T I M S S

Supplement 2

International Versions of the Background Questionnares Population 2

TIMSS International Database USER GUIDE

Primary and Middle School Years

TIMSS

Third International Mathematics and Science Study

Supplement 2
International Versions of the Background Questionnaires – Population 2

Overview

This supplement contains the international versions of the Population 2 background questionnaires in the following five sections:

Section 1: Student Background Questionnaire - Non-Specialized Version (SQ2)

Section 2: Student Background Questionnaire - Specialized Version (SQ2(s))

Section 3: Mathematics Teacher Background Questionnaire (TQM2)

Section 4: Science Teacher Background Questionnaire (TQS2)

Section 5: School Background Questionnaire (SCQ2)

Tables S2.1 through S2.4 list all of the international background variables corresponding to each of the student, mathematics teacher, science teacher, and school background questionnaire items.

The international versions of the questionnaires were designed to provide an opportunity for individual countries to make modifications to some questions or response options in order include the appropriate wording or options most consistent with their own national systems. In the international versions of the questionnaires, such questions contain instructions to NRCs to substitute the appropriate wording for their country and/or to modify or delete any inappropriate questions or options. These instructions were indicated in two ways in the questionnaires:

1) NRC NOTE:
2) <International Option> (indicating that the NRC was to substitute, if necessary, an appropriate national option that would retain the same basic interpretation as the international version)

Documentation of any national adaptations of the student, teacher, and school background questionnaire items is included in Supplement 3 to provide the user with information required to evaluate the availability of internationally-comparable data for use in secondary analyses involving the TIMSS contextual variables.

Table S2.1
Index of International Background Variables for the Population 2 Student Questionnaire Items

Questionnaire Location	Variable Name	Description
SQ2-2	BSBGSEX	Are you a boy or a girl?
SQ2-3A	BSBGBRN1	Were you born in <country>?
SQ2-3B	BSBGBRN2	How old were you when you came to <country>?
SQ2-4	BSBGLANG	How often do you speak <language of test> at home?
SQ2-5A	BSBMEXTR	Outside school, how much time do you spend taking extra lessons in mathematics?
SQ2-5B	BSBSEXTR	Outside school, how much time do you spend taking extra lessons in science?
SQ2-5C	BSBGCLUB	Outside school, how much time do you spend participating in science or mathematics clubs?
SQ2-5D	BSBGPAID	Outside school, how much time do you spend at a paid job?
SQ2-6A	BSBGDAY1	Outside school, how much time do you spend watching television and videos?
SQ2-6B	BSBGDAY2	Outside school, how much time do you spend playing computer games?
SQ2-6C	BSBGDAY3	Outside school, how much time do you spend playing/talking with friends?
SQ2-6D	BSBGDAY4	Outside school, how much time do you spend doing jobs at home?
SQ2-6E	BSBGDAY5	Outside school, how much time per day do you spend playing sports?
SQ2-6F	BSBGDAY6	Outside school, how much time per day do you spend reading a book for enjoyment?
SQ2-6G	BSBMDAY7	Outside school, how much time per day do you spend studying or doing homework in mathematics?
SQ2-6H	BSBSDAY8	Outside school, how much time do you spend studying or doing homework in science?
SQ2-6I	BSBGDAY9	Outside school, how much time do you spend studying or doing homework in other subjects?
SQ2-7A	BSBGADU1	Does your mother live at home with you?
SQ2-7B	BSBGADU2	Does your father live at home with you?
SQ2-7C	BSBGADU3	Do any brothers live at home with you?
SQ2-7D	BSBGADU4	Do any sisters live at home with you?
SQ2-7E	BSBGADU5	Do you have a stepmother who lives with you?
SQ2-7F	BSBGADU6	Do you have a stepfather who lives with you?
SQ2-7G	BSBGADU7	Do any grandparents live at home with you?
SQ2-7H	BSBGADU8	Do any other relatives live at home with you?
SQ2-7I	BSBGADU9	Do any non-relatives live at home with you?
SQ2-8	BSBGHOME	Altogether, how many people live in your home?
SQ2-9/1	BSBGEDUM	How far did your mother go in school?
SQ2-9/2	BSBGEDUF	How far did your father go in school?
SQ2-9/3	BSBGEDUS	How far do you expect to go in school?
SQ2-10A	BSBGBRNM	Was your mother born in <country>?
SQ2-10B	BSBGBRNF	Was your father born in <country>?
SQ2-11	BSBGBOOK	About how many books are there in your home?
SQ2-12A	BSBGPS01	Do you have a calculator at your home?
SQ2-12B	BSBGPS02	Do you have a computer at your home?
SQ2-12C	BSBGPS03	Do you have a study desk at home for your own use?
SQ2-12D	BSBGPS04	Do you have a dictionary at your home?
SQ2-12E	BSBGPS05	Do you have a <country specific> at your home?
SQ2-12F	BSBGPS06	Do you have a <country specific> at your home?
SQ2-12G	BSBGPS07	Do you have a <country specific> at your home?
SQ2-12H	BSBGPS08	Do you have a <country specific> at your home?
SQ2-12I	BSBGPS09	Do you have a <country specific> at your home?
SQ2-12J	BSBGPS10	Do you have a <country specific> at your home?
SQ2-12K	BSBGPS11	Do you have a <country specific> at your home?
SQ2-12L	BSBGPS12	Do you have a <country specific> at your home?
SQ2-12M	BSBGPS13	Do you have a <country specific> at your home?

Table S2.1
Index of International Background Variables for the Population 2 Student Questionnaire Items (Continued)

Questionnaire Location	Variable Name	Description
SQ2-12N	BSBGPS14	Do you have a <country specific> at your home?
SQ2-12O	BSBGPS15	Do you have a <country specific> at your home?
SQ2-12P	BSBGPS16	Do you have a <country specific> at your home?
SQ2-13A	BSBSMIP1	My mother thinks it is important for me to do well in science at school
SQ2-13B	BSBMMIP2	My mother thinks it is important for me to do well in mathematics at school
SQ2-13C	BSBGMIP3	My mother thinks it is important for me to do well in <language of test> at school
SQ2-13D	BSBGMIP4	My mother thinks it is important for me to be good at sports
SQ2-13E	BSBGMIP5	My mother thinks it is important for me to have time to have fun
SQ2-13F	BSBGMIP6	My mother thinks it is important for me to be placed in the high achieving class
SQ2-14A	BSBMCLS1	In my mathematics class, students often neglect their school work
SQ2-14B	BSBMCLS2	In my mathematics class, students are orderly and quiet during lessons
SQ2-14C	BSBMCLS3	Outside school, how much time do you spend doing jobs at home?
SQ2-15A	BSBSFIP1	My friends think it is important for me to do well in science at school
SQ2-15B	BSBMFIP2	My friends think it is important for me to do well in mathematics at school
SQ2-15C	BSBGFIP3	My friends think it is important for me to do well in <language of test> at school
SQ2-15D	BSBGFIP4	My friends think it is important for me to have time to have fun
SQ2-15E	BSBGFIP5	My friends think it is important for me to be good at sports
SQ2-15F	BSBGFIP6	My friends think it is important for me to be placed in the high achieving class
SQ2-16A	BSBSSIP1	I think it is important to do well in science at school
SQ2-16B	BSBMSIP2	I think it is important to do well in mathematics at school
SQ2-16C	BSBGSIP3	I think it is important to do well in <language of test> at school
SQ2-16D	BSBGSIP4	I think it is important to have time to have fun
SQ2-16E	BSBGSIP5	I think it is important to be good at sports
SQ2-16F	BSBGSIP6	I think it is important to be placed in the high achieving class
SQ2-17A	BSBMGOOD	I usually do well in mathematics
SQ2G-17B	BSBSGOOD	I usually do well in science
SQ2-18A	BSBGSSKP	How often did you skip a class last month in school?
SQ2-18B	BSBGSSTL	How often was something of yours stolen last month in school?
SQ2-18C	BSBGSHRT	How far did your father go in school?
SQ2-18D	BSBGFSKP	How often did some of your friends skip a class last month in school?
SQ2-18E	BSBGFSTL	Was your mother born in <country>?
SQ2-18F	BSBGFHRT	How often did your friends think another student might hurt them last month in school?
SQ2-19A	BSBMDOW1	To do well in mathematics, you need lots of natural ability
SQ2-19B	BSBMDOW2	To do well in mathematics, you need good luck
SQ2-19C	BSBMDOW3	To do well in mathematics, you need lots of hard work studying at home
SQ2-19D	BSBMDOW4	To do well in mathematics, you need to memorize the textbook or notes
SQ2-20A	BSBSDOW1	To do well in science you need lots of natural ability
SQ2-20B	BSBSDOW2	To do well in science you need good luck
SQ2-20C	BSBSDOW3	To do well in science you need lots of hard work studying at home
SQ2-20D	BSBSDOW4	To do well in science you need to memorize the textbook or notes
SQ2-21A	BSBMLIKE	How much do you like mathematics?
SQ2G-21B	BSBSLIKE	How much do you like science?
SQ2-22A	BSBMCMLK	How much do you like using computers in mathematics?
SQ2-22B	BSBSCMLK	How much do you like using computers in science?
SQ2-23A	BSBMENJY	Do you think that you enjoy learning mathematics?
SQ2-23B	BSBMBORE	Do you think that mathematics is boring?

Table S2.1
Index of International Background Variables for the Population 2 Student Questionnaire Items (Continued 2)

Questionnaire Location	Variable Name	Description
SQ2-23C	BSBMEASY	Do you think that mathematics is an easy subjecy?
SQ2-23D	BSBMLIFE	Do you think that mathematics is important to everyone's life?
SQ2-23E	BSBMWORK	Do you think that you would like a job that involved using mathematics?
SQ2-24A	BSBMJOB	I need to do well in mathematics to get desired job
SQ2-24B	BSBMPRNT	I need to do well in mathematics to please my parents
SQ2-24C	BSBMSCHL	I need to do well in mathematics to get into the school I prefer.
SQ2-24D	BSBMSELF	I need to do well in mathematics to please myself.
SQ2-25A	BSBMPROB	How often does the teacher show how to do mathematics problems in your mathematics lesson?
SQ2-25B	BSBMNOTE	How often do you copy notes from the board in your mathematics lesson?
SQ2-25C	BSBMTEST	How often do you have a quiz or test in your mathematics lesson?
SQ2-25D	BSBMWSHT	How often do you work from worksheets or textbooks alone in your mathematics lesson?
SQ2-25E	BSBMPROJ	Outside school, how much time do you spend doing jobs at home?
SQ2-25F	BSBMCALC	How often do you use calculators in your mathematics lesson?
SQ2-25G	BSBMCOMP	How often do you use computers in your mathematics lesson?
SQ2-25H	BSBMSGRP	How often do you work together in pairs or small groups in your mathematics lesson?
SQ2-25I	BSBMEVLF	How often do you use things from life to solve problems in your mathematics lesson?
SQ2-25J	BSBMHWGV	How often does the teacher give homework in your mathematics lesson?
SQ2-25K	BSBMHWCL	How often do you begin homework in class in your mathematics lesson?
SQ2-25L	BSBMHWTC	How often does the teacher check homework in your mathematics lesson?
SQ2-25M	BSBMHWFC	How often do you check each other's homework in your mathematics lesson?
SQ2-25N	BSBMHWDS	How often do you discuss completed homework in your mathematics lesson?
SQ2-26A	BSBMRULE	How often does the teacher explain rules and definitions when beginning new mathematics topics?
SQ2-26B	BSBMPRAC	How often do you discuss a practical problem when beginning new mathematics topics?
SQ2-26C	BSBMSMGP	How often do you work together in small groups on a problem when beginning new mathematics topics?
SQ2-26D	BSBMASK	How often does the teacher asks what you know about the topic when beginning new mathematics topics?
SQ2-26E	BSBMTXBK	How often do you look at textbook while teacher talks about it when beginning new mathematics topics?
SQ2-26F	BSBMEG	How often do you try to solve a related example when beginning new mathematics topics?
SQ2-27AA	BSBGENV1	How much do you think science can help address air pollution?
SQ2-27AB	BSBGENV2	How far did your father go in school?
SQ2-27AC	BSBGENV3	How much do you think science can help address destruction of forests?
SQ2-27AD	BSBGENV4	Was your mother born in <country>?
SQ2-27AE	BSBGENV5	How much do you think science can help address ozone layer damage?
SQ2-27AF	BSBGENV6	How much do you think science can help address problems from nuclear power plants?
SQ2-27B	BSBGWORR	Which environmental problem concerns you the most?
SQ2G-28A	BSBSENJY	Do you think that you enjoy learning science?
SQ2G-28B	BSBSBORE	Do you think that science is boring?
SQ2G-28C	BSBSEASY	Do you think that science is an easy subject?
SQ2G-28D	BSBSLIFE	Do you think that science is important to everyone's life?
SQ2G-28E	BSBSWORK	Do you think that you would like a job that involved using science?
SQ2G-29A	BSBSJOB	I need to do well in science to get the job I want
SQ2G-29B	BSBSPRNT	I need to do well in science to please my parents
SQ2G-29C	BSBSSCHL	I need to do well in science to get into the school I prefer
SQ2G-29D	BSBSSELF	I need to do well in science to please myself
SQ2G-30	BSBSCARE	Which science would you most prefer to use in a career?
SQ2G-31A	BSBSPROB	How often does the teacher show how to do science problems in your science lesson?
SQ2G-31B	BSBSNOTE	How often do you copy notes from the board in your science lesson?

Table S2.1
Index of International Background Variables for the Population 2 Student Questionnaire Items (Continued 3)

Questionnaire Location	Variable Name	Description
SQ2G-31C	BSBSTEST	How often do you have a quiz or test in your science lesson?
SQ2G-31D	BSBSPROJ	How often do you work on science projects in your science lesson?
SQ2G-31E	BSBSWSHT	How often do you work from worksheets or textbooks alone in your science lesson?
SQ2G-31F	BSBSCALC	How often do you use calculators in your science lesson?
SQ2G-31G	BSBSCOMP	How often do you use computers in your science lesson?
SQ2G-31H	BSBSEVLF	How often do you use things from life to solve problems in your science lesson?
SQ2G-31I	BSBSSGRP	How often do you work together in pairs or small groups in your science lesson?
SQ2G-31J	BSBSHWGV	How often does the teacher give homework in your science lesson?
SQ2G-31K	BSBSHWCL	How often do you begin homework in class in your science lesson?
SQ2G-31L	BSBSHWTC	How often does the teacher check homework in your science lesson?
SQ2G-31M	BSBSHWFC	How often do you check each other's homework in your science lesson?
SQ2G-31N	BSBSHWDS	Outside school, how much time do you spend doing jobs at home?
SQ2G-31O	BSBSDEMO	How often does the teacher demonstrate an experiment in your science lesson?
SQ2G-31P	BSBSEXPR	How often do you do an experiment in your science lesson?
SQ2G-32A	BSBSRULE	How often does the teacher explain rules and definitions when beginning new science topics?
SQ2G-32B	BSBSPRAC	How often do you discuss a practical problem when beginning new science topics?
SQ2G-32C	BSBSSMGP	How often do you work together in small groups on a problem when beginning new science topics?
SQ2G-32D	BSBSASK	How often does the teacher asks what you know about the topic when beginning new science topics?
SQ2G-32E	BSBSTXBK	How often do you look at textbook while teacher talks about it when beginning new science topics?
SQ2G-32F	BSBSEG	How often do you try to solve a related example when beginning new science topics?
SQ2-33A	BSBGACT1	How often do you read a book or magazine?
SQ2-33B	BSBGACT2	How often do you visit a museum or art exhibition?
SQ2-33C	BSBGACT3	How often do you attend a concert?
SQ2-33D	BSBGACT4	How often do you go to the theatre?
SQ2-33E	BSBGACT5	How often do you go to the movies
SQ2-34A	BSBGNEWS	How often do you watch news or documentaries on television or video?
SQ2-34B	BSBGOPER	How often do you watch opera, ballet, or classical music on television or video?
SQ2-34C	BSBGNATR	How often do you watch nature, wildlife, or history on television or video?
SQ2-34D	BSBGPOPU	How far did your father go in school?
SQ2-34E	BSBGSPRT	How often do you watch sports on television or video?
SQ2-34F	BSBGVIDE	Was your mother born in <country>?
SQ2-34G	BSBGCRTN	How often do you watch cartoons on television or video?
SQ2-34H	BSBGCMDY	How often do you watch comedy, adventure, or suspense on television or video?
SQ2S-17B	BSBBGOOD	I usually do well in biological science
SQ2S-17C	BSBEGOOD	I usually do well in earth science
SQ2S-17D	BSBPGOOD	I usually do well in physical science
SQ2S-21B	BSBBLIKE	I like biological science
SQ2S-21C	BSBELIKE	I like earth science
SQ2S-21D	BSBPLIKE	I like physical science
SQ2S-28A	BSBBSTDY	Are you studying biology this year?
SQ2S-28B	BSBCSTDY	Are you studying chemistry this year?
SQ2S-28C	BSBESTDY	Are you studying earth science this year?
SQ2S-28D	BSBPSTDY	Are you studying physics this year?
SQ2S-29A	BSBBENJY	Do you think that you enjoy learning biology?
SQ2S-29B	BSBBBORE	Do you think that biology is boring?
SQ2S-29C	BSBBEASY	Do you think that biology is an easy subject?

Table S2.1
Index of International Background Variables for the Population 2 Student Questionnaire Items (Continued 4)

Questionnaire Location	Variable Name	Description
SQ2S-29D	BSBBLIFE	Do you think that biology is important to everyone's life?
SQ2S-29E	BSBBWORK	Do you think that you would like a job that involved using biology?
SQ2S-30A	BSBBJOB	I need to do well in biology to get the job I want
SQ2S-30B	BSBBPRNT	I need to do well in biology to please my parents
SQ2S-30C	BSBBSCHL	I need to do well in biology to get into the school I prefer
SQ2S-30D	BSBBSELF	I need to do well in biology to please myself
SQ2S-31A	BSBBPROB	How often does the teacher show how to do biology problems in your biology lesson?
SQ2S-31B	BSBBNOTE	How often do you copy notes from the board in your biology lesson?
SQ2S-31C	BSBBTEST	How often do you have a quiz or test in your biology lesson?
SQ2S-31D	BSBBPROJ	How often do you work on biology projects in your biology lesson?
SQ2S-31E	BSBBWSHT	How often do you work from worksheets or textbooks alone in your biology lesson?
SQ2S-31F	BSBBCALC	Outside school, how much time do you spend doing jobs at home?
SQ2S-31G	BSBBCOMP	How often do you use computers in your biology lesson?
SQ2S-31H	BSBBEVLF	How often do you use things from life to solve problems in your biology lesson?
SQ2S-31I	BSBBSGRP	How often do you work together in pairs or small groups in your biology lesson?
SQ2S-31J	BSBBHWGV	How often does the teacher give homework in your biology lesson?
SQ2S-31K	BSBBHWCL	How often do you begin homework in class in your biology lesson?
SQ2S-31L	BSBBHWTC	How often does the teacher check homework in your biology lesson?
SQ2S-31M	BSBBHWFC	How often do you check each other's homework in your biology lesson?
SQ2S-31N	BSBBHWDS	How often do you discuss completed homework in your biology lesson?
SQ2S-31O	BSBBDEMO	How often does the teacher demonstrate an experiment in your biology lesson?
SQ2S-31P	BSBBEXPR	How often do you do an experiment in your biology lesson?
SQ2S-32A	BSBBRULE	How often does the teacher explain rules and definitions when beginning new biology topics?
SQ2S-32B	BSBBPRAC	How often do you discuss a practical problem when beginning new biology topics?
SQ2S-32C	BSBBSMGP	How often do you work together in small groups on a problem when beginning new biology topics?
SQ2S-32D	BSBBASK	How often does the teacher asks what you know about the topic when beginning new biology topics?
SQ2S-32E	BSBBTXBK	How often do you look at textbook while teacher talks about it when beginning new biology topics?
SQ2S-32F	BSBBEG	How often do you try to solve a related example when beginning new biology topics?
SQ2S-33A	BSBCENJY	How far did your father go in school?
SQ2S-33B	BSBCBORE	Do you think that chemistry is boring?
SQ2S-33C	BSBCEASY	Was your mother born in <country>?
SQ2S-33D	BSBCLIFE	Do you think that chemistry is important to everyone's life?
SQ2S-33E	BSBCWORK	Do you think that you would like a job that involved using chemistry?
SQ2S-34A	BSBCJOB	I need to do well in chemistry to get the job I want
SQ2S-34B	BSBCPRNT	I need to do well in chemistry to please my parents
SQ2S-34C	BSBCSCHL	I need to do well in chemistry to get into the school I prefer
SQ2S-34D	BSBCSELF	I need to do well in chemistry to please myself
SQ2S-35A	BSBCPROB	How often does the teacher show how to do chemistry problems in your chemistry lesson?
SQ2S-35B	BSBCNOTE	How often do you copy notes from the board in your chemistry lesson?
SQ2S-35C	BSBCTEST	How often do you have a quiz or test in your chemistry lesson?
SQ2S-35D	BSBCPROJ	How often do you work on chemistry projects in your chemistry lesson?
SQ2S-35E	BSBCWSHT	How often do you work from worksheets or textbooks alone in your chemistry lesson?
SQ2S-35F	BSBCCALC	How often do you use calculators in your chemistry lesson?
SQ2S-35G	BSBCCOMP	How often do you use computers in your chemistry lesson?
SQ2S-35H	BSBCEVLF	How often do you use things from life to solve problems in your chemistry lesson?
SQ2S-35I	BSBCSGRP	How often do you work together in pairs or small groups in your chemistry lesson?

Table S2.1
Index of International Background Variables for the Population 2 Student Questionnaire Items (Continued 5)

Questionnaire Location	Variable Name	Description
SQ2S-35J	BSBCHWGV	How often does the teacher give homework in your chemistry lesson?
SQ2S-35K	BSBCHWCL	How often do you begin homework in class in your chemistry lesson?
SQ2S-35L	BSBCHWTC	How often does the teacher check homework in your chemistry lesson?
SQ2S-35M	BSBCHWFC	How often do you check each other's homework in your chemistry lesson?
SQ2S-35N	BSBCHWDS	How often do you discuss completed homework in your chemistry lesson?
SQ2S-35O	BSBCDEMO	How often does the teacher demonstrate an experiment in your chemistry lesson?
SQ2S-35P	BSBCEXPR	How often do you do an experiment in your chemistry lesson?
SQ2S-36A	BSBCRULE	How often does the teacher explain rules and definitions when beginning new chemistry topics?
SQ2S-36B	BSBCPRAC	How often do you discuss a practical problem when beginning new chemistry topics?
SQ2S-36C	BSBCSMGP	How often do you work together in small groups on a problem when beginning new chemistry topics?
SQ2S-36D	BSBCASK	How often does the teacher asks what you know about the topic when beginning new chemistry topics?
SQ2S-36E	BSBCTXBK	Outside school, how much time do you spend doing jobs at home?
SQ2S-36F	BSBCEG	How often do you try to solve a related example when beginning new chemistry topics?
SQ2S-37A	BSBEENJY	Do you think that you enjoy learning earth science?
SQ2S-37B	BSBEBORE	Do you think that earth science is boring?
SQ2S-37C	BSBEEASY	Do you think that earth science is an easy subject?
SQ2S-37D	BSBELIFE	Do you think that earth science is important to everyone's life?
SQ2S-37E	BSBEWORK	Do you think that you would like a job that involved using earth science?
SQ2S-38A	BSBEJOB	I need to do well in earth science to get the job I want
SQ2S-38B	BSBEPRNT	I need to do well in earth science to please my parents
SQ2S-38C	BSBESCHL	I need to do well in earth science to get into the school I prefer
SQ2S-38D	BSBESELF	I need to do well in earth science to please myself
SQ2S-39A	BSBEPROB	How often does the teacher show how to do earth science problems in your earth science lesson?
SQ2S-39B	BSBENOTE	How often do you copy notes from the board in your earth science lesson?
SQ2S-39C	BSBETEST	How often do you have a quiz or test in your earth science lesson?
SQ2S-39D	BSBEPROJ	How often do you work on earth science projects in your earth science lesson?
SQ2S-39E	BSBEWSHT	How often do you work from worksheets or textbooks alone in your earth science lesson?
SQ2S-39F	BSBECALC	How often do you use calculators in your earth science lesson?
SQ2S-39G	BSBECOMP	How far did your father go in school?
SQ2S-39H	BSBEEVLF	How often do you use things from life to solve problems in your earth science lesson?
SQ2S-39I	BSBESGRP	Was your mother born in <country>?
SQ2S-39J	BSBEHWGV	How often does the teacher give homework in your earth science lesson?
SQ2S-39K	BSBEHWCL	How often do you begin homework in class in your earth science lesson?
SQ2S-39L	BSBEHWTC	How often does the teacher check homework in your earth science lesson?
SQ2S-39M	BSBEHWFC	How often do you check each other's homework in your earth science lesson?
SQ2S-39N	BSBEHWDS	How often do you discuss completed homework in your earth science lesson?
SQ2S-39O	BSBEDEMO	How often does the teacher demonstrate an experiment in your earth science lesson?
SQ2S-39P	BSBEEXPR	How often do you do an experiment in your earth science lesson?
SQ2S-40A	BSBERULE	How often does the teacher explain rules and definitions when beginning new earth science topics?
SQ2S-40B	BSBEPRAC	How often do you discuss a practical problem when beginning new earth science topics?
SQ2S-40C	BSBESMGP	How often do you work together in small groups on a problem when beginning new earth science topics?
SQ2S-40D	BSBEASK	How often does the teacher asks what you know about the topic when beginning new earth science topics?
SQ2S-40E	BSBETXBK	How often do you look at textbook while teacher talks about it when beginning new earth science topics?
SQ2S-40F	BSBEEG	How often do you try to solve a related example when beginning new earth science topics?
SQ2S-41A	BSBPENJY	Do you think that you enjoy learning physics?
SQ2S-41B	BSBPBORE	Do you think that physics is boring?

Table S2.1
Index of International Background Variables for the Population 2 Student Questionnaire Items (Continued 6)

Questionnaire Location	Variable Name	Description
SQ2S-41C	BSBPEASY	Do you think that physics is an easy subject?
SQ2S-41D	BSBPLIFE	Do you think that physics is important to everyone's life?
SQ2S-41E	BSBPWORK	Do you think that you would like a job that involved using physics?
SQ2S-42A	BSBPJOB	I need to do well in physics to get the job I want
SQ2S-42B	BSBPPRNT	I need to do well in physics to please my parents
SQ2S-42C	BSBPSCHL	I need to do well in physics to get into the school I prefer
SQ2S-42D	BSBPSELF	I need to do well in physics to please myself
SQ2S-43A	BSBPPROB	How often does the teacher show how to do physics problems in your physics lesson?
SQ2S-43B	BSBPNOTE	How often do you copy notes from the board in your physics lesson?
SQ2S-43C	BSBPTEST	How often do you have a quiz or test in your physics lesson?
SQ2S-43D	BSBPPROJ	How often do you work on physics projects in your physics lesson?
SQ2S-43E	BSBPWSHT	Outside school, how much time do you spend doing jobs at home?
SQ2S-43F	BSBPCALC	How often do you use calculators in your physics lesson?
SQ2S-43G	BSBPCOMP	How often do you use computers in your physics lesson?
SQ2S-43H	BSBPEVLF	How often do you work together in pairs or small groups in your physics lesson?
SQ2S-43I	BSBPSGRP	How often do you use things from life to solve problems in your physics lesson?
SQ2S-43J	BSBPHWGV	How often does the teacher give homework in your physics lesson?
SQ2S-43K	BSBPHWCL	How often do you begin homework in class in your physics lesson?
SQ2S-43L	BSBPHWTC	How often does the teacher check homework in your physics lesson?
SQ2S-43M	BSBPHWFC	How often do you check each other's homework in your physics lesson?
SQ2S-43N	BSBPHWDS	How often do you discuss completed homework in your physics lesson?
SQ2S-43O	BSBPDEMO	How often does the teacher demonstrate an experiment in your physics lesson?
SQ2S-43P	BSBPEXPR	How often do you do an experiment in your physics lesson?
SQ2S-44A	BSBPRULE	How often does the teacher explain rules and definitions when beginning new physics topics?
SQ2S-44B	BSBPPRAC	How often do you discuss a practical problem when beginning new physics topics?
SQ2S-44C	BSBPSMGP	How often do you work together in small groups on a problem when beginning new physics topics?
SQ2S-44D	BSBPASK	How often does the teacher asks what you know about the topic when beginning new physics topics?
SQ2S-44E	BSBPTXBK	How often do you look at textbook while teacher talks about it when beginning new physics topics?
SQ2S-44F	BSBPEG	How often do you try to solve a related example when beginning new physics topics?

Table S2.2

Index of International Background Variables for the Population 2 Mathematics Teacher Questionnaire Items

Questionnaire Location	Variable Name	Description
TQM2A1	BTBGAGE	Teacher age
TQM2A2	BTBGSEX	Teacher sex
TQM2A3	BTBGEDUC	Highest level of formal education
TQM2A4	BTBMTEAC	Do not teach mathematics this year.
TQM2A4A	BTBMGRPK	Are you teaching mathematics at the pre-kindergarten level this year?
TQM2A4B	BTBMGRK	Are you teaching mathematics at the kindergarten level this year?
TQM2A4C	BTBMGR1	Are you teaching mathematics at the 1st grade level this year?
TQM2A4D	BTBMGR2	Are you teaching mathematics at the 2nd grade level this year?
TQM2A4E	BTBMGR3	Are you teaching mathematics at the 3rd grade level this year?
TQM2A4F	BTBMGR4	Are you teaching mathematics at the 4th grade level this year?
TQM2A4G	BTBMGR5	Are you teaching mathematics at the 5th grade level this year?
TQM2A4H	BTBMGR6	Are you teaching mathematics at the 6th grade level this year?
TQM2A4I	BTBMGR7	Are you teaching mathematics at the 7th grade level this year?
TQM2A4J	BTBMGR8	Are you teaching mathematics at the 8th grade level this year?
TQM2A4K	BTBMGR9	Are you teaching mathematics at the 9th grade level this year?
TQM2A4L	BTBMGR10	Are you teaching mathematics at the 10th grade level this year?
TQM2A4M	BTBMGR11	Are you teaching mathematics at the 11th grade level this year?
TQM2A4N	BTBMGR12	Are you teaching mathematics at the 12th grade level this year?
TQM2A4O	BTBMGR13	Are you teaching mathematics at the 13th grade level this year?
TQM2A5	BTBSTEAC	Do not teach science this year.
TQM2A5A	BTBSGRPK	Are you teaching science at the pre-kindergarten level this year?
TQM2A5B	BTBSGRK	Are you teaching science at the kindergarten level this year?
TQM2A5C	BTBSGR1	Are you teaching science at the 1st grade level this year?
TQM2A5D	BTBSGR2	Are you teaching science at the 2nd grade level this year?
TQM2A5E	BTBSGR3	Are you teaching science at the 3rd grade level this year?
TQM2A5F	BTBSGR4	Are you teaching science at the 4th grade level this year?
TQM2A5G	BTBSGR5	Are you teaching science at the 5th grade level this year?
TQM2A5H	BTBSGR6	Are you teaching science at the 6th grade level this year?
TQM2A5I	BTBSGR7	Are you teaching science at the 7th grade level this year?
TQM2A5J	BTBSGR8	Are you teaching science at the 8th grade level this year?
TQM2A5K	BTBSGR9	Are you teaching science at the 9th grade level this year?
TQM2A5L	BTBSGR10	Are you teaching science at the 10th grade level this year?
TQM2A5M	BTBSGR11	Are you teaching science at the 11th grade level this year?
TQM2A5N	BTBSGR12	Are you teaching science at the 12th grade level this year?
TQM2A5O	BTBSGR13	Are you teaching science at the 13th grade level this year?
TQM2A6	BTBGPTFT	Do you teach part-time or full-time?
TQM2A7	BTBGTAUG	By the end of this year, how many years will you have been teaching?
TQM2A8A	BTBGGRPK	Have you taught at the pre-kindergarten level in the past five years?
TQM2A8B	BTBGGRK	Have you taught at the kindergarten level in the past five years?
TQM2A8C	BTBGGR1	Have you taught at the 1st grade level in the past five years?
TQM2A8D	BTBGGR2	Have you taught at the 2nd grade level in the past five years?
TQM2A8E	BTBGGR3	Have you taught at the 3rd grade level in the past five years?
TQM2A8F	BTBGGR4	Have you taught at the 4th grade level in the past five years?
TQM2A8G	BTBGGR5	Have you taught at the 5th grade level in the past five years?
TQM2A8H	BTBGGR6	Have you taught at the 6th grade level in the past five years?
TQM2A8I	BTBGGR7	Have you taught at the 7th grade level in the past five years?

Table S2.2

Index of International Background Variables for the Population 2 Mathematics Teacher Questionnaire Items (Continued)

Questionnaire Location	Variable Name	Description
TQM2A8J	BTBGGR8	Have you taught at the 8th grade level in the past five years?
TQM2A8K	BTBGGR9	Have you taught at the 9th grade level in the past five years?
TQM2A8L	BTBGGR10	Have you taught at the 10th grade level in the past five years?
TQM2A8M	BTBGGR11	Have you taught at the 11th grade level in the past five years?
TQM2A8N	BTBGGR12	Have you taught at the 12th grade level in the past five years?
TQM2A8O	BTBGGR13	Have you taught at the 13th grade level in the past five years?
TQM2A9A	BTBMSUB1	How many periods are you scheduled to teach mathematics each week?
TQM2A9B	BTBSSUB2	How many periods are you scheduled to teach general science each week?
TQM2A9C	BTBSSUB3	How many periods are you scheduled to teach physical science each week?
TQM2A9D	BTBSSUB4	How many periods are you scheduled to teach earth science each week?
TQM2A9E	BTBSSUB5	How many periods are you scheduled to teach life science each week?
TQM2A9F	BTBSSUB6	How many periods are you scheduled to teach biology each week?
TQM2A9G	BTBSSUB7	How many periods are you scheduled to teach chemistry each week?
TQM2A9H	BTBSSUB8	How many periods are you scheduled to teach physics each week?
TQM2A9I	BTBGSUB9	How many periods are you scheduled to teach other subjects each week?
TQM2A10A	BTBGTSK1	How many periods are you scheduled to supervise students per week?
TQM2A10B	BTBGTSK2	How many periods are you scheduled to counsel/appraise students per week?
TQM2A10C	BTBGTSK3	How many periods are you scheduled for administrative duties per week?
TQM2A10D	BTBGTSK4	How many periods are you scheduled to plan individually per week?
TQM2A10E	BTBGTSK5	How many periods are you scheduled to plan with others per week?
TQM2A10F	BTBGTSK6	How many periods are you scheduled per week for other non-student contact time?
TQM2A11	BTBGTOTL	How many periods are you scheduled all together per week?
TQM2A12A	BTBGACT1	How many hours outside the school day do you spend per week preparing or grading exams?
TQM2A12B	BTBGACT2	How many hours outside the school day do you spend per week grading other work?
TQM2A12C	BTBGACT3	How many hours outside the school day do you spend per week planning lessons?
TQM2A12D	BTBGACT4	How many hours outside the school day do you spend per week meeting with students?
TQM2A12E	BTBGACT5	How many hours outside the school day do you spend per week meeting with parents?
TQM2A12F	BTBGACT6	How many hours outside the school day do you spend per week in professional development?
TQM2A12G	BTBGACT7	How many hours outside the school day do you spend per week keeping records?
TQM2A12H	BTBGACT8	How many hours outside the school day do you spend per week on administrative tasks?
TQM2A13	BTBGMEET	How often do you meet with other teachers to discuss curriculum or teaching issues?
TQM2A14A	BTBGINF1	How much influence do you have on subject matter to be taught?
TQM2A14B	BTBGINF2	How much influence do you have on textbooks to be used?
TQM2A14C	BTBGINF3	How much influence do you have on the amount of money to be spent on supplies?
TQM2A14D	BTBGINF4	How much influence do you have on what supplies are purchased?
TQM2A15A	BTBMIMP1	To be good in mathematics how important is it to remember formulas and procedures?
TQM2A15B	BTBMIMP2	To be good in mathematics how important is it to think in a sequential & procedural manner?
TQM2A15C	BTBMIMP3	To be good in mathematics how important is it to understand mathematicsematical concepts?
TQM2A15D	BTBMIMP4	To be good in mathematics how important is it to think creatively?
TQM2A15E	BTBMIMP5	To be good in mathematics how important is it to understand real world use?
TQM2A15F	BTBMIMP6	To be good in mathematics how important is it to be able to provide reasons to support solutions?
TQM2A16A	BTBMAGR1	Mathematics is primarily an abstract subject.
TQM2A16B	BTBMAGR2	Mathematics is primarily a formal way of representing the real world.
TQM2A16C	BTBMAGR3	Mathematics is primarily a practical and structured guide for addressing real situations.
TQM2A16D	BTBGAGR4	If students have difficulty, they should be given more practice by themselves.
TQM2A16E	BTBMAGR5	Some students have a natural talent for mathematics and others do not.

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Index of International Background Variables for the Population 2 Mathematics Teacher Questionnaire Items (Continued 2)

Questionnaire Location	Variable Name	Description
TQM2A16F	BTBMAGR6	More than one representation should be used in teaching a mathematics topic.
TQM2A16G	BTBMAGR7	Mathematics should be learned as sets of algorithms that cover all possibilities.
TQM2A16H	BTBMAGR8	Basic computational skills are sufficient for teaching primary school mathematics.
TQM2A16I	BTBMAGR9	A liking for and understanding of students are essential for teaching science.
TQM2A17A	BTBMFAM1	How familiar are you with the <national curriculum guide for mathematics>?
TQM2A17B	BTBMFAM2	How familiar are you with the <regional curriculum guide for mathematics>?
TQM2A17C	BTBGFAM3	How familiar are you with the <school curriculum guide>?
TQM2A17D	BTBGFAM4	How familiar are you with the <national examination specifications>?
TQM2A17E	BTBGFAM5	How familiar are you with the <regional examination specifications>?
TQM2A17F	BTBMFAM6	How familiar are you with the <national pedagogy guide for mathematics>?
TQM2A17G	BTBMFAM7	How familiar are you with the <regional pedagogy guide for mathematics>?
TQM2A18	BTBGCARE	Was teaching your first choice as a career when beginning university?
TQM2A19	BTBGCHNG	Would you change to another career if you had the opportunity?
TQM2A20	BTBGSOAP	Do you think that society appreciates your work?
TQM2A21	BTBGSTAP	Do you think your students appreciate your work?
TQM2A22	BTBGBOOK	Approximately how many books are in your home?
TQM2A23A	BTBGRNK1	Social status rank of accountant
TQM2A23B	BTBGRNK2	Social status rank of <medical doctor>
TQM2A23C	BTBGRNK3	Social status rank of lawyer
TQM2A23D	BTBGRNK4	Social status rank of engineer
TQM2A23E	BTBGRNK5	Social status rank of nurse
TQM2A23F	BTBGRNK6	Social status rank of senior <civil servant>
TQM2A23G	BTBGRNK7	Social status rank of teacher, primary school
TQM2A23H	BTBGRNK8	Social status rank of teacher, secondary school
TQM2A23I	BTBGRNK9	Social status rank of <unskilled worker>
TQM2B1/1	BTBMBOY	How many boys are in your class?
TQM2B1/2	BTBMGIRL	How many girls are in your class?
TQM2B2A	BTBMACH1	What percent of your students are in the top third nationally?
TQM2B2B	BTBMACH2	What percent of your students are in the middle third nationally?
TQM2B2C	BTBMACH3	What percent of your students are in the bottom third nationally?
TQM2B3	BTBMTIME	How many minutes per week do you teach mathematics to your class?
TQM2B4	BTBMTXBK	Do you use a textbook in teaching mathematics to your class?
TQM2B4/1A	BTBMTXB0	Do you use <text> in your class?
TQM2B4/1B	BTBMTXB1	Do you use <text> in your class?
TQM2B4/1C	BTBMTXB2	Do you use <text> in your class?
TQM2B4/1D	BTBMTXB3	Do you use <text> in your class?
TQM2B4/1E	BTBMTXB4	Do you use <text> in your class?
TQM2B4/1F	BTBMTXB5	Do you use <text> in your class?
TQM2B4/1G	BTBMTXB6	Do you use <text> in your class?
TQM2B4/1H	BTBMTXB7	Do you use <text> in your class?
TQM2B4/1I	BTBMTXB8	Do you use <text> in your class?
TQM2B4/1J	BTBMTXB9	Do you use <text> in your class?
TQM2B4/2	BTBMTSNM	Name of textbook:
TQM2B5	BTBMTXBS	What percentage of your teaching time is based on the text?
TQM2B6	BTBMADTB	What do you use in place of or in addition to a textbook?
TQM2B7A	BTBMLM01	Is your teaching limited by students with different academic abilities?

Table S2.2

Index of International Background Variables for the Population 2 Mathematics Teacher Questionnaire Items (Continued 3)

Questionnaire Location	Variable Name	Description
TQM2B7B	BTBMLM02	Is your teaching limited by students from a wide range of backgrounds?
TQM2B7C	BTBMLM03	Is your teaching limited by students with special needs?
TQM2B7D	BTBMLM04	Is your teaching limited by uninterested students?
TQM2B7E	BTBMLM05	Is your teaching limited by disruptive students?
TQM2B7F	BTBMLM06	Is your teaching limited by parents interested in their children's progress?
TQM2B7G	BTBMLM07	Is your teaching limited by parents uninterested in their children's progress?
TQM2B7H	BTBMLM08	Is your teaching limited by shortage of computer hardware?
TQM2B7I	BTBMLM09	Is your teaching limited by shortage of computer software?
TQM2B7J	BTBMLM10	Is your teaching limited by shortage of other instructional equipment for student use?
TQM2B7K	BTBMLM11	Is your teaching limited by shortage of equipment for demonstrations?
TQM2B7L	BTBMLM12	Is your teaching limited by inadequate physical facilities?
TQM2B7M	BTBMLM13	Is your teaching limited by high student/teacher ratio?
TQM2B7N	BTBMLM14	Is your teaching limited by low morale among fellow teachers/administrators?
TQM2B7O	BTBMLM15	Is your teaching limited by low morale among students?
TQM2B7P	BTBMLM16	Is your teaching limited by threats to personal safety or students' safety?
TQM2B8	BTBMCALC	How many of your students have access to calculators during mathematics lessons?
TQM2B9A	BTBMCAL1	How often do your students use calculators for checking answers?
TQM2B9B	BTBMCAL2	How often do your students use calculators for tests?
TQM2B9C	BTBMCAL3	How often do your students use calculators for routine computation?
TQM2B9D	BTBMCAL4	How often do your students use calculators for solving complex problems?
TQM2B9E	BTBMCAL5	How often do your students use calculators for exploring number concepts?
TQM2B10A	BTBMRLY1	In planning mathematics lessons, how much do you rely on previously prepared lessons?
TQM2B10B	BTBMRLY2	In planning mathematics lessons, how much do you rely on a plan made by teachers in the school?
TQM2B10C	BTBMRLY3	In planning mathematics lessons, how much do you rely on other specialists in your school?
TQM2B10D	BTBMRLY4	In planning mathematics lessons, how much do you rely on student textbooks?
TQM2B10E	BTBMRLY5	In planning mathematics lessons, how much do you rely on other resource books?
TQM2B10F	BTBMRLY6	In planning mathematics lessons, how much do you rely on teacher guides?
TQM2B10G	BTBMRLY7	In planning mathematics lessons, how much do you rely on external examinations?
TQM2B11A	BTBMSRC1	What is your main source when deciding which topics to teach?
TQM2B11B	BTBMSRC2	What is your main source when deciding how to present a topic?
TQM2B11C	BTBMSRC3	What is your main source when selecting practice exercises?
TQM2B11D	BTBMSRC4	What is your main source when selecting exercises for assessment?
TQM2B12A	BTBMTA	How many periods have you spent teaching whole numbers this year?
TQM2B12AA	BTBMTAA	Will teach whole numbers later this year.
TQM2B12AB	BTBMTAB	Whole numbers are not taught this year.
TQM2B12AC	BTBMTAC	Whole numbers were taught in a previous year.
TQM2B12A1	BTBMTA1	How many periods have you spent teaching whole number meanings this year?
TQM2B12A1A	BTBMTA1A	Will teach whole number meanings later this year.
TQM2B12A1B	BTBMTA1B	Whole number meanings are not taught this year.
TQM2B12A1C	BTBMTA1C	Whole number meanings were taught in a previous year.
TQM2B12A2	BTBMTA2	How many periods have you spent teaching whole number operations this year?
TQM2B12A2A	BTBMTA2A	Will teach whole number operations later this year.
TQM2B12A2B	BTBMTA2B	Whole number operations are not taught this year.
TQM2B12A2C	BTBMTA2C	Whole number operations were taught in a previous year.
TQM2B12B	BTBMTB	How many periods have you spent teaching fractions this year?
TQM2B12BA	BTBMTBA	Will teach fractions later this year.

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Index of International Background Variables for the Population 2 Mathematics Teacher Questionnaire Items (Continued 4)

Questionnaire Location	Variable Name	Description
TQM2B12BB	BTBMTBB	Fractions are not taught this year.
TQM2B12BC	BTBMTBC	Fractions were taught in a previous year.
TQM2B12B1	BTBMTB1	How many periods have you spent teaching common fractions/meaning this year?
TQM2B12B1A	BTBMTB1A	Will teach common fractions/meaning later this year.
TQM2B12B1B	BTBMTB1B	Common fractions/meaning are not taught this year.
TQM2B12B1C	BTBMTB1C	Common fractions/meaning were taught in a previous year.
TQM2B12B2	BTBMTB2	How many periods have you spent teaching common fractions/properties this year?
TQM2B12B2A	BTBMTB2A	Will teach common fractions/properties later this year.
TQM2B12B2B	BTBMTB2B	Common fractions/properties are not taught this year.
TQM2B12B2C	BTBMTB2C	Common fractions/properties were taught in a previous year.
TQM2B12B3	BTBMTB3	How many periods have you spent teaching decimal fractions/meaning this year?
TQM2B12B3A	BTBMTB3A	Will teach decimal fractions/meaning later this year.
TQM2B12B3B	BTBMTB3B	Decimal fractions/meaning are not taught this year.
TQM2B12B3C	BTBMTB3C	Decimal fractions/meaning were taught in a previous year.
TQM2B12B4	BTBMTB4	How many periods have you spent teaching decimal fractions/properties this year?
TQM2B12B4A	BTBMTB4A	Will teach decimal fractions/properties later this year.
TQM2B12B4B	BTBMTB4B	Decimal fractions/properties are not taught this year.
TQM2B12B4C	BTBMTB4C	Decimal fractions/properties were taught in a previous year.
TQM2B12B5	BTBMTB5	How many periods have you spent teaching relat. bet. common & dec. fractions this year?
TQM2B12B5A	BTBMTB5A	Will teach relat. bet. common & dec. fractions later this year.
TQM2B12B5B	BTBMTB5B	Relationship bet. common & dec. fractions are not taught this year.
TQM2B12B5C	BTBMTB5C	Relationship bet. common & dec. fractions were taught in a previous year.
TQM2B12B6	BTBMTB6	How many periods have you spent teaching fractions/equivalence this year?
TQM2B12B6A	BTBMTB6A	Will teach fractions/equivalence later this year.
TQM2B12B6B	BTBMTB6B	Fractions/equivalence are not taught this year.
TQM2B12B6C	BTBMTB6C	Fractions/equivalence were taught in a previous year.
TQM2B12B7	BTBMTB7	How many periods have you spent teaching ordering of fractions this year?
TQM2B12B7A	BTBMTB7A	Will teach ordering of fractions later this year.
TQM2B12B7B	BTBMTB7B	Ordering of fractions is not taught this year.
TQM2B12B7C	BTBMTB7C	Ordering of fractions was taught in a previous year.
TQM2B12C	BTBMTC	How many periods have you spent teaching percentages this year?
TQM2B12CA	BTBMTCA	Will teach percentages later this year.
TQM2B12CB	BTBMTCB	Percentages are not taught this year.
TQM2B12CC	BTBMTCC	Percentages were taught in a previous year.
TQM2B12D	BTBMTD	How many periods have you spent teaching number sets this year?
TQM2B12DA	BTBMTDA	Will teach number sets later this year.
TQM2B12DB	BTBMTDB	Number sets are not taught this year.
TQM2B12DC	BTBMTDC	Number sets were taught in a previous year.
TQM2B12E	BTBMTE	How many periods have you spent teaching number theory this year?
TQM2B12EA	BTBMTEA	Will teach number theory later this year.
TQM2B12EB	BTBMTEB	Number theory is not taught this year.
TQM2B12EC	BTBMTEC	Number theory was taught in a previous year.
TQM2B12F	BTBMTF	How many periods have you spent teaching number sense this year?
TQM2B12FA	BTBMTFA	Will teach number sense later this year.
TQM2B12FB	BTBMTFB	Number sense are not taught this year.
TQM2B12FC	BTBMTFC	Number sense were taught in a previous year.

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Index of International Background Variables for the Population 2 Mathematics Teacher Questionnaire Items (Continued 5)

Questionnaire Location	Variable Name	Description
TQM2B12G	BTBMTG	How many periods have you spent teaching measurement units this year?
TQM2B12GA	BTBMTGA	Will teach measurement units later this year.
TQM2B12GB	BTBMTGB	Measurement units are not taught this year.
TQM2B12GC	BTBMTGC	Measurement units were taught in a previous year.
TQM2B12H	BTBMTH	How many periods have you spent teaching estimation of measurements this year?
TQM2B12HA	BTBMTHA	Will teach estimation of measurements later this year.
TQM2B12HB	BTBMTHB	Estimation of measurements are not taught this year.
TQM2B12HC	BTBMTHC	Estimation of measurements were taught in a previous year.
TQM2B12I	BTBMTI	How many periods have you spent teaching perimeter, area, & volume this year?
TQM2B12IA	BTBMTIA	Will teach perimeter, area, & volume later this year.
TQM2B12IB	BTBMTIB	Perimeter, area, & volume are not taught this year.
TQM2B12IC	BTBMTIC	Perimeter, area, & volume were taught in a previous year.
TQM2B12J	BTBMTJ	How many periods have you spent teaching geometry basics this year?
TQM2B12JA	BTBMTJA	Will teach geometry basics later this year.
TQM2B12JB	BTBMTJB	Geometry basics are not taught this year.
TQM2B12JC	BTBMTJC	Geometry basics were taught in a previous year.
TQM2B12K	BTBMTK	How many periods have you spent teaching congruence and similarity this year?
TQM2B12KA	BTBMTKA	Will teach congruence and similarity later this year.
TQM2B12KB	BTBMTKB	Congruence and similarity are not taught this year.
TQM2B12KC	BTBMTKC	Congruence and similarity were taught in a previous year.
TQM2B12L	BTBMTL	How many periods have you spent teaching transformations & symmetry this year?
TQM2B12LA	BTBMTLA	Will teach transformations & symmetry later this year.
TQM2B12LB	BTBMTLB	Transformations & symmetry are not taught this year.
TQM2B12LC	BTBMTLC	Transformations & symmetry were taught in a previous year.
TQM2B12M	BTBMTM	How many periods have you spent teaching 3D geometry this year?
TQM2B12MA	BTBMTMA	Will teach 3D geometry later this year.
TQM2B12MB	BTBMTMB	3D geometry is not taught this year.
TQM2B12MC	BTBMTMC	3D geometry was taught in a previous year.
TQM2B12N	BTBMTN	How many periods have you spent teaching ratio and proportions this year?
TQM2B12NA	BTBMTNA	Will teach ratio and proportions later this year.
TQM2B12NB	BTBMTNB	Ratio and proportions are not taught this year.
TQM2B12NC	BTBMTNC	Ratio and proportions were taught in a previous year.
TQM2B12N1	BTBMTN1	How many periods have you spent teaching ratio concepts this year?
TQM2B12N1A	BTBMTN1A	Will teach ratio concepts later this year.
TQM2B12N1B	BTBMTN1B	Ratio concepts are not taught this year.
TQM2B12N1C	BTBMTN1C	Ratio concepts were taught in a previous year.
TQM2B12N2	BTBMTN2	How many periods have you spent teaching ratio applications this year?
TQM2B12N2A	BTBMTN2A	Will teach ratio applications later this year.
TQM2B12N2B	BTBMTN2B	Ratio applications are not taught this year.
TQM2B12N2C	BTBMTN2C	Ratio applications were taught in a previous year.
TQM2B12O	BTBMTO	How many periods have you spent teaching proportionality this year?
TQM2B12OA	BTBMTOA	Will teach proportionality later this year.
TQM2B12OB	BTBMTOB	Proportionality is not taught this year.
TQM2B12OC	BTBMTOC	Proportionality was taught in a previous year.
TQM2B12O1	BTBMTO1	How many periods have you spent teaching slope & trigonometry this year?
TQM2B12O1A	BTBMTO1A	Will teach slope & trigonometry later this year.

Table S2.2

Index of International Background Variables for the Population 2 Mathematics Teacher Questionnaire Items (Continued 6)

Questionnaire Location	Variable Name	Description
TQM2B12O1B	BTBMTO1B	Slope & trigonometry is not taught this year.
TQM2B12O1C	BTBMTO1C	Slope & trigonometry was taught in a previous year.
TQM2B12O2	BTBMTO2	How many periods have you spent teaching linear interpolation this year?
TQM2B12O2A	BTBMTO2A	Will teach linear interpolation later this year.
TQM2B12O2B	BTBMTO2B	Linear interpolation is not taught this year.
TQM2B12O2C	BTBMTO2C	Linear interpolation was taught in a previous year.
TQM2B12P	BTBMTP	How many periods have you spent teaching functions, relations, & patterns this year?
TQM2B12PA	BTBMTPA	Will teach functions, relations, & patterns later this year.
TQM2B12PB	BTBMTPB	Functions, relations, & patterns are not taught this year.
TQM2B12PC	BTBMTPC	Functions, relations, & patterns were taught in a previous year.
TQM2B12Q	BTBMTQ	How many periods have you spent teaching equations & formulas this year?
TQM2B12QA	BTBMTQA	Will teach equations & formulas later this year.
TQM2B12QB	BTBMTQB	Equations & formulas are not taught this year.
TQM2B12QC	BTBMTQC	Equations & formulas were taught in a previous year.
TQM2B12Q1	BTBMTQ1	How many periods have you spent teaching linear equations this year?
TQM2B12Q1A	BTBMTQ1A	Will teach linear equations later this year.
TQM2B12Q1B	BTBMTQ1B	Linear equations are not taught this year.
TQM2B12Q1C	BTBMTQ1C	Linear equations were taught in a previous year.
TQM2B12Q2	BTBMTQ2	How many periods have you spent teaching other equations this year?
TQM2B12Q2A	BTBMTQ2A	Will teach other equations later this year.
TQM2B12Q2B	BTBMTQ2B	Other equations are not taught this year.
TQM2B12Q2C	BTBMTQ2C	Other equations were taught in a previous year.
TQM2B12R	BTBMTR	How many periods have you spent teaching statistics this year?
TQM2B12RA	BTBMTRA	Will teach statistics later this year.
TQM2B12RB	BTBMTRB	Statistics are not taught this year.
TQM2B12RC	BTBMTRC	Statistics were taught in a previous year.
TQM2B12S	BTBMTS	How many periods have you spent teaching probability this year?
TQM2B12SA	BTBMTSA	Will teach probability later this year.
TQM2B12SB	BTBMTSB	Probability is not taught this year.
TQM2B12SC	BTBMTSC	Probability was taught in a previous year.
TQM2B12T	BTBMTT	How many periods have you spent teaching sets and logic this year?
TQM2B12TA	BTBMTTA	Will teach sets and logic later this year.
TQM2B12TB	BTBMTTB	Sets and logic are not taught this year.
TQM2B12TC	BTBMTTC	Sets and logic were taught in a previous year.
TQM2B12U	BTBMTU	How many periods have you spent teaching problem solving this year?
TQM2B12UA	BTBMTUA	Will teach problem solving later this year.
TQM2B12UB	BTBMTUB	Problem solving is not taught this year.
TQM2B12UC	BTBMTUC	Problem solving was taught in a previous year.
TQM2B12V	BTBMTV	How many periods have you spent teaching other mathematics content this year?
TQM2B12VA	BTBMTVA	Will teach other mathematics content later this year.
TQM2B12VB	BTBMTVB	Other mathematics content is not taught this year.
TQM2B12VC	BTBMTVC	Other mathematics content was taught in a previous year.
TQM2B13A	BTBMCLTM	How many minutes was the last mathematics lesson you taught to your class?
TQM2B13B01	BTBMTO01	Was whole numbers the subject of the lesson?
TQM2B13B02	BTBMTO02	Was fractions the subject of the lesson?
TQM2B13B03	BTBMTO03	Were percentages the subject of the lesson?

Table S2.2
Index of International Background Variables for the Population 2 Mathematics Teacher Questionnaire Items (Continued 7)

Questionnaire Location	Variable Name	Description
TQM2B13B04	BTBMTO04	Were other number sets and concepts the subject of the lesson?
TQM2B13B05	BTBMTO05	Was number theory the subject of the lesson?
TQM2B13B06	BTBMTO06	Was estimation and number sense the subject of the lesson?
TQM2B13B07	BTBMTO07	Was measurement units and processes the subject of the lesson?
TQM2B13B08	BTBMTO08	Was estimation and measurement error the subject of the lesson?
TQM2B13B09	BTBMTO09	Was perimeter, area, and volume the subject of the lesson?
TQM2B13B10	BTBMTO10	Were basics of one and two dimensional geometry the subject of the lesson?
TQM2B13B11	BTBMTO11	Was geometric congruence and similarity the subject of the lesson?
TQM2B13B12	BTBMTO12	Was geometric transformation and symmetry the subject of the lesson?
TQM2B13B13	BTBMTO13	Was three dimensional geometry and constructions the subject of the lesson?
TQM2B13B14	BTBMTO14	Was ratio and proportion the subject of the lesson?
TQM2B13B15	BTBMTO15	Was proportionality: slope, trigonometry, and interpolation the subject of the lesson?
TQM2B13B16	BTBMTO16	Were functions, relations, and patterns the subject of the lesson?
TQM2B13B17	BTBMTO17	Were equations, inequalities, and algebraic formulas the subject of the lesson?
TQM2B13B18	BTBMTO18	Was statistics and data the subject of the lesson?
TQM2B13B19	BTBMTO19	Was probability and uncertainty the subject of the lesson?
TQM2B13B20	BTBMTO20	Were sets and logic the subject of the lesson?
TQM2B13B21	BTBMTO21	Were problem solving strategies the subject of the lesson?
TQM2B13B22	BTBMTO22	Was other mathematics content the subject of the lesson?
TQM2B13C1	BTBMTOP1	Was this lesson the introduction of a new topic?
TQM2B13C2	BTBMTOP2	Was this lesson the continuation of a previous lesson?
TQM2B13C3	BTBMTOP3	Was this lesson the end of coverage of this topic?
TQM2B13D	BTBMHMW1	Did you assign homework after the class <period>?
TQM2B13E	BTBMHWT1	How long would it take a typical student to complete this homework assignment?
TQM2B13F	BTBMCLCM	Was a computer used during this class period?
TQM2B14A01	BTBMOR01	In what order did you do a review of previous lessons?
TQM2B14A01	BTBMTM01	How long did you spend on reviewing previous lessons?
TQM2B14A02	BTBMOR02	In what order did you give a short quiz to review previous lesson?
TQM2B14A02	BTBMTM02	How long did you spend on a quiz reviewing previous lessons?
TQM2B14A03	BTBMOR03	In what order did you do an oral drill?
TQM2B14A03	BTBMTM03	How long did you spend on an oral drill?
TQM2B14A04	BTBMOR04	In what order did you do a review of previous homework?
TQM2B14A04	BTBMTM04	How long did you spend on reviewing previous homework?
TQM2B14A05	BTBMOR05	In what order did you do an introduction of a new topic?
TQM2B14A05	BTBMTM05	How long did you spend on a new topic introduction?
TQM2B14A06	BTBMOR06	In what order did you do a development of a topic?
TQM2B14A06	BTBMTM06	How long did you spend on developing a contuing topic?
TQM2B14A07	BTBMOR07	In what order did you do small group activities?
TQM2B14A07	BTBMTM07	How long did you spend on small group activities?
TQM2B14A08	BTBMOR08	In what order did you have students do paper-and-pencil exercises?
TQM2B14A08	BTBMTM08	How long did students spend on pencil-and-paper exercises?
TQM2B14A09	BTBMOR09	In what order did you assign homework?
TQM2B14A09	BTBMTM09	How long did you spend assigning homework?
TQM2B14A10	BTBMOR10	In what order did you allow students to work on homework in class?
TQM2B14A10	BTBMTM10	How long did students spend on homework in class?
TQM2B14A11	BTBMOR11	In what order did you have a student laboratory activity?

Table S2.2

Index of International Background Variables for the Population 2 Mathematics Teacher Questionnaire Items (Continued 8)

Questionnaire Location	Variable Name	Description
TQM2B14A11	BTBMTM11	How long did students spend on a laboratory activity?
TQM2B14B	BTBMSGRP	Did the students work in small groups?
TQM2B15A	BTBMASK1	How often do you ask students to explain reasoning behind an idea?
TQM2B15B	BTBMASK2	How often do you ask students to use tables, charts, or graphs?
TQM2B15C	BTBMASK3	How often do you ask students to work on problems with no obvious method of solution?
TQM2B15D	BTBMASK4	How often do you ask students to use computers?
TQM2B15E	BTBMASK5	How often do you ask students to write equations to represent relationships?
TQM2B15F	BTBMASK6	How often do you ask students to practice computational skills?
TQM2B16A	BTBMDO1	After a wrong answer, how often do you correct the student in front of the class?
TQM2B16B	BTBMDO2	After a wrong answer, how often do you ask another student to help?
TQM2B16C	BTBMDO3	After a wrong answer, how often do you call on a student likely to be correct?
TQM2B16D	BTBMDO4	After a wrong answer, how often do you get other responses and discuss?
TQM2B17A	BTBMLES1	In mathematics lessons, how often do students work individually without assistance?
TQM2B17B	BTBMLES2	In mathematics lessons, how often do students work individually with assistance?
TQM2B17C	BTBMLES3	In mathematics lessons, how often do students work as a class with teacher leading?
TQM2B17D	BTBMLES4	In mathematics lessons, how often do students work as a class with students responding to each other?
TQM2B17E	BTBMLES5	In mathematics lessons, how often do students work in pairs without assistance?
TQM2B17F	BTBMLES6	In mathematics lessons, how often do students work in pairs with assistance?
TQM2B18	BTBMHMW2	How often do you assign mathematics homework?
TQM2B19	BTBMHWT2	How many minutes of homework do you usually assign?
TQM2B20A	BTBMWKBK	How often do you assign worksheets for homework?
TQM2B20B	BTBMPROB	How often do you assign textbook problems for homework?
TQM2B20C	BTBMREAD	How often do you assign reading for homework?
TQM2B20D	BTBMWRIT	How often do you assign writing for homework?
TQM2B20E	BTBMDATA	How often do you assign small investigations for homework?
TQM2B20F	BTBMIEXP	How often do you assign long term individual projects for homework?
TQM2B20G	BTBMGEXP	How often do you assign long term small group projects for homework?
TQM2B20H	BTBMFIND	How often do you have students find uses of the content for homework?
TQM2B20I	BTBMORAL	How often do you have students prepare oral reports for homework?
TQM2B20J	BTBMJOUR	How often do you assign journals for homework?
TQM2B21A	BTBMWHW1	How often do you record whether or not homework was completed?
TQM2B21B	BTBMWHW2	How often do you collect, correct and keep homework assignments?
TQM2B21C	BTBMWHW3	How often do you collect, correct and return homework assignments?
TQM2B21D	BTBMWHW4	How often do you give feedback on homework to whole class?
TQM2B21E	BTBMWHW5	How often do you have students correct their own homework assignments in class?
TQM2B21F	BTBMWHW6	How often do you have students exchange homework assignments and correct them?
TQM2B21G	BTBMWHW7	How often do you use homework as a basis for class discussion?
TQM2B21H	BTBMWHW8	How often do you use homework to contribute towards students' grades?
TQM2B22A	BTBMWGT1	In assessment, how much weight do you give externally produced examinations?
TQM2B22B	BTBMWGT2	In assessment, how much weight do you give teacher-made open-ended tests?
TQM2B22C	BTBMWGT3	In assessment, how much weight do you give teacher-made multiple-choice tests?
TQM2B22D	BTBMWGT4	In assessment, how much weight do you give homework assignments?
TQM2B22E	BTBMWGT5	In assessment, how much weight do you give laboratory exercises?
TQM2B22F	BTBMWGT6	In assessment, how much weight do you give observations of students?
TQM2B22G	BTBMWGT7	In assessment, how much weight do you give responses of students in class?
TQM2B23A	BTBGASS1	How often do you use assessment information to provide grades for students?

Table S2.2

Index of International Background Variables for the Population 2 Mathematics Teacher Questionnaire Items (Continued 9)

Questionnaire Location	Variable Name	Description
TQM2B23B	BTBGASS2	How often do you use assessment information to provide feedback to students?
TQM2B23C	BTBGASS3	How often do you use assessment information to diagnose learning problems?
TQM2B23D	BTBGASS4	How often do you use assessment information to report to parents?
TQM2B23E	BTBGASS5	How often do you use assessment information to assign students to tracks?
TQM2B23F	BTBGASS6	How often do you use assessment information to plan for future lessons?
TQM2C011	BTBM011	Does anything in your mathematics class enable your students to answer questions on common fractions?
TQM2C011A	BTBM011A	Something was done earlier this year to enable students to answer questions on common fractions.
TQM2C011B	BTBM011B	Something is being done now to enable students to answer questions on common fractions.
TQM2C011C	BTBM011C	Something will be done later this year to enable students to answer questions on common fractions.
TQM2C011D	BTBM011D	Common fractions was covered in the curriculum for an earlier grade.
TQM2C011E	BTBM011E	Common fractions is covered in this years curriculum, but I will not cover it.
TQM2C011F	BTBM011F	Common fractions is covered in the curriculum for a later grade.
TQM2C011G	BTBM011G	Common fractions is not included in the curriculum.
TQM2C011H	BTBM011H	I do not know whether common fractions is covered in another grade.
TQM2C012A	BTBM012A	Would you consider the above common fractions item A appropriate on a test for your class?
TQM2C012B	BTBM012B	Would you consider the above common fractions item B appropriate on a test for your class?
TQM2C012C	BTBM012C	Would you consider the above common fractions item C appropriate on a test for your class?
TQM2C012D	BTBM012D	Would you consider the above common fractions item D appropriate on a test for your class?
TQM2C012N	BTBM012N	None of the above common fractions items would be appropriate on a test for my class.
TQM2C013	BTBM013	Are students likely to encounter the topic common fractions" outside of school this year?"
TQM2C021	BTBM021	Does anything in your mathematics class enable your students to answer questions on decimal fractions?
TQM2C021A	BTBM021A	Something was done earlier this year to enable students to answer questions on decimal fractions.
TQM2C021B	BTBM021B	Something is being done now to enable students to answer questions on decimal fractions.
TQM2C021C	BTBM021C	Something will be done later this year to enable students to answer questions on decimal fractions.
TQM2C021D	BTBM021D	Decimal fractions was covered in the curriculum for an earlier grade.
TQM2C021E	BTBM021E	Decimal fractions is covered in this years curriculum, but I will not cover it.
TQM2C021F	BTBM021F	Decimal fractions is covered in the curriculum for a later grade.
TQM2C021G	BTBM021G	Decimal fractions is not included in the curriculum.
TQM2C021H	BTBM021H	I do not know whether decimal fractions is covered in another grade.
TQM2C022A	BTBM022A	Would you consider the above decimal fractions item A appropriate on a test for your class?
TQM2C022B	BTBM022B	Would you consider the above decimal fractions item B appropriate on a test for your class?
TQM2C022N	BTBM022N	None of the above decimal fractions items would be appropriate on a test for my class.
TQM2C023	BTBM023	Are students likely to encounter the topic decimal fractions" outside of school this year?"
TQM2C031	BTBM031	Does anything in your mathematics class enable your students to answer questions on units of measurement?
TQM2C031A	BTBM031A	Something was done earlier this year to enable students to answer questions on units of measurement.
TQM2C031B	BTBM031B	Something is being done now to enable students to answer questions on units of measurement.
TQM2C031C	BTBM031C	Something will be done later this year to enable students to answer questions on units of measurement.
TQM2C031D	BTBM031D	Units of measurement was covered in the curriculum for an earlier grade.
TQM2C031E	BTBM031E	Units of measurement is covered in this years curriculum, but I will not cover it.
TQM2C031F	BTBM031F	Units of measurement is covered in the curriculum for a later grade.
TQM2C031G	BTBM031G	Units of measurement is not included in the curriculum.
TQM2C031H	BTBM031H	I do not know whether units of measurement is covered in another grade.
TQM2C032A	BTBM032A	Would you consider the above units of measurement item A appropriate on a test for your class?
TQM2C032B	BTBM032B	Would you consider the above units of measurement item B appropriate on a test for your class?
TQM2C032C	BTBM032C	Would you consider the above units of measurement item C appropriate on a test for your class?
TQM2C032D	BTBM032D	Would you consider the above units of measurement item D appropriate on a test for your class?

Table S2.2

Index of International Background Variables for the Population 2 Mathematics Teacher Questionnaire Items (Continued 10)

Questionnaire Location	Variable Name	Description
TQM2C032E	BTBM032E	Would you consider the above units of measurement item E appropriate on a test for your class?
TQM2C032N	BTBM032N	None of the above units of measurement items would be appropriate on a test for my class.
TQM2C033	BTBM033	Are students likely to encounter the topic units of measurement" outside of school this year?"
TQM2C041	BTBM041	Does anything in your mathematics class enable your students to answer questions on units of measurement?
TQM2C041A	BTBM041A	Something was done earlier this year to enable students to answer questions on units of measurement.
TQM2C041B	BTBM041B	Something is being done now to enable students to answer questions on units of measurement.
TQM2C041C	BTBM041C	Something will be done later this year to enable students to answer questions on units of measurement.
TQM2C041D	BTBM041D	Units of measurement was covered in the curriculum for an earlier grade.
TQM2C041E	BTBM041E	Units of measurement is covered in this years curriculum, but I will not cover it.
TQM2C041F	BTBM041F	Units of measurement is covered in the curriculum for a later grade.
TQM2C041G	BTBM041G	Units of measurement is not included in the curriculum.
TQM2C041H	BTBM041H	I do not know whether units of measurement is covered in another grade.
TQM2C042	BTBM042	Would you consider the above units of measurement item appropriate on a test for your class?
TQM2C043	BTBM043	Are students likely to encounter the topic units of measurement" outside of school this year?"
TQM2C051	BTBM051	Does anything in your mathematics class enable your students to answer questions on perimeter, area, volume?
TQM2C051A	BTBM051A	Something was done earlier this year to enable students to answer questions on perimeter, area, volume.
TQM2C051B	BTBM051B	Something is being done now to enable students to answer questions on perimeter, area, volume.
TQM2C051C	BTBM051C	Something will be done later this year to enable students to answer questions on perimeter, area, volume.
TQM2C051D	BTBM051D	Perimeter, area, volume was covered in the curriculum for an earlier grade.
TQM2C051E	BTBM051E	Perimeter, area, volume is covered in this years curriculum, but I will not cover it.
TQM2C051F	BTBM051F	Perimeter, area, volume is covered in the curriculum for a later grade.
TQM2C051G	BTBM051G	Perimeter, area, volume is not included in the curriculum.
TQM2C051H	BTBM051H	I do not know whether perimeter, area, volume is covered in another grade.
TQM2C052A	BTBM052A	Would you consider the above perimeter, area, volume item A appropriate on a test for your class?
TQM2C052B	BTBM052B	Would you consider the above perimeter, area, volume item B appropriate on a test for your class?
TQM2C052C	BTBM052C	Would you consider the above perimeter, area, volume item C appropriate on a test for your class?
TQM2C052D	BTBM052D	Would you consider the above perimeter, area, volume item D appropriate on a test for your class?
TQM2C052N	BTBM052N	None of the above perimeter, area, volume items would be appropriate on a test for my class.
TQM2C053	BTBM053	Are students likely to encounter the topic perimeter, area, volume outside school this year?
TQM2C061	BTBM061	Does anything in your mathematics class enable your students to answer questions on estimation?
TQM2C061A	BTBM061A	Something was done earlier this year to enable students to answer questions on estimation.
TQM2C061B	BTBM061B	Something is being done now to enable students to answer questions on estimation.
TQM2C061C	BTBM061C	Something will be done later this year to enable students to answer questions on estimation.
TQM2C061D	BTBM061D	Estimation was covered in the curriculum for an earlier grade.
TQM2C061E	BTBM061E	Estimation is covered in this years curriculum, but I will not cover it.
TQM2C061F	BTBM061F	Estimation is covered in the curriculum for a later grade.
TQM2C061G	BTBM061G	Estimation is not included in the curriculum.
TQM2C061H	BTBM061H	I do not know whether estimation is covered in another grade.
TQM2C062A	BTBM062A	Would you consider the above estimation item A appropriate on a test for your class?
TQM2C062B	BTBM062B	Would you consider the above estimation item B appropriate on a test for your class?
TQM2C062C	BTBM062C	Would you consider the above estimation item C appropriate on a test for your class?
TQM2C062N	BTBM062N	None of the above estimation items would be appropriate on a test for my class.
TQM2C063	BTBM063	Are students likely to encounter the topic estimation" outside of school this year?"
TQM2C071	BTBM071	Does anything in your mathematics class enable your students to answer questions on geometric transformations?
TQM2C071A	BTBM071A	Something was done earlier this year to enable students to answer questions on geometric transformations.
TQM2C071B	BTBM071B	Something is being done now to enable students to answer questions on geometric transformations.

Table S2.2
Index of International Background Variables for the Population 2 Mathematics Teacher Questionnaire Items (Continued 11)

Questionnaire Location	Variable Name	Description
TQM2C071C	BTBM071C	Something will be done later this year to enable students to answer questions on geometric transformations.
TQM2C071D	BTBM071D	Geometric transformations was covered in the curriculum for an earlier grade.
TQM2C071E	BTBM071E	Geometric transformations is covered in this years curriculum, but I will not cover it.
TQM2C071F	BTBM071F	Geometric transformations is covered in the curriculum for a later grade.
TQM2C071G	BTBM071G	Geometric transformations is not included in the curriculum.
TQM2C071H	BTBM071H	I do not know whether geometric transformations is covered in another grade.
TQM2C072A	BTBM072A	Would you consider the above geometric transformations item A appropriate on a test for your class?
TQM2C072B	BTBM072B	Would you consider the above geometric transformations item B appropriate on a test for your class?
TQM2C072N	BTBM072N	None of the above geometric transformations items would be appropriate on a test for my class.
TQM2C073	BTBM073	Are students likely to encounter the topic geometric transformations" outside of school this year?"
TQM2C081	BTBM081	Does anything in your mathematics class enable your students to answer questions on congruence & similarity?
TQM2C081A	BTBM081A	Something was done earlier this year to enable students to answer questions on congruence & similarity.
TQM2C081B	BTBM081B	Something is being done now to enable students to answer questions on congruence & similarity.
TQM2C081C	BTBM081C	Something will be done later this year to enable students to answer questions on congruence & similarity.
TQM2C081D	BTBM081D	Congruence & similarity was covered in the curriculum for an earlier grade.
TQM2C081E	BTBM081E	Congruence & similarity is covered in this years curriculum, but I will not cover it.
TQM2C081F	BTBM081F	Congruence & similarity is covered in the curriculum for a later grade.
TQM2C081G	BTBM081G	Congruence & similarity is not included in the curriculum.
TQM2C081H	BTBM081H	I do not know whether congruence & similarity is covered in another grade.
TQM2C082A	BTBM082A	Would you consider the above congruence & similarity item A appropriate on a test for your class?
TQM2C082B	BTBM082B	Would you consider the above congruence & similarity item B appropriate on a test for your class?
TQM2C082C	BTBM082C	Would you consider the above congruence & similarity item C appropriate on a test for your class?
TQM2C082D	BTBM082D	Would you consider the above congruence & similarity item D appropriate on a test for your class?
TQM2C082N	BTBM082N	None of the above congruence & similarity items would be appropriate on a test for my class.
TQM2C083	BTBM083	Are students likely to encounter the topic congruence & similarity" outside of school this year?"
TQM2C091	BTBM091	Does anything in your mathematics class enable your students to answer questions on proportionality concepts?
TQM2C091A	BTBM091A	Something was done earlier this year to enable students to answer questions on proportionality concepts.
TQM2C091B	BTBM091B	Something is being done now to enable students to answer questions on proportionality concepts.
TQM2C091C	BTBM091C	Something will be done later this year to enable students to answer questions on proportionality concepts.
TQM2C091D	BTBM091D	Proportionality concepts was covered in the curriculum for an earlier grade.
TQM2C091E	BTBM091E	Proportionality concepts is covered in this years curriculum, but I will not cover it.
TQM2C091F	BTBM091F	Proportionality concepts is covered in the curriculum for a later grade.
TQM2C091G	BTBM091G	Proportionality concepts is not included in the curriculum.
TQM2C091H	BTBM091H	I do not know whether proportionality concepts is covered in another grade.
TQM2C092A	BTBM092A	Would you consider the above proportionality concepts item A appropriate on a test for your class?
TQM2C092B	BTBM092B	Would you consider the above proportionality concepts item B appropriate on a test for your class?
TQM2C092C	BTBM092C	Would you consider the above proportionality concepts item C appropriate on a test for your class?
TQM2C092D	BTBM092D	Would you consider the above proportionality concepts item D appropriate on a test for your class?
TQM2C092N	BTBM092N	None of the above proportionality concepts items would be appropriate on a test for my class.
TQM2C093	BTBM093	Are students likely to encounter the topic proportionality concepts" outside of school this year?"
TQM2C101	BTBM101	Does anything in your mathematics class enable your students to answer questions on proportionality problems?
TQM2C101A	BTBM101A	Something was done earlier this year to enable students to answer questions on proportionality problems.
TQM2C101B	BTBM101B	Something is being done now to enable students to answer questions on proportionality problems.
TQM2C101C	BTBM101C	Something will be done later this year to enable students to answer questions on proportionality problems.
TQM2C101D	BTBM101D	Proportionality problems was covered in the curriculum for an earlier grade.
TQM2C101E	BTBM101E	Proportionality problems is covered in this years curriculum, but I will not cover it.

Table S2.2
Index of International Background Variables for the Population 2 Mathematics Teacher Questionnaire Items (Continued 12)

Questionnaire Location	Variable Name	Description
TQM2C101F	BTBM101F	Proportionality problems is covered in the curriculum for a later grade.
TQM2C101G	BTBM101G	Proportionality problems is not included in the curriculum.
TQM2C101H	BTBM101H	I do not know whether proportionality problems is covered in another grade.
TQM2C102A	BTBM102A	Would you consider the above proportionality problems item A appropriate on a test for your class?
TQM2C102B	BTBM102B	Would you consider the above proportionality problems item B appropriate on a test for your class?
TQM2C102C	BTBM102C	Would you consider the above proportionality problems item C appropriate on a test for your class?
TQM2C102D	BTBM102D	Would you consider the above proportionality problems item D appropriate on a test for your class?
TQM2C102N	BTBM102N	None of the above proportionality problems items would be appropriate on a test for my class.
TQM2C103	BTBM103	Are students likely to encounter the topic proportionality problems" outside of school this year?"
TQM2C111	BTBM111	Does anything in your mathematics class enable your students to answer questions on linear equations?
TQM2C111A	BTBM111A	Something was done earlier this year to enable students to answer questions on linear equations.
TQM2C111B	BTBM111B	Something is being done now to enable students to answer questions on linear equations.
TQM2C111C	BTBM111C	Something will be done later this year to enable students to answer questions on linear equations.
TQM2C111D	BTBM111D	Linear equations was covered in the curriculum for an earlier grade.
TQM2C111E	BTBM111E	Linear equations is covered in this years curriculum, but I will not cover it.
TQM2C111F	BTBM111F	Linear equations is covered in the curriculum for a later grade.
TQM2C111G	BTBM111G	Linear equations is not included in the curriculum.
TQM2C111H	BTBM111H	I do not know whether linear equations is covered in another grade.
TQM2C112A	BTBM112A	Would you consider the above linear equations item A appropriate on a test for your class?
TQM2C112B	BTBM112B	Would you consider the above linear equations item B appropriate on a test for your class?
TQM2C112C	BTBM112C	Would you consider the above linear equations item C appropriate on a test for your class?
TQM2C112D	BTBM112D	Would you consider the above linear equations item D appropriate on a test for your class?
TQM2C112N	BTBM112N	None of the above linear equations items would be appropriate on a test for my class.
TQM2C113	BTBM113	Are students likely to encounter the topic linear equations" outside of school this year?"
TQM2C121	BTBM121	Does anything in your mathematics class enable your students to answer questions on linear equations?
TQM2C121A	BTBM121A	Something was done earlier this year to enable students to answer questions on linear equations.
TQM2C121B	BTBM121B	Something is being done now to enable students to answer questions on linear equations.
TQM2C121C	BTBM121C	Something will be done later this year to enable students to answer questions on linear equations.
TQM2C121D	BTBM121D	Linear equations was covered in the curriculum for an earlier grade.
TQM2C121E	BTBM121E	Linear equations is covered in this years curriculum, but I will not cover it.
TQM2C121F	BTBM121F	Linear equations is covered in the curriculum for a later grade.
TQM2C121G	BTBM121G	Linear equations is not included in the curriculum.
TQM2C121H	BTBM121H	I do not know whether linear equations is covered in another grade.
TQM2C122	BTBM122	Would you consider the above linear equations item A appropriate on a test for your class?
TQM2C123	BTBM123	Are students likely to encounter the topic linear equations" outside of school this year?"
TQM2C131	BTBM131	Does anything in your mathematics class enable your students to answer questions on data analysis?
TQM2C131A	BTBM131A	Something was done earlier this year to enable students to answer questions on data analysis.
TQM2C131B	BTBM131B	Something is being done now to enable students to answer questions on data analysis.
TQM2C131C	BTBM131C	Something will be done later this year to enable students to answer questions on data analysis.
TQM2C131D	BTBM131D	Data analysis was covered in the curriculum for an earlier grade.
TQM2C131E	BTBM131E	Data analysis is covered in this years curriculum, but I will not cover it.
TQM2C131F	BTBM131F	Data analysis is covered in the curriculum for a later grade.
TQM2C131G	BTBM131G	Data analysis is not included in the curriculum.
TQM2C131H	BTBM131H	I do not know whether data analysis is covered in another grade.
TQM2C132A	BTBM132A	Would you consider the above data analysis item A appropriate on a test for your class?
TQM2C132B	BTBM132B	Would you consider the above data analysis item B appropriate on a test for your class?

Table S2.2

Index of International Background Variables for the Population 2 Mathematics Teacher Questionnaire Items (Continued 13)

Questionnaire Location	Variable Name	Description
TQM2C132C	BTBM132C	Would you consider the above data analysis item C appropriate on a test for your class?
TQM2C132D	BTBM132D	Would you consider the above data analysis item D appropriate on a test for your class?
TQM2C132N	BTBM132N	None of the above data analysis items would be appropriate on a test for my class.
TQM2C133	BTBM133	Are students likely to encounter the topic data analysis" outside of school this year?"
TQM2C141	BTBM141	Does anything in your mathematics class enable your students to answer questions on data analysis?
TQM2C141A	BTBM141A	Something was done earlier this year to enable students to answer questions on data analysis.
TQM2C141B	BTBM141B	Something is being done now to enable students to answer questions on data analysis.
TQM2C141C	BTBM141C	Something will be done later this year to enable students to answer questions on data analysis.
TQM2C141D	BTBM141D	Data analysis was covered in the curriculum for an earlier grade.
TQM2C141E	BTBM141E	Data analysis is covered in this years curriculum, but I will not cover it.
TQM2C141F	BTBM141F	Data analysis is covered in the curriculum for a later grade.
TQM2C141G	BTBM141G	Data analysis is not included in the curriculum.
TQM2C141H	BTBM141H	I do not know whether data analysis is covered in another grade.
TQM2C142	BTBM142	Would you consider the above data analysis item A appropriate on a test for your class?
TQM2C143	BTBM143	Are students likely to encounter the topic data analysis outside of school this year?
TQM2D1A	BTBMPA1A	Solve problem by presenting general graph with constant ratio.
TQM2D1B	BTBMPA1B	Show proportional equations, then assign practice exercises.
TQM2D1C	BTBMPA1C	Use method suggested by the textbook.
TQM2D1D	BTBMPA1D	Work with students to develop a specific graph to show relationship.
TQM2D1E	BTBMPA1E	Have students use calculator to find pairs of numbers with this relationship.
TQM2D1F	BTBMPA1F	Divide into groups and have students work on discovering a method to solve problem.
TQM2D1G	BTBMPA1G	Which approach is least acceptable?
TQM2D2A	BTBMPA2A	Review section of the textbook that explains the concept.
TQM2D2B	BTBMPA2B	Make class roster for a class with two boys and three girls. "Have students find solution."
TQM2D2C	BTBMPA2C	Have a few students explain their thinking, then discuss.
TQM2D2D	BTBMPA2D	Present situations of this type, have students use calculators to find percents, add to 100%.
TQM2D2E	BTBMPA2E	Show diagram with sets of girls, boys, all.
TQM2D2F	BTBMPA2F	Relate to general idea of ratio, investigate possible fractions that could be made.
TQM2D2G	BTBMPA2G	Which approach is least acceptable?

Table S2.3
Index of International Background Variables for the Population 2 Science Teacher Questionnaire Items

Questionnaire Location	Variable Name	Description
TQS2A1	BTBGAGE	Teacher age
TQS2A2	BTBGSEX	Teacher sex
TQS2A3	BTBGEDUC	Highest level of formal education
TQS2A4	BTBSTEAC	Do not teach science this year.
TQS2A4A	BTBSGRPK	Are you teaching science at the pre-kindergarten level this year?
TQS2A4B	BTBSGRK	Are you teaching science at the kindergarten level this year?
TQS2A4C	BTBSGR1	Are you teaching science at the 1st grade level this year?
TQS2A4D	BTBSGR2	Are you teaching science at the 2nd grade level this year?
TQS2A4E	BTBSGR3	Are you teaching science at the 3rd grade level this year?
TQS2A4F	BTBSGR4	Are you teaching science at the 4th grade level this year?
TQS2A4G	BTBSGR5	Are you teaching science at the 5th grade level this year?
TQS2A4H	BTBSGR6	Are you teaching science at the 6th grade level this year?
TQS2A4I	BTBSGR7	Are you teaching science at the 7th grade level this year?
TQS2A4J	BTBSGR8	Are you teaching science at the 8th grade level this year?
TQS2A4K	BTBSGR9	Are you teaching science at the 9th grade level this year?
TQS2A4L	BTBSGR10	Are you teaching science at the 10th grade level this year?
TQS2A4M	BTBSGR11	Are you teaching science at the 11th grade level this year?
TQS2A4N	BTBSGR12	Are you teaching science at the 12th grade level this year?
TQS2A4O	BTBSGR13	Are you teaching science at the 13th grade level this year?
TQS2A5	BTBMTEAC	Do not teach mathematics this year.
TQS2A5A	BTBMGRPK	Are you teaching mathematics at the pre-kindergarten level this year?
TQS2A5B	BTBMGRK	Are you teaching mathematics at the kindergarten level this year?
TQS2A5C	BTBMGR1	Are you teaching mathematics at the 1st grade level this year?
TQS2A5D	BTBMGR2	Are you teaching mathematics at the 2nd grade level this year?
TQS2A5E	BTBMGR3	Are you teaching mathematics at the 3rd grade level this year?
TQS2A5F	BTBMGR4	Are you teaching mathematics at the 4th grade level this year?
TQS2A5G	BTBMGR5	Are you teaching mathematics at the 5th grade level this year?
TQS2A5H	BTBMGR6	Are you teaching mathematics at the 6th grade level this year?
TQS2A5I	BTBMGR7	Are you teaching mathematics at the 7th grade level this year?
TQS2A5J	BTBMGR8	Are you teaching mathematics at the 8th grade level this year?
TQS2A5K	BTBMGR9	Are you teaching mathematics at the 9th grade level this year?
TQS2A5L	BTBMGR10	Are you teaching mathematics at the 10th grade level this year?
TQS2A5M	BTBMGR11	Are you teaching mathematics at the 11th grade level this year?
TQS2A5N	BTBMGR12	Are you teaching mathematics at the 12th grade level this year?
TQS2A5O	BTBMGR13	Are you teaching mathematics at the 13th grade level this year?
TQS2A6	BTBGPTFT	Do you teach part-time or full-time?
TQS2A7	BTBGTAUG	By the end of this year, how many years will you have been teaching?
TQS2A8A	BTBGGRPK	Have you taught at the pre-kindergarten level in the past five years?
TQS2A8B	BTBGGRK	Have you taught at the kindergarten level in the past five years?
TQS2A8C	BTBGGR1	Have you taught at the 1st grade level in the past five years?
TQS2A8D	BTBGGR2	Have you taught at the 2nd grade level in the past five years?
TQS2A8E	BTBGGR3	Have you taught at the 3rd grade level in the past five years?
TQS2A8F	BTBGGR4	Have you taught at the 4th grade level in the past five years?
TQS2A8G	BTBGGR5	Have you taught at the 5th grade level in the past five years?
TQS2A8H	BTBGGR6	Have you taught at the 6th grade level in the past five years?
TQS2A8I	BTBGGR7	Have you taught at the 7th grade level in the past five years?

Table S2.3
Index of International Background Variables for the Population 2 Science Teacher Questionnaire Items (Continued)

Questionnaire Location	Variable Name	Description
TQS2A8J	BTBGGR8	Have you taught at the 8th grade level in the past five years?
TQS2A8K	BTBGGR9	Have you taught at the 9th grade level in the past five years?
TQS2A8L	BTBGGR10	Have you taught at the 10th grade level in the past five years?
TQS2A8M	BTBGGR11	Have you taught at the 11th grade level in the past five years?
TQS2A8N	BTBGGR12	Have you taught at the 12th grade level in the past five years?
TQS2A8O	BTBGGR13	Have you taught at the 13th grade level in the past five years?
TQS2A9A	BTBMSUB1	How many periods are you scheduled to teach mathematics each week?
TQS2A9B	BTBSSUB2	How many periods are you scheduled to teach general science each week?
TQS2A9C	BTBSSUB3	How many periods are you scheduled to teach physical science each week?
TQS2A9D	BTBSSUB4	How many periods are you scheduled to teach earth science each week?
TQS2A9E	BTBSSUB5	How many periods are you scheduled to teach life science each week?
TQS2A9F	BTBSSUB6	How many periods are you scheduled to teach biology each week?
TQS2A9G	BTBSSUB7	How many periods are you scheduled to teach chemistry each week?
TQS2A9H	BTBSSUB8	How many periods are you scheduled to teach physics each week?
TQS2A9I	BTBGSUB9	How many periods are you scheduled to teach other subjects each week?
TQS2A10A	BTBGTSK1	How many periods are you scheduled to supervise students per week?
TQS2A10B	BTBGTSK2	How many periods are you scheduled to counsel/appraise students per week?
TQS2A10C	BTBGTSK3	How many periods are you scheduled for administrative duties per week?
TQS2A10D	BTBGTSK4	How many periods are you scheduled to plan individually per week?
TQS2A10E	BTBGTSK5	How many periods are you scheduled to plan with others per week?
TQS2A10F	BTBGTSK6	How many periods are you scheduled per week for other non-student contact time?
TQS2A11	BTBGTOTL	How many periods are you scheduled all together per week?
TQS2A12A	BTBGACT1	How many hours outside the school day do you spend per week preparing or grading exams?
TQS2A12B	BTBGACT2	How many hours outside the school day do you spend per week grading other work?
TQS2A12C	BTBGACT3	How many hours outside the school day do you spend per week planning lessons?
TQS2A12D	BTBGACT4	How many hours outside the school day do you spend per week meeting with students?
TQS2A12E	BTBGACT5	How many hours outside the school day do you spend per week meeting with parents?
TQS2A12F	BTBGACT6	How many hours outside the school day do you spend per week in professional development?
TQS2A12G	BTBGACT7	How many hours outside the school day do you spend per week keeping records?
TQS2A12H	BTBGACT8	How many hours outside the school day do you spend per week on administrative tasks?
TQS2A13	BTBGMEET	How often do you meet with other teachers to discuss curriculum or teaching issues?
TQS2A14A	BTBGINF1	How much influence do you have on subject matter to be taught?
TQS2A14B	BTBGINF2	How much influence do you have on textbooks to be used?
TQS2A14C	BTBGINF3	How much influence do you have on the amount of money to be spent on supplies?
TQS2A14D	BTBGINF4	How much influence do you have on what supplies are purchased?
TQS2A15A	BTBSIMP1	To be good in science how important is it to remember formulas and procedures?
TQS2A15B	BTBSIMP2	To be good in science how important is it to think in a sequential & procedural manner?
TQS2A15C	BTBSIMP3	To be good in science how important is it to understand scientific concepts?
TQS2A15D	BTBSIMP4	To be good in science how important is it to think creatively?
TQS2A15E	BTBSIMP5	To be good in science how important is it to understand real world use?
TQS2A15F	BTBSIMP6	To be good in science how important is it to be able to provide reasons to support solutions?
TQS2A16A	BTBSAGR1	Science is primarily an abstract subject.
TQS2A16B	BTBSAGR2	Science is primarily a formal way of representing the real world.
TQS2A16C	BTBSAGR3	Science is primarily a practical and structured guide for addressing real situations.
TQS2A16D	BTBSAGR4	Some students have a natural talent for science and others do not.
TQS2A16E	BTBSAGR5	It is important for teachers to give students prescriptive directions for doing science experiments.

Table S2.3

Index of International Background Variables for the Population 2 Science Teacher Questionnaire Items (Continued 2)

Questionnaire Location	Variable Name	Description
TQS2A16F	BTBSAGR6	Focusing on rules gives students the impression that the sciences are a set of procedures.
TQS2A16G	BTBSAGR7	If students get into debates about ideas in sciences, it can harm their learning.
TQS2A16H	BTBSAGR8	Students see a science task as the same task when it is represented in two different ways.
TQS2A16I	BTBSAGR9	A liking for and understanding of students are essential for teaching science.
TQS2A17A	BTBSFAM1	How familiar are you with the <national curriculum guide for science>?
TQS2A17B	BTBSFAM2	How familiar are you with the <regional curriculum guide for science>?
TQS2A17C	BTBGFAM3	How familiar are you with the <school curriculum guide>?
TQS2A17D	BTBGFAM4	How familiar are you with the <national examination specifications>?
TQS2A17E	BTBGFAM5	How familiar are you with the <regional examination specifications>?
TQS2A17F	BTBSFAM6	How familiar are you with the <national pedagogy guide for science>?
TQS2A17G	BTBSFAM7	How familiar are you with the <regional pedagogy guide for science>?
TQS2A18A	BTBSPRP1	How well prepared are you to teach earth's features?
TQS2A18B	BTBSPRP2	How well prepared are you to teach energy?
TQS2A18C	BTBSPRP3	How well prepared are you to teach light?
TQS2A18D	BTBSPRP4	How well prepared are you to teach structure/function of human tissues/organs?
TQS2A18E	BTBSPRP5	How well prepared are you to teach human metabolism?
TQS2A18F	BTBSPRP6	How well prepared are you to teach human reproduction?
TQS2A18G	BTBSPRP7	How well prepared are you to teach human genetics?
TQS2A18H	BTBSPRP8	How well prepared are you to teach measurement?
TQS2A18I	BTBSPRP9	How well prepared are you to teach organizing data/making conclusions?
TQS2A19	BTBGCARE	Was teaching your first choice as a career when beginning university?
TQS2A20	BTBGCHNG	Would you change to another career if you had the opportunity?
TQS2A21	BTBGSOAP	Do you think that society appreciates your work?
TQS2A22	BTBGSTAP	Do you think your students appreciate your work?
TQS2A23	BTBGBOOK	Approximately how many books are in your home?
TQS2A24A	BTBGRNK1	Social status rank of accountant
TQS2A24B	BTBGRNK2	Social status rank of <medical doctor>
TQS2A24C	BTBGRNK3	Social status rank of lawyer
TQS2A24D	BTBGRNK4	Social status rank of engineer
TQS2A24E	BTBGRNK5	Social status rank of nurse
TQS2A24F	BTBGRNK6	Social status rank of senior <civil servant>
TQS2A24G	BTBGRNK7	Social status rank of teacher, primary school
TQS2A24H	BTBGRNK8	Social status rank of teacher, secondary school
TQS2A24I	BTBGRNK9	Social status rank of <unskilled worker>
TQS2B1/1	BTBSBOY	How many boys are in your class?
TQS2B1/2	BTBSGIRL	How many girls are in your class?
TQS2B2A	BTBSACH1	What percent of your students are in the top third nationally?
TQS2B2B	BTBSACH2	What percent of your students are in the middle third nationally?
TQS2B2C	BTBSACH3	What percent of your students are in the bottom third nationally?
TQS2B3	BTBSTIME	How many minutes per week do you teach science to your class?
TQS2B4	BTBSTXBK	Do you use a textbook in teaching science to your class?
TQS2B4/1A	BTBSTXB0	Do you use <text> in your class?
TQS2B4/1B	BTBSTXB1	Do you use <text> in your class?
TQS2B4/1C	BTBSTXB2	Do you use <text> in your class?
TQS2B4/1D	BTBSTXB3	Do you use <text> in your class?
TQS2B4/1E	BTBSTXB4	Do you use <text> in your class?

Table S2.3

Index of International Background Variables for the Population 2 Science Teacher Questionnaire Items (Continued 3)

Questionnaire Location	Variable Name	Description
TQS2B4/1F	BTBSTXB5	Do you use <text> in your class?
TQS2B4/1G	BTBSTXB6	Do you use <text> in your class?
TQS2B4/1H	BTBSTXB7	Do you use <text> in your class?
TQS2B4/1I	BTBSTXB8	Do you use <text> in your class?
TQS2B4/1J	BTBSTXB9	Do you use <text> in your class?
TQS2B4/2	BTBSTXNM	Name of textbook:
TQS2B5	BTBSTXBS	What percentage of your teaching time is based on the text?
TQS2B6	BTBSADTB	What do you use in place of or in addition to a textbook?
TQS2B7A	BTBSLM01	Is your teaching limited by students with different academic abilities?
TQS2B7B	BTBSLM02	Is your teaching limited by students from a wide range of backgrounds?
TQS2B7C	BTBSLM03	Is your teaching limited by students with special needs?
TQS2B7D	BTBSLM04	Is your teaching limited by uninterested students?
TQS2B7E	BTBSLM05	Is your teaching limited by disruptive students?
TQS2B7F	BTBSLM06	Is your teaching limited by parents interested in their children's progress?
TQS2B7G	BTBSLM07	Is your teaching limited by parents uninterested in their children's progress?
TQS2B7H	BTBSLM08	Is your teaching limited by shortage of computer hardware?
TQS2B7I	BTBSLM09	Is your teaching limited by shortage of computer software?
TQS2B7J	BTBSLM10	Is your teaching limited by shortage of other instructional equipment for student use?
TQS2B7K	BTBSLM11	Is your teaching limited by shortage of equipment for demonstrations?
TQS2B7L	BTBSLM12	Is your teaching limited by inadequate physical facilities?
TQS2B7M	BTBSLM13	Is your teaching limited by high student/teacher ratio?
TQS2B7N	BTBSLM14	Is your teaching limited by low morale among fellow teachers/administrators?
TQS2B7O	BTBSLM15	Is your teaching limited by low morale among students?
TQS2B7P	BTBSLM16	Is your teaching limited by threats to personal safety or students' safety?
TQS2B8	BTBSCALC	How many of your students have access to calculators during science lessons?
TQS2B9A	BTBSCAL1	How often do your students use calculators for checking answers?
TQS2B9B	BTBSCAL2	How often do your students use calculators for tests?
TQS2B9C	BTBSCAL3	How often do your students use calculators for routine computation?
TQS2B9D	BTBSCAL4	How often do your students use calculators for solving complex problems?
TQS2B9E	BTBSCAL5	How often do your students use calculators for exploring number concepts?
TQS2B10A	BTBSRLY1	In planning science lessons, how much do you rely on previously prepared lessons?
TQS2B10B	BTBSRLY2	In planning science lessons, how much do you rely on a plan made by teachers in the school?
TQS2B10C	BTBSRLY3	In planning science lessons, how much do you rely on other specialists in your school?
TQS2B10D	BTBSRLY4	In planning science lessons, how much do you rely on student textbooks?
TQS2B10E	BTBSRLY5	In planning science lessons, how much do you rely on other resource books?
TQS2B10F	BTBSRLY6	In planning science lessons, how much do you rely on teacher guides?
TQS2B10G	BTBSRLY7	In planning science lessons, how much do you rely on external examinations?
TQS2B11A	BTBSSRC1	What is your main source when deciding which topics to teach?
TQS2B11B	BTBSSRC2	What is your main source when deciding how to present a topic?
TQS2B11C	BTBSSRC3	What is your main source when selecting practice exercises?
TQS2B11D	BTBSSRC4	What is your main source when selecting exercises for assessment?
TQS2B12A	BTBSTA	How many periods have you spent teaching earth features this year?
TQS2B12AA	BTBSTAA	Will teach earth features later this year.
TQS2B12AB	BTBSTAB	Earth features are not taught this year.
TQS2B12AC	BTBSTAC	Earth features were taught in a previous year.
TQS2B12A1	BTBSTA1	How many periods have you spent teaching earth features/layers this year?

Table S2.3
Index of International Background Variables for the Population 2 Science Teacher Questionnaire Items (Continued 4)

Questionnaire Location	Variable Name	Description
TQS2B12A1A	BTBSTA1A	Will teach earth features/layers later this year.
TQS2B12A1B	BTBSTA1B	Earth features/layers are not taught this year.
TQS2B12A1C	BTBSTA1C	Earth features/layers were taught in a previous year.
TQS2B12A2	BTBSTA2	How many periods have you spent teaching earth features/landforms this year?
TQS2B12A2A	BTBSTA2A	Will teach earth features/landforms later this year.
TQS2B12A2B	BTBSTA2B	Earth features/landforms are not taught this year.
TQS2B12A2C	BTBSTA2C	Earth features/landforms were taught in a previous year.
TQS2B12A3	BTBSTA3	How many periods have you spent teaching earth features/bodies of water this year?
TQS2B12A3A	BTBSTA3A	Will teach earth features/bodies of water later this year.
TQS2B12A3B	BTBSTA3B	Earth features/bodies of water are not taught this year.
TQS2B12A3C	BTBSTA3C	Earth features/bodies of water were taught in a previous year.
TQS2B12A4	BTBSTA4	How many periods have you spent teaching earth features/atmosphere this year?
TQS2B12A4A	BTBSTA4A	Will teach earth features/atmosphere later this year.
TQS2B12A4B	BTBSTA4B	Earth features/atmosphere is not taught this year.
TQS2B12A4C	BTBSTA4C	Earth features/atmosphere was taught in a previous year.
TQS2B12A5	BTBSTA5	How many periods have you spent teaching earth features/rocks,soil this year?
TQS2B12A5A	BTBSTA5A	Will teach earth features/rocks,soil later this year.
TQS2B12A5B	BTBSTA5B	Earth features/rocks,soil are not taught this year.
TQS2B12A5C	BTBSTA5C	Earth features/rocks,soil were taught in a previous year.
TQS2B12A6	BTBSTA6	How many periods have you spent teaching earth features/iceforms this year?
TQS2B12A6A	BTBSTA6A	Will teach earth features/iceforms later this year.
TQS2B12A6B	BTBSTA6B	Earth features/iceforms are not taught this year.
TQS2B12A6C	BTBSTA6C	Earth features/iceforms were taught in a previous year.
TQS2B12B	BTBSTB	How many periods have you spent teaching earth processes this year?
TQS2B12BA	BTBSTBA	Will teach earth processes later this year.
TQS2B12BB	BTBSTBB	Earth processes are not taught this year.
TQS2B12BC	BTBSTBC	Earth processes were taught in a previous year.
TQS2B12C	BTBSTC	How many periods have you spent teaching about earth in the universe this year?
TQS2B12CA	BTBSTCA	Will teach earth in the universe later this year.
TQS2B12CB	BTBSTCB	Earth in the universe is not taught this year.
TQS2B12CC	BTBSTCC	Earth in the universe was taught in a previous year.
TQS2B12D	BTBSTD	How many periods have you spent teaching human biology this year?
TQS2B12DA	BTBSTDA	Will teach human biology later this year.
TQS2B12DB	BTBSTDB	Human biology is not taught this year.
TQS2B12DC	BTBSTDC	Human biology was taught in a previous year.
TQS2B12D1	BTBSTD1	How many periods have you spent teaching human biology/structures this year?
TQS2B12D1A	BTBSTD1A	Will teach human biology/structures later this year.
TQS2B12D1B	BTBSTD1B	Human biology/structures is not taught this year.
TQS2B12D1C	BTBSTD1C	Human biology/structures was taught in a previous year.
TQS2B12D2	BTBSTD2	How many periods have you spent teaching human biology/processes this year?
TQS2B12D2A	BTBSTD2A	Will teach human biology/processes later this year.
TQS2B12D2B	BTBSTD2B	Human biology/processes is not taught this year.
TQS2B12D2C	BTBSTD2C	Human biology/processes was taught in a previous year.
TQS2B12D3	BTBSTD3	How many periods have you spent teaching human biology/reproduction this year?
TQS2B12D3A	BTBSTD3A	Will teach human biology/reproduction later this year.
TQS2B12D3B	BTBSTD3B	Human biology/reproduction is not taught this year.

Table S2.3
Index of International Background Variables for the Population 2 Science Teacher Questionnaire Items (Continued 5)

Questionnaire Location	Variable Name	Description
TQS2B12D3C	BTBSTD3C	Human biology/reproduction was taught in a previous year.
TQS2B12D4	BTBSTD4	How many periods have you spent teaching human biology/genetics this year?
TQS2B12D4A	BTBSTD4A	Will teach human biology/genetics later this year.
TQS2B12D4B	BTBSTD4B	Human biology/genetics is not taught this year.
TQS2B12D4C	BTBSTD4C	Human biology/genetics was taught in a previous year.
TQS2B12E	BTBSTE	How many periods have you spent teaching diversity of living things this year?
TQS2B12EA	BTBSTEA	Will teach diversity of living things later this year.
TQS2B12EB	BTBSTEB	Diversity of living things is not taught this year.
TQS2B12EC	BTBSTEC	Diversity of living things was taught in a previous year.
TQS2B12F	BTBSTF	How many periods have you spent teaching life processes this year?
TQS2B12FA	BTBSTFA	Will teach life processes later this year.
TQS2B12FB	BTBSTFB	Life processes are not taught this year.
TQS2B12FC	BTBSTFC	Life processes were taught in a previous year.
TQS2B12G	BTBSTG	How many periods have you spent teaching life cycles and genetics this year?
TQS2B12GA	BTBSTGA	Will teach life cycles and genetics later this year.
TQS2B12GB	BTBSTGB	Life cycles and genetics are not taught this year.
TQS2B12GC	BTBSTGC	Life cycles and genetics were taught in a previous year.
TQS2B12H	BTBSTH	How many periods have you spent teaching interactions of living things this year?
TQS2B12HA	BTBSTHA	Will teach interactions of living things later this year.
TQS2B12HB	BTBSTHB	Interactions of living things are not taught this year.
TQS2B12HC	BTBSTHC	Interactions of living things were taught in a previous year.
TQS2B12I	BTBSTI	How many periods have you spent teaching about types/properties of matter this year?
TQS2B12IA	BTBSTIA	Will teach types/properties of matter later this year.
TQS2B12IB	BTBSTIB	Types/properties of matter is not taught this year.
TQS2B12IC	BTBSTIC	Types/properties of matter was taught in a previous year.
TQS2B12J	BTBSTJ	How many periods have you spent teaching about structure of matter this year?
TQS2B12JA	BTBSTJA	Will teach structure of matter later this year.
TQS2B12JB	BTBSTJB	Structure of matter is not taught this year.
TQS2B12JC	BTBSTJC	Structure of matter was taught in a previous year.
TQS2B12K	BTBSTK	How many periods have you spent teaching energy types this year?
TQS2B12KA	BTBSTKA	Will teach energy types later this year.
TQS2B12KB	BTBSTKB	Energy types are not taught this year.
TQS2B12KC	BTBSTKC	Energy types were taught in a previous year.
TQS2B12L	BTBSTL	How many periods have you spent teaching energy processes this year?
TQS2B12LA	BTBSTLA	Will teach energy processes later this year.
TQS2B12LB	BTBSTLB	Energy processes are not taught this year.
TQS2B12LC	BTBSTLC	Energy processes were taught in a previous year.
TQS2B12L1	BTBSTL1	How many periods have you spent teaching energy processes/light this year?
TQS2B12L1A	BTBSTL1A	Will teach energy processes/light later this year.
TQS2B12L1B	BTBSTL1B	Energy processes/light are not taught this year.
TQS2B12L1C	BTBSTL1C	Energy processes/light were taught in a previous year.
TQS2B12M	BTBSTM	How many periods have you spent teaching physical changes this year?
TQS2B12MA	BTBSTMA	Will teach physical changes later this year.
TQS2B12MB	BTBSTMB	Physical changes are not taught this year.
TQS2B12MC	BTBSTMC	Physical changes were taught in a previous year.
TQS2B12N	BTBSTN	How many periods have you spent teaching quantum theory this year?

Table S2.3

Index of International Background Variables for the Population 2 Science Teacher Questionnaire Items (Continued 6)

Questionnaire Location	Variable Name	Description
TQS2B12NA	BTBSTNA	Will teach quantum theory later this year.
TQS2B12NB	BTBSTNB	Quantum theory is not taught this year.
TQS2B12NC	BTBSTNC	Quantum theory is taught in a previous year.
TQS2B12O	BTBSTO	How many periods have you spent teaching general chemical changes this year?
TQS2B12OA	BTBSTOA	Will teach general chemical changes later this year.
TQS2B12OB	BTBSTOB	General chemical changes are not taught this year.
TQS2B12OC	BTBSTOC	General chemical changes are taught in a previous year.
TQS2B12P	BTBSTP	How many periods have you spent teaching specialized chemical changes this year?
TQS2B12PA	BTBSTPA	Will teach specialized chemical changes later this year.
TQS2B12PB	BTBSTPB	Specialized chemical changes are not taught this year.
TQS2B12PC	BTBSTPC	Specialized chemical changes are taught in a previous year.
TQS2B12Q	BTBSTQ	How many periods have you spent teaching forces and motion this year?
TQS2B12QA	BTBSTQA	Will teach forces and motion later this year.
TQS2B12QB	BTBSTQB	Forces and motion are not taught this year.
TQS2B12QC	BTBSTQC	Forces and motion were taught in a previous year.
TQS2B12R	BTBSTR	How many periods have you spent teaching relativity theory this year?
TQS2B12RA	BTBSTRA	Will teach relativity theory later this year.
TQS2B12RB	BTBSTRB	Relativity theory is not taught this year.
TQS2B12RC	BTBSTRC	Relativity theory is taught in a previous year.
TQS2B12S	BTBSTS	How many periods have you spent teaching about science and society this year?
TQS2B12SA	BTBSTSA	Will teach science and society later this year.
TQS2B12SB	BTBSTSB	Science and society is not taught this year.
TQS2B12SC	BTBSTSC	Science and society was taught in a previous year.
TQS2B12T	BTBSTT	How many periods have you spent teaching history of science this year?
TQS2B12TA	BTBSTTA	Will teach history of science later this year.
TQS2B12TB	BTBSTTB	History of science is not taught this year.
TQS2B12TC	BTBSTTC	History of science was taught in a previous year.
TQS2B12U	BTBSTU	How many periods have you spent teaching environmental & resource issues this year?
TQS2B12UA	BTBSTUA	Will teach environmental & resource issues later this year.
TQS2B12UB	BTBSTUB	Environmental & resource issues are not taught this year.
TQS2B12UC	BTBSTUC	Environmental & resource issues were taught in a previous year.
TQS2B12V	BTBSTV	How many periods have you spent teaching the nature of science this year?
TQS2B12VA	BTBSTVA	Will teach nature of science later this year.
TQS2B12VB	BTBSTVB	Nature of science is not taught this year.
TQS2B12VC	BTBSTVC	Nature of science was taught in a previous year.
TQS2B12W1	BTBSTW1	How many periods have you spent teaching measurement/apparatus this year?
TQS2B12W1A	BTBSTW1A	Will teach measurement/apparatus later this year.
TQS2B12W1B	BTBSTW1B	Measurement/apparatus is not taught this year.
TQS2B12W1C	BTBSTW1C	Measurement/apparatus was taught in a previous year.
TQS2B12W2	BTBSTW2	How many periods have you spent teaching measurement/operations this year?
TQS2B12W2A	BTBSTW2A	Will teach measurement/operations later this year.
TQS2B12W2B	BTBSTW2B	Measurement/operations is not taught this year.
TQS2B12W2C	BTBSTW2C	Measurement/operations was taught in a previous year.
TQS2B12W3	BTBSTW3	How many periods have you spent teaching measurement/data gathering this year?
TQS2B12W3A	BTBSTW3A	Will teach measurement/data gathering later this year.
TQS2B12W3B	BTBSTW3B	Measurement/data gathering is not taught this year.

Table S2.3
Index of International Background Variables for the Population 2 Science Teacher Questionnaire Items (Continued 7)

Questionnaire Location	Variable Name	Description
TQS2B12W3C	BTBSTW3C	Measurement/data gathering was taught in a previous year.
TQS2B12X1	BTBSTX1	How many periods have you spent teaching data analysis/representing this year?
TQS2B12X1A	BTBSTX1A	Will teach data analysis/representing later this year.
TQS2B12X1B	BTBSTX1B	Data analysis/representing is not taught this year.
TQS2B12X1C	BTBSTX1C	Data analysis/representing was taught in a previous year.
TQS2B12X2	BTBSTX2	How many periods have you spent teaching data analysis/interpreting this year?
TQS2B12X2A	BTBSTX2A	Will teach data analysis/interpreting later this year.
TQS2B12X2B	BTBSTX2B	Data analysis/interpreting is not taught this year.
TQS2B12X2C	BTBSTX2C	Data analysis/interpreting was taught in a previous year.
TQS2B12X3	BTBSTX3	How many periods have you spent teaching data analysis/collecting & interpreting this year?
TQS2B12X3A	BTBSTX3A	Will teach data analysis/collecting & interpreting later this year.
TQS2B12X3B	BTBSTX3B	Data analysis/collecting & interpreting is not taught this year.
TQS2B12X3C	BTBSTX3C	Data analysis/collecting & interpreting was taught in a previous year.
TQS2B12X4	BTBSTX4	How many periods have you spent teaching data analysis/concluding this year?
TQS2B12X4A	BTBSTX4A	Will teach data analysis/concluding later this year.
TQS2B12X4B	BTBSTX4B	Data analysis/concluding is not taught this year.
TQS2B12X4C	BTBSTX4C	Data analysis/concluding was taught in a previous year.
TQS2B13A	BTBSCLTM	How many minutes was the last science lesson you taught to your class?
TQS2B13B01	BTBSTO01	Were earth features the subject of the lesson?
TQS2B13B02	BTBSTO02	Were earth processes the subject of the lesson?
TQS2B13B03	BTBSTO03	Was earth and the universe the subject of the lesson?
TQS2B13B04	BTBSTO04	Was human biology/health the subject of the lesson?
TQS2B13B05	BTBSTO05	Was diversity/structure of living things the subject of the lesson?
TQS2B13B06	BTBSTO06	Were life processes the subject of the lesson?
TQS2B13B07	BTBSTO07	Were life cycles the subject of the lesson?
TQS2B13B08	BTBSTO08	Were interactions of living things the subject of the lesson?
TQS2B13B09	BTBSTO09	Were types of matter the subject of the lesson?
TQS2B13B10	BTBSTO10	Was structure of matter the subject of the lesson?
TQS2B13B11	BTBSTO11	Were energy types the subject of the lesson?
TQS2B13B12	BTBSTO12	Were energy processes the subject of the lesson?
TQS2B13B13	BTBSTO13	Were physical changes the subject of the lesson?
TQS2B13B14	BTBSTO14	Were kinetic and quantum theory the subject of the lesson?
TQS2B13B15	BTBSTO15	Were general chemical changes the subject of the lesson?
TQS2B13B16	BTBSTO16	Were specialized chemical changes the subject of the lesson?
TQS2B13B17	BTBSTO17	Were force and motion the subject of the lesson?
TQS2B13B18	BTBSTO18	Was relativity theory the subject of the lesson?
TQS2B13B19	BTBSTO19	Was science and society the subject of the lesson?
TQS2B13B20	BTBSTO20	Was history of science the subject of the lesson?
TQS2B13B21	BTBSTO21	Were environmental issues the subject of the lesson?
TQS2B13B22	BTBSTO22	Was nature of science the subject of the lesson?
TQS2B13C1	BTBSTOP1	Was this lesson the introduction of a new topic?
TQS2B13C2	BTBSTOP2	Was this lesson the continuation of a previous lesson?
TQS2B13C3	BTBSTOP3	Was this lesson the end of coverage of this topic?
TQS2B13D	BTBSHMW1	Did you assign homework after the class <period>?
TQS2B13E	BTBSHWT1	How long would it take a typical student to complete this homework assignment?
TQS2B13F	BTBSCLCM	Was a computer used during this class period?

Table S2.3
Index of International Background Variables for the Population 2 Science Teacher Questionnaire Items (Continued 8)

Questionnaire Location	Variable Name	Description
TQS2B13G	BTBSLAB1	Was there a separate laboratory session associated with this class period?
TQS2B13H	BTBSLAB2	How many minutes were give to a separate laboratory session?
TQS2B14A01	BTBSOR01	In what order did you do a review of previous lessons?
TQS2B14A01	BTBSTM01	How long did you spend on reviewing previous lessons?
TQS2B14A02	BTBSOR02	In what order did you give a short quiz to review previous lesson?
TQS2B14A02	BTBSTM02	How long did you spend on a quiz reviewing previous lessons?
TQS2B14A03	BTBSOR03	In what order did you do an oral drill?
TQS2B14A03	BTBSTM03	How long did you spend on an oral drill?
TQS2B14A04	BTBSOR04	In what order did you do a review of previous homework?
TQS2B14A04	BTBSTM04	How long did you spend on reviewing previous homework?
TQS2B14A05	BTBSOR05	In what order did you do an introduction of a new topic?
TQS2B14A05	BTBSTM05	How long did you spend on a new topic introduction?
TQS2B14A06	BTBSOR06	In what order did you do a development of a topic?
TQS2B14A06	BTBSTM06	How long did you spend on developing a contuing topic?
TQS2B14A07	BTBSOR07	In what order did you do small group activities?
TQS2B14A07	BTBSTM07	How long did you spend on small group activities?
TQS2B14A08	BTBSOR08	In what order did you have students do paper-and-pencil exercises?
TQS2B14A08	BTBSTM08	How long did students spend on pencil-and-paper exercises?
TQS2B14A09	BTBSOR09	In what order did you assign homework?
TQS2B14A09	BTBSTM09	How long did you spend assigning homework?
TQS2B14A10	BTBSOR10	In what order did you allow students to work on homework in class?
TQS2B14A10	BTBSTM10	How long did students spend on homework in class?
TQS2B14A11	BTBSOR11	In what order did you have a student laboratory activity?
TQS2B14A11	BTBSTM11	How long did students spend on a laboratory activity?
TQS2B14B	BTBSSGRP	Did the students work in small groups?
TQS2B15A	BTBSASK1	In your science lessons, how often do you ask students to explain reasoning behind an idea?
TQS2B15B	BTBSASK2	In your science lessons, how often do you ask students to use tables, charts, or graphs?
TQS2B15C	BTBSASK3	How often do you ask students to work on problems with no obvious method of solution?
TQS2B15D	BTBSASK4	How often do you ask students to use computers?
TQS2B15E	BTBSASK5	How often do you ask students to write explanations of what was observed and why?
TQS2B15F	BTBSASK6	How often do you ask students to put events in order and give a reason?
TQS2B16A	BTBSDO1	After a wrong answer, how often do you correct the student in front of the class?
TQS2B16B	BTBSDO2	After a wrong answer, how often do you ask another student to help?
TQS2B16C	BTBSDO3	After a wrong answer, how often do you call on a student likely to be correct?
TQS2B16D	BTBSDO4	After a wrong answer, how often do you get other responses and discuss?
TQS2B17A	BTBSLES1	In science lessons, how often do students work individually without assistance?
TQS2B17B	BTBSLES2	In science lessons, how often do students work individually with assistance?
TQS2B17C	BTBSLES3	In science lessons, how often do students work as a class with teacher leading?
TQS2B17D	BTBSLES4	In science lessons, how often do students work as a class with students responding to each other?
TQS2B17E	BTBSLES5	In science lessons, how often do students work in pairs without assistance?
TQS2B17F	BTBSLES6	In science lessons, how often do students work in pairs with assistance?
TQS2B18	BTBSHMW2	How often do you assign science homework?
TQS2B19	BTBSHWT2	How many minutes of homework do you usually assign?
TQS2B20A	BTBSWKBK	How often do you assign worksheets for homework?
TQS2B20B	BTBSPROB	How often do you assign textbook problems for homework?
TQS2B20C	BTBSREAD	How often do you assign reading for homework?

Table S2.3

Index of International Background Variables for the Population 2 Science Teacher Questionnaire Items (Continued 9)

Questionnaire Location	Variable Name	Description
TQS2B20D	BTBSWRIT	How often do you assign writing for homework?
TQS2B20E	BTBSDATA	How often do you assign small investigations for homework?
TQS2B20F	BTBSIEXP	How often do you assign long term individual projects for homework?
TQS2B20G	BTBSGEXP	How often do you assign long term small group projects for homework?
TQS2B20H	BTBSFIND	How often do you have students find uses of the content for homework?
TQS2B20I	BTBSORAL	How often do you have students prepare oral reports for homework?
TQS2B20J	BTBSJOUR	How often do you assign journals for homework?
TQS2B21A	BTBSWHW1	How often do you record whether or not homework was completed?
TQS2B21B	BTBSWHW2	How often do you collect, correct and keep homework assignments?
TQS2B21C	BTBSWHW3	How often do you collect, correct and return homework assignments?
TQS2B21D	BTBSWHW4	How often do you give feedback on homework to whole class?
TQS2B21E	BTBSWHW5	How often do you have students correct their own homework assignments in class?
TQS2B21F	BTBSWHW6	How often do you have students exchange homework assignments and correct them?
TQS2B21G	BTBSWHW7	How often do you use homework as a basis for class discussion?
TQS2B21H	BTBSWHW8	How often do you use homework to contribute towards students' grades?
TQS2B22A	BTBSWGT1	In assessment, how much weight do you give externally produced examinations?
TQS2B22B	BTBSWGT2	In assessment, how much weight do you give teacher-made open-ended tests?
TQS2B22C	BTBSWGT3	In assessment, how much weight do you give teacher-made multiple-choice tests?
TQS2B22D	BTBSWGT4	In assessment, how much weight do you give homework assignments?
TQS2B22E	BTBSWGT5	In assessment, how much weight do you give laboratory exercises?
TQS2B22F	BTBSWGT6	In assessment, how much weight do you give observations of students?
TQS2B22G	BTBSWGT7	In assessment, how much weight do you give responses of students in class?
TQS2B23A	BTBGASS1	How often do you use assessment information to provide grades for students?
TQS2B23B	BTBGASS2	How often do you use assessment information to provide feedback to students?
TQS2B23C	BTBGASS3	How often do you use assessment information to diagnose learning problems?
TQS2B23D	BTBGASS4	How often do you use assessment information to report to parents?
TQS2B23E	BTBGASS5	How often do you use assessment information to assign students to tracks?
TQS2B23F	BTBGASS6	How often do you use assessment information to plan for future lessons?
TQS2C011	BTBS011	Does anything in your science class enable your students to answer questions on earth features/composition?
TQS2C011A	BTBS011A	Something was done earlier this year to enable students to answer questions on earth features/composition?
TQS2C011B	BTBS011B	Something is being done now to enable students to answer questions on earth features/composition.
TQS2C011C	BTBS011C	Something will be done later this year to enable students to answer questions on earth features/composition.
TQS2C011D	BTBS011D	Earth features/composition was covered in the curriculum for an earlier grade.
TQS2C011E	BTBS011E	Earth features/composition is covered in this years curriculum, but I will not cover it.
TQS2C011F	BTBS011F	Earth features/composition is covered in the curriculum for a later grade.
TQS2C011G	BTBS011G	Earth features/composition is not included in the curriculum.
TQS2C011H	BTBS011H	I do not know whether earth features/composition is covered in another grade.
TQS2C012	BTBS012	Would you consider the above earth features/composition item appropriate on a test for your class?
TQS2C013	BTBS013	Are students likely to encounter the topic 'earth features/composition' outside of school this year?
TQS2C021	BTBS021	Does anything in your science class enable your students to answer questions on landforms?
TQS2C021A	BTBS021A	Something was done earlier this year to enable students to answer questions on landforms.
TQS2C021B	BTBS021B	Something is being done now to enable students to answer questions on landforms.
TQS2C021C	BTBS021C	Something will be done later this year to enable students to answer questions on landforms.
TQS2C021D	BTBS021D	Landforms was covered in the curriculum for an earlier grade.
TQS2C021E	BTBS021E	Landforms is covered in this years curriculum, but I will not cover it.
TQS2C021F	BTBS021F	Landforms is covered in the curriculum for a later grade.

Table S2.3
Index of International Background Variables for the Population 2 Science Teacher Questionnaire Items (Continued 10)

Questionnaire Location	Variable Name	Description
TQS2C021G	BTBS021G	Landforms is not included in the curriculum.
TQS2C021H	BTBS021H	I do not know whether landforms is covered in another grade.
TQS2C022A	BTBS022A	Would you consider the above landforms item A appropriate on a test for your class?
TQS2C022B	BTBS022B	Would you consider the above landforms item B appropriate on a test for your class?
TQS2C022N	BTBS022N	Neither of the above landforms items would be appropriate on a test for my class.
TQS2C023	BTBS023	Are students likely to encounter the topic 'landforms' outside of school this year?
TQS2C031	BTBS031	Does anything in your science class enable your students to answer questions on bodies of water?
TQS2C031A	BTBS031A	Something was done earlier this year to enable students to answer questions on bodies of water.
TQS2C031B	BTBS031B	Something is being done now to enable students to answer questions on bodies of water.
TQS2C031C	BTBS031C	Something will be done later this year to enable students to answer questions on bodies of water.
TQS2C031D	BTBS031D	Bodies of water was covered in the curriculum for an earlier grade.
TQS2C031E	BTBS031E	Bodies of water is covered in this years curriculum, but I will not cover it.
TQS2C031F	BTBS031F	Bodies of water is covered in the curriculum for a later grade.
TQS2C031G	BTBS031G	Bodies of water is not included in the curriculum.
TQS2C031H	BTBS031H	I do not know whether bodies of water is covered in another grade.
TQS2C032	BTBS032	Would you consider the above bodies of water item appropriate on a test for your class?
TQS2C033	BTBS033	Are students likely to encounter the topic 'bodies of water' outside of school this year?
TQS2C041	BTBS041	Does anything in your science class enable your students to answer questions on bodies of water?
TQS2C041A	BTBS041A	Something was done earlier this year to enable students to answer questions on bodies of water.
TQS2C041B	BTBS041B	Something is being done now to enable students to answer questions on bodies of water.
TQS2C041C	BTBS041C	Something will be done later this year to enable students to answer questions on bodies of water.
TQS2C041D	BTBS041D	Bodies of water was covered in the curriculum for an earlier grade.
TQS2C041E	BTBS041E	Bodies of water is covered in this years curriculum, but I will not cover it.
TQS2C041F	BTBS041F	Bodies of water is covered in the curriculum for a later grade.
TQS2C041G	BTBS041G	Bodies of water is not included in the curriculum.
TQS2C041H	BTBS041H	I do not know whether bodies of water is covered in another grade.
TQS2C042	BTBS042	Would you consider the above bodies of water item appropriate on a test for your class?
TQS2C043	BTBS043	Are students likely to encounter the topic 'bodies of water' outside of school this year?
TQS2C051	BTBS051	Does anything in your science class enable your students to answer questions on atmosphere?
TQS2C051A	BTBS051A	Something was done earlier this year to enable students to answer questions on atmosphere.
TQS2C051B	BTBS051B	Something is being done now to enable students to answer questions on atmosphere.
TQS2C051C	BTBS051C	Something will be done later this year to enable students to answer questions on atmosphere.
TQS2C051D	BTBS051D	Atmosphere was covered in the curriculum for an earlier grade.
TQS2C051E	BTBS051E	Atmosphere is covered in this years curriculum, but I will not cover it.
TQS2C051F	BTBS051F	Atmosphere is covered in the curriculum for a later grade.
TQS2C051G	BTBS051G	Atmosphere is not included in the curriculum.
TQS2C051H	BTBS051H	I do not know whether atmosphere is covered in another grade.
TQS2C052A	BTBS052A	Would you consider the above atmosphere item A appropriate on a test for your class?
TQS2C052B	BTBS052B	Would you consider the above atmosphere item B appropriate on a test for your class?
TQS2C052C	BTBS052C	Would you consider the above atmosphere item C appropriate on a test for your class?
TQS2C052N	BTBS052N	None of the above atmosphere items would be appropriate on a test for my class.
TQS2C053	BTBS053	Are students likely to encounter the topic 'atmosphere' outside of school this year?
TQS2C061	BTBS061	Does anything in your science class enable your students to answer questions on rocks and soil?
TQS2C061A	BTBS061A	Something was done earlier this year to enable students to answer questions on rocks & soil.
TQS2C061B	BTBS061B	Something is being done now to enable students to answer questions on rocks & soil.
TQS2C061C	BTBS061C	Something will be done later this year to enable students to answer questions on rocks & soil.

Table S2.3
Index of International Background Variables for the Population 2 Science Teacher Questionnaire Items (Continued 11)

Questionnaire Location	Variable Name	Description
TQS2C061D	BTBS061D	Rocks & soil was covered in the curriculum for an earlier grade.
TQS2C061E	BTBS061E	Rocks & soil is covered in this years curriculum, but I will not cover it.
TQS2C061F	BTBS061F	Rocks & soil is covered in the curriculum for a later grade.
TQS2C061G	BTBS061G	Rocks & soil is not included in the curriculum.
TQS2C061H	BTBS061H	I do not know whether rocks & soil is covered in another grade.
TQS2C062A	BTBS062A	Would you consider the above rocks & soil item A appropriate on a test for your class?
TQS2C062B	BTBS062B	Would you consider the above rocks & soil item B appropriate on a test for your class?
TQS2C062C	BTBS062C	Would you consider the above rocks & soil item C appropriate on a test for your class?
TQS2C062N	BTBS062N	None of the above rocks & soil items would be appropriate on a test for my class.
TQS2C063	BTBS063	Are students likely to encounter the topic 'rocks & soil outside' of school this year?
TQS2C071	BTBS071	Does anything in your science class enable your students to answer questions on human biology?
TQS2C071A	BTBS071A	Something was done earlier this year to enable students to answer questions on human biology.
TQS2C071B	BTBS071B	Something is being done now to enable students to answer questions on human biology.
TQS2C071C	BTBS071C	Something will be done later this year to enable students to answer questions on human biology.
TQS2C071D	BTBS071D	Human biology was covered in the curriculum for an earlier grade.
TQS2C071E	BTBS071E	Human biology is covered in this years curriculum, but I will not cover it.
TQS2C071F	BTBS071F	Human biology is covered in the curriculum for a later grade.
TQS2C071G	BTBS071G	Human biology is not included in the curriculum.
TQS2C071H	BTBS071H	I do not know whether human biology is covered in another grade.
TQS2C072A	BTBS072A	Would you consider the above human biology item A appropriate on a test for your class?
TQS2C072B	BTBS072B	Would you consider the above human biology item B appropriate on a test for your class?
TQS2C072C	BTBS072C	Would you consider the above human biology item C appropriate on a test for your class?
TQS2C072D	BTBS072D	Would you consider the above human biology item D appropriate on a test for your class?
TQS2C072E	BTBS072E	Would you consider the above human biology item E appropriate on a test for your class?
TQS2C072F	BTBS072F	Would you consider the above human biology item F appropriate on a test for your class?
TQS2C072N	BTBS072N	None of the above human biology items would be appropriate on a test for my class.
TQS2C073	BTBS073	Are students likely to encounter the topic 'human biology' outside of school this year?
TQS2C081	BTBS081	Does anything in your science class enable your students to answer questions on human biology?
TQS2C081A	BTBS081A	Something was done earlier this year to enable students to answer questions on human biology.
TQS2C081B	BTBS081B	Something is being done now to enable students to answer questions on human biology.
TQS2C081C	BTBS081C	Something will be done later this year to enable students to answer questions on human biology.
TQS2C081D	BTBS081D	Human biology was covered in the curriculum for an earlier grade.
TQS2C081E	BTBS081E	Human biology is covered in this years curriculum, but I will not cover it.
TQS2C081F	BTBS081F	Human biology is covered in the curriculum for a later grade.
TQS2C081G	BTBS081G	Human biology is not included in the curriculum.
TQS2C081H	BTBS081H	I do not know whether human biology is covered in another grade.
TQS2C082	BTBS082	Would you consider the above human biology item appropriate on a test for your class?
TQS2C083	BTBS083	Are students likely to encounter the topic 'human biology' outside of school this year?
TQS2C091	BTBS091	Does anything in your science class enable your students to answer questions on energy types?
TQS2C091A	BTBS091A	Something was done earlier this year to enable students to answer questions on energy types.
TQS2C091B	BTBS091B	Something is being done now to enable students to answer questions on energy types.
TQS2C091C	BTBS091C	Something will be done later this year to enable students to answer questions on energy types.
TQS2C091D	BTBS091D	Energy types was covered in the curriculum for an earlier grade.
TQS2C091E	BTBS091E	Energy types is covered in this years curriculum, but I will not cover it.
TQS2C091F	BTBS091F	Energy types is covered in the curriculum for a later grade.
TQS2C091G	BTBS091G	Energy types is not included in the curriculum.

Table S2.3

Index of International Background Variables for the Population 2 Science Teacher Questionnaire Items (Continued 12)

Questionnaire Location	Variable Name	Description
TQS2C091H	BTBS091H	I do not know whether energy types is covered in another grade.
TQS2C092A	BTBS092A	Would you consider the above energy types item A appropriate on a test for your class?
TQS2C092B	BTBS092B	Would you consider the above energy types item B appropriate on a test for your class?
TQS2C092C	BTBS092C	Would you consider the above energy types item C appropriate on a test for your class?
TQS2C092D	BTBS092D	Would you consider the above energy types item D appropriate on a test for your class?
TQS2C092N	BTBS092N	None of the above energy types items would be appropriate on a test for my class.
TQS2C093	BTBS093	Are students likely to encounter the topic 'energy types' outside of school this year?
TQS2C101	BTBS101	Does anything in your science class enable your students to answer questions on energy types?
TQS2C101A	BTBS101A	Something was done earlier this year to enable students to answer questions on energy types.
TQS2C101B	BTBS101B	Something is being done now to enable students to answer questions on energy types.
TQS2C101C	BTBS101C	Something will be done later this year to enable students to answer questions on energy types.
TQS2C101D	BTBS101D	Energy types was covered in the curriculum for an earlier grade.
TQS2C101E	BTBS101E	Energy types is covered in this years curriculum, but I will not cover it.
TQS2C101F	BTBS101F	Energy types is covered in the curriculum for a later grade.
TQS2C101G	BTBS101G	Energy types is not included in the curriculum.
TQS2C101H	BTBS101H	I do not know whether energy types is covered in another grade.
TQS2C102	BTBS102	Would you consider the above energy types item appropriate on a test for your class?
TQS2C103	BTBS103	Are students likely to encounter the topic 'energy types' outside of school this year?
TQS2C111	BTBS111	Does anything in your science class enable your students to answer questions on energy types?
TQS2C111A	BTBS111A	Something was done earlier this year to enable students to answer questions on energy types.
TQS2C111B	BTBS111B	Something is being done now to enable students to answer questions on energy types.
TQS2C111C	BTBS111C	Something will be done later this year to enable students to answer questions on energy types.
TQS2C111D	BTBS111D	Energy types was covered in the curriculum for an earlier grade.
TQS2C111E	BTBS111E	Energy types is covered in this years curriculum, but I will not cover it.
TQS2C111F	BTBS111F	Energy types is covered in the curriculum for a later grade.
TQS2C111G	BTBS111G	Energy types is not included in the curriculum.
TQS2C111H	BTBS111H	I do not know whether energy types is covered in another grade.
TQS2C112	BTBS112	Would you consider the above energy types item appropriate on a test for your class?
TQS2C113	BTBS113	Are students likely to encounter the topic 'energy types' outside of school this year?
TQS2C121	BTBS121	Does anything in your science class enable your students to answer questions on light?
TQS2C121A	BTBS121A	Something was done earlier this year to enable students to answer questions on light.
TQS2C121B	BTBS121B	Something is being done now to enable students to answer questions on light.
TQS2C121C	BTBS121C	Something will be done later this year to enable students to answer questions on light.
TQS2C121D	BTBS121D	Light was covered in the curriculum for an earlier grade.
TQS2C121E	BTBS121E	Light is covered in this years curriculum, but I will not cover it.
TQS2C121F	BTBS121F	Light is covered in the curriculum for a later grade.
TQS2C121G	BTBS121G	Light is not included in the curriculum.
TQS2C121H	BTBS121H	I do not know whether light is covered in another grade.
TQS2C122A	BTBS122A	Would you consider the above light item A appropriate on a test for your class?
TQS2C122B	BTBS122B	Would you consider the above light item B appropriate on a test for your class?
TQS2C122C	BTBS122C	Would you consider the above light item C appropriate on a test for your class?
TQS2C122D	BTBS122D	Would you consider the above light item D appropriate on a test for your class?"
TQS2C122N	BTBS122N	None of the above light items would be appropriate on a test for my class.
TQS2C123	BTBS123	Are students likely to encounter the topic 'light' outside of school this year?
TQS2C131	BTBS131	Does anything in your science class enable your students to answer questions on data analysis?
TQS2C131A	BTBS131A	Something was done earlier this year to enable students to answer questions on data analysis.

Table S2.3
Index of International Background Variables for the Population 2 Science Teacher Questionnaire Items (Continued 13)

Questionnaire Location	Variable Name	Description
TQS2C131B	BTBS131B	Something is being done now to enable students to answer questions on data analysis.
TQS2C131C	BTBS131C	Something will be done later this year to enable students to answer questions on data analysis.
TQS2C131D	BTBS131D	Data analysis was covered in the curriculum for an earlier grade.
TQS2C131E	BTBS131E	Data analysis is covered in this years curriculum, but I will not cover it.
TQS2C131F	BTBS131F	Data analysis is covered in the curriculum for a later grade.
TQS2C131G	BTBS131G	Data analysis is not included in the curriculum.
TQS2C131H	BTBS131H	I do not know whether data analysis is covered in another grade.
TQS2C132A	BTBS132A	Would you consider the above data analysis item A appropriate on a test for your class?
TQS2C132B	BTBS132B	Would you consider the above data analysis item B appropriate on a test for your class?
TQS2C132C	BTBS132C	Would you consider the above data analysis item C appropriate on a test for your class?
TQS2C132D	BTBS132D	Would you consider the above data analysis item D appropriate on a test for your class?
TQS2C132N	BTBS132N	None of the above data analysis items would be appropriate on a test for my class.
TQS2C133	BTBS133	Are students likely to encounter the topic 'data analysis' outside of school this year?
TQS2D1A	BTBSPA1A	'What is energy' approach should be avoided because students might get confused.
TQS2D1B	BTBSPA1B	Teacher should have begun by explaining what energy is.
TQS2D1C	BTBSPA1C	'What is energy' approach useful because teacher became aware of student ideas.
TQS2D1D	BTBSPA1D	Teacher should have begun with demonstration of effects of energy.
TQS2D2A	BTBSPA2A	Explain to students how water makes things appear larger.
TQS2D2B	BTBSPA2B	Ask questions about how objects appear in and out of water.
TQS2D2C	BTBSPA2C	Have students do experiment measuring size of objects in and out of water.
TQS2D2D	BTBSPA2D	Have students design an experiment that would determine whether idea is correct.
TQS2D2E	BTBSPA2E	Have students read relevant information from textbooks.
TQS2D2F	BTBSPA2F	Do demonstration showing how water affects the appearance of objects.
TQS2D2G	BTBSPA2G	Have students compare ideas about why objects would appear to be different sizes.
TQS2D2H	BTBSPA2H	Which of the approaches do you believe to be least acceptable?
TQS2D3A	BTBSPA3A	Give students more accurate explanation of how human inheritance works.
TQS2D3B	BTBSPA3B	Ask questions that lead students to understand that idea is inaccurate.
TQS2D3C	BTBSPA3C	Have students collect data about inheritance from classmates.
TQS2D3D	BTBSPA3D	Have students design investigation to decide whether or not idea is correct.
TQS2D3E	BTBSPA3E	Have students read relevant information from textbooks.
TQS2D3F	BTBSPA3F	Use data to demonstrate how inheritance works.
TQS2D3G	BTBSPA3G	Have students compare ideas about inheritance.
TQS2D3H	BTBSPA3H	Which of the approaches do you believe to be least acceptable?

Table S2.4
Index of International Background Variables for the Population 2 School Questionnaire Items

Questionnaire Location	Variable Name	Description
SCQ2-1	BCBGCOMM	In what type of community is your school located?
SCQ2-2A	BCBGGRPK	Does your school serve pre-kindergarten?
SCQ2-2B	BCBGGRK	Does your school serve kindergarten?
SCQ2-2C	BCBGGR1	Does your school serve 1st grade?
SCQ2-2D	BCBGGR2	Does your school serve 2nd grade?
SCQ2-2E	BCBGGR3	Does your school serve 3rd grade?
SCQ2-2F	BCBGGR4	Does your school serve 4th grade?
SCQ2-2G	BCBGGR5	Does your school serve 5th grade?
SCQ2-2H	BCBGGR6	Does your school serve 6th grade?
SCQ2-2I	BCBGGR7	Does your school serve 7th grade?
SCQ2-2J	BCBGGR8	Does your school serve 8th grade?
SCQ2-2K	BCBGGR9	Does your school serve 9th grade?
SCQ2-2L	BCBGGR10	Does your school serve 10th grade?
SCQ2-2M	BCBGGR11	Does your school serve 11th grade?
SCQ2-2N	BCBGGR12	Does your school serve 12th grade?
SCQ2-2O	BCBGGR13	Does your school serve 13th grade?
SCQ2-3A	BCBGFTE1	How many principals are on the staff of your school? (in FTE)
SCQ2-3B	BCBGFTE2	How many assistant principals are on the staff of your school?(in FTE)
SCQ2-3C	BCBGFTE3	How many department heads are on the staff of your school? (in FTE)
SCQ2-3D	BCBGFTE4	How many classroom teachers are on the staff of your school? (in FTE)
SCQ2-3E	BCBGFTE5	How many teacher aides are on the staff of your school? (in FTE)
SCQ2-3F	BCBGFTE6	How many laboratory technicians are on the staff of your school? (in FTE)
SCQ2-3G	BCBGFTE7	How many learning specialists are on the staff of your school? (in FTE)
SCQ2-3H	BCBGFTE8	How many other professional staff members are on the staff of your school? (in FTE)
SCQ2-4A	BCBGFTTE	How many individual full-time classroom teachers are there in your school?
SCQ2-4B	BCBGPTTE	How many individual part-time classroom teachers are there in your school?
SCQ2-5	BCBGTE5Y	What percentage of the classroom teachers have been at your school for 5 or more years?
SCQ2-6A	BCBMTEAC	What percentage of the classroom teachers teach 3/4 + of teaching load in mathematics?
SCQ2-6B	BCBMNONE	What percentage of the classroom teachers teach no mathematics?
SCQ2-6C	BCBSTEAC	What percentage of the classroom teachers teach 3/4 + of teaching load in science?
SCQ2-6D	BCBSNONE	What percentage of the classroom teachers teach no science?
SCQ2-6E	BCBGTEAC	What percentage of the classroom teachers teach 3/4 + of load in mathematics and science?
SCQ2-6F	BCBGNONE	What percentage of the classroom teachers teach no mathematics or science?
SCQ2-7	BCBGSAME	How long do students typically stay with the same teacher?
SCQ2-8A	BCBMRELW	How many hours during the school week do teachers have for tasks related to teaching mathematics?
SCQ2-8B	BCBMTEAW	How many hours during the school week do teachers have for teaching mathematics?
SCQ2-9A	BCBSRELW	How many hours during the school week do teachers have for tasks related to teaching science?
SCQ2-9B	BCBSTEAW	How many hours during the school week do teachers have for teaching science?
SCQ2-10A	BCBGCOL1	Does your school have policy promoting cooperation & collaboration among teachers?
SCQ2-10B	BCBGCOL2	Are teachers encouraged to share and discuss instructional ideas and materials?
SCQ2-10C	BCBGCOL3	Do teachers in your school meet regularly to discuss instructional goals & issues?
SCQ2-11A	BCBGAC01	As principal, how many hours per month do you spend on hiring teachers?
SCQ2-11B	BCBGAC02	As principal, how many hours per month do you spend on representing school in community?
SCQ2-11C	BCBGAC03	As principal, how many hours per month do you spend on representing school at official meetings?
SCQ2-11D	BCBGAC04	As principal, how many hours per month do you spend on internal administrative tasks?
SCQ2-11E	BCBGAC05	As principal, how many hours per month do you spend on teaching?

Table S2.4
Index of International Background Variables for the Population 2 School Questionnaire Items (Continued)

Questionnaire Location	Variable Name	Description
SCQ2-11F	BCBGAC06	As principal, how many hours per month do you spend on giving demonstration lessons?
SCQ2-11G	BCBGAC07	As principal, how many hours per month do you spend discussing educ. objectives w/ teachers?
SCQ2-11H	BCBGAC08	As principal, how many hours per month do you spend on initiating curriculum revision/planning?
SCQ2-11I	BCBGAC09	As principal, how many hours per month do you spend on talking with parents?
SCQ2-11J	BCBGAC10	As principal, how many hours per month do you spend on counseling/disciplining students?
SCQ2-11K	BCBGAC11	As principal, how many hours per month do you spend responding to requests from district, state, nat'l officials ?
SCQ2-11L	BCBGAC12	As principal, how many hours per month do you spend on training teachers?
SCQ2-11M	BCBGAC13	As principal, how many hours per month do you spend on professional development activities?
SCQ2-11N	BCBGAC14	As principal, how many hours per month do you spend on other activities?
SCQ2-12A	BCBGRP01	In your school, who has primary responsibility for hiring teachers?
SCQ2-12B	BCBGRP02	In your school, who has primary responsibility for establishing disciplinary policies?
SCQ2-12C	BCBGRP03	In your school, who has primary responsibility for establishing student grading policies?
SCQ2-12D	BCBGRP04	In your school, who has primary responsibility for formulating the school budget?
SCQ2-12E	BCBGRP05	In your school, who has primary responsibility for purchasing supplies?
SCQ2-12F	BCBGRP06	In your school, who has primary responsibility for placing students in classes?
SCQ2-12G	BCBGRP07	In your school, who has primary responsibility for assigning teachers to classes?
SCQ2-12H	BCBGRP08	In your school, who has primary responsibility for choosing textbooks?
SCQ2-12I	BCBGRP09	In your school, who has primary responsibility for establishing homework policies?
SCQ2-12J	BCBGRP10	In your school, who has primary responsibility for determining teacher salaries?
SCQ2-12K	BCBGRP11	In your school, who has primary responsibility for establishing community relationships?
SCQ2-12L	BCBGRP12	In your school, who has primary responsibility for communicating with students' families?
SCQ2-12M	BCBGRP13	In your school, who has primary responsibility for determining course content?
SCQ2-12N	BCBGRP14	In your school, who has primary responsibility for determining course offerings?
SCQ2-13A	BCBGIF01	How much influence does the <National Curriculum Council> have in determining curriculum?
SCQ2-13B	BCBGIF02	How much influence does the <National Subject Association> have in determining curriculum?
SCQ2-13C	BCBGIF03	How much influence does the <educational district> have in determining curriculum?
SCQ2-13D	BCBGIF04	How much influence does the <school governing board> have in determining curriculum?
SCQ2-13E	BCBGIF05	How much influence does the principal/head of school have in determining curriculum?
SCQ2-13F	BCBGIF06	How much influence do teachers collectively have in determining curriculum?
SCQ2-13G	BCBGIF07	How much influence do teachers of a subject have in determining curriculum?
SCQ2-13H	BCBGIF08	How much influence do individual teachers have in determining curriculum?
SCQ2-13I	BCBGIF09	How much influence do parents have in determining curriculum?
SCQ2-13J	BCBGIF10	How much influence do students have in determining curriculum?
SCQ2-13K	BCBGIF11	How much influence do church/religious groups have in determining curriculum?
SCQ2-13L	BCBGIF12	How much influence does business community have in determining curriculum?
SCQ2-13M	BCBGIF13	How much influence do textbook publishers have in determining curriculum?
SCQ2-13N	BCBGIF14	How much influence do external exams/standardized tests have in determining curriculum?
SCQ2-13O	BCBGIF15	How much influence do teacher unions have in determining curriculum?
SCQ2-14A	BCBMCURR	Does your school have its own written statement of the mathematics content to be taught?
SCQ2-14B	BCBSCURR	Does your school have its own written statement of the science content to be taught?
SCQ2-15A	BCBGCOM1	In your school, how many computers are available for use by teachers or students?
SCQ2-15B	BCBGCOM2	In your school, how many computers are used by teachers for administrative purposes?
SCQ2-15C	BCBGCOM3	In your school, how many computers are used by teachers during instructional time?
SCQ2-15D	BCBGCOM4	In your school, how many computers are used by students for educational purposes?
SCQ2-15E	BCBGCOM5	In your school, how many computers are used by office staff for record keeping?
SCQ2-16A	BCBGST01	Is your school's instructional capacity affected by inadequacy of instructional materials?

Table S2.4
Index of International Background Variables for the Population 2 School Questionnaire Items (Continued 2)

Questionnaire Location	Variable Name	Description
SCQ2-16B	BCBGST02	Is your school's instructional capacity affected by inadequacy of budget for supplies?
SCQ2-16C	BCBGST03	Is your school's instructional capacity affected by inadequacy of school buildings and grounds?
SCQ2-16D	BCBGST04	Is your school's instructional capacity affected by inadequacy of heating/cooling and lighting system?
SCQ2-16E	BCBGST05	Is your school's instructional capacity affected by inadequacy of instructional space?
SCQ2-16F	BCBGST06	Is your school's instructional capacity affected by inadequacy of equipment for handicapped students?
SCQ2-16G	BCBMST07	Is your school's instructional capacity affected by inadequacy of computers for mathematics instruction?
SCQ2-16H	BCBMST08	Is your school's instructional capacity affected by inadequacy of computer software for mathematics instruction?
SCQ2-16I	BCBMST09	Is your school's instructional capacity affected by inadequacy of calculators for mathematics instruction?
SCQ2-16J	BCBMST10	Is your school's instructional capacity affected by inadequacy of library materials relevant to mathematics instruction?
SCQ2-16K	BCBMST11	Is your school's instructional capacity affected by inadequacy of A-V resources for mathematics instruction?
SCQ2-16L	BCBSST12	Is your school's instructional capacity affected by inadequacy of science laboratory equipment & materials?
SCQ2-16M	BCBSST13	Is your school's instructional capacity affected by inadequacy of computers for science instruction?
SCQ2-16N	BCBSST14	Is your school's instructional capacity affected by inadequacy of computer software for science instruction?
SCQ2-16O	BCBSST15	Is your school's instructional capacity affected by inadequacy of calculators for science instruction?
SCQ2-16P	BCBSST16	Is your school's instructional capacity affected by inadequacy of library materials relevant to science instruction?
SCQ2-16Q	BCBSST17	Is your school's instructional capacity affected by inadequacy of A-V resources for science instruction?
SCQ2-17A1	BCBGBENR	How many boys attend your school?
SCQ2-17A2	BCBGGENR	How many girls attend your school?
SCQ2-17B	BCBGABST	What percentage of students are absent on a typical day?
SCQ2-17C	BCBGENDY	What percentage of students who begin the year in your school also finish in your school?
SCQ2-17D	BCBGTNSF	What percentage of students in your school transfer in after the beginning of school year?
SCQ2-17E1	BCBGLBER	How many boys are in lower grade?
SCQ2-17E2	BCBGLGER	How many girls are in lower grade?
SCQ2-17F1	BCBGLBRT	How many boys in lower grade are repeating the grade?
SCQ2-17F2	BCBGLGRT	How many girls in lower grade are repeating the grade?
SCQ2-17G	BCBGLSIZ	What is the approximate average class size in lower grade?
SCQ2-17H	BCBGLMGR	How many lower grade students are in multi-grade classrooms?
SCQ2-17I1	BCBMLBER	How many boys in lower grade study mathematics?
SCQ2-17I2	BCBMLGER	How many girls in lower grade study mathematics?
SCQ2-17J1	BCBSLBER	How many boys in lower grade study science?
SCQ2-17J2	BCBSLGER	How many girls in lower grade study science?
SCQ2-17K1	BCBGUBER	How many boys are in upper grade?
SCQ2-17K2	BCBGUGER	How many girls are in upper grade?
SCQ2-17L1	BCBGUBRT	How many boys in upper grade are repeating the grade?
SCQ2-17L2	BCBGUGRT	How many girls in upper grade are repeating the grade?
SCQ2-17M	BCBGUSIZ	What is the approximate average class size in upper grade?
SCQ2-17N	BCBGUMGR	How many upper grade students are in multi-grade classrooms?
SCQ2-17O1	BCBMUBER	How many boys in upper grade study mathematics?
SCQ2-17O2	BCBMUGER	How many girls in upper grade study mathematics?
SCQ2-17P1	BCBSUBER	How many boys in upper grade study science?
SCQ2-17P2	BCBSUGER	How many girls in upper grade study science?
SCQ2-18A1	BCBGUO01	How often does school administration or staff have to deal with upper grade students arriving late at school?
SCQ2-18A2	BCBGUP01	What percentage of upper grade students arrive late at school?
SCQ2-18B1	BCBGUO02	How often does school administration or staff have to deal with upper grade students' unjustifiable absenteeism?
SCQ2-18B2	BCBGUP02	What percentage of upper grade students are absent without an excuse?
SCQ2-18C1	BCBGUO03	How often does school administration or staff have to deal with upper grade students skipping class periods?

Table S2.4
Index of International Background Variables for the Population 2 School Questionnaire Items (Continued 3)

Questionnaire Location	Variable Name	Description
SCQ2-18C2	BCBGUP03	What percentage of upper grade students skip classes?
SCQ2-18D1	BCBGUO04	How often does school administration or staff have to deal with upper grade students violating the dress code?
SCQ2-18D2	BCBGUP04	What percentage of upper grade students violate the dress code?
SCQ2-18E1	BCBGUO05	How often does school administration or staff have to deal with classroom disturbance by upper grade students?
SCQ2-18E2	BCBGUP05	What percentage of upper grade students disturb class?
SCQ2-18F1	BCBGUO06	How often does school administration or staff have to deal with cheating by upper grade students?
SCQ2-18F2	BCBGUP06	What percentage of upper grade students cheat?
SCQ2-18G1	BCBGUO07	How often does school administration or staff have to deal with use of profanity by upper grade students?
SCQ2-18G2	BCBGUP07	What percentage of upper grade students use profanity?
SCQ2-18H1	BCBGUO08	How often does school administration or staff have to deal with vandalism by upper grade students?
SCQ2-18H2	BCBGUP08	What percentage of upper grade students have been involved in vandalism?
SCQ2-18I1	BCBGUO09	How often does school administration or staff have to deal with theft by upper grade students?
SCQ2-18I2	BCBGUP09	What percentage of upper grade students have been involved with theft?
SCQ2-18J1	BCBGUO10	How often does school administration or staff have to deal with intimidation of students by upper grade students?
SCQ2-18J2	BCBGUP10	What percentage of upper grade students have been involved in intimidation of other students?
SCQ2-18K1	BCBGUO11	How often does administration or staff have to deal with physical injury to students caused by upper grade students?
SCQ2-18K2	BCBGUP11	What percentage of upper grade students have caused physical injury to another student?
SCQ2-18L1	BCBGUO12	How often does administration or staff have to deal with intimidation of teachers or staff by upper grade students?
SCQ2-18L2	BCBGUP12	What percentage of upper grade students been involved in intimidation of teachers or staff members?
SCQ2-18M1	BCBGUO13	How often does school administration or staff have to deal with physical injury of staff caused by upper grade students?
SCQ2-18M2	BCBGUP13	What percentage of upper grade students have caused physical injury to a teacher or staff member?
SCQ2-18N1	BCBGUO14	How often does school administration or staff have to deal with tobacco use/possession by upper grade students?
SCQ2-18N2	BCBGUP14	What percentage of upper grade students have been found to be involved in tobacco use?
SCQ2-18O1	BCBGUO15	How often does school administration or staff have to deal with alcohol use/possessionby upper grade students?
SCQ2-18O2	BCBGUP15	What percentage of upper grade students have been found to be involved in alcohol use?
SCQ2-18P1	BCBGUO16	How often does school administration or staff have to deal with illegal drug use/possession by upper grade students?
SCQ2-18P2	BCBGUP16	What percentage of upper grade students have been found to be involved in illegal drug use/possession?
SCQ2-18Q1	BCBGUO17	How often does school administration or staff have to deal with weapon use/possession by upper grade students?
SCQ2-18Q2	BCBGUP17	What percentage of upper grade students have been found in possession of weapons?
SCQ2-18R1	BCBGUO18	How often does school administration or staff have to deal with inappropriate sexual behavior by upper grade students?
SCQ2-18R2	BCBGUP18	What percentage of upper grade students have been found to be involved in inappropriate sexual behavior?
SCQ2-19	BCBGINST	Is instructional time the same for both lower and upper grade in your school?
SCQ2-19A1	BCBGLDYY	How many instructional days are in the school year for lower grade?
SCQ2-19A2	BCBGUDYY	How many instructional days are in the school year for upper grade?
SCQ2-19B1	BCBGLFLW	How many full instructional days are in the school week for lower grade?
SCQ2-19B2	BCBGUFLW	How many full instructional days are in the school week for upper grade?
SCQ2-19C1	BCBGLHFW	How many half instructional days are in the school week for lower grade?
SCQ2-19C2	BCBGUHFW	How many half instructional days are in the school week for upper grade?
SCQ2-19D1	BCBGLTHW	How many total hours are in the school week for lower grade?
SCQ2-19D2	BCBGUTHW	How many total hours are in the school week for upper grade?
SCQ2-19E1	BCBGLIHW	How many instructional hours are in the school week for lower grade?
SCQ2-19E2	BCBGUIHW	How many instructional hours are in the school week for upper grade?
SCQ2-20	BCBGDIVI	Is the school week divided into instructional periods?
SCQ2-20A1	BCBGLPDW	How many instructional periods are there in a week for lower grade?
SCQ2-20A2	BCBGUPDW	How many instructional periods are there in a week for upper grade?
SCQ2-20B1	BCBGLTMP	How many minutes is a typical instructional period for lower grade?

Table S2.4
Index of International Background Variables for the Population 2 School Questionnaire Items (Continued 4)

Questionnaire Location	Variable Name	Description
SCQ2-20B2	BCBGUTMP	How many minutes is a typical instructional period for upper grade?
SCQ2-21	BCBMRMDL	Does your school provide remedial teaching in mathematics?
SCQ2-21A	BCBMRMD1	For remedial mathematics teaching, are groups formed within regular mathematics classes?
SCQ2-21B	BCBMRMD2	For remedial mathematics teaching, are students withdrawn from regular mathematics classes?
SCQ2-21C	BCBMRMD3	For remedial mathematics teaching, do students receive extra <tuition> before/after school?
SCQ2-21D	BCBMRMD4	For remedial mathematics teaching, is some other method used?
SCQ2-22	BCBSRMDL	Does your school provide remedial teaching in science?
SCQ2-22A	BCBSRMD1	For remedial science teaching, are groups formed within regular science classes?
SCQ2-22B	BCBSRMD2	For remedial science teaching, are students withdrawn from regular science classes?
SCQ2-22C	BCBSRMD3	For remedial science teaching, do students receive extra <tuition> before/after school?
SCQ2-22D	BCBSRMD4	For remedial science teaching, is some other method used?
SCQ2-23	BCBMENRH	Does your school provide special enrichment activities in mathematics?
SCQ2-23A	BCBMENR1	For mathematics enrichment, are groups formed within regular mathematics classes?
SCQ2-23B	BCBMENR2	For mathematics enrichment, are students withdrawn from regular mathematics classes?
SCQ2-23C	BCBMENR3	For mathematics enrichment, do students receive extra <tuition> before/after school?
SCQ2-23D	BCBMENR4	For mathematics enrichment, is some other method used?
SCQ2-24	BCBSENRH	Does your school provide special enrichment activities in science?
SCQ2-24A	BCBSENR1	For science enrichment, are groups formed within regular science classes?
SCQ2-24B	BCBSENR2	For science enrichment, are students withdrawn from regular science classes?
SCQ2-24C	BCBSENR3	For science enrichment, do students receive extra <tuition> before/after school?
SCQ2-24D	BCBSENR4	For science enrichment, is some other method used?
SCQ2-25	BCBMUSCO	Do all students in upper grade follow the same course of study in mathematics?
SCQ2-25A	BCBMUC1	How many instructional minutes per week are students in upper grade required to spend in mathematics classes?
SCQ2-25B	BCBMUC2	How many instructional weeks per year are students in upper grade required to spend in mathematics classes?
SCQ2-25C	BCBMUC3	How many different courses of study in mathematics are available to upper grade students?
SCQ2-25D1	BCBMUC41	What percentage of upper grade students take the most advanced mathematics course of study?
SCQ2-25D2	BCBMUC42	What percentage of upper grade students take the least advanced mathematics course of study?
SCQ2-25E1	BCBMUC51	How many instructional minutes/week for students in most advanced mathematics course of study?
SCQ2-25E2	BCBMUC52	How many instructional minutes/week for students in least advanced mathematics course of study?
SCQ2-25F1	BCBMUC61	How many instructional weeks/year for students in most advanced mathematics course of study?
SCQ2-25F2	BCBMUC62	How many instructional weeks/year for students in least advanced mathematics course of study?
SCQ2-26A	BCBMUFC1	How important is academic performance in selecting mathematics course of study for student?
SCQ2-26B	BCBMUFC2	How important are standardized tests in selecting mathematics course of study for student?
SCQ2-26C	BCBMUFC3	How important is entrance exam in selecting mathematics course of study for student?
SCQ2-26D	BCBMUFC4	How important is oral exam in selecting mathematics course of study for student?
SCQ2-26E	BCBMUFC5	How important are teacher recommendations in selecting mathematics course of study for student?
SCQ2-26F	BCBMUFC6	How important are parental wishes in selecting mathematics course of study for student?
SCQ2-26G	BCBMUFC7	How important are student wishes in selecting mathematics course of study for student?
SCQ2-26H	BCBMUFC8	How important are curricular requirements in selecting mathematics course of study for student?
SCQ2-27	BCBSUSCO	Do all students in upper grade follow the same course of study in science?
SCQ2-27A	BCBSUC1	How many instructional minutes per week are students in upper grade required to spend in science classes?
SCQ2-27B	BCBSUC2	How many instructional weeks per year are students in upper grade required to spend in science classes?
SCQ2-27C	BCBSUC3	How many different courses of study in science are available to upper grade students?
SCQ2-27D1	BCBSUC41	What percentage of upper grade students take the most advanced science course of study?
SCQ2-27D2	BCBSUC42	What percentage of upper grade students take the least advanced science course of study?
SCQ2-27E1	BCBSUC51	How many instructional minutes/week for students in most advanced science course of study?

Table S2.4
Index of International Background Variables for the Population 2 School Questionnaire Items (Continued 5)

Questionnaire Location	Variable Name	Description
SCQ2-27E2	BCBSUC52	How many instructional minutes/week for students in least advanced science course of study?
SCQ2-27F1	BCBSUC61	How many instructional weeks/year for students in most advanced science course of study?
SCQ2-27F2	BCBSUC62	How many instructional weeks/year for students in least advanced science course of study?
SCQ2-28A	BCBSUFC1	How important is academic performance in selecting science course of study for student?
SCQ2-28B	BCBSUFC2	How important are standardized tests in selecting science course of study for student?
SCQ2-28C	BCBSUFC3	How important is entrance exam in selecting science course of study for student?
SCQ2-28D	BCBSUFC4	How important is oral exam in selecting science course of study for student?
SCQ2-28E	BCBSUFC5	How important are teacher recommendations in selecting science course of study for student?
SCQ2-28F	BCBSUFC6	How important are parental wishes in selecting science course of study for student?
SCQ2-28G	BCBSUFC7	How important are student wishes in selecting science course of study for student?
SCQ2-28H	BCBSUFC8	How important are curricular requirements in selecting science course of study for student?
SCQ2-29A	BCBGSTD1	What percent of students in your school come disadvantaged economic backgrounds?
SCQ2-29B	BCBGSTD2	What percent of students in your school come from homes where neither parent received more than primary education?
SCQ2-29C	BCBGSTD3	What percent of students in your school come from one-parent families?
SCQ2-29D	BCBGSTD4	What percent of students in your school attended preschool?
SCQ2-29E	BCBGSTD5	What percent of students in your school have 1st language other than that taught in school?
SCQ2-29F	BCBGSTD6	What percent of students in your school have learning problems?
SCQ2-29G	BCBGSTD7	What percent of students in your school have health problems?
SCQ2-29H	BCBGSTD8	What percent of students in your school have nutrition problems?
SCQ2-30A	BCBGBS01	In admitting students to your school, do you consider residence in a particular area?
SCQ2-30B	BCBGBS02	In admitting students to your school, do you consider student's academic performance?
SCQ2-30C	BCBGBS03	In admitting students to your school, do you consider interview with student?
SCQ2-30D	BCBGBS04	In admitting students to your school, do you consider interview with parent?
SCQ2-30E	BCBGBS05	In admitting students to your school, is preference given to students with siblings in the school?
SCQ2-30F	BCBGBS06	In admitting students to your school, is preference given according to date of application?
SCQ2-30G	BCBGBS07	In admitting students to your school, do you consider recommendations of previous teachers?
SCQ2-30H	BCBGBS08	In admitting students to your school, is preference given to students from a particular school?
SCQ2-30I	BCBGBS09	In admitting students to your school, is preference given to children of former students?
SCQ2-30J	BCBGBS10	In admitting students to your school, do you consider performance on a standardized test?
SCQ2-30K	BCBGBS11	In admitting students to your school, do you consider performance on an entrance exam?
SCQ2-30L	BCBGBS12	In admitting students to your school, do you consider performance on an oral exam?
SCQ2-30M	BCBGBS13	In admitting students to your school, do you consider other factors?

Section 1

Student Background Questionnaire
Non-Specialized Version (SQ2)

Identification Label

School:

Class:

Student:

IEA Third International Mathematics and Science Study

Student Questionnaire

Population 2

TIMSS Study Center
Boston College
Chestnut Hill, MA 02167
USA

(Institute Address)

Doc. Ref.: ICC878/NRC415

GENERAL DIRECTIONS

In this booklet, you will find questions about yourself. Some questions ask for facts while other questions ask for your opinion.

Read each question carefully and respond as accurately and carefully as possible. You may ask for help if you do not understand something or are not sure how to respond.

Some of the questions will be followed by a few possible choices indicated with a letter next to or below it. For these questions, circle the letter next to or below your choice as shown in Example 1.

Example 1

		Yes	*No*
1.	**I attend school**	(A)	B

The letter "A" has been circled because you attend school.

If you decide to change your response to a question, put an "X" over your first choice and then put a circle around your new choice as shown in Example 2.

Example 2

		strongly agree	*agree*	*disagree*	*strongly disagree*
1.	**I like ice cream**.	(A)	~~(B)~~	C	D

For other questions you will be asked to write a number or date in the space provided in your booklet. For these questions, you may use words and numbers in your answers. When you write, please be sure that your handwriting is clear.

1. On what date were you born?

Write in the day, month and year.

<_____day _____ month _____year>

<NRC NOTE: USE STYLE APPROPRIATE TO YOUR COUNTRY AND GRADE LEVEL.>

---

2. Are you a girl or a boy?

Circle either A or B.

girl ..... A

boy ..... B

3a. Were you born in <country> ?

Circle either A or B.

Yes ..... A

No ..... B

3b. If you were not born in <country>, how old were you when you came to <country>?

Write in your age at the time.

I was _____ years old when I came to <country>

---

4. How often do you speak <language of test> at home?

Circle either A, B, or C.

always or almost always ..... A

sometimes ..... B

never C

5. During the week, how much time before or after school do you usually spend...

Circle one letter, A, B, C, D, or E, for each line.

	no time	*less than 1 hour*	*1-2 hours*	*3-5 hours*	*more than 5 hours*
a) taking <extra lessons/cramming school> in mathematics?	A	B	C	D	E
b) taking <extra lessons/cramming school> in science?	A	B	C	D	E
c) participating in science or mathematics clubs?	A	B	C	D	E
d) working at a paid job?	A	B	C	D	E

6. On a normal school day, how much time do you spend before or after school doing each of these things?

Circle one letter, A, B, C, D, or E, for each line.

	no time	*less than 1 hour*	*1-2 hours*	*3-5 hours*	*more than 5 hours*
a) watching television and videos	A	B	C	D	E
b) playing computer games	A	B	C	D	E
c) playing or talking with friends outside of school	A	B	C	D	E
d) doing jobs at home	A	B	C	D	E
e) playing sports	A	B	C	D	E
f) reading a book for enjoyment	A	B	C	D	E
g) studying mathematics or doing mathematics homework after school	A	B	C	D	E
h) studying science or doing science homework after school	A	B	C	D	E
i) studying or doing homework in school subjects other than mathematics and science	A	B	C	D	E

7. Do each of these people live at home with you most or all of the time?

Circle either A or B for each line.

		Yes	*No*
a)	mother	A	B
b)	father	A	B
c)	one or more brothers	A	B
d)	one or more sisters	A	B
e)	stepmother	A	B
f)	stepfather	A	B
g)	one or more grandparents	A	B
h)	another relative or relatives (uncle, aunt, cousin, etc.).....	A	B
i)	another person or persons (not relatives)	A	B

---

8. Altogether, how many people live in your home?

Write in the total number of people.

_____(Don't forget to include yourself.)

---

9. How far in school did your mother and father go? How far do you expect to go?

Circle ONE letter in each column.

		Mother	*Father*	*Yourself*
a)	<finished primary school>	A	A	A
b)	<finished some secondary school>	B	B	B
c)	<finished secondary school>	C	C	C
d)	<some vocational/technical education after secondary school>	D	D	D
e)	<some university>	E	E	E
f)	<finished university>	F	F	F
g)	I don't know	G	G	G

		Yes	*No*
10a.	**Was your mother born in <country>?**	A	B
	Circle either A or B.		
10b.	**Was your father born in <country>?**	A	B
	Circle either A or B.		

11. About how many books are there in your home?

(Do not count magazines, newspapers, or your school books.)

Circle one letter, A, B, C, D, or E.

none or very few (0 - 10 books)	A
enough to fill one shelf (11-25 books)	B
enough to fill one bookcase (26-100 books)	C
enough to fill two bookcases (101 - 200 books).....	D
enough to fill three or more bookcases (more than 200)	E

12. Do you have any of these items at your home?

Circle either A or B for each line.

		Yes	*No*
a)	calculator	A	B
b)	computer	A	B
c)	study desk/table for your use	A	B
d)	dictionary	A	B
e)	<country-specific>	A	B
f)	<country-specific>	A	B
g)	<country-specific>	A	B
h)	<country-specific>	A	B
i)	<country-specific>	A	B
j)	<country-specific>	A	B
k)	<country-specific>	A	B
l)	<country-specific>	A	B
m)	<country-specific>	A	B
n)	<country-specific>	A	B
o)	<country-specific>	A	B
p)	<country-specific>	A	B

13. My mother thinks it is important for me to...

Circle one letter, A, B, C, or D, for each line.

		strongly agree	*agree*	*disagree*	*strongly disagree*
a)	do well in science at school.	A	B	C	D
b)	do well in mathematics at school.	A	B	C	D
c)	do well in <language of test> at school.	A	B	C	D
d)	be good at sports.	A	B	C	D
e)	have time to have fun.	A	B	C	D
f)	be placed in <classes> with the high achieving students.	A	B	C	D

14. In my mathematics class...

Circle one letter, A, B, C, or D, for each line.

		strongly agree	*agree*	*disagree*	*strongly disagree*
a)	students often neglect their school work.	A	B	C	D
b)	students are orderly and quiet during <lessons> ...	A	B	C	D
c)	students do exactly as the teacher says.	A	B	C	D

15. Most of my friends think it is important to ...

Circle one letter, A, B, C, or D, for each line.

		strongly agree	*agree*	*disagree*	*strongly disagree*
a)	do well in science at school.	A	B	C	D
b)	do well in mathematics at school.	A	B	C	D
c)	do well in <language of test> at school.	A	B	C	D
d)	have time to have fun.	A	B	C	D
e)	be good at sports.	A	B	C	D
f)	be placed in <classes> with the high achieving students.	A	B	C	D

16. I think it is important to...

Circle one letter, A, B, C, or D, for each line.

		strongly agree	*agree*	*disagree*	*strongly disagree*
a)	do well in science at school.	A	B	C	D
b)	do well in mathematics at school.	A	B	C	D
c)	do well in <language of test> at school.	A	B	C	D
d)	have time to have fun.	A	B	C	D
e)	be good at sports.	A	B	C	D
f)	be placed in <classes> with the high achieving students.	A	B	C	D

17. How well do you usually do in mathematics and science at school?

Circle one letter, A, B, C, or D, for each line.

		strongly agree	*agree*	*disagree*	*strongly disagree*
a)	I usually do well in mathematics.	A	B	C	D
b)	I usually do well in science.	A	B	C	D

18. How often did any of these things happen last month in school?

Circle one letter, A, B, C, or D, for each line.

		never	*once or twice*	*3-4 times*	*5 or more*
a)	I skipped a class.	A	B	C	D
b)	Something of mine was stolen.	A	B	C	D
c)	I thought another student might hurt me.	A	B	C	D
d)	Some of my friends skipped classes.	A	B	C	D
e)	Some of my friends had things stolen.	A	B	C	D
f)	Some of my friends were hurt by other students. .	A	B	C	D

19. To do well in mathematics at school you need...

Circle one letter, A, B, C, or D, for each line.

		strongly agree	***agree***	***disagree***	***strongly disagree***
a)	lots of natural <talent/ability>.	A	B	C	D
b)	good luck.	A	B	C	D
c)	lots of hard work studying at home.	A	B	C	D
d)	to memorize the textbook or notes.	A	B	C	D

20. To do well in science at school you need...

Circle one letter, A, B, C, or D, for each line

		strongly agree	***agree***	***disagree***	***strongly disagree***
a)	lots of natural <talent/ability>.	A	B	C	D
b)	good luck.	A	B	C	D
c)	lots of hard work studying at home.	A	B	C	D
d)	to memorize the textbook or notes.	A	B	C	D

21. How much do you like...

Circle one letter, A, B, C, or D, for each line

		dislike a lot	***dislike***	***like***	***like a lot***
a)	mathematics?	A	B	C	D
b)	science?	A	B	C	D

22. How much do you like using computers in...

Circle one letter, A, B, C, D, or E, for each line

		don't use computers	*dislike a lot*	*dislike*	*like*	*like a lot*
a)	mathematics classes?	A	B	C	D	E
b)	science classes?	A	B	C	D	E

23. What do you think about mathematics?

Circle one letter, A, B, C, or D, for each line.

		strongly agree	*agree*	*disagree*	*strongly disagree*
a)	I enjoy learning mathematics.	A	B	C	D
b)	Mathematics is boring.	A	B	C	D
c)	Mathematics is an easy subject.	A	B	C	D
d)	Mathematics is important to everyone's life.	A	B	C	D
e)	I would like a job that involved using mathematics	A	B	C	D

24. I need to do well in mathematics...

Circle one letter, A, B, C, or D, for each line.

		strongly agree	*agree*	*disagree*	*strongly disagree*
a)	to get the job I want	A	B	C	D
b)	to please my parent(s)	A	B	C	D
c)	to get into the <secondary school> or university I prefer	A	B	C	D
d)	to please myself	A	B	C	D

25. How often does this happen in your mathematics lessons?

Circle one letter, A, B, C, or D, for each line.

		almost always	***pretty often***	***once in a while***	***never***
a)	The teacher shows us how to do mathematics problems.	A	B	C	D
b)	We copy notes from the board.	A	B	C	D
c)	We have a quiz or test.	A	B	C	D
d)	We work from worksheets or textbooks on our own.	A	B	C	D
e)	We work on mathematics projects.	A	B	C	D
f)	We use calculators..	A	B	C	D
g)	We use computers.	A	B	C	D
h)	We work together in pairs or small groups.	A	B	C	D
i)	We use things from everyday life in solving mathematics problems.	A	B	C	D
j)	The teacher gives us homework.	A	B	C	D
k)	We can begin our homework in class.	A	B	C	D
l)	The teacher checks homework.	A	B	C	D
m)	We check each other's homework.	A	B	C	D
n)	We discuss our completed homework.	A	B	C	D

26. When we begin a new topic in mathematics, we begin by...

Circle one letter, A, B, C, or D, for each line.

		almost always	*pretty often*	*once in a while*	*never*
a)	having the teacher explain the rules and definitions	A	B	C	D
b)	discussing a practical or story problem related to everyday life	A	B	C	D
c)	working together in pairs or small groups on a problem or project	A	B	C	D
d)	having the teacher ask us what we know related to the new topic	A	B	C	D
e)	looking at the textbook while the teacher talks about it	A	B	C	D
f)	trying to solve an example related to the new topic	A	B	C	D

27a. Listed below are some of the world's environmental problems. How much do you think the application of science can help in addressing these problems?

Circle one letter, A, B, C, or D, for each line.

		not at all	*very little*	*some-what*	*a great deal*
a)	air pollution	A	B	C	D
b)	water pollution	A	B	C	D
c)	destruction of forests	A	B	C	D
d)	endangered species	A	B	C	D
e)	damage to the ozone layer	A	B	C	D
f)	problems from nuclear power plants	A	B	C	D

27b. Which one of the above problems concerns you most?

Write the letter here: _____

28. What do you think about science?

Circle one letter, A, B, C, or D, for each line.

		strongly agree	***agree***	***disagree***	***strongly disagree***
a)	I enjoy learning science.	A	B	C	D
b)	Science is boring.	A	B	C	D
c)	Science is an easy subject.	A	B	C	D
d)	Science is important to everyone's life	A	B	C	D
e)	I would like a job that involved using science.	A	B	C	D

29. I need to do well in science...

Circle one letter, A, B, C, or D, for each line.

		strongly agree	***agree***	***disagree***	***strongly disagree***
a)	to get the job I want.	A	B	C	D
b)	to please my parents.	A	B	C	D
c)	to get into the <secondary school> or university I prefer.	A	B	C	D
d)	to please myself.	A	B	C	D

30. If you were going to choose a career that uses a science, which science would you prefer to use?

Circle one letter, A, B, C, or D.

Biology ..... A

Chemistry ..... B

Earth Science C

Physics ..... D

31. How often does this happen in your science lessons?

Circle one letter, A, B, C, or D, for each line.

		almost always	*pretty often*	*once in a while*	*never*
a)	The teacher shows us how to do science problems	A	B	C	D
b)	We copy notes from the board	A	B	C	D
c)	We have a quiz or test	A	B	C	D
d)	We work on science projects	A	B	C	D
e)	We work from worksheets or textbooks on our own	A	B	C	D
f)	We use calculators	A	B	C	D
g)	We use computers	A	B	C	D
h)	We use things from every day life in solving science problems	A	B	C	D
i)	We work together in pairs or small groups	A	B	C	D
j)	The teacher gives us homework	A	B	C	D
k)	We can begin our homework in class	A	B	C	D
l)	The teacher checks homework	A	B	C	D
m)	We check each other's homework	A	B	C	D
n)	We discuss our completed homework	A	B	C	D
o)	The teacher gives a demonstration of an experiment	A	B	C	D
p)	We ourselves do an experiment or practical investigation in class	A	B	C	D

32. When we begin a new topic in science, we begin by...

Circle one letter, A, B, C, or D, for each line.

		almost always	***pretty often***	***once in a while***	***never***
a)	having the teacher explain the rules and definitions.	A	B	C	D
b)	discussing a practical or story problem related to everyday life.	A	B	C	D
c)	working together in small groups on a problem or project.	A	B	C	D
d)	having the teacher ask us what we know related to the new topic.	A	B	C	D
e)	looking at the textbook while the teacher talks about it.	A	B	C	D
f)	trying to solve an example related to the new topic.	A	B	C	D

THANK YOU for the thought and effort you have put into answering these questions. We wish you well in all that you do.

INTERNATIONAL OPTION

33 . Outside of school, how often do you do these activities?

Circle one letter, A, B, C, or D, for each line.

		about every day	*about once a week*	*about once a month*	*rarely*
a)	read a book or magazine	A	B	C	D
b)	visit a museum or art exhibition	A	B	C	D
c)	attend a concert	A	B	C	D
d)	go to the theatre	A	B	C	D
e)	go to the movies	A	B	C	D

34 . Outside of school, how often do you watch the following kinds of programs on television or video?

Circle one letter, A, B, C, or D, for each line.

		about every day	*about once a week*	*about once a month*	*rarely*
a)	news or documentaries	A	B	C	D
b)	opera, ballet or classical music	A	B	C	D
c)	nature, wildlife or history	A	B	C	D
d)	popular music	A	B	C	D
e)	sports	A	B	C	D
f)	video games	A	B	C	D
g)	cartoons	A	B	C	D
h)	comedy, adventure or suspense	A	B	C	D

STOP

There are no more questions in this booklet

If you have finished answering this booklet before the time is over then you may go back and review your answers. Thank you for taking the time to answer these questions carefully.

Section 2

Student Background Questionnaire
Specialized Version (SQ2(S))

Identification Label

School:

Class:

Student:

IEA Third International Mathematics and Science Study

Student Questionnaire

Population 2 (s)

TIMSS Study Center
Boston College
Chestnut Hill, MA 02167
USA

(Institute Address)

Doc. Ref.: ICC878/NRC415

GENERAL DIRECTIONS

In this booklet, you will find questions about yourself. Some questions ask for facts while other questions ask for your opinion.

Read each question carefully and respond as accurately and carefully as possible. You may ask for help if you do not understand something or are not sure how to respond.

Some of the questions will be followed by a few possible choices indicated with a letter next to or below it. For these questions, circle the letter next to or below your choice as shown in Example 1.

Example 1

		Yes	*No*
1.	**I attend school**	(A)	B

The letter "A" has been circled because you attend school.

If you decide to change your response to a question, put an "X" over your first choice and then put a circle around your new choice as shown in Example 2.

Example 2

		strongly agree	*agree*	*disagree*	*strongly disagree*
1.	**I like ice cream**.	(A)	~~(B)~~	C	D

For other questions you will be asked to write a number or date in the space provided in your booklet. For these questions, you may use words and numbers in your answers. When you write, please be sure that your handwriting is clear.

1. On what date were you born?

Write in the day, month and year.

<_____day _____ month _____year>

<NRC NOTE: USE STYLE APPROPRIATE TO YOUR COUNTRY AND GRADE LEVEL.>

---

2. Are you a girl or a boy?

Circle either A or B.

girl ..... A

boy ..... B

3a. Were you born in <country> ?

Circle either A or B.

Yes ..... A

No ..... B

3b. If you were not born in <country>, how old were you when you came to <country>?

Write in your age at the time.

I was _____ years old when I came to <country>

---

4. How often do you speak <language of test> at home?

Circle either A, B, or C.

always or almost always ..... A

sometimes ..... B

never C

5. During the week, how much time before or after school do you usually spend...

Circle one letter, A, B, C, D, or E, for each line.

	no time	*less than 1 hour*	*1-2 hours*	*3-5 hours*	*more than 5 hours*
a) taking <extra lessons/cramming school> in mathematics?	A	B	C	D	E
b) taking <extra lessons/cramming school> in science?	A	B	C	D	E
c) participating in science or mathematics clubs?	A	B	C	D	E
d) working at a paid job?	A	B	C	D	E

6. On a normal school day, how much time do you spend before or after school doing each of these things?

Circle one letter, A, B, C, D, or E, for each line.

	no time	*less than 1 hour*	*1-2 hours*	*3-5 hours*	*more than 5 hours*
a) watching television and videos	A	B	C	D	E
b) playing computer games	A	B	C	D	E
c) playing or talking with friends outside of school	A	B	C	D	E
d) doing jobs at home	A	B	C	D	E
e) playing sports	A	B	C	D	E
f) reading a book for enjoyment	A	B	C	D	E
g) studying mathematics or doing mathematics homework after school	A	B	C	D	E
h) studying science or doing science homework after school	A	B	C	D	E
i) studying or doing homework in school subjects other than mathematics and science	A	B	C	D	E

7. Do each of these people live at home with you most or all of the time?

Circle either A or B for each line.

		Yes	*No*
a)	mother	A	B
b)	father	A	B
c)	one or more brothers	A	B
d)	one or more sisters	A	B
e)	stepmother	A	B
f)	stepfather	A	B
g)	one or more grandparents	A	B
h)	another relative or relatives (uncle, aunt, cousin, etc.).....	A	B
i)	another person or persons (not relatives)	A	B

---

8. Altogether, how many people live in your home?

Write in the total number of people.

_____(Don't forget to include yourself.)

---

9. How far in school did your mother and father go? How far do you expect to go?

Circle ONE letter in each column.

		Mother	*Father*	*Yourself*
a)	<finished primary school>	A	A	A
b)	<finished some secondary school>	B	B	B
c)	<finished secondary school>	C	C	C
d)	<some vocational/technical education after secondary school>	D	D	D
e)	<some university>	E	E	E
f)	<finished university>	F	F	F
g)	I don't know	G	G	G

		Yes	*No*
10a.	**Was your mother born in <country>?**	A	B
	Circle either A or B.		
10b.	**Was your father born in <country>?**	A	B
	Circle either A or B.		

11. About how many books are there in your home?

(Do not count magazines, newspapers, or your school books.)

Circle one letter, A, B, C, D, or E.

none or very few (0 - 10 books)	A
enough to fill one shelf (11-25 books)	B
enough to fill one bookcase (26-100 books)	C
enough to fill two bookcases (101 - 200 books).....	D
enough to fill three or more bookcases (more than 200)	E

12. Do you have any of these items at your home?

Circle either A or B for each line.

		Yes	*No*
a)	calculator	A	B
b)	computer	A	B
c)	study desk/table for your use	A	B
d)	dictionary	A	B
e)	<country-specific>	A	B
f)	<country-specific>	A	B
g)	<country-specific>	A	B
h)	<country-specific>	A	B
i)	<country-specific>	A	B
j)	<country-specific>	A	B
k)	<country-specific>	A	B
l)	<country-specific>	A	B
m)	<country-specific>	A	B
n)	<country-specific>	A	B
o)	<country-specific>	A	B
p)	<country-specific>	A	B

13. My mother thinks it is important for me to...

Circle one letter, A, B, C, or D, for each line.

		strongly agree	*agree*	*disagree*	*strongly disagree*
a)	do well in science at school.	A	B	C	D
b)	do well in mathematics at school.	A	B	C	D
c)	do well in <language of test> at school.	A	B	C	D
d)	be good at sports.	A	B	C	D
e)	have time to have fun.	A	B	C	D
f)	be placed in <classes> with the high achieving students.	A	B	C	D

14. In my mathematics class...

Circle one letter, A, B, C, or D, for each line.

		strongly agree	*agree*	*disagree*	*strongly disagree*
a)	students often neglect their school work.	A	B	C	D
b)	students are orderly and quiet during <lessons> ...	A	B	C	D
c)	students do exactly as the teacher says.	A	B	C	D

15. Most of my friends think it is important to ...

Circle one letter, A, B, C, or D, for each line.

		strongly agree	*agree*	*disagree*	*strongly disagree*
a)	do well in science at school.	A	B	C	D
b)	do well in mathematics at school.	A	B	C	D
c)	do well in <language of test> at school.	A	B	C	D
d)	have time to have fun.	A	B	C	D
e)	be good at sports.	A	B	C	D
f)	be placed in <classes> with the high achieving students.	A	B	C	D

16. I think it is important to...

Circle one letter, A, B, C, or D, for each line.

		strongly agree	*agree*	*disagree*	*strongly disagree*
a)	do well in science at school.	A	B	C	D
b)	do well in mathematics at school.	A	B	C	D
c)	do well in <language of test> at school.	A	B	C	D
d)	have time to have fun.	A	B	C	D
e)	be good at sports.	A	B	C	D
f)	be placed in <classes> with the high achieving students.	A	B	C	D

17. How well do you usually do in mathematics and science at school?

Circle one letter, A, B, C, or D, for each line.

		strongly agree	*agree*	*disagree*	*strongly disagree*
a)	I usually do well in mathematics.	A	B	C	D
b)	I usually do well in biological science.	A	B	C	D
c)	I usually do well in earth science.	A	B	C	D
d)	I usually do well in physical science (chemistry/physics).	A	B	C	D

18. How often did any of these things happen last month in school?

Circle one letter, A, B, C, or D, for each line.

		never	*once or twice*	*3-4 times*	*5 or more*
a)	I skipped a class.	A	B	C	D
b)	Something of mine was stolen.	A	B	C	D
c)	I thought another student might hurt me.	A	B	C	D
d)	Some of my friends skipped classes.	A	B	C	D
e)	Some of my friends had things stolen.	A	B	C	D
f)	Some of my friends were hurt by other students. .	A	B	C	D

19. To do well in mathematics at school you need...

Circle one letter, A, B, C, or D, for each line.

		strongly agree	***agree***	***disagree***	***strongly disagree***
a)	lots of natural <talent/ability>.	A	B	C	D
b)	good luck.	A	B	C	D
c)	lots of hard work studying at home.	A	B	C	D
d)	to memorize the textbook or notes.	A	B	C	D

---

20. To do well in science at school you need...

Circle one letter, A, B, C, or D, for each line

		strongly agree	***agree***	***disagree***	***strongly disagree***
a)	lots of natural <talent/ability>.	A	B	C	D
b)	good luck.	A	B	C	D
c)	lots of hard work studying at home.	A	B	C	D
d)	to memorize the textbook or notes.	A	B	C	D

---

21. How much do you like...

Circle one letter, A, B, C, or D, for each line

		dislike a lot	***dislike***	***like***	***like a lot***
a)	mathematics?	A	B	C	D
b)	biological science?	A	B	C	D
c)	earth science?	A	B	C	D
d)	physical science (chemistry/physics)?	A	B	C	D

22. How much do you like using computers in...

Circle one letter, A, B, C, D, or E, for each line

		don't use computers	*dislike a lot*	*dislike*	*like*	*like a lot*
a)	mathematics classes?	A	B	C	D	E
b)	science classes?	A	B	C	D	E

23. What do you think about mathematics?

Circle one letter, A, B, C, or D, for each line.

		strongly agree	*agree*	*disagree*	*strongly disagree*
a)	I enjoy learning mathematics.	A	B	C	D
b)	Mathematics is boring.	A	B	C	D
c)	Mathematics is an easy subject.	A	B	C	D
d)	Mathematics is important to everyone's life.	A	B	C	D
e)	I would like a job that involved using mathematics	A	B	C	D

24. I need to do well in mathematics...

Circle one letter, A, B, C, or D, for each line.

		strongly agree	*agree*	*disagree*	*strongly disagree*
a)	to get the job I want	A	B	C	D
b)	to please my parent(s)	A	B	C	D
c)	to get into the <secondary school> or university I prefer	A	B	C	D
d)	to please myself	A	B	C	D

25. How often does this happen in your mathematics lessons?

Circle one letter, A, B, C, or D, for each line.

		almost always	*pretty often*	*once in a while*	*never*
a)	The teacher shows us how to do mathematics problems.	A	B	C	D
b)	We copy notes from the board.	A	B	C	D
c)	We have a quiz or test.	A	B	C	D
d)	We work from worksheets or textbooks on our own.	A	B	C	D
e)	We work on mathematics projects.	A	B	C	D
f)	We use calculators..	A	B	C	D
g)	We use computers.	A	B	C	D
h)	We work together in pairs or small groups.	A	B	C	D
i)	We use things from everyday life in solving mathematics problems.	A	B	C	D
j)	The teacher gives us homework.	A	B	C	D
k)	We can begin our homework in class.	A	B	C	D
l)	The teacher checks homework.	A	B	C	D
m)	We check each other's homework.	A	B	C	D
n)	We discuss our completed homework.	A	B	C	D

26. When we begin a new topic in mathematics, we begin by...

Circle one letter, A, B, C, or D, for each line.

		almost always	*pretty often*	*once in a while*	*never*
a)	having the teacher explain the rules and definitions	A	B	C	D
b)	discussing a practical or story problem related to everyday life	A	B	C	D
c)	working together in pairs or small groups on a problem or project	A	B	C	D
d)	having the teacher ask us what we know related to the new topic	A	B	C	D
e)	looking at the textbook while the teacher talks about it	A	B	C	D
f)	trying to solve an example related to the new topic	A	B	C	D

27a. Listed below are some of the world's environmental problems. How much do you think the application of science can help in addressing these problems?

Circle one letter, A, B, C, or D, for each line.

		not at all	*very little*	*some-what*	*a great deal*
a)	air pollution	A	B	C	D
b)	water pollution	A	B	C	D
c)	destruction of forests	A	B	C	D
d)	endangered species	A	B	C	D
e)	damage to the ozone layer	A	B	C	D
f)	problems from nuclear power plants	A	B	C	D

27b. Which one of the above problems concerns you most?

Write the letter here: _____

28. Which science(s) are you studying this year?

Circle the letter next to each science you are studying.

Biology	A	(Complete Questions #29 - 32)
Chemistry	B	(Complete Questions #33 - 36)
Earth Science	C	(Complete Questions #37 - 40)
Physics	D	(Complete Questions #41 - 44)

COMPLETE QUESTIONS ONLY FOR THOSE COURSES YOU ARE CURRENTLY TAKING.

FILL IN ONLY IF YOU ARE STUDYING BIOLOGY

29. What do you think about biology?

Circle one letter, A, B, C, or D, for each line.

		strongly agree	***agree***	***disagree***	***strongly disagree***
a)	I enjoy learning biology.	A	B	C	D
b)	Biology is boring.	A	B	C	D
c)	Biology is an easy subject.	A	B	C	D
d)	Biology is important to everyone's life.	A	B	C	D
e)	I would like a job that involved using biology.	A	B	C	D

30. I need to do well in biology...

Circle one letter, A, B, C, or D, for each line.

		strongly agree	***agree***	***disagree***	***strongly disagree***
a)	to get the job I want.	A	B	C	D
b)	to please my parents.	A	B	C	D
c)	to get into the <secondary school> or university I prefer.	A	B	C	D
d)	to please myself.	A	B	C	D

FILL IN ONLY IF YOU ARE STUDYING BIOLOGY

31. How often does this happen in your biology lessons?

Circle one letter, A, B, C, or D, for each line.

		almost always	*pretty often*	*once in a while*	*never*
a)	The teacher shows us how to do biology problems	A	B	C	D
b)	We copy notes from the board	A	B	C	D
c)	We have a quiz or test	A	B	C	D
d)	We work on biology projects	A	B	C	D
e)	We work from worksheets or textbooks on our own	A	B	C	D
f)	We use calculators	A	B	C	D
g)	We use computers	A	B	C	D
h)	We use things from every day life in solving biology problems	A	B	C	D
i)	We work together in pairs or small groups	A	B	C	D
j)	The teacher gives us homework	A	B	C	D
k)	We can begin our homework in class	A	B	C	D
l)	The teacher checks homework	A	B	C	D
m)	We check each other's homework	A	B	C	D
n)	We discuss our completed homework	A	B	C	D
o)	The teacher gives a demonstration of an experiment	A	B	C	D
p)	We ourselves do an experiment or practical investigation in class	A	B	C	D

FILL IN ONLY IF YOU ARE STUDYING BIOLOGY

32. When we begin a new topic in biology, we begin by...

Circle one letter, A, B, C, or D, for each line.

		almost always	*pretty often*	*once in a while*	*never*
a)	having the teacher explain the rules and definitions.	A	B	C	D
b)	discussing a practical or story problem related to everyday life.	A	B	C	D
c)	working together in small groups on a problem or project.	A	B	C	D
d)	having the teacher ask us what we know related to the new topic.	A	B	C	D
e)	looking at the textbook while the teacher talks about it.	A	B	C	D
f)	trying to solve an example related to the new topic.	A	B	C	D

FILL IN ONLY IF YOU ARE STUDYING CHEMISTRY

33. What do you think about chemistry?

Circle one letter, A, B, C, or D, for each line.

		strongly agree	*agree*	*disagree*	*strongly disagree*
a)	I enjoy learning chemistry.	A	B	C	D
b)	Chemistry is boring.	A	B	C	D
c)	Chemistry is an easy subject.	A	B	C	D
d)	Chemistry is important to everyone's life.	A	B	C	D
e)	I would like a job that involved using chemistry.	A	B	C	D

34. I need to do well in chemistry...

Circle one letter, A, B, C, or D, for each line.

		strongly agree	*agree*	*disagree*	*strongly disagree*
a)	to get the job I want.	A	B	C	D
b)	to please my parents.	A	B	C	D
c)	to get into the <secondary school> or university I prefer.	A	B	C	D
d)	to please myself.	A	B	C	D

FILL IN ONLY IF YOU ARE STUDYING CHEMISTRY

35. How often does this happen in chemistry lessons?

Circle one letter, A, B, C, or D, for each line.

		almost always	*pretty often*	*once in a while*	*never*
a)	The teacher shows us how to do chemistry problems	A	B	C	D
b)	We copy notes from the board	A	B	C	D
c)	We have a quiz or test	A	B	C	D
d)	We work on chemistry projects	A	B	C	D
e)	We work from worksheets or textbooks on our own	A	B	C	D
f)	We use calculators	A	B	C	D
g)	We use computers	A	B	C	D
h)	We use things from every day life in solving chemistry problems	A	B	C	D
i)	We work together in pairs or small groups	A	B	C	D
j)	The teacher gives us homework	A	B	C	D
k)	We can begin our homework in class	A	B	C	D
l)	The teacher checks homework	A	B	C	D
m)	We check each other's homework	A	B	C	D
n)	We discuss our completed homework	A	B	C	D
o)	The teacher gives a demonstration of an experiment	A	B	C	D
p)	We ourselves do an experiment or practical investigation in class	A	B	C	D

FILL IN ONLY IF YOU ARE STUDYING CHEMISTRY

36. When we begin a new topic in chemistry, we begin by...

Circle one letter, A, B, C, or D, for each line.

		almost always	*pretty often*	*once in a while*	*never*
a)	having the teacher explain the rules and definitions.	A	B	C	D
b)	discussing a practical or story problem related to everyday life.	A	B	C	D
c)	working together in small groups on a problem or project.	A	B	C	D
d)	having the teacher ask us what we know related to the new topic.	A	B	C	D
e)	looking at the textbook while the teacher talks about it.	A	B	C	D
f)	trying to solve an example related to the new topic.	A	B	C	D

FILL IN ONLY IF YOU ARE STUDYING EARTH SCIENCE

37. What do you think about earth science?

Circle one letter, A, B, C, or D, for each line.

		strongly agree	***agree***	***disagree***	***strongly disagree***
a)	I enjoy learning earth science.	A	B	C	D
b)	Earth science is boring.	A	B	C	D
c)	Earth science is an easy subject.	A	B	C	D
d)	Earth science is important to everyone's life.	A	B	C	D
e)	I would like a job that involved using earth science.	A	B	C	D

38. I need to do well in earth science...

Circle one letter, A, B, C, or D, for each line.

		strongly agree	***agree***	***disagree***	***strongly disagree***
a)	to get the job I want.	A	B	C	D
b)	to please my parents.	A	B	C	D
c)	to get into the <secondary school> or university I prefer.	A	B	C	D
d)	to please myself.	A	B	C	D

FILL IN ONLY IF YOU ARE STUDYING EARTH SCIENCE

39. How often does this happen in your earth science lessons?

Circle one letter, A, B, C, or D, for each line.

		almost always	*pretty often*	*once in a while*	*never*
a)	The teacher shows us how to do earth science problems	A	B	C	D
b)	We copy notes from the board	A	B	C	D
c)	We have a quiz or test	A	B	C	D
d)	We work on earth science projects	A	B	C	D
e)	We work from worksheets or textbooks on our own	A	B	C	D
f)	We use calculators	A	B	C	D
g)	We use computers	A	B	C	D
h)	We use things from every day life in solving earth science problems	A	B	C	D
i)	We work together in pairs or small groups	A	B	C	D
j)	The teacher gives us homework	A	B	C	D
k)	We can begin our homework in class	A	B	C	D
l)	The teacher checks homework	A	B	C	D
m)	We check each other's homework	A	B	C	D
n)	We discuss our completed homework	A	B	C	D
o)	The teacher gives a demonstration of an experiment	A	B	C	D
p)	We ourselves do an experiment or practical investigation in class	A	B	C	D

FILL IN ONLY IF YOU ARE STUDYING EARTH SCIENCE

40. When we begin a new topic in earth science, we begin by...

Circle one letter, A, B, C, or D, for each line.

		almost always	*pretty often*	*once in a while*	*never*
a)	having the teacher explain the rules and definitions.	A	B	C	D
b)	starting with a practical or story problem related to everyday life.	A	B	C	D
c)	working together in small groups on a problem or project.	A	B	C	D
d)	having the teacher ask us what we know related to the new topic.	A	B	C	D
e)	looking at the textbook while the teacher talks about it.	A	B	C	D
f)	trying to solve an example related to the new topic.	A	B	C	D

FILL IN ONLY IF YOU ARE STUDYING PHYSICS

41. What do you think about physics?

Circle one letter, A, B, C, or D, for each line.

		strongly agree	*agree*	*disagree*	*strongly disagree*
a)	I enjoy learning physics.	A	B	C	D
b)	Physics is boring.	A	B	C	D
c)	Physics is an easy subject.	A	B	C	D
d)	Physics is important to everyone's life.	A	B	C	D
e)	I would like a job that involved using physics.	A	B	C	D

42. I need to do well in physics...

Circle one letter, A, B, C, or D, for each line.

		strongly agree	*agree*	*disagree*	*strongly disagree*
a)	to get the job I want.	A	B	C	D
b)	to please my parents.	A	B	C	D
c)	to get into the <secondary school> or university I prefer.	A	B	C	D
d)	to please myself.	A	B	C	D

FILL IN ONLY IF YOU ARE STUDYING PHYSICS

43. How often does this happen in your physics lessons?

Circle one letter, A, B, C, or D, for each line.

		almost always	*pretty often*	*once in a while*	*never*
a)	The teacher shows us how to do physics problems	A	B	C	D
b)	We copy notes from the board	A	B	C	D
c)	We have a quiz or test	A	B	C	D
d)	We work on physics projects	A	B	C	D
e)	We work from worksheets or textbooks on our own	A	B	C	D
f)	We use calculators	A	B	C	D
g)	We use computers	A	B	C	D
h)	We use things from every day life in solving physics problems	A	B	C	D
i)	We work together in pairs or small groups	A	B	C	D
j)	The teacher gives us homework	A	B	C	D
k)	We can begin our homework in class	A	B	C	D
l)	The teacher checks homework	A	B	C	D
m)	We check each other's homework	A	B	C	D
n)	We discuss our completed homework	A	B	C	D
o)	The teacher gives a demonstration of an experiment	A	B	C	D
p)	We ourselves do an experiment or practical investigation in class	A	B	C	D

FILL IN ONLY IF YOU ARE STUDYING PHYSICS

44. When we begin a new topic in physics, we begin by...

Circle one letter, A, B, C, or D, for each line.

		almost always	*pretty often*	*once in a while*	*never*
a)	having the teacher explain the rules and definitions.	A	B	C	D
b)	discussing a practical or story problem related to everyday life.	A	B	C	D
c)	working together in small groups on a problem or project.	A	B	C	D
d)	having the teacher ask us what we know related to the new topic.	A	B	C	D
e)	looking at the textbook while the teacher talks about it.	A	B	C	D
f)	trying to solve an example related to the new topic.	A	B	C	D

THANK YOU for the thought and effort you have put into answering these questions. We wish you well in all that you do.

INTERNATIONAL OPTION

45. Outside of school, how often do you do these activities?

Circle one letter, A, B, C, or D, for each line.

		about every day	*about once a week*	*about once a month*	*rarely*
a)	read a book or magazine	A	B	C	D
b)	visit a museum or art exhibition	A	B	C	D
c)	attend a concert	A	B	C	D
d)	go to the theatre	A	B	C	D
e)	go to the movies	A	B	C	D

46. Outside of school, how often do you watch the following kinds of programs on television or video?

Circle one letter, A, B, C, or D, for each line.

		about every day	*about once a week*	*about once a month*	*rarely*
a)	news or documentaries	A	B	C	D
b)	opera, ballet or classical music	A	B	C	D
c)	nature, wildlife or history	A	B	C	D
d)	popular music	A	B	C	D
e)	sports	A	B	C	D
f)	video games	A	B	C	D
g)	cartoons	A	B	C	D
h)	comedy, adventure or suspense	A	B	C	D

STOP

There are no more questions in this booklet

If you have finished answering this booklet before the time is over then you may go back and review your answers. Thank you for taking the time to answer these questions carefully.

Section 3

Mathematics Teacher Background Questionnaire (TQM2)

Identification Label

School ID :
Stratum ID:
Teacher ID: **Link:**
Name:
Class ID:
Name of Class:
Subject: **Grade:**

IEA Third International Mathematics and Science Study

Teacher Questionnaire (Mathematics) Population 2

Your school has agreed to participate in the Third International Mathematics and Science Study (TIMSS), an educational research project sponsored by the International Association for the Evaluation of Educational Achievement (IEA). TIMSS is investigating mathematics and science achievement in over fifty educational systems around the world. It is designed to measure and interpret differences in national educational systems in order to help improve the teaching and learning of mathematics and science worldwide.

This questionnaire is addressed to teachers of mathematics, who are asked to supply information about their academic and professional backgrounds, instructional practices, and attitudes towards teaching mathematics. Since your class has been selected as part of a nationwide sample, your responses are very important in helping to describe mathematics classes in <country>.

Some of the questions in this questionnaire ask about **your mathematics class**. This is the class which is identified at the top of this page, and which will be tested as part of TIMSS in your school.

It is important that you answer each question carefully so that the information provided reflects your situation as accurately as possible. It is estimated that it will require approximately 60 minutes to complete this questionnaire.

Your cooperation in completing this questionnaire is greatly appreciated.

TIMSS Study Center
Boston College
Chestnut Hill, MA 02167
USA

(Institute Address)

Doc. Ref.: ICC880/NRC417

GENERAL DIRECTIONS:

1. Identify a place and a time when you will be able to complete this questionnaire without being interrupted. This questionnaire has been designed to be completed within 60 minutes by most teachers. However, the amount of time you will need may vary. To make it as easy as possible for you to respond, most items may be completed simply by checking the appropriate box.

2. There are no "right" or "wrong" answers to any of these items. The questionnaire is designed to provide information about teachers' professional experiences, opinions, and classroom activities.

3. Several items ask you to think of a recent class <hour/period> as you respond. In responding to these items, choose a recent class <hour/period> which you can recall in some detail and which was fairly typical of what occurs in your classroom (i.e., a class <hour/period> which was not affected by special events such as assemblies, guests, student testing other than short quizzes, or any other unusual circumstances).

   Remember, "your mathematics class" is the class which is identified on the cover of this questionnaire, and which will be tested as part of TIMSS in your school.

4. More specific instructions to assist you in responding are found in *italics* for each item. Once you have completed the questionnaire, place it into the return envelope provided and return it to:

<Country Specific Information>

Again, thank you for your time, effort and thought in completing this questionnaire!

Section A

1. How old are you?

Check one box only.

- under 25 ..... ☐
- 25-29 ..... ☐
- 30-39 ..... ☐
- 40-49 ..... ☐
- 50-59 ..... ☐
- 60 or more ..... ☐

2. Are you female or male?

Check one box only.

- female ..... ☐
- male ..... ☐

3. What is the highest level of formal education you have completed?

Check one box only.

- <TEACHER TRAINING W/O COMPLETING SECONDARY> ..... ☐
- <SECONDARY ONLY> ..... ☐
- <SECONDARY + 1 OR 2 YEAR TEACHER TRAINING> ..... ☐
- <SECONDARY AND 3 OR 4 YEAR TEACHER TRAINING> ..... ☐
- <BA OR EQUIVALENT + NO TEACHER TRAINING> ..... ☐
- <BA OR EQUIVALENT + TEACHER TRAINING> ..... ☐
- <MA/PHD WITH NO TEACHER TRAINING> ..... ☐
- <MA/PHD + TEACHER TRAINING> ..... ☐

4. At which grade levels are you teaching <u>Mathematics</u> during this school year?

NRC Note: <List only country-specific grades and their appropriate designations.>

Check one box in each row.

☐ Do not teach mathematics this year

		Yes	*No*
a)	<PRE-KINDERGARTEN>	☐	☐
b)	<KINDERGARTEN>	☐	☐
c)	<GRADE 1>	☐	☐
d)	<GRADE 2>	☐	☐
e)	<GRADE 3>	☐	☐
f)	<GRADE 4>	☐	☐
g)	<GRADE 5>	☐	☐
h)	<GRADE 6>	☐	☐
i)	<GRADE 7>	☐	☐
j)	<GRADE 8>	☐	☐
k)	<GRADE 9>	☐	☐
l)	<GRADE 10>	☐	☐
m)	<GRADE 11>	☐	☐
n)	<GRADE 12>	☐	☐
o)	<GRADE 13>	☐	☐

5. At which grade levels are you teaching <u>Science</u> during this school year?

NRC Note: <List only country-specific grades and their appropriate designations.>

Check one box in each row.

☐ Do not teach science this year

		Yes	*No*
a)	<PRE-KINDERGARTEN>	☐	☐
b)	<KINDERGARTEN>	☐	☐
c)	<GRADE 1>	☐	☐
d)	<GRADE 2>	☐	☐
e)	<GRADE 3>	☐	☐
f)	<GRADE 4>	☐	☐
g)	<GRADE 5>	☐	☐
h)	<GRADE 6>	☐	☐
i)	<GRADE 7>	☐	☐
j)	<GRADE 8>	☐	☐
k)	<GRADE 9>	☐	☐
l)	<GRADE 10>	☐	☐
m)	<GRADE 11>	☐	☐
n)	<GRADE 12>	☐	☐
o)	<GRADE 13>	☐	☐

6. Do you teach part-time or full-time?

Check one.

Part-time ..... ☐

Full-time ..... ☐

7. By the end of this school year how many years will you have been teaching altogether?

Please round to the nearest whole number. ..... _____

8. At which of these grade levels have you taught in the past 5 years?

NRC Note: <List only country-specific grades and their appropriate designations.>

Check one box in each row.

		Yes	***No***
a)	<PRE-KINDERGARTEN>	☐	☐
b)	<KINDERGARTEN>	☐	☐
c)	<GRADE 1>	☐	☐
d)	<GRADE 2>	☐	☐
e)	<GRADE 3>	☐	☐
f)	<GRADE 4>	☐	☐
g)	<GRADE 5>	☐	☐
h)	<GRADE 6>	☐	☐
i)	<GRADE 7>	☐	☐
j)	<GRADE 8>	☐	☐
k)	<GRADE 9>	☐	☐
l)	<GRADE 10>	☐	☐
m)	<GRADE 11>	☐	☐
n)	<GRADE 12>	☐	☐
o)	<GRADE 13>	☐	☐

9. For how many single <hours/periods> are you formally <scheduled/time-tabled> to teach each of the following subjects during the school week?

NCR Note: <List only the generic science courses appropriate for your country>

Count a double <hour/period> as two single <hours/periods>.
Write zero if none.

		Number of Single <hours/periods>
a)	mathematics	_____
b)	<GENERAL/INTEGRATED SCIENCE>	_____
c)	<PHYSICAL SCIENCE>	_____
d)	<EARTH SCIENCE>	_____
e)	<LIFE SCIENCE>	_____
f)	<BIOLOGY>	_____
g)	<CHEMISTRY>	_____
h)	<PHYSICS>	_____
i)	other subjects	_____

10. For how many single <hours/periods> are you formally <scheduled/time-tabled> to perform each of the following tasks during the school week?

NCR Note: <List only the generic science courses appropriate for your country>

Count a double <hour/period> as two single <hours/periods>.
Write zero if none.

		Number of Single <hours/periods>
a)	student supervision	_____
b)	student counselling/appraisal	_____
c)	administrative duties	_____
d)	individual curriculum planning	_____
e)	cooperative curriculum planning	_____
f)	other non-student contact time (i.e., use not specified)	_____

11. For how many single <hours/periods> are you <scheduled/ time-tabled> in one school week altogether?

Write in number ..... _____ *<hours/periods>*

12. APPROXIMATELY how many hours per week do you normally spend on each of the following activities outside the formal school day?

Check one box in each row.

		none	*less than 1 hour*	*1 - 2 hours*	*3 - 4 hours*	*more than 4 hours*
a)	preparing or grading student tests or exams	☐	☐	☐	☐	☐
b)	reading and grading other student work	☐	☐	☐	☐	☐
c)	planning lessons by yourself	☐	☐	☐	☐	☐
d)	meeting with students outside of classroom time (e.g., tutoring, guidance)	☐	☐	☐	☐	☐
e)	meeting with parents	☐	☐	☐	☐	☐
f)	professional reading and development activity (e.g., seminars, conferences, etc.)	☐	☐	☐	☐	☐
g)	keeping students' records up to date	☐	☐	☐	☐	☐
h)	administrative tasks including staff meetings (e.g. photocopying, displaying students' work) .	☐	☐	☐	☐	☐

13. About how often do you have meetings with other teachers in your subject area to discuss and plan curriculum or teaching approaches?

Check one box only.

never ..... ☐

once or twice a year ..... ☐

every other month ..... ☐

once a month ..... ☐

once a week ..... ☐

two or three times a week ..... ☐

almost every day ..... ☐

14. How much influence do you have on each of the following...

Check one box in each row.

		none	*little*	*some*	*a lot*
a)	subject matter to be taught	☐	☐	☐	☐
b)	specific textbooks to be used	☐	☐	☐	☐
c)	the amount of money to be spent on supplies	☐	☐	☐	☐
d)	what supplies are purchased	☐	☐	☐	☐

15. To be good at mathematics at school, how important do you think it is for students to...

Check one box in each row.

		not important	*somewhat important*	*very important*
a)	remember formulas and procedures.....	☐	☐	☐
b)	think in a sequential and procedural manner.	☐	☐	☐
c)	understand mathematical concepts, principles, and strategies.	☐	☐	☐
d)	be able to think creatively.	☐	☐	☐
e)	understand how mathematics is used in the real world.	☐	☐	☐
f)	be able to provide reasons to support their solutions. ...	☐	☐	☐

16. To what extent do you agree or disagree with each of the following statements?

Check one box in each row.

		strongly disagree	*disagree*	*agree*	*strongly agree*
a)	Mathematics is primarily an abstract subject.	☐	☐	☐	☐
b)	Mathematics is primarily a formal way of representing the real world.	☐	☐	☐	☐
c)	Mathematics is primarily a practical and structured guide for addressing real situations.	☐	☐	☐	☐
d)	If students are having difficulty, an effective approach is to give them more practice by themselves during the class.	☐	☐	☐	☐
e)	Some students have a natural talent for mathematics and others do not.	☐	☐	☐	☐
f)	More than one representation (picture, concrete material, symbol set, etc.) should be used in teaching a mathematics topic.	☐	☐	☐	☐
g)	Mathematics should be learned as sets of algorithms or rules that cover all possibilities.	☐	☐	☐	☐
h)	Basic computational skills on the part of the teacher are sufficient for teaching <PRIMARY SCHOOL> mathematics.	☐	☐	☐	☐
i)	A liking for and understanding of students are essential for teaching mathematics.	☐	☐	☐	☐

17. Indicate your familiarity with each of the following documents:

NRC Note: <Include country-specific appropriate options only>

Check one box in each row.

		no such document	***not familiar***	***fairly familiar***	***very familiar***
a)	<THE NATIONAL CURRICULUM GUIDE FOR MATHEMATICS>	☐	☐	☐	☐
b)	<THE REGIONAL CURRICULUM GUIDE(S) FOR MATHEMATICS>	☐	☐	☐	☐
c)	<THE SCHOOL CURRICULUM GUIDE>	☐	☐	☐	☐
d)	<THE NATIONAL EXAMINATION SPECIFICATIONS>	☐	☐	☐	☐
e)	<THE REGIONAL EXAMINATION SPECIFICATIONS>	☐	☐	☐	☐
f)	<THE NATIONAL PEDAGOGY GUIDE FOR MATHEMATICS>	☐	☐	☐	☐
g)	<THE REGIONAL PEDAGOGY GUIDE FOR MATHEMATICS>	☐	☐	☐	☐

International Option

18. Was Teaching your first choice as a career when beginning university or teacher education college?

Check only one box ..... *Yes* ☐ *No* ☐

19. Would you change to another career if you had the opportunity?

Check only one box ..... *Yes* ☐ *No* ☐

20. Do you think that society appreciates your work?

Check only one box ..... *Yes* ☐ *No* ☐

21. Do you think your students appreciate your work?

Check only one box ..... *Yes* ☐ *No* ☐

22. Approximately how many books are in your home?

(Do not count magazines or newspapers.)

Check one box only.

none or very few (0-10) ..... ☐
enough to fill a shelf (11-25) ..... ☐
enough to fill a bookcase (26-100) ..... ☐
enough to fill two bookcases (101-200) ..... ☐
enough to fill three or more bookcases (more than 200) ..... ☐

23. Please rank the following professions in order of social status. Assign a rank of '1' to the profession with the highest social status, and ' 9' to the profession with the lowest status.

a) accountant ..... _____
b) <medical doctor> ..... _____
c) lawyer ..... _____
d) engineer ..... _____
e) nurse ..... _____
f) senior <civil servant> ..... _____
g) teacher, primary school ..... _____
h) teacher, secondary school ..... _____
i) <unskilled worker> ..... _____

THERE ARE NO QUESTIONS ON THIS PAGE

Section B

In this section, many of the questions refer to “your mathematics class.” Please remember that this is the class which is identified on the cover of this questionnaire, and which will be tested as part of TIMSS in your school.

1. How many students are in your mathematics class?

Write in a number for each. Write 0 (zero) if there are none.

boys _____ girls _____

2. Compared with other students in <country> at this grade level, estimate what percent of students in your class have:

Please write a number.

high achievement levels (i.e. in the top third nationally) ..... _____ %

middle achievement levels (middle third nationally) ..... _____ %

low achievement levels (bottom third nationally) ..... _____ %

TOTAL 100%

3. How many minutes per week do you teach mathematics to your mathematics class?

Minutes: _____

NRC Note: **TEXTBOOKS** <Insert the country specific textbook list used in the TIMSS document analysis. If the TIMSS document analysis list is not exhaustive of all texts used in your country, use the open-ended question (option 2). The open-ended option may be used alone or in conjunction with the TIMSS document analysis list.>

4. Do you use a textbook in teaching mathematics to your class?

Check one box.

Yes ☐ No ☐

Option 1

If YES, which of the following textbooks do you use most?

		Yes	***No***
a)	<COUNTRY SPECIFIC TEXT>	☐	☐
b)	<COUNTRY SPECIFIC TEXT>	☐	☐
c)	<COUNTRY SPECIFIC TEXT>	☐	☐
d)	<COUNTRY SPECIFIC TEXT>	☐	☐

Option 2

If YES, write in the title, author, etc. of the textbook you use most.

Title: _____

Author (Publisher): _____

Year: _____

Other: _____

5. Approximately what percentage of your weekly mathematics teaching time is based on the text(s) indicated in the previous question?

Check one box.

- 0 - 25% ☐
- 26 - 50% ☐
- 51 - 75% ☐
- 76 - 100% ☐

6. What do you use in the place of or in addition to a textbook?

Write in.

7. In your view to what extent do the following limit how you teach your mathematics class?

Check one box in each row.

		not at all	*a little*	*quite a lot*	*a great deal*
a)	students with different academic abilities	☐	☐	☐	☐
b)	students who come from a wide range of backgrounds, (e.g., economic, language)	☐	☐	☐	☐
c)	students with special needs, (e.g., hearing, vision, speech impairment, physical disabilities, mental or emotional/psychological impairment)	☐	☐	☐	☐
d)	uninterested students	☐	☐	☐	☐
e)	disruptive students	☐	☐	☐	☐
f)	parents interested in their children's learning and progress	☐	☐	☐	☐
g)	parents uninterested in their children's learning and progress	☐	☐	☐	☐
h)	shortage of computer hardware	☐	☐	☐	☐
i)	shortage of computer software	☐	☐	☐	☐
j)	shortage of other instructional equipment for students' use	☐	☐	☐	☐
k)	shortage of equipment for your use in demonstrations and other exercises	☐	☐	☐	☐
l)	inadequate physical facilities	☐	☐	☐	☐
m)	high student/teacher ratio	☐	☐	☐	☐
n)	low morale among fellow teachers/administrators	☐	☐	☐	☐
o)	low morale among students	☐	☐	☐	☐
p)	threat(s) to personal safety or the safety of students	☐	☐	☐	☐

8. How many of your students have access to calculators during mathematics lessons?

Check one box.

Almost all ..... ☐
About three quarters ..... ☐
About half ..... ☐
About one quarter ..... ☐
None ..... ☐

9. How often do students in your mathematics class use calculators for the following activities?

Check one box for each row.

	almost every day	*once or twice a week*	*once or twice a month*	*never, or hardly ever*
a) Checking answers	☐	☐	☐	☐
b) Tests and exams	☐	☐	☐	☐
c) Routine computation	☐	☐	☐	☐
d) Solving complex problems	☐	☐	☐	☐
e) Exploring number concepts	☐	☐	☐	☐

10. When planning mathematics lessons, how much do you rely on...

Check one box in each row.

	never	*rarely*	*sometimes*	*always*
a) your own previously prepared lessons	☐	☐	☐	☐
b) a written plan compiled by teachers in the school	☐	☐	☐	☐
c) other teachers or math specialists in your school/department	☐	☐	☐	☐
d) student textbooks	☐	☐	☐	☐
e) other textbooks or resource books	☐	☐	☐	☐
f) teacher guides or teacher edition of textbook ...	☐	☐	☐	☐
g) external examinations or standardized tests	☐	☐	☐	☐

11. In planning mathematics lessons, what is your main source of written information when...

NRC Note: <List only country-specific appropriate options.>

Check one box in each row.

	<***National or Regional Examination Specifications***>	<***National or Regional Curriculum Guide***>	<***School Curriculum Guide***>	***Teacher Edition of Textbook***	***Student Edition of Textbook***	***Other Resource Books***
a) deciding which topics to teach (goals)	☐	☐	☐	☐	☐	☐
b) deciding how to present a topic	☐	☐	☐	☐	☐	☐
c) selecting problems and exercises for work in class and homework	☐	☐	☐	☐	☐	☐
d) selecting problems and applications for assessment and evaluation	☐	☐	☐	☐	☐	☐

Mathematics Topics

On the following pages there is a list of mathematics topics. Each topic is illustrated by a short list of subtopics. Not all topics are necessarily appropriate for your class. Nevertheless, please respond to the entire list so that we may obtain an indication of topics covered in your class that is as complete and accurate as possible.

- *Before marking anything, read quickly through the entire list to obtain an idea of where various topics may be found. Be sure to read the four examples on the next page.*
- *If you **have taught** a topic to your class, check the appropriate box indicating the total number of <periods> in which the topic was taught. Four choices are provided: 1-5 <periods>, 6-10 <periods>, 11-15 <periods>, and > 15 (i.e., more than 15) <periods>.*
- *If you **will continue to teach or begin teaching** a topic in future lessons this year, check the box in the "will teach later this year" column.*
- *If you have **not taught** a topic and will not teach it this year to your class, check the box in the "not taught this year" column.*
- *If you know that a topic was taught to your students in a **previous year,** check the box in the "taught in a previous year" column.*
- *If you have taught ANY of the subtopics listed under a major topic, indicate that you have taught that major topic area. Subtopics are listed for illustration purposes.*
- *For a few main topics, you are asked to indicate whether you have taught certain subtopics as well as the main topic, since these subtopics are of special interest in this study.*

EXAMPLES:

NRC Note: <Use country-specific appropriate designation for class <period/hour>.

How long did you spend teaching each of these topics to your class this year? Will you cover any of these topics in future <periods>?

Check as many boxes as apply for each topic listed.

	have taught this year <period> completed				*will teach later this year*	*not taught this year*	*taught a previous year*
	1-5	*6-10*	*11-15*	*> 15*			
Example 1. You have not taught this topic and will not teach it this year:							
a) Sets & Logic ..... Sets, set notation and set operations; classification; logic and truth tables	☐	☐	☐	☐	☐	☒	☐
Example 2. You've taught this topic in 2 class <periods> and know it was taught in a previous year:							
b) Problem Solving Strategies ..... Problem solving heuristics and strategies	☒	☐	☐	☐	☐	☐	☒
Example 3. You've taught this topic in 8 class <periods> and will teach it in future <periods>:							
c) Percentages ..... Concepts of percentage; computations with percentage; types of percentage problems	☐	☒	☐	☐	☒	☐	☐
Example 4. You have not taught this topic but will teach it in future <periods>:							
d) Estimation & Error of Measurements ... Estimation of measurements other than perimeter and area; precision and accuracy; errors of measurement	☐	☐	☐	☐	☒	☐	☐

12. How long did you spend teaching each of these topics to your mathematics class this year? Will you cover any of these topics in future <periods>?

Check as many boxes as apply for each topic listed.

TOPIC	*have taught this year <period> completed*				*will teach later this year*	*not taught this year*	*taught a previous year*
	1-5	*6-10*	*11-15*	*> 15*			
a) Whole Numbers ..... *Indicate your coverage both at the main topic level and for each of the following subtopics.*	☐	☐	☐	☐	☐	☐	☐
1. Meaning of whole numbers; place value and numeration	☐	☐	☐	☐	☐	☐	☐
2. Operations with and properties of whole numbers	☐	☐	☐	☐	☐	☐	☐
b) Common & Decimal Fractions ..... *Indicate your coverage both at the main topic level and for each of the following subtopics.*	☐	☐	☐	☐	☐	☐	☐
1. Meaning, Representation and Uses of Common Fractions	☐	☐	☐	☐	☐	☐	☐
2. Properties of Common Fractions	☐	☐	☐	☐	☐	☐	☐
3. Meaning, Representation and Uses of Decimal Fractions	☐	☐	☐	☐	☐	☐	☐
4. Properties of Decimal Fractions	☐	☐	☐	☐	☐	☐	☐
5. Relationships Between Common and Decimal Fractions	☐	☐	☐	☐	☐	☐	☐
6. Conversion of Equivalent Forms	☐	☐	☐	☐	☐	☐	☐
7. Ordering of Fractions (Common And Decimals)	☐	☐	☐	☐	☐	☐	☐
c) Percentages ..... Concepts of percentage; computations with percentage; types of percentage problems	☐	☐	☐	☐	☐	☐	☐
d) Number Sets & Concepts ..... Uses, properties, and computations with integers (negative as well as positive), rational numbers (including negative fractions), real numbers complex numbers; number bases other than ten; exponents, roots and radicals	☐	☐	☐	☐	☐	☐	☐
e) Number Theory ..... Prime and composite numbers; factorizations of whole numbers; greatest common divisors; least common multiples; permutations; combinations; systematic counting of possibilities and so on	☐	☐	☐	☐	☐	☐	☐

TOPIC	*have taught this year <period> completed* 1-5	6-10	11-15	> 15	*will teach later this year*	*not taught this year*	*taught a previous year*
f) Estimation & Number Sense ..... Estimating quantity and size; rounding and significant figures, estimating the results of computations (including mental arithmetic and reasonableness of results); scientific notation and orders of magnitude	☐	☐	☐	☐	☐	☐	☐
g) Measurement Units & Processes ..... Ideas and units of measurement; standard metric units; length, area, volume, capacity, time, money and so on; use of measurement instruments	☐	☐	☐	☐	☐	☐	☐
h) Estimation & Error of Measurements ... Estimation of measurements other than perimeter and area; precision and accuracy; errors of measurement	☐	☐	☐	☐	☐	☐	☐
i) Perimeter, Area, & Volume ..... Perimeter & area of triangles, quadrilaterals, polygons, circles & other two-dimensional shapes; Calculating, estimating, & solving problems involving perimeters and areas; Surface area and volume	☐	☐	☐	☐	☐	☐	☐
j) Basics of One & Two Dimensional Geometry ..... Number lines and graphs in one and two dimensions; triangles, quadrilaterals, other polygons, and circles; equations of straight lines; Pythagorean Theorem	☐	☐	☐	☐	☐	☐	☐
k) Geometric Congruence & Similarity ..... Concepts, properties and uses of congruent and similar figures, especially for triangles, quadrilaterals, other polygons and plane shapes	☐	☐	☐	☐	☐	☐	☐
l) Geometric Transformations & Symmetry Geometric patterns; tessellations; kinds of symmetry in geometric figures, symmetry of number patterns; transformations of all types and their representations; algebraic structure and properties of sets of transformations	☐	☐	☐	☐	☐	☐	☐
m) Constructions & Three Dimensional Geometry ..... Constructions with compass and straightedge; conic sections; three-dimensional shapes, surfaces and their properties; lines and planes in space; spatial perception and visualization; coordinate graphs and vectors in three dimensions	☐	☐	☐	☐	☐	☐	☐

TOPIC	*have taught this year <period> completed* 1-5	6-10	11-15	> 15	*will teach later this year*	*not taught this year*	*taught a previous year*
n) Ratio & Proportion	☐	☐	☐	☐	☐	☐	☐
Indicate your coverage both at the main topic level and for each of the following subtopics.							
1. Concepts and Meaning	☐	☐	☐	☐	☐	☐	☐
2. Applications and Uses ..... Maps and models; solving practical problems based on proportionality; solving proportional equations	☐	☐	☐	☐	☐	☐	☐
o) Proportionality: Slope, Trigonometry & Interpolation	☐	☐	☐	☐	☐	☐	☐
Indicate your coverage both at the main topic level and for each of the following subtopics.							
1. Slope and Trigonometry ..... Slope; trigonometric ratios; solving triangles and problems involving triangles including the rules of sines and of cosines	☐	☐	☐	☐	☐	☐	☐
2. Linear Interpolation and Extrapolation .	☐	☐	☐	☐	☐	☐	☐
p) Functions, Relations, & Patterns ..... Number patterns; relations ,their properties and graphs; types of function (linear, quadratic, exponential, trigonometric, inverse, etc.); operations on functions; relations of functions and equations (roots, zeros, etc.); problems involving functions	☐	☐	☐	☐	☐	☐	☐
q) Equations, Inequalities, & Formulas	☐	☐	☐	☐	☐	☐	☐
Indicate your coverage both at the main topic level and for each of the following subtopics.							
1. Linear Equations and Formulas..... Representing situations algebraically; work with formulas other than measurement formulas; algebraic expressions & working with them (Factoring, polynomial operations, etc.); solving linear equations	☐	☐	☐	☐	☐	☐	☐
2. Other Equations and Formulas ..... Solving various types of equations (quadratic, radical, trigonometric, logarithmic, etc.); inequalities; systems of equations; systems of inequalities	☐	☐	☐	☐	☐	☐	☐

TOPIC	*have taught this year <period> completed* 1-5	6-10	11-15	> 15	*will teach later this year*	*not taught this year*	*taught a previous year*
r) Statistics & Data ..... Collecting data from experiments & surveys; representing & interpreting data in tables, charts, graphs, etc.; nominal, ordinal, etc., scales; means, medians & other measures of central tendency; variance, standard deviations & other measure of dispersion; sampling, randomness & bias; prediction & inferences from data; regression & fitting lines & curves to data; correlation's & other measures of relationship; use & misuse of statistics in analyzing data	☐	☐	☐	☐	☐	☐	☐
s) Probability & Uncertainty ..... Informal language of 'more likely,' 'less likely', etc.; probability models & numerical probability; all other aspects of probability & probability distributions for random variables; expectations, parameter estimation, hypothesis testing, confidence intervals, & related statistical topics	☐	☐	☐	☐	☐	☐	☐
t) Sets & Logic ..... Sets, set notation and set operations; classification; logic and truth tables	☐	☐	☐	☐	☐	☐	☐
u) Problem Solving Strategies ..... Problem solving heuristics and strategies	☐	☐	☐	☐	☐	☐	☐
v) Other Mathematics Content ..... Mark here for all content you covered that was not in one of the earlier categories. This includes advanced topics such as the following: Computers (operation of computers, flow charts, learning a programming language, programs, algorithms with applications to the computer); History and nature of mathematics; and Proofs.	☐	☐	☐	☐	☐	☐	☐

Think of the last <lesson> in which you taught mathematics to your mathematics class. (If this lesson was atypical, e.g. an examination period or a field trip, pick the previous one.)

13a. How many minutes was this class <hour/period>?

Please write in a number.

_____ *minutes*

13b. For each of the following mathematics topics, indicate whether or not it was the subject of the lesson.

(See 'Mathematics Topics' category descriptions in question 12.)

Check one box in each row.

		Yes	***No***
1.	Whole Numbers	☐	☐
2.	Common and Decimal Fractions	☐	☐
3.	Percentages	☐	☐
4.	Number Sets and Concepts	☐	☐
5.	Number Theory	☐	☐
6.	Estimation and Number Sense	☐	☐
7.	Measurement Units and Processes	☐	☐
8.	Estimation and Error of Measurements	☐	☐
9.	Perimeter, Area and Volume	☐	☐
10.	Basics of One and Two Dimensional Geometry	☐	☐
11.	Geometric Congruence and Similarity	☐	☐
12.	Geometric Transformations and Symmetry	☐	☐
13.	Constructions and Three Dimensional Geometry	☐	☐
14.	Ratio and Proportion	☐	☐
15.	Proportionality: Slope, trigonometry and interpolation	☐	☐
16.	Functions, Relations, and Patterns	☐	☐
17.	Equations, Inequalities, and Formulas	☐	☐
18.	Statistics and Data	☐	☐
19.	Probability and Uncertainty	☐	☐
20.	Sets and Logic	☐	☐
21.	Problem Solving Strategies	☐	☐
22.	Other Mathematics Content	☐	☐

13c. Was this lesson...

Check one box in each row.

		Yes	***No***
1.	the introduction of this topic	☐	☐
2.	a continuation of a previous lesson on the same topic	☐	☐
3.	the end of the coverage of this topic	☐	☐

13d. Did you assign homework after the class <hour/period>?

Check one box.

Yes ☐ No ☐

13e. If yes,
how long would it take a typical student to complete this homework?

Please write in a number.

_____ *minutes*

13f. Was a computer used during this class <hour/period>?

Check one box.

Yes ☐ No ☐

Think of the same mathematics class <hour/period>.

14a. How did the lesson proceed?

The following presents a list of activities that may occur during a lesson. Although the list is not exhaustive of what happens in a classroom, most classroom activities may be considered as variations of those listed below. Using this list, indicate how your lesson developed. In the blanks on the right, write in the order in which the activities used in the lesson took place (1 = first, 2 = second, and so on) and estimate the amount of time you spent on each one. Ignore activities you used that do not fit into the descriptions listed. <u>Write in the order and the approximate number of minutes for each activity.</u> NOTE: If you did not do a certain activity write zero in the blank next to it.

	order	***minutes***
• review of previous lesson(s)	_____	_____
• a short quiz or test to review previous lesson	_____	_____
• oral recitation or drill (students responding aloud).....	_____	_____
• review or correction of previous lesson's homework	_____	_____
• **introduction** of a topic (class discussion, teacher explanation/demonstration, film, video, use of concrete materials etc.).....	_____	_____
• **development** of a topic (class discussion, teacher explanation/demonstration, group problem solving, film, video, etc.).....	_____	_____
• small group activities (with or without teacher)	_____	_____
• students do paper-and-pencil exercises related to topic (not the same as homework)	_____	_____
• assignment of student homework	_____	_____
• students work on homework in class	_____	_____
• student laboratory or data collection activity (not a separate laboratory hour) or hands-on session.....	_____	_____

14b. In this class <hour/period> did the students work in small groups?

Check one box.

- none of the time ..... ☐
- some of the time ..... ☐
- all the time ..... ☐

15. In your mathematics lessons, how often do you usually ask students to do the following?

Check one box in each row.

		never or almost never	*some lessons*	*most lessons*	*every lesson*
a)	explain the reasoning behind an idea	☐	☐	☐	☐
b)	represent and analyze relationships using tables, charts, or graphs	☐	☐	☐	☐
c)	work on problems for which there is no immediately obvious method of solution	☐	☐	☐	☐
d)	use computers to solve exercises or problems ..	☐	☐	☐	☐
e)	write equations to represent relationships	☐	☐	☐	☐
f)	practice computational skills	☐	☐	☐	☐

16. In your mathematics lessons, how frequently do you do the following when a student gives an incorrect response during a class discussion?

Check one box in each row.

		never or almost never	*some lessons*	*most lessons*	*every lesson*
a)	correct the student's error in front of the class ..	☐	☐	☐	☐
b)	ask the student another question to help him or her get the correct response	☐	☐	☐	☐
c)	call on another student who's likely to give the correct response	☐	☐	☐	☐
d)	call on other students to get their responses and then discuss what is correct	☐	☐	☐	☐

17. In mathematics lessons, how often do students...

Check one box in each row.

	never or almost never	*some lessons*	*most lessons*	*every lesson*
a) work individually without assistance from the teacher	☐	☐	☐	☐
b) work individually with assistance from the teacher	☐	☐	☐	☐
c) work together as a class with the teacher teaching the whole class	☐	☐	☐	☐
d) work together as a class with students responding to one another	☐	☐	☐	☐
e) work in pairs or small groups without assistance from the teacher	☐	☐	☐	☐
f) work in pairs or small groups with assistance from the teacher	☐	☐	☐	☐

18. How often do you usually assign mathematics homework?

Check one box.

- never ☐
- less than once a week ☐
- once or twice a week ☐
- 3 or 4 times a week ☐
- every day ☐

19. If you assign mathematics homework, how many minutes of mathematics homework do you usually assign your students?

(Consider the time it would take an average student in your class.)

Check one box.

- I do not assign homework. ☐
- less than 15 minutes ☐
- 15-30 minutes ☐
- 31-60 minutes ☐
- 61-90 minutes ☐
- more than 90 minutes ☐

20. If you assign mathematics homework, how often do you assign each of the following kinds of tasks?

Check one box in each row.

	never	*rarely*	*sometimes*	*always*	*I do not assign homework*
a) worksheets or workbook	☐	☐	☐	☐	☐
b) problem/question sets in textbook	☐	☐	☐	☐	☐
c) reading in a textbook or supplementary materials	☐	☐	☐	☐	☐
d) writing definitions or other short writing assignment	☐	☐	☐	☐	☐
e) small investigation(s) or gathering data	☐	☐	☐	☐	☐
f) working individually on long term projects or experiments	☐	☐	☐	☐	☐
g) working as a small group on long term projects or experiments	☐	☐	☐	☐	☐
h) finding one or more uses of the content covered	☐	☐	☐	☐	☐
i) preparing oral reports either individually or as a small group	☐	☐	☐	☐	☐
j) keeping a journal	☐	☐	☐	☐	☐

21. If students are assigned <u>written</u> mathematics homework, how often do you do the following?

Check one box in each row.

	never	*rarely*	*sometimes*	*always*	*I do not assign homework*
a) record whether or not the homework was completed	☐	☐	☐	☐	☐
b) collect, correct and keep assignments	☐	☐	☐	☐	☐
c) collect, correct assignments and then return to students	☐	☐	☐	☐	☐
d) give feedback on homework to whole class	☐	☐	☐	☐	☐
e) have students correct their own assignments in class	☐	☐	☐	☐	☐
f) have students exchange assignments and correct them in class	☐	☐	☐	☐	☐
g) use it as a basis for class discussion	☐	☐	☐	☐	☐
h) use it to contribute towards students' grades or marks	☐	☐	☐	☐	☐

22. In assessing the work of the students in your mathematics class, how much weight do you give each of the following types of assessment?

Check one box in each row.

		none	*little*	*quite a lot*	*a great deal*
a)	standardized tests produced outside the school	☐	☐	☐	☐
b)	teacher-made short answer or essay tests that require students to describe or explain their reasoning	☐	☐	☐	☐
c)	teacher made multiple choice, true-false and matching tests	☐	☐	☐	☐
d)	how well students do on homework assignments	☐	☐	☐	☐
e)	how well students do on projects or practical/laboratory exercises	☐	☐	☐	☐
f)	observations of students	☐	☐	☐	☐
g)	responses of students in class	☐	☐	☐	☐

23. How often do you use the assessment information you gather from students to...

Check one box in each row.

		none	*little*	*quite a lot*	*a great deal*
a)	provide students' grades or marks?	☐	☐	☐	☐
b)	provide feedback to students?	☐	☐	☐	☐
c)	diagnose students' learning problems?	☐	☐	☐	☐
d)	report to parents?	☐	☐	☐	☐
e)	assign students to different programs or tracks?	☐	☐	☐	☐
f)	plan for future lessons?	☐	☐	☐	☐

THANK YOU for the thought, time, and effort you have put into completing this questionnaire.

Section C

OPPORTUNITY TO LEARN (Mathematics)

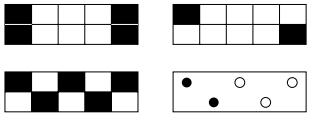
In this section, a set of exercises on various mathematical topics are presented, and you are asked to indicate whether you have taught or will teach the topic to your mathematics class this year.

Please remember, “your mathematics class” refers to the class which is identified on the cover of this questionnaire, and which will be tested as part of TIMSS in your school.

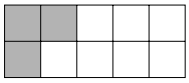
I. COMMON FRACTIONS

The following exercises illustrate the above topic. These exercises, or ones like them, might be used to assess students' learning of this topic.

A. Which picture shows that $\frac{2}{5}$ is equivalent to $\frac{4}{10}$?

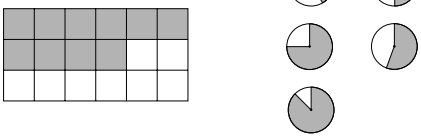


B. In the figure, how many more small squares need to be shaded so that $\frac{4}{5}$ of the small squares are shaded?



C. Which of these numbers is smallest: $\frac{1}{6}$, $\frac{2}{3}$, $\frac{1}{3}$, or $\frac{1}{2}$?

D. Which circle has approximately the same fraction shaded as that of the rectangle?



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1. Is anything done in your mathematics class that would enable your students to complete similar exercises that address this topic?

Check one: ☐ Yes ☐ No

If YES... *Check as many as apply.*

a) Something was done EARLIER this year. ..... ☐
b) Something is CURRENTLY in progress. ..... ☐
c) Something will be done LATER this year. ..... ☐

If NO... *Check as many as apply.*

d) The topic was covered in the curriculum for an EARLIER grade. ..... ☐
e) Although the topic is in the curriculum for THIS grade, I will not cover it. ☐
f) The topic is covered in the curriculum for a LATER grade. ..... ☐
g) To my knowledge, this topic is NOT INCLUDED in the curriculum. ..... ☐
h) I DO NOT KNOW whether this topic is covered in any other grade. ..... ☐

2. If you were to develop a test for your mathematics class that assesses this particular math topic, which of the above items would you consider appropriate for the test?

Check all that apply.

A ☐ B ☐ C ☐ D ☐ none ☐

3. Are students likely to encounter this topic <u>outside</u> of school this year?

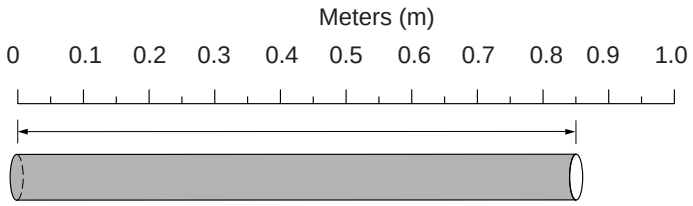
Check one: ☐ Yes ☐ No

II. DECIMAL FRACTIONS

The following exercises illustrate the above topic. These exercises, or ones like them, might be used to assess students' learning of this topic.

A. A runner ran 3000 m in exactly 8 minutes. What was his average speed in meters per second?

B. What is the length of the pipe being measured?



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1. Is anything done in your mathematics class that would enable your students to complete similar exercises that address this topic?

Check one: ☐ Yes ☐ No

If YES... *Check as many as apply.*

a) Something was done EARLIER this year. ..... ☐
b) Something is CURRENTLY in progress. ..... ☐
c) Something will be done LATER this year. ..... ☐

If NO... *Check as many as apply.*

d) The topic was covered in the curriculum for an EARLIER grade. ..... ☐
e) Although the topic is in the curriculum for THIS grade, I will not cover it. ☐
f) The topic is covered in the curriculum for a LATER grade. ..... ☐
g) To my knowledge, this topic is NOT INCLUDED in the curriculum. ..... ☐
h) I DO NOT KNOW whether this topic is covered in any other grade. ..... ☐

2. If you were to develop a test for your mathematics class that assesses this particular math topic, which of the above items would you consider appropriate for the test?

Check all that apply.

A ☐ B ☐ neither ☐

3. Are students likely to encounter this topic <u>outside</u> of school this year?

Check one: ☐ Yes ☐ No

III. UNITS OF MEASUREMENT

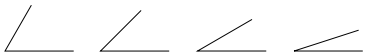
The following exercises illustrate the above topic. These exercises, or ones like them, might be used to assess students' learning of this topic.

A. A cake is put in the oven at 7:20. If the cake takes three quarters of an hour to bake, at what time should it be taken out of the oven?

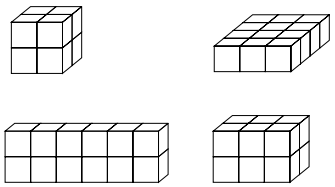
B. What unit would be best to use to measure the weight (mass) of an egg?

C. The number of 750 mL bottles that can be filled from 600 L of water is...?

D. Which of these angles has a measure closest to 30º?



E. All the small blocks are the same size. Which stack of blocks has a different volume from the others?



1. Is anything done in your mathematics class that would enable your students to complete similar exercises that address this topic?

Check one: ☐ Yes ☐ No

If YES... *Check as many as apply.*

a) Something was done EARLIER this year. ..... ☐
b) Something is CURRENTLY in progress. ..... ☐
c) Something will be done LATER this year. ..... ☐

If NO... *Check as many as apply.*

d) The topic was covered in the curriculum for an EARLIER grade. ..... ☐
e) Although the topic is in the curriculum for THIS grade, I will not cover it. ☐
f) The topic is covered in the curriculum for a LATER grade. ..... ☐
g) To my knowledge, this topic is NOT INCLUDED in the curriculum. ..... ☐
h) I DO NOT KNOW whether this topic is covered in any other grade. ..... ☐

2. If you were to develop a test for your mathematics class that assesses this particular math topic, which of the above items would you consider appropriate for the test?

Check all that apply.

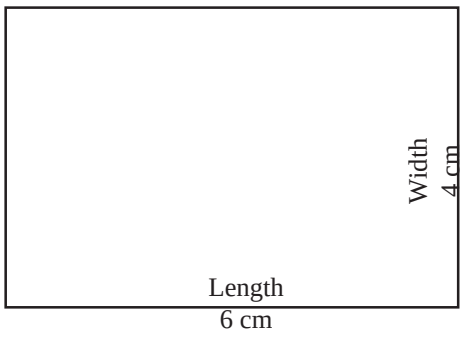
A ☐ B ☐ C ☐ D ☐ E ☐ none ☐

3. Are students likely to encounter this topic <u>outside</u> of school this year?

Check one: ☐ Yes ☐ No

IV. UNITS OF MEASUREMENT

The following exercise also illustrates the above topic. This exercise or ones like it, might be used to assess students' learning of this topic.



A. In the space above, draw a new rectangle whose length is one and one half times the length of the rectangle above, and whose width is half the width of the rectangle above. Show the length and width of the new rectangle in centimeters on the figure.

B. What is the ratio of the area of the new rectangle to the area of the first one? Show your work.

1. Is anything done in your mathematics class that would enable your students to complete similar exercises that address this topic?

Check one: ☐ Yes ☐ No

If YES... *Check as many as apply.*

a) Something was done EARLIER this year. ..... ☐
b) Something is CURRENTLY in progress. ..... ☐
c) Something will be done LATER this year. ..... ☐

If NO... *Check as many as apply.*

d) The topic was covered in the curriculum for an EARLIER grade. ..... ☐
e) Although the topic is in the curriculum for THIS grade, I will not cover it. ☐
f) The topic is covered in the curriculum for a LATER grade. ..... ☐
g) To my knowledge, this topic is NOT INCLUDED in the curriculum. ..... ☐
h) I DO NOT KNOW whether this topic is covered in any other grade. ..... ☐

2. If you were to develop a test for your mathematics class that assesses this particular math topic, would you consider the above item appropriate for the test?

Check one: ☐ Yes ☐ No

3. Are students likely to encounter this topic <u>outside</u> of school this year?

Check one: ☐ Yes ☐ No

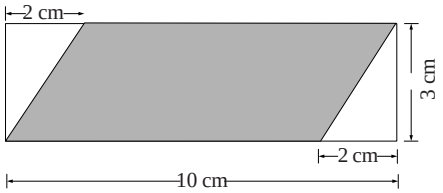
V. MEASUREMENT OF PERIMETER, AREA, AND VOLUME

The following exercises illustrate the above topic. These exercises, or ones like them, might be used to assess students' learning of this topic.

A. The length of a rectangle is 6 cm, and its perimeter is 16 cm. What is the area of the rectangle in square centimeters?

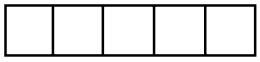
B. A thin wire 20 centimeters long is formed into a rectangle. If the width of this rectangle is 5 centimeters, what is its length?

C. The figure shows a shaded parallelogram inside a rectangle.



What is the area of the parallelogram in square centimeters?

D. The figure consists of 5 squares of equal size. The area of the whole figure is 405 sq cm. Find the area of one square. Find the length of the side of one square. Find the perimeter of the whole figure in centimeters.



1. Is anything done in your mathematics class that would enable your students to complete similar exercises that address this topic?

Check one: ☐ Yes ☐ No

If YES... *Check as many as apply.*

a) Something was done EARLIER this year. ..... ☐
b) Something is CURRENTLY in progress. ..... ☐
c) Something will be done LATER this year. ..... ☐

If NO... *Check as many as apply.*

d) The topic was covered in the curriculum for an EARLIER grade. ..... ☐
e) Although the topic is in the curriculum for THIS grade, I will not cover it. ☐
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g) To my knowledge, this topic is NOT INCLUDED in the curriculum. ..... ☐
h) I DO NOT KNOW whether this topic is covered in any other grade. ..... ☐

2. If you were to develop a test for your mathematics class that assesses this particular math topic, which of the above items would you consider appropriate for the test?

Check all that apply.

A ☐ B ☐ C ☐ D ☐ none ☐

3. Are students likely to encounter this topic <u>outside</u> of school this year?

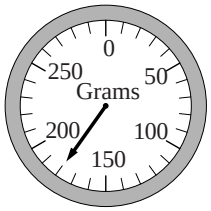
Check one: ☐ Yes ☐ No

VI. ESTIMATION AND ERRORS OF MEASUREMENT

The following exercises illustrate the above topic. These exercises, or ones like them, might be used to assess students' learning of this topic.

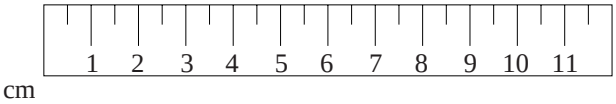
A. The length of a box was 9 cm to the nearest centimeter. Which of these could be the actual length of the box: 10 cm, 9.9 cm, 9.6 cm, or 8.6 cm?

B. Which of these is the weight (mass) shown on the scale:



153 g, 160 g, 165 g, or 180 g?

C. Using a centimeter ruler like this one, you can measure accurately to the nearest...?



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1. Is anything done in your mathematics class that would enable your students to complete similar exercises that address this topic?

Check one: ☐ Yes ☐ No

If YES... *Check as many as apply.*

a) Something was done EARLIER this year. ..... ☐
b) Something is CURRENTLY in progress. ..... ☐
c) Something will be done LATER this year. ..... ☐

If NO... *Check as many as apply.*

d) The topic was covered in the curriculum for an EARLIER grade. ..... ☐
e) Although the topic is in the curriculum for THIS grade, I will not cover it. ☐
f) The topic is covered in the curriculum for a LATER grade. ..... ☐
g) To my knowledge, this topic is NOT INCLUDED in the curriculum. ..... ☐
h) I DO NOT KNOW whether this topic is covered in any other grade. ..... ☐

2. If you were to develop a test for your mathematics class that assesses this particular math topic, which of the above items would you consider appropriate for the test?

Check all that apply.

A ☐ B ☐ C ☐ none ☐

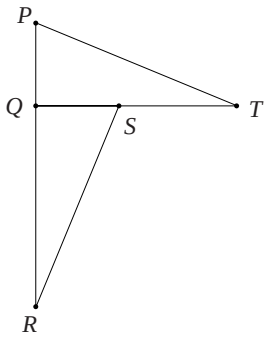
3. Are students likely to encounter this topic <u>outside</u> of school this year?

Check one: ☐ Yes ☐ No

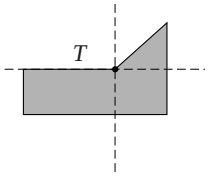
VII. GEOMETRIC TRANSFORMATIONS

The following exercises illustrate the above topic. These exercises, or ones like them, might be used to assess students' learning of this topic.

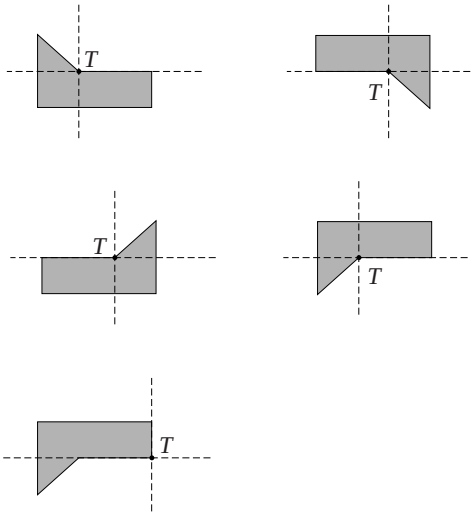
A. Triangle *PQT* can be rotated (turned) onto triangle *SQR*. What point is the center of rotation?



B. A half-turn about point *T* in the plane is applied to the shaded figure.



Which of these shows the result of the half-turn?



GEOMETRIC TRANSFORMATIONS (continued)

1. Is anything done in your mathematics class that would enable your students to complete similar exercises that address this topic?

Check one: ☐ Yes ☐ No

If YES... *Check as many as apply.*

a) Something was done EARLIER this year. ..... ☐
b) Something is CURRENTLY in progress. ..... ☐
c) Something will be done LATER this year. ..... ☐

If NO... *Check as many as apply.*

d) The topic was covered in the curriculum for an EARLIER grade. ..... ☐
e) Although the topic is in the curriculum for THIS grade, I will not cover it. ☐
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g) To my knowledge, this topic is NOT INCLUDED in the curriculum. ..... ☐
h) I DO NOT KNOW whether this topic is covered in any other grade. ..... ☐

2. If you were to develop a test for your mathematics class that assesses this particular math topic, which of the above items would you consider appropriate for the test?

Check all that apply.

A ☐ B ☐ neither ☐

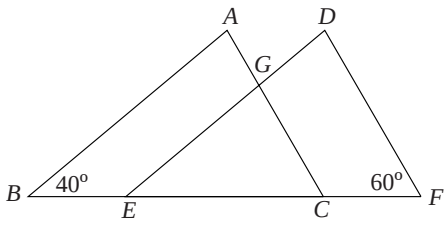
3. Are students likely to encounter this topic <u>outside</u> of school this year?

Check one: ☐ Yes ☐ No

VIII. GEOMETRIC CONGRUENCE AND SIMILARITY

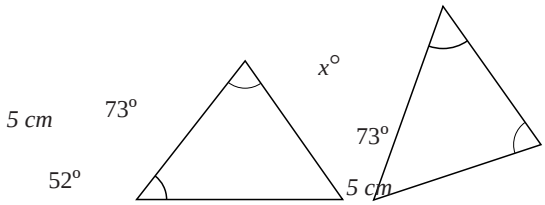
The following exercises illustrate the above topic. These exercises, or ones like them, might be used to assess students' learning of this topic.

A. In this figure, triangles *ABC* and *DEF* are congruent with *BC* = *EF*.



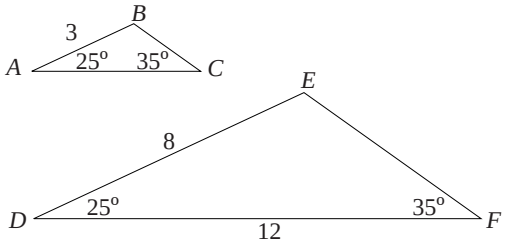
What is the measure of angle *EGC*?

B. These triangles are congruent. The measures of some of the sides and angles of the triangles are shown.



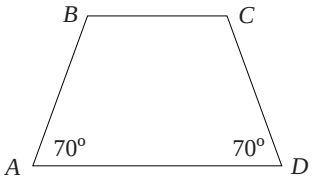
What is the value of *x*?

C. Triangle *ABC* and *DEF* are similar triangles.



What is the length of side *AC*?

D. *ABCD* is a trapezoid.



Another trapezoid, *GHIJ* (not shown), is congruent (the same size and shape) to *ABCD*. Angles *G* and *J* each measure 70°. Which of these could be true?

1. *GH* = *AB*
2. Angle *H* is a right angle.
3. All sides of *GHIJ* are the same length.
4. The perimeter of *GHIJ* is 3 times the perimeter of *ABCD*.
5. The area of *GHIJ* is less than the area of *ABCD*.

GEOMETRIC CONGRUENCE AND SIMILARITY (continued)

1. Is anything done in your mathematics class that would enable your students to complete similar exercises that address this topic?

Check one: ☐ Yes ☐ No

If YES... *Check as many as apply.*

a) Something was done EARLIER this year. ..... ☐
b) Something is CURRENTLY in progress. ..... ☐
c) Something will be done LATER this year. ..... ☐

If NO... *Check as many as apply.*

d) The topic was covered in the curriculum for an EARLIER grade. ..... ☐
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h) I DO NOT KNOW whether this topic is covered in any other grade. ..... ☐

2. If you were to develop a test for your mathematics class that assesses this particular math topic, which of the above items would you consider appropriate for the test?

Check all that apply.

A ☐ B ☐ C ☐ D ☐ none ☐

3. Are students likely to encounter this topic <u>outside</u> of school this year?

Check one: ☐ Yes ☐ No

IX. PROPORTIONALITY CONCEPTS

The following exercises illustrate the above topic. These exercises, or ones like them, might be used to assess students' learning of this topic.

A. To obtain a certain color of paint, Alana combines 5 liters of red paint, 2 liters of blue paint, and 2 liters of yellow paint. What is the ratio of red to the total amount of paint?

B. Three-fifths of the students in a class are girls. If 5 girls and 5 boys are added to the class, which statement is true of the class?

1. There are more girls than boys.
2. There are the same number of girls as there are boys.
3. There are more boys than girls.
4. You cannot tell whether there are more girls or boys from the information given.

C. A class has 28 students. The ratio of girls to boys is 4 : 3. How many girls are in the class?

D. Two boxes of square-shaped cardboard pieces are available to make a large pattern. There are 4 small squares in each piece.

All pieces in Box 1 look like  . All pieces in Box 2 look like  . In the required pattern, for every piece from Box 2 there are 2 pieces from Box 1.
If 60 pieces from Box 2 are used in the required pattern, how many pieces will be needed altogether? What fraction of the small squares in the required pattern will be black?

---

1. Is anything done in your mathematics class that would enable your students to complete similar exercises that address this topic?

Check one: ☐ Yes ☐ No

If YES... *Check as many as apply.*

a) Something was done EARLIER this year. ..... ☐
b) Something is CURRENTLY in progress. ..... ☐
c) Something will be done LATER this year. ..... ☐

If NO... *Check as many as apply.*

d) The topic was covered in the curriculum for an EARLIER grade. ..... ☐
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g) To my knowledge, this topic is NOT INCLUDED in the curriculum. ..... ☐
h) I DO NOT KNOW whether this topic is covered in any other grade. ..... ☐

2. If you were to develop a test for your mathematics class that assesses this particular math topic, which of the above items would you consider appropriate for the test?

Check all that apply.

A ☐ B ☐ C ☐ D ☐ none ☐

3. Are students likely to encounter this topic <u>outside</u> of school this year?

Check one: ☐ Yes ☐ No

X. PROPORTIONALITY PROBLEMS

The following exercises illustrate the above topic. These exercises, or ones like them, might be used to assess students' learning of this topic.

A. On a map 0.5 cm represents 50 kilometers. How far are two cities actually apart if they are shown as 9 centimeters apart on the map?

B. Peter bought 70 items and Sue bought 90 items. Each item cost the same and the items cost $800 altogether. How much did Sue pay?

C. If there are 300 calories in 100 g of a certain food, how many calories are there in a 30 g portion of this food?

D. The table show the values of x and y, where x is proportional to y.

x	3	6	P
y	7	Q	35

What are the values of P and Q?

---

1. Is anything done in your mathematics class that would enable your students to complete similar exercises that address this topic?

Check one: ☐ Yes ☐ No

If YES... *Check as many as apply.*

a) Something was done EARLIER this year. ..... ☐
b) Something is CURRENTLY in progress. ..... ☐
c) Something will be done LATER this year. ..... ☐

If NO... *Check as many as apply.*

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g) To my knowledge, this topic is NOT INCLUDED in the curriculum. ..... ☐
h) I DO NOT KNOW whether this topic is covered in any other grade. ..... ☐

2. If you were to develop a test for your mathematics class that assesses this particular math topic, which of the above items would you consider appropriate for the test?

Check all that apply.

A ☐ B ☐ C ☐ D ☐ none ☐

3. Are students likely to encounter this topic <u>outside</u> of school this year?

Check one: ☐ Yes ☐ No

XI. LINEAR EQUATIONS

The following exercises illustrate the above topic. These exercises, or ones like them, might be used to assess students' learning of this topic.

A. n is a number. When n is multiplied by 7, and 6 is then added, the result is 41. What equation represents this relation?

B. The cost, C, of printing greeting cards consists of a fixed charge of 100 cents and a charge of 6 cents for each card printed. Write an equation that could be used to determine the cost of printing n cards.

C. Juan has 5 fewer hats than Maria and Clarissa has 3 times as many hats as Juan. If Maria has n hats, what equation represents the number of hats that Clarissa has?

D. The table shows a relation between x and y.

x	2	3	4	5
y	7	10	13	16

Write an equation that expresses this relation.

---

1. Is anything done in your mathematics class that would enable your students to complete similar exercises that address this topic?

Check one: ☐ Yes ☐ No

If YES... *Check as many as apply.*

a) Something was done EARLIER this year. ..... ☐
b) Something is CURRENTLY in progress. ..... ☐
c) Something will be done LATER this year. ..... ☐

If NO... *Check as many as apply.*

d) The topic was covered in the curriculum for an EARLIER grade. ..... ☐
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g) To my knowledge, this topic is NOT INCLUDED in the curriculum. ..... ☐
h) I DO NOT KNOW whether this topic is covered in any other grade. ..... ☐

2. If you were to develop a test for your mathematics class that assesses this particular math topic, which of the above items would you consider appropriate for the test?

Check all that apply.

A ☐ B ☐ C ☐ D ☐ none ☐

3. Are students likely to encounter this topic <u>outside</u> of school this year?

Check one: ☐ Yes ☐ No

XII. LINEAR EQUATIONS

The following exercise also illustrates the above topic. This exercise or ones like it, might be used to assess students' learning of this topic.

A. There are 54 kilograms of apples in two boxes. The second box of apples weighs 12 kilograms more than the first. How many kilograms of apples are in each box? Show your work.

---

1. Is anything done in your mathematics class that would enable your students to complete similar exercises that address this topic?

Check one: ☐ Yes ☐ No

If YES... *Check as many as apply.*

a) Something was done EARLIER this year. ..... ☐
b) Something is CURRENTLY in progress. ..... ☐
c) Something will be done LATER this year. ..... ☐

If NO... *Check as many as apply.*

d) The topic was covered in the curriculum for an EARLIER grade. ..... ☐
e) Although the topic is in the curriculum for THIS grade, I will not cover it. ☐
f) The topic is covered in the curriculum for a LATER grade. ..... ☐
g) To my knowledge, this topic is NOT INCLUDED in the curriculum. ..... ☐
h) I DO NOT KNOW whether this topic is covered in any other grade. ..... ☐

2. If you were to develop a test for your mathematics class that assesses this particular math topic, would you consider the above item appropriate for the test?

Check one: ☐ Yes ☐ No

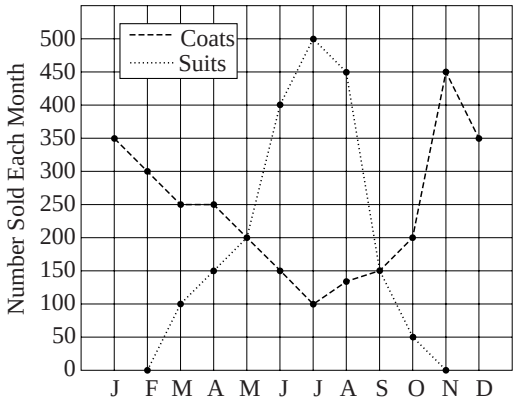
3. Are students likely to encounter this topic <u>outside</u> of school this year?

Check one: ☐ Yes ☐ No

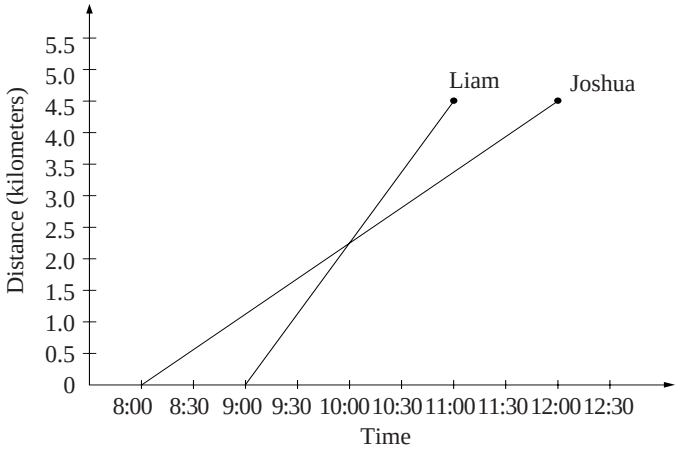
XIII. DATA REPRESENTATION AND ANALYSIS

The following exercises illustrate the above topic. These exercises, or ones like them, might be used to assess students' learning of this topic.

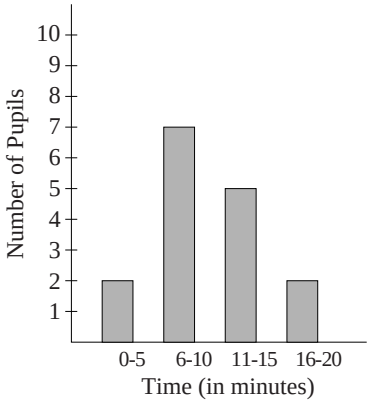
A. According to the information in the graph, during which two-month period does the greatest increase in coat sales occur?



B. The graph represents the distance and time of a hike taken by Joshua and Liam. If they both started from the same place and walked in the same direction, at what time did they meet?



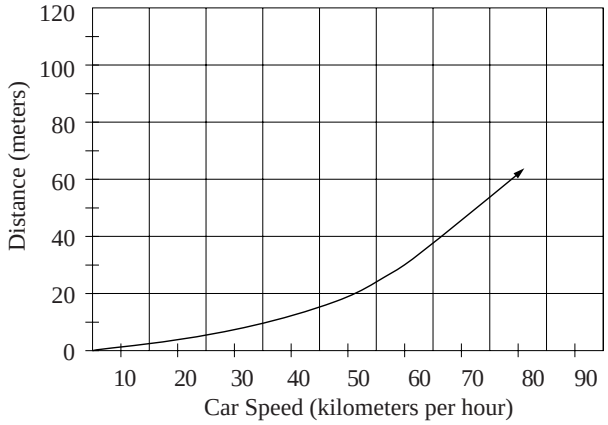
C. The graph shows the time of travel by pupils from home to school.



How many pupil must travel for MORE than 10 minutes?

DATA REPRESENTATION AND ANALYSIS (continued)

D. The graph shows the distance traveled after the brakes are applied for a typical car traveling at different speeds.



A car is traveling 80 km per hour. About how far will the car travel after the brakes are applied?

---

1. Is anything done in your mathematics class that would enable your students to complete similar exercises that address this topic?

Check one: ☐ Yes ☐ No

If YES... *Check as many as apply.*

a) Something was done EARLIER this year. ..... ☐
b) Something is CURRENTLY in progress. ..... ☐
c) Something will be done LATER this year. ..... ☐

If NO... *Check as many as apply.*

d) The topic was covered in the curriculum for an EARLIER grade. ..... ☐
e) Although the topic is in the curriculum for THIS grade, I will not cover it. ☐
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g) To my knowledge, this topic is NOT INCLUDED in the curriculum. ..... ☐
h) I DO NOT KNOW whether this topic is covered in any other grade. ..... ☐

2. If you were to develop a test for your mathematics class that assesses this particular math topic, which of the above items would you consider appropriate for the test?

Check all that apply.

A ☐ B ☐ C ☐ D ☐ none ☐

3. Are students likely to encounter this topic <u>outside</u> of school this year?

Check one: ☐ Yes ☐ No

XIV. DATA REPRESENTATION AND ANALYSIS

The following exercise also illustrates the above topic. This exercise or ones like it, might be used to assess students' learning of this topic.

A. The following two advertisements appeared in a newspaper in a country where the units of currency are zeds.

BUILDING A	**BUILDING B**
Office space available 85 - 95 square meters 475 zeds per month 100 - 120 square meters 800 zeds per month	Office space available 35 - 260 square meters 90 zeds per square meter per year

If a company is interested in renting an office of 110 square meters in that country for a year, at which office building, A or B, should they rent the office in order to get the lower price? Show your work.

---

1. Is anything done in your mathematics class that would enable your students to complete similar exercises that address this topic?

Check one: ☐ Yes ☐ No

If YES... *Check as many as apply.*

a) Something was done EARLIER this year. ..... ☐
b) Something is CURRENTLY in progress. ..... ☐
c) Something will be done LATER this year. ..... ☐

If NO... *Check as many as apply.*

d) The topic was covered in the curriculum for an EARLIER grade. ..... ☐
e) Although the topic is in the curriculum for THIS grade, I will not cover it. ☐
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g) To my knowledge, this topic is NOT INCLUDED in the curriculum. ..... ☐
h) I DO NOT KNOW whether this topic is covered in any other grade. ..... ☐

2. If you were to develop a test for your mathematics class that assesses this particular math topic, would you consider the above item appropriate for the test?

Check one: ☐ Yes ☐ No

3. Are students likely to encounter this topic <u>outside</u> of school this year?

Check one: ☐ Yes ☐ No

Section D

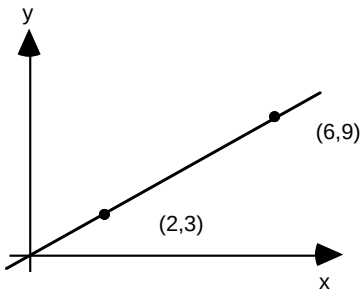
Pedagogical Approach

To better understand what teachers believe about how mathematics is best taught, we are asking you to respond to two teaching situations. Several possible approaches are presented for each situation. The situations presented may or may not be likely to occur in your own classes. We are interested in what you believe would be the best approach or sequence of approaches to help students learn in these situations regardless of whether or not they might occur in your classes.

- Imagine yourself in each situation.
- Assume that there are no time or equipment constraints.
- Choose what you believe, based on your own principles and beliefs, to be the best approach or sequence of approaches to help students learn.
- Place a '1' in the box next to the approach you believe to be the best. If you believe other approaches would also be acceptable, place a number in the box next to each one indicating the order in which you would consider using it. You need not choose more than one approach. Write zero in the box for any approach you do not consider acceptable.

1. Each year many teachers must help their students learn to solve problems such as "Juan *was able to run 1.5 kilometers in 5 minutes. If he was able to keep up this same average speed, how far would he run in 12.5 minutes?* "If you needed to help your class learn how to solve such problems, what approach or sequence of approaches do you believe would best help students learn?

Place a '1' in the box in the right-hand margin next to the approach you believe to be the best. If you believe other approaches would also be acceptable, place a number in the box next to each one indicating the order in which you would consider using it. You need not choose more than one approach. Write zero in the box for any approach you do not consider acceptable.

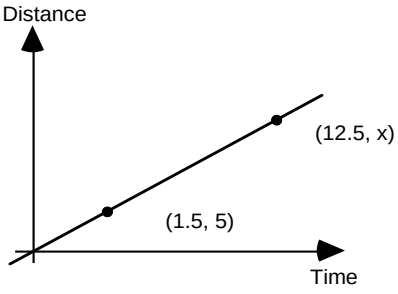


a) I would present a general graph such as this because an understanding of graphs with a constant ratio of change in x to change in y is one important mathematical tool for solving problems like this one. ☐

b) I would present the method of using proportional equations to solve this problem, as in: $\frac{15}{5}=\frac{x}{12.5} \rightarrow 5x=(15)(12.5) \rightarrow x=18.75/5=3.75 \text{ km}$

After presenting other examples of this type of problem, I would assign practice exercises to students. ..... ☐

c) I would use the method suggested by the textbook for dealing with problems of this type, carrying out the strategy suggested by the textbook. ☐



d) I would work with students to develop a reasonable graph for this *specific* problem, such as the one to the right and then work with students on using the properties of graphs like this one to find a numerical solution to the problem. ..... ☐

e) I would have students use a calculator to find pairs of numbers that related how long a person has run at a constant average speed to how far that person has traveled. I would then have the students use these pairs of numbers to study how to determine the distance a person running at constant average speed would travel in a given time. ..... ☐

f) I would divide the class into several groups and have the students in each group work together on the problem until each group found a method for solving the given problem and then found a method that would work for similar problems. ..... ☐

g) Which of the approaches listed above do you believe to be the least acceptable approach? ☐

Place the letter of that approach in the box .....

2. Many students have trouble relating ratios to fractions when they are asked to relate part of a set of objects to the whole set. For example, when asked *"There are 2 boys in a class for every 3 girls in the class. What fraction of the students are boys?"* Many students would answer 2/3 rather than 2/5. If you were working with a class in which many students had this kind of misunderstanding, what approach or sequence of approaches do you believe would best help students learn?

Place a '1' in the box in the right-hand margin next to the approach you believe to be the best. If you believe other approaches would also be acceptable, place a number in the box next to each one indicating the order in which you would consider using it. You need not choose more than one approach. Leave blank the box for any approach you do not consider acceptable.

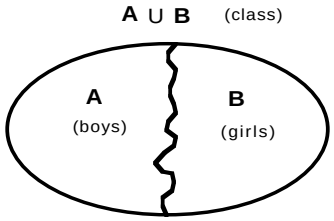
a) I would review with my students the section of the textbook that explains this concept. ..... ☐

b) I would make the situation more concrete by having the students help me make up the class roster for a class with two boys and three girls. From this class roster, I would then ask the students to work on finding a solution to the problem. ..... ☐

c) I would ask several students to explain their thinking about this problem and ask other students to comment on what seems helpful and not helpful with these explanations. If this did not clear up the difference in understandings, I would at least better understand my students' thinking and could choose activities to provide them with experiences that might lead them to the more conventional, useful idea. ☐

d) I would present several situations of this sort and after getting students to answer what fraction of the class were boys and what fraction girls, I would ask the students to use calculators to find what percent of the class were boys and what percent girls. Then I would ask them if the percentages of boys and girls in each class added to 100 percent. ..... ☐

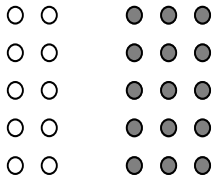
e) I would discuss which sets of objects that were involved in the situation with a diagram as the one shown at right and that the fraction needed is



$\frac{n(A)}{n(A \cup B)}$ which is not equal to ... $\frac{n(A)}{n(B)}$ **A, B** disjoint.

Many students do not even realize that the set **A** ∪ **B** is involved as well as set A and set B. ..... ☐

f) I would relate this kind of situation to the general idea of ratio as represented by discrete objects such as 2:3 which is represented, for example, by the diagram at right. Then I would investigate with students all the various fractions that could be made in such a situation. ☐



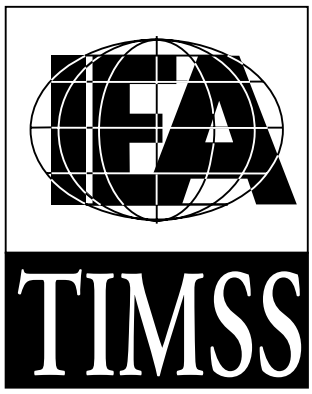
g) Which of the approaches do you believe to be the least acceptable approach?

Place the letter of that approach in the box. ..... ☐

THANK YOU for the thought, time, and effort you have put into completing this questionnaire.

Section 4

Science Teacher Background Questionnaire (TQS2)



Identification Label		
School ID :		
Stratum ID:		
Teacher ID:		**Link:**
Name:		
Class ID:		
Name of Class:		
Subject:		**Grade:**

IEA Third International Mathematics and Science Study

Teacher Questionnaire (Science)
Population 2

Your school has agreed to participate in the Third International Mathematics and Science Study (TIMSS), an educational research project sponsored by the International Association for the Evaluation of Educational Achievement (IEA). TIMSS is investigating mathematics and science achievement in over fifty educational systems around the world. It is designed to measure and interpret differences in national educational systems in order to help improve the teaching and learning of mathematics and science worldwide.

This questionnaire is addressed to teachers of science, who are asked to supply information about their academic and professional backgrounds, instructional practices, and attitudes towards teaching science. Since your class has been selected as part of a nationwide sample, your responses are very important in helping to describe science classes in <country>.

Some of the questions in this questionnaire ask about **your science class**. This is the class which is identified at the top of this page, and which will be tested as part of TIMSS in your school.

It is important that you answer each question carefully so that the information provided reflects your situation as accurately as possible. It is estimated that it will require approximately 60 minutes to complete this questionnaire.

Your cooperation in completing this questionnaire is greatly appreciated.

TIMSS Study Center
Boston College
Chestnut Hill, MA 02167
USA

(Institute Address)

Doc. Ref.: ICC881/NRC418

GENERAL DIRECTIONS:

1. Identify a place and a time when you will be able to complete this questionnaire without being interrupted. This questionnaire has been designed to be completed within 60 minutes by most teachers. However, the amount of time you will need vary. To make it as easy as possible for you to respond, most items may be completed simply by checking the appropriate box.

2. There are no "right" or "wrong" answers to any of these items. The questionnaire is designed to provide information about teachers' professional experiences, opinions, and classroom activities.

3. Several items ask you to think of a recent class <hour/period> as you respond. In responding to these items, choose a recent class <hour/period> which you can recall in some detail and which was fairly typical of what occurs in your classroom (i.e., a class <hour/period> which was not affected by special events such as assemblies, guests, student testing other than short quizzes, or any other unusual circumstances).

   Remember, "your science class" is the class which is identified on the cover of this questionnaire, and which will be tested as part of TIMSS in your school.

4. More specific instructions to assist you in responding are found in *italics* for each item. Once you have completed the questionnaire, place it into the return envelope provided and return it to:

<Country Specific Information>

Again, thank you for your time, effort and thought in completing this questionnaire!

Section A

1. How old are you?

Check one box only.

- under 25 ..... ☐
- 25-29 ..... ☐
- 30-39 ..... ☐
- 40-49 ..... ☐
- 50-59 ..... ☐
- 60 or more ..... ☐

2. Are you female or male?

Check one box only.

- female ..... ☐
- male ..... ☐

3. What was the highest level of formal education you have completed?

Check one box only.

- <TEACHER TRAINING W/O COMPLETING SECONDARY> ..... ☐
- <SECONDARY ONLY> ..... ☐
- <SECONDARY + 1 OR 2 YEAR TEACHER TRAINING> ..... ☐
- <SECONDARY AND 3 OR 4 YEAR TEACHER TRAINING> ..... ☐
- <BA OR EQUIVALENT + NO TEACHER TRAINING> ..... ☐
- <BA OR EQUIVALENT + TEACHER TRAINING> ..... ☐
- <MA/PHD WITH NO TEACHER TRAINING> ..... ☐
- <MA/PHD + TEACHER TRAINING> ..... ☐

4a. At which grade levels are you teaching <u>Science</u> during this school year?

NRC Note: <List only country-specific grades and their appropriate designations.>

Check one box in each row.

☐ Do not teach science this year

		Yes	*No*
a)	<PRE-KINDERGARTEN>	☐	☐
b)	<KINDERGARTEN>	☐	☐
c)	<GRADE 1>	☐	☐
d)	<GRADE 2>	☐	☐
e)	<GRADE 3>	☐	☐
f)	<GRADE 4>	☐	☐
g)	<GRADE 5>	☐	☐
h)	<GRADE 6>	☐	☐
i)	<GRADE 7>	☐	☐
j)	<GRADE 8>	☐	☐
k)	<GRADE 9>	☐	☐
l)	<GRADE 10>	☐	☐
m)	<GRADE 11>	☐	☐
n)	<GRADE 12>	☐	☐
o)	<GRADE 13>	☐	☐

5. At which grade levels are you teaching <u>Mathematics</u> during this school year?

NRC Note: <List only country-specific grades and their appropriate designations.>

Check one box in each row.

☐ Do not teach mathematics this year

		Yes	*No*
a)	<PRE-KINDERGARTEN>	☐	☐
b)	<KINDERGARTEN>	☐	☐
c)	<GRADE 1>	☐	☐
d)	<GRADE 2>	☐	☐
e)	<GRADE 3>	☐	☐
f)	<GRADE 4>	☐	☐
g)	<GRADE 5>	☐	☐
h)	<GRADE 6>	☐	☐
i)	<GRADE 7>	☐	☐
j)	<GRADE 8>	☐	☐
k)	<GRADE 9>	☐	☐
l)	<GRADE 10>	☐	☐
m)	<GRADE 11>	☐	☐
n)	<GRADE 12>	☐	☐
o)	<GRADE 13>	☐	☐

6. Do you teach part-time or full-time?

Check one.

Part-time ..... ☐

Full-time ..... ☐

7. By the end of this school year how many years will you have been teaching altogether?

Please round to the nearest whole number. ..... _____

8. At which of these grade levels have you taught in the past 5 years?

NRC Note: <List only country-specific grades and their appropriate designations.>

Check one box in each row.

		Yes	***No***
a)	<PRE-KINDERGARTEN>	☐	☐
b)	<KINDERGARTEN>	☐	☐
c)	<GRADE 1>	☐	☐
d)	<GRADE 2>	☐	☐
e)	<GRADE 3>	☐	☐
f)	<GRADE 4>	☐	☐
g)	<GRADE 5>	☐	☐
h)	<GRADE 6>	☐	☐
i)	<GRADE 7>	☐	☐
j)	<GRADE 8>	☐	☐
k)	<GRADE 9>	☐	☐
l)	<GRADE 10>	☐	☐
m)	<GRADE 11>	☐	☐
n)	<GRADE 12>	☐	☐
o)	<GRADE 13>	☐	☐

9. For how many single <hours/periods> are you formally <scheduled/time-tabled> to teach each of the following subjects during the school week?

NCR Note: <List only the generic science courses appropriate for your country>

Count a double <hour/period> as two single <hours/periods>.
Write zero if none.

		Number of Single <hours/periods>
a)	mathematics	_____
b)	<GENERAL/INTEGRATED SCIENCE>	_____
c)	<PHYSICAL SCIENCE>	_____
d)	<EARTH SCIENCE>	_____
e)	<LIFE SCIENCE>	_____
f)	<BIOLOGY>	_____
g)	<CHEMISTRY>	_____
h)	<PHYSICS>	_____
i)	other subjects	_____

10. For how many single <hours/periods> are you formally <scheduled/time-tabled> to perform each of the following tasks during the school week?

NCR Note: <List only the generic science courses appropriate for your country>

Count a double <hour/period> as two single <hours/periods>.
Write zero if none.

		Number of Single <hours/periods>
a)	student supervision	_____
b)	student counselling/appraisal	_____
c)	administrative duties	_____
d)	individual curriculum planning	_____
e)	cooperative curriculum planning	_____
f)	other non-student contact time (i.e., use not specified)	_____

11. For how many single <hours/periods> are you <scheduled/ time-tabled> in one school week altogether?

Write in number.

_____ *<hours/periods>*

12. APPROXIMATELY how many hours per week do you normally spend on each of the following activities outside the formal school day?

Check one box in each row.

		none	*less than 1 hour*	*1 - 2 hours*	*3 - 4 hours*	*more than 4 hours*
a)	preparing or grading student tests or exams	☐	☐	☐	☐	☐
b)	reading and grading other student work	☐	☐	☐	☐	☐
c)	planning lessons by yourself	☐	☐	☐	☐	☐
d)	meeting with students outside of classroom time (e.g., tutoring, guidance)	☐	☐	☐	☐	☐
e)	meeting with parents	☐	☐	☐	☐	☐
f)	professional reading and development activity (e.g., seminars, conferences, etc.)	☐	☐	☐	☐	☐
g)	keeping students' records up to date	☐	☐	☐	☐	☐
h)	administrative tasks including staff meetings (e.g., photocopying, displaying students' work)	☐	☐	☐	☐	☐

13. About how often do you have meetings with other teachers in your subject area to discuss and plan curriculum or teaching approaches?

Check one box only.

- never ..... ☐
- once or twice a year ..... ☐
- every other month ..... ☐
- once a month ..... ☐
- once a week ..... ☐
- two or three times a week ..... ☐
- almost every day ..... ☐

14. How much influence do you have on each of the following...

Check one box in each row.

		none	*little*	*some*	*a lot*
a)	subject matter to be taught	☐	☐	☐	☐
b)	specific textbooks to be used	☐	☐	☐	☐
c)	the amount of money to be spent on supplies	☐	☐	☐	☐
d)	what supplies are purchased	☐	☐	☐	☐

15. To be good at science at school, how important do you think it is for students to...

Check one box in each row.

		not important	*somewhat important*	*very important*
a)	remember formulas and procedures.	☐	☐	☐
b)	think in a sequential and procedural manner.	☐	☐	☐
c)	understand scientific concepts, principles, and strategies.	☐	☐	☐
d)	be able to think creatively.	☐	☐	☐
e)	understand how science is used in the real world.	☐	☐	☐
f)	be able to provide reasons to support their conclusions.	☐	☐	☐

16. To what extent do you agree or disagree with each of the following statements?

Check one box in each row.

		strongly disagree	*disagree*	*agree*	*strongly agree*
a)	Science is primarily an abstract subject.	☐	☐	☐	☐
b)	Science is primarily a formal way of representing the real world.	☐	☐	☐	☐
c)	Science is primarily a practical and structured guide for addressing real situations.	☐	☐	☐	☐
d)	Some students have a natural talent for science and others do not.	☐	☐	☐	☐
e)	It is important for teachers to give students prescriptive and sequential directions for doing science experiments	☐	☐	☐	☐
f)	Focusing on rules is a bad idea. It gives students the impression that the sciences (physics, chemistry, biology, and earth science) are a set of procedures to be memorized.	☐	☐	☐	☐
g)	If students get into debates in class about ideas or procedures covering the sciences, it can harm their learning.	☐	☐	☐	☐
h)	Students see a science task as the same task when it is represented in two different ways (picture, concrete material, symbol set, etc.).	☐	☐	☐	☐
i)	A liking for and understanding of students are essential for teaching science.	☐	☐	☐	☐

17. Indicate your familiarity with each of the following documents:

NRC Note: <Include country-specific appropriate options only>

Check one box in each row.

	no such document	*not familiar*	*fairly familiar*	*very familiar*
a) <THE NATIONAL CURRICULUM GUIDE FOR SCIENCE>	☐	☐	☐	☐
b) <THE REGIONAL CURRICULUM GUIDE(S) FOR SCIENCE>	☐	☐	☐	☐
c) <THE SCHOOL CURRICULUM GUIDE>	☐	☐	☐	☐
d) <THE NATIONAL EXAMINATION SPECIFICATIONS>	☐	☐	☐	☐
e) <THE REGIONAL EXAMINATION SPECIFICATIONS>	☐	☐	☐	☐
f) <THE NATIONAL PEDAGOGY GUIDE FOR SCIENCE>	☐	☐	☐	☐
g) <THE REGIONAL PEDAGOGY GUIDE FOR SCIENCE>	☐	☐	☐	☐

18. How well prepared do you feel you are to teach...

Check one box in each row.

	Sufficiently prepared - I would feel confident teaching this topic	***Somewhat prepared - it would depend on the instructional resources available***	***Not well prepared - it would be difficult for me to teach this topic***
a) Earth's features, landforms, bodies of water, atmosphere, etc.	☐	☐	☐
b) Types of energy, sources of energy, conversions between energy types	☐	☐	☐
c) Light	☐	☐	☐
d) Structure and function of human tissues, organs	☐	☐	☐
e) Human metabolism	☐	☐	☐
f) Human reproduction	☐	☐	☐
g) Human genetics	☐	☐	☐
h) Measurement	☐	☐	☐
i) Organizing, representing and interpreting data, making conclusions	☐	☐	☐

International Option

19. Was teaching your first choice as a career when beginning university or teacher education college?

Check only one box ..... *Yes* ☐ *No* ☐

20. Would you change to another career if you had the opportunity?

Check only one box ..... *Yes* ☐ *No* ☐

21. Do you think that society appreciates your work?

Check only one box ..... *Yes* ☐ *No* ☐

22. Do you think your students appreciate your work?

Check only one box ..... *Yes* ☐ *No* ☐

23. Approximately how many books are in your home?

(Do not count magazines or newspapers.)

Check one box only.

none or very few (0-10) ..... ☐
enough to fill a shelf (11-25) ..... ☐
enough to fill a bookcase (26-100) ..... ☐
enough to fill two bookcases (101-200) ..... ☐
enough to fill three or more bookcases (more than 200) ..... ☐

24. Please rank the following professions in order of social status. Assign a rank of '1' to the profession with the highest social status, and ' 9' to the profession with the lowest status.

a) accountant ..... _____
b) <medical doctor> ..... _____
c) lawyer ..... _____
d) engineer ..... _____
e) nurse ..... _____
f) senior <civil servant> ..... _____
g) teacher, primary school ..... _____
h) teacher, secondary school ..... _____
i) <unskilled worker> ..... _____

THERE ARE NO QUESTIONS ON THIS PAGE

Section B

In this section, many of the questions refer to “your science class”. Please remember that this is the class which is identified on the cover of this questionnaire, and which will be tested as part of TIMSS in your school.

1. How many students are in your science class?

Write in a number for each. Write 0 (zero) if there are none.

boys _____ girls _____

2. Compared with other students in <country> at this grade level, estimate what percent of students in your class have:

Please write a number.

high achievement levels (i.e. in the top third nationally) ..... _____ %

middle achievement levels (middle third nationally) ..... _____ %

low achievement levels (bottom third nationally) ..... _____ %

TOTAL 100%

3. How many minutes per week do you teach science to your science class?

Minutes: _____

NRC Note: **TEXTBOOKS** <Insert the country specific textbook list used in the TIMSS document analysis. If the TIMSS document analysis list is not exhaustive of all texts used in your country, use the open-ended question (option 2). The open-ended option may be used alone or in conjunction with the TIMSS document analysis list.>

4. Do you use a textbook in teaching science to your class?

Check one box.

Yes ☐ No ☐

Option 1

If YES, which of the following textbooks do you use most?

		Yes	***No***
a)	<COUNTRY SPECIFIC TEXT>	☐	☐
b)	<COUNTRY SPECIFIC TEXT>	☐	☐
c)	<COUNTRY SPECIFIC TEXT>	☐	☐
d)	<COUNTRY SPECIFIC TEXT>	☐	☐

Option 2

If YES, write in the title, author, etc. of the textbook you use most.

Title: _____

Author (Publisher): _____

Year: _____

Other: _____

5. Approximately what percentage of your weekly science teaching time is based on the text(s) indicated in the previous question?

Check one box.

- 0 - 25% ..... ☐
- 26 - 50% ..... ☐
- 51 - 75% ..... ☐
- 76 - 100% ..... ☐

6. What do you use in the place of or in addition to a textbook?

Write in.

_____

_____

_____

_____

_____

_____

7. In your view to what extent do the following limit how you teach your science class?

Check one box in each row.

		not at all	*a little*	*quite a lot*	*a great deal*
a)	students with different academic abilities	☐	☐	☐	☐
b)	students who come from a wide range of backgrounds, (e.g., economic, language)	☐	☐	☐	☐
c)	students with special needs, (e.g., hearing, vision, speech impairment, physical disabilities, mental or emotional/psychological impairment)	☐	☐	☐	☐
d)	uninterested students	☐	☐	☐	☐
e)	disruptive students	☐	☐	☐	☐
f)	parents interested in their children's learning and progress	☐	☐	☐	☐
g)	parents uninterested in their children's learning and progress	☐	☐	☐	☐
h)	shortage of computer hardware	☐	☐	☐	☐
i)	shortage of computer software	☐	☐	☐	☐
j)	shortage of other instructional equipment for students' use	☐	☐	☐	☐
k)	shortage of equipment for your use in demonstrations and other exercises	☐	☐	☐	☐
l)	inadequate physical facilities	☐	☐	☐	☐
m)	high student/teacher ratio	☐	☐	☐	☐
n)	low morale among fellow teachers/administrators	☐	☐	☐	☐
o)	low morale among students	☐	☐	☐	☐
p)	threat(s) to personal safety or the safety of students	☐	☐	☐	☐

8. How many of your students have access to calculators during science lessons?

Check one box.

- Almost all ☐
- About three quarters ☐
- About half ☐
- About one quarter ☐
- None ☐

9. How often do students in your science class use calculators for the following activities?

Check one box for each row.

		almost every day	*once or twice a week*	*once or twice a month*	*never, or hardly ever*
a)	Checking answers	☐	☐	☐	☐
b)	Tests and exams	☐	☐	☐	☐
c)	Routine computation	☐	☐	☐	☐
d)	Solving complex problems	☐	☐	☐	☐
e)	Exploring number concepts	☐	☐	☐	☐

10. When planning science lessons, how much do you rely on...

Check one box in each row.

		never	*rarely*	*sometimes*	*always*
a)	your own previously prepared lessons	☐	☐	☐	☐
b)	a written plan compiled by teachers in the school	☐	☐	☐	☐
c)	other teachers or science specialists in your school/department	☐	☐	☐	☐
d)	student textbooks	☐	☐	☐	☐
e)	other textbooks or resource books	☐	☐	☐	☐
f)	teacher guides or teacher edition of textbook	☐	☐	☐	☐
g)	external examinations or standardized tests	☐	☐	☐	☐

11. In planning science lessons, what is your main source of written information when...

NRC Note: <List only country-specific appropriate options.>

Check one box in each row.

	<*National or Regional Examination Specifications*>	<*National or Regional Curriculum Guide*>	<*School Curriculum Guide*>	*Teacher Edition of Textbook*	*Student Edition of Textbook*	*Other Resource Books*
a) deciding which topics to teach (goals)	☐	☐	☐	☐	☐	☐
b) deciding how to present a topic	☐	☐	☐	☐	☐	☐
c) selecting problems and exercises for work in class and homework	☐	☐	☐	☐	☐	☐
d) selecting problems and applications for assessment and evaluation	☐	☐	☐	☐	☐	☐

Science Topics

On the following pages there is a list of science topics. Each topic is illustrated by a short list of subtopics. Not all topics are necessarily appropriate for your class. Nevertheless, please respond to the entire list so that we may obtain an indication of topics covered in your class that is as complete and accurate as possible.

- *Before marking anything, read quickly through the entire list to obtain an idea of where various topics may be found. Be sure to read the four examples on the next page.*
- *If you **have taught** a topic to your class, check the appropriate box indicating the total number of <periods> in which the topic was taught. Four choices are provided: 1-5 <periods>, 6-10 <periods>, 11-15 <periods>, and > 15 (i.e., more than 15) <periods>.*
- *If you **will continue to teach or begin teaching** a topic in future lessons this year, check the box in the "will teach later this year" column.*
- *If you have **not taught** a topic and will not teach it this year to your class, check the box in the "not taught this year" column.*
- *If you know that a topic was taught to your students in a **previous year,** check the box in the "taught in a previous year" column.*
- *If you have taught ANY of the subtopics listed under a major topic, indicate that you have taught that major topic area. Subtopics are listed for illustration purposes.*
- *For a few main topics, you are asked to indicate whether you have taught certain subtopics as well as the main topic, since these subtopics are of special interest in this study.*

EXAMPLES:

NRC Note: <Use country-specific appropriate designation for class <period/hour>.

How long did you spend teaching each of these topics to your class this year? Will you cover any of these topics in future <periods>?

Check as many boxes as apply for each topic listed.

	have taught this year <period> completed				*will teach later this year*	*not taught this year*	*taught a previous year*
	1-5	*6-10*	*11-15*	*> 15*			
Example 1. You have not taught this topic and will not teach it this year:							
a) Relativity Theory ..... Relativity theory	☐	☐	☐	☐	☐	☒	☐
Example 2. You've taught this topic in 2 class <periods> and know it was taught in a previous year:							
b) Earth Processes ..... Weather and climate, physical cycles, building and breaking (e.g., volcanoes, earthquakes), geologic timetable, fossils	☒	☐	☐	☐	☐	☐	☒
Example 3. You've taught this topic in 8 class <periods> and will teach it in future <periods>:							
c) Energy Processes ..... Heat and temperature; wave phenomena, sound and vibration, electricity, and magnetism	☐	☐	☒	☐	☐	☐	☐
Example 4. You have not taught this topic but will teach it in future <periods>:							
d) Nature of Science..... The nature of scientific knowledge; the scientific enterprise; and scientific methods	☐	☐	☐	☐	☒	☐	☐

12. How long did you spend teaching each of these topics to your science class this year? Will you cover any of these topics in future <periods>?

Check as many boxes as apply for each topic listed.

TOPIC	*have taught this year <period> completed* 1-5	6-10	11-15	> 15	*will teach later this year*	*not taught this year*	*taught a previous year*
a) Earth Features ..... *Indicate your coverage both at the main topic level and for each of the following subtopics.*	☐	☐	☐	☐	☐	☐	☐
1. Layers of the Earth	☐	☐	☐	☐	☐	☐	☐
2. Landforms	☐	☐	☐	☐	☐	☐	☐
3. Bodies of Water	☐	☐	☐	☐	☐	☐	☐
4. Atmosphere	☐	☐	☐	☐	☐	☐	☐
5. Rocks, Soil	☐	☐	☐	☐	☐	☐	☐
6. Iceforms	☐	☐	☐	☐	☐	☐	☐
b) Earth Processes ..... Weather and climate, physical cycles, building and breaking (e.g., volcanoes, earthquakes), geologic timetable, fossils	☐	☐	☐	☐	☐	☐	☐
c) Earth in the Universe ..... Interactions between sun, earth and moon; planets and the solar system; things beyond the solar system; evolution of the universe	☐	☐	☐	☐	☐	☐	☐
d) Human Biology & Health	☐	☐	☐	☐	☐	☐	☐
1. Structures and Functions of the Body ...	☐	☐	☐	☐	☐	☐	☐
2. Metabolism, Respiration, Digestion and other Bodily Processes	☐	☐	☐	☐	☐	☐	☐
3. Reproduction	☐	☐	☐	☐	☐	☐	☐
4. Genetics	☐	☐	☐	☐	☐	☐	☐
e) Diversity & Structure of Living Things . Plants, fungi, animals, other organisms; structure and function of organ systems; organs, tissues, and cells	☐	☐	☐	☐	☐	☐	☐
f) Life Processes & Systems Enabling Life Functions ..... Sensing and responding; biochemical processes in cells; photosynthesis; respiration; digestion	☐	☐	☐	☐	☐	☐	☐
g) Life Cycles, Genetic Continuity, Diversity ..... Life cycles, reproduction, variation and inheritance, evolution, speciation, diversity, and the biochemistry of genetics	☐	☐	☐	☐	☐	☐	☐

TOPIC	*have taught this year <period> completed* 1-5	6-10	11-15	> 15	*will teach later this year*	*not taught this year*	*taught a previous year*
h) Interactions of Living Things ..... Biomes and ecosystems, habitats and niches; the interdependence of life; animal behavior'	☐	☐	☐	☐	☐	☐	☐
i) Types and Properties of Matter ..... Classification of matter (e.g., mixtures, compounds); physical properties and chemical properties	☐	☐	☐	☐	☐	☐	☐
j) Structure of Matter ..... Atoms, ions, molecules, macromolecules, crystals	☐	☐	☐	☐	☐	☐	☐
k) Energy Types, Sources, and Conversions Types of energy (e.g., mechanical, chemical); sources of energy (food, oil, wood); conversions of energy; work and efficiency	☐	☐	☐	☐	☐	☐	☐
l) Energy Processes ..... Heat and temperature; wave phenomena, sound and vibration, electricity, and magnetism. *Indicate your coverage both for the above main topic and for the following subtopic.*	☐	☐	☐	☐	☐	☐	☐
1. Light	☐	☐	☐	☐	☐	☐	☐
m) Physical Changes ..... Physical changes and explanations of physical changes	☐	☐	☐	☐	☐	☐	☐
n) Kinetic & Quantum Theory ..... Kinetic theory and quantum theory and fundamental particles	☐	☐	☐	☐	☐	☐	☐
o) General Chemical Changes ..... Chemical changes, explanations of chemical changes; rate of change and equilibria; energy and chemical change	☐	☐	☐	☐	☐	☐	☐
p) Specialized Chemical Changes ..... Nuclear fusion and fission; radiation; electrochemistry; organic and biochemical changes	☐	☐	☐	☐	☐	☐	☐
q) Forces & Motion ..... Types of forces; speed, acceleration; dynamics of motion, fluid behavior	☐	☐	☐	☐	☐	☐	☐
r) Relativity Theory ..... Relativity theory	☐	☐	☐	☐	☐	☐	☐

TOPIC	*have taught this year <period> completed* 1-5	6-10	11-15	> 15	*will teach later this year*	*not taught this year*	*taught a previous year*
s) Science, Technology, & Society..... The nature or conceptions of technology; the interactions among science, mathematics, and technology, and the interactions between science, technology and society	☐	☐	☐	☐	☐	☐	☐
t) History of Science & Technology..... Famous scientists, classic experiments, historical development of scientific ideas, the industrial revolution, and classic inventions	☐	☐	☐	☐	☐	☐	☐
u) Environmental & Resource Issues ..... Pollution, conservation of land, water, and sea resources, conservation of material and energy resources, world population, food production and storage, and the effects of natural disasters	☐	☐	☐	☐	☐	☐	☐
v) Nature of Science..... Enterprise; and scientific methods	☐	☐	☐	☐	☐	☐	☐
w) Measurement							
1. Using Apparatus	☐	☐	☐	☐	☐	☐	☐
2. Conducting Routine Experimental Operations	☐	☐	☐	☐	☐	☐	☐
3. Gathering Data	☐	☐	☐	☐	☐	☐	☐
x) Data Analysis							
1. Organizing and Representing Data	☐	☐	☐	☐	☐	☐	☐
2. Interpreting Provided Data	☐	☐	☐	☐	☐	☐	☐
3. Interpreting Data From Student Investigations	☐	☐	☐	☐	☐	☐	☐
4. Formulating Conclusions From Data Collected	☐	☐	☐	☐	☐	☐	☐
By Students	☐	☐	☐	☐	☐	☐	☐

Think of the last <lesson> in which you taught science to your science class. (If this lesson was atypical, e.g., an examination period or a field trip, pick the previous one.)

13a. How many minutes was this class <hour/period>?

Please write in a number.

_____ *minutes*

13b. For each of the following science topics, indicate whether or not it was the subject of the lesson.

(See "Science Topics" category descriptions in question 12.)

Check one box in each row.

		Yes	***No***
1.	Earth Features	☐	☐
2.	Earth Processes	☐	☐
3.	Earth in the Universe	☐	☐
4.	Human Biology and Health	☐	☐
5.	Diversity and Structure of Living Things	☐	☐
6.	Life Processes and Systems Enabling Life Function	☐	☐
7.	Life Cycles, Genetic Continuity, Diversity	☐	☐
8.	Interactions of Living Things	☐	☐
9.	Types and Properties of Matter	☐	☐
10.	Structure of Matter	☐	☐
11.	Energy Types, Sources, and Conversions	☐	☐
12.	Energy Processes	☐	☐
13.	Physical Changes	☐	☐
14.	Kinetic and Quantum Theory	☐	☐
15.	General Chemical Changes	☐	☐
16.	Specialized Chemical Changes	☐	☐
17.	Force and Motion	☐	☐
18.	Relativity Theory	☐	☐
19.	Science, Technology and Society	☐	☐
20.	History of Science and Technology	☐	☐
21.	Environmental and Resource Issues	☐	☐
22.	Nature of Science	☐	☐

13c. Was this lesson...

Check one box in each row.

		Yes	***No***
1.	the introduction of this topic	☐	☐
2.	a continuation of a previous lesson on the same topic	☐	☐
3.	the end of the coverage of this topic	☐	☐

13d. Did you assign homework after the class <hour/period>?

Check one box.

Yes ☐ No ☐

13e. If yes,
how long would it take a typical student to complete this homework?

Please write in a number.

_____ *minutes*

13f. Was a computer used during this class <hour/period>?

Check one box.

Yes ☐ No ☐

13g. Was there a separate laboratory <session/hour/period> associated with this class <hour/period>?

Check one box.

Yes ☐ No ☐

13h. If yes,
how many minutes were given to this laboratory <session/hour/period>?

Please write in a number.

_____ *minutes*

Think of the same science class <hour/period>.

14a. How did the lesson proceed?

The following presents a list of activities that may occur during a lesson. Although the list is not exhaustive of what happens in a classroom, most classroom activities may be considered as variations of those listed below. Using this list, indicate how your lesson developed. In the blanks on the right, write in the order in which the activities used in the lesson took place (1 = first, 2 = second, and so on) and estimate the amount of time you spent on each one. Ignore activities you used that do not fit into the descriptions listed. Write in the order and the approximate number of minutes for each activity. NOTE: If you did not do a certain activity write zero in the blank next to it.

	order	***minutes***
• review of previous lesson(s)	_____	_____
• a short quiz or test to review previous lesson	_____	_____
• oral recitation or drill (students responding aloud).....	_____	_____
• review or correction of previous lesson's homework	_____	_____
• **introduction** of a topic (class discussion, teacher explanation/demonstration, film, video, use of concrete materials etc.).....	_____	_____
• **development** of a topic (class discussion, teacher explanation/demonstration, group problem solving, film, video, etc.).....	_____	_____
• small group activities (with or without teacher)	_____	_____
• students do paper-and-pencil exercises related to topic (not the same as homework)	_____	_____
• assignment of student homework	_____	_____
• students work on homework in class	_____	_____
• student laboratory or data collection activity (not a separate laboratory hour) or hands-on session.....	_____	_____

14b. In this class <hour/period> did the students work in small groups?

Check one box.

none of the time ..... ☐

some of the time ..... ☐

all the time ..... ☐

15. In your science lessons, how often do you usually ask students to do the following?

Check one box in each row.

		never or almost never	*some lessons*	*most lessons*	*every lesson*
a)	explain the reasoning behind an idea.	☐	☐	☐	☐
b)	represent and analyze relationships using tables, charts, or graphs.	☐	☐	☐	☐
c)	work on problems for which there is no immediately obvious method of solution.	☐	☐	☐	☐
d)	use computers to solve exercises or problems. .	☐	☐	☐	☐
e)	write explanations about what was observed and why it happened.	☐	☐	☐	☐
f)	put events of objects in order and give a reason for the organization.	☐	☐	☐	☐

16. In your science lessons, how frequently do you do the following when a student gives an incorrect response during a class discussion?

Check one box in each row.

		never or almost never	*some lessons*	*most lessons*	*every lesson*
a)	correct the student's error in front of the class ..	☐	☐	☐	☐
b)	ask the student another question to help him or her get the correct response	☐	☐	☐	☐
c)	call on another student who's likely to give the correct response	☐	☐	☐	☐
d)	call on other students to get their responses and then discuss what is correct	☐	☐	☐	☐

17. In science lessons, how often do students...

Check one box in each row.

	never or almost never	*some lessons*	*most lessons*	*every lesson*
a) work individually without assistance from the teacher	☐	☐	☐	☐
b) work individually with assistance from the teacher	☐	☐	☐	☐
c) work together as a class with the teacher teaching the whole class	☐	☐	☐	☐
d) work together as a class with students responding to one another	☐	☐	☐	☐
e) work in pairs or small groups without assistance from the teacher	☐	☐	☐	☐
f) work in pairs or small groups with assistance from the teacher	☐	☐	☐	☐

18. How often do you usually assign science homework?

Check one box.

- never ☐
- less than once a week ☐
- once or twice a week ☐
- 3 or 4 times a week ☐
- every day ☐

19. If you assign science homework, how many minutes of science homework do you usually assign your students?

(Consider the time it would take an average student in your class.)

Check one box.

- I do not assign homework. ☐
- less than 15 minutes ☐
- 15-30 minutes ☐
- 31-60 minutes ☐
- 61-90 minutes ☐
- more than 90 minutes ☐

20. If you assign science homework, how often do you assign each of the following kinds of tasks?

Check one box in each row.

	never	*rarely*	*sometimes*	*always*	*I do not assign homework*
a) worksheets or workbook	☐	☐	☐	☐	☐
b) problem/question sets in textbook	☐	☐	☐	☐	☐
c) reading in a textbook or supplementary materials	☐	☐	☐	☐	☐
d) writing definitions or other short writing assignment	☐	☐	☐	☐	☐
e) small investigation(s) or gathering data	☐	☐	☐	☐	☐
f) working individually on long term projects or experiments	☐	☐	☐	☐	☐
g) working as a small group on long term projects or experiments	☐	☐	☐	☐	☐
h) finding one or more uses of the content covered	☐	☐	☐	☐	☐
i) preparing oral reports either individually or as a small group	☐	☐	☐	☐	☐
j) keeping a journal	☐	☐	☐	☐	☐

21. If students are assigned <u>written</u> science homework, how often do you do the following?

Check one box in each row.

	never	*rarely*	*sometimes*	*always*	*I do not assign homework*
a) record whether or not the homework was completed	☐	☐	☐	☐	☐
b) collect, correct and keep assignments	☐	☐	☐	☐	☐
c) collect, correct assignments and then return to students	☐	☐	☐	☐	☐
d) give feedback on homework to whole class	☐	☐	☐	☐	☐
e) have students correct their own assignments in class	☐	☐	☐	☐	☐
f) have students exchange assignments and correct them in class	☐	☐	☐	☐	☐
g) use it as a basis for class discussion	☐	☐	☐	☐	☐
h) use it to contribute towards students' grades or marks	☐	☐	☐	☐	☐

22. In assessing the work of the students in your science class, how much weight do you give each of the following types of assessment?

Check one box in each row.

		none	*little*	*quite a lot*	*a great deal*
a)	standardized tests produced outside the school	☐	☐	☐	☐
b)	teacher-made short answer or essay tests that require students to describe or explain their reasoning	☐	☐	☐	☐
c)	teacher made multiple choice, true-false and matching tests	☐	☐	☐	☐
d)	how well students do on homework assignments	☐	☐	☐	☐
e)	how well students do on projects or practical/laboratory exercises	☐	☐	☐	☐
f)	observations of students	☐	☐	☐	☐
g)	responses of students in class	☐	☐	☐	☐

23. How often do you use the assessment information you gather from students to...

Check one box in each row.

		none	*little*	*quite a lot*	*a great deal*
a)	provide students' grades or marks?	☐	☐	☐	☐
b)	provide feedback to students?	☐	☐	☐	☐
c)	diagnose students' learning problems?	☐	☐	☐	☐
d)	report to parents?	☐	☐	☐	☐
e)	assign students to different programs or tracks?	☐	☐	☐	☐
f)	plan for future lessons?	☐	☐	☐	☐

THANK YOU for the thought, time, and effort you have put into completing this questionnaire.

Section C

OPPORTUNITY TO LEARN (Science)

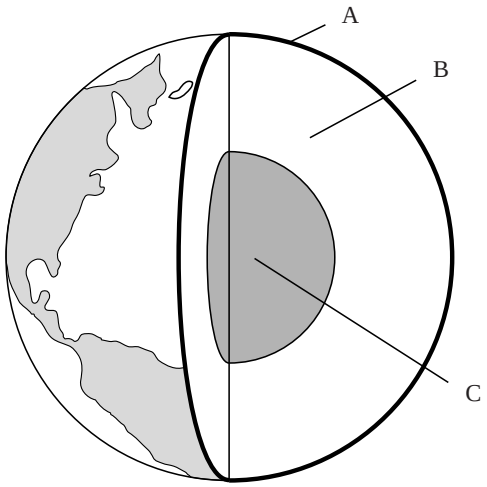
In this section, a set of exercises on various science topics are presented, and you are asked to indicate whether you have taught or will teach the topic to your science class this year.

Please remember, “your science class” refers to the class which is identified on the cover of this questionnaire, and which will be tested as part of TIMSS in your school.

I. EARTH FEATURES: COMPOSITION

The following exercise illustrates the above topic. This exercise, or ones like it, might be used to assess students' learning of this topic.

A. The picture shows the three main layers of the Earth.



Where is it hottest, A, B, or C?

---

1. Is anything done in your science class that would enable your students to complete similar exercises that address this topic?

Check one: ☐ Yes ☐ No

If YES... *Check as many as apply.*

a) Something was done EARLIER this year. ..... ☐
b) Something is CURRENTLY in progress. ..... ☐
c) Something will be done LATER this year. ..... ☐

If NO... *Check as many as apply.*

d) The topic was covered in the curriculum for an EARLIER grade. ..... ☐
e) Although the topic is in the curriculum for THIS grade, I will not cover it. ☐
f) The topic is covered in the curriculum for a LATER grade. ..... ☐
g) To my knowledge, this topic is NOT INCLUDED in the curriculum. ..... ☐
h) I DO NOT KNOW whether this topic is covered in any other grade. ..... ☐

2. If you were to develop a test for your science class that assesses this particular science topic, would you consider the above item appropriate for the test?

Check one: ☐ Yes ☐ No

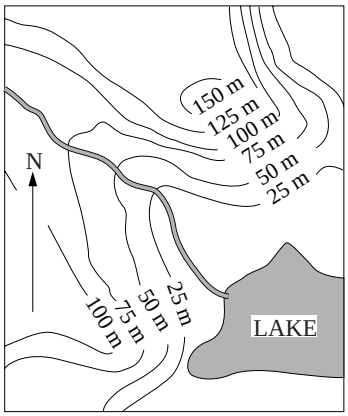
3. Are students likely to encounter this topic <u>outside</u> of school this year?

Check one: ☐ Yes ☐ No

II. EARTH FEATURES: LANDFORMS

The following exercises illustrate the above topic. These exercises, or ones like them, might be used to assess students' learning of this topic.

A. On the diagram, hills and valleys are shown by means of contour lines. Each contour line indicates that all points on the line have the same elevation above sea level. In which direction does the river flow?



B. The pictures show two different mountains. The mountains in Picture A are rough and jagged. The mountains in Picture B are smooth and rounded. Which statement about these mountains is probably true?

Picture A

Picture B

1. The mountains in Picture A are older.
2. The mountains in Picture B are older
3. The mountains are about the same age but were formed in different ways.
4. The mountains are about the same age but are in different hemispheres.

---

1. Is anything done in your science class that would enable your students to complete similar exercises that address this topic?

Check one: ☐ Yes ☐ No

If YES... *Check as many as apply.*

a) Something was done EARLIER this year. ..... ☐
b) Something is CURRENTLY in progress. ..... ☐
c) Something will be done LATER this year. ..... ☐

If NO... *Check as many as apply.*

d) The topic was covered in the curriculum for an EARLIER grade. ..... ☐
e) Although the topic is in the curriculum for THIS grade, I will not cover it. ☐
f) The topic is covered in the curriculum for a LATER grade. ..... ☐
g) To my knowledge, this topic is NOT INCLUDED in the curriculum. ..... ☐
h) I DO NOT KNOW whether this topic is covered in any other grade. ..... ☐

2. If you were to develop a test for your science class that assesses this particular science topic, which of the above items would you consider appropriate for the test?

Check all that apply.

A ☐ B ☐ neither ☐

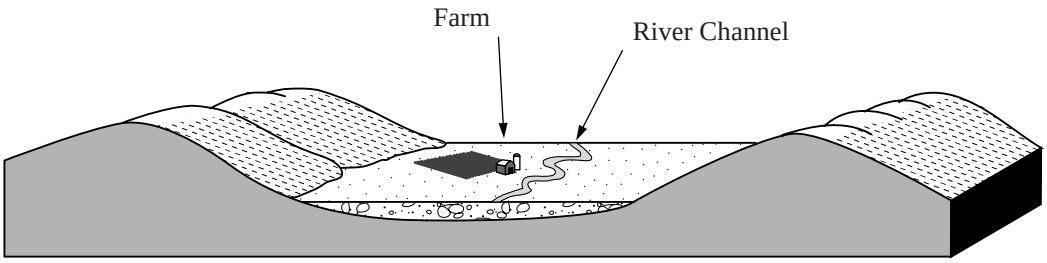
3. Are students likely to encounter this topic <u>outside</u> of school this year?

Check one: ☐ Yes ☐ No

III. EARTH FEATURES: BODIES OF WATER

The following exercise also illustrates the above topic. This exercise, or ones like it, might be used to assess students' learning of this topic.

A. The wide plain through which a river flows is covered with several layers of soil and sediment.



Write down one reason why this plain is a good place for farming.
Write down one reason why this plain is <u>not</u> a good place for farming.

---

1. Is anything done in your science class that would enable your students to complete similar exercises that address this topic?

Check one: ☐ Yes ☐ No

If YES... *Check as many as apply.*

a) Something was done EARLIER this year. ..... ☐
b) Something is CURRENTLY in progress. ..... ☐
c) Something will be done LATER this year. ..... ☐

If NO... *Check as many as apply.*

d) The topic was covered in the curriculum for an EARLIER grade. ..... ☐
e) Although the topic is in the curriculum for THIS grade, I will not cover it. ☐
f) The topic is covered in the curriculum for a LATER grade. ..... ☐
g) To my knowledge, this topic is NOT INCLUDED in the curriculum. ..... ☐
h) I DO NOT KNOW whether this topic is covered in any other grade. ..... ☐

2. If you were to develop a test for your science class that assesses this particular science topic, would you consider the above item appropriate for the test?

Check one: ☐ Yes ☐ No

3. Are students likely to encounter this topic <u>outside</u> of school this year?

Check one: ☐ Yes ☐ No

IV. EARTH FEATURES: BODIES OF WATER

The following exercise illustrates the above topic. This exercise, or ones like it, might be used to assess students' learning of this topic.

A. A small, fast-moving river is in a V-shaped valley on the slope of a mountain. If you follow the river to where it passes through a plain, what will the river most likely look like compared with how it looked on the mountain: much the same, deeper and faster, slower and wider, or straighter?

---

1. Is anything done in your science class that would enable your students to complete similar exercises that address this topic?

Check one: ☐ Yes ☐ No

If YES... *Check as many as apply.*

a) Something was done EARLIER this year. ..... ☐
b) Something is CURRENTLY in progress. ..... ☐
c) Something will be done LATER this year. ..... ☐

If NO... *Check as many as apply.*

d) The topic was covered in the curriculum for an EARLIER grade. ..... ☐
e) Although the topic is in the curriculum for THIS grade, I will not cover it. ☐
f) The topic is covered in the curriculum for a LATER grade. ..... ☐
g) To my knowledge, this topic is NOT INCLUDED in the curriculum. ..... ☐
h) I DO NOT KNOW whether this topic is covered in any other grade. ..... ☐

2. If you were to develop a test for your science class that assesses this particular science topic, would you consider the above item appropriate for the test?

Check one: ☐ Yes ☐ No

3. Are students likely to encounter this topic <u>outside</u> of school this year?

Check one: ☐ Yes ☐ No

V. EARTH FEATURES: ATMOSPHERE

The following exercises illustrate the above topic. These exercises, or ones like them, might be used to assess students' learning of this topic.

A. Air is made up of many gases. Which gas is found in the greatest amount?

B. Why do mountain climbers use oxygen at the top of the world's highest mountains?

C. Write down one reason why the ozone layer is important for all living things on Earth.

1. Is anything done in your science class that would enable your students to complete similar exercises that address this topic?

Check one: ☐ Yes ☐ No

If YES... *Check as many as apply.*

a) Something was done EARLIER this year. ..... ☐
b) Something is CURRENTLY in progress. ..... ☐
c) Something will be done LATER this year. ..... ☐

If NO... *Check as many as apply.*

d) The topic was covered in the curriculum for an EARLIER grade. ..... ☐
e) Although the topic is in the curriculum for THIS grade, I will not cover it. ☐
f) The topic is covered in the curriculum for a LATER grade. ..... ☐
g) To my knowledge, this topic is NOT INCLUDED in the curriculum. ..... ☐
h) I DO NOT KNOW whether this topic is covered in any other grade. ..... ☐

2. If you were to develop a test for your science class that assesses this particular science topic, which of the above items would you consider appropriate for the test?

Check all that apply.

A ☐ B ☐ C ☐ none ☐

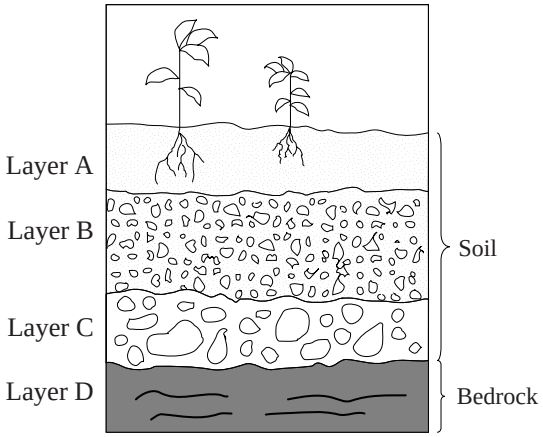
3. Are students likely to encounter this topic <u>outside</u> of school this year?

Check one: ☐ Yes ☐ No

VI. EARTH FEATURES: ROCKS AND SOILS

The following exercises illustrate the above topic. These exercises, or ones like them, might be used to assess students' learning of this topic.

A. Which layer in the diagram contains the most organic material?



B. The presence of igneous rock in an area would indicate that the area once had...?

C. Rock that is made of material that has settled to the bottom of lakes and oceans and been compressed and hardened is...?

1. Is anything done in your science class that would enable your students to complete similar exercises that address this topic?

Check one: ☐ Yes ☐ No

If YES... *Check as many as apply.*

a) Something was done EARLIER this year. ..... ☐
b) Something is CURRENTLY in progress. ..... ☐
c) Something will be done LATER this year. ..... ☐

If NO... *Check as many as apply.*

d) The topic was covered in the curriculum for an EARLIER grade. ..... ☐
e) Although the topic is in the curriculum for THIS grade, I will not cover it. ☐
f) The topic is covered in the curriculum for a LATER grade. ..... ☐
g) To my knowledge, this topic is NOT INCLUDED in the curriculum. ..... ☐
h) I DO NOT KNOW whether this topic is covered in any other grade. ..... ☐

2. If you were to develop a test for your science class that assesses this particular science topic, which of the above items would you consider appropriate for the test?

Check all that apply.

A ☐ B ☐ C ☐ none ☐

3. Are students likely to encounter this topic <u>outside</u> of school this year?

Check one: ☐ Yes ☐ No

VII. HUMAN BIOLOGY

The following exercises illustrate the above topic. These exercises, or ones like them, might be used to assess students' learning of this topic.

A. Sensory messages are taken to the brain by...?

B. Write down the reason why we get thirsty on a hot day and have to drink a lot.

C. What is the advantage of having two eyes to see with rather than one eye?

D. What is the main function of red blood cells?

E. From whom can a son inherit his traits?

F. When you bend your arm at the elbow, the bones and muscles in your arm are acting as a system. What simple machine does this system represent?

1. Is anything done in your science class that would enable your students to complete similar exercises that address this topic?

Check one: ☐ Yes ☐ No

If YES... *Check as many as apply.*

a) Something was done EARLIER this year. ..... ☐
b) Something is CURRENTLY in progress. ..... ☐
c) Something will be done LATER this year. ..... ☐

If NO... *Check as many as apply.*

d) The topic was covered in the curriculum for an EARLIER grade. ..... ☐
e) Although the topic is in the curriculum for THIS grade, I will not cover it. ☐
f) The topic is covered in the curriculum for a LATER grade. ..... ☐
g) To my knowledge, this topic is NOT INCLUDED in the curriculum. ..... ☐
h) I DO NOT KNOW whether this topic is covered in any other grade. ..... ☐

2. If you were to develop a test for your science class that assesses this particular science topic, which of the above items would you consider appropriate for the test?

Check all that apply.

A ☐ B ☐ C ☐ D ☐ E ☐ F ☐ none ☐

3. Are students likely to encounter this topic <u>outside</u> of school this year?

Check one: ☐ Yes ☐ No

VIII. HUMAN BIOLOGY

The following exercise also illustrates the above topic. This exercise, or ones like it, might be used to assess students' learning of this topic.

A. Suppose you want to investigate how the human heart rate changes with changes in activity. What materials would you use and what procedures would you follow?

---

1. Is anything done in your science class that would enable your students to complete similar exercises that address this topic?

Check one: ☐ Yes ☐ No

If YES... *Check as many as apply.*

a) Something was done EARLIER this year. ..... ☐
b) Something is CURRENTLY in progress. ..... ☐
c) Something will be done LATER this year. ..... ☐

If NO... *Check as many as apply.*

d) The topic was covered in the curriculum for an EARLIER grade. ..... ☐
e) Although the topic is in the curriculum for THIS grade, I will not cover it. ☐
f) The topic is covered in the curriculum for a LATER grade. ..... ☐
g) To my knowledge, this topic is NOT INCLUDED in the curriculum. ..... ☐
h) I DO NOT KNOW whether this topic is covered in any other grade. ..... ☐

2. If you were to develop a test for your science class that assesses this particular science topic, would you consider the above item appropriate for the test?

Check one: ☐ Yes ☐ No

3. Are students likely to encounter this topic <u>outside</u> of school this year?

Check one: ☐ Yes ☐ No

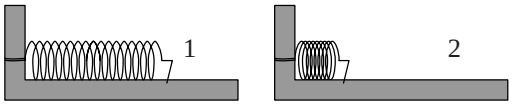
IX. ENERGY TYPES, SOURCES, AND CONVERSIONS

The following exercises illustrate the above topic. These exercises, or ones like them, might be used to assess students' learning of this topic.

A. Most of the chemical energy released when gasoline burns in a car engine is not used to move the car, but is changed into...?

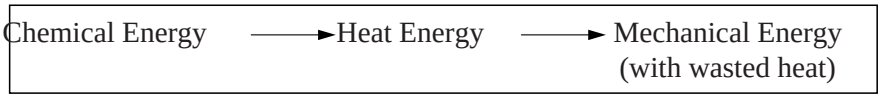
B. People get energy from the food they eat. Where does the energy stored in food come from?

C. Spring 1 and spring 2 were the same. Then, spring 1 was pushed together a little and clamped in place. Spring 2 was pushed together a lot and clamped.



Which spring has more stored energy?

D.



The sequence of energy changes shown in the diagram explains which event?

1. A flashlight is on.
2. A candle burns.
3. Gasoline burns to power a car.
4. Electric current runs a refrigerator.

1. Is anything done in your science class that would enable your students to complete similar exercises that address this topic?

Check one: ☐ Yes ☐ No

If YES... *Check as many as apply.*

a) Something was done EARLIER this year. ..... ☐
b) Something is CURRENTLY in progress. ..... ☐
c) Something will be done LATER this year. ..... ☐

If NO... *Check as many as apply.*

d) The topic was covered in the curriculum for an EARLIER grade. ..... ☐
e) Although the topic is in the curriculum for THIS grade, I will not cover it. ☐
f) The topic is covered in the curriculum for a LATER grade. ..... ☐
g) To my knowledge, this topic is NOT INCLUDED in the curriculum. ..... ☐
h) I DO NOT KNOW whether this topic is covered in any other grade. ..... ☐

2. If you were to develop a test for your science class that assesses this particular science topic, which of the above items would you consider appropriate for the test?

Check all that apply.

A ☐ B ☐ C ☐ D ☐ none ☐

3. Are students likely to encounter this topic <u>outside</u> of school this year?

Check one: ☐ Yes ☐ No

X. ENERGY TYPES, SOURCES, AND CONVERSIONS

The following exercise also illustrates the above topic. This exercise, or ones like it, might be used to assess students' learning of this topic.

A. Machine A and Machine B are each used to clear a field. The table show how large an area each cleared in 1 hour and how much gasoline each used.

	Area of field cleared in 1 hour	Gasoline used in 1 hour
Machine A	2 hectares	3/4 liter
Machine B	1 hectare	1/2 liter

Which tool is more efficient in converting the energy in gasoline to work? Explain your answer.

---

1. Is anything done in your science class that would enable your students to complete similar exercises that address this topic?

Check one: ☐ Yes ☐ No

If YES... *Check as many as apply.*

a) Something was done EARLIER this year. ..... ☐
b) Something is CURRENTLY in progress. ..... ☐
c) Something will be done LATER this year. ..... ☐

If NO... *Check as many as apply.*

d) The topic was covered in the curriculum for an EARLIER grade. ..... ☐
e) Although the topic is in the curriculum for THIS grade, I will not cover it. ☐
f) The topic is covered in the curriculum for a LATER grade. ..... ☐
g) To my knowledge, this topic is NOT INCLUDED in the curriculum. ..... ☐
h) I DO NOT KNOW whether this topic is covered in any other grade. ..... ☐

2. If you were to develop a test for your science class that assesses this particular science topic, would you consider the above item appropriate for the test?

Check one: ☐ Yes ☐ No

3. Are students likely to encounter this topic <u>outside</u> of school this year?

Check one: ☐ Yes ☐ No

XI. ENERGY TYPES, SOURCES, AND CONVERSIONS

The following exercise also illustrates the above topic. This exercise, or ones like it, might be used to assess students' learning of this topic.

A. Electrical energy is used to power a lamp. Is the amount of light energy produced more than, less than, or the same as the amount of electrical energy used? Give a reason to support your answer.

---

1. Is anything done in your science class that would enable your students to complete similar exercises that address this topic?

Check one: ☐ Yes ☐ No

If YES... *Check as many as apply.*

a) Something was done EARLIER this year. ..... ☐
b) Something is CURRENTLY in progress. ..... ☐
c) Something will be done LATER this year. ..... ☐

If NO... *Check as many as apply.*

d) The topic was covered in the curriculum for an EARLIER grade. ..... ☐
e) Although the topic is in the curriculum for THIS grade, I will not cover it. ☐
f) The topic is covered in the curriculum for a LATER grade. ..... ☐
g) To my knowledge, this topic is NOT INCLUDED in the curriculum. ..... ☐
h) I DO NOT KNOW whether this topic is covered in any other grade. ..... ☐

2. If you were to develop a test for your science class that assesses this particular science topic, would you consider the above item appropriate for the test?

Check one: ☐ Yes ☐ No

3. Are students likely to encounter this topic <u>outside</u> of school this year?

Check one: ☐ Yes ☐ No

XII. LIGHT

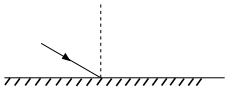
The following exercises illustrate the above topic. These exercises, or ones like them, might be used to assess students' learning of this topic.

A. The walls of a building are to be painted to reflect as much light as possible. What color should they be painted?

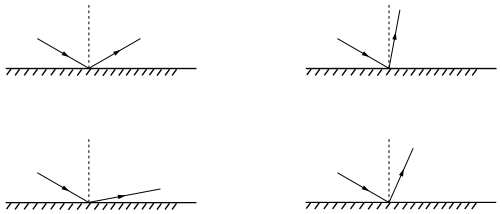
B. A flashlight close to a wall produces a small circle of light compared to the circle it makes when the flashlight is far from the wall. The same amount of light energy reaches the wall regardless of distance. Explain why.

C. A person in a dark room looking through a window can clearly see a person outside in the daylight. But a person outside cannot see the person inside. Why does this happen?

D. A beam of light strikes a mirror as shown.



What picture would best show what the reflected light would look like?



1. Is anything done in your science class that would enable your students to complete similar exercises that address this topic?

Check one: ☐ Yes ☐ No

If YES... *Check as many as apply.*

a) Something was done EARLIER this year. ..... ☐
b) Something is CURRENTLY in progress. ..... ☐
c) Something will be done LATER this year. ..... ☐

If NO... *Check as many as apply.*

d) The topic was covered in the curriculum for an EARLIER grade. ..... ☐
e) Although the topic is in the curriculum for THIS grade, I will not cover it. ☐
f) The topic is covered in the curriculum for a LATER grade. ..... ☐
g) To my knowledge, this topic is NOT INCLUDED in the curriculum. ..... ☐
h) I DO NOT KNOW whether this topic is covered in any other grade. ..... ☐

2. If you were to develop a test for your science class that assesses this particular science topic, which of the above items would you consider appropriate for the test?

Check all that apply.

A ☐ B ☐ C ☐ D ☐ none ☐

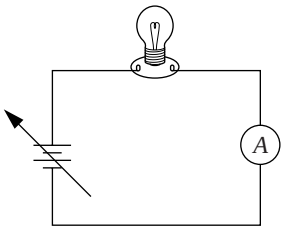
3. Are students likely to encounter this topic <u>outside</u> of school this year?

Check one: ☐ Yes ☐ No

XIII. DATA ANALYSIS

The following exercises illustrate the above topic. These exercises, or ones like them, might be used to assess students' learning of this topic.

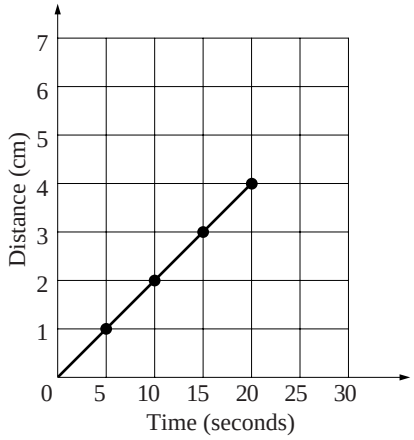
A. Some students used an ammeter *A* to measure the current in the circuit for different voltages.



Voltage (volts)	Current (milliamperes)
1.5	10
3.0	20
6.0	—

The table shows the results. What is the current for 6.0 volts?

B. The graph shows the progress made by an ant moving along a straight line.



If the ant keeps moving at the same speed, how far will it have traveled at the end of 30 seconds?

C. The table gives the temperature at a certain place at different times of the day for three days.

	6 a.m.	9 a.m.	12 noon	3 p.m.	6 p.m.
Monday	15ºC	17ºC	20ºC	21ºC	19ºC
Tuesday	15ºC	15ºC	15ºC	5ºC	4ºC
Wednesday	8ºC	10ºC	14ºC	14ºC	13ºC

When did the temperature become much colder?

DATA ANALYSIS (continued)

AMOUNT OF OXYGEN PRODUCED IN A POND

Location	Oygen Produced
Top Meter	4 grams/cubic meter
Second Meter	3 grams/cubic meter
Third Meter	1 grams/cubic meter
Bottom Meter	0 grams/cubic meter

D. Which statement is consistent with the data in the table?

1. More oxygen production occurs near the surface because there is more light there.
2. More oxygen production occurs near the bottom because there are more plants there.
3. The greater the water pressure, the more oxygen production occurs.
4. The rate of oxygen production is not related to depth.

---

1. Is anything done in your science class that would enable your students to complete similar exercises that address this topic?

Check one: ☐ Yes ☐ No

If YES... *Check as many as apply.*

a) Something was done EARLIER this year. ..... ☐
b) Something is CURRENTLY in progress. ..... ☐
c) Something will be done LATER this year. ..... ☐

If NO... *Check as many as apply.*

d) The topic was covered in the curriculum for an EARLIER grade. ..... ☐
e) Although the topic is in the curriculum for THIS grade, I will not cover it. ☐
f) The topic is covered in the curriculum for a LATER grade. ..... ☐
g) To my knowledge, this topic is NOT INCLUDED in the curriculum. ..... ☐
h) I DO NOT KNOW whether this topic is covered in any other grade. ..... ☐

2. If you were to develop a test for your science class that assesses this particular science topic, which of the above items would you consider appropriate for the test?

Check all that apply.

A ☐ B ☐ C ☐ D ☐ none ☐

3. Are students likely to encounter this topic <u>outside</u> of school this year?

Check one: ☐ Yes ☐ No

THERE ARE NO QUESTIONS ON THIS PAGE

Section D

Pedagogical Approach

To better understand what teachers believe about how science is best taught, we are asking you to respond to two out of the three following hypothetical teaching situations. Several possible approaches are presented for each situation. Some of the situations may involve topics that are tangential to your current teaching field, and therefore, may or may not be likely to occur in your classes. Nevertheless, we are interested in what you believe would be the best approach or sequence of approaches to help students learn in these situations regardless of whether they may occur in your classes.

- Respond to the two situations with the science content most similar to your background and experience
- Imagine yourself in each situation.
- Assume that there are no time or equipment constraints.

For item 1:

- Indicate how strongly you agree or disagree with each of the four statements made about the teaching approach presented.

For items 2 and 3:

- Choose what you believe, based on your own principles and beliefs, to be the best approach or sequence of approaches to help students learn.
- Number the boxes next to each approach in the order in which you would consider using them. If you would use only one approach, place a '1' in that box only. Write zero in blank the box for any approach you would not consider using.

Remember, respond to only two of the next three items: 1, 2, and 3.

1. A teacher began instruction on a new topic in energy (e.g., chemical energy, mechanical energy, energy in life or earth processes). The first thing the teacher did was ask the students "What do you think energy is?" Student responses ranged from very accurate to quite incorrect. What is your opinion about this approach?

Check one box only in each line.

		strongly disagree	disagree	agree	strongly agree
a)	This approach should be avoided because some students might get confused by other students' inaccurate ideas about energy.	☐	☐	☐	☐
b)	The teacher should have begun instruction by first explaining what energy is.	☐	☐	☐	☐
c)	This approach was useful because the teacher became aware of the students' ideas about energy	☐	☐	☐	☐
d)	The teacher should have begun instruction with a demonstration of the effects of energy followed by a discussion of the concept of energy.	☐	☐	☐	☐

2. A student puts his hand in the water in the class aquarium and says, "Look! My hand swells up in the water. See how much bigger than normal it is?" Although the student's hand does appear to be larger than normal when in the water, the student's reasoning is not an accurate explanation of this phenomenon.

If you were working with a class in which you suspected many students shared the belief stated by the student above and if there were no time constraints on what you might do in responding to this, what approach or sequence of approaches do you believe would best help students learn?

Place a '1' in the box next to the approach you believe to be the best. If you believe other approaches would also be acceptable, place a number in the box next to each one indicating the order in which you would consider using it. You need not choose more than one approach. Write a zero in the box for any approach you do not consider acceptable.

a) I would explain to the students how water affects the angles of reflection making an object appear larger than it really is. ..... ☐

b) I would ask the class questions about how the different objects in the aquarium appear in and out of the water to lead them to understand that the above explanation is inaccurate. ..... ☐

c) I would give the students an experiment to do measuring the size of different objects both outside and in several different places inside the aquarium to generate data contrary to the above statement ..... ☐

d) I would ask the students to design and conduct an experiment on the size of objects outside and inside an aquarium that would help them decide whether the explanation above is correct. ..... ☐

e) I would have the students read relevant information from their textbooks. ..... ☐

f) I would demonstrate an experiment or show a filmstrip on how water affects the appearance of objects which would provide a basis for arriving at a more accurate explanation. ..... ☐

g) I would have the students compare their ideas about why objects would appear to be different sizes inside and outside of the aquarium in a discussion. ..... ☐

h) Which of the approaches listed above do you believe to be the least acceptable approach?

Place the letter (a - g) of that approach in the box. ..... ☐

3. A boy in class says, "I already have two brothers, so my mother's next baby probably will be a girl." This idea is quite different from how human inheritance works.

If you were working with a class in which you suspected many students shared the belief stated by the student above and if there were no time constraints on what you might do in responding to this, what approach or sequence of approaches do you believe would best help students learn?

Place a '1' in the box next to the approach you believe to be the best. If you believe other approaches would also be acceptable, place a number in the box next to each one indicating the order in which you would consider using it. You need not choose more than one approach. Write a zero in the box for any approach you do not consider acceptable.

a) I would give the students a more accurate explanation of how human inheritance works. ..... ☐

b) I would ask the class questions that lead students to understand that the above idea is inaccurate. ..... ☐

c) I would have students collect data about inheritance from their classmates ..... ☐

d) I would ask the students to design and conduct an investigation on human inheritance that would help them decide whether the idea above is correct. ..... ☐

e) I would have the students read relevant information from their textbooks. ..... ☐

f) I would use some data to demonstrate how inheritance works which would provide a basis for arriving at a more accurate explanation. ..... ☐

g) I would have the students compare their ideas about how human inheritance works by discussing this topic. ..... ☐

h) Which of the approaches listed above do you believe to be the least acceptable approach?

Place the letter (a - g) of that approach in the box. ..... ☐

THANK YOU for the thought, time and effort you have put into completing this questionnaire.

Section 5

School Background Questionnaire (SCQ2)

Identification Label

Stratum ID:

School ID:

IEA Third International Mathematics and Science Study

School Questionnaire
Population 2

Your school has been selected to participate in the Third International Mathematics and Science Study (TIMSS), an educational research project sponsored by the International Association for the Evaluation of Educational Achievement (IEA). TIMSS is investigating student achievement in mathematics and science in over fifty educational systems around the world. It is designed to measure and interpret differences in national educational systems in order to help improve the teaching and learning of mathematics and science worldwide.

This school questionnaire is addressed to school principals and department heads who are asked to supply information about their schools. Since your school has been selected as part of a nationwide sample, your responses are very important in helping to describe the school system in <COUNTRY>.

It is important that you answer each question carefully so that the information provided reflects the situation in your school as accurately as possible. Some of the questions will require that you look up school records, so you may wish to arrange for the assistance of another staff member to help provide this information. It is estimated that it will require approximately 60 minutes to complete this questionnaire.

When you have completed the questionnaire, please place it in the accompanying envelope and return it to:

<Insert country-specific information here>.

Your cooperation in completing this questionnaire is greatly appreciated.

TIMSS Study Center
Boston College
Chestnut Hill, MA 02167
USA

(Institute Address)

Doc. Ref.: ICC883/NRC420

1. In what type of community is your school located?

Check one box only.

- A geographically isolated area ..... ☐
- Village or rural (farm) area ..... ☐
- One on the outskirts of a town/city ..... ☐
- One close to the center of a town/city ..... ☐

2. Which of the following grade levels are found in your school?

<List only country-specific grades and their appropriate designations.>

Check one box in each line.

	Yes	***No***
a) <Pre-kindergarten>	☐	☐
b) <Kindergarten>	☐	☐
c) <Grade 1>	☐	☐
d) <Grade 2>	☐	☐
e) <Grade 3>	☐	☐
f) <Grade 4>	☐	☐
g) <Grade 5>	☐	☐
h) <Grade 6>	☐	☐
i) <Grade 7>	☐	☐
j) <Grade 8>	☐	☐
k) <Grade 9>	☐	☐
l) <Grade 10>	☐	☐
m) <Grade 11>	☐	☐
n) <Grade 12>	☐	☐
o) <Grade 13>	☐	☐

3. How many of the following are on the staff of your school?

For each type of position listed, provide the number of full-time equivalents (FTEs) present in your school. For example, one full-time (100% time) teacher represents 1 FTE; one part-time (50% time) teacher represents .5 FTE. A staff member who teaches 50% time and functions as an assistant principal for the remaining 50% represents .5 FTE teacher and .5 FTE assistant principal. Write in 0 (zero) if there are no such positions in your school.

		Number of FTEs
a)	Principals	_____
b)	Assistant principals	_____
c)	Department heads	_____
d)	<Classroom teachers>	_____
e)	Teacher aides	_____
f)	Laboratory technicians	_____
g)	Learning specialists	_____
h)	Other professional staff	_____

4a. How many individual full-time <classroom teachers> are there in your school?

Write in a number.

_____

4b. How many individual part-time <classroom teachers> are there in your school?

Write in a number.

_____

5. What percentage of the <classroom teachers> have been at your school for 5 or more years?

Please indicate a percentage. Write 0 (zero) if none.

_____*%*

6. What percentage of the <classroom teachers> teach...

Please indicate a percentage for each of the following. Write 0 (zero) if none.

a) three quarters or more of their teaching load in mathematics ..... _____%

b) no mathematics ..... _____%

c) three quarters or more of their teaching load in science subjects ..... _____%

d) no science subjects ..... _____%

e) three quarters or more of their teaching load in mathematics AND science subjects ..... _____%

f) no mathematics OR science subjects ..... _____%

7. How long do students typically stay with the same teacher?

Check only one box.

One school year ..... ☐

Two school years ..... ☐

Three school years ..... ☐

Four or more school years ..... ☐

8. During the school week, about how many hours of scheduled school time does a mathematics teacher usually have for...

Write in a numeric value. Please write in 0 (zero) if no time is scheduled.

a) tasks related to teaching mathematics (e.g., lesson preparation, grading homework, etc.) ..... _____ *hours/week*

b) teaching mathematics classes ..... _____ *hours/week*

9. During the school week, about how many hours of scheduled school time does a science teacher usually have for...

Write in a numeric value. Please write in 0 (zero) if no time is scheduled.

a) tasks related to teaching science (e.g., lesson preparation, grading homework, etc.) ..... _____ *hours /week*

b) teaching science classes ..... _____ *hours /week*

10. Cooperation and Collaboration:

Check only one box for each.

		Yes	***No***
a)	Does your school have an official policy related to promoting cooperation and collaboration among teachers?	☐	☐
b)	Are teachers in your school encouraged to share and discuss instructional ideas and materials?	☐	☐
c)	Do teachers in your school meet regularly to discuss instructional goals and issues?	☐	☐

11. As principal of this school, about how many hours per month do you usually spend on each of the following activities?

*Please indicate the approximate **number** of hours for each item. Please write 0 (zero) if no time is spent on an activity.*

		hours per month
a)	Hiring teachers	_____
b)	Representing the school in the community	_____
c)	Representing the school at official meetings	_____
d)	Internal administrative tasks (e.g., regulations, school budget, timetable)	_____
e)	Teaching (including preparation)	_____
f)	Giving a demonstration lesson	_____
g)	Discussing educational objectives with teachers	_____
h)	Initiating curriculum revision and/or planning	_____
i)	Talking with parents	_____
j)	Counseling and disciplining of students	_____
k)	Responding to requests from <district>, <state>, or <national> education officials	_____
l)	Training teachers	_____
m)	Professional development activities	_____
n)	Other activities	_____

12. With regard to your school, who has primary responsibility for each of the following activities?

*Check **one** box in each line.*

	not a school responsibility	***<school's governing board>***	***department principal***	***department head***	***department teachers***
a) Hiring teachers	☐	☐	☐	☐	☐
b) Establishing disciplinary policies	☐	☐	☐	☐	☐
c) Establishing student grading policies	☐	☐	☐	☐	☐
d) Formulating the school budget	☐	☐	☐	☐	☐
e) Purchasing supplies	☐	☐	☐	☐	☐
f) Placing students in classes	☐	☐	☐	☐	☐
g) Assigning teachers to classes	☐	☐	☐	☐	☐
h) Determining which textbooks are used	☐	☐	☐	☐	☐
i) Establishing homework policies	☐	☐	☐	☐	☐
j) Determining teacher salaries	☐	☐	☐	☐	☐
k) Establishing community relationships	☐	☐	☐	☐	☐
l) Communicating with students' families	☐	☐	☐	☐	☐
m) Determining course content	☐	☐	☐	☐	☐
n) Deciding which courses are offered	☐	☐	☐	☐	☐

13. How much influence do each of the following have in determining the curriculum that is taught in your school?

*Check **one** box in each line.*

		none	*a little*	*some*	*a lot*
a)	<National Curriculum Council>	☐	☐	☐	☐
b)	<National Subject Association>	☐	☐	☐	☐
c)	<educational region or district>	☐	☐	☐	☐
d)	<school governing board>	☐	☐	☐	☐
e)	Principal/head of school	☐	☐	☐	☐
f)	Teachers (collectively for the school)	☐	☐	☐	☐
g)	Teachers (of same subject) as a group	☐	☐	☐	☐
h)	Each teacher individually	☐	☐	☐	☐
i)	Parents	☐	☐	☐	☐
j)	Students	☐	☐	☐	☐
k)	Church/religious groups	☐	☐	☐	☐
l)	Business community	☐	☐	☐	☐
m)	Textbook publishers	☐	☐	☐	☐
n)	External examinations/standardized tests	☐	☐	☐	☐
o)	Teacher unions	☐	☐	☐	☐

14. Does your school have its own written statement of the curriculum content to be taught (i.e., other than the national or regional curriculum guides)?

*Check **one** box in each line.*

		Yes	*No*
a)	For mathematics	☐	☐
b)	For science	☐	☐

15. In your school, how many computers are...

Write in a number for each. Write 0 (zero) if there are none.

a) available for use by teachers or students ..... _____

b) used by teachers for administrative purposes (e.g., grade reports, attendance, etc.) ..... _____

c) used by teachers during instructional time ..... _____

d) used by students for educational purposes ..... _____

e) used by office staff for school record keeping. ..... _____

16. Is your school's capacity to provide instruction affected by a shortage or inadequacy of any of the following?

*Check **one** box in each line*

		none	***a little***	***some***	***a lot***
a)	Instructional materials (e.g., textbooks)	☐	☐	☐	☐
b)	Budget for supplies (e.g., paper, pencils)	☐	☐	☐	☐
c)	School buildings and grounds	☐	☐	☐	☐
d)	Heating/cooling and lighting systems	☐	☐	☐	☐
e)	Instructional space (e.g., classrooms)	☐	☐	☐	☐
f)	Special equipment for handicapped students	☐	☐	☐	☐
g)	Computers for mathematics instruction	☐	☐	☐	☐
h)	Computer software for mathematics instruction	☐	☐	☐	☐
i)	Calculators for mathematics instruction	☐	☐	☐	☐
j)	Library materials relevant to mathematics instruction	☐	☐	☐	☐
k)	Audio-visual resources for mathematics instruction .	☐	☐	☐	☐
l)	Science laboratory equipment and materials	☐	☐	☐	☐
m)	Computers for science instruction	☐	☐	☐	☐
n)	Computer software for science instruction	☐	☐	☐	☐
o)	Calculators for science instruction	☐	☐	☐	☐
p)	Library materials relevant to science instruction	☐	☐	☐	☐
q)	Audio-visual resources for science instruction	☐	☐	☐	☐

NRC Note:

Item 17 on the next page addresses the issue of INSTRUCTIONAL TIME in <L-GRADE> and <U-GRADE>. If these two grades do not occur in the same school, include only the relevant items/options in the questionnaire to be completed.

17. The students in your school:

Write in the answer for each of the following. Write 0 (zero) if there are none.

		boys	***girls***
a)	What is the total school enrollment (number of students)?	_____	_____
b)	On a typical school day, what percentage of students are absent from school for any reason?	_____ %	
c)	About what percentage of students who begin the year in your school also finish the year in your school?	_____ %	
d)	What percentage of the students in your school transfer into your school after the beginning of the school year?	_____ %	

Concerning <L-GRADE> students...

		boys	***girls***
e)	How many students are in <L-GRADE>?	_____	_____
f)	How many students in <L-GRADE> are repeating the grade?	_____	_____
g)	What is the approximate average class size in <L-GRADE>?	_____	
h)	How many <L-GRADE> students are in multi-grade classrooms?	_____	
i)	How many students in <L-GRADE> study mathematics?	_____	_____
j)	How many students in <L-GRADE> study science?	_____	_____

Concerning <U-GRADE> students...

		boys	***girls***
k)	How many students are in <U-GRADE>?	_____	_____
l)	How many students in <U-GRADE> are repeating the grade?	_____	_____
m)	What is the approximate average class size in <U-GRADE>?	_____	
n)	How many <U-GRADE> students are in multi-grade classrooms?	_____	
o)	How many students in <U-GRADE> study mathematics?	_____	_____
p)	How many students in <U-GRADE> study science?	_____	_____

18. About how often does the school administration or staff have to deal with the following behaviors among <U-GRADE> students?

indicate the approximate percentage of

Check one box for each of the following and

<U-GRADE> students involved for each of the following.

		rarely	***monthly***	***weekly***	***daily***	
a)	arriving late at school	☐	☐	☐	☐	_____ %
b)	absenteeism (i.e., unjustified absences) ..	☐	☐	☐	☐	_____ %
c)	skipping class <hours/periods>	☐	☐	☐	☐	_____ %
d)	violating dress code	☐	☐	☐	☐	_____ %
e)	classroom disturbance	☐	☐	☐	☐	_____ %
f)	cheating	☐	☐	☐	☐	_____ %
g)	profanity	☐	☐	☐	☐	_____ %
h)	vandalism	☐	☐	☐	☐	_____ %
i)	theft	☐	☐	☐	☐	_____ %
j)	intimidation or verbal abuse of other students	☐	☐	☐	☐	_____ %
k)	physical injury to other students	☐	☐	☐	☐	_____ %
l)	intimidation or verbal abuse of teachers or staff	☐	☐	☐	☐	_____ %
m)	physical injury to teachers or staff	☐	☐	☐	☐	_____ %
n)	<tobacco use/possession>	☐	☐	☐	☐	_____ %
o)	<alcohol use/possession>	☐	☐	☐	☐	_____ %
p)	<illegal drug use/possession>	☐	☐	☐	☐	_____ %
q)	<weapon use/possession>	☐	☐	☐	☐	_____ %
r)	<inappropriate sexual behavior>	☐	☐	☐	☐	_____ %

NRC Note:

Item 19 on the next page addresses the issue of INSTRUCTIONAL TIME in <L-GRADE> and <U-GRADE>. If these two grades do not occur in the same school, include only the relevant items/options in the questionnaire to be completed.

19. In your school:

*If the instructional time is the same for both <L-GRADE> and <U-GRADE> students in your school, check the box to the right and **respond only** to questions under the column for the upper grade* ..... ☐

	<L-GRADE>	***<U-GRADE>***	
a) How many instructional days are in the school year?	_____	_____	*days*
b) How many ***full*** instructional days (over 4 hours) are there in the school week?	_____	_____	*days*
c) How many ***half*** instructional days (4 hours or less) are there in the school week?	_____	_____	*half days*
d) How many hours ***in total*** are there in the school week? *(include lunch breaks, study hall time, and after school activities)*	_____	_____	*hours*
e) How many ***instructional*** hours are there in the school week? (*exclude lunch breaks, study hall time, and after school activities)*.....	_____	_____	*hours*

20. Is the school week divided into instructional <hours/periods>?

Check one

Yes ☐ **No** ☐

If yes,

	<L-GRADE>	***<U-GRADE>***	
a) How many ***instructional*** periods are there in a week?	_____	_____	*periods*
b) How many minutes is a typical instructional period?	_____	_____	*minutes*

21. Does your school provide REMEDIAL TEACHING in MATHEMATICS?

Check one

Yes ☐ **No** ☐

If yes, how is this organized?

	Yes	*No*
a) Groups are formed within regular mathematics class	☐	☐
b) Students are withdrawn from their regular mathematics class	☐	☐
c) Students receive extra <tuition> before or after school	☐	☐
d) Other	☐	☐

22. Does your school provide REMEDIAL TEACHING in SCIENCE?

Check one

Yes ☐ **No** ☐

If yes, how is this organized?

	Yes	*No*
a) Groups are formed within regular science class	☐	☐
b) Students are withdrawn from their regular science class	☐	☐
c) Students receive extra <tuition> before or after school	☐	☐
d) Other	☐	☐

23. Does your school provide SPECIAL ENRICHMENT activities in MATHEMATICS for advanced students?

Check one

Yes ☐ **No** ☐

If yes, how is this organized?

	Yes	*No*
a) Groups are formed within regular mathematics class	☐	☐
b) Students are withdrawn from their regular mathematics class	☐	☐
c) Students receive extra <tuition> before or after school	☐	☐
d) Other	☐	☐

24. Does your school provide SPECIAL ENRICHMENT activities in SCIENCE?

Check one

Yes ☐ **No** ☐

If yes, how is it organized?

	Yes	***No***
a) Groups are formed within regular science class	☐	☐
b) Students are withdrawn from their regular science class	☐	☐
c) Students receive extra <tuition> before or after school	☐	☐
d) Other	☐	☐

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25. Do all students in <U-GRADE> follow the same course of study in mathematics?

Check one

Yes ☐ **No** ☐

If yes, then...

a) how many instructional minutes per week are students in the <U-GRADE> REQUIRED to spend in mathematics classes? ..... _____ *minutes*

b) how many instructional weeks per year are students in the <U-GRADE> REQUIRED to spend in mathematics classes? ..... _____ *weeks*

If no, then...

c) how many different courses of study in mathematics are available to <U-GRADE> students ..... _____ *courses*

d) what percentage of <U-GRADE> students take...

1. the most advanced mathematics course of study ..... _____ %
2. the least advanced mathematics course of study ..... _____ %

e) what is the total number of instructional minutes per week for those <U-GRADE> students who take...

1. the most advanced mathematics course of study ..... _____ *minutes*
2. the least advanced mathematics course of study ..... _____ *minutes*

f) what is the total number of instructional weeks per year for those <U-GRADE> students who take...

1. the most advanced mathematics course of study ..... _____ *weeks*
2. the least advanced mathematics course of study ..... _____ *weeks*

26. If all students do not follow the same course of study in mathematics, how important are each of the following factors in deciding which courses of study in mathematics a <U-Grade> student takes?

Check one for each of the following.

	not important	***somewhat important***	***moderately important***	***very important***	***Not applicable***
a) academic performance	☐	☐	☐	☐	☐
b) performance on a standardized test	☐	☐	☐	☐	☐
c) performance on an entrance examination	☐	☐	☐	☐	☐
d) performance on an oral examination	☐	☐	☐	☐	☐
e) teacher recommendations	☐	☐	☐	☐	☐
f) parental wishes	☐	☐	☐	☐	☐
g) the student's own wishes	☐	☐	☐	☐	☐
h) curricular requirements	☐	☐	☐	☐	☐

27. Do all students in <U-GRADE> follow the same course of study in science?

Check one

Yes ☐ **No** ☐

If yes, then...

a) how many instructional minutes per week are students in the <U-GRADE> REQUIRED to spend in science classes? ..... _____ *minutes*

b) how many instructional weeks per year are students in the <U-GRADE> REQUIRED to spend in science classes? ..... _____ *weeks*

If no, then...

c) how many different courses of study in science are available to <U-GRADE> students? ..... _____ *courses*

d) what percentage of <U-GRADE> students take...

1. the most advanced science course of study ..... _____ %
2. the least advanced science course of study ..... _____ %

e) what is the total number of instructional minutes per week for those <U-GRADE> students who take...

1. the most advanced science course of study ..... _____ *minutes*
2. the least advanced science course of study ..... _____ *minutes*

f) what is the total number of instructional weeks per year for those <U-GRADE> students who take...

1. the most advanced science course of study ..... _____ *weeks*
2. the least advanced science course of study ..... _____ *weeks*

28. If all students do not follow the same course of study in science, how important are each of the following factors in deciding which courses of study in science a <U-Grade> student takes?

Check one for each of the following.

	not important	*somewhat important*	*moderately important*	*very important*	*Not applicable*
a) academic performance	☐	☐	☐	☐	☐
b) performance on a standardized test	☐	☐	☐	☐	☐
c) performance on an entrance examination	☐	☐	☐	☐	☐
d) performance on an oral examination	☐	☐	☐	☐	☐
e) teacher recommendations	☐	☐	☐	☐	☐
f) parental wishes	☐	☐	☐	☐	☐
g) the student's own wishes	☐	☐	☐	☐	☐
h) curricular requirements	☐	☐	☐	☐	☐

International Option

29. Approximately what percentage of the students in your school...

Indicate a percentage for each of the following. Write 0 (zero) if there are none.

a) come from <disadvantaged economic backgrounds> ..... _____ %
b) come from homes where neither parent received more than primary education ..... _____ %
c) come from one-parent families ..... _____ %
d) attended preschool ..... _____ %
e) have a first language different from the language taught in the school ..... _____ %
f) have learning problems ..... _____ %
g) have health problems ..... _____ %
h) have nutrition problems ..... _____ %

NRC Note: <disadvantaged economic backgrounds> must be defined by NRCs in a way that is meaningful in their countries. It is understood that such a definition is not always possible.

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30. On what basis are pupils admitted to your school?

Check only one box in each line

		Yes	***No***
a)	Residence in a particular area	☐	☐
b)	Student's academic performance	☐	☐
c)	Interview with student	☐	☐
d)	Interview with parent(s)	☐	☐
e)	Preference given to students with older brothers or sisters in the school	☐	☐
f)	Preference given according to date of application	☐	☐
g)	Recommendation of previous teachers	☐	☐
h)	Preference given to students from a particular school	☐	☐
i)	Preference given to children of former students	☐	☐
j)	Performance on a standardized test	☐	☐
k)	Performance on an entrance examination	☐	☐
l)	Performance on an oral examination	☐	☐
m)	Other	☐	☐

THANK YOU for your thought, time, and effort in answering these questions.