**Identification Label**

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

**IEA Third International Mathematics and Science Study - Repeat**

# Science Teacher Questionnaire
# Main Survey

Your school has agreed to participate in the Third International Mathematics and Science Study - Repeat (TIMSS-R), an educational research project sponsored by the International Association for the Evaluation of Educational Achievement (IEA). TIMSS-R is investigating mathematics and science achievement in about forty countries around the world. It is designed to measure and interpret differences in national education 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-R 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 02467
USA

(Institute Address)

TIMSS-R Ref.No. 98-0038

**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. **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-R in your school.**

3. 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!

# THERE ARE NO QUESTIONS ON THIS PAGE

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

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

**4. In one typical calendar week from Monday to Sunday, for how many single <hours/periods> are you formally <scheduled/time-tabled> in one school week altogether?**

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

---

**5. In one typical calendar week from Monday to Sunday, for how many single <hours/periods> are you formally <scheduled/time-tabled> to teach each of the following subjects?**

NRC 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 ..... | _____ |

---

**6. In one typical calendar week from Monday to Sunday, for how many single <hours/periods> are you formally <scheduled/time-tabled> to perform each of the following tasks?**

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

| | | ***Number of single <hours/periods>*** |
|---|---|---|
| a) | student supervision (other than teaching) ..... | _____ |
| 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) ..... | _____ |
| g) | other ..... | _____ |

**7. APPROXIMATELY how many hours per week do you normally spend on each of the following activities outside the formal school day? Do not include time already accounted for in Question # 6.**

*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).. | ☐ | ☐ | ☐ | ☐ | ☐ |
| i) | other ..... | ☐ | ☐ | ☐ | ☐ | ☐ |

**8. APPROXIMATELY how many hours per week do you normally spend on your teaching activities altogether (include time spent in and out of school)?**

*Please round to the nearest whole hour.* ..... _____

**9. 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 ☐

**10. 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 | ☐ | ☐ | ☐ | ☐ |

**11. 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 science 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 | ☐ | ☐ | ☐ |

**12. 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. ..... | ☐ | ☐ | ☐ | ☐ |

## 13. 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> | ☐ | ☐ | ☐ | ☐ |

## 14. How well prepared do you feel you are to teach...

*Check **one** box in each row.*

| | | *I do not teach these topics* | *Not well prepared* | *Somewhat prepared* | *Very well prepared* |
|---|---|---|---|---|---|
| a) | earth science – earth's features and physical processes? | ☐ | ☐ | ☐ | ☐ |
| b) | earth science – the solar system and the universe? | ☐ | ☐ | ☐ | ☐ |
| c) | biology – structure and function of human systems? | ☐ | ☐ | ☐ | ☐ |
| d) | biology – diversity, structure, and processes of plant and animal life? | ☐ | ☐ | ☐ | ☐ |
| e) | chemistry – classification and structure of matter? | ☐ | ☐ | ☐ | ☐ |
| f) | chemistry – chemical reactivity and transformations? | ☐ | ☐ | ☐ | ☐ |
| g) | physics – types of energy, sources of energy, conversion between energy types? | ☐ | ☐ | ☐ | ☐ |
| h) | physics – light? | ☐ | ☐ | ☐ | ☐ |
| i) | environmental and resource issues? | ☐ | ☐ | ☐ | ☐ |
| j) | scientific methods and inquiry skills? | ☐ | ☐ | ☐ | ☐ |

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

*Check **one** box only.*

<DID NOT COMPLETE SECONDARY SCHOOL> ..... ☐

<SECONDARY ONLY> ..... ☐

<BA OR EQUIVALENT> ..... ☐

<MA/PHD> ..... ☐

**16a. Do you have a <teacher training certificate>?**

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

**16b. How many years of <pre-service teacher training> have you had?**

*Please round to the nearest whole number.* ..... _____
*(Write in 0 (zero), if you have not had any teacher training.)*

**16c. If you have had <pre-service teacher training>, did you begin this training in secondary school?**

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

**17. While studying to obtain your <BA or equivalent or teacher training certificate>, what was your major or main area of study?**

I do not have a <BA or equivalent or teacher training certificate.> ..... ☐
*(Check the box and skip to the next question.)*

*Check **one** box in each row.*

| | | ***Yes*** | ***No*** |
|---|---|---|---|
| a) | Mathematics ..... | ☐ | ☐ |
| b) | Biology ..... | ☐ | ☐ |
| c) | Physics ..... | ☐ | ☐ |
| d) | Chemistry ..... | ☐ | ☐ |
| e) | Education ..... | ☐ | ☐ |
| f) | Mathematics Education ..... | ☐ | ☐ |
| g) | Science Education ..... | ☐ | ☐ |
| h) | Other ..... | ☐ | ☐ |

**18. If you have a master's degree, what was your major or main area of study?**

I do not have a master's degree. ..... ☐
*(Check the box and skip to the next question.)*

*Check **one** box in each row.*

| | | ***Yes*** | ***No*** |
|---|---|---|---|
| a) | Mathematics ..... | ☐ | ☐ |
| b) | Biology ..... | ☐ | ☐ |
| c) | Physics ..... | ☐ | ☐ |
| d) | Chemistry ..... | ☐ | ☐ |
| e) | Education ..... | ☐ | ☐ |
| f) | Mathematics Education ..... | ☐ | ☐ |
| g) | Science Education ..... | ☐ | ☐ |
| h) | Other ..... | ☐ | ☐ |

# 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) ..... ☐

# 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-R 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. What subject matter do you emphasize <u>most</u> in your science class?**

*Check **one** box only.*

- General/integrated science ..... ☐
- Earth science ..... ☐
- Biology ..... ☐
- Chemistry ..... ☐
- Physics ..... ☐
- Physical science (chemistry/physics) ..... ☐
- Other, please specify _____ ..... ☐

---

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

Minutes: _____

---

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

*Check **one** box.*

***Yes*** ☐ ***No*** ☐

**4b. If yes, approximately what percentage of your weekly science teaching time is based on your science textbook?**

*Check **one** box.*

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

**5. Do the students in your science class have calculators available to use during science lessons?**

*Check **one** box only.*

***Yes*** ☐ ***No*** ☐

**6. To what extent are the students in your science class permitted to use calculators in science lessons?**

*Check **one** box only.*

unrestricted use ..... ☐

restricted use ..... ☐

calculators are not permitted ..... ☐

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

*Check **one** box in each row.*

| | | ***Almost every class*** | ***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 ..... | ☐ | ☐ | ☐ | ☐ |

**8. Do the students in your science class have computers available to use during science lessons?**

*Check **one** box in each row.*

| | | ***Never or almost never*** | ***Some lessons*** | ***Most lessons*** | ***Every lesson*** |
|---|---|---|---|---|---|
| a) | in the classroom ..... | ☐ | ☐ | ☐ | ☐ |
| b) | in other instructional rooms (computer labs, science lab, reading lab, library, etc.) ..... | ☐ | ☐ | ☐ | ☐ |

**If computers are available,**

| | | ***Yes*** | ***No*** |
|---|---|---|---|
| c) | do any of the computers have access to the Internet? ..... | ☐ | ☐ |
| d) | do you use the Internet for instructional/educational purposes? ..... | ☐ | ☐ |

## 9. 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 ..... | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

## 10. 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 or objects in order and give a reason for the organization ..... | ☐ | ☐ | ☐ | ☐ |
| g) use graphing calculators to solve exercises or problems ..... | ☐ | ☐ | ☐ | ☐ |

## 11. 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 | ☐ | ☐ | ☐ | ☐ |

## 12. In a typical month of lessons in your science class, what percentage of time is spent on each of the following activities?

*Write in a percentage for each activity.*

***The total should add to 100%.***

a) adminstrative tasks (not related to lesson's content/purpose) _____%

b) homework review _____%

c) lecture-style presentation by teacher _____%

d) teacher-guided student practice _____%

e) re-teaching and clarification of content/procedures _____%

f) student independent practice _____%

g) tests and quizzes _____%

h) teacher demonstrations of experiments _____%

i) students conducting experiments _____%

j) other _____%

**13. The following list includes the main topics addressed by the TIMSS science test. Check the response that describes when students in your class have been taught each topic.**

*If a topic has been taught before this year and also in the current year, check the two boxes that apply. Otherwise, check **one** box in each row.*

| | *Taught before this year* | *Taught 1-5 periods this year* | *Taught more than 5 periods this year* | *Not yet taught* | *I do not know* |
|---|---|---|---|---|---|
| **a) Earth Science** | | | | | |
| 1) Earth's physical features (layers, landforms, bodies of water, rocks, soil) ..... | ☐ | ☐ | ☐ | ☐ | ☐ |
| 2) Earth's atmosphere (layers, composition, temperature, pressure) ..... | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3) Earth processes and history (weather and climate, physical cycles, plate tectonics, fossils) ..... | ☐ | ☐ | ☐ | ☐ | ☐ |
| 4) Earth in the solar system and the universe (interactions between Earth, sun, and moon; relationship to planets and stars) ..... | ☐ | ☐ | ☐ | ☐ | ☐ |
| **b) Biology** | | | | | |
| 5) Human body - structure and function of organs and systems ..... | ☐ | ☐ | ☐ | ☐ | ☐ |
| 6) Human bodily processes (metabolism, respiration, digestion) ..... | ☐ | ☐ | ☐ | ☐ | ☐ |
| 7) Human nutrition, health, and disease ..... | ☐ | ☐ | ☐ | ☐ | ☐ |
| 8) Biology of plant and animal life (diversity, structure, life processes, life cycles) ..... | ☐ | ☐ | ☐ | ☐ | ☐ |
| 9) Interactions of living things (biomes and ecosystems, interdependence) ..... | ☐ | ☐ | ☐ | ☐ | ☐ |
| 10) Reproduction, genetics, evolution, and speciation ..... | ☐ | ☐ | ☐ | ☐ | ☐ |
| **c) Chemistry** | | | | | |
| 11) Classification of matter (elements, compounds, solutions, mixtures) ..... | ☐ | ☐ | ☐ | ☐ | ☐ |
| 12) Structure of matter (atoms, ions, molecules, crystals) ..... | ☐ | ☐ | ☐ | ☐ | ☐ |
| 13) Chemical reactivity and transformations (definition of chemical change, oxidation, combustion) ..... | ☐ | ☐ | ☐ | ☐ | ☐ |
| 14) Energy and chemical change (exothermic and endothermic reactions, reaction rates) ..... | ☐ | ☐ | ☐ | ☐ | ☐ |

*If a topic has been taught before this year and also in the current year, check the two boxes that apply. Otherwise, check **one** box in each row.*

| | *Taught before this year* | *Taught 1-5 periods this year* | *Taught more than 5 periods this year* | *Not yet taught* | *I do not know* |
|---|---|---|---|---|---|
| **d) Physics** | | | | | |
| 15) Physical properties and physical changes of matter (weight, mass, states of matter, boiling, freezing) | ☐ | ☐ | ☐ | ☐ | ☐ |
| 16) Subatomic particles (protons, electrons, neutrons) | ☐ | ☐ | ☐ | ☐ | ☐ |
| 17) Energy types, sources, and conversions (chemical, kinetic, electric, light energy; work and efficiency) | ☐ | ☐ | ☐ | ☐ | ☐ |
| 18) Heat and temperature | ☐ | ☐ | ☐ | ☐ | ☐ |
| 19) Wave phenomena, sound, and vibration | ☐ | ☐ | ☐ | ☐ | ☐ |
| 20) Light | ☐ | ☐ | ☐ | ☐ | ☐ |
| 21) Electricity and magnetism | ☐ | ☐ | ☐ | ☐ | ☐ |
| 22) Forces and motion (types of forces, balanced/unbalanced forces, fluid behavior, speed, acceleration) | ☐ | ☐ | ☐ | ☐ | ☐ |
| **e) Environmental and Resource Issues** | | | | | |
| 23) Pollution (acid rain, global warming, ozone layer, water pollution) | ☐ | ☐ | ☐ | ☐ | ☐ |
| 24) Conservation of natural resources (land, water, forests, energy sources) | ☐ | ☐ | ☐ | ☐ | ☐ |
| 25) Food supply and production, population, and environmental effects of natural and man-made events | ☐ | ☐ | ☐ | ☐ | ☐ |
| **f) Nature of Science and Scientific Inquiry Skills** | | | | | |
| 26) Scientific method (formulating hypotheses, making observations, drawing conclusions, generalizing) | ☐ | ☐ | ☐ | ☐ | ☐ |
| 27) Experimental design (experimental control, materials, and procedures) | ☐ | ☐ | ☐ | ☐ | ☐ |
| 28) Scientific measurements (reliability, replication, experimental error, accuracy, scales) | ☐ | ☐ | ☐ | ☐ | ☐ |
| 29) Using scientific apparatus and conducting routine experimental operations | ☐ | ☐ | ☐ | ☐ | ☐ |
| 30) Gathering, organizing, and representing data (units, tables, charts, graphs) | ☐ | ☐ | ☐ | ☐ | ☐ |
| 31) Describing and interpreting data | ☐ | ☐ | ☐ | ☐ | ☐ |

## 14. 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 | ☐ | ☐ | ☐ | ☐ |

**15. 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 ☐

***If "never," please skip ahead to Question 19.***

**16. 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.*

- less than 15 minutes ☐
- 15-30 minutes ☐
- 31-60 minutes ☐
- 61-90 minutes ☐
- more than 90 minutes ☐

**17. 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*** |
|---|---|---|---|---|---|
| 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 | ☐ | ☐ | ☐ | ☐ |

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

I do not assign written homework. ..... ☐
*(Check the box and skip to the next question.)*

*Check **one** box in each row.*

| | | *Never* | *Rarely* | *Sometimes* | *Always* |
|---|---|---|---|---|---|
| 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 ..... | ☐ | ☐ | ☐ | ☐ |

**19. 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 ..... | ☐ | ☐ | ☐ | ☐ |

**20. 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.**