

REFERENCE 2

The Science Curriculum

R 2



	Achievement Standards
Australia	Achievement standards are stated as learning outcomes.
Belgium (Flemish)	Achievement standards are stated in terms of final learning objectives for A Stream and developmental objectives for B Stream. Students not meeting the standards may need to repeat the grade, receive reduced hours of instruction, or be moved to an easier class.
Bulgaria	The curriculum does not incorporate achievement standards.
Canada	Achievement standards are prescribed learning outcomes with the stem "It's expected that students will..." or contained in supplementary resource books.
Chile	There are no performance standards but there are objectives describing what students should learn. The revised curriculum will include performance standards stated as expected learning outcomes.
Chinese Taipei	The curriculum does not incorporate achievement standards.
Cyprus	The curriculum does not incorporate achievement standards.
Czech Republic	The curriculum provides a description of the skills and knowledge students must have. Teachers decide if the student has met the curriculum standards and considers this in promotion. If a student fails a single subject, the student must repeat the grade.
England	Achievement standards are established as a system of levels, each level with its own description of performance. On average, at age 7 students are expected to be at level 2; at age 11 level 4; and at age 13 level 5/6. One level is regarded as two years progress.
Finland	The curriculum does not incorporate achievement standards.
Hong Kong, SAR	The curriculum does not incorporate achievement standards.
Hungary	Standards are stated as learning objectives.
Indonesia	There are instructional objectives in the curriculum but no performance standards.
Iran, Islamic Rep.	The curriculum does not incorporate achievement standards.
Israel	The curriculum does not incorporate achievement standards.
Italy	The curriculum does not incorporate achievement standards.
Japan	Achievement standards are stated in the national curriculum as learning objectives, such as "To help students..." or "To enable students to..."
Jordan	Objectives are defined in the curriculum and the minimum percent of attainment for each objective is specified.
Korea, Rep. of	Achievement standards will be included in the revised curriculum (to be implemented at the 8th grade in 2001).
Latvia (LSS)	The curriculum incorporates achievement standards.
Lithuania	Achievement standards are not a part of curricula, but are prepared as separate documents. The draft of the National Educational Standards was released in 1997. As of 1999, the document had not been officially approved.
Macedonia, Rep. of	In physics and geography achievement standards are stated as the compulsory knowledge and skills which should be attained by all students. In biology and chemistry achievement standards are stated as learning objectives.
Malaysia	Achievement standards are stated as scientific skills in the curriculum content specification document.
Moldova	The curriculum incorporates achievement standards.
Morocco	The curriculum does not incorporate achievement standards.
Netherlands	Achievement standards are stated as learning objectives, such as "Students develop a competence..." or "Students learn to research..."
New Zealand	Achievement standards are stated as learning outcomes expressed at eight levels of learning independent of age and grade.
Philippines	Achievement standards are stated as learning competencies.
Romania	The achievement standards are stated as learning objectives, such as "The student should be able to arrive at a conclusion based on experimental work."
Russian Federation	Achievement standards are stated as knowledge and skills which should be attained by students by the end of basic school.
Singapore	Achievement standards are stated in terms of learning objectives, assessment guidelines (table of specifications), and science process skills (practicals).
Slovak Republic	Learning objectives are included in the curriculum. Performance standards are in development.
Slovenia	The curriculum states standards for student performance by grade level and subject area. If a student's achievement in a subject is under minimal standard, the student receives an unsatisfactory mark and must take a correcting exam in that subject. Students receiving three or more unsatisfactory marks must repeat the grade.
South Africa	The standards are not specific. A list of content to be covered is provided.
Thailand	Achievement standards are stated as learning objectives.
Tunisia	Achievement standards are stated as learning objectives.
Turkey	Achievement standards are stated as objectives, such as "Ability to understand/know..."
United States	For states that have science standards, indicators or benchmarks are included.

SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

Background data provided by National Research Coordinators.

	Percentage of Students Whose Schools Reported Various Organizational Approaches in Science Instruction to Accommodate Students with Different Abilities or Interests in Science				
	All Classes Study Similar Content but at Different Levels of Difficulty	Students Are Grouped by Ability within Classes	Enrichment Science Is Offered	Remedial Science Is Offered	Different Classes Study Different Content
Australia	45 (4.5)	34 (3.6)	50 (4.5)	42 (4.3)	18 (3.0)
Belgium (Flemish)	57 (4.4)	11 (2.1)	19 (3.1)	37 (4.4)	58 (3.9)
Bulgaria	56 (5.1)	58 (5.6)	22 (3.8)	15 (2.9)	11 (2.6)
Canada	x x	x x	x x	x x	x x
Chile	73 (3.5)	29 (3.2)	25 (3.2)	47 (4.0)	15 (3.0)
Chinese Taipei	49 (4.0)	23 (3.6)	83 (3.2)	78 (3.7)	16 (3.2)
Cyprus	53 (0.2)	37 (0.2)	6 (0.2)	28 (0.2)	4 (0.1)
Czech Republic	69 (4.6)	27 (4.4)	32 (4.3)	37 (5.2)	6 (2.9)
England	r 66 (4.6)	r 48 (4.5)	r 38 (5.0)	r 45 (4.9)	r 0 (0.0)
Finland	96 (2.0)	1 (0.8)	35 (3.4)	77 (4.0)	5 (2.1)
Hong Kong, SAR	47 (4.9)	10 (2.9)	49 (4.2)	21 (3.2)	r 2 (1.2)
Hungary	88 (2.6)	23 (3.5)	56 (4.1)	37 (4.3)	4 (1.7)
Indonesia	49 (5.0)	16 (3.4)	97 (1.3)	93 (2.3)	14 (3.0)
Iran, Islamic Rep.	0 (0.0)	s 41 (4.8)	s 26 (4.5)	s 62 (5.4)	0 (0.0)
Israel	s 32 (5.4)	s 34 (5.3)	s 83 (4.9)	s 33 (4.9)	s 23 (4.7)
Italy	0 (0.0)	0 (0.0)	38 (4.0)	45 (4.1)	0 (0.0)
Japan	23 (3.7)	7 (2.4)	28 (3.2)	58 (4.5)	4 (1.8)
Jordan	68 (4.2)	34 (4.7)	73 (4.0)	85 (3.2)	1 (0.0)
Korea, Rep. of	24 (3.7)	39 (4.3)	21 (3.3)	17 (3.0)	16 (2.8)
Latvia (LSS)	r 61 (4.8)	r 27 (4.2)	r 11 (3.1)	r 85 (3.2)	r 2 (1.3)
Lithuania [‡]	--	--	--	--	--
Macedonia, Rep. of	62 (4.4)	21 (3.4)	90 (2.4)	94 (2.0)	5 (2.0)
Malaysia	57 (4.4)	53 (3.8)	92 (2.7)	82 (3.3)	34 (4.1)
Moldova	76 (3.1)	68 (3.7)	72 (3.9)	r 60 (4.6)	17 (3.2)
Morocco	51 (4.0)	2 (1.2)	5 (1.9)	30 (3.4)	8 (2.4)
Netherlands	r 62 (6.2)	r 32 (6.8)	r 77 (6.3)	r 38 (6.4)	r 61 (6.6)
New Zealand	72 (3.8)	35 (4.4)	68 (4.2)	45 (4.0)	r 4 (1.7)
Philippines	86 (3.2)	43 (4.4)	71 (4.3)	66 (4.2)	18 (3.5)
Romania	81 (3.3)	51 (4.5)	82 (3.5)	80 (3.5)	4 (1.6)
Russian Federation	31 (4.0)	49 (4.0)	91 (2.6)	50 (3.6)	21 (3.5)
Singapore	0 (0.0)	0 (0.0)	81 (3.3)	97 (0.8)	83 (3.5)
Slovak Republic	64 (4.6)	7 (2.6)	25 (3.9)	59 (5.2)	2 (1.5)
Slovenia	0 (0.0)	22 (4.1)	94 (2.1)	74 (3.5)	0 (0.0)
South Africa	--	--	--	--	--
Thailand	91 (2.7)	48 (4.0)	43 (3.9)	40 (3.7)	4 (1.3)
Tunisia	89 (2.8)	9 (2.6)	22 (3.6)	28 (3.7)	4 (1.6)
Turkey	69 (4.3)	16 (2.7)	22 (3.1)	47 (4.0)	12 (2.3)
United States	r 52 (4.6)	r 17 (3.4)	r 34 (4.0)	r 17 (3.4)	r 12 (2.7)
International Avg.	54 (0.7)	28 (0.6)	50 (0.6)	53 (0.7)	14 (0.5)

SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

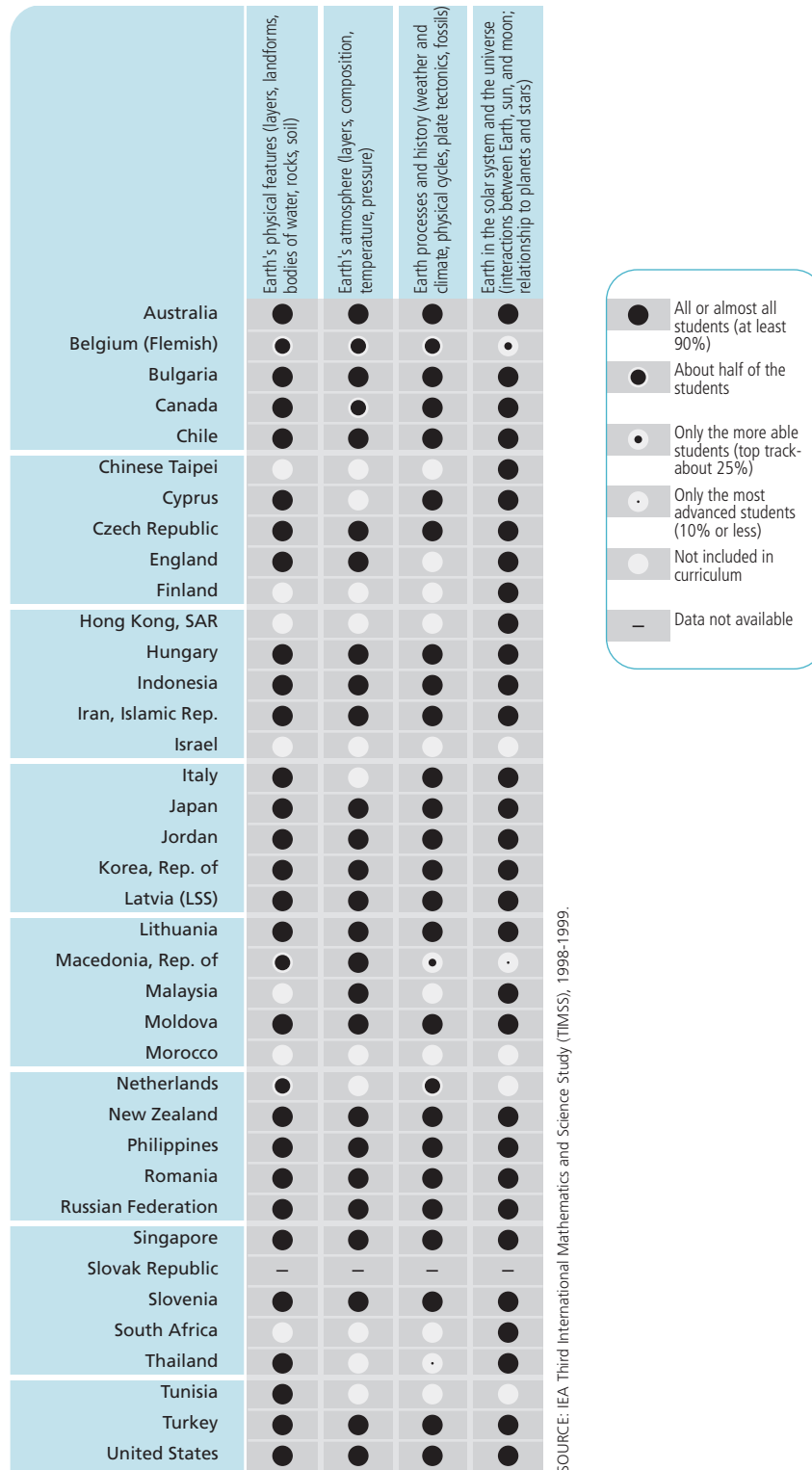
Background data provided by schools.

[‡] Lithuania tested the same cohort of students as other countries, but later in 1999, at the beginning of the next school year.

() Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A dash (–) indicates data are not available.

An "r" indicates school response data available for 70-84% of students. An "s" indicates school response data available for 50-69% of students. An "x" indicates school response data available for <50% of students.



SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

Background data provided by National Research Coordinators.

	Human body – structure and function of organs and systems	Human bodily processes (metabolism, respiration, digestion)	Human nutrition, health, and disease	Biology of plant and animal life (diversity, structure, life processes, life cycles)	Photosynthesis	Interactions of living things (biomes and ecosystems, interdependence)	Reproduction, genetics, evolution, and speciation
Australia	●	●	●	●	●	●	●
Belgium (Flemish)	●	●	●	●	●	●	●
Bulgaria	●	●	●	●	●	●	●
Canada	●	●	●	●	●	●	●
Chile	●	●	●	●	●	●	●
Chinese Taipei	●	●	●	●	●	●	●
Cyprus	●	●	●	●	●	●	●
Czech Republic	●	●	●	●	●	●	●
England	●	●	●	●	●	●	●
Finland	●	●	●	●	●	●	●
Hong Kong, SAR	●	●	●	●	●	●	●
Hungary	●	●	●	●	●	●	●
Indonesia	●	●	●	●	●	●	●
Iran, Islamic Rep.	●	●	●	●	●	●	●
Israel	●	●	●	●	●	●	●
Italy	●	●	●	●	●	●	●
Japan	●	●	●	●	●	●	●
Jordan	●	●	●	●	●	●	●
Korea, Rep. of	●	●	●	●	●	●	●
Latvia (LSS)	●	●	●	●	●	●	●
Lithuania	●	●	●	●	●	●	●
Macedonia, Rep. of	●	●	●	●	●	●	●
Malaysia	●	●	●	●	●	●	●
Moldova	●	●	●	●	●	●	●
Morocco	●	●	●	●	●	●	●
Netherlands	●	●	●	●	●	●	●
New Zealand	●	●	●	●	●	●	●
Philippines	●	●	●	●	●	●	●
Romania	●	●	●	●	●	●	●
Russian Federation	●	●	●	●	●	●	●
Singapore	●	●	●	●	●	●	●
Slovak Republic	—	—	—	—	—	—	—
Slovenia	●	●	●	●	●	●	●
South Africa	●	●	●	●	●	●	●
Thailand	●	●	●	●	●	●	●
Tunisia	●	●	●	●	●	●	●
Turkey	●	●	●	●	●	●	●
United States	●	●	●	●	●	●	●

- All or almost all students (at least 90%)
- About half of the students
- Only the more able students (top track-about 25%)
- Only the most advanced students (10% or less)
- Not included in curriculum
- Data not available

SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

Background data provided by National Research Coordinators.

Exhibit R2.5 Detailed Information About Topics in the Intended Curriculum, Up to and Including Eighth Grade - Physics

	Physical properties and physical changes of matter (weight, mass, states of matter, boiling, freezing)	Subatomic particles (protons, electrons, neutrons)	Energy types, sources, and conversions (chemical, kinetic, electric, light energy; work and efficiency)	Heat and temperature	Gas laws (relationship between temperature/pressure/volume)	Wave phenomena, sound, and vibration	Light (reflection, refraction, light and color)	Electricity and magnetism (circuits, conductivity, magnets)	Forces and motion (types of forces, balanced/unbalanced forces, fluid behavior, speed, acceleration)	Buoyancy
Australia	●	●	●	●	●	●	●	●	●	●
Belgium (Flemish)	●	●	●	●	●	●	●	●	●	●
Bulgaria	●	●	●	●	●	●	●	●	●	●
Canada	●	●	●	●	●	●	●	●	●	●
Chile	●	●	●	●	●	●	●	●	●	●
Chinese Taipei	●	●	●	●	●	●	●	●	●	●
Cyprus	●	●	●	●	●	●	●	●	●	●
Czech Republic	●	●	●	●	●	●	●	●	●	●
England	●	●	●	●	●	●	●	●	●	●
Finland	●	●	●	●	●	●	●	●	●	●
Hong Kong, SAR	●	●	●	●	●	●	●	●	●	●
Hungary	●	●	●	●	●	●	●	●	●	●
Indonesia	●	●	●	●	●	●	●	●	●	●
Iran, Islamic Rep.	●	●	●	●	●	●	●	●	●	●
Israel	●	●	●	●	●	●	●	●	●	●
Italy	●	●	●	●	●	●	●	●	●	●
Japan	●	●	●	●	●	●	●	●	●	●
Jordan	●	●	●	●	●	●	●	●	●	●
Korea, Rep. of	●	●	●	●	●	●	●	●	●	●
Latvia (LSS)	●	●	●	●	●	●	●	●	●	●
Lithuania	●	●	●	●	●	●	●	●	●	●
Macedonia, Rep. of	●	●	●	●	●	●	●	●	●	●
Malaysia	●	●	●	●	●	●	●	●	●	●
Moldova	●	●	●	●	●	●	●	●	●	●
Morocco	●	●	●	●	●	●	●	●	●	●
Netherlands	●	●	●	●	●	●	●	●	●	●
New Zealand	●	●	●	●	●	●	●	●	●	●
Philippines	●	●	●	●	●	●	●	●	●	●
Romania	●	●	●	●	●	●	●	●	●	●
Russian Federation	●	●	●	●	●	●	●	●	●	●
Singapore	●	●	●	●	●	●	●	●	●	●
Slovak Republic	—	—	—	—	—	—	—	—	—	—
Slovenia	●	●	●	●	●	●	●	●	●	●
South Africa	●	●	●	●	●	●	●	●	●	●
Thailand	●	●	●	●	●	●	●	●	●	●
Tunisia	●	●	●	●	●	●	●	●	●	●
Turkey	●	●	●	●	●	●	●	●	●	●
United States	●	●	●	●	●	●	●	●	●	●

- All or almost all students (at least 90%)
- About half of the students
- Only the more able students (top track-about 25%)
- Only the most advanced students (10% or less)
- Not included in curriculum
- Data not available

SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

Background data provided by National Research Coordinators.

	Classification of matter (elements, compounds, solutions, mixtures)	Structure of matter (atoms, ions, molecules, crystals)	Formation of solutions (solvents, solutes, soluble/insoluble substances)	Acids, bases, and salts	Chemical reactivity and transformations (definition of chemical change, oxidation, combustion)	Energy and chemical change (exothermic and endothermic reactions, reaction rates)	Chemical bonding and compound formation (ionic, covalent)	Chemical equations	Atomic structure	Atomic number and atomic mass	Periodic table	Valency
Australia	●	●	●	●	●	●	○	○	●	○	○	○
Belgium (Flemish)	○	○	○	○	○	○	○	○	○	○	○	○
Bulgaria	●	●	●	●	●	●	●	●	●	●	●	●
Canada	●	○	●	○	○	○	○	○	○	○	○	○
Chile	●	●	○	○	●	○	○	○	○	○	○	○
Chinese Taipei	●	●	●	●	●	●	○	○	○	○	○	○
Cyprus	●	●	●	○	○	○	○	●	○	○	○	○
Czech Republic	●	●	●	○	●	○	●	●	●	●	●	●
England	●	●	●	○	●	○	○	○	○	○	○	○
Finland	●	●	●	○	●	○	○	○	●	●	○	○
Hong Kong, SAR	●	●	●	●	○	○	○	○	○	○	○	○
Hungary	●	●	●	●	●	●	●	●	●	●	●	●
Indonesia	○	●	○	○	○	○	○	○	○	○	○	○
Iran, Islamic Rep.	●	●	●	●	●	●	○	○	○	○	○	○
Israel	●	●	●	●	○	○	○	○	○	○	○	○
Italy	●	●	○	○	●	○	○	○	○	○	○	○
Japan	●	●	●	●	●	○	○	○	○	○	○	○
Jordan	●	●	●	●	○	○	○	○	○	○	○	○
Korea, Rep. of	●	●	●	●	●	○	○	○	○	○	○	○
Latvia (LSS)	●	●	●	○	○	○	○	○	○	○	○	○
Lithuania	●	●	●	●	●	●	○	○	○	○	○	○
Macedonia, Rep. of	●	●	●	●	○	○	○	○	○	○	○	○
Malaysia	●	●	●	●	○	○	○	○	○	○	○	○
Moldova	●	●	○	●	●	●	○	○	○	○	○	○
Morocco	○	○	○	○	○	○	○	○	○	○	○	○
Netherlands	○	○	○	○	○	○	○	○	○	○	○	○
New Zealand	●	○	●	○	●	○	○	○	○	○	○	○
Philippines	●	●	○	○	○	○	○	○	○	○	○	○
Romania	●	●	●	●	●	○	○	○	○	○	○	○
Russian Federation	●	●	●	●	●	●	○	○	○	○	○	○
Singapore	●	●	●	●	●	○	○	○	○	○	○	○
Slovak Republic	—	—	—	—	—	—	—	—	—	—	—	—
Slovenia	●	○	●	●	○	○	○	○	○	○	○	○
South Africa	●	○	●	●	○	○	○	○	○	○	○	○
Thailand	●	●	●	●	●	○	○	○	○	○	○	○
Tunisia	○	○	○	○	○	○	○	○	○	○	○	○
Turkey	●	●	●	●	●	●	○	○	○	○	○	○
United States	●	●	●	●	●	○	○	○	○	○	○	○

SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

Exhibit R2.7 Detailed Information About Topics in the Intended Curriculum, Up to and Including Eighth Grade - Environmental and Resource Issues

	Pollution (acid rain, global warming, ozone layer, water pollution)	Conservation of natural resources (land, water, forests, energy sources)	Food supply and production, population, and environmental effects of natural and man-made events
Australia	●	●	●
Belgium (Flemish)	●	●	●
Bulgaria	●	●	●
Canada	●	●	●
Chile	●	●	●
Chinese Taipei	○	●	●
Cyprus	●	●	●
Czech Republic	●	●	●
England	●	●	●
Finland	○	●	○
Hong Kong, SAR	●	●	●
Hungary	○	○	○
Indonesia	●	●	●
Iran, Islamic Rep.	○	●	○
Israel	○	●	●
Italy	●	●	●
Japan	○	○	○
Jordan	●	●	●
Korea, Rep. of	○	○	○
Latvia (LSS)	●	●	●
Lithuania	●	○	○
Macedonia, Rep. of	○	●	●
Malaysia	●	○	○
Moldova	●	●	●
Morocco	●	●	○
Netherlands	●	●	●
New Zealand	●	●	●
Philippines	●	●	●
Romania	●	●	●
Russian Federation	●	●	●
Singapore	●	●	●
Slovak Republic	—	—	—
Slovenia	●	●	●
South Africa	○	○	○
Thailand	●	●	●
Tunisia	●	●	○
Turkey	●	●	●
United States	●	●	●

- All or almost all students (at least 90%)
- About half of the students
- Only the more able students (top track-about 25%)
- Only the most advanced students (10% or less)
- Not included in curriculum
- Data not available

SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

Background data provided by National Research Coordinators.

	Scientific method (formulating hypotheses, making observations, drawing conclusions, generalizing)	Experimental design (experimental control, materials and procedures)	Scientific measurements (reliability, replication, experimental error, accuracy, scales)	Using scientific apparatus and conducting routine experimental operations	Gathering, organizing, and representing data (units, tables, charts, graphs)	Describing and interpreting data
Australia	●	●	●	●	●	●
Belgium (Flemish)	●	●	●	●	●	●
Bulgaria	●	●	●	●	●	●
Canada	●	●	●	●	●	●
Chile	●	●	●	●	●	●
Chinese Taipei	●	●	●	●	●	●
Cyprus	●	●	●	●	●	●
Czech Republic	●	●	●	●	●	●
England	●	●	●	●	●	●
Finland	●	●	●	●	●	●
Hong Kong, SAR	●	●	●	●	●	●
Hungary	●	●	●	●	●	●
Indonesia	●	●	●	●	●	●
Iran, Islamic Rep.	●	●	●	●	●	●
Israel	●	●	●	●	●	●
Italy	●	●	●	●	●	●
Japan	●	●	●	●	●	●
Jordan	●	●	●	●	●	●
Korea, Rep. of	●	●	●	●	●	●
Latvia (LSS)	●	●	●	●	●	●
Lithuania	●	●	●	●	●	●
Macedonia, Rep. of	●	●	●	●	●	●
Malaysia	●	●	●	●	●	●
Moldova	●	●	●	●	●	●
Morocco	●	●	●	●	●	●
Netherlands	●	●	●	●	●	●
New Zealand	●	●	●	●	●	●
Philippines	●	●	●	●	●	●
Romania	●	●	●	●	●	●
Russian Federation	●	●	●	●	●	●
Singapore	●	●	●	●	●	●
Slovak Republic	—	—	—	—	—	—
Slovenia	●	●	●	●	●	●
South Africa	●	●	●	●	●	●
Thailand	●	●	●	●	●	●
Tunisia	●	●	●	●	●	●
Turkey	●	●	●	●	●	●
United States	●	●	●	●	●	●

- All or almost all students (at least 90%)
- About half of the students
- Only the more able students (top track-about 25%)
- Only the most advanced students (10% or less)
- Not included in curriculum
- Data not available

SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

Background data provided by National Research Coordinators.

		Percentage of Students					Not Yet Taught 50% or More of Topics
		Taught Topics Before This Year Only		Taught Topics During This Year ¹			
		More Than 80% of Topics	More Than 50% Up To and Including 80% of Topics	More Than 50% of Topics Each Taught More Than 5 Periods	More Than 50% of Topics Each Taught at Least 1-5 Periods	50% or Less of Topics Taught	
Australia	r	6 (1.7)	11 (2.2)	10 (1.8)	18 (2.5)	21 (3.1)	34 (2.9)
Belgium (Flemish)	r	4 (1.8)	12 (2.4)	2 (1.3)	10 (2.7)	12 (2.8)	60 (4.1)
Bulgaria	r	1 (0.6)	1 (0.0)	45 (5.6)	52 (5.9)	1 (0.1)	1 (0.6)
Canada	s	17 (2.6)	12 (2.5)	21 (2.8)	22 (2.8)	14 (2.8)	16 (2.6)
Chile		29 (3.4)	22 (3.5)	15 (2.9)	17 (2.9)	11 (2.4)	7 (2.0)
Chinese Taipei ²		--	--	--	--	--	--
Cyprus	s	10 (2.8)	12 (3.9)	1 (0.1)	6 (3.3)	8 (3.1)	62 (5.6)
Czech Republic		45 (6.3)	11 (3.4)	6 (1.9)	23 (4.2)	13 (3.7)	2 (1.2)
England	s	22 (4.2)	13 (3.6)	0 (0.0)	24 (4.2)	14 (4.0)	27 (3.5)
Finland	r	3 (1.5)	3 (1.8)	6 (2.0)	27 (3.7)	5 (1.7)	56 (4.1)
Hong Kong, SAR	s	1 (0.1)	0 (0.0)	2 (1.6)	7 (2.9)	1 (0.1)	88 (3.6)
Hungary		1 (1.0)	25 (3.4)	17 (3.3)	19 (3.4)	15 (3.0)	23 (3.7)
Indonesia		4 (1.9)	4 (1.6)	12 (3.3)	67 (4.6)	10 (2.7)	2 (1.2)
Iran, Islamic Rep.		26 (4.2)	25 (3.7)	0 (0.5)	14 (2.9)	6 (1.8)	29 (4.0)
Israel		x x	x x	x x	x x	x x	x x
Italy		5 (1.7)	8 (2.1)	18 (3.2)	28 (3.4)	22 (3.1)	19 (2.8)
Japan		0 (0.0)	3 (1.6)	3 (1.8)	6 (1.9)	28 (3.7)	61 (4.0)
Jordan		9 (2.4)	29 (4.1)	4 (1.8)	18 (3.8)	28 (4.2)	13 (3.0)
Korea, Rep. of		4 (1.6)	13 (3.0)	12 (2.8)	22 (3.4)	41 (4.0)	8 (2.1)
Latvia (LSS)	s	23 (4.6)	16 (3.8)	3 (1.7)	26 (4.7)	14 (3.0)	17 (4.1)
Lithuania [†]		--	--	--	--	--	--
Macedonia, Rep. of		53 (4.9)	14 (3.5)	4 (1.8)	9 (2.7)	6 (2.1)	15 (2.4)
Malaysia		3 (1.5)	5 (2.0)	2 (1.2)	3 (1.4)	4 (1.6)	84 (3.3)
Moldova		--	--	--	--	--	--
Morocco		--	--	--	--	--	--
Netherlands		0 (0.0)	1 (0.8)	10 (3.5)	59 (6.0)	14 (3.8)	17 (4.7)
New Zealand	r	3 (1.4)	4 (2.0)	7 (2.1)	21 (3.5)	4 (1.5)	61 (3.6)
Philippines		4 (1.7)	9 (2.3)	29 (4.1)	47 (4.5)	8 (2.3)	3 (1.5)
Romania		60 (4.1)	12 (2.9)	7 (3.2)	15 (3.3)	5 (1.6)	0 (0.0)
Russian Federation		--	--	--	--	--	--
Singapore		x x	x x	x x	x x	x x	x x
South Africa		x x	x x	x x	x x	x x	x x
Thailand		5 (1.8)	2 (1.2)	19 (3.0)	62 (4.3)	4 (1.8)	9 (2.3)
Tunisia	r	2 (1.2)	2 (1.1)	2 (1.2)	1 (1.0)	2 (1.4)	92 (2.6)
Turkey		15 (2.6)	13 (2.5)	3 (1.2)	10 (2.3)	4 (1.5)	55 (4.3)
United States	r	20 (3.1)	12 (2.6)	26 (3.4)	20 (2.1)	11 (2.3)	11 (2.4)
International Avg.		13 (0.5)	10 (0.5)	10 (0.5)	23 (0.7)	12 (0.5)	31 (0.6)

SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

Background data provided by teachers.

* Categories of topic coverage for earth science are based on combined responses to questions about the individual science subtopics in the content area described in exhibit 5.12.

¹ For each topic in exhibit 5.12, teachers were asked if the topic was taught before this year, taught 1-5 periods this year, taught more than 5 periods this year, or not yet taught. Topics taught during this year, regardless if taught before this year, are included in this category.² Data for grade 9 earth science teachers not available.[†] Lithuania tested the same cohort of students as other countries, but later in 1999, at the beginning of the next school year.

Science teacher background data for Slovak Republic and Slovenia are unavailable.

() Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A dash (-) indicates data are not available.

An "r" indicates teacher response data available for 70-84% of students. An "s" indicates teacher response data available for 50-69% of students. An "x" indicates teacher response data available for <50% of students.

Exhibit R2.10 When Biology Topics Are Taught*

		Percentage of Students					Not Yet Taught 50% or More of Topics
		Taught Topics Before This Year Only		Taught Topics During This Year ¹			
		More Than 80% of Topics	More Than 50% Up To and Including 80% of Topics	More Than 50% of Topics Each Taught More Than 5 Periods	More Than 50% of Topics Each Taught at Least 1-5 Periods	50% or Less of Topics Taught	
Australia	r	1 (0.8)	0 (0.2)	26 (3.2)	27 (3.0)	17 (3.2)	28 (3.2)
Belgium (Flemish)		0 (0.0)	7 (2.0)	27 (4.3)	39 (4.4)	25 (4.2)	2 (1.3)
Bulgaria	r	0 (0.0)	0 (0.0)	11 (2.9)	26 (4.5)	56 (5.6)	8 (3.9)
Canada	s	1 (0.5)	6 (1.8)	10 (2.1)	26 (4.1)	10 (3.4)	47 (3.3)
Chile		12 (2.7)	20 (3.1)	28 (3.6)	19 (3.2)	16 (2.6)	6 (2.0)
Chinese Taipei ²		--	--	--	--	--	--
Cyprus	r	0 (0.0)	1 (0.7)	8 (2.6)	30 (3.8)	47 (4.5)	14 (3.2)
Czech Republic		8 (2.4)	2 (0.8)	25 (4.6)	26 (2.8)	33 (5.3)	6 (1.8)
England	s	9 (3.1)	8 (2.7)	16 (3.5)	42 (4.8)	19 (3.9)	6 (1.7)
Finland		1 (0.5)	6 (1.6)	4 (1.8)	4 (1.7)	13 (3.0)	72 (3.5)
Hong Kong, SAR	r	3 (1.3)	6 (2.4)	4 (1.7)	17 (3.8)	25 (4.3)	45 (4.5)
Hungary		7 (2.3)	24 (3.4)	17 (3.3)	23 (3.8)	23 (3.5)	6 (2.1)
Indonesia		5 (1.7)	8 (2.9)	12 (2.9)	34 (4.4)	39 (4.8)	2 (1.3)
Iran, Islamic Rep.		5 (1.9)	13 (2.8)	7 (2.2)	43 (4.3)	30 (4.0)	2 (1.0)
Israel	r	5 (1.4)	5 (1.7)	12 (3.3)	18 (3.8)	11 (2.5)	51 (4.1)
Italy		34 (4.0)	30 (3.5)	11 (2.3)	11 (2.3)	13 (2.2)	1 (0.3)
Japan		1 (1.2)	1 (0.9)	17 (3.3)	37 (3.9)	17 (3.3)	27 (3.5)
Jordan		12 (2.9)	23 (3.8)	13 (2.9)	23 (3.5)	17 (3.2)	12 (3.2)
Korea, Rep. of		4 (1.7)	1 (1.0)	13 (3.1)	39 (3.8)	21 (3.6)	20 (3.3)
Latvia (LSS)		2 (1.1)	7 (2.2)	5 (1.8)	14 (3.1)	32 (4.5)	40 (4.6)
Lithuania [‡]		--	--	--	--	--	--
Macedonia, Rep. of		0 (0.0)	2 (1.2)	15 (2.9)	44 (4.4)	37 (4.4)	2 (1.2)
Malaysia		1 (0.0)	0 (0.0)	44 (4.4)	41 (3.8)	3 (1.6)	11 (2.8)
Moldova		--	--	--	--	--	--
Morocco		--	--	--	--	--	--
Netherlands	r	0 (0.0)	1 (0.7)	2 (1.2)	96 (1.7)	1 (0.9)	0 (0.0)
New Zealand		0 (0.0)	1 (0.4)	20 (3.3)	29 (4.0)	3 (1.8)	48 (4.0)
Philippines		7 (2.3)	4 (1.9)	6 (2.0)	29 (3.7)	8 (2.4)	46 (4.2)
Romania		1 (0.7)	51 (4.7)	11 (2.4)	11 (3.1)	25 (3.7)	2 (1.3)
Russian Federation		--	--	--	--	--	--
Singapore		0 (0.0)	2 (1.5)	34 (4.3)	45 (4.6)	14 (3.3)	4 (2.0)
South Africa	r	2 (1.0)	2 (1.4)	26 (5.0)	15 (3.7)	1 (1.0)	54 (5.4)
Thailand		14 (3.2)	5 (1.8)	19 (3.4)	45 (4.1)	9 (2.4)	9 (2.3)
Tunisia		1 (1.0)	7 (2.3)	9 (2.5)	8 (2.4)	19 (3.6)	55 (4.1)
Turkey		43 (4.6)	22 (2.6)	6 (1.6)	13 (3.1)	10 (2.7)	7 (2.5)
United States	r	45 (3.7)	10 (2.1)	9 (2.0)	17 (2.6)	9 (2.2)	10 (2.0)
International Avg.		7 (0.4)	9 (0.4)	15 (0.6)	29 (0.7)	19 (0.6)	21 (0.5)

SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

Background data provided by teachers.

* Categories of topic coverage for biology are based on combined responses to questions about the individual science subtopics in the content area described in exhibit 5.13.

¹ For each topic in exhibit 5.13, teachers were asked if the topic was taught before this year, taught 1-5 periods this year, taught more than 5 periods this year, or not yet taught. Topics taught during this year, regardless if taught before this year, are included in this category.² Data for grade 7 biology teachers not available.[‡] Lithuania tested the same cohort of students as other countries, but later in 1999, at the beginning of the next school year.

Science teacher background data for Slovak Republic and Slovenia are unavailable.

() Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A dash (–) indicates data are not available.

An "r" indicates teacher response data available for 70-84% of students. An "s" indicates teacher response data available for 50-69% of students.

		Percentage of Students					Not Yet Taught 50% or More of Topics
		Taught Topics Before This Year Only		Taught Topics During This Year ¹			
		More Than 80% of Topics	More Than 50% Up To and Including 80% of Topics	More Than 50% of Topics Each Taught More Than 5 Periods	More Than 50% of Topics Each Taught at Least 1-5 Periods	50% or Less of Topics Taught	
Australia	r	0 (0.0)	3 (0.8)	10 (1.8)	27 (3.6)	25 (2.8)	36 (2.8)
Belgium (Flemish)	s	0 (0.0)	0 (0.0)	1 (0.9)	13 (3.4)	2 (1.3)	84 (3.3)
Bulgaria	r	1 (0.7)	4 (1.4)	20 (6.7)	63 (6.2)	8 (2.3)	4 (1.7)
Canada	s	0 (0.2)	6 (2.0)	7 (1.7)	25 (3.0)	16 (2.8)	45 (3.2)
Chile	r	18 (3.3)	27 (3.8)	7 (2.2)	13 (2.9)	10 (2.5)	26 (3.8)
Chinese Taipei		5 (1.6)	5 (1.9)	12 (2.7)	34 (4.2)	26 (3.8)	19 (2.9)
Cyprus	s	0 (0.0)	0 (0.0)	9 (2.9)	32 (4.8)	2 (1.6)	56 (5.8)
Czech Republic		0 (0.0)	5 (2.3)	5 (2.1)	26 (4.9)	60 (5.0)	4 (2.1)
England	s	0 (0.2)	16 (4.2)	4 (1.8)	52 (5.3)	27 (4.4)	1 (0.5)
Finland		0 (0.4)	0 (0.0)	4 (2.0)	22 (3.2)	3 (1.3)	71 (3.8)
Hong Kong, SAR	r	1 (0.9)	2 (1.3)	12 (3.3)	21 (4.0)	37 (4.9)	28 (4.3)
Hungary		0 (0.0)	16 (3.3)	10 (2.4)	24 (3.6)	48 (4.3)	2 (1.3)
Indonesia		6 (2.2)	9 (2.6)	15 (3.4)	41 (5.1)	19 (3.0)	10 (2.3)
Iran, Islamic Rep.		1 (0.8)	8 (2.2)	2 (1.1)	69 (3.5)	18 (3.0)	2 (1.0)
Israel	r	0 (0.0)	2 (1.2)	6 (2.3)	10 (3.0)	7 (2.4)	76 (4.3)
Italy		4 (1.6)	14 (2.7)	7 (2.1)	20 (3.0)	32 (3.9)	24 (3.3)
Japan		0 (0.0)	12 (3.1)	1 (0.9)	7 (2.0)	73 (3.6)	6 (2.3)
Jordan		1 (0.9)	3 (1.5)	30 (4.1)	48 (4.2)	16 (3.0)	2 (1.1)
Korea, Rep. of		4 (1.6)	13 (2.6)	2 (1.2)	24 (3.7)	30 (3.9)	28 (3.8)
Latvia (LSS)		0 (0.0)	1 (0.7)	28 (4.6)	55 (4.6)	0 (0.0)	17 (3.3)
Lithuania [‡]		--	--	--	--	--	--
Macedonia, Rep. of		0 (0.0)	4 (1.7)	21 (4.0)	47 (4.5)	27 (3.6)	1 (0.0)
Malaysia		2 (1.1)	2 (1.2)	10 (2.7)	30 (4.0)	35 (4.3)	21 (3.2)
Moldova		--	--	--	--	--	--
Morocco		--	--	--	--	--	--
Netherlands		0 (0.0)	1 (0.7)	0 (0.0)	98 (0.9)	1 (0.6)	0 (0.0)
New Zealand		0 (0.1)	4 (1.3)	7 (2.2)	48 (3.5)	1 (0.7)	40 (4.0)
Philippines		9 (2.5)	7 (2.1)	9 (2.3)	53 (4.6)	5 (1.9)	18 (3.5)
Romania		2 (1.3)	23 (3.6)	8 (2.3)	18 (3.7)	48 (4.8)	1 (0.0)
Russian Federation		--	--	--	--	--	--
Singapore		0 (0.1)	2 (1.1)	20 (3.5)	59 (4.3)	17 (3.6)	2 (1.4)
South Africa	r	3 (1.7)	1 (1.0)	18 (4.1)	19 (4.0)	5 (1.7)	54 (5.1)
Thailand	r	2 (1.2)	3 (1.5)	4 (1.7)	23 (3.8)	10 (2.9)	59 (4.8)
Tunisia	s	1 (0.6)	0 (0.0)	0 (0.0)	2 (1.5)	0 (0.0)	97 (1.6)
Turkey		1 (0.8)	20 (3.4)	13 (2.6)	25 (3.8)	39 (3.2)	2 (1.3)
United States	r	5 (1.5)	7 (1.9)	21 (3.6)	37 (2.9)	12 (2.4)	18 (3.1)
International Avg.		2 (0.2)	7 (0.4)	10 (0.5)	34 (0.7)	21 (0.6)	27 (0.5)

SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

Background data provided by teachers.

* Categories of topic coverage for physics are based on combined responses to questions about the individual science subtopics in the content area described in exhibit 5.14.

¹ For each topic in exhibit 5.14, teachers were asked if the topic was taught before this year, taught 1-5 periods this year, taught more than 5 periods this year, or not yet taught. Topics taught during this year, regardless if taught before this year, are included in this category.[‡] Lithuania tested the same cohort of students as other countries, but later in 1999, at the beginning of the next school year.

Science teacher background data for Slovak Republic and Slovenia are unavailable.

() Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A dash (–) indicates data are not available.

An "r" indicates teacher response data available for 70-84% of students. An "s" indicates teacher response data available for 50-69% of students.

Exhibit R2.12 When Chemistry Topics Are Taught*

		Percentage of Students					Not Yet Taught 50% or More of Topics
		Taught Topics Before This Year Only		Taught Topics During This Year ¹			
		More Than 80% of Topics	More Than 50% Up To and Including 80% of Topics	More Than 50% of Topics Each Taught More Than 5 Periods	More Than 50% of Topics Each Taught at Least 1-5 Periods	50% or Less of Topics Taught	
Australia	r	2 (0.7)	2 (1.2)	29 (3.3)	25 (3.0)	9 (2.0)	34 (4.1)
Belgium (Flemish)	s	0 (0.0)	0 (0.0)	0 (0.0)	3 (1.9)	0 (0.0)	97 (1.9)
Bulgaria		6 (2.0)	11 (2.6)	31 (5.8)	31 (4.8)	20 (3.4)	1 (0.7)
Canada	s	6 (2.0)	2 (0.9)	15 (2.7)	25 (3.2)	2 (0.9)	51 (3.9)
Chile		51 (4.0)	9 (2.4)	9 (2.5)	13 (2.7)	3 (1.4)	14 (2.8)
Chinese Taipei		7 (1.9)	1 (0.7)	41 (4.5)	46 (3.9)	5 (1.9)	1 (0.7)
Cyprus	r	0 (0.0)	0 (0.0)	3 (1.9)	59 (4.4)	1 (0.0)	38 (4.8)
Czech Republic		1 (0.3)	5 (2.1)	28 (4.9)	45 (5.6)	14 (3.1)	8 (3.0)
England	s	4 (2.2)	7 (2.8)	14 (3.5)	59 (5.1)	5 (2.0)	11 (3.3)
Finland		2 (1.1)	2 (1.2)	21 (3.5)	52 (3.8)	2 (1.1)	20 (2.7)
Hong Kong, SAR	r	8 (2.6)	19 (3.8)	6 (1.9)	15 (3.5)	18 (3.8)	35 (4.8)
Hungary		22 (3.7)	17 (2.9)	15 (3.0)	25 (3.3)	19 (3.2)	1 (1.0)
Indonesia		x x	x x	x x	x x	x x	x x
Iran, Islamic Rep.		3 (1.2)	5 (1.6)	6 (1.8)	64 (4.0)	19 (3.4)	4 (1.5)
Israel		1 (0.8)	2 (1.5)	26 (3.7)	23 (3.3)	12 (2.8)	36 (4.1)
Italy		21 (3.1)	15 (2.6)	12 (2.5)	20 (3.2)	9 (2.1)	23 (3.6)
Japan		3 (1.7)	1 (0.7)	32 (4.3)	35 (3.8)	12 (2.7)	18 (3.3)
Jordan		3 (1.6)	5 (1.7)	35 (4.1)	33 (4.0)	22 (3.8)	2 (1.1)
Korea, Rep. of		2 (1.3)	3 (1.3)	27 (3.4)	45 (3.8)	13 (2.8)	10 (2.3)
Latvia (LSS)		0 (0.0)	0 (0.0)	32 (4.3)	59 (4.5)	0 (0.3)	9 (2.4)
Lithuania [‡]		--	--	--	--	--	--
Macedonia, Rep. of		56 (4.0)	14 (3.1)	7 (2.4)	15 (3.1)	7 (2.0)	2 (1.1)
Malaysia		10 (2.8)	10 (2.7)	11 (3.1)	13 (2.8)	11 (2.9)	45 (4.4)
Moldova		--	--	--	--	--	--
Morocco		--	--	--	--	--	--
Netherlands	r	0 (0.0)	0 (0.0)	0 (0.0)	98 (1.0)	0 (0.0)	1 (0.9)
New Zealand		0 (0.0)	0 (0.0)	25 (3.5)	35 (3.7)	0 (0.0)	40 (3.9)
Philippines		9 (2.6)	10 (2.6)	13 (2.8)	48 (4.4)	3 (1.5)	17 (2.9)
Romania		5 (1.7)	9 (2.3)	16 (3.5)	23 (4.1)	33 (3.9)	15 (3.9)
Russian Federation		--	--	--	--	--	--
Singapore	r	1 (0.6)	11 (2.9)	20 (3.8)	48 (4.9)	9 (2.3)	13 (3.3)
South Africa	r	2 (1.1)	0 (0.0)	32 (4.6)	23 (3.7)	3 (1.6)	39 (3.8)
Thailand	r	5 (1.9)	5 (1.9)	6 (1.8)	33 (4.7)	9 (2.5)	42 (4.7)
Tunisia	s	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.1)	99 (1.1)
Turkey		1 (0.0)	0 (0.0)	48 (4.1)	45 (4.2)	1 (0.7)	5 (2.1)
United States	r	8 (1.9)	2 (0.9)	31 (3.5)	32 (3.4)	4 (1.0)	23 (3.3)
International Avg.		8 (0.3)	5 (0.3)	19 (0.6)	35 (0.7)	9 (0.4)	24 (0.6)

SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

Background data provided by teachers.

* Categories of topic coverage for chemistry are based on combined responses to questions about the individual science subtopics in the content area described in exhibit 5.15.

¹ For each topic in exhibit 5.15, teachers were asked if the topic was taught before this year, taught 1-5 periods this year, taught more than 5 periods this year, or not yet taught. Topics taught during this year, regardless if taught before this year, are included in this category.

[‡] Lithuania tested the same cohort of students as other countries, but later in 1999, at the beginning of the next school year.

Science teacher background data for Slovak Republic and Slovenia are unavailable.

() Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A dash (–) indicates data are not available.

An "r" indicates teacher response data available for 70-84% of students. An "s" indicates teacher response data available for 50-69% of students.

Exhibit R2.13 When Environmental and Resource Issues Topics Are Taught*

		Percentage of Students					Not Yet Taught 50% or More of Topics
		Taught Topics Before This Year Only		Taught Topics During This Year ¹			
		More Than 80% of Topics	More Than 50% Up To and Including 80% of Topics	More Than 50% of Topics Each Taught More Than 5 Periods	More Than 50% of Topics Each Taught at Least 1-5 Periods	50% or Less of Topics Taught	
Australia	r	6 (1.6)	6 (2.0)	7 (1.8)	24 (3.1)	2 (0.9)	55 (3.9)
Belgium (Flemish)	r	4 (1.9)	6 (3.3)	6 (2.0)	64 (4.9)	3 (1.5)	17 (3.6)
Bulgaria	s	4 (2.1)	1 (0.9)	11 (2.6)	73 (4.1)	0 (0.0)	11 (3.3)
Canada	s	9 (2.1)	10 (2.0)	19 (3.6)	51 (4.5)	3 (1.2)	8 (1.7)
Chile		4 (1.6)	4 (1.4)	65 (3.5)	24 (3.1)	0 (0.0)	4 (1.6)
Chinese Taipei	r	16 (3.8)	5 (2.2)	4 (1.8)	22 (3.4)	3 (1.5)	51 (4.4)
Cyprus	s	2 (1.4)	1 (1.3)	2 (0.1)	72 (5.2)	1 (1.2)	22 (4.6)
Czech Republic		10 (4.3)	9 (3.0)	9 (2.7)	64 (5.4)	0 (0.0)	9 (2.7)
England	s	15 (4.1)	8 (2.9)	5 (2.0)	43 (5.5)	1 (0.8)	27 (4.9)
Finland		2 (1.2)	2 (1.3)	2 (0.9)	67 (4.3)	0 (0.0)	27 (4.2)
Hong Kong, SAR	r	4 (1.9)	10 (3.1)	4 (2.0)	29 (5.0)	6 (2.4)	46 (5.3)
Hungary		6 (1.9)	6 (2.1)	24 (3.5)	59 (4.1)	3 (1.6)	1 (1.0)
Indonesia		17 (4.0)	6 (1.9)	12 (3.2)	45 (5.3)	3 (1.5)	17 (3.6)
Iran, Islamic Rep.		18 (3.4)	23 (4.6)	1 (0.8)	21 (3.2)	3 (1.2)	34 (3.9)
Israel	r	7 (3.3)	4 (1.7)	3 (1.5)	23 (4.0)	2 (1.5)	61 (4.4)
Italy		17 (3.2)	13 (2.7)	17 (3.0)	29 (3.8)	3 (1.4)	20 (2.8)
Japan		1 (0.0)	1 (0.0)	1 (0.0)	6 (2.0)	0 (0.0)	92 (2.5)
Jordan		7 (2.4)	19 (3.8)	12 (2.8)	32 (4.0)	7 (1.8)	22 (3.8)
Korea, Rep. of		13 (2.7)	7 (2.2)	4 (1.7)	31 (3.7)	3 (1.4)	42 (4.5)
Latvia (LSS)	r	3 (1.4)	13 (3.6)	9 (2.7)	58 (5.1)	3 (1.8)	14 (3.5)
Lithuania [‡]		--	--	--	--	--	--
Macedonia, Rep. of	r	17 (3.2)	12 (3.0)	10 (2.9)	43 (4.8)	4 (2.1)	14 (3.0)
Malaysia		1 (0.0)	2 (1.3)	19 (3.4)	56 (4.1)	1 (0.8)	21 (3.5)
Moldova		--	--	--	--	--	--
Morocco		--	--	--	--	--	--
Netherlands		1 (0.5)	2 (1.1)	5 (1.9)	92 (2.5)	0 (0.0)	1 (1.0)
New Zealand		2 (1.1)	1 (0.7)	5 (1.7)	46 (3.9)	2 (1.2)	43 (3.6)
Philippines		9 (2.5)	6 (2.1)	32 (4.3)	47 (4.3)	2 (1.2)	4 (1.7)
Romania		7 (2.1)	1 (0.9)	19 (4.4)	67 (4.9)	1 (0.9)	6 (2.3)
Russian Federation		--	--	--	--	--	--
Singapore	r	13 (2.6)	12 (3.1)	10 (2.9)	41 (4.5)	12 (2.9)	13 (3.4)
South Africa	s	3 (1.4)	0 (0.1)	34 (5.1)	26 (4.6)	1 (1.0)	36 (4.8)
Thailand		9 (2.6)	4 (1.7)	25 (3.9)	48 (4.8)	4 (1.8)	8 (2.4)
Tunisia	r	7 (1.9)	10 (2.6)	12 (3.2)	6 (2.2)	6 (2.1)	58 (4.5)
Turkey		36 (3.9)	17 (3.1)	5 (1.5)	23 (3.5)	3 (1.7)	16 (3.2)
United States	r	21 (2.8)	8 (2.1)	15 (2.3)	34 (3.3)	3 (0.7)	19 (2.5)
International Avg.		9 (0.4)	7 (0.4)	13 (0.5)	43 (0.7)	3 (0.2)	26 (0.6)

SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

Background data provided by teachers.

* Categories of topic coverage for environmental and resource issues are based on combined responses to questions about the individual science subtopics in the content area described in exhibit 5.16.

¹ For each topic in exhibit 5.16, teachers were asked if the topic was taught before this year, taught 1-5 periods this year, taught more than 5 periods this year, or not yet taught. Topics taught during this year, regardless if taught before this year, are included in this category.

[‡] Lithuania tested the same cohort of students as other countries, but later in 1999, at the beginning of the next school year.

Science teacher background data for Slovak Republic and Slovenia are unavailable.

() Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A dash (–) indicates data are not available.

An "r" indicates teacher response data available for 70-84% of students. An "s" indicates teacher response data available for 50-69% of students.

	Percentage of Students					
	Taught Topics Before This Year Only		Taught Topics During This Year ¹			Not Yet Taught 50% or More of Topics
	More Than 80% of Topics	More Than 50% Up To and Including 80% of Topics	More Than 50% of Topics Each Taught More Than 5 Periods	More Than 50% of Topics Each Taught at Least 1-5 Periods	50% or Less of Topics Taught	
Australia	4 (0.9)	3 (1.1)	48 (3.9)	35 (3.6)	8 (2.0)	2 (0.7)
Belgium (Flemish) r	3 (2.6)	2 (1.1)	30 (4.4)	37 (4.7)	2 (1.3)	26 (4.8)
Bulgaria	x x	x x	x x	x x	x x	x x
Canada r	2 (0.9)	0 (0.3)	47 (3.1)	47 (3.0)	2 (0.9)	1 (0.7)
Chile	11 (2.6)	4 (1.6)	24 (3.2)	39 (4.5)	13 (2.5)	9 (2.3)
Chinese Taipei	31 (4.1)	6 (2.3)	10 (2.5)	26 (3.8)	4 (1.7)	23 (3.9)
Cyprus r	0 (0.0)	4 (0.2)	11 (1.2)	80 (2.7)	0 (0.0)	5 (2.4)
Czech Republic r	2 (1.7)	3 (0.8)	11 (3.7)	52 (5.6)	9 (3.2)	22 (4.4)
England s	2 (1.1)	3 (2.0)	46 (5.1)	46 (5.0)	1 (0.5)	2 (1.1)
Finland	0 (0.0)	0 (0.4)	14 (2.6)	75 (3.4)	0 (0.3)	10 (2.3)
Hong Kong, SAR	18 (3.5)	10 (2.6)	12 (3.1)	27 (3.9)	9 (2.7)	24 (3.8)
Hungary	6 (2.2)	6 (2.1)	16 (3.4)	54 (4.3)	10 (2.5)	8 (2.0)
Indonesia	6 (2.2)	4 (1.6)	12 (3.1)	45 (4.7)	7 (2.2)	27 (4.1)
Iran, Islamic Rep. r	3 (1.6)	2 (1.0)	12 (4.5)	36 (4.8)	4 (1.9)	43 (4.4)
Israel	6 (2.4)	0 (0.0)	21 (3.9)	50 (4.3)	11 (2.8)	12 (2.7)
Italy	25 (3.4)	14 (2.5)	11 (2.8)	32 (3.6)	14 (3.0)	5 (1.8)
Japan	11 (2.5)	8 (2.5)	28 (3.9)	44 (4.2)	5 (1.7)	5 (1.8)
Jordan r	2 (1.4)	3 (1.5)	9 (2.9)	44 (5.1)	10 (2.7)	32 (4.8)
Korea, Rep. of	8 (1.9)	4 (1.7)	14 (2.9)	59 (4.0)	6 (2.0)	9 (2.3)
Latvia (LSS) r	1 (0.8)	0 (0.0)	20 (3.5)	63 (4.2)	5 (2.3)	11 (3.3)
Lithuania †	--	--	--	--	--	--
Macedonia, Rep. of s	13 (4.4)	6 (2.8)	18 (4.3)	39 (6.1)	8 (3.1)	16 (5.1)
Malaysia	13 (2.8)	6 (2.2)	16 (3.0)	41 (4.0)	6 (2.1)	18 (3.7)
Moldova	--	--	--	--	--	--
Morocco	--	--	--	--	--	--
Netherlands	3 (2.8)	0 (0.0)	1 (0.7)	96 (3.0)	1 (0.7)	0 (0.0)
New Zealand	0 (0.0)	0 (0.0)	56 (3.9)	40 (3.9)	1 (1.5)	2 (1.1)
Philippines	21 (3.4)	3 (1.4)	18 (3.2)	51 (4.3)	3 (1.5)	4 (1.6)
Romania r	18 (3.4)	7 (2.7)	20 (4.4)	40 (5.0)	9 (3.1)	6 (2.4)
Russian Federation	--	--	--	--	--	--
Singapore	13 (3.2)	8 (2.5)	18 (3.5)	46 (4.5)	9 (2.5)	6 (2.4)
South Africa r	1 (0.7)	2 (1.3)	21 (3.9)	37 (4.5)	2 (1.6)	36 (4.4)
Thailand	30 (4.2)	5 (1.5)	15 (3.3)	32 (4.1)	4 (1.6)	14 (2.9)
Tunisia r	6 (2.0)	4 (1.8)	53 (4.4)	3 (1.4)	8 (1.7)	27 (4.2)
Turkey r	17 (3.4)	7 (2.4)	6 (2.3)	17 (3.2)	9 (2.5)	44 (4.2)
United States r	2 (0.8)	1 (0.4)	49 (4.0)	43 (4.1)	2 (1.3)	2 (1.1)
International Avg.	9 (0.4)	4 (0.3)	22 (0.6)	44 (0.8)	6 (0.4)	15 (0.6)

SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

Background data provided by teachers.

* Categories of topic coverage for scientific inquiry and the nature of science are based on combined responses to questions about the individual science subtopics in the content area described in exhibit 5.17.

¹ For each topic in exhibit 5.17, teachers were asked if the topic was taught before this year, taught 1-5 periods this year, taught more than 5 periods this year, or not yet taught. Topics taught during this year, regardless if taught before this year, are included in this category.[†] Lithuania tested the same cohort of students as other countries, but later in 1999, at the beginning of the next school year.

Science teacher background data for Slovak Republic and Slovenia are unavailable.

() Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A dash (-) indicates data are not available.

An "r" indicates teacher response data available for 70-84% of students. An "s" indicates teacher response data available for 50-69% of students. An "x" indicates teacher response data available for <50% of students.

