Content Domain	Main Topic	Cognitive Domain
EARTH SCIENCE	Earth in the Solar System and Universe	Conceptual Understanding

Appearance of Jupiter and Moon

The planet Jupiter is bigger than Earth's moon but it appears to be smaller when viewed from Earth. Why is this?

Item Number: S022283

SCORING

Note: A correct response is based on the relative distances of Jupiter and the Moon from Earth. An implicit comparison is correct as long as it is clear from the student response that a greater distance from Jupiter is implied. Actual distances may be used to convey the relative difference. The distances do not have to be completely accurate as long as the relative distances are correct. Responses that mention ONLY the great distance of Jupiter OR the close distance of the Moon without comparative language are also scored as correct.

Correct Response

 Refers to the greater distance of Jupiter and/or the shorter distance of the Moon (from Earth), implicitly or explicitly.

Examples: Jupiter is farther away from Earth than the Moon.

The Moon is much closer than Jupiter.

Jupiter is farther.

It (Jupiter) is a long distance from Earth.

Because Jupiter is so far away.

The Moon is so close to the Earth that it looks bigger.

· Other correct.

Incorrect Response

 Refers to distance but explanation does not clearly communicate the effect of Jupiter's or the Moon's distance on the appearance of size.

Examples: Because of distance.

Jupiter's moons are closer.

- Refers to the Moon being further, or Jupiter being closer to Earth.
- · Other incorrect (including crossed out/erased, stray marks, illegible, or off task).

Overall Percent Correct

England Netherlands Estonia Australia New Zealand United States Russian Federation Korea, Republic of Norway Scotland Belgium (Flemish) Sweden Singapore Hungary Italy	92 88 86 86 85 84 83 83 83 82 81 81 77	
Moldova, Rep. of Hong Kong, SAR Japan Latvia Slovenia Armenia Lithuania Malaysia Chinese Taipei Slovak Republic Jordan Indonesia	76 76 75 75 74 72 70 67 66 66 66	A A A O O O O
Israel International average	66 65	0
Palestinian Nat'l Auth. Bulgaria Iran, Islamic Republic of Bahrain Cyprus Serbia and Montenegro Chile Tunisia Macedonia, Republic of Romania Egypt Saudi Arabia Morocco Philippines Lebanon Botswana South Africa Ghana	64 64 63 62 61 56 55 52 47 45 42 41 40 39 35 18 13 8	0 0 0 0 0 0 0 0 0 0 0 0 0 0

Country average vs. International average:

Higher	
Not different	0
Lower	_

Appearance of Jupiter and Moon (continued)

Item Number: S022283

Student Responses

Correct Response:

The planet Jupiter is bigger than Earth's moon but it appears to be smaller when viewed from Earth. Why is this?

Because the moon is closer than Jupiter so it looks brigger.

Earth 10

69

Incorrect Response:

The planet Jupiter is bigger than Earth's moon but it appears to be smaller when viewed from Earth. Why is this?

Because the moon is far away from the

Content Domain	Main Topic	Cognitive Domain
EARTH SCIENCE	Earth in the Solar System and Universe	Conceptual Understanding

Why the moon changes shape

The shape of the moon appears to change regularly during each month. Which of the following best explains why the shape of the moon appears to change?

- (A) The Earth turns on its axis.
- (B) The Moon turns on its axis.
- (C) The Moon orbits around the Earth.
- (D) Clouds cover the Moon.

Item Number: S032437

Correct Response:

C

Overall Percent Correct

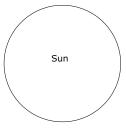
Hong Kong, SAR	72	A
Malaysia	63	
Japan	58	
Singapore	58	
New Zealand	58	A
Korea, Republic of	58	
Chinese Taipei	57	<u> </u>
Norway	56	
Hungary	55	
Estonia	54	
Serbia and Montenegro	54	
Australia	54	0
Bahrain	53	0
Sweden	53	0
Chile	53	0
Bulgaria	53	0
Scotland	53	0
Philippines	53	0
England	52	0
Egypt	52	0
United States	51	0
Armenia	51	0
Lithuania	51	0
	50	0
Tenanon		
Lebanon International average	50	
International average Iran, Islamic Republic of		0
International average	50	
International average Iran, Islamic Republic of	50 49	0
International average Iran, Islamic Republic of Italy	50 49 49	0
International average Iran, Islamic Republic of Italy Jordan	50 49 49 49	0 0
International average Iran, Islamic Republic of Italy Jordan Netherlands	50 49 49 49 48	0 0 0
International average Iran, Islamic Republic of Italy Jordan Netherlands Israel	49 49 49 49 48 47	0 0 0 0 0 0 0
International average Iran, Islamic Republic of Italy Jordan Netherlands Israel Slovenia	49 49 49 48 47 47	0 0 0 0 0
International average Iran, Islamic Republic of Italy Jordan Netherlands Israel Slovenia Palestinian Nat'l Auth.	49 49 49 48 47 47	0 0 0 0 0 0 0 0 0
International average Iran, Islamic Republic of Italy Jordan Netherlands Israel Slovenia Palestinian Nat'l Auth. Saudi Arabia	49 49 49 48 47 47 47	0 0 0 0 0 0
International average Iran, Islamic Republic of Italy Jordan Netherlands Israel Slovenia Palestinian Nat'l Auth. Saudi Arabia Belgium (Flemish)	49 49 49 48 47 47 47 47	0 0 0 0 0 0
International average Iran, Islamic Republic of Italy Jordan Netherlands Israel Slovenia Palestinian Nat'l Auth. Saudi Arabia Belgium (Flemish) Moldova, Rep. of	49 49 49 48 47 47 47 47 46 45	0 0 0 0 0 0
International average Iran, Islamic Republic of Italy Jordan Netherlands Israel Slovenia Palestinian Nat'l Auth. Saudi Arabia Belgium (Flemish) Moldova, Rep. of Latvia	49 49 49 48 47 47 47 47 46 45 45	0 0 0 0 0 0
International average Iran, Islamic Republic of Italy Jordan Netherlands Israel Slovenia Palestinian Nat'l Auth. Saudi Arabia Belgium (Flemish) Moldova, Rep. of Latvia Slovak Republic	49 49 49 48 47 47 47 47 46 45 45	0 0 0 0 0 0
International average Iran, Islamic Republic of Italy Jordan Netherlands Israel Slovenia Palestinian Nat'l Auth. Saudi Arabia Belgium (Flemish) Moldova, Rep. of Latvia Slovak Republic Russian Federation	49 49 49 48 47 47 47 47 46 45 45 45	0 0 0 0 0 0
International average Iran, Islamic Republic of Italy Jordan Netherlands Israel Slovenia Palestinian Nat'l Auth. Saudi Arabia Belgium (Flemish) Moldova, Rep. of Latvia Slovak Republic Russian Federation Ghana	49 49 49 48 47 47 47 46 45 45 45 44	0 0 0 0 0 0
International average Iran, Islamic Republic of Italy Jordan Netherlands Israel Slovenia Palestinian Nat'l Auth. Saudi Arabia Belgium (Flemish) Moldova, Rep. of Latvia Slovak Republic Russian Federation Ghana Cyprus	49 49 48 47 47 47 46 45 45 45 45 44 43	0 0 0 0 0 0
International average Iran, Islamic Republic of Italy Jordan Netherlands Israel Slovenia Palestinian Nat'l Auth. Saudi Arabia Belgium (Flemish) Moldova, Rep. of Latvia Slovak Republic Russian Federation Ghana Cyprus Romania	49 49 48 47 47 47 46 45 45 45 45 44 43 43	0 0 0 0 0 0
International average Iran, Islamic Republic of Italy Jordan Netherlands Israel Slovenia Palestinian Nat'l Auth. Saudi Arabia Belgium (Flemish) Moldova, Rep. of Latvia Slovak Republic Russian Federation Ghana Cyprus Romania Macedonia, Republic of	49 49 48 47 47 47 46 45 45 45 45 44 43 43 42	0 0 0 0 0 0
International average Iran, Islamic Republic of Italy Jordan Netherlands Israel Slovenia Palestinian Nat'l Auth. Saudi Arabia Belgium (Flemish) Moldova, Rep. of Latvia Slovak Republic Russian Federation Ghana Cyprus Romania Macedonia, Republic of South Africa	49 49 48 47 47 47 46 45 45 45 45 44 43 43 42 41	0 0 0 0 0 0
International average Iran, Islamic Republic of Italy Jordan Netherlands Israel Slovenia Palestinian Nat'l Auth. Saudi Arabia Belgium (Flemish) Moldova, Rep. of Latvia Slovak Republic Russian Federation Ghana Cyprus Romania Macedonia, Republic of South Africa Morocco	49 49 49 48 47 47 47 46 45 45 45 44 43 43 42 41 40	0 0 0 0 0 0
International average Iran, Islamic Republic of Italy Jordan Netherlands Israel Slovenia Palestinian Nat'l Auth. Saudi Arabia Belgium (Flemish) Moldova, Rep. of Latvia Slovak Republic Russian Federation Ghana Cyprus Romania Macedonia, Republic of South Africa Morocco Botswana	49 49 49 48 47 47 47 46 45 45 45 44 43 43 42 41 40 39	0 0 0 0 0 0

Country average vs. International average:

Content Domain	Main Topic	Cognitive Domain
EARTH SCIENCE	Earth in the Solar System and Universe	Conceptual Understanding

Position of the moon during solar eclipse

Draw the position of the Moon on the diagram below to show what is meant by an eclipse of the Sun.





Item Number: S032532

SCORING

Note: To receive credit, the Moon should be located between the Earth and the Sun within the shaded region shown in the diagram below. Responses may also show the shadow cast by the Moon on Earth. Credit should be given for responses based on the correct position of the Moon even if incorrect shadows are shown. Because it is not explicitly required in the item, errors in the relative size or distance of the moon will not be considered.

Correct Response

· Moon is located between the Sun and Earth within the shaded region.

Incorrect Response

- · Moon is drawn on the other side of Earth (lunar eclipse).
- · Moon is drawn overlapping the Sun (concentric or partially "eclipsed" circles).
- · Other incorrect (including crossed out/erased, stray marks, illegible, or off task).

Overall Percent Correct

Armenia	93	
Malaysia	79	
Hong Kong, SAR	76	
Singapore	70	
New Zealand	69	
Australia	68	
Estonia	66	
United States	66	
England	64	
Netherlands	63	
Sweden	63	
Chinese Taipei	62	
Japan	61	
Iran, Islamic Republic of	61	<u> </u>
Italy	61	_
Slovak Republic	60	<u> </u>
Latvia	60	
Korea, Republic of	59	_
Hungary	59	0
Russian Federation	59	0
Jordan	58	0
Bulgaria	58	0
Serbia and Montenegro	57	0
Palestinian Nat'l Auth.	57	0
Scotland	56	0
Jeotlaria	50	0
Indonesia	56	\circ
Indonesia Israel	56 55	0
Israel	55	0 0 0
Israel Norway	55 54	0
Israel	55	0
Israel Norway International average	55 54 53	0
Israel Norway International average Slovenia	55 54 53 52	0
Israel Norway International average Slovenia Bahrain	55 54 53 52 52	0 0
Israel Norway International average Slovenia Bahrain Belgium (Flemish)	55 54 53 52 52 52	0 0 0 0 0
Israel Norway International average Slovenia Bahrain Belgium (Flemish) Romania	55 54 53 52 52 52 52 49	0 0 0 0 0
Israel Norway International average Slovenia Bahrain Belgium (Flemish) Romania Saudi Arabia Philippines	55 54 53 52 52 52 52 49 46	0 0 0 0 0
Israel Norway International average Slovenia Bahrain Belgium (Flemish) Romania Saudi Arabia Philippines Cyprus	55 54 53 52 52 52 49 46 44	0 0 0 0 0
Israel Norway International average Slovenia Bahrain Belgium (Flemish) Romania Saudi Arabia Philippines	55 54 53 52 52 52 49 46 44 43	0 0 0 0 0
Israel Norway International average Slovenia Bahrain Belgium (Flemish) Romania Saudi Arabia Philippines Cyprus Egypt	55 54 52 52 52 52 49 46 44 43 42	0 0 0 0 0
Israel Norway International average Slovenia Bahrain Belgium (Flemish) Romania Saudi Arabia Philippines Cyprus Egypt Chile Lithuania	55 54 52 52 52 52 49 46 44 43 42 41	0 0 0 0 0
Israel Norway International average Slovenia Bahrain Belgium (Flemish) Romania Saudi Arabia Philippines Cyprus Egypt Chile Lithuania Moldova, Rep. of	55 54 52 52 52 52 49 46 44 43 42 41 40 35	0 0 0 0 0
Israel Norway International average Slovenia Bahrain Belgium (Flemish) Romania Saudi Arabia Philippines Cyprus Egypt Chile Lithuania Moldova, Rep. of Lebanon	55 54 52 52 52 52 49 46 44 43 42 41 40	0 0 0 0 0
Israel Norway International average Slovenia Bahrain Belgium (Flemish) Romania Saudi Arabia Philippines Cyprus Egypt Chile Lithuania Moldova, Rep. of	55 54 52 52 52 52 49 46 44 43 42 41 40 35 33	
Israel Norway International average Slovenia Bahrain Belgium (Flemish) Romania Saudi Arabia Philippines Cyprus Egypt Chile Lithuania Moldova, Rep. of Lebanon Macedonia, Republic of Tunisia	55 54 52 52 52 52 49 46 44 43 42 41 40 35 33 33 32	
Israel Norway International average Slovenia Bahrain Belgium (Flemish) Romania Saudi Arabia Philippines Cyprus Egypt Chile Lithuania Moldova, Rep. of Lebanon Macedonia, Republic of Tunisia Morocco	55 54 52 52 52 52 49 46 44 43 42 41 40 35 33 33	
Israel Norway International average Slovenia Bahrain Belgium (Flemish) Romania Saudi Arabia Philippines Cyprus Egypt Chile Lithuania Moldova, Rep. of Lebanon Macedonia, Republic of Tunisia	55 54 52 52 52 52 49 46 44 43 42 41 40 35 33 33 32 22	
Israel Norway International average Slovenia Bahrain Belgium (Flemish) Romania Saudi Arabia Philippines Cyprus Egypt Chile Lithuania Moldova, Rep. of Lebanon Macedonia, Republic of Tunisia Morocco Ghana	55 54 52 52 52 52 49 46 44 43 42 41 40 35 33 33 32 22	0 0 0 0 0
Israel Norway International average Slovenia Bahrain Belgium (Flemish) Romania Saudi Arabia Philippines Cyprus Egypt Chile Lithuania Moldova, Rep. of Lebanon Macedonia, Republic of Tunisia Morocco Ghana Botswana	55 54 53 52 52 52 52 49 46 44 43 42 41 40 35 33 33 32 22 19	

Country average vs. International average:

Higher	
Not different	O
Lower	_

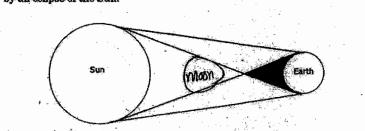
Position of the moon during solar eclipse (continued)

Item Number: S032532

Student Responses

Correct Response:

Draw the position of the Moon on the diagram below to show what is meant by an eclipse of the Sun.



Incorrect Response:

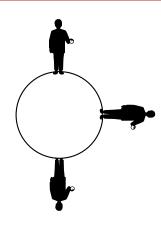
Draw the position of the Moon on the diagram below to show what is meant by an eclipse of the Sun.





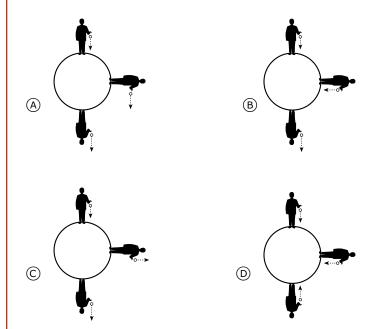
Content Domain	Main Topic	Cognitive Domain
EARTH SCIENCE	Earth in the Solar System and Universe	Conceptual Understanding

Direction dropped ball will fall



The diagram above shows a person holding a ball standing at three different places on Earth. If the person drops the ball, gravity will make it fall.

Which of the following diagrams best shows the direction the dropped ball will fall at the three different positions?



Item Number: S032714

Overall Percent Correct

Japan	92	A
Estonia	91	
Korea, Republic of	90	
Hungary	88	<u> </u>
Sweden	87	
Netherlands	87	
Malaysia	86	
Chinese Taipei	86	
Norway	84	
Slovenia	83	
Russian Federation	82	
Lithuania	82 81	A
	81	A
New Zealand		_
Hong Kong, SAR	81	A
Latvia	80	<u> </u>
Singapore	80	A
Slovak Republic	80	<u> </u>
Australia	79	<u> </u>
Serbia and Montenegro	78	A
England	78	A
Belgium (Flemish)	77	A
United States	75	A
Scotland	73	0
Armenia	72	0
Lebanon	72	0
Lebanon Italy	72 71	-
Lebanon Italy International average	72 71 70	0
Lebanon Italy International average Romania	72 71 70 70	0
Lebanon Italy International average Romania Iran, Islamic Republic of	72 71 70 70 67	0 0
Lebanon Italy International average Romania Iran, Islamic Republic of Bahrain	72 71 70 70 67 67	0 0 0
Lebanon Italy International average Romania Iran, Islamic Republic of Bahrain Jordan	72 71 70 70 67 67 66	0 0 0 0 0 0
Lebanon Italy International average Romania Iran, Islamic Republic of Bahrain Jordan Moldova, Rep. of	72 71 70 70 67 67 66 66	0 0 0 0 0 0 0
Lebanon Italy International average Romania Iran, Islamic Republic of Bahrain Jordan Moldova, Rep. of Israel	72 71 70 70 67 67 66 66 66	0 0 0 0 0 0 0 0
Lebanon Italy International average Romania Iran, Islamic Republic of Bahrain Jordan Moldova, Rep. of Israel Philippines	72 71 70 70 67 67 66 66 65 65	0 0 0 0 0 0 0 0 0
Lebanon Italy International average Romania Iran, Islamic Republic of Bahrain Jordan Moldova, Rep. of Israel Philippines Indonesia	72 71 70 70 67 66 66 65 65 65	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lebanon Italy International average Romania Iran, Islamic Republic of Bahrain Jordan Moldova, Rep. of Israel Philippines Indonesia Bulgaria	72 71 70 67 67 66 66 65 65 62 61	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lebanon Italy International average Romania Iran, Islamic Republic of Bahrain Jordan Moldova, Rep. of Israel Philippines Indonesia Bulgaria Botswana	72 71 70 67 67 66 66 65 65 62 61 61	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lebanon Italy International average Romania Iran, Islamic Republic of Bahrain Jordan Moldova, Rep. of Israel Philippines Indonesia Bulgaria Botswana Saudi Arabia	72 71 70 70 67 66 66 65 65 62 61 61	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lebanon Italy International average Romania Iran, Islamic Republic of Bahrain Jordan Moldova, Rep. of Israel Philippines Indonesia Bulgaria Botswana Saudi Arabia Palestinian Nat'l Auth.	72 71 70 70 67 66 66 65 65 62 61 61 61 58	
Lebanon Italy International average Romania Iran, Islamic Republic of Bahrain Jordan Moldova, Rep. of Israel Philippines Indonesia Bulgaria Botswana Saudi Arabia Palestinian Nat'l Auth. Chile	72 71 70 70 67 66 66 65 65 62 61 61 61 58 58	
Lebanon Italy International average Romania Iran, Islamic Republic of Bahrain Jordan Moldova, Rep. of Israel Philippines Indonesia Bulgaria Botswana Saudi Arabia Palestinian Nat'l Auth. Chile Cyprus	72 71 70 70 67 66 66 65 65 62 61 61 61 58 58	
Italy International average Romania Iran, Islamic Republic of Bahrain Jordan Moldova, Rep. of Israel Philippines Indonesia Bulgaria Botswana Saudi Arabia Palestinian Nat'l Auth. Chile Cyprus Macedonia, Republic of	72 71 70 67 67 66 65 65 62 61 61 58 58 58	
Lebanon Italy International average Romania Iran, Islamic Republic of Bahrain Jordan Moldova, Rep. of Israel Philippines Indonesia Bulgaria Botswana Saudi Arabia Palestinian Nat'l Auth. Chile Cyprus Macedonia, Republic of Egypt	72 71 70 67 67 66 65 65 62 61 61 61 58 58 58	
Lebanon Italy International average Romania Iran, Islamic Republic of Bahrain Jordan Moldova, Rep. of Israel Philippines Indonesia Bulgaria Botswana Saudi Arabia Palestinian Nat'l Auth. Chile Cyprus Macedonia, Republic of Egypt Tunisia	72 71 70 67 67 66 65 65 62 61 61 61 58 58 54 51 47	
Lebanon Italy International average Romania Iran, Islamic Republic of Bahrain Jordan Moldova, Rep. of Israel Philippines Indonesia Bulgaria Botswana Saudi Arabia Palestinian Nat'l Auth. Chile Cyprus Macedonia, Republic of Egypt	72 71 70 67 67 66 65 65 62 61 61 61 58 58 58	

Country average vs. International average:

Morocco

Higher △
Not different ○
Lower ▼

Correct Response:

7

Content Domain	Main Topic	Cognitive Domain
EARTH SCIENCE	Earth in the Solar System and Universe	Factual Knowledge

Sun is an example of a star

The Sun is an example of which of the following?

- (A) comet
- (B) planet
- © galaxy
- (D) star

Item Number: S032150

Correct Response:

D

Overall Percent Correct

Italy	90	A
New Zealand	87	A
Slovak Republic	86	A
Sweden	86	A
United States	84	A
Australia	83	A
Chile	83	A
Bulgaria	83	A
England	82	A
Serbia and Montenegro	80	A
Norway	80	A
Scotland	79	A
Lithuania	79	A
Latvia	78	A
Russian Federation	77	A
Estonia	75	A
Slovenia	74	A
Belgium (Flemish)	65	A
Netherlands	65	A
Hong Kong, SAR	65	A
Macedonia, Republic of	62	0
Jordan	61	0
Moldova, Rep. of	61	0
Romania	60	0
International average	60	
Bahrain	60	0
Bahrain Philippines	60 59	0
Bahrain Philippines Hungary	60 59 58	0
Bahrain Philippines Hungary Singapore	60 59 58 56	0 0 V
Bahrain Philippines Hungary Singapore Malaysia	60 59 58 56 54	0 0 V
Bahrain Philippines Hungary Singapore Malaysia Chinese Taipei	60 59 58 56 54 54	0 0 V
Bahrain Philippines Hungary Singapore Malaysia Chinese Taipei Iran, Islamic Republic of	60 59 58 56 54 54 52	0 0 V
Bahrain Philippines Hungary Singapore Malaysia Chinese Taipei Iran, Islamic Republic of Palestinian Nat'l Auth.	60 59 58 56 54 54 52 52	0 0 V
Bahrain Philippines Hungary Singapore Malaysia Chinese Taipei Iran, Islamic Republic of Palestinian Nat'l Auth. Egypt	60 59 58 56 54 54 52 52	0 0 V
Bahrain Philippines Hungary Singapore Malaysia Chinese Taipei Iran, Islamic Republic of Palestinian Nat'l Auth. Egypt Armenia	60 59 58 56 54 54 52 52 51 48	0 0 V
Bahrain Philippines Hungary Singapore Malaysia Chinese Taipei Iran, Islamic Republic of Palestinian Nat'l Auth. Egypt Armenia Lebanon	60 59 58 56 54 52 52 51 48	0 0 V
Bahrain Philippines Hungary Singapore Malaysia Chinese Taipei Iran, Islamic Republic of Palestinian Nat'l Auth. Egypt Armenia Lebanon Cyprus	60 59 58 56 54 52 52 51 48 47 43	0 0 V
Bahrain Philippines Hungary Singapore Malaysia Chinese Taipei Iran, Islamic Republic of Palestinian Nat'l Auth. Egypt Armenia Lebanon Cyprus Botswana	60 59 58 56 54 52 52 51 48 47 43	0
Bahrain Philippines Hungary Singapore Malaysia Chinese Taipei Iran, Islamic Republic of Palestinian Nat'l Auth. Egypt Armenia Lebanon Cyprus Botswana South Africa	60 59 58 56 54 52 52 51 48 47 43 41	0 0 V
Bahrain Philippines Hungary Singapore Malaysia Chinese Taipei Iran, Islamic Republic of Palestinian Nat'l Auth. Egypt Armenia Lebanon Cyprus Botswana South Africa Indonesia	59 58 56 54 52 52 51 48 47 43 41 41	0 0 V
Bahrain Philippines Hungary Singapore Malaysia Chinese Taipei Iran, Islamic Republic of Palestinian Nat'l Auth. Egypt Armenia Lebanon Cyprus Botswana South Africa Indonesia Japan	59 58 56 54 52 52 51 48 47 43 41 40 37	0 0 V
Bahrain Philippines Hungary Singapore Malaysia Chinese Taipei Iran, Islamic Republic of Palestinian Nat'l Auth. Egypt Armenia Lebanon Cyprus Botswana South Africa Indonesia Japan Saudi Arabia	59 58 56 54 54 52 52 51 48 47 43 41 40 37	0 0 V
Bahrain Philippines Hungary Singapore Malaysia Chinese Taipei Iran, Islamic Republic of Palestinian Nat'l Auth. Egypt Armenia Lebanon Cyprus Botswana South Africa Indonesia Japan Saudi Arabia Ghana	60 59 58 56 54 52 52 51 48 47 43 41 40 37 33	0 0 V
Bahrain Philippines Hungary Singapore Malaysia Chinese Taipei Iran, Islamic Republic of Palestinian Nat'l Auth. Egypt Armenia Lebanon Cyprus Botswana South Africa Indonesia Japan Saudi Arabia Ghana Morocco	59 58 56 54 52 52 51 48 47 43 41 40 37 33 33 29	0 0 V
Bahrain Philippines Hungary Singapore Malaysia Chinese Taipei Iran, Islamic Republic of Palestinian Nat'l Auth. Egypt Armenia Lebanon Cyprus Botswana South Africa Indonesia Japan Saudi Arabia Ghana Morocco Korea, Republic of	59 58 56 54 52 52 51 48 47 43 41 40 37 33 33 29	0 0 V
Bahrain Philippines Hungary Singapore Malaysia Chinese Taipei Iran, Islamic Republic of Palestinian Nat'l Auth. Egypt Armenia Lebanon Cyprus Botswana South Africa Indonesia Japan Saudi Arabia Ghana Morocco Korea, Republic of Israel	60 59 58 56 54 52 52 51 48 47 43 41 40 37 33 33 29 29 26	0 0 V
Bahrain Philippines Hungary Singapore Malaysia Chinese Taipei Iran, Islamic Republic of Palestinian Nat'l Auth. Egypt Armenia Lebanon Cyprus Botswana South Africa Indonesia Japan Saudi Arabia Ghana Morocco Korea, Republic of	59 58 56 54 52 52 51 48 47 43 41 40 37 33 33 29	0 0 V

Country average vs. International average:

Content Domain	Main Topic	Cognitive Domain
EARTH SCIENCE	Earth in the Solar System and Universe	Reasoning and Analysis

The surface temperatures of Venus and Mercury

The table shows some information about the planets Venus and Mercury.

	Average Surface Temperature (°C)	Atmospheric Composition	Mean Distance from the Sun (millions of km)	Time to Revolve Around the Sun (Number of Days)
Venus	470	Mostly Carbon Dioxide	108	225
Mercury	300	Trace amounts of gases	58	88

Which of the following best explains why the surface temperature of Venus is higher than that of Mercury?

- (A) There is less absorption of sunlight on Mercury because of the lack of atmospheric gases.
- B The high percentage of carbon dioxide in the atmosphere of Venus causes a greenhouse effect.
- © The longer time for Venus to revolve around the Sun allows it to absorb more heat from the Sun.
- ① The Sun's rays are less direct on Mercury because it is closer to the Sun.

Item Number: S032301

Correct Response:

В

Overall Percent Correct

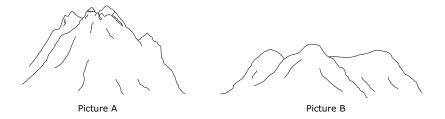
Korea, Republic of	70	A
Hong Kong, SAR	69	<u> </u>
Chinese Taipei	69	A
Singapore	60	A
United States	49	
Australia	48	
Japan	47	A
Egypt	46	A
Sweden	46	A
New Zealand	45	A
England	44	A
Lithuania	44	
Estonia	43	A
Israel	41	A
Hungary	41	A
Scotland	40	0
Slovenia	39	0
Latvia	38	0
Italy	38	0
Netherlands	38	0
Slovak Republic	38	0
Belgium (Flemish)	38	0
Russian Federation	37	0
International average	36	
Serbia and Montenegro	34	0
Norway	34	0
Norway Iran, Islamic Republic of	34 33	0 0
Norway Iran, Islamic Republic of Bulgaria	34 33 33	0 0 0
Norway Iran, Islamic Republic of Bulgaria Malaysia	34 33 33 31	0 0 0
Norway Iran, Islamic Republic of Bulgaria Malaysia Chile	34 33 33 31 30	0 0 0
Norway Iran, Islamic Republic of Bulgaria Malaysia Chile Cyprus	34 33 33 31 30 30	0 0 0
Norway Iran, Islamic Republic of Bulgaria Malaysia Chile Cyprus Palestinian Nat'l Auth.	34 33 33 31 30 30 28	0 0 0
Norway Iran, Islamic Republic of Bulgaria Malaysia Chile Cyprus Palestinian Nat'l Auth. Bahrain	34 33 33 31 30 30 28 28	0 0 0
Norway Iran, Islamic Republic of Bulgaria Malaysia Chile Cyprus Palestinian Nat'l Auth. Bahrain Romania	34 33 33 31 30 30 28 28	0 0 0
Norway Iran, Islamic Republic of Bulgaria Malaysia Chile Cyprus Palestinian Nat'l Auth. Bahrain Romania Philippines	34 33 33 31 30 30 28 28 28	0 0 0
Norway Iran, Islamic Republic of Bulgaria Malaysia Chile Cyprus Palestinian Nat'l Auth. Bahrain Romania Philippines Jordan	34 33 33 31 30 30 28 28 28 28	0 0 0
Norway Iran, Islamic Republic of Bulgaria Malaysia Chile Cyprus Palestinian Nat'l Auth. Bahrain Romania Philippines Jordan Botswana	34 33 33 31 30 30 28 28 28 28 28	0 0 0
Norway Iran, Islamic Republic of Bulgaria Malaysia Chile Cyprus Palestinian Nat'l Auth. Bahrain Romania Philippines Jordan Botswana Moldova, Rep. of	34 33 31 30 30 28 28 28 28 28 24 24	0 0 0
Norway Iran, Islamic Republic of Bulgaria Malaysia Chile Cyprus Palestinian Nat'l Auth. Bahrain Romania Philippines Jordan Botswana Moldova, Rep. of Lebanon	34 33 31 30 30 28 28 28 28 28 24 24 24	0 0
Norway Iran, Islamic Republic of Bulgaria Malaysia Chile Cyprus Palestinian Nat'l Auth. Bahrain Romania Philippines Jordan Botswana Moldova, Rep. of Lebanon South Africa	34 33 31 30 30 28 28 28 28 28 24 24 24 24	0 0 0
Norway Iran, Islamic Republic of Bulgaria Malaysia Chile Cyprus Palestinian Nat'l Auth. Bahrain Romania Philippines Jordan Botswana Moldova, Rep. of Lebanon South Africa Ghana	34 33 33 31 30 30 28 28 28 28 24 24 24 24 23 22	O O
Norway Iran, Islamic Republic of Bulgaria Malaysia Chile Cyprus Palestinian Nat'l Auth. Bahrain Romania Philippines Jordan Botswana Moldova, Rep. of Lebanon South Africa Ghana Tunisia	34 33 31 30 30 28 28 28 28 24 24 24 24 23 22 19	O O
Norway Iran, Islamic Republic of Bulgaria Malaysia Chile Cyprus Palestinian Nat'l Auth. Bahrain Romania Philippines Jordan Botswana Moldova, Rep. of Lebanon South Africa Ghana Tunisia Saudi Arabia	34 33 31 30 30 28 28 28 28 24 24 24 24 23 22 19	O O
Norway Iran, Islamic Republic of Bulgaria Malaysia Chile Cyprus Palestinian Nat'l Auth. Bahrain Romania Philippines Jordan Botswana Moldova, Rep. of Lebanon South Africa Ghana Tunisia Saudi Arabia Indonesia	34 33 33 31 30 28 28 28 28 28 24 24 24 24 23 22 19 18	O O
Norway Iran, Islamic Republic of Bulgaria Malaysia Chile Cyprus Palestinian Nat'l Auth. Bahrain Romania Philippines Jordan Botswana Moldova, Rep. of Lebanon South Africa Ghana Tunisia Saudi Arabia Indonesia Morocco	34 33 33 31 30 28 28 28 28 28 24 24 24 24 23 22 19 18 16	0 0 0
Norway Iran, Islamic Republic of Bulgaria Malaysia Chile Cyprus Palestinian Nat'l Auth. Bahrain Romania Philippines Jordan Botswana Moldova, Rep. of Lebanon South Africa Ghana Tunisia Saudi Arabia Indonesia Morocco Macedonia, Republic of	34 33 33 31 30 28 28 28 28 28 24 24 24 23 22 19 18 16 16	O O
Norway Iran, Islamic Republic of Bulgaria Malaysia Chile Cyprus Palestinian Nat'l Auth. Bahrain Romania Philippines Jordan Botswana Moldova, Rep. of Lebanon South Africa Ghana Tunisia Saudi Arabia Indonesia Morocco	34 33 33 31 30 28 28 28 28 28 24 24 24 24 23 22 19 18 16	O O

Country average vs. International average:

Content Domain	Main Topic	Cognitive Domain
EARTH SCIENCE	Earth Processes, Cycles and History	Conceptual Understanding

True statement of mountain age

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?

- (A) The mountains in Picture A are older.
- (B) The mountains in Picture B are older.
- (c) The mountains are about the same age but were formed in different ways.
- (D) The mountains are about the same age but are in different hemispheres.

Item Number: S012013

Correct Response:

В

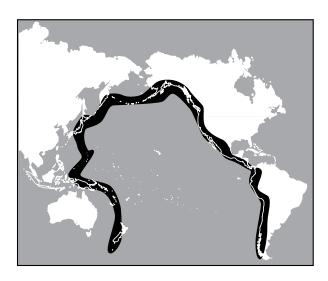
Overall Percent Correct

Macedonia, Republic of 55	
Moldaya Pan of 51	
ivioluova, nep. oi 31	
Russian Federation 50	
Hungary 50	
Lithuania 47	
Estonia 44	
Latvia 44	
Romania 44	
Armenia 43	
Korea, Republic of 42	
Slovenia 42	_
Sweden 41	
Belgium (Flemish) 38	
United States 36	
9	
)
)
)
England 29 (
Netherlands 28 (
A . I.	
Australia 27 (
Scotland 25 Tunisia 24 Japan 22 Egypt 22 Chinese Taipei 21 Palestinian Nat'l Auth. 21 Malaysia 21 Hong Kong, SAR 20 Jordan 19 Lebanon 19 Israel 19 New Zealand 18	
Scotland 25 Tunisia 24 Japan 22 Egypt 22 Chinese Taipei 21 Palestinian Nat'l Auth. 21 Malaysia 21 Hong Kong, SAR 20 Jordan 19 Lebanon 19 Israel 19 New Zealand 18 Serbia and Montenegro 15	
Scotland 25 Tunisia 24 Japan 22 Egypt 22 Chinese Taipei 21 Palestinian Nat'l Auth. 21 Malaysia 21 Hong Kong, SAR 20 Jordan 19 Lebanon 19 Israel 19 New Zealand 18 Serbia and Montenegro 15 Philippines 14	
Scotland 25 Tunisia 24 Japan 22 Egypt 22 Chinese Taipei 21 Palestinian Nat'l Auth. 21 Malaysia 21 Hong Kong, SAR 20 Jordan 19 Lebanon 19 Israel 19 New Zealand 18 Serbia and Montenegro 15 Philippines 14 South Africa 14	
Scotland 25 Tunisia 24 Japan 22 Egypt 22 Chinese Taipei 21 Palestinian Nat'l Auth. 21 Malaysia 21 Hong Kong, SAR 20 Jordan 19 Lebanon 19 Israel 19 New Zealand 18 Serbia and Montenegro 15 Philippines 14 South Africa 14 Cyprus 13	
Scotland 25 Tunisia 24 Japan 22 Egypt 22 Chinese Taipei 21 Palestinian Nat'l Auth. 21 Malaysia 21 Hong Kong, SAR 20 Jordan 19 Lebanon 19 Israel 19 New Zealand 18 Serbia and Montenegro 15 Philippines 14 South Africa 14 Cyprus 13 Bahrain 13	
Scotland 25 Tunisia 24 Japan 22 Egypt 22 Chinese Taipei 21 Palestinian Nat'l Auth. 21 Malaysia 21 Hong Kong, SAR 20 Jordan 19 Lebanon 19 Israel 19 New Zealand 18 Serbia and Montenegro 15 Philippines 14 South Africa 14 Cyprus 13 Bahrain 13 Singapore 12	
Scotland 25 Tunisia 24 Japan 22 Egypt 22 Chinese Taipei 21 Palestinian Nat'l Auth. 21 Malaysia 21 Hong Kong, SAR 20 Jordan 19 Lebanon 19 Israel 19 New Zealand 18 Serbia and Montenegro 15 Philippines 14 South Africa 14 Cyprus 13 Bahrain 13 Singapore 12 Ghana 12	
Scotland 25 Tunisia 24 Japan 22 Egypt 22 Chinese Taipei 21 Palestinian Nat'l Auth. 21 Malaysia 21 Hong Kong, SAR 20 Jordan 19 Lebanon 19 Israel 19 New Zealand 18 Serbia and Montenegro 15 Philippines 14 South Africa 14 Cyprus 13 Bahrain 13 Singapore 12 Ghana 12 Chile 11	
Scotland 25 Tunisia 24 Japan 22 Egypt 22 Chinese Taipei 21 Palestinian Nat'l Auth. 21 Malaysia 21 Hong Kong, SAR 20 Jordan 19 Lebanon 19 Israel 19 New Zealand 18 Serbia and Montenegro 15 Philippines 14 South Africa 14 Cyprus 13 Bahrain 13 Singapore 12 Ghana 12 Chile 11 Indonesia 7	

Country average vs. International average:

Content Domain	Main Topic	Cognitive Domain
EARTH SCIENCE	Earth Processes, Cycles and History	Conceptual Understanding

Pacific Ring of Fire



The diagram above shows the Pacific Ring of Fire. Earthquakes and volcanic activity occur along the Ring of Fire. Which of the following best explains why?

- (A) It is located at the boundaries of tectonic plates.
- (B) It is located at the boundary of deep and shallow water.
- (C) It is located where the major ocean currents meet.
- (D) It is located where ocean temperature is the highest.

Item Number: S032656

Correct Response:

Δ

Overall Percent Correct

Sweden	82	\blacktriangle
Hong Kong, SAR	77	A
England	77	
Russian Federation	76	
Scotland	75	A
Lithuania	75	\blacktriangle
Japan	74	A
Latvia	71	A
United States	71	A
Chinese Taipei	70	
Italy	70	
Estonia	69	A
Slovak Republic	66	\blacktriangle
New Zealand	64	lack
Australia	64	A
Netherlands	63	A
Singapore	63	<u> </u>
Slovenia	62	A
Korea, Republic of	62	_ _
Romania	62	_
Norway	60	_ _
Bulgaria	56	<u> </u>
Cyprus	54	_
Hungary	54	A
	٠.	_
Moldova Rep. of	53	
Moldova, Rep. of Iran, Islamic Republic of	53 52	A
·		A
Iran, Islamic Republic of	52	▲ ▲ ▼
Iran, Islamic Republic of International average	52 48	▼
Iran, Islamic Republic of International average Chile	52 48 44	▼
Iran, Islamic Republic of International average Chile Israel	52 48 44 42	▼
Iran, Islamic Republic of International average Chile Israel Armenia	52 48 44 42 42	▼
Iran, Islamic Republic of International average Chile Israel Armenia Macedonia, Republic of	52 48 44 42 42 38	▼
Iran, Islamic Republic of International average Chile Israel Armenia Macedonia, Republic of Serbia and Montenegro	52 48 44 42 42 38 37	▼
Iran, Islamic Republic of International average Chile Israel Armenia Macedonia, Republic of Serbia and Montenegro Philippines	52 48 44 42 42 38 37 34	▼
Iran, Islamic Republic of International average Chile Israel Armenia Macedonia, Republic of Serbia and Montenegro Philippines Indonesia	52 48 44 42 42 38 37 34 33	▼
Iran, Islamic Republic of International average Chile Israel Armenia Macedonia, Republic of Serbia and Montenegro Philippines Indonesia Belgium (Flemish)	52 48 44 42 42 38 37 34 33 31	▼
Iran, Islamic Republic of International average Chile Israel Armenia Macedonia, Republic of Serbia and Montenegro Philippines Indonesia Belgium (Flemish) Jordan	52 48 44 42 42 38 37 34 33 31 20	▼
Iran, Islamic Republic of International average Chile Israel Armenia Macedonia, Republic of Serbia and Montenegro Philippines Indonesia Belgium (Flemish) Jordan Morocco	52 48 44 42 42 38 37 34 33 31 20 20	* * * * * * * * * * * * * * * * * * *
Iran, Islamic Republic of International average Chile Israel Armenia Macedonia, Republic of Serbia and Montenegro Philippines Indonesia Belgium (Flemish) Jordan Morocco Malaysia	52 48 44 42 42 38 37 34 33 31 20 20 18	▼
Iran, Islamic Republic of International average Chile Israel Armenia Macedonia, Republic of Serbia and Montenegro Philippines Indonesia Belgium (Flemish) Jordan Morocco Malaysia Bahrain	52 48 44 42 42 38 37 34 33 31 20 20 18 17	▼
Iran, Islamic Republic of International average Chile Israel Armenia Macedonia, Republic of Serbia and Montenegro Philippines Indonesia Belgium (Flemish) Jordan Morocco Malaysia Bahrain Saudi Arabia	52 48 44 42 42 38 37 34 33 31 20 20 18 17 16	▼
Iran, Islamic Republic of International average Chile Israel Armenia Macedonia, Republic of Serbia and Montenegro Philippines Indonesia Belgium (Flemish) Jordan Morocco Malaysia Bahrain Saudi Arabia Tunisia	52 48 44 42 42 38 37 34 33 31 20 20 18 17 16 15	▼
Iran, Islamic Republic of International average Chile Israel Armenia Macedonia, Republic of Serbia and Montenegro Philippines Indonesia Belgium (Flemish) Jordan Morocco Malaysia Bahrain Saudi Arabia Tunisia Egypt	52 48 44 42 42 38 37 34 33 31 20 20 18 17 16 15 14	▼
Iran, Islamic Republic of International average Chile Israel Armenia Macedonia, Republic of Serbia and Montenegro Philippines Indonesia Belgium (Flemish) Jordan Morocco Malaysia Bahrain Saudi Arabia Tunisia Egypt Lebanon	52 48 44 42 42 38 37 34 33 31 20 20 18 17 16 15 14 13	▼
Iran, Islamic Republic of International average Chile Israel Armenia Macedonia, Republic of Serbia and Montenegro Philippines Indonesia Belgium (Flemish) Jordan Morocco Malaysia Bahrain Saudi Arabia Tunisia Egypt Lebanon Ghana	52 48 44 42 42 38 37 34 33 31 20 20 18 17 16 15 14 13 11	▼
Iran, Islamic Republic of International average Chile Israel Armenia Macedonia, Republic of Serbia and Montenegro Philippines Indonesia Belgium (Flemish) Jordan Morocco Malaysia Bahrain Saudi Arabia Tunisia Egypt Lebanon Ghana Palestinian Nat'l Auth.	52 48 44 42 42 38 37 34 33 31 20 20 18 17 16 15 14 13 11 11	▼

Country average vs. International average:

Content Domain	Main Topic	Cognitive Domain
EARTH SCIENCE	Earth Processes, Cycles and History	Factual Knowledge

Substance NOT a fossil fuel

Which is NOT a fossil fuel?

- (A) Coal
- B Oil
- © Wood
- (D) Natural gas

Item Number: S012018

Correct Response:

C

Overall Percent Correct

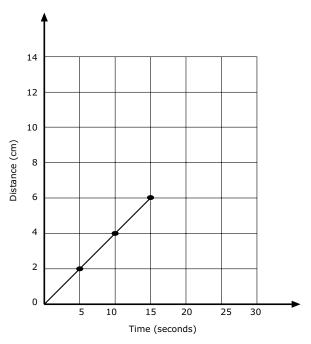
Lithuania	87	
Chinese Taipei	87	<u> </u>
Malaysia	86	<u> </u>
Bahrain	83	<u> </u>
Bulgaria	83	<u> </u>
Singapore	82	<u> </u>
Jordan	77	<u> </u>
Netherlands	76	<u> </u>
Estonia	74	
	72	A
Belgium (Flemish) Armenia	72 71	
	7 I 71	A
Korea, Republic of United States		A
	70	
Russian Federation	69	<u> </u>
Slovak Republic	68	A
Japan	67	<u> </u>
Hong Kong, SAR	67	A
Palestinian Nat'l Auth.	67	A
Indonesia	67	A
Moldova, Rep. of	65	Ο
England	64	0
Scotland	64	0
Serbia and Montenegro	63	0
Italy	62	0
International average	62	
International average Slovenia	62 61	0
		Ο
Slovenia	61	
Slovenia Botswana	61 61	Ο
Slovenia Botswana Egypt	61 61 60	0 0
Slovenia Botswana Egypt Romania	61 61 60 59	0 0 0
Slovenia Botswana Egypt Romania Tunisia	61 61 60 59 58	0 0 0 0
Slovenia Botswana Egypt Romania Tunisia Australia	61 61 60 59 58 57	0 0 0 0
Slovenia Botswana Egypt Romania Tunisia Australia Philippines	61 61 60 59 58 57	0 0 0 0
Slovenia Botswana Egypt Romania Tunisia Australia Philippines Latvia	61 61 60 59 58 57 57	0 0 0 0
Slovenia Botswana Egypt Romania Tunisia Australia Philippines Latvia Lebanon	61 61 60 59 58 57 57 56	0 0 0 0
Slovenia Botswana Egypt Romania Tunisia Australia Philippines Latvia Lebanon Chile	61 61 60 59 58 57 57 56 55	0 0 0 0
Slovenia Botswana Egypt Romania Tunisia Australia Philippines Latvia Lebanon Chile Sweden	61 61 60 59 58 57 57 56 55 55	0 0 0 0
Slovenia Botswana Egypt Romania Tunisia Australia Philippines Latvia Lebanon Chile Sweden New Zealand	61 61 60 59 58 57 57 56 55 55 54	0 0 0 0
Slovenia Botswana Egypt Romania Tunisia Australia Philippines Latvia Lebanon Chile Sweden New Zealand Saudi Arabia Israel	61 61 60 59 58 57 57 56 55 55 54 53	0 0 0 0
Slovenia Botswana Egypt Romania Tunisia Australia Philippines Latvia Lebanon Chile Sweden New Zealand Saudi Arabia	61 61 60 59 58 57 57 56 55 55 54 53 52	0 0 0 0
Slovenia Botswana Egypt Romania Tunisia Australia Philippines Latvia Lebanon Chile Sweden New Zealand Saudi Arabia Israel Iran, Islamic Republic of Morocco	61 60 59 58 57 56 55 55 54 53 52 52 52 46	0 0 0 0
Slovenia Botswana Egypt Romania Tunisia Australia Philippines Latvia Lebanon Chile Sweden New Zealand Saudi Arabia Israel Iran, Islamic Republic of Morocco Macedonia, Republic of	61 60 59 58 57 56 55 54 53 52 52 52 46 39	0 0 0 0
Slovenia Botswana Egypt Romania Tunisia Australia Philippines Latvia Lebanon Chile Sweden New Zealand Saudi Arabia Israel Iran, Islamic Republic of Morocco Macedonia, Republic of Norway	61 60 59 58 57 56 55 55 54 53 52 52 52 46 39	0 0 0 0
Slovenia Botswana Egypt Romania Tunisia Australia Philippines Latvia Lebanon Chile Sweden New Zealand Saudi Arabia Israel Iran, Islamic Republic of Morocco Macedonia, Republic of Norway Ghana	61 60 59 58 57 56 55 55 54 53 52 52 52 46 39 36	0 0 0 0
Slovenia Botswana Egypt Romania Tunisia Australia Philippines Latvia Lebanon Chile Sweden New Zealand Saudi Arabia Israel Iran, Islamic Republic of Morocco Macedonia, Republic of Norway Ghana Cyprus	61 60 59 58 57 56 55 55 54 53 52 52 46 39 36 36	0 0 0 0
Slovenia Botswana Egypt Romania Tunisia Australia Philippines Latvia Lebanon Chile Sweden New Zealand Saudi Arabia Israel Iran, Islamic Republic of Morocco Macedonia, Republic of Norway Ghana Cyprus South Africa	61 60 59 58 57 57 56 55 54 52 52 52 46 39 36 36 35 33	0 0 0 0
Slovenia Botswana Egypt Romania Tunisia Australia Philippines Latvia Lebanon Chile Sweden New Zealand Saudi Arabia Israel Iran, Islamic Republic of Morocco Macedonia, Republic of Norway Ghana Cyprus	61 60 59 58 57 56 55 55 54 53 52 52 46 39 36 36	0 0 0 0

Country average vs. International average:

Content Domain	Main Topic	Cognitive Domain
EARTH SCIENCE	Earth Processes, Cycles and History	Factual Knowledge

Rock at bottom of lake/ocean

The graph shows the progress made by a beetle moving along a straight line.



If the beetle keeps moving at the same speed, how long will it take to travel $10\ \mathrm{cm}$?

- (A) 4 seconds
- (B) 6 seconds
- © 20 seconds
- (D) 25 seconds

Item Number: S012041

Correct Response:

C

Overall Percent Correct

Lithuania	89	A
Hungary	88	
Korea, Republic of	85	
Hong Kong, SAR	85	
Estonia	85	
Chinese Taipei	80	
Iran, Islamic Republic of	80	
Tunisia	74	
Japan	74	
England	71	
Latvia	70	
Armenia	70	
Morocco	68	
Israel	65	
Singapore	65	
Russian Federation	65	
Jordan	65	
Bahrain	64	
United States	60	
Palestinian Nat'l Auth.	57	0
Italy	56	0
International average	54	

International average	54	
Philippines	52	0
Australia	52	0
Moldova, Rep. of	52	0
Saudi Arabia	51	0
Egypt	50	0
Slovenia	47	▼
Serbia and Montenegro	44	\blacksquare
Scotland	44	\blacksquare
Netherlands	43	\blacksquare
Romania	43	\blacksquare
Cyprus	41	\blacksquare
Malaysia	41	\blacksquare
Lebanon	40	* * * * * * * * * * * * * * * * * * *
Bulgaria	39	\blacksquare
New Zealand	37	\blacksquare
Botswana	36	\blacksquare
Sweden	34	\blacksquare
Ghana	34	\blacksquare
Slovak Republic	31	\blacksquare
Norway	28	\blacksquare
Indonesia	27	\blacksquare
Belgium (Flemish)	26	\blacksquare
Macedonia, Republic of	22	\blacksquare
South Africa	22	\blacksquare
Chile	18	\blacksquare

Country average vs. International average:

Content Domain	Main Topic	Cognitive Domain
EARTH SCIENCE	Earth Processes, Cycles and History	Factual Knowledge

Fossil fuels

Fossil fuels were formed from

- (A) volcanoes
- (B) the remains of living things
- (c) gases in the atmosphere
- (D) water trapped inside rocks

Item Number: S022074

Correct Response:

В

Overall Percent Correct

Jordan	82	A
Singapore	81	
Chinese Taipei	79	
•	79 77	
Hong Kong, SAR		A
England	71	A
Indonesia	69	A
Iran, Islamic Republic of	67	A
Serbia and Montenegro	66	<u> </u>
United States	65	A
Estonia	64	A
Botswana	61	A
Macedonia, Republic of	59	A
Italy	57	A
Hungary	57	A
Sweden	57	A
Scotland	56	0
Lithuania	56	
Korea, Republic of	56	A
Slovenia	54	0
Bulgaria	53	0
Romania	53	0
Norway	52	0
International average	52	
Armenia	51	0
Japan	51	0
Japan Netherlands	51 51	Ο
Netherlands Egypt		O O
Netherlands	51	0 0 0
Netherlands Egypt	51 50	0 0 0
Netherlands Egypt Palestinian Nat'l Auth.	51 50 49	0 0 0 0
Netherlands Egypt Palestinian Nat'l Auth. Slovak Republic	51 50 49 48	0 0 0 0
Netherlands Egypt Palestinian Nat'l Auth. Slovak Republic New Zealand	51 50 49 48 46	0 0 0 0
Netherlands Egypt Palestinian Nat'l Auth. Slovak Republic New Zealand Australia	51 50 49 48 46 46	0 0 0 0
Netherlands Egypt Palestinian Nat'l Auth. Slovak Republic New Zealand Australia Israel	51 50 49 48 46 46 45	0 0 0 0
Netherlands Egypt Palestinian Nat'l Auth. Slovak Republic New Zealand Australia Israel Malaysia	51 50 49 48 46 46 45 45	0 0 0 0
Netherlands Egypt Palestinian Nat'l Auth. Slovak Republic New Zealand Australia Israel Malaysia Belgium (Flemish)	51 50 49 48 46 46 45 45	0 0 0 0
New Zealand Australia Israel Malaysia Belgium (Flemish) Latvia	51 50 49 48 46 46 45 45 45 44	0 0 0 0 •
Netherlands Egypt Palestinian Nat'l Auth. Slovak Republic New Zealand Australia Israel Malaysia Belgium (Flemish) Latvia Russian Federation	51 50 49 48 46 46 45 45 45 44 43	0 0 0 0 •
Netherlands Egypt Palestinian Nat'l Auth. Slovak Republic New Zealand Australia Israel Malaysia Belgium (Flemish) Latvia Russian Federation Moldova, Rep. of	51 50 49 48 46 46 45 45 45 44 43 43	0 0 0 0
Netherlands Egypt Palestinian Nat'l Auth. Slovak Republic New Zealand Australia Israel Malaysia Belgium (Flemish) Latvia Russian Federation Moldova, Rep. of Lebanon	51 50 49 48 46 46 45 45 45 44 43 43 42	0 0 0 0 •
Netherlands Egypt Palestinian Nat'l Auth. Slovak Republic New Zealand Australia Israel Malaysia Belgium (Flemish) Latvia Russian Federation Moldova, Rep. of Lebanon Philippines	51 50 49 48 46 46 45 45 45 44 43 43 42 41	0 0 0 0 •
Netherlands Egypt Palestinian Nat'l Auth. Slovak Republic New Zealand Australia Israel Malaysia Belgium (Flemish) Latvia Russian Federation Moldova, Rep. of Lebanon Philippines Bahrain	51 50 49 48 46 46 45 45 44 43 43 42 41 39	0 0 0 0 •
Netherlands Egypt Palestinian Nat'l Auth. Slovak Republic New Zealand Australia Israel Malaysia Belgium (Flemish) Latvia Russian Federation Moldova, Rep. of Lebanon Philippines Bahrain Chile	51 50 49 48 46 46 45 45 44 43 43 42 41 39 35	0 0 0 0 •
Netherlands Egypt Palestinian Nat'l Auth. Slovak Republic New Zealand Australia Israel Malaysia Belgium (Flemish) Latvia Russian Federation Moldova, Rep. of Lebanon Philippines Bahrain Chile Saudi Arabia	51 50 49 48 46 46 45 45 44 43 43 42 41 39 35 26	0 0 0 0 •
Netherlands Egypt Palestinian Nat'l Auth. Slovak Republic New Zealand Australia Israel Malaysia Belgium (Flemish) Latvia Russian Federation Moldova, Rep. of Lebanon Philippines Bahrain Chile Saudi Arabia Tunisia South Africa	51 50 49 48 46 45 45 45 44 43 42 41 39 35 26	0 0 0 0 •
Netherlands Egypt Palestinian Nat'l Auth. Slovak Republic New Zealand Australia Israel Malaysia Belgium (Flemish) Latvia Russian Federation Moldova, Rep. of Lebanon Philippines Bahrain Chile Saudi Arabia Tunisia South Africa Cyprus	51 50 49 48 46 45 45 45 44 43 43 42 41 39 35 26 22 22	0 0 0 0 •
Netherlands Egypt Palestinian Nat'l Auth. Slovak Republic New Zealand Australia Israel Malaysia Belgium (Flemish) Latvia Russian Federation Moldova, Rep. of Lebanon Philippines Bahrain Chile Saudi Arabia Tunisia South Africa	51 50 49 48 46 45 45 45 44 43 42 41 39 35 26 22 22 21	0 0 0 0 •
Netherlands Egypt Palestinian Nat'l Auth. Slovak Republic New Zealand Australia Israel Malaysia Belgium (Flemish) Latvia Russian Federation Moldova, Rep. of Lebanon Philippines Bahrain Chile Saudi Arabia Tunisia South Africa Cyprus Ghana	51 50 49 48 46 45 45 45 44 43 42 41 39 35 26 22 21 19	0 0 0 0 •

Country average vs. International average:

Higher O
Lower

A

Content Domain	Main Topic	Cognitive Domain
EARTH SCIENCE	Earth Processes, Cycles and History	Reasoning and Analysis

Time/temperature table

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	15°C	17°C	20°C	21°C	19°C
Tuesday	15°C	15°C	15°C	5°C	4°C
Wednesday	8°C	10°C	14°C	14°C	13°C

When did the wind become much colder?

- (A) Monday morning
- (B) Monday afternoon
- © Tuesday morning
- (D) Tuesday afternoon
- (E) Wednesday afternoon

Item Number: S012027

Correct Response:

D

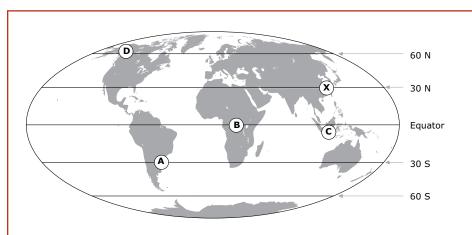
Overall Percent Correct

Japan	96	A
Netherlands	93	_
Hungary	93	<u> </u>
Australia	92	_ _
Sweden	89	_ _
Singapore	89	_
Belgium (Flemish)	89	_ _
England	88	_
New Zealand	87	_
Korea, Republic of	87	A
Hong Kong, SAR	87	A
Chinese Taipei	87	_ _
Estonia	87	_
Malaysia	85	A
Slovenia	84	A
United States	84	A
Israel	83	_
Italy	83	A
Scotland	82	A
Serbia and Montenegro	82	<u> </u>
Latvia	82	A
Bulgaria	79	A
Slovak Republic	79	A
Cyprus	76	A
Lithuania	76	0
Chile	76	0
Norway	75	0
Macedonia, Republic of	75	0
International average	73	
Romania	71	0
Jordan	69	0
Tunisia	69	▼
Moldova, Rep. of	68	0
Russian Federation	68	* * *
Morocco	65	▼
Bahrain	63	▼
Palestinian Nat'l Auth.	60	▼
Lebanon	57	▼
Iran, Islamic Republic of	56	▼
Indonesia	44	▼
Egypt	43	▼
Armenia	39	▼
Saudi Arabia	36	▼ ▼ ▼
Botswana	35	▼
Philippines	33	▼
South Africa	26	▼
Ghana	0	▼

Country average vs. International average:

Content Domain	Main Topic	Cognitive Domain
EARTH SCIENCE	Earth Processes, Cycles and History	Reasoning and Analysis

Map of the world with lines of latitude



The diagram above shows a map of the world with the lines of latitude marked. Which of the following places marked on the map is most likely to have an average yearly temperature similar to location **X**?

- (A) location A
- (B) location B
- (c) location C
- D location D

Item Number: S032652

Correct Response:

Δ

Overall Percent Correct

Estonia	73	
Netherlands	70	
Hungary	68	<u> </u>
Malaysia	67	<u> </u>
Chinese Taipei	65	<u> </u>
Korea, Republic of	64	<u> </u>
Slovak Republic	64	_
Singapore	63	<u> </u>
Sweden	61	
Slovenia	58	
Italy	57	
Australia	55	
Latvia	53	
		0
England	53	
Moldova, Rep. of	53	0
United States	51	A
Serbia and Montenegro	51	0
Hong Kong, SAR	51	0
Japan	49	0
Belgium (Flemish)	49	0
New Zealand	49	O
Macedonia, Republic of	49	0
Israel	48	0
Bulgaria	48	0
Indonesia	48	0
International average	48	
International average Russian Federation	48 46	0
International average Russian Federation Romania	48 46 45	0
International average Russian Federation Romania Jordan	48 46 45 45	0
International average Russian Federation Romania Jordan Iran, Islamic Republic of	48 46 45 45 44	0 0 0
International average Russian Federation Romania Jordan Iran, Islamic Republic of Scotland	48 46 45 45 44 44	0 0 0 •
International average Russian Federation Romania Jordan Iran, Islamic Republic of	48 46 45 45 44 44 43	○ ○ ○ ▼
International average Russian Federation Romania Jordan Iran, Islamic Republic of Scotland Bahrain Norway	48 46 45 45 44 44 43 42	0 0 0 •
International average Russian Federation Romania Jordan Iran, Islamic Republic of Scotland Bahrain Norway Cyprus	48 46 45 45 44 44 43 42 42	0 0 0 •
International average Russian Federation Romania Jordan Iran, Islamic Republic of Scotland Bahrain Norway Cyprus Lithuania	48 46 45 45 44 44 43 42	0 0 0 •
International average Russian Federation Romania Jordan Iran, Islamic Republic of Scotland Bahrain Norway Cyprus	48 46 45 45 44 44 43 42 42	0 0 0 •
International average Russian Federation Romania Jordan Iran, Islamic Republic of Scotland Bahrain Norway Cyprus Lithuania	48 46 45 45 44 44 43 42 42 42	0 0 0 •
International average Russian Federation Romania Jordan Iran, Islamic Republic of Scotland Bahrain Norway Cyprus Lithuania Chile	48 46 45 45 44 44 43 42 42 42 41	0 0 0 •
International average Russian Federation Romania Jordan Iran, Islamic Republic of Scotland Bahrain Norway Cyprus Lithuania Chile Palestinian Nat'l Auth.	48 46 45 45 44 44 43 42 42 42 41 39	0 0 0 •
International average Russian Federation Romania Jordan Iran, Islamic Republic of Scotland Bahrain Norway Cyprus Lithuania Chile Palestinian Nat'l Auth. Philippines	48 46 45 45 44 44 43 42 42 42 41 39 39	0 0 0 •
International average Russian Federation Romania Jordan Iran, Islamic Republic of Scotland Bahrain Norway Cyprus Lithuania Chile Palestinian Nat'l Auth. Philippines Armenia	48 46 45 45 44 44 43 42 42 42 41 39 39 37	0 0 0 •
International average Russian Federation Romania Jordan Iran, Islamic Republic of Scotland Bahrain Norway Cyprus Lithuania Chile Palestinian Nat'l Auth. Philippines Armenia Saudi Arabia	48 46 45 45 44 44 43 42 42 41 39 39 37 35	0 0 0 0 0 0 0 0 0
International average Russian Federation Romania Jordan Iran, Islamic Republic of Scotland Bahrain Norway Cyprus Lithuania Chile Palestinian Nat'l Auth. Philippines Armenia Saudi Arabia Egypt	48 46 45 45 44 44 43 42 42 41 39 39 37 35 35	0 0 0 0 0 0 0 0 0
International average Russian Federation Romania Jordan Iran, Islamic Republic of Scotland Bahrain Norway Cyprus Lithuania Chile Palestinian Nat'l Auth. Philippines Armenia Saudi Arabia Egypt Lebanon	48 46 45 45 44 44 43 42 42 41 39 39 37 35 35 34	0 0 0 0 0 0 0 0 0
International average Russian Federation Romania Jordan Iran, Islamic Republic of Scotland Bahrain Norway Cyprus Lithuania Chile Palestinian Nat'l Auth. Philippines Armenia Saudi Arabia Egypt Lebanon Morocco	48 46 45 44 44 43 42 42 42 41 39 39 37 35 35 34 30	0 0 0 0 0 0 0 0 0
International average Russian Federation Romania Jordan Iran, Islamic Republic of Scotland Bahrain Norway Cyprus Lithuania Chile Palestinian Nat'l Auth. Philippines Armenia Saudi Arabia Egypt Lebanon Morocco Ghana	48 46 45 44 44 43 42 42 42 41 39 39 37 35 35 34 30 26	0 0 0 •
Russian Federation Romania Jordan Iran, Islamic Republic of Scotland Bahrain Norway Cyprus Lithuania Chile Palestinian Nat'l Auth. Philippines Armenia Saudi Arabia Egypt Lebanon Morocco Ghana Botswana	48 46 45 45 44 44 43 42 42 42 41 39 39 37 35 35 34 30 26 25	0 0 0 0 0 0 0 0 0
Russian Federation Romania Jordan Iran, Islamic Republic of Scotland Bahrain Norway Cyprus Lithuania Chile Palestinian Nat'l Auth. Philippines Armenia Saudi Arabia Egypt Lebanon Morocco Ghana Botswana South Africa	48 46 45 45 44 44 43 42 42 42 41 39 39 37 35 35 34 30 26 25 21	0 0 0 0 0 0 0 0 0

Country average vs. International average:

Content Domain	Main Topic	Cognitive Domain
EARTH SCIENCE	Earth's Structure and Physical Features	Factual Knowledge

Stone in underground caves

Most underground caves are formed by the action of water on

- (A) granite
- (B) limestone
- (C) sandstone
- (D) shale

Item Number: S012030

Correct Response:

В

Overall Percent Correct

Slovenia Slovak Republic Hungary Korea, Republic of Chinese Taipei Serbia and Montenegro Cyprus Netherlands Belgium (Flemish) Bulgaria Romania Italy Sweden Malaysia England	91 85 85 78 75 74 63 62 59 58 58 57 56 55	
Macedonia, Republic of Lebanon Singapore Israel	53 52 47 46	•
International average	46	
Norway	45	0
United States	45	0
Estonia	44	0
Australia	41	▼
Rahrain	40	▼
Russian Federation	40	▼
New Zealand	40	▼
Morocco	40	¥
Scotland	38	▼ ▼ ▼
	37	_
Philippines Chile		
	36	· ·
Ghana	36	_
Moldova, Rep. of	35	▼
Botswana	35	_
Jordan	32	▼
Iran, Islamic Republic of	31	_
Armenia	30	V
Egypt	30	V
Lithuania 	29	V
Indonesia	28	V
Japan	26	V
Hong Kong, SAR	25	V
South Africa	24	V
Latvia	24	V
Saudi Arabia	17	V
Tunisia	6	V
Palestinian Nat'l Auth.	0	•

Country average vs. International average:

Content Domain	Main Topic	Cognitive Domain
EARTH SCIENCE	Earth's Structure and Physical Features	Factual Knowledge

Abundance of gases in atmosphere

Three gases found in Earth's atmosphere are carbon dioxide, nitrogen, and oxygen. What is their order of abundance from greatest to least?

- (A) nitrogen, oxygen, carbon dioxide
- (B) nitrogen, carbon dioxide, oxygen
- (C) oxygen, nitrogen, carbon dioxide
- (D) carbon dioxide, oxygen, nitrogen

Item Number: S022275

Correct Response:

Δ

Overall Percent Correct

Chinese Taipei	56	A
Hong Kong, SAR	56	<u> </u>
Japan	49	<u> </u>
Armenia	44	<u> </u>
Estonia	44	<u> </u>
Slovak Republic	43	<u> </u>
Palestinian Nat'l Auth.	43	<u> </u>
Hungary	40	<u> </u>
Singapore	39	<u> </u>
Bulgaria	38	<u> </u>
Korea, Republic of	36	<u> </u>
Malaysia	34	<u> </u>
Romania	32	0
Macedonia, Republic of	31	0
Russian Federation	31	0
Slovenia	30	0
Israel	30	0
Scotland	29	0
		0
Philippines	29	0
Egypt	28	
Serbia and Montenegro International average	28 28	0
England	27	0
Lithuania	27	0
Litiraariia	_,	~
Latvia	26	\circ
Latvia Indonesia	26 26	0
Indonesia	26	0
Indonesia Italy	26 23	O ▼
Indonesia Italy Ghana	26 23 23	O ▼
Indonesia Italy Ghana Moldova, Rep. of	26 23 23 22	O ▼
Indonesia Italy Ghana Moldova, Rep. of Saudi Arabia	26 23 23 22 22	O ▼
Indonesia Italy Ghana Moldova, Rep. of Saudi Arabia Jordan	26 23 23 22 22 21	O ▼
Indonesia Italy Ghana Moldova, Rep. of Saudi Arabia Jordan Lebanon	26 23 23 22 22 21 21	O ▼
Indonesia Italy Ghana Moldova, Rep. of Saudi Arabia Jordan Lebanon United States	26 23 23 22 22 21 21 21	O ▼
Indonesia Italy Ghana Moldova, Rep. of Saudi Arabia Jordan Lebanon United States Netherlands	26 23 23 22 22 21 21 21 21	O ▼
Indonesia Italy Ghana Moldova, Rep. of Saudi Arabia Jordan Lebanon United States Netherlands Norway	26 23 23 22 22 21 21 21 21 21 20	O ▼
Indonesia Italy Ghana Moldova, Rep. of Saudi Arabia Jordan Lebanon United States Netherlands Norway New Zealand	26 23 23 22 22 21 21 21 21 20 20	O ▼
Indonesia Italy Ghana Moldova, Rep. of Saudi Arabia Jordan Lebanon United States Netherlands Norway New Zealand Bahrain	26 23 23 22 22 21 21 21 21 20 20	O V
Indonesia Italy Ghana Moldova, Rep. of Saudi Arabia Jordan Lebanon United States Netherlands Norway New Zealand Bahrain Australia	26 23 23 22 22 21 21 21 21 20 20 19	O V
Indonesia Italy Ghana Moldova, Rep. of Saudi Arabia Jordan Lebanon United States Netherlands Norway New Zealand Bahrain Australia Sweden	26 23 23 22 22 21 21 21 21 20 20 19	O ▼
Indonesia Italy Ghana Moldova, Rep. of Saudi Arabia Jordan Lebanon United States Netherlands Norway New Zealand Bahrain Australia Sweden Botswana	26 23 23 22 22 21 21 21 20 20 19 19 18	O V
Indonesia Italy Ghana Moldova, Rep. of Saudi Arabia Jordan Lebanon United States Netherlands Norway New Zealand Bahrain Australia Sweden Botswana Cyprus	26 23 23 22 22 21 21 21 20 20 19 19 18 18 18	O V
Indonesia Italy Ghana Moldova, Rep. of Saudi Arabia Jordan Lebanon United States Netherlands Norway New Zealand Bahrain Australia Sweden Botswana Cyprus Morocco	26 23 23 22 22 21 21 21 20 20 19 19 18 18 17 16	O V
Indonesia Italy Ghana Moldova, Rep. of Saudi Arabia Jordan Lebanon United States Netherlands Norway New Zealand Bahrain Australia Sweden Botswana Cyprus Morocco South Africa	26 23 23 22 22 21 21 21 20 20 19 19 18 18 17 16	O V
Indonesia Italy Ghana Moldova, Rep. of Saudi Arabia Jordan Lebanon United States Netherlands Norway New Zealand Bahrain Australia Sweden Botswana Cyprus Morocco South Africa Iran, Islamic Republic of	26 23 23 22 22 21 21 21 20 20 19 19 18 18 17 16 15	O V
Indonesia Italy Ghana Moldova, Rep. of Saudi Arabia Jordan Lebanon United States Netherlands Norway New Zealand Bahrain Australia Sweden Botswana Cyprus Morocco South Africa Iran, Islamic Republic of Belgium (Flemish)	26 23 23 22 22 21 21 21 20 20 19 19 18 18 17 16 15 13	O V
Indonesia Italy Ghana Moldova, Rep. of Saudi Arabia Jordan Lebanon United States Netherlands Norway New Zealand Bahrain Australia Sweden Botswana Cyprus Morocco South Africa Iran, Islamic Republic of Belgium (Flemish) Chile	26 23 23 22 22 21 21 21 20 20 19 19 18 18 17 16 15 13 12	O V
Indonesia Italy Ghana Moldova, Rep. of Saudi Arabia Jordan Lebanon United States Netherlands Norway New Zealand Bahrain Australia Sweden Botswana Cyprus Morocco South Africa Iran, Islamic Republic of Belgium (Flemish)	26 23 23 22 22 21 21 21 20 20 19 19 18 18 17 16 15 13	O V

Country average vs. International average:

Content Domain	Main Topic	Cognitive Domain
EARTH SCIENCE	Earth's Structure and Physical Features	Reasoning and Analysis

Changes in river shape/speed

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?

- (A) Much the same
- (B) Deeper and faster
- © Slower and wider
- \bigcirc Straighter

Item Number: S012006

Correct Response:

C

Overall Percent Correct

Japan	84	A
Russian Federation	79	_
Estonia	79	<u> </u>
Netherlands	74	<u> </u>
Chinese Taipei	73	<u> </u>
Slovenia	73	<u> </u>
Slovak Republic	71	_ _
Hungary	71	_ _
Belgium (Flemish)	68	_
Sweden	66	A
Latvia	65	A
Norway	65	A
Israel	63	A
Singapore	62	A
Romania	62	
Korea, Republic of	61	A
Iran, Islamic Republic of	59	
Australia	58	
Italy	58	A
Malaysia	57	A
United States	57	A
England	57	A
Bulgaria	56	0
Serbia and Montenegro	52	0
Scotland	52	0
International average	52	
International average Indonesia	52 52	0
International average Indonesia New Zealand	52 52 50	0
International average Indonesia New Zealand Moldova, Rep. of	52 52 50 50	0 0
International average Indonesia New Zealand Moldova, Rep. of Lithuania	52 52 50 50 50	0 0 0
International average Indonesia New Zealand Moldova, Rep. of Lithuania Armenia	52 50 50 50 50 49	0 0 0 0
International average Indonesia New Zealand Moldova, Rep. of Lithuania Armenia Hong Kong, SAR	52 52 50 50 50 49 48	0 0 0 0
International average Indonesia New Zealand Moldova, Rep. of Lithuania Armenia Hong Kong, SAR Macedonia, Republic of	52 50 50 50 49 48 46	0 0 0 0
International average Indonesia New Zealand Moldova, Rep. of Lithuania Armenia Hong Kong, SAR Macedonia, Republic of Chile	52 50 50 50 49 48 46 44	0 0 0 0
International average Indonesia New Zealand Moldova, Rep. of Lithuania Armenia Hong Kong, SAR Macedonia, Republic of Chile Cyprus	52 50 50 50 49 48 46 44 37	0 0 0 0
International average Indonesia New Zealand Moldova, Rep. of Lithuania Armenia Hong Kong, SAR Macedonia, Republic of Chile Cyprus Morocco	52 52 50 50 50 49 48 46 44 37 37	0 0 0 0
International average Indonesia New Zealand Moldova, Rep. of Lithuania Armenia Hong Kong, SAR Macedonia, Republic of Chile Cyprus Morocco Jordan	52 50 50 50 49 48 46 44 37 37 36	0 0 0
International average Indonesia New Zealand Moldova, Rep. of Lithuania Armenia Hong Kong, SAR Macedonia, Republic of Chile Cyprus Morocco Jordan Tunisia	52 52 50 50 50 49 48 46 44 37 37 36 36	0 0 0 0
International average Indonesia New Zealand Moldova, Rep. of Lithuania Armenia Hong Kong, SAR Macedonia, Republic of Chile Cyprus Morocco Jordan Tunisia Philippines	52 52 50 50 50 49 48 46 44 37 37 36 36 33	0 0 0 0
International average Indonesia New Zealand Moldova, Rep. of Lithuania Armenia Hong Kong, SAR Macedonia, Republic of Chile Cyprus Morocco Jordan Tunisia Philippines Botswana	52 52 50 50 50 49 48 46 44 37 36 36 33	0 0 0 0
International average Indonesia New Zealand Moldova, Rep. of Lithuania Armenia Hong Kong, SAR Macedonia, Republic of Chile Cyprus Morocco Jordan Tunisia Philippines Botswana Palestinian Nat'l Auth.	52 52 50 50 50 49 48 46 44 37 36 36 33 31 27	0 0 0 0 0 0 0 0 0 0
International average Indonesia New Zealand Moldova, Rep. of Lithuania Armenia Hong Kong, SAR Macedonia, Republic of Chile Cyprus Morocco Jordan Tunisia Philippines Botswana Palestinian Nat'l Auth. South Africa	52 52 50 50 50 49 48 46 44 37 36 36 33 31 27 26	0 0 0 0 0 0 0 0 0 0
International average Indonesia New Zealand Moldova, Rep. of Lithuania Armenia Hong Kong, SAR Macedonia, Republic of Chile Cyprus Morocco Jordan Tunisia Philippines Botswana Palestinian Nat'l Auth. South Africa Lebanon	52 52 50 50 50 49 48 46 44 37 36 36 33 31 27 26 26	0 0 0 0 0 0 0 0 0 0
International average Indonesia New Zealand Moldova, Rep. of Lithuania Armenia Hong Kong, SAR Macedonia, Republic of Chile Cyprus Morocco Jordan Tunisia Philippines Botswana Palestinian Nat'l Auth. South Africa Lebanon Ghana	52 52 50 50 50 49 48 46 44 37 36 36 33 31 27 26 26 25	0 0 0 0 0 0 0 0 0 0
International average Indonesia New Zealand Moldova, Rep. of Lithuania Armenia Hong Kong, SAR Macedonia, Republic of Chile Cyprus Morocco Jordan Tunisia Philippines Botswana Palestinian Nat'l Auth. South Africa Lebanon Ghana Bahrain	52 52 50 50 50 49 48 46 44 37 36 36 33 31 27 26 26 25 22	0 0 0 0 0 0 0 0 0 0
International average Indonesia New Zealand Moldova, Rep. of Lithuania Armenia Hong Kong, SAR Macedonia, Republic of Chile Cyprus Morocco Jordan Tunisia Philippines Botswana Palestinian Nat'l Auth. South Africa Lebanon Ghana Bahrain Egypt	52 52 50 50 50 49 48 46 44 37 36 36 33 31 27 26 26 25 22	0 0 0 0
International average Indonesia New Zealand Moldova, Rep. of Lithuania Armenia Hong Kong, SAR Macedonia, Republic of Chile Cyprus Morocco Jordan Tunisia Philippines Botswana Palestinian Nat'l Auth. South Africa Lebanon Ghana Bahrain	52 52 50 50 50 49 48 46 44 37 36 36 33 31 27 26 26 25 22	0 0 0 0 0 0 0 0 0 0

Country average vs. International average:

Content Domain	Main Topic	Cognitive Domain
ENVIRONMENTAL SCIENCE	Changes in Environment	Factual Knowledge

Increased carbon dioxide in atmosphere

The burning of fossil fuels has increased the carbon dioxide content of the atmosphere. What is a possible effect that the increased amount of carbon dioxide is likely to have on our planet?

- (A) A warmer climate
- (B) A cooler climate
- © Lower relative humidity
- (D) More ozone in the atmosphere

Item Number: S012017

Correct Response:

Overall Percent Correct

Singapore	83	
Japan	80	
Hong Kong, SAR	72	
Netherlands	71	
Malaysia	67	
Sweden	66	
Korea, Republic of	65	
England	65	
Australia	64	
Norway	62	
Chinese Taipei	62	
Scotland	62	
Estonia	58	
United States	56	
New Zealand	56	
Hungary	56	
Indonesia	52	<u> </u>
Israel	51	<u> </u>
Italy	48	0
Latvia	47	0
Moldova, Rep. of	46	0
Belgium (Flemish)	45	0
International average	45	
Iran, Islamic Republic of	45	0
	44	0
Slovenia Russian Federation	44 43	0
Slovenia Russian Federation	43	0
Slovenia Russian Federation Bulgaria		0
Slovenia Russian Federation Bulgaria Slovak Republic	43 43	0 0
Slovenia Russian Federation Bulgaria	43 43 43	0 0 0
Slovenia Russian Federation Bulgaria Slovak Republic Cyprus Chile	43 43 43 42 40	0 0 0 0
Slovenia Russian Federation Bulgaria Slovak Republic Cyprus Chile Romania	43 43 43 42 40 40	0 0 0 0
Slovenia Russian Federation Bulgaria Slovak Republic Cyprus Chile	43 43 43 42 40 40 35	0 0 0 0
Slovenia Russian Federation Bulgaria Slovak Republic Cyprus Chile Romania Macedonia, Republic of Armenia	43 43 42 40 40 35 35	0 0 0 0
Slovenia Russian Federation Bulgaria Slovak Republic Cyprus Chile Romania Macedonia, Republic of Armenia Lithuania	43 43 42 40 40 35 35 34	0 0 0 0
Slovenia Russian Federation Bulgaria Slovak Republic Cyprus Chile Romania Macedonia, Republic of Armenia Lithuania Philippines	43 43 43 42 40 40 35 35 34 32	0 0 0 0
Slovenia Russian Federation Bulgaria Slovak Republic Cyprus Chile Romania Macedonia, Republic of Armenia Lithuania Philippines Morocco	43 43 42 40 40 35 35 34 32	0 0 0 0
Slovenia Russian Federation Bulgaria Slovak Republic Cyprus Chile Romania Macedonia, Republic of Armenia Lithuania Philippines Morocco Serbia and Montenegro	43 43 42 40 40 35 35 34 32 32 30	0 0 0 0
Slovenia Russian Federation Bulgaria Slovak Republic Cyprus Chile Romania Macedonia, Republic of Armenia Lithuania Philippines Morocco Serbia and Montenegro Botswana	43 43 42 40 40 35 35 34 32 30 27	0 0 0
Slovenia Russian Federation Bulgaria Slovak Republic Cyprus Chile Romania Macedonia, Republic of Armenia Lithuania Philippines Morocco Serbia and Montenegro Botswana South Africa	43 43 42 40 40 35 35 34 32 32 30 27 23	0 0 0 0 0 0 0 0 0 0
Slovenia Russian Federation Bulgaria Slovak Republic Cyprus Chile Romania Macedonia, Republic of Armenia Lithuania Philippines Morocco Serbia and Montenegro Botswana South Africa Lebanon	43 43 42 40 40 35 35 34 32 30 27 23 21	0 0 0 0 0 0 0 0 0 0
Slovenia Russian Federation Bulgaria Slovak Republic Cyprus Chile Romania Macedonia, Republic of Armenia Lithuania Philippines Morocco Serbia and Montenegro Botswana South Africa Lebanon Jordan	43 43 42 40 40 35 35 34 32 30 27 23 21 21	0 0 0 0 0 0 0 0 0 0
Slovenia Russian Federation Bulgaria Slovak Republic Cyprus Chile Romania Macedonia, Republic of Armenia Lithuania Philippines Morocco Serbia and Montenegro Botswana South Africa Lebanon Jordan Ghana	43 43 42 40 40 35 35 34 32 30 27 23 21 21	0 0 0 0 0 0 0 0 0
Slovenia Russian Federation Bulgaria Slovak Republic Cyprus Chile Romania Macedonia, Republic of Armenia Lithuania Philippines Morocco Serbia and Montenegro Botswana South Africa Lebanon Jordan Ghana Bahrain	43 43 42 40 40 35 35 34 32 30 27 23 21 21 18	0 0 0 0 0 0 0 0 0
Slovenia Russian Federation Bulgaria Slovak Republic Cyprus Chile Romania Macedonia, Republic of Armenia Lithuania Philippines Morocco Serbia and Montenegro Botswana South Africa Lebanon Jordan Ghana Bahrain Egypt	43 43 42 40 40 35 35 34 32 30 27 23 21 21 18 17	0 0 0 0 0 0 0 0 0
Slovenia Russian Federation Bulgaria Slovak Republic Cyprus Chile Romania Macedonia, Republic of Armenia Lithuania Philippines Morocco Serbia and Montenegro Botswana South Africa Lebanon Jordan Ghana Bahrain Egypt Tunisia	43 43 42 40 40 35 35 34 32 30 27 23 21 21 21 18 17	0 0 0 0 0 0 0 0 0 0
Slovenia Russian Federation Bulgaria Slovak Republic Cyprus Chile Romania Macedonia, Republic of Armenia Lithuania Philippines Morocco Serbia and Montenegro Botswana South Africa Lebanon Jordan Ghana Bahrain Egypt Tunisia Palestinian Nat'l Auth.	43 43 42 40 40 35 35 34 32 30 27 23 21 21 18 17 17	0 0 0 0 0 0 0 0 0 0
Slovenia Russian Federation Bulgaria Slovak Republic Cyprus Chile Romania Macedonia, Republic of Armenia Lithuania Philippines Morocco Serbia and Montenegro Botswana South Africa Lebanon Jordan Ghana Bahrain Egypt Tunisia	43 43 42 40 40 35 35 34 32 30 27 23 21 21 21 18 17	0 0 0 0 0 0 0 0 0 0

Country average vs. International average:

Content Domain	Main Topic	Cognitive Domain
ENVIRONMENTAL SCIENCE	Changes in Environment	Factual Knowledge

Main cause of acid rain

One of the main causes of acid rain is

- (A) Waste from nuclear power plants
- B Spills from chemical manufacturing plants
- © Gases from burning fossil fuels
- \bigcirc Gases from aerosol spray cans

Item Number: S022240

Correct Response:

C

Overall Percent Correct

Chinese Taipei	67	
Singapore	61	
Hong Kong, SAR	56	
Malaysia	51	
Lithuania	49	
Slovenia	47	
England	46	
Korea, Republic of	40	
Bulgaria	40	A
Tunisia	39	<u> </u>
Scotland	39	<u> </u>
Japan	38	<u> </u>
Jordan	38	_
Cyprus	37	
• •	36	0
Egypt Botswana	35	0
		0
Australia	35	
United States	35	0
Armenia	34	0
Estonia	34	0
International average	33	
Latvia	\sim	0
	32	
Slovak Republic	32	0
Slovak Republic Indonesia	32 31	0
Slovak Republic	32 31 30	0 0
Slovak Republic Indonesia	32 31	0 0 0
Slovak Republic Indonesia Palestinian Nat'l Auth.	32 31 30	0 0 0 0
Slovak Republic Indonesia Palestinian Nat'l Auth. Hungary	32 31 30 29	0 0 0 0
Slovak Republic Indonesia Palestinian Nat'l Auth. Hungary South Africa	32 31 30 29 29	0 0 0 0
Slovak Republic Indonesia Palestinian Nat'l Auth. Hungary South Africa Sweden	32 31 30 29 29 28	0 0 0 0
Slovak Republic Indonesia Palestinian Nat'l Auth. Hungary South Africa Sweden New Zealand	32 31 30 29 29 28 27	0 0 0 0
Slovak Republic Indonesia Palestinian Nat'l Auth. Hungary South Africa Sweden New Zealand Saudi Arabia	32 31 30 29 29 28 27 27	0 0 0 0
Slovak Republic Indonesia Palestinian Nat'l Auth. Hungary South Africa Sweden New Zealand Saudi Arabia Philippines	32 31 30 29 29 28 27 27	0 0 0 0
Slovak Republic Indonesia Palestinian Nat'l Auth. Hungary South Africa Sweden New Zealand Saudi Arabia Philippines Serbia and Montenegro	32 31 30 29 29 28 27 27 27 26	0 0 0 0
Slovak Republic Indonesia Palestinian Nat'l Auth. Hungary South Africa Sweden New Zealand Saudi Arabia Philippines Serbia and Montenegro Ghana	32 31 30 29 29 28 27 27 27 26 26	0 0 0 0
Slovak Republic Indonesia Palestinian Nat'l Auth. Hungary South Africa Sweden New Zealand Saudi Arabia Philippines Serbia and Montenegro Ghana Iran, Islamic Republic of	32 31 30 29 29 28 27 27 27 26 26 26 25	0 0 0 0
Slovak Republic Indonesia Palestinian Nat'l Auth. Hungary South Africa Sweden New Zealand Saudi Arabia Philippines Serbia and Montenegro Ghana Iran, Islamic Republic of Romania	32 31 30 29 29 28 27 27 27 26 26 26	0 0 0 0
Slovak Republic Indonesia Palestinian Nat'l Auth. Hungary South Africa Sweden New Zealand Saudi Arabia Philippines Serbia and Montenegro Ghana Iran, Islamic Republic of Romania Netherlands	32 31 30 29 29 28 27 27 27 26 26 26 25 25	0 0 0 0
Slovak Republic Indonesia Palestinian Nat'l Auth. Hungary South Africa Sweden New Zealand Saudi Arabia Philippines Serbia and Montenegro Ghana Iran, Islamic Republic of Romania Netherlands Bahrain Chile	32 31 30 29 29 28 27 27 27 26 26 26 25 25 25 23	0 0 0 0
Slovak Republic Indonesia Palestinian Nat'l Auth. Hungary South Africa Sweden New Zealand Saudi Arabia Philippines Serbia and Montenegro Ghana Iran, Islamic Republic of Romania Netherlands Bahrain Chile Russian Federation	32 31 30 29 28 27 27 27 26 26 25 25 25 23 23	0 0 0 0
Slovak Republic Indonesia Palestinian Nat'l Auth. Hungary South Africa Sweden New Zealand Saudi Arabia Philippines Serbia and Montenegro Ghana Iran, Islamic Republic of Romania Netherlands Bahrain Chile Russian Federation Lebanon	32 31 30 29 28 27 27 27 26 26 25 25 25 23 23	0 0 0 0
Slovak Republic Indonesia Palestinian Nat'l Auth. Hungary South Africa Sweden New Zealand Saudi Arabia Philippines Serbia and Montenegro Ghana Iran, Islamic Republic of Romania Netherlands Bahrain Chile Russian Federation Lebanon Israel	32 31 30 29 28 27 27 27 26 26 25 25 25 23 23 23	0 0 0 0
Slovak Republic Indonesia Palestinian Nat'l Auth. Hungary South Africa Sweden New Zealand Saudi Arabia Philippines Serbia and Montenegro Ghana Iran, Islamic Republic of Romania Netherlands Bahrain Chile Russian Federation Lebanon	32 31 30 29 28 27 27 27 26 26 25 25 25 23 23	0 0 0

Country average vs. International average:

19

17

13

12

Belgium (Flemish)

Macedonia, Republic of

Norway

Morocco

Content Domain	Main Topic	Cognitive Domain
ENVIRONMENTAL SCIENCE	Changes in Environment	Factual Knowledge

Activity to reduce air pollution in a city

Which of these daily activities can most directly help reduce air pollution in a city?

- (A) turning down the volume on the television
- (B) using biodegradable materials
- © using public transportation instead of driving
- (D) recycling paper

Item Number: S032446

Correct Response:

C

Overall Percent Correct

Korea, Republic of	91	
Hong Kong, SAR	84	
Sweden	84	
Singapore	81	
Chinese Taipei	79	
Belgium (Flemish)	78	
Netherlands	78	
New Zealand	76	
Hungary	75	A
England	75	
Scotland	73	
Australia	72	
Norway	68	
Iran, Islamic Republic of	67	
Italy	67	
United States	63	
Cyprus	61	
Japan	58	0
Bahrain	57	O
Slovenia	56	0
Lithuania	56	0
Jordan	56	0
International average	55	
Moldova, Rep. of	55	0
Russian Federation	53	0
Russian Federation Malaysia	53 53	0
Russian Federation Malaysia Estonia	53 53 52	0 0
Russian Federation Malaysia Estonia Latvia	53 53 52 51	0 0 0
Russian Federation Malaysia Estonia Latvia Palestinian Nat'l Auth.	53 53 52 51 50	0 0 0 0
Russian Federation Malaysia Estonia Latvia Palestinian Nat'l Auth. Lebanon	53 53 52 51 50 49	0 0 0 0
Russian Federation Malaysia Estonia Latvia Palestinian Nat'l Auth. Lebanon Slovak Republic	53 53 52 51 50 49 47	0 0 0 0
Russian Federation Malaysia Estonia Latvia Palestinian Nat'l Auth. Lebanon Slovak Republic Israel	53 53 52 51 50 49 47 46	0 0 0 0
Russian Federation Malaysia Estonia Latvia Palestinian Nat'l Auth. Lebanon Slovak Republic Israel Saudi Arabia	53 53 52 51 50 49 47 46 44	0 0 0 0
Russian Federation Malaysia Estonia Latvia Palestinian Nat'l Auth. Lebanon Slovak Republic Israel Saudi Arabia Chile	53 53 52 51 50 49 47 46 44 43	0 0 0 0
Russian Federation Malaysia Estonia Latvia Palestinian Nat'l Auth. Lebanon Slovak Republic Israel Saudi Arabia Chile Armenia	53 53 52 51 50 49 47 46 44 43 42	0 0 0 0
Russian Federation Malaysia Estonia Latvia Palestinian Nat'l Auth. Lebanon Slovak Republic Israel Saudi Arabia Chile Armenia Philippines	53 53 52 51 50 49 47 46 44 43 42 42	0 0 0 0
Russian Federation Malaysia Estonia Latvia Palestinian Nat'l Auth. Lebanon Slovak Republic Israel Saudi Arabia Chile Armenia Philippines Morocco	53 53 52 51 50 49 47 46 44 43 42 42 41	0 0 0 0
Russian Federation Malaysia Estonia Latvia Palestinian Nat'l Auth. Lebanon Slovak Republic Israel Saudi Arabia Chile Armenia Philippines Morocco Romania	53 53 52 51 50 49 47 46 44 43 42 42 41 38	0 0 0
Russian Federation Malaysia Estonia Latvia Palestinian Nat'l Auth. Lebanon Slovak Republic Israel Saudi Arabia Chile Armenia Philippines Morocco Romania Macedonia, Republic of	53 53 52 51 50 49 47 46 44 43 42 41 38 38	0 0 0 0
Russian Federation Malaysia Estonia Latvia Palestinian Nat'l Auth. Lebanon Slovak Republic Israel Saudi Arabia Chile Armenia Philippines Morocco Romania Macedonia, Republic of Serbia and Montenegro	53 53 52 51 50 49 47 46 44 43 42 41 38 38 36	0 0 0 0
Russian Federation Malaysia Estonia Latvia Palestinian Nat'l Auth. Lebanon Slovak Republic Israel Saudi Arabia Chile Armenia Philippines Morocco Romania Macedonia, Republic of Serbia and Montenegro Tunisia	53 53 52 51 50 49 47 46 44 43 42 41 38 38 36 33	0 0 0 0
Russian Federation Malaysia Estonia Latvia Palestinian Nat'l Auth. Lebanon Slovak Republic Israel Saudi Arabia Chile Armenia Philippines Morocco Romania Macedonia, Republic of Serbia and Montenegro Tunisia Indonesia	53 53 52 51 50 49 47 46 44 43 42 41 38 38 36 33 31	0 0 0 0
Russian Federation Malaysia Estonia Latvia Palestinian Nat'l Auth. Lebanon Slovak Republic Israel Saudi Arabia Chile Armenia Philippines Morocco Romania Macedonia, Republic of Serbia and Montenegro Tunisia Indonesia Bulgaria	53 53 52 51 50 49 47 46 44 43 42 41 38 38 36 33 31 25	0 0 0 0
Russian Federation Malaysia Estonia Latvia Palestinian Nat'l Auth. Lebanon Slovak Republic Israel Saudi Arabia Chile Armenia Philippines Morocco Romania Macedonia, Republic of Serbia and Montenegro Tunisia Indonesia Bulgaria South Africa	53 53 52 51 50 49 47 46 44 43 42 41 38 38 36 33 31 25 24	0 0 0 0
Russian Federation Malaysia Estonia Latvia Palestinian Nat'l Auth. Lebanon Slovak Republic Israel Saudi Arabia Chile Armenia Philippines Morocco Romania Macedonia, Republic of Serbia and Montenegro Tunisia Indonesia Bulgaria South Africa Ghana	53 53 52 51 50 49 47 46 44 43 42 41 38 38 36 33 31 25 24 24	0 0 0 0
Russian Federation Malaysia Estonia Latvia Palestinian Nat'l Auth. Lebanon Slovak Republic Israel Saudi Arabia Chile Armenia Philippines Morocco Romania Macedonia, Republic of Serbia and Montenegro Tunisia Indonesia Bulgaria South Africa Ghana Botswana	53 53 52 51 50 49 47 46 44 43 42 41 38 38 36 33 31 25 24 24 20	0 0 0 0
Russian Federation Malaysia Estonia Latvia Palestinian Nat'l Auth. Lebanon Slovak Republic Israel Saudi Arabia Chile Armenia Philippines Morocco Romania Macedonia, Republic of Serbia and Montenegro Tunisia Indonesia Bulgaria South Africa Ghana	53 53 52 51 50 49 47 46 44 43 42 41 38 38 36 33 31 25 24 24	0 0 0 0

Country average vs. International average:

Content Domain	Main Topic	Cognitive Domain
ENVIRONMENTAL SCIENCE	Use and Conservation of Natural Resources	Conceptual Understanding

Nonrenewable natural resource

Oil is an example of a natural resource that is not renewable. Which is another example of a nonrenewable resource?

- (A) Wood
- (B) Seawater
- © Sunlight
- (D) Coal

Item Number: S012042

Correct Response:

D

Overall Percent Correct

Singapore Hong Kong, SAR Chinese Taipei England Korea, Republic of Scotland Jordan Italy Palestinian Nat'l Auth. Lebanon Bulgaria Estonia United States Slovenia Lithuania Romania	86 80 79 69 68 65 61 60 59 59 59 58 58	
Indonesia Moldova, Rep. of Netherlands Egypt Australia	56 56 56 55	0 0 0
Hungary Saudi Arabia New Zealand	55 55 53	0 0 0
International average	52	
Botswana	52	0
Slovak Republic	52	0
Slovak Republic Russian Federation	52 51	0 0
Slovak Republic Russian Federation Malaysia	52 51 51	0 0 0
Slovak Republic Russian Federation Malaysia Bahrain	52 51 51 50	0 0 0
Slovak Republic Russian Federation Malaysia Bahrain Norway	52 51 51 50 49	0 0 0 0
Slovak Republic Russian Federation Malaysia Bahrain Norway Belgium (Flemish)	52 51 51 50 49 48	0 0 0 0
Slovak Republic Russian Federation Malaysia Bahrain Norway Belgium (Flemish) Serbia and Montenegro	52 51 51 50 49 48 46	0 0 0 0
Slovak Republic Russian Federation Malaysia Bahrain Norway Belgium (Flemish) Serbia and Montenegro Cyprus	52 51 51 50 49 48 46 45	0 0 0 0
Slovak Republic Russian Federation Malaysia Bahrain Norway Belgium (Flemish) Serbia and Montenegro Cyprus Israel	52 51 51 50 49 48 46 45	0 0 0 0
Slovak Republic Russian Federation Malaysia Bahrain Norway Belgium (Flemish) Serbia and Montenegro Cyprus Israel Tunisia	52 51 51 50 49 48 46 45 45	0 0 0 0
Slovak Republic Russian Federation Malaysia Bahrain Norway Belgium (Flemish) Serbia and Montenegro Cyprus Israel Tunisia Armenia	52 51 51 50 49 48 46 45 45 43	0 0 0 0
Slovak Republic Russian Federation Malaysia Bahrain Norway Belgium (Flemish) Serbia and Montenegro Cyprus Israel Tunisia Armenia Latvia	52 51 51 50 49 48 46 45 45 41 41	0 0 0 0
Slovak Republic Russian Federation Malaysia Bahrain Norway Belgium (Flemish) Serbia and Montenegro Cyprus Israel Tunisia Armenia Latvia Japan	52 51 51 50 49 48 46 45 45 41 41 39	0 0 0
Slovak Republic Russian Federation Malaysia Bahrain Norway Belgium (Flemish) Serbia and Montenegro Cyprus Israel Tunisia Armenia Latvia Japan Morocco	52 51 51 50 49 48 46 45 45 43 41 41 39 39	0 0 0 0
Slovak Republic Russian Federation Malaysia Bahrain Norway Belgium (Flemish) Serbia and Montenegro Cyprus Israel Tunisia Armenia Latvia Japan	52 51 51 50 49 48 46 45 45 41 41 39	0 0 0 0
Slovak Republic Russian Federation Malaysia Bahrain Norway Belgium (Flemish) Serbia and Montenegro Cyprus Israel Tunisia Armenia Latvia Japan Morocco Macedonia, Republic of Chile	52 51 51 50 49 48 46 45 43 41 41 39 39 37	0 0 0 0
Slovak Republic Russian Federation Malaysia Bahrain Norway Belgium (Flemish) Serbia and Montenegro Cyprus Israel Tunisia Armenia Latvia Japan Morocco Macedonia, Republic of	52 51 51 50 49 48 46 45 43 41 41 39 39 37 36	0 0 0 0
Slovak Republic Russian Federation Malaysia Bahrain Norway Belgium (Flemish) Serbia and Montenegro Cyprus Israel Tunisia Armenia Latvia Japan Morocco Macedonia, Republic of Chile Philippines	52 51 51 50 49 48 46 45 43 41 41 39 39 37 36 35	0 0 0 0
Slovak Republic Russian Federation Malaysia Bahrain Norway Belgium (Flemish) Serbia and Montenegro Cyprus Israel Tunisia Armenia Latvia Japan Morocco Macedonia, Republic of Chile Philippines Sweden	52 51 51 50 49 48 46 45 45 41 41 39 39 37 36 35 35	0 0 0 0

Country average vs. International average:

Content Domain	Main Topic	Cognitive Domain
ENVIRONMENTAL SCIENCE	Use and Conservation of Natural Resources	Conceptual Understanding

Renewable energy source

Write down one renewable energy source and describe one way that make use of it.	people
Energy Source:	
Use:	

Item Number: S032242

SCORING

Note: For credit, responses must name a renewable energy source or device and a use that indicates how the energy from the source/device is applied. Credit is NOT given for responses that name a renewable source/device with no or inadequate description of its use.

Correct Response

• Sun or sunlight (solar energy) with a correct description of its use.

Examples: Sun. It is used to heat water by solar panels.

Sunlight. It keeps us warm.

• Wind (windmills) with a correct description of its use.

Examples: Windmills. Are for grinding corns or for pumping water.

Wind turbines to generate electricity.

• Water (waves, tides, water wheels, etc.) with a correct description of its use.

Examples: Tidal barrage. To generate electricity.

Water. To generate electricity.

· Other correct.

Examples: Food. To give the body energy.

Wood. It is used in wood stoves for cooking.

Incorrect Response

• Names any fossil fuel (e.g., coal, oil, gasoline).

Examples: Gas. You can use it for heating.

• Names a renewable energy source/device with no or inadequate description of use.

Examples: Water. You can heat, freeze and melt it.

Sunlight. Windmill.

• Names "light" (without connection to the Sun) with or without a correct description of use.

Examples: Light energy. It help us to see.

Light.

• Other incorrect (including crossed out/erased, stray marks, illegible or off task)

Examples: Electricity. Used for cooking. Batteries. To power a torch.

Overall Percent Correct

Hong Kong, SAR Singapore England	64	
• .	47	<u> </u>
	43	<u> </u>
Italy	41	<u> </u>
Jordan	40	<u> </u>
Slovak Republic	38	<u> </u>
Chinese Taipei	36	_
Estonia	35	_
Slovenia	35	
Palestinian Nat'l Auth.	34	
Hungary	34	
New Zealand	32	
Scotland	29	0
United States	29 29	A
Sweden	29	0
Israel	27	
Lebanon	27	0
Netherlands	27	0
Iran, Islamic Republic of	27	0
Australia	27	0
Latvia	26	0
Malaysia	26	0
Lithuania	26	0
International average Russian Federation	25	0
Romania	25 24	0
		0
Macedonia, Republic of	23	O
' '	2.2	0
Belgium (Flemish)	23	0
Belgium (Flemish) Norway	22	0
Belgium (Flemish) Norway Bahrain	22 22	○▼
Belgium (Flemish) Norway Bahrain Cyprus	22 22 21	○▼
Belgium (Flemish) Norway Bahrain Cyprus Korea, Republic of	22 22 21 21	○▼▼
Belgium (Flemish) Norway Bahrain Cyprus Korea, Republic of Serbia and Montenegro	22 22 21 21 20	○▼▼▼
Belgium (Flemish) Norway Bahrain Cyprus Korea, Republic of Serbia and Montenegro Bulgaria	22 22 21 21 20 19	○▼▼▼▼
Belgium (Flemish) Norway Bahrain Cyprus Korea, Republic of Serbia and Montenegro Bulgaria Philippines	22 22 21 21 20 19	○▼▼▼▼
Belgium (Flemish) Norway Bahrain Cyprus Korea, Republic of Serbia and Montenegro Bulgaria Philippines Egypt	22 22 21 21 20 19 19	○▼▼▼▼
Belgium (Flemish) Norway Bahrain Cyprus Korea, Republic of Serbia and Montenegro Bulgaria Philippines Egypt Indonesia	22 22 21 21 20 19 19 18 17	○▼▼▼▼
Belgium (Flemish) Norway Bahrain Cyprus Korea, Republic of Serbia and Montenegro Bulgaria Philippines Egypt Indonesia Chile	22 22 21 21 20 19 19 18 17	○▼▼▼▼
Belgium (Flemish) Norway Bahrain Cyprus Korea, Republic of Serbia and Montenegro Bulgaria Philippines Egypt Indonesia Chile Botswana	22 22 21 21 20 19 19 18 17 17	○▼▼▼
Belgium (Flemish) Norway Bahrain Cyprus Korea, Republic of Serbia and Montenegro Bulgaria Philippines Egypt Indonesia Chile Botswana Tunisia	22 22 21 21 20 19 19 18 17 17 15	○▼▼▼▼
Belgium (Flemish) Norway Bahrain Cyprus Korea, Republic of Serbia and Montenegro Bulgaria Philippines Egypt Indonesia Chile Botswana Tunisia Armenia	22 22 21 21 20 19 19 18 17 17 15 14	○▼▼▼▼
Belgium (Flemish) Norway Bahrain Cyprus Korea, Republic of Serbia and Montenegro Bulgaria Philippines Egypt Indonesia Chile Botswana Tunisia Armenia Saudi Arabia	22 22 21 21 20 19 19 18 17 17 15 14 13 12	<!--</td-->
Belgium (Flemish) Norway Bahrain Cyprus Korea, Republic of Serbia and Montenegro Bulgaria Philippines Egypt Indonesia Chile Botswana Tunisia Armenia	22 22 21 21 20 19 19 18 17 17 15 14 13 12 9	<!--</td-->
Belgium (Flemish) Norway Bahrain Cyprus Korea, Republic of Serbia and Montenegro Bulgaria Philippines Egypt Indonesia Chile Botswana Tunisia Armenia Saudi Arabia Ghana Japan	22 22 21 21 20 19 19 18 17 17 15 14 13 12 9	<!--</td-->
Belgium (Flemish) Norway Bahrain Cyprus Korea, Republic of Serbia and Montenegro Bulgaria Philippines Egypt Indonesia Chile Botswana Tunisia Armenia Saudi Arabia Ghana Japan South Africa	22 22 21 21 20 19 19 18 17 17 15 14 13 12 9	<!--</td-->
Belgium (Flemish) Norway Bahrain Cyprus Korea, Republic of Serbia and Montenegro Bulgaria Philippines Egypt Indonesia Chile Botswana Tunisia Armenia Saudi Arabia Ghana Japan	22 22 21 21 20 19 19 18 17 17 15 14 13 12 9 7	○▼▼▼▼
Belgium (Flemish) Norway Bahrain Cyprus Korea, Republic of Serbia and Montenegro Bulgaria Philippines Egypt Indonesia Chile Botswana Tunisia Armenia Saudi Arabia Ghana Japan South Africa	22 22 21 21 20 19 19 18 17 17 15 14 13 12 9	<!--</td-->

Country average vs. International average:

Renewable energy source (continued)

Item Number: S032242

Student Responses

Correct Response:

Write down one renewable energy source and describe one way that people make use of it.
Energy Source: Son//Jht
Use: We use the soulight to power
Sdar powered things such as a calculater

Incorrect Response:

Write down one renewable energy source and describe one way that people make use of it.

Ener	gy Source:	-	Coa	1				 ,
Use:	Coal	Can	be r	eused	aga	in	and	
			your					
	other	items,						

Content Domain	Main Topic	Cognitive Domain
ENVIRONMENTAL SCIENCE	Use and Conservation of Natural Resources	Conceptual Understanding

Group of renewable energy sources

Which group of energy sources are ALL renewable?

- (A) coal, oil, and natural gas
- (B) solar, oil, and geothermal
- © wind, solar, and tidal
- (D) natural gas, solar, and tidal

Item Number: S032422

Correct Response:

C

Overall Percent Correct

Hong Kong, SAR	84	A
Korea, Republic of	77	A
Lithuania	76	
Singapore	76	A
Hungary	74	
Chinese Taipei	74	A
Estonia	73	A
Italy	70	A
England	70	
Slovenia	68	A
Scotland	68	A
Japan	66	A
Russian Federation	63	
Malaysia	63	A
Slovak Republic	62	A
Sweden	61	A
Latvia	60	A
Netherlands	60	0
Jordan	59	A
United States	56	0
Belgium (Flemish)	55	0
Armenia	55	0
New Zealand	55	0
International average	53	
Cyprus	53	0
	53 52	0 0
Cyprus		0 0
Cyprus Australia	52	0 0 0
Cyprus Australia Bahrain	52 52	0 0 0
Cyprus Australia Bahrain Norway Romania Palestinian Nat'l Auth.	52 52 50	0 0 0 0
Cyprus Australia Bahrain Norway Romania	52 52 50 50	0 0 0 0
Cyprus Australia Bahrain Norway Romania Palestinian Nat'l Auth.	52 52 50 50 49	0 0 0 0 0
Cyprus Australia Bahrain Norway Romania Palestinian Nat'l Auth. Serbia and Montenegro	52 52 50 50 49 49	0 0 0 0 0
Cyprus Australia Bahrain Norway Romania Palestinian Nat'l Auth. Serbia and Montenegro Lebanon	52 52 50 50 49 49	0 0 0 0 0
Cyprus Australia Bahrain Norway Romania Palestinian Nat'l Auth. Serbia and Montenegro Lebanon Egypt	52 52 50 50 49 49 47 45	0 0 0 0 0
Cyprus Australia Bahrain Norway Romania Palestinian Nat'l Auth. Serbia and Montenegro Lebanon Egypt Bulgaria	52 52 50 50 49 49 47 45	0 0 0 0 0
Cyprus Australia Bahrain Norway Romania Palestinian Nat'l Auth. Serbia and Montenegro Lebanon Egypt Bulgaria Indonesia	52 52 50 50 49 49 47 45 45	0 0 0 0 0
Cyprus Australia Bahrain Norway Romania Palestinian Nat'l Auth. Serbia and Montenegro Lebanon Egypt Bulgaria Indonesia Israel	52 52 50 50 49 47 45 45 45	0 0 0 0 0
Cyprus Australia Bahrain Norway Romania Palestinian Nat'l Auth. Serbia and Montenegro Lebanon Egypt Bulgaria Indonesia Israel Moldova, Rep. of	52 52 50 50 49 47 45 45 45 44 43	0 0 0 0
Cyprus Australia Bahrain Norway Romania Palestinian Nat'l Auth. Serbia and Montenegro Lebanon Egypt Bulgaria Indonesia Israel Moldova, Rep. of Macedonia, Republic of	52 52 50 50 49 47 45 45 45 44 43 43	0 0 0 0 0
Cyprus Australia Bahrain Norway Romania Palestinian Nat'l Auth. Serbia and Montenegro Lebanon Egypt Bulgaria Indonesia Israel Moldova, Rep. of Macedonia, Republic of Iran, Islamic Republic of Chile Tunisia	52 52 50 50 49 47 45 45 45 44 43 43	0 0 0 0 0
Cyprus Australia Bahrain Norway Romania Palestinian Nat'l Auth. Serbia and Montenegro Lebanon Egypt Bulgaria Indonesia Israel Moldova, Rep. of Macedonia, Republic of Iran, Islamic Republic of Chile	52 52 50 50 49 47 45 45 45 44 43 40 40	0 0 0 0 0
Cyprus Australia Bahrain Norway Romania Palestinian Nat'l Auth. Serbia and Montenegro Lebanon Egypt Bulgaria Indonesia Israel Moldova, Rep. of Macedonia, Republic of Iran, Islamic Republic of Chile Tunisia	52 52 50 50 49 47 45 45 44 43 40 40 30	0 0 0 0 0
Cyprus Australia Bahrain Norway Romania Palestinian Nat'l Auth. Serbia and Montenegro Lebanon Egypt Bulgaria Indonesia Israel Moldova, Rep. of Macedonia, Republic of Iran, Islamic Republic of Chile Tunisia Philippines Botswana Morocco	52 52 50 50 49 47 45 45 44 43 40 40 30 28	0 0 0 0 0
Cyprus Australia Bahrain Norway Romania Palestinian Nat'l Auth. Serbia and Montenegro Lebanon Egypt Bulgaria Indonesia Israel Moldova, Rep. of Macedonia, Republic of Iran, Islamic Republic of Chile Tunisia Philippines Botswana	52 52 50 50 49 47 45 45 44 43 40 40 30 28 27	0 0 0 0 0
Cyprus Australia Bahrain Norway Romania Palestinian Nat'l Auth. Serbia and Montenegro Lebanon Egypt Bulgaria Indonesia Israel Moldova, Rep. of Macedonia, Republic of Iran, Islamic Republic of Chile Tunisia Philippines Botswana Morocco	52 52 50 50 49 47 45 45 44 43 40 40 30 28 27 26	0 0 0 0 0
Cyprus Australia Bahrain Norway Romania Palestinian Nat'l Auth. Serbia and Montenegro Lebanon Egypt Bulgaria Indonesia Israel Moldova, Rep. of Macedonia, Republic of Iran, Islamic Republic of Chile Tunisia Philippines Botswana Morocco South Africa	52 52 50 50 49 47 45 45 44 43 40 40 30 28 27 26 21	0 0 0 0 0

Country average vs. International average:

Content Domain	Main Topic	Cognitive Domain
ENVIRONMENTAL SCIENCE	Use and Conservation of Natural Resources	Factual Knowledge

Overgrazing by livestock

Overgrazing of land by livestock contributes to a major problem. That problem is

- (A) depletion of ground water
- (B) increased pollution
- © erosion of soil
- (D) acid rain

Item Number: S012005

Correct Response:

C

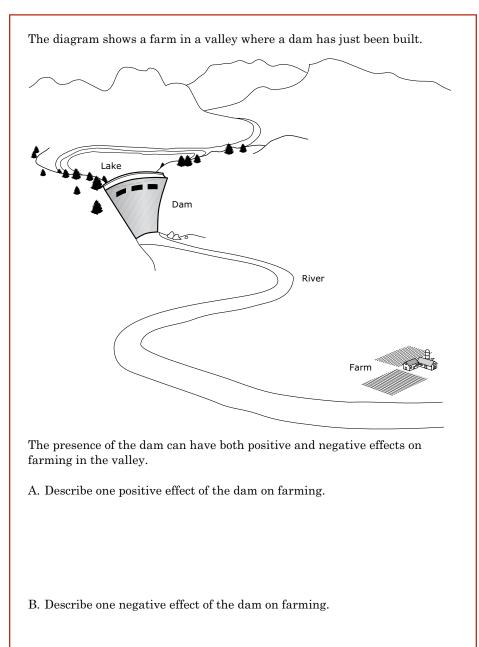
Overall Percent Correct

Chinese Taipei	88	
Botswana	80	
Malaysia	79	
Australia	74	
Netherlands	72	
Estonia	71	
Singapore	70	
Hong Kong, SAR	68	
Russian Federation	67	
United States	65	
Hungary	64	
Romania	63	
Japan	63	
Indonesia	63	
Ghana	63	
Jordan	63	
Latvia	61	
Belgium (Flemish)	60	
England	60	0
Italy	59	O
Palestinian Nat'l Auth.	59	0
Morocco	57	0
Slovenia	57	0
Scotland	57	0
		U
International average	56	0
International average Norway	56 56	0
International average Norway Iran, Islamic Republic of	56 56 56	0
International average Norway Iran, Islamic Republic of Bulgaria	56 56 56 54	0 0
International average Norway Iran, Islamic Republic of Bulgaria Armenia	56 56 56 54 54	0 0 0
International average Norway Iran, Islamic Republic of Bulgaria Armenia New Zealand	56 56 56 54 54 54	0 0 0 0 0
International average Norway Iran, Islamic Republic of Bulgaria Armenia New Zealand Tunisia	56 56 56 54 54 54 54	0 0 0 0
International average Norway Iran, Islamic Republic of Bulgaria Armenia New Zealand Tunisia Slovak Republic	56 56 56 54 54 54 52 52	0 0 0 0
International average Norway Iran, Islamic Republic of Bulgaria Armenia New Zealand Tunisia Slovak Republic Serbia and Montenegro	56 56 54 54 54 52 52 51	0 0 0 0
International average Norway Iran, Islamic Republic of Bulgaria Armenia New Zealand Tunisia Slovak Republic Serbia and Montenegro Bahrain	56 56 54 54 54 52 52 51 48	0 0 0 0
International average Norway Iran, Islamic Republic of Bulgaria Armenia New Zealand Tunisia Slovak Republic Serbia and Montenegro Bahrain Macedonia, Republic of	56 56 54 54 54 52 52 51 48 48	0 0 0 0
International average Norway Iran, Islamic Republic of Bulgaria Armenia New Zealand Tunisia Slovak Republic Serbia and Montenegro Bahrain Macedonia, Republic of Cyprus	56 56 54 54 54 52 52 51 48 48	0 0 0 0
International average Norway Iran, Islamic Republic of Bulgaria Armenia New Zealand Tunisia Slovak Republic Serbia and Montenegro Bahrain Macedonia, Republic of Cyprus Sweden	56 56 54 54 54 52 52 51 48 47 46	0 0 0 0
International average Norway Iran, Islamic Republic of Bulgaria Armenia New Zealand Tunisia Slovak Republic Serbia and Montenegro Bahrain Macedonia, Republic of Cyprus Sweden Chile	56 56 54 54 54 52 52 51 48 47 46 46	0 0 0 0
International average Norway Iran, Islamic Republic of Bulgaria Armenia New Zealand Tunisia Slovak Republic Serbia and Montenegro Bahrain Macedonia, Republic of Cyprus Sweden Chile Philippines	56 56 56 54 54 52 52 51 48 48 47 46 46 45	0 0 0 0
International average Norway Iran, Islamic Republic of Bulgaria Armenia New Zealand Tunisia Slovak Republic Serbia and Montenegro Bahrain Macedonia, Republic of Cyprus Sweden Chile Philippines Lithuania	56 56 54 54 54 52 52 51 48 47 46 46 45 45	0 0 0 0
International average Norway Iran, Islamic Republic of Bulgaria Armenia New Zealand Tunisia Slovak Republic Serbia and Montenegro Bahrain Macedonia, Republic of Cyprus Sweden Chile Philippines Lithuania Moldova, Rep. of	56 56 54 54 54 52 52 51 48 47 46 46 45 45	0 0 0 0
International average Norway Iran, Islamic Republic of Bulgaria Armenia New Zealand Tunisia Slovak Republic Serbia and Montenegro Bahrain Macedonia, Republic of Cyprus Sweden Chile Philippines Lithuania Moldova, Rep. of South Africa	56 56 54 54 54 52 52 51 48 47 46 46 45 45 42 36	0 0 0 0 0 0 0 0 0
International average Norway Iran, Islamic Republic of Bulgaria Armenia New Zealand Tunisia Slovak Republic Serbia and Montenegro Bahrain Macedonia, Republic of Cyprus Sweden Chile Philippines Lithuania Moldova, Rep. of South Africa Egypt	56 56 54 54 54 52 52 51 48 47 46 45 45 42 36 34	0 0 0 0 0 0 0 0 0
International average Norway Iran, Islamic Republic of Bulgaria Armenia New Zealand Tunisia Slovak Republic Serbia and Montenegro Bahrain Macedonia, Republic of Cyprus Sweden Chile Philippines Lithuania Moldova, Rep. of South Africa Egypt Saudi Arabia	56 56 54 54 54 52 52 51 48 47 46 45 45 42 36 34	0 0 0 0 0 0 0 0 0
International average Norway Iran, Islamic Republic of Bulgaria Armenia New Zealand Tunisia Slovak Republic Serbia and Montenegro Bahrain Macedonia, Republic of Cyprus Sweden Chile Philippines Lithuania Moldova, Rep. of South Africa Egypt Saudi Arabia Israel	56 56 54 54 54 52 52 51 48 47 46 45 45 42 36 34 33	0 0 0 0 0 0 0 0 0
International average Norway Iran, Islamic Republic of Bulgaria Armenia New Zealand Tunisia Slovak Republic Serbia and Montenegro Bahrain Macedonia, Republic of Cyprus Sweden Chile Philippines Lithuania Moldova, Rep. of South Africa Egypt Saudi Arabia Israel Lebanon	56 56 54 54 52 52 51 48 47 46 45 45 42 36 34 33 32	0 0 0 0
International average Norway Iran, Islamic Republic of Bulgaria Armenia New Zealand Tunisia Slovak Republic Serbia and Montenegro Bahrain Macedonia, Republic of Cyprus Sweden Chile Philippines Lithuania Moldova, Rep. of South Africa Egypt Saudi Arabia Israel	56 56 54 54 54 52 52 51 48 47 46 45 45 42 36 34 33	0 0 0 0 0 0 0 0 0

Country average vs. International average:

Content Domain	Main Topic	Cognitive Domain
ENVIRONMENTAL SCIENCE	Use and Conservation of Natural Resources	Reasoning and Analysis

Positive/negative effect of dam



Item Number: S022088A

Overall Percent Correct

Chinese Taipei	87	A
Korea, Republic of	83	<u> </u>
Netherlands	82	<u> </u>
Belgium (Flemish)	79	<u> </u>
Hong Kong, SAR	78	<u> </u>
United States	77	_ _
Japan	77	<u> </u>
Australia	75	<u> </u>
Iran, Islamic Republic of	74	<u> </u>
Estonia	74	_
Singapore	72	_ _
Slovenia	72	_ _
Latvia	72	<u> </u>
Slovak Republic	72	_ _
Malaysia	71	<u> </u>
New Zealand	71	_ _
England	70	<u> </u>
Italy	67	<u> </u>
Norway	67	<u> </u>
Lithuania	65	<u> </u>
Romania	64	0
Jordan	63	0
Israel	61	0
Indonesia	61	0
International average	60	
	59	0
International average		0
International average Macedonia, Republic of	59	0
International average Macedonia, Republic of Cyprus	59 59	0
International average Macedonia, Republic of Cyprus Hungary	59 59 58	0 0 0
International average Macedonia, Republic of Cyprus Hungary Serbia and Montenegro	59 59 58 57	0 0 0
International average Macedonia, Republic of Cyprus Hungary Serbia and Montenegro Scotland	59 59 58 57 57	0 0 0 0 0
International average Macedonia, Republic of Cyprus Hungary Serbia and Montenegro Scotland Sweden	59 59 58 57 57 56	0 0 0 0 0
International average Macedonia, Republic of Cyprus Hungary Serbia and Montenegro Scotland Sweden Bulgaria	59 59 58 57 57 56 55	0 0 0 0 0
International average Macedonia, Republic of Cyprus Hungary Serbia and Montenegro Scotland Sweden Bulgaria Russian Federation	59 59 58 57 57 56 55	0 0 0 0 0
International average Macedonia, Republic of Cyprus Hungary Serbia and Montenegro Scotland Sweden Bulgaria Russian Federation Tunisia	59 59 58 57 57 56 55 55	0 0 0 0 0
International average Macedonia, Republic of Cyprus Hungary Serbia and Montenegro Scotland Sweden Bulgaria Russian Federation Tunisia Egypt Palestinian Nat'l Auth. Moldova, Rep. of	59 59 58 57 57 56 55 55 53 51 49	0 0 0 0 0 0
International average Macedonia, Republic of Cyprus Hungary Serbia and Montenegro Scotland Sweden Bulgaria Russian Federation Tunisia Egypt Palestinian Nat'l Auth.	59 59 58 57 57 56 55 55 53 51 49	0 0 0 0 0 0
International average Macedonia, Republic of Cyprus Hungary Serbia and Montenegro Scotland Sweden Bulgaria Russian Federation Tunisia Egypt Palestinian Nat'l Auth. Moldova, Rep. of	59 59 58 57 57 56 55 55 53 51 49	0 0 0 0 0
International average Macedonia, Republic of Cyprus Hungary Serbia and Montenegro Scotland Sweden Bulgaria Russian Federation Tunisia Egypt Palestinian Nat'l Auth. Moldova, Rep. of Philippines	59 58 57 57 56 55 55 51 49 49	0 0 0 0 0 0
International average Macedonia, Republic of Cyprus Hungary Serbia and Montenegro Scotland Sweden Bulgaria Russian Federation Tunisia Egypt Palestinian Nat'l Auth. Moldova, Rep. of Philippines Armenia	59 58 57 57 56 55 55 51 49 48 46	0 0 0 0 0 0 0 0 0 0 0
International average Macedonia, Republic of Cyprus Hungary Serbia and Montenegro Scotland Sweden Bulgaria Russian Federation Tunisia Egypt Palestinian Nat'l Auth. Moldova, Rep. of Philippines Armenia Saudi Arabia	59 58 57 57 56 55 55 51 49 49 48 46 45	0 0 0 0 0 0 0 0 0 0 0
International average Macedonia, Republic of Cyprus Hungary Serbia and Montenegro Scotland Sweden Bulgaria Russian Federation Tunisia Egypt Palestinian Nat'l Auth. Moldova, Rep. of Philippines Armenia Saudi Arabia Bahrain	59 58 57 57 56 55 55 51 49 49 48 46 45	0 0 0 0 0 0 0 0 0 0 0
International average Macedonia, Republic of Cyprus Hungary Serbia and Montenegro Scotland Sweden Bulgaria Russian Federation Tunisia Egypt Palestinian Nat'l Auth. Moldova, Rep. of Philippines Armenia Saudi Arabia Bahrain Botswana	59 58 57 57 56 55 53 51 49 48 46 45 44	0 0 0 0 0 0 0 0 0 0 0
International average Macedonia, Republic of Cyprus Hungary Serbia and Montenegro Scotland Sweden Bulgaria Russian Federation Tunisia Egypt Palestinian Nat'l Auth. Moldova, Rep. of Philippines Armenia Saudi Arabia Bahrain Botswana Morocco	59 58 57 57 56 55 53 51 49 48 46 45 44 39 38	0 0 0 0 0 0 0 0 0 0 0
International average Macedonia, Republic of Cyprus Hungary Serbia and Montenegro Scotland Sweden Bulgaria Russian Federation Tunisia Egypt Palestinian Nat'l Auth. Moldova, Rep. of Philippines Armenia Saudi Arabia Bahrain Botswana Morocco Chile	59 58 57 57 56 55 53 51 49 48 46 45 44 39 38	0 0 0 0 0 0
International average Macedonia, Republic of Cyprus Hungary Serbia and Montenegro Scotland Sweden Bulgaria Russian Federation Tunisia Egypt Palestinian Nat'l Auth. Moldova, Rep. of Philippines Armenia Saudi Arabia Bahrain Botswana Morocco Chile Lebanon	59 59 58 57 57 56 55 53 51 49 48 46 45 44 39 38 36 28	0 0 0 0 0 0 0 0 0 0 0

Country average vs. International average:

Positive/negative effect of dam (continued)

Item Number: S022088A

SCORING

Codes for Positive Effects

Note: For credit, responses must clearly indicate a positive effect of the dam related to farming in the valley.

Correct Response

· Mentions that the dam prevents flooding.

Examples: Without the dam, a big storm could cause a flood.

There is no chance of flooding.

It slows down the river so it does not overflow and ruin the crops.

· Mentions that the dam controls the water supply.

Examples: It stores water for the summer.

The dam releases just the right amount of water.

It brings more water closer to the farm.

It would be easier to irrigate.

· Mentions a soil-related benefit of the dam.

Examples: More top soil.

Controls erosion.

The ground will be more fertile because of the large supply of water.

· Mentions the dam as a source of power.

Examples: The farmer will have a good power supply.

The farm can use the hydroelectric power for energy.

· Other correct.

Incorrect Response

 Mentions a positive effect but does not clearly address the issue of farming or the effect of the dam.

Examples: It provides better drinking water.

Water is good for the crops.

It makes the river small for swimming and fishing.

· Gives a negative effect.

Examples: It might prevent the farm from getting enough water.

The water could become too high and overflow.

· Other incorrect (including crossed out/erased, stray marks, illegible, or off task)

Positive/negative effect of dam (continued)

Item Number: S022088A

Student Responses

Correct Response:

The diagram shows a farm in a valley where a dam has just been built.

Lake

Dam

River

The presence of the dam can have both positive and negative effects on farming in the valley.

A. Describe one positive effect of the dam on farming.

The Dan will prevent the river From Flooding the Farm.

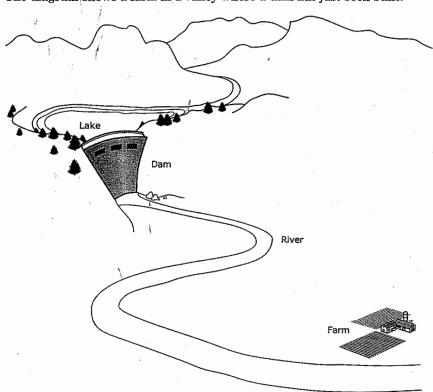
Positive/negative effect of dam (continued)

Item Number: S022088A

Student Responses (continued)

Incorrect Response:

The diagram shows a farm in a valley where a dam has just been built.



The presence of the dam can have both positive and negative effects on farming in the valley.

A. Describe one positive effect of the dam on farming.

theres more mousture in the ground