| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| MEASUREMENT | Attributes and Units | Knowing Facts <br> and Procedures |

Weight of an adult

Which of these could be the weight (mass) of an adult?
(A) 1 kg
(B) 6 kg
(C) 60 kg
(D) 600 kg

Overall Percent Correct

| Chinese Taipei | 91 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| Singapore | 90 | $\boldsymbol{\Delta}$ |
| Japan | 89 | $\boldsymbol{\Delta}$ |
| Latvia | 89 | $\boldsymbol{\Delta}$ |
| Lithuania | 88 | $\boldsymbol{\Delta}$ |
| Netherlands | 87 | $\boldsymbol{\Delta}$ |
| Russian Federation | 87 | $\boldsymbol{\Delta}$ |
| Hungary | 86 | $\boldsymbol{\Delta}$ |
| Italy | 82 | $\boldsymbol{\Delta}$ |
| Hong Kong, SAR | 81 | $\boldsymbol{\Delta}$ |
| Moldova, Republic of | 81 | $\boldsymbol{\Delta}$ |
| Belgium (Flemish) | 80 | $\boldsymbol{\Delta}$ |
| Australia | 79 | $\boldsymbol{\Delta}$ |
| New Zealand | 78 | $\boldsymbol{\Delta}$ |
| Norway | 78 | $\boldsymbol{\Delta}$ |
| Armenia | 76 | $\boldsymbol{\Delta}$ |
| Cyprus | 76 | $\boldsymbol{\Delta}$ |
| International average | 72 |  |
| Slovenia | 61 | $\boldsymbol{\nabla}$ |
| United States | 54 | $\boldsymbol{\nabla}$ |
| England | 54 | $\boldsymbol{\nabla}$ |
| Scotland | 50 | $\boldsymbol{\nabla}$ |
| Iran, Islamic Republic of | 45 | $\boldsymbol{\nabla}$ |
| Morocco | 44 | $\boldsymbol{\nabla}$ |
| Philippines | 36 | $\boldsymbol{\nabla}$ |
| Tunisia | 32 | $\boldsymbol{\nabla}$ |

Country average vs. International average:

| Higher | $\Delta$ |
| :--- | :--- |
| Not different | O |
| Lower | $\nabla$ |

Item Number: M011023

Correct Response: $\quad$ C

| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| MEASUREMENT | Attributes and Units | Knowing Facts <br> and Procedures |

Units to measure mass of egg
Overall Percent Correct

What units would be best to use to measure the weight (mass) of an egg?
(A) centimeters
(B) milliliters
(C) grams
(D) kilograms

| Japan | 91 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| Netherlands | 88 | $\boldsymbol{\Delta}$ |
| Cyprus | 83 | $\boldsymbol{\Delta}$ |
| Lithuania | 82 | $\boldsymbol{\Delta}$ |
| Singapore | 82 | $\boldsymbol{\Delta}$ |
| Latvia | 81 | $\boldsymbol{\Delta}$ |
| England | 80 | $\boldsymbol{\Delta}$ |
| Belgium (Flemish) | 80 | $\boldsymbol{\Delta}$ |
| Hong Kong, SAR | 78 | $\boldsymbol{\Delta}$ |
| Italy | 77 | $\boldsymbol{\Delta}$ |
| Hungary | 76 | $\boldsymbol{\Delta}$ |
| Russian Federation | 75 | $\boldsymbol{\Delta}$ |
| Moldova, Republic of | 74 | $\boldsymbol{\Delta}$ |
| International average | 69 |  |
| Chinese Taipei | 68 | O |
| Australia | 67 | O |
| New Zealand | 67 | O |
| Armenia | 65 | O |
| Norway | 59 | $\boldsymbol{\nabla}$ |
| Slovenia | 59 | $\boldsymbol{\nabla}$ |
| Scotland | 55 | $\boldsymbol{\nabla}$ |
| United States | 54 | $\boldsymbol{\nabla}$ |
| Iran, Islamic Republic of | 50 | $\boldsymbol{\nabla}$ |
| Morocco | 47 | $\boldsymbol{\nabla}$ |
| Tunisia | 43 | $\boldsymbol{\nabla}$ |
| Philippines | 40 | $\boldsymbol{\nabla}$ |


| Country average vs. |  |
| :--- | :---: |
| International average: |  |
| Higher | - |
| Not different | O |
| Lower | $\mathbf{\nabla}$ |

Item Number: M012023


| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| MEASUREMENT | Attributes and Units | Knowing Facts <br> and Procedures |

Which could equal 150 milliliters
Overall Percent Correct

Which of these could equal 150 milliliters?

| Chinese Taipei | 87 | $\triangle$ |
| :---: | :---: | :---: |
| Hong Kong, SAR | 86 | $\triangle$ |
| Lithuania | 82 | $\triangle$ |
| Singapore | 81 | $\triangle$ |
| Japan | 75 | $\triangle$ |
| Hungary | 74 | $\triangle$ |
| Russian Federation | 72 | $\triangle$ |
| England | 72 | $\triangle$ |
| Cyprus | 71 | $\triangle$ |
| Latvia | 69 | $\triangle$ |
| Belgium (Flemish) | 69 | $\triangle$ |
| Italy | 68 | $\triangle$ |
| Moldova, Republic of | 68 | $\triangle$ |
| Slovenia | 63 | 0 |
| International average | 61 |  |
| Australia | 60 | 0 |
| Scotland | 60 | 0 |
| Netherlands | 59 | 0 |
| New Zealand | 55 | $\nabla$ |
| United States | 48 | $\nabla$ |
| Armenia | 41 | $\nabla$ |
| Norway | 39 | $\nabla$ |
| Philippines | 36 | $\nabla$ |
| Morocco | 32 | $\nabla$ |
| Tunisia | 28 | $\nabla$ |
| Iran, Islamic Republic of | 25 | $\nabla$ |

Country average vs. International average:

| Higher | $\Delta$ |
| :--- | :---: |
| Not different | O |
| Lower | $\nabla$ |

Item Number: M031338

Correct Response: $\quad$ A

| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| MEASUREMENT | Attributes and Units | Reasoning |

Which has largest area

Which of these figures has the largest area?
(A)

(B)

(c)

(D)


Overall Percent Correct

| Australia | 85 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| Chinese Taipei | 96 | $\boldsymbol{\Delta}$ |
| Japan | 94 | $\boldsymbol{\Delta}$ |
| Hong Kong, SAR | 91 | $\boldsymbol{\Delta}$ |
| Singapore | 88 | $\boldsymbol{\Delta}$ |
| Latvia | 86 | $\boldsymbol{\Delta}$ |
| Scotland | 86 | $\boldsymbol{\Delta}$ |
| Belgium (Flemish) | 84 | $\boldsymbol{\Delta}$ |
| Netherlands | 83 | $\boldsymbol{\Delta}$ |
| Russian Federation | 82 | O |
| Moldova, Republic of | 81 | O |
| United States | 81 | $\boldsymbol{\Delta}$ |
| Hungary | 80 | O |
| Lithuania | 80 | O |
| Armenia | 79 | O |
| Cyprus | 79 | O |
| Italy | 79 | O |
| New Zealand | 79 | O |
| England | 78 | O |
| International average | 78 |  |
| Slovenia | 77 | O |
| Iran, Islamic Republic of | 72 | $\boldsymbol{\nabla}$ |
| Morocco | 65 | $\boldsymbol{\nabla}$ |
| Norway | 65 | $\boldsymbol{\nabla}$ |
| Tunisia | 46 | $\boldsymbol{\nabla}$ |
| Philippines | 43 | $\boldsymbol{\nabla}$ |

Country average vs. International average:

| Higher | $\Delta$ |
| :--- | :--- |
| Not different | O |
| Lower | $\nabla$ |

Item Number: M011005

Correct Response: $\quad$ C

| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| MEASUREMENT | Attributes and Units | Solving Routine Problems |

The length of the films

Simon wants to watch a film that is between $1 \frac{1}{2}$ and 2 hours long.
Which of the following films should he choose?
(A) a 59-minute film
(B) a 102-minute film
(C) a 121-minute film
(D) a 150 -minute film

Overall Percent Correct

| Singapore | 46 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| England | 42 | $\boldsymbol{\Delta}$ |
| Hungary | 41 | $\boldsymbol{\Delta}$ |
| Netherlands | 38 | $\boldsymbol{\Delta}$ |
| Australia | 37 | $\boldsymbol{\Delta}$ |
| Hong Kong, SAR | 37 | $\boldsymbol{\Delta}$ |
| Russian Federation | 37 | $\boldsymbol{\Delta}$ |
| United States | 34 | $\boldsymbol{\Delta}$ |
| Belgium (Flemish) | 33 | O |
| Chinese Taipei | 32 | O |
| Lithuania | 30 | O |
| Slovenia | 30 | O |
| International average | 30 |  |
| New Zealand | 29 | O |
| Norway | 29 | O |
| Scotland | 28 | O |
| Latvia | 27 | O |
| Italy | 26 | $\boldsymbol{\nabla}$ |
| Moldova, Republic of | 26 | O |
| Cyprus | 25 | $\boldsymbol{\nabla}$ |
| Japan | 25 | $\boldsymbol{\nabla}$ |
| Armenia | 22 | $\boldsymbol{\nabla}$ |
| Iran, Islamic Republic of | 22 | $\boldsymbol{\nabla}$ |
| Philippines | 22 | $\boldsymbol{\nabla}$ |
| Tunisia | 17 | $\boldsymbol{\nabla}$ |
| Morocco | 16 | $\boldsymbol{\nabla}$ |

Country average vs. International average:

| Higher | $\Delta$ |
| :--- | :--- |
| Not different | O |
| Lower | $\nabla$ |


| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| MEASUREMENT | Tools, techniques, <br> and formulas | Knowing Facts <br> and Procedures |

## How much did temperature rise

Overall Percent Correct

When Tracy left for school, the temperature was minus 3 degrees.


At recess, the temperature was 5 degrees.


How many degrees did the temperature rise?

Item Number: M011013


| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| MEASUREMENT | Tools, techniques, <br> and formulas | Knowing Facts <br> and Procedures |

Draw a triangle with $A B$ as the base

|  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | $A$ |  |  | $B$ |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |

Draw a triangle in the grid so that the line $A B$ is the base of the triangle and the two new sides are the same length as each other.

Overall Percent Correct

| Hong Kong, SAR | 95 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| Latvia | 84 | $\boldsymbol{\Delta}$ |
| Japan | 80 | $\boldsymbol{\Delta}$ |
| New Zealand | 80 | $\boldsymbol{\Delta}$ |
| Australia | 77 | $\boldsymbol{\Delta}$ |
| Italy | 77 | $\boldsymbol{\Delta}$ |
| Russian Federation | 77 | $\boldsymbol{\Delta}$ |
| Singapore | 77 | $\boldsymbol{\Delta}$ |
| Belgium (Flemish) | 77 | $\boldsymbol{\Delta}$ |
| Lithuania | 74 | $\boldsymbol{\Delta}$ |
| England | 73 | $\boldsymbol{\Delta}$ |
| Hungary | 72 | $\boldsymbol{\Delta}$ |
| Scotland | 71 | O |
| Chinese Taipei | 70 | O |
| Moldova, Republic of | 67 | O |
| International average | 67 |  |
| Slovenia | 64 | O |
| United States | 63 | $\boldsymbol{\nabla}$ |
| Norway | 58 | $\boldsymbol{\nabla}$ |
| Cyprus | 57 | $\boldsymbol{\nabla}$ |
| Armenia | 56 | $\boldsymbol{\nabla}$ |
| Iran, Islamic Republic of | 48 | $\boldsymbol{\nabla}$ |
| Philippines | 45 | $\boldsymbol{\nabla}$ |
| Morocco | 42 | $\boldsymbol{\nabla}$ |
| Tunisia | 28 | $\boldsymbol{\nabla}$ |
| Netherlands | 0 | $\boldsymbol{\nabla}$ |

Country average vs. International average:

| Higher | $\boldsymbol{\Delta}$ |
| :--- | :--- |
| Not different | O |
| Lower | $\nabla$ |

Item Number: M031322

## SCORING

## Correct Response

- Triangle with two new sides equal (i.e. meeting on or within 2 mm of the gridline that is the perpendicular bisector of $A B$ )
Incorrect Response
- Triangle with two new sides unequal
- Other incorrect (including crossed out/erased, stray marks, illegible, or off task)

Draw a triangle with $A B$ as the base (continued)
Item Number: M031322

## Student Responses

## Correct Response:



Draw a triangle in the grid so that the line $A B$ is the base of the triangle and the two new sides are the same length as each other.

Incorrect Response:


Draw a triangle in the grid so that the line $A B$ is the base of the triangle and the two new sides are the same length as each other.

| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| MEASUREMENT | Tools, Techniques, <br> and Formulas | Reasoning |

## Distance on map

One centimeter on the map represents 8 kilometers on the land.


About how far apart are Oxford and Smithville on the land?
(A) 4 km
(B) 16 km
(C) 35 km
(D) 50 km

## Overall Percent Correct

| Netherlands | 69 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| Singapore | 62 | $\boldsymbol{\Delta}$ |
| Japan | 61 | $\boldsymbol{\Delta}$ |
| Belgium (Flemish) | 61 | $\boldsymbol{\Delta}$ |
| Hong Kong, SAR | 60 | $\boldsymbol{\Delta}$ |
| Lithuania | 59 | $\boldsymbol{\Delta}$ |
| Latvia | 57 | $\boldsymbol{\Delta}$ |
| Hungary | 55 | $\boldsymbol{\Delta}$ |
| Russian Federation | 52 | $\boldsymbol{\Delta}$ |
| England | 51 | $\boldsymbol{\Delta}$ |
| Chinese Taipei | 49 | $\boldsymbol{\Delta}$ |
| Australia | 46 | O |
| New Zealand | 45 | O |
| International average | 45 |  |
| Italy | 44 | O |
| Moldova, Republic of | 44 | O |
| United States | 41 | $\boldsymbol{\nabla}$ |
| Slovenia | 38 | $\boldsymbol{\nabla}$ |
| Cyprus | 37 | $\boldsymbol{\nabla}$ |
| Norway | 36 | $\boldsymbol{\nabla}$ |
| Scotland | 35 | $\boldsymbol{\nabla}$ |
| Armenia | 33 | $\boldsymbol{\nabla}$ |
| Morocco | 26 | $\boldsymbol{\nabla}$ |
| Iran, Islamic Republic of | 21 | $\boldsymbol{\nabla}$ |
| Tunisia | 21 | $\boldsymbol{\nabla}$ |
| Philippines | 20 | $\boldsymbol{\nabla}$ |


| Country average vs. |  |
| :--- | :---: |
| International average: |  |
| Higher | $\mathbf{O}$ |
| Not different | 0 |
| Lower | $\boldsymbol{\nabla}$ | International average:

Item Number: M012065

| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| MEASUREMENT | Tools, Techniques, <br> and Formulas | Reasoning |

Complete the figure with an area of $13 \mathrm{~cm}^{2}$


The squares in the grid above have areas of 1 square centimeter. Draw lines to complete the figure so that it has an area of 13 square centimeters.

Overall Percent Correct

| Japan | 68 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| Chinese Taipei | 66 | $\boldsymbol{\Delta}$ |
| Hong Kong, SAR | 52 | $\boldsymbol{\Delta}$ |
| Latvia | 43 | $\boldsymbol{\Delta}$ |
| Singapore | 43 | $\boldsymbol{\Delta}$ |
| Lithuania | 40 | $\boldsymbol{\Delta}$ |
| Netherlands | 37 | $\boldsymbol{\Delta}$ |
| Moldova, Republic of | 35 | $\boldsymbol{\Delta}$ |
| Cyprus | 34 | $\boldsymbol{\Delta}$ |
| Russian Federation | 30 | O |
| Australia | 29 | O |
| England | 29 | O |
| Scotland | 29 | O |
| International average | 29 |  |
| Belgium (Flemish) | 28 | O |
| Hungary | 26 | O |
| Armenia | 25 | O |
| United States | 24 | $\boldsymbol{\nabla}$ |
| Italy | 22 | $\boldsymbol{\nabla}$ |
| New Zealand | 15 | $\boldsymbol{\nabla}$ |
| Iran, Islamic Republic of | 11 | $\boldsymbol{\nabla}$ |
| Slovenia | 11 | $\boldsymbol{\nabla}$ |
| Norway | 10 | $\boldsymbol{\nabla}$ |
| Morocco | 9 | $\boldsymbol{\nabla}$ |
| Tunisia | 9 | $\boldsymbol{\nabla}$ |
| Philippines | 5 | $\boldsymbol{\nabla}$ |
|  |  |  |

Country average vs. International average:

| Higher | $\Delta$ |
| :--- | :--- |
| Not different | O |
| Lower | $\nabla$ |

Item Number: M031298

## SCORING

## Correct Response

- Lines drawn to give area of 13 square cm


## Incorrect Response

- Error due to counting half squares as full square centimeters
- One line drawn to close given figure
- Symmetrical figure drawn
- Other incorrect (including crossed out/erased, stray marks, illegible, or off task)

Complete the figure with an area of $13 \mathrm{~cm}^{2}$ (continued)
Item Number: M031298

## Student Responses

## Correct Response:



The squares in the grid above have areas of 1 square centimeter. Draw lines to complete the figure so that it has an area of 13 square centimeters.

Incorrect Response:


The squares in the grid above have areas of 1 square centimeter. Draw lines to complete the figure so that it has an area of 13 square centimeters.

| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| MEASUREMENT | Tools, Techniques, <br> and Formulas | Solving Routine Problems |

## When is Mary's trip

Here is a calendar for December.

| DECEMBER |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{S}$ | $\mathbf{M}$ | $\mathbf{T}$ | $\mathbf{W}$ | $\mathbf{T}$ | $\mathbf{F}$ | $\mathbf{S}$ |  |
|  |  |  | 1 | 2 | 3 | 4 |  |
| 5 | 6 | 7 | 8 | 9 | 10 | 11 |  |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 |  |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 |  |
| 26 | 27 | 28 | 29 | 30 | 31 |  |  |

Mary's birthday is on Thursday, December 2. She is going on a trip exactly 3 weeks later. On what date will she go on the trip?
(A) December 16th
(B) December 21st
(C) December 23rd
(D) December 30th

Overall Percent Correct

| Japan | 83 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| England | 82 | $\boldsymbol{\Delta}$ |
| Belgium (Flemish) | 81 | $\boldsymbol{\Delta}$ |
| Netherlands | 79 | $\boldsymbol{\Delta}$ |
| Scotland | 79 | $\boldsymbol{\Delta}$ |
| Hong Kong, SAR | 76 | $\boldsymbol{\Delta}$ |
| Australia | 75 | $\boldsymbol{\Delta}$ |
| Chinese Taipei | 75 | $\boldsymbol{\Delta}$ |
| Singapore | 75 | $\boldsymbol{\Delta}$ |
| United States | 75 | $\boldsymbol{\Delta}$ |
| New Zealand | 74 | $\boldsymbol{\Delta}$ |
| Latvia | 69 | $\boldsymbol{\Delta}$ |
| Hungary | 67 | O |
| Russian Federation | 67 | O |
| Italy | 66 | O |
| Slovenia | 66 | O |
| Lithuania | 65 | O |
| Moldova, Republic of | 64 | O |
| International average | 64 |  |
| Norway | 62 | O |
| Cyprus | 61 | O |
| Armenia | 51 | $\boldsymbol{\nabla}$ |
| Philippines | 36 | $\boldsymbol{\nabla}$ |
| Iran, Islamic Republic of | 31 | $\boldsymbol{\nabla}$ |
| Morocco | 26 | $\boldsymbol{\nabla}$ |
| Tunisia | 25 | $\boldsymbol{\nabla}$ |

Country average vs. International average:

| Higher | $\Delta$ |
| :--- | :--- |
| Not different | O |
| Lower | $\nabla$ |

Item Number: M011017

Correct Response: $\quad$ C

| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| MEASUREMENT | Tools, Techniques, <br> and Formulas | Solving Routine Problems |

## Perimeter of rectangle

Overall Percent Correct

Here is a rectangle with length 6 centimeters and width 4 centimeters. The distance right around its shape is called its perimeter.


Which of these gives the perimeter of the rectangle in centimeters?
(A) $6+4$
(B) $6 \times 4$
(C) $6 \times 4 \times 2$
(D) $6+4+6+4$

| Singapore | 93 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| Latvia | 77 | $\boldsymbol{\Delta}$ |
| Lithuania | 73 | $\boldsymbol{\Delta}$ |
| Russian Federation | 72 | $\boldsymbol{\Delta}$ |
| Armenia | 66 | $\boldsymbol{\Delta}$ |
| United States | 64 | $\boldsymbol{\Delta}$ |
| Hong Kong, SAR | 62 | $\boldsymbol{\Delta}$ |
| Moldova, Republic of | 62 | $\boldsymbol{\Delta}$ |
| Belgium (Flemish) | 61 | $\boldsymbol{\Delta}$ |
| Australia | 57 | $\boldsymbol{\Delta}$ |
| Hungary | 57 | $\boldsymbol{\Delta}$ |
| Italy | 57 | $\boldsymbol{\Delta}$ |
| Cyprus | 53 | $\mathbf{O}$ |
| England | 52 | $\mathbf{O}$ |
| International average | 51 |  |
| Chinese Taipei | 42 | $\boldsymbol{\nabla}$ |
| New Zealand | 39 | $\boldsymbol{\nabla}$ |
| Norway | 39 | $\boldsymbol{\nabla}$ |
| Philippines | 39 | $\boldsymbol{\nabla}$ |
| Scotland | 36 | $\boldsymbol{\nabla}$ |
| Netherlands | 35 | $\boldsymbol{\nabla}$ |
| Iran, Islamic Republic of | 34 | $\boldsymbol{\nabla}$ |
| Slovenia | 33 | $\boldsymbol{\nabla}$ |
| Japan | 25 | $\boldsymbol{\nabla}$ |
| Tunisia | 25 | $\boldsymbol{\nabla}$ |
| Morocco | 21 | $\boldsymbol{\nabla}$ |

Country average vs. International average:

| Higher | $\Delta$ |
| :--- | :--- |
| Not different | O |
| Lower | $\nabla$ |

Item Number: M011025


| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| MEASUREMENT | Tools, Techniques, <br> and Formulas | Solving Routine Problems |

## Betty's average driving speed

Overall Percent Correct

The distance from one town to another is 180 km . If Betty has to drive the distance in 3 hours, what must her average speed be in kilometers per hour?
(A) $180 \times 3$
(B) $180+3$
(C) $180 \div 3$
(D) 180-3

| Hong Kong, SAR | 83 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| Latvia | 80 | $\boldsymbol{\Delta}$ |
| Russian Federation | 74 | $\boldsymbol{\Delta}$ |
| Chinese Taipei | 73 | $\boldsymbol{\Delta}$ |
| Japan | 73 | $\boldsymbol{\Delta}$ |
| Lithuania | 65 | $\boldsymbol{\Delta}$ |
| Netherlands | 62 | $\boldsymbol{\Delta}$ |
| Singapore | 59 | $\boldsymbol{\Delta}$ |
| Belgium (Flemish) | 56 | $\boldsymbol{\Delta}$ |
| Armenia | 54 | $\boldsymbol{\Delta}$ |
| Hungary | 53 | $\mathbf{O}$ |
| Moldova, Republic of | 53 | $\mathbf{O}$ |
| International average | 48 |  |
| Cyprus | 39 | $\boldsymbol{\nabla}$ |
| Slovenia | 37 | $\boldsymbol{\nabla}$ |
| United States | 37 | $\boldsymbol{\nabla}$ |
| England | 36 | $\boldsymbol{\nabla}$ |
| Italy | 34 | $\boldsymbol{\nabla}$ |
| New Zealand | 32 | $\boldsymbol{\nabla}$ |
| Australia | 31 | $\boldsymbol{\nabla}$ |
| Norway | 30 | $\boldsymbol{\nabla}$ |
| Scotland | 29 | $\boldsymbol{\nabla}$ |
| Tunisia | 28 | $\boldsymbol{\nabla}$ |
| Morocco | 27 | $\boldsymbol{\nabla}$ |
| Iran, Islamic Republic of | 26 | $\boldsymbol{\nabla}$ |
| Philippines | 25 | $\boldsymbol{\nabla}$ |
|  |  |  |


| Country average vs. |  |
| :---: | :---: |
| International average: |  |
| Higher | $\mathbf{A}$ |
| Not different | O |
| Lower | $\nabla$ |

Item Number: M031097
$\square$

| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| MEASUREMENT | Tools, Techniques, <br> and Formulas | Solving Routine Problems |

George practiced soccer 6 days a week

George practiced soccer six days a week.
For 3 of the days he practiced for 45 minutes each day.
For 3 of the days he practiced for 20 minutes each day.
In hours and minutes, what is the total amount of time George practiced on these six days?
(A) 2 hours 20 minutes
(B) 2 hours 55 minutes
(C) 3 hours 5 minutes
(D) 3 hours 15 minutes

Overall Percent Correct

| Singapore | 64 | $\mathbf{\Delta}$ |
| :--- | :--- | :--- |
| Chinese Taipei | 61 | $\mathbf{\Delta}$ |
| Russian Federation | 57 | $\mathbf{\Delta}$ |
| Japan | 53 | $\mathbf{\Delta}$ |
| Lithuania | 53 | $\boldsymbol{\Delta}$ |
| Hong Kong, SAR | 50 | $\mathbf{\Delta}$ |
| Latvia | 49 | $\mathbf{\Delta}$ |
| Hungary | 44 | $\mathbf{\Delta}$ |
| England | 42 | O |
| Belgium (Flemish) | 41 | O |
| International average | 37 |  |
| United States | 36 | O |
| Moldova, Republic of | 35 | O |
| Armenia | 34 | O |
| Australia | 33 | O |
| Italy | 33 | O |
| Netherlands | 33 | O |
| Slovenia | 32 | O |
| Cyprus | 31 | $\boldsymbol{\nabla}$ |
| New Zealand | 28 | $\boldsymbol{\nabla}$ |
| Scotland | 27 | $\boldsymbol{\nabla}$ |
| Norway | 24 | $\boldsymbol{\nabla}$ |
| Morocco | 17 | $\boldsymbol{\nabla}$ |
| Philippines | 15 | $\boldsymbol{\nabla}$ |
| Iran, Islamic Republic of | 13 | $\boldsymbol{\nabla}$ |
| Tunisia | 11 | $\boldsymbol{\nabla}$ |

Country average vs. International average:

| Higher | $\Delta$ |
| :--- | :--- |
| Not different | O |
| Lower | $\nabla$ |

Item Number: M031178

Correct Response: $\quad$ D

| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| MEASUREMENT | Tools, Techniques, <br> and Formulas | Using Concepts |

## Volume of stack of cubes

## Overall Percent Correct

Jasmine made a stack of cubes of the same size. The stack had 5 layers and each layer had 10 cubes. What is the volume of the stack?
(A) 5 cubes
(B) 15 cubes
(C) 30 cubes
(D) 50 cubes

| Chinese Taipei | 93 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| Hong Kong, SAR | 91 | $\boldsymbol{\Delta}$ |
| Netherlands | 85 | $\boldsymbol{\Delta}$ |
| Singapore | 85 | $\boldsymbol{\Delta}$ |
| Russian Federation | 82 | $\boldsymbol{\Delta}$ |
| Lithuania | 80 | $\boldsymbol{\Delta}$ |
| Latvia | 79 | $\boldsymbol{\Delta}$ |
| Belgium (Flemish) | 75 | $\boldsymbol{\Delta}$ |
| Japan | 73 | $\boldsymbol{\Delta}$ |
| Moldova, Republic of | 70 | $\boldsymbol{\Delta}$ |
| Italy | 67 | O |
| United States | 67 | $\boldsymbol{\Delta}$ |
| England | 65 | O |
| Hungary | 64 | O |
| International average | 63 |  |
| Australia | 61 | O |
| Cyprus | 61 | O |
| Scotland | 60 | O |
| New Zealand | 56 | $\boldsymbol{\nabla}$ |
| Armenia | 53 | $\boldsymbol{\nabla}$ |
| Slovenia | 53 | $\boldsymbol{\nabla}$ |
| Norway | 46 | $\boldsymbol{\nabla}$ |
| Iran, Islamic Republic of | 36 | $\boldsymbol{\nabla}$ |
| Morocco | 29 | $\boldsymbol{\nabla}$ |
| Tunisia | 28 | $\boldsymbol{\nabla}$ |
| Philippines | 26 | $\boldsymbol{\nabla}$ |


| Country average vs. |  |
| :--- | :---: |
| International average: |  |
| Higher | - |
| Not different | O |
| Lower | $\mathbf{\nabla}$ |

Item Number: M011010

Correct Response: $\quad$ D

| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| NUMBER | Fractions and Decimals | Knowing Facts <br> and Procedures |

Sum of two numbers with decimals
Overall Percent Correct

What is the sum of 2.5 and 3.8 ?
(A) 5.3
(B) 6.3
(C) 6.4
(D) 9.5

Country average vs. International average:

| Higher | $\Delta$ |
| :--- | :--- |
| Not different | O |
| Lower | $\nabla$ |


| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| NUMBER | Fractions and Decimals | Knowing Facts <br> and Procedures |

Subtraction with decimals
Overall Percent Correct


| Singapore | 94 | $\triangle$ |
| :---: | :---: | :---: |
| Hong Kong, SAR | 84 | $\triangle$ |
| Chinese Taipei | 83 | $\triangle$ |
| Russian Federation | 81 | $\triangle$ |
| Latvia | 79 | A |
| Armenia | 74 | $\triangle$ |
| Italy | 74 | $\triangle$ |
| Lithuania | 73 | $\triangle$ |
| Japan | 72 | - |
| Moldova, Republic of | 72 | $\triangle$ |
| United States | 72 | $\triangle$ |
| Belgium (Flemish) | 71 | $\triangle$ |
| Netherlands | 69 | $\triangle$ |
| Cyprus | 65 | 0 |
| Hungary | 63 | 0 |
| International average | 61 |  |
| Scotland | 51 | $\nabla$ |
| Tunisia | 47 | $\nabla$ |
| Slovenia | 44 | $\nabla$ |
| England | 43 | $\nabla$ |
| Morocco | 41 | $\nabla$ |
| Philippines | 40 | $\nabla$ |
| Iran, Islamic Republic of | 38 | $\nabla$ |
| Norway | 38 | $\nabla$ |
| Australia | 35 | $\nabla$ |
| New Zealand | 28 | $\nabla$ |


| Country average vs. |  |
| :--- | :---: |
| International average: |  |
| Higher | $\Delta$ |
| Not different | O |
| Lower | $\mathbf{\nabla}$ |

Item Number: M011015


| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| NUMBER | Fractions and Decimals | Knowing Facts <br> and Procedures |

Fraction to decimal
Overall Percent Correct

Which of these means $\frac{7}{10}$ ?
(A) 70
(B) 7
(C) 0.7
(D) 0.07

| Singapore | 95 | A |
| :---: | :---: | :---: |
| Hong Kong, SAR | 78 | $\Delta$ |
| Chinese Taipei | 74 | $\Delta$ |
| Belgium (Flemish) | 73 | $\Delta$ |
| Cyprus | 65 | $\Delta$ |
| United States | 62 | $\Delta$ |
| Japan | 60 | $\Delta$ |
| Italy | 58 | $\Delta$ |
| Moldova, Republic of | 52 | $\Delta$ |
| Philippines | 49 | $\Delta$ |
| Lithuania | 48 | $\Delta$ |
| England | 46 | 0 |
| International average | 43 |  |
| Australia | 42 | 0 |
| Armenia | 42 | 0 |
| Russian Federation | 39 | 0 |
| New Zealand | 37 | $\nabla$ |
| Netherlands | 29 | $\nabla$ |
| Morocco | 23 | $\nabla$ |
| Scotland | 22 | $\nabla$ |
| Hungary | 17 | $\nabla$ |
| Norway | 17 | $\nabla$ |
| Iran, Islamic Republic of | 16 | $\nabla$ |
| Tunisia | 15 | $\nabla$ |
| Latvia | 12 | $\nabla$ |
| Slovenia | 8 | $\nabla$ |


| Country average vs. |  |
| :---: | :---: |
| International average: |  |
| Higher | $\Delta$ |
| Not different | O |
| Lower | $\nabla$ |

Item Number: M011020

| Correct Response: | C |
| :---: | :---: |


| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| A. NUMBER | Fractions and Decimals | Knowing Facts and Procedures |
| B. NUMBER | Fractions and Decimals | Reasoning |

Geometry Tiles: ½ black
A. WITHOUT using any triangle tiles, place 4 tiles so that $\frac{1}{2}$ of a square shape is black. Then shade in the square below to show what you did with your tiles.

## Shade in Here


B. Place 8 tiles so that $\frac{5}{8}$ of the rectangle shape is black. Then shade in the rectangle below to show what you did with your tiles.

## Shade in Here



Item Number: M031348A

## SCORING

## Correct Response

- Draws a pattern made up of 2 black tiles and two white tiles. See examples below.



## Incorrect Response

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

Geometry Tiles: $1 ⁄ 2$ black (continued)
Item Number: M031348A

## Student Responses

## Correct Response:

A. WITHOUT using any triangle tiles, place 4 tiles so that $\frac{1}{2}$ of a square shape is black. Then shade in the square below to show what you did with your tiles.

## Shade in Here



## Incorrect Response:

A. WITHOUT using any triangle tiles, place 4 tiles so that $\frac{1}{2}$ of a square shape is black. Then shade in the square below to show what you did with your tiles.

## Shade in Here



| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| A. NUMBER | Fractions and Decimals | Knowing Facts and Procedures |
| B. NUMBER | Fractions and Decimals | Reasoning |

## Geometry Tiles: 5/8 black

A. WITHOUT using any triangle tiles, place 4 tiles so that $\frac{1}{2}$ of a square shape is black. Then shade in the square below to show what you did with your tiles.

## Shade in Here


B. Place 8 tiles so that $\frac{5}{8}$ of the rectangle shape is black. Then shade in the rectangle below to show what you did with your tiles.

## Shade in Here



Overall Percent Correct

| Japan | 13 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| Latvia | 13 | $\boldsymbol{\Delta}$ |
| England | 13 | $\boldsymbol{\Delta}$ |
| Belgium (Flemish) | 13 | $\boldsymbol{\Delta}$ |
| Australia | 11 | $\boldsymbol{\Delta}$ |
| Singapore | 11 | $\boldsymbol{\Delta}$ |
| New Zealand | 10 | $\boldsymbol{\Delta}$ |
| Russian Federation | 10 | 0 |
| Chinese Taipei | 8 | 0 |
| Cyprus | 8 | 0 |
| Lithuania | 8 | 0 |
| Netherlands | 8 | 0 |
| United States | 8 | 0 |
| Hong Kong, SAR | 7 | 0 |
| Scotland | 7 | 0 |
| International average | 7 |  |
| Italy | 6 | 0 |
| Norway | 5 | 0 |
| Hungary | 4 | $\boldsymbol{\nabla}$ |
| Iran, Islamic Republic of | 1 | $\boldsymbol{\nabla}$ |
| Moldova, Republic of | 1 | $\boldsymbol{\nabla}$ |
| Philippines | 1 | $\boldsymbol{\nabla}$ |
| Slovenia | 1 | $\boldsymbol{\nabla}$ |
| Tunisia | 1 | $\boldsymbol{\nabla}$ |
| Armenia | 0 | $\boldsymbol{\nabla}$ |
| Morocco | 0 | $\boldsymbol{\nabla}$ |

Country average vs. International average:

| Higher | $\Delta$ |
| :--- | :--- |
| Not different | O |
| Lower | $\nabla$ |

Item Number: M031348B

## SCORING

## Correct Response

- Any figure using 3 black, 1 white, and 4 triangle tiles:



## Partially Correct Response

- 5/8 of the figure shaded without using correct tiles


## Incorrect Response

- $1 / 2$ of the figure shaded
- Other incorrect (including crossed out/erased, stray marks, illegible, or off task)

Geometry Tiles: 5/8 black (continued)
Item Number: M031348B

## Student Responses

## Correct Response:

B. Place 8 tiles so that $\frac{5}{8}$ of the rectangle shape is black. Then shade in the rectangle below to show what you did with your tiles.


## Incorrect Response:

B. Place 8 tiles so that $\frac{5}{8}$ of the rectangle shape is black. Then shade in the rectangle below to show what you did with your tiles.

Shade in Here


| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| NUMBER | Fractions and Decimals | Solving Routine Problems |

Fraction of cake left

Janis, Maija, and their mother were eating a cake. Janis ate $\frac{1}{2}$ of the cake.
Maija ate $\frac{1}{4}$ of the cake. Their mother ate $\frac{1}{4}$ of the cake.
How much of the cake is left?
(A) $\frac{3}{4}$
(B) $\frac{1}{2}$
(C) $\frac{1}{4}$
(D) None

Item Number: M012119

Overall Percent Correct

| Singapore | 83 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| England | 83 | $\boldsymbol{\Delta}$ |
| Hong Kong, SAR | 82 | $\boldsymbol{\Delta}$ |
| New Zealand | 74 | $\boldsymbol{\Delta}$ |
| Lithuania | 73 | $\boldsymbol{\Delta}$ |
| Scotland | 70 | $\boldsymbol{\Delta}$ |
| Australia | 68 | $\boldsymbol{\Delta}$ |
| United States | 65 | $\boldsymbol{\Delta}$ |
| Belgium (Flemish) | 65 | $\boldsymbol{\Delta}$ |
| Netherlands | 63 | 0 |
| Russian Federation | 63 | 0 |
| Hungary | 61 | 0 |
| Moldova, Republic of | 61 | 0 |
| Italy | 60 | 0 |
| Latvia | 60 | 0 |
| International average | 59 |  |
| Slovenia | 58 | 0 |
| Cyprus | 54 | $\boldsymbol{\nabla}$ |
| Chinese Taipei | 51 | $\boldsymbol{\nabla}$ |
| Norway | 49 | $\boldsymbol{\nabla}$ |
| Armenia | 48 | $\boldsymbol{\nabla}$ |
| Iran, Islamic Republic of | 48 | $\boldsymbol{\nabla}$ |
| Japan | 47 | $\boldsymbol{\nabla}$ |
| Morocco | 32 | $\boldsymbol{\nabla}$ |
| Philippines | 32 | $\boldsymbol{\nabla}$ |
| Tunisia | 24 | $\boldsymbol{\nabla}$ |

Country average vs. International average:

| Higher | $\Delta$ |
| :--- | :--- |
| Not different | O |
| Lower | $\nabla$ |

## $\Delta$ $\nabla$ $\nabla$

| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| NUMBER | Fractions and Decimals | Solving Routine Problems |

$1 / 3$ of 600 balls in a box

There are 600 balls in a box, and $\frac{1}{3}$ of the balls are red.
How many red balls are in the box?

Answer: $\qquad$ red balls

Overall Percent Correct

| Lithuania | 85 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| Singapore | 84 | $\boldsymbol{\Delta}$ |
| Latvia | 82 | $\boldsymbol{\Delta}$ |
| Belgium (Flemish) | 82 | $\boldsymbol{\Delta}$ |
| Russian Federation | 78 | $\boldsymbol{\Delta}$ |
| Moldova, Republic of | 68 | $\boldsymbol{\Delta}$ |
| Cyprus | 64 | $\boldsymbol{\Delta}$ |
| Hong Kong, SAR | 64 | $\boldsymbol{\Delta}$ |
| Armenia | 63 | $\boldsymbol{\Delta}$ |
| Netherlands | 63 | $\boldsymbol{\Delta}$ |
| Hungary | 62 | $\boldsymbol{\Delta}$ |
| Japan | 56 | $\boldsymbol{\Delta}$ |
| Chinese Taipei | 55 | $\boldsymbol{\Delta}$ |
| International average | 49 |  |
| Italy | 43 | $\boldsymbol{\nabla}$ |
| England | 41 | $\boldsymbol{\nabla}$ |
| Scotland | 40 | $\boldsymbol{\nabla}$ |
| United States | 38 | $\boldsymbol{\nabla}$ |
| New Zealand | 34 | $\boldsymbol{\nabla}$ |
| Slovenia | 32 | $\boldsymbol{\nabla}$ |
| Australia | 30 | $\boldsymbol{\nabla}$ |
| Tunisia | 24 | $\boldsymbol{\nabla}$ |
| Norway | 19 | $\boldsymbol{\nabla}$ |
| Philippines | 14 | $\boldsymbol{\nabla}$ |
| Iran, Islamic Republic of | 9 | $\boldsymbol{\nabla}$ |
| Morocco | 7 | $\boldsymbol{\nabla}$ |
|  |  |  |

Country average vs. International average:

| Higher | $\Delta$ |
| :--- | :--- |
| Not different | O |
| Lower | $\nabla$ |

Item Number: M031065

## SCORING

## Correct Response

- 200


## Incorrect Response

- Incorrect (including crossed out/erased, stray marks, illegible, or off task)
$1 / 3$ of 600 balls in a box (continued)
Item Number: M031065


## Student Responses

## Correct Response:

There are 600 balls in a box, and $\frac{1}{3}$ of the balls are red.
How many red balls are in the box?

Answer: $\rightarrow($ red balls


Incorrect Response:
There are 600 balls in a box, and $\frac{1}{3}$ of the balls are red.
How many red balls are in the box?

Answer: 1,72729 red balls

$$
\begin{aligned}
& 3 \longdiv { 6 0 0 } 5 9 . \\
& \begin{array}{c}
28 \\
78 \\
\times 8 \\
\hline 51 \\
\hline
\end{array}
\end{aligned}
$$

| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| NUMBER | Fractions and Decimals | Solving Routine Problems |

What fraction of cake John ate

A cake was cut into 8 pieces of equal size. John ate 3 pieces of the cake. What fraction of the cake did John eat?
(A) $\frac{1}{8}$
(B) $\frac{3}{8}$
(C) $\frac{3}{5}$
(D) $\frac{8}{3}$

## Overall Percent Correct

| Chinese Taipei | 97 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| Hong Kong, SAR | 93 | $\boldsymbol{\Delta}$ |
| Singapore | 89 | $\boldsymbol{\Delta}$ |
| Belgium (Flemish) | 89 | $\boldsymbol{\Delta}$ |
| Japan | 88 | $\boldsymbol{\Delta}$ |
| United States | 86 | $\boldsymbol{\Delta}$ |
| Cyprus | 85 | $\boldsymbol{\Delta}$ |
| Netherlands | 83 | $\boldsymbol{\Delta}$ |
| England | 80 | $\boldsymbol{\Delta}$ |
| Australia | 79 | $\boldsymbol{\Delta}$ |
| New Zealand | 77 | $\boldsymbol{\Delta}$ |
| Lithuania | 73 | $\boldsymbol{\Delta}$ |
| Italy | 72 | $\mathbf{O}$ |
| Scotland | 71 | 0 |
| Latvia | 69 | $\mathbf{O}$ |
| International average | 69 |  |
| Hungary | 64 | $\boldsymbol{\nabla}$ |
| Norway | 62 | $\boldsymbol{\nabla}$ |
| Iran, Islamic Republic of | 58 | $\boldsymbol{\nabla}$ |
| Russian Federation | 58 | $\boldsymbol{\nabla}$ |
| Armenia | 53 | $\boldsymbol{\nabla}$ |
| Philippines | 52 | $\boldsymbol{\nabla}$ |
| Moldova, Republic of | 46 | $\boldsymbol{\nabla}$ |
| Slovenia | 42 | $\boldsymbol{\nabla}$ |
| Tunisia | 28 | $\boldsymbol{\nabla}$ |
| Morocco | 27 | $\boldsymbol{\nabla}$ |

Country average vs. International average:

| Higher | $\Delta$ |
| :--- | :--- |
| Not different | O |
| Lower | $\nabla$ |


| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| NUMBER | Fractions and Decimals | Using Concepts |

Which figure has one-half black dots
Overall Percent Correct


| Belgium (Flemish) | 97 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| Netherlands | 97 | $\boldsymbol{\Delta}$ |
| Hungary | 95 | $\boldsymbol{\Delta}$ |
| Moldova, Republic of | 91 | $\boldsymbol{\Delta}$ |
| Russian Federation | 90 | $\boldsymbol{\Delta}$ |
| Hong Kong, SAR | 90 | $\mathbf{\Delta}$ |
| Lithuania | 89 | $\boldsymbol{\Delta}$ |
| Singapore | 89 | $\boldsymbol{\Delta}$ |
| Japan | 88 | $\boldsymbol{\Delta}$ |
| Italy | 88 | $\boldsymbol{\Delta}$ |
| Armenia | 86 | $\boldsymbol{\Delta}$ |
| Norway | 85 | $\boldsymbol{\Delta}$ |
| Australia | 85 | $\boldsymbol{\Delta}$ |
| Latvia | 84 | $\mathbf{\Delta}$ |
| England | 84 | $\boldsymbol{\Delta}$ |
| New Zealand | 84 | $\mathbf{\Delta}$ |
| United States | 79 | $\mathbf{\Delta}$ |
| Scotland | 76 | $\mathbf{O}$ |
| International average | 75 |  |
| Iran, Islamic Republic of | 66 | $\boldsymbol{\nabla}$ |
| Cyprus | 56 | $\boldsymbol{\nabla}$ |
| Morocco | 47 | $\boldsymbol{\nabla}$ |
| Tunisia | 46 | $\boldsymbol{\nabla}$ |
| Chinese Taipei | 42 | $\boldsymbol{\nabla}$ |
| Philippines | 37 | $\boldsymbol{\nabla}$ |
|  |  |  |


| Country average vs. |  |
| :--- | :---: |
| International average: |  |
| Higher | $\mathbf{\Delta}$ |
| Not different | O |
| Lower | $\mathbf{\nabla}$ |

Item Number: M011001

Correct Response: $\quad$ B

| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| NUMBER | Fractions and Decimals | Using Concepts |

3 of 4 squares shaded

In this diagram, 2 out of every 3 squares are shaded.


Which diagram has 3 out of every 4 squares shaded?
(A)

(C)
(B)

(D)


Overall Percent Correct

| Singapore | 77 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| Belgium (Flemish) | 74 | $\boldsymbol{\Delta}$ |
| Japan | 73 | $\boldsymbol{\Delta}$ |
| Lithuania | 71 | $\boldsymbol{\Delta}$ |
| Hong Kong, SAR | 70 | $\boldsymbol{\Delta}$ |
| Italy | 68 | $\boldsymbol{\Delta}$ |
| Netherlands | 65 | $\boldsymbol{\Delta}$ |
| United States | 63 | $\boldsymbol{\Delta}$ |
| England | 63 | $\boldsymbol{\Delta}$ |
| Cyprus | 60 | $\boldsymbol{\Delta}$ |
| Moldova, Republic of | 60 | $\boldsymbol{\Delta}$ |
| Chinese Taipei | 59 | $\boldsymbol{\Delta}$ |
| Slovenia | 56 | $\mathbf{O}$ |
| International average | 55 |  |
| Scotland | 54 | 0 |
| Australia | 51 | 0 |
| New Zealand | 51 | 0 |
| Norway | 46 | $\boldsymbol{\nabla}$ |
| Russian Federation | 46 | $\boldsymbol{\nabla}$ |
| Hungary | 45 | $\boldsymbol{\nabla}$ |
| Latvia | 45 | $\boldsymbol{\nabla}$ |
| Armenia | 43 | $\boldsymbol{\nabla}$ |
| Iran, Islamic Republic of | 43 | $\boldsymbol{\nabla}$ |
| Philippines | 33 | $\boldsymbol{\nabla}$ |
| Morocco | 25 | $\boldsymbol{\nabla}$ |
| Tunisia | 22 | $\boldsymbol{\nabla}$ |
|  |  |  |

Country average vs. International average:

| Higher | $\Delta$ |
| :--- | :--- |
| Not different | O |
| Lower | $\nabla$ |

Item Number: M011016

Correct Response: $\quad$ C

| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| NUMBER | Fractions and Decimals | Using Concepts |

Figure showing fraction of shaded square
Overall Percent Correct


| Singapore | 93 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| Hong Kong, SAR | 86 | $\boldsymbol{\Delta}$ |
| United States | 82 | $\boldsymbol{\Delta}$ |
| Chinese Taipei | 81 | $\boldsymbol{\Delta}$ |
| Belgium (Flemish) | 79 | $\boldsymbol{\Delta}$ |
| Japan | 76 | $\boldsymbol{\Delta}$ |
| Cyprus | 75 | $\boldsymbol{\Delta}$ |
| Netherlands | 73 | $\boldsymbol{\Delta}$ |
| England | 67 | $\boldsymbol{\Delta}$ |
| Australia | 62 | $\boldsymbol{\Delta}$ |
| Latvia | 60 | 0 |
| New Zealand | 59 | 0 |
| International average | 57 |  |
| Hungary | 56 | O |
| Lithuania | 56 | O |
| Italy | 55 | O |
| Scotland | 52 | $\boldsymbol{\nabla}$ |
| Philippines | 50 | $\boldsymbol{\nabla}$ |
| Russian Federation | 49 | $\boldsymbol{\nabla}$ |
| Iran, Islamic Republic of | 47 | $\boldsymbol{\nabla}$ |
| Moldova, Republic of | 43 | $\boldsymbol{\nabla}$ |
| Slovenia | 34 | $\boldsymbol{\nabla}$ |
| Armenia | 29 | $\boldsymbol{\nabla}$ |
| Norway | 29 | $\boldsymbol{\nabla}$ |
| Morocco | 13 | $\boldsymbol{\nabla}$ |
| Tunisia | 12 | $\boldsymbol{\nabla}$ |



Item Number: M012044


| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| NUMBER | Ratio, Proportions, <br> and Percent | Solving Routine Problems |

Maria collected soft drink bottles

For every soft drink bottle that Fred collected, Maria collected 3.
Fred collected a total of 9 soft drink bottles. How many did Maria collect?
(A) 3
(B) 12
(C) 13
(D) 27

## Overall Percent Correct

| Chinese Taipei | 74 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| Hong Kong, SAR | 74 | $\boldsymbol{\Delta}$ |
| Lithuania | 67 | $\boldsymbol{\Delta}$ |
| Singapore | 67 | $\boldsymbol{\Delta}$ |
| Japan | 65 | $\boldsymbol{\Delta}$ |
| Netherlands | 63 | $\boldsymbol{\Delta}$ |
| England | 60 | $\boldsymbol{\Delta}$ |
| Belgium (Flemish) | 59 | $\boldsymbol{\Delta}$ |
| Cyprus | 58 | $\boldsymbol{\Delta}$ |
| United States | 55 | $\boldsymbol{\Delta}$ |
| Hungary | 52 | 0 |
| Russian Federation | 52 | 0 |
| International average | 49 |  |
| Scotland | 47 | O |
| Armenia | 46 | O |
| Slovenia | 46 | O |
| Moldova, Republic of | 43 | 0 |
| Australia | 42 | $\boldsymbol{\nabla}$ |
| Italy | 40 | $\boldsymbol{\nabla}$ |
| New Zealand | 40 | $\boldsymbol{\nabla}$ |
| Norway | 40 | $\boldsymbol{\nabla}$ |
| Latvia | 38 | $\boldsymbol{\nabla}$ |
| Iran, Islamic Republic of | 28 | $\boldsymbol{\nabla}$ |
| Tunisia | 21 | $\boldsymbol{\nabla}$ |
| Morocco | 20 | $\boldsymbol{\nabla}$ |
| Philippines | 20 | $\boldsymbol{\nabla}$ |

Country average vs. International average:

| Higher | $\Delta$ |
| :--- | :--- |
| Not different | O |
| Lower | $\nabla$ |


| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| NUMBER | Whole Numbers | Knowing Facts <br> and Procedures |

Number rounded to 600
Overall Percent Correct

Which number would be rounded to 600 when rounded to the nearest hundred?

| Singapore | 87 | $\mathbf{\Delta}$ |
| :--- | :--- | :--- |
| Chinese Taipei | 86 | $\mathbf{\Delta}$ |
| Netherlands | 86 | $\mathbf{\Delta}$ |
| Japan | 85 | $\mathbf{\Delta}$ |
| England | 84 | $\mathbf{\Delta}$ |
| Hungary | 83 | $\mathbf{\Delta}$ |
| Hong Kong, SAR | 82 | $\mathbf{\Delta}$ |
| United States | 80 | $\mathbf{\Delta}$ |
| Australia | 78 | $\mathbf{\Delta}$ |
| Scotland | 78 | $\mathbf{\Delta}$ |
| Belgium (Flemish) | 78 | $\mathbf{\Delta}$ |
| Moldova, Republic of | 70 | $\mathbf{\Delta}$ |
| New Zealand | 70 | $\mathbf{\Delta}$ |
| Cyprus | 68 | $\mathbf{\Delta}$ |
| International average | 64 |  |
| Lithuania | 61 | $\mathbf{O}$ |
| Norway | 59 | $\mathbf{O}$ |
| Italy | 53 | $\boldsymbol{\nabla}$ |
| Morocco | 52 | $\boldsymbol{\nabla}$ |
| Latvia | 50 | $\boldsymbol{\nabla}$ |
| Armenia | 46 | $\boldsymbol{\nabla}$ |
| Russian Federation | 45 | $\boldsymbol{\nabla}$ |
| Slovenia | 39 | $\boldsymbol{\nabla}$ |
| Tunisia | 38 | $\boldsymbol{\nabla}$ |
| Philippines | 20 | $\boldsymbol{\nabla}$ |
| Iran, Islamic Republic of | 11 | $\boldsymbol{\nabla}$ |


| Country average vs. |  |
| :--- | :---: |
| International average: |  |
| Higher | $\mathbf{\Delta}$ |
| Not different | O |
| Lower | $\mathbf{\nabla}$ |

Item Number: M011019

Correct Response: $\quad$ D

| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| NUMBER | Whole Numbers | Knowing Facts <br> and Procedures |

Which number is it
Overall Percent Correct

What number equals 3 ones +5 tens +4 hundreds +60 thousands?
(A) 6,453
(B) 60,453
(C) 64,530
(D) 354,060
(E) 604,530

| Singapore | 88 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| Netherlands | 85 | $\boldsymbol{\Delta}$ |
| Japan | 84 | $\boldsymbol{\Delta}$ |
| Chinese Taipei | 83 | $\boldsymbol{\Delta}$ |
| Hungary | 83 | $\boldsymbol{\Delta}$ |
| Latvia | 80 | $\boldsymbol{\Delta}$ |
| Russian Federation | 80 | $\boldsymbol{\Delta}$ |
| United States | 80 | $\boldsymbol{\Delta}$ |
| Belgium (Flemish) | 80 | $\boldsymbol{\Delta}$ |
| Italy | 72 | $\boldsymbol{\Delta}$ |
| Cyprus | 70 | 0 |
| Lithuania | 69 | 0 |
| England | 68 | 0 |
| International average | 68 |  |
| Iran, Islamic Republic of | 63 | 0 |
| Australia | 62 | $\boldsymbol{\nabla}$ |
| New Zealand | 62 | $\boldsymbol{\nabla}$ |
| Hong Kong, SAR | 61 | $\boldsymbol{\nabla}$ |
| Slovenia | 61 | $\boldsymbol{\nabla}$ |
| Norway | 60 | $\boldsymbol{\nabla}$ |
| Moldova, Republic of | 59 | $\boldsymbol{\nabla}$ |
| Morocco | 53 | $\boldsymbol{\nabla}$ |
| Scotland | 52 | $\boldsymbol{\nabla}$ |
| Tunisia | 51 | $\boldsymbol{\nabla}$ |
| Philippines | 45 | $\boldsymbol{\nabla}$ |
| Armenia | 42 | $\boldsymbol{\nabla}$ |


| Country average vs. |  |
| :---: | :---: |
| International average: |  |
| Higher | O |
| Not different | $\square$ |

Item Number: M011021

| Correct Response: | B |
| :--- | :--- |


| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| NUMBER | Whole Numbers | Knowing Facts <br> and Procedures |

## Express number in words

Overall Percent Correct

Which of these is a name for 9,740 ?
(A) Nine thousand seventy-four
(B) Nine thousand seven hundred forty
(C) Nine thousand seventy-four hundred
(D) Nine hundred seventy-four thousand

| Chinese Taipei | 98 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| Hong Kong, SAR | 98 | $\boldsymbol{\Delta}$ |
| Singapore | 97 | $\boldsymbol{\Delta}$ |
| Japan | 96 | $\boldsymbol{\Delta}$ |
| England | 95 | $\boldsymbol{\Delta}$ |
| Belgium (Flemish) | 95 | $\boldsymbol{\Delta}$ |
| Netherlands | 92 | $\boldsymbol{\Delta}$ |
| Italy | 91 | $\boldsymbol{\Delta}$ |
| Lithuania | 91 | $\boldsymbol{\Delta}$ |
| United States | 91 | $\boldsymbol{\Delta}$ |
| Latvia | 90 | $\boldsymbol{\Delta}$ |
| Russian Federation | 90 | $\boldsymbol{\Delta}$ |
| Australia | 89 | 0 |
| Hungary | 88 | 0 |
| Moldova, Republic of | 87 | 0 |
| New Zealand | 87 | 0 |
| Scotland | 87 | 0 |
| International average | 86 |  |
| Cyprus | 85 | 0 |
| Slovenia | 81 | $\boldsymbol{\nabla}$ |
| Norway | 80 | $\boldsymbol{\nabla}$ |
| Armenia | 79 | $\boldsymbol{\nabla}$ |
| Philippines | 79 | $\boldsymbol{\nabla}$ |
| Iran, Islamic Republic of | 72 | $\boldsymbol{\nabla}$ |
| Morocco | 64 | $\boldsymbol{\nabla}$ |
| Tunisia | 50 | $\boldsymbol{\nabla}$ |


| Country average vs. |  |
| :---: | :---: |
| International average: |  |
| Higher | $\mathbf{A}$ |
| Not different | O |
| Lower | $\nabla$ |

Item Number: M011024


| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| NUMBER | Whole Numbers | Knowing Facts <br> and Procedures |

Which number is equal
Overall Percent Correct

Which number is equal to eight tens plus nine tens?

| Chinese Taipei | 91 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| Singapore | 87 | $\boldsymbol{\Delta}$ |
| Hungary | 85 | $\boldsymbol{\Delta}$ |
| Moldova, Republic of | 84 | $\boldsymbol{\Delta}$ |
| Hong Kong, SAR | 80 | $\boldsymbol{\Delta}$ |
| Netherlands | 77 | $\boldsymbol{\Delta}$ |
| Latvia | 75 | $\boldsymbol{\Delta}$ |
| Lithuania | 73 | $\boldsymbol{\Delta}$ |
| New Zealand | 73 | $\boldsymbol{\Delta}$ |
| England | 73 | $\boldsymbol{\Delta}$ |
| Armenia | 72 | $\boldsymbol{\Delta}$ |
| Russian Federation | 72 | $\boldsymbol{\Delta}$ |
| Belgium (Flemish) | 70 | $\boldsymbol{\Delta}$ |
| Japan | 69 | $\boldsymbol{\Delta}$ |
| Australia | 67 | 0 |
| Norway | 65 | 0 |
| United States | 65 | 0 |
| International average | 65 |  |
| Scotland | 64 | 0 |
| Cyprus | 54 | $\boldsymbol{\nabla}$ |
| Slovenia | 53 | $\boldsymbol{\nabla}$ |
| Italy | 51 | $\boldsymbol{\nabla}$ |
| Iran, Islamic Republic of | 34 | $\boldsymbol{\nabla}$ |
| Morocco | 29 | $\boldsymbol{\nabla}$ |
| Philippines | 28 | $\boldsymbol{\nabla}$ |
| Tunisia | 27 | $\boldsymbol{\nabla}$ |
|  |  |  |


| Country average vs. |  |
| :---: | :---: |
| International average: |  |
| Higher | $\mathbf{A}$ |
| Not different | O |
| Lower | $\nabla$ |

Item Number: M011028

Correct Response: $\quad$ B

| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| NUMBER | Whole Numbers | Knowing Facts <br> and Procedures |

15 times 9
$15 \times 9=$

Answer: $\qquad$

Overall Percent Correct

| Chinese Taipei | 94 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| Singapore | 93 | $\boldsymbol{\Delta}$ |
| Hong Kong, SAR | 91 | $\boldsymbol{\Delta}$ |
| Russian Federation | 90 | $\boldsymbol{\Delta}$ |
| Moldova, Republic of | 88 | $\boldsymbol{\Delta}$ |
| Lithuania | 87 | $\boldsymbol{\Delta}$ |
| Japan | 86 | $\boldsymbol{\Delta}$ |
| Latvia | 86 | $\boldsymbol{\Delta}$ |
| Netherlands | 86 | $\boldsymbol{\Delta}$ |
| Armenia | 85 | $\boldsymbol{\Delta}$ |
| Hungary | 85 | $\boldsymbol{\Delta}$ |
| Belgium (Flemish) | 84 | $\boldsymbol{\Delta}$ |
| Cyprus | 76 | $\boldsymbol{\Delta}$ |
| Italy | 75 | 0 |
| United States | 73 | 0 |
| International average | 72 |  |
| Tunisia | 68 | 0 |
| Slovenia | 67 | 0 |
| Iran, Islamic Republic of | 61 | $\boldsymbol{\nabla}$ |
| Philippines | 59 | $\boldsymbol{\nabla}$ |
| England | 59 | $\boldsymbol{\nabla}$ |
| Scotland | 54 | $\boldsymbol{\nabla}$ |
| Australia | 45 | $\boldsymbol{\nabla}$ |
| New Zealand | 41 | $\boldsymbol{\nabla}$ |
| Morocco | 36 | $\boldsymbol{\nabla}$ |
| Norway | 30 | $\boldsymbol{\nabla}$ |


| Country average vs. |  |
| :---: | :---: |
| International average: |  |
| Higher | O |
| Not different | Lower |

Country average vs. International average:

Item Number: M031305

## SCORING

## Correct Response

- 135


## Incorrect Response

- Incorrect (including crossed out/erased, stray marks, illegible, or off task)

15 times 9 (continued)
Item Number: M031305

## Student Responses

## Correct Response:

$15 \times 9=$
$\frac{9}{135}$
Answer: 130

Incorrect Response:
$15 \times 9=$

Answer: 55

| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| NUMBER | Whole Numbers | Knowing Facts <br> and Procedures |

204 divided by 4
$204 \div 4=$

Answer: $\qquad$
$\qquad$

Overall Percent Correct

| Hong Kong, SAR | 93 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| Singapore | 91 | $\boldsymbol{\Delta}$ |
| Chinese Taipei | 90 | $\boldsymbol{\Delta}$ |
| Russian Federation | 90 | $\boldsymbol{\Delta}$ |
| Hungary | 86 | $\boldsymbol{\Delta}$ |
| Moldova, Republic of | 85 | $\boldsymbol{\Delta}$ |
| Japan | 84 | $\boldsymbol{\Delta}$ |
| Latvia | 82 | $\boldsymbol{\Delta}$ |
| Lithuania | 82 | $\boldsymbol{\Delta}$ |
| Belgium (Flemish) | 77 | $\boldsymbol{\Delta}$ |
| Cyprus | 72 | $\boldsymbol{\Delta}$ |
| Italy | 71 | $\boldsymbol{\Delta}$ |
| Armenia | 70 | $\boldsymbol{\Delta}$ |
| Netherlands | 65 | 0 |
| International average | 63 |  |
| United States | 55 | $\boldsymbol{\nabla}$ |
| Tunisia | 47 | $\boldsymbol{\nabla}$ |
| Iran, Islamic Republic of | 46 | $\boldsymbol{\nabla}$ |
| England | 46 | $\boldsymbol{\nabla}$ |
| Scotland | 42 | $\boldsymbol{\nabla}$ |
| Slovenia | 41 | $\boldsymbol{\nabla}$ |
| Philippines | 38 | $\boldsymbol{\nabla}$ |
| Australia | 33 | $\boldsymbol{\nabla}$ |
| New Zealand | 33 | $\boldsymbol{\nabla}$ |
| Norway | 27 | $\boldsymbol{\nabla}$ |
| Morocco | 17 | $\boldsymbol{\nabla}$ |

[^0] International average:

| Higher | $\Delta$ |
| :--- | :--- |
| Not different | O |
| Lower | $\nabla$ |

Item Number: M031306

## SCORING

## Correct Response

- 51


## Incorrect Response

- Incorrect (including crossed out/erased, stray marks, illegible, or off task)

204 divided by 4 (continued)
Item Number: M031306

## Student Responses

## Correct Response:



Incorrect Response:

```
204\div4=
```

Answer: $150 \Omega 4$


| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| NUMBER | Whole Numbers | Reasoning |

The number Lia should add to 142 to get 369

Lia is practicing addition and subtraction problems. What number should Lia add to 142 to get 369 ?

Answer: $\qquad$

## Overall Percent Correct

| Singapore | 88 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| Hungary | 86 | $\boldsymbol{\Delta}$ |
| Russian Federation | 85 | $\boldsymbol{\Delta}$ |
| Chinese Taipei | 83 | $\boldsymbol{\Delta}$ |
| Lithuania | 83 | $\boldsymbol{\Delta}$ |
| Hong Kong, SAR | 82 | $\boldsymbol{\Delta}$ |
| Japan | 81 | $\boldsymbol{\Delta}$ |
| Latvia | 79 | $\boldsymbol{\Delta}$ |
| Belgium (Flemish) | 72 | $\boldsymbol{\Delta}$ |
| United States | 71 | $\boldsymbol{\Delta}$ |
| Netherlands | 69 | $\boldsymbol{\Delta}$ |
| Armenia | 64 | 0 |
| Cyprus | 64 | 0 |
| Moldova, Republic of | 64 | 0 |
| International average | 62 |  |
| England | 59 | 0 |
| Italy | 57 | 0 |
| Slovenia | 54 | $\boldsymbol{\nabla}$ |
| Australia | 52 | $\boldsymbol{\nabla}$ |
| Scotland | 51 | $\boldsymbol{\nabla}$ |
| New Zealand | 46 | $\boldsymbol{\nabla}$ |
| Iran, Islamic Republic of | 39 | $\boldsymbol{\nabla}$ |
| Norway | 37 | $\boldsymbol{\nabla}$ |
| Tunisia | 29 | $\boldsymbol{\nabla}$ |
| Philippines | 28 | $\boldsymbol{\nabla}$ |
| Morocco | 24 | $\boldsymbol{\nabla}$ |
|  |  |  |

Country average vs. International average:

| Higher | $\Delta$ |
| :--- | :--- |
| Not different | O |
| Lower | $\nabla$ |

Item Number: M031130

## SCORING

## Correct Response

- 227


## Incorrect Response

- Incorrect (including crossed out/erased, stray marks, illegible, or off task)

The number Lia should add to 142 to get 369 (continued)

## Student Responses

## Correct Response:

Lia is practicing addition and subtraction problems. What number should Lia add to 142 to get 369 ?


Incorrect Response:
Lia is practicing addition and subtraction problems. What number should Lia add to 142 to get 369 ?

Answer: $\quad 9 \quad \sigma$


| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| NUMBER | Whole Numbers | Reasoning |

1279 plus 243 by mistake

## Overall Percent Correct

Juanita wanted to use her calculator to add 1,379 and 243 . She entered

| Hungary | 89 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| Netherlands | 88 | $\boldsymbol{\Delta}$ |
| Belgium (Flemish) | 88 | $\boldsymbol{\Delta}$ |
| Chinese Taipei | 85 | $\boldsymbol{\Delta}$ |
| Hong Kong, SAR | 84 | $\boldsymbol{\Delta}$ |
| Japan | 83 | $\boldsymbol{\Delta}$ |
| Russian Federation | 83 | $\boldsymbol{\Delta}$ |
| Singapore | 83 | $\boldsymbol{\Delta}$ |
| England | 82 | $\boldsymbol{\Delta}$ |
| Latvia | 79 | $\boldsymbol{\Delta}$ |
| Lithuania | 77 | $\boldsymbol{\Delta}$ |
| Slovenia | 77 | 0 |
| Australia | 76 | $\mathbf{\Delta}$ |
| United States | 75 | $\mathbf{\Delta}$ |
| Scotland | 74 | 0 |
| Cyprus | 73 | 0 |
| International average | 72 |  |
| Italy | 70 | 0 |
| Norway | 70 | 0 |
| Moldova, Republic of | 68 | O |
| New Zealand | 68 | $\boldsymbol{\nabla}$ |
| Armenia | 64 | $\boldsymbol{\nabla}$ |
| Philippines | 47 | $\boldsymbol{\nabla}$ |
| Iran, Islamic Republic of | 45 | $\boldsymbol{\nabla}$ |
| Tunisia | 39 | $\boldsymbol{\nabla}$ |
| Morocco | 38 | $\boldsymbol{\nabla}$ |


| Country average vs. |  |
| :--- | :---: |
| International average: |  |
| Higher | $\Delta$ |
| Not different | O |
| Lower | $\mathbf{\nabla}$ |

Item Number: M031341

| Correct Response: | A |
| :---: | :---: |


| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| NUMBER | Whole Numbers | Solving Routine Problems |

Total number of boys and girls

In Toshi's class there are twice as many girls as boys. There are 8 boys in the class. What is the total number of boys and girls in the class?
(A) 12
(B) 16
(C) 20
(D) 24

Overall Percent Correct

| Netherlands | 82 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| Singapore | 81 | $\boldsymbol{\Delta}$ |
| New Zealand | 64 | $\boldsymbol{\Delta}$ |
| Hungary | 62 | $\boldsymbol{\Delta}$ |
| Japan | 62 | $\boldsymbol{\Delta}$ |
| Belgium (Flemish) | 62 | $\boldsymbol{\Delta}$ |
| Australia | 60 | $\boldsymbol{\Delta}$ |
| Lithuania | 60 | $\boldsymbol{\Delta}$ |
| England | 60 | $\boldsymbol{\Delta}$ |
| Cyprus | 56 | $\boldsymbol{\Delta}$ |
| United States | 54 | $\boldsymbol{\Delta}$ |
| Latvia | 53 | 0 |
| Russian Federation | 53 | 0 |
| Italy | 51 | 0 |
| International average | 51 |  |
| Hong Kong, SAR | 50 | 0 |
| Slovenia | 50 | 0 |
| Norway | 49 | 0 |
| Scotland | 48 | 0 |
| Moldova, Republic of | 47 | 0 |
| Armenia | 40 | $\boldsymbol{\nabla}$ |
| Chinese Taipei | 29 | $\boldsymbol{\nabla}$ |
| Morocco | 24 | $\boldsymbol{\nabla}$ |
| Tunisia | 24 | $\boldsymbol{\nabla}$ |
| Philippines | 22 | $\boldsymbol{\nabla}$ |
| Iran, Islamic Republic of | 20 | $\boldsymbol{\nabla}$ |
|  |  |  |

Country average vs. International average:

| Higher | $\Delta$ |
| :--- | :--- |
| Not different | O |
| Lower | $\nabla$ |


| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| NUMBER | Whole Numbers | Solving Routine Problems |

Total number of pencils

There are 9 boxes of pencils. Each box has 125 pencils. What is the total number of pencils?
(A) 1,025
(B) 1,100
(C) 1,125
(D) 1,220
(E) 1,225

Overall Percent Correct

| Singapore | 91 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| Chinese Taipei | 83 | $\boldsymbol{\Delta}$ |
| Russian Federation | 79 | $\boldsymbol{\Delta}$ |
| Hong Kong, SAR | 77 | $\boldsymbol{\Delta}$ |
| Cyprus | 76 | $\boldsymbol{\Delta}$ |
| United States | 76 | $\boldsymbol{\Delta}$ |
| Japan | 74 | $\boldsymbol{\Delta}$ |
| Hungary | 73 | $\boldsymbol{\Delta}$ |
| Lithuania | 73 | $\boldsymbol{\Delta}$ |
| Latvia | 72 | $\boldsymbol{\Delta}$ |
| Italy | 70 | $\boldsymbol{\Delta}$ |
| Moldova, Republic of | 69 | $\boldsymbol{\Delta}$ |
| Armenia | 66 | $\mathbf{O}$ |
| Netherlands | 64 | 0 |
| Belgium (Flemish) | 63 | 0 |
| International average | 63 |  |
| England | 55 | $\boldsymbol{\nabla}$ |
| Scotland | 51 | $\boldsymbol{\nabla}$ |
| Slovenia | 50 | $\boldsymbol{\nabla}$ |
| Iran, Islamic Republic of | 49 | $\boldsymbol{\nabla}$ |
| Philippines | 49 | $\boldsymbol{\nabla}$ |
| Australia | 48 | $\boldsymbol{\nabla}$ |
| New Zealand | 47 | $\boldsymbol{\nabla}$ |
| Tunisia | 45 | $\boldsymbol{\nabla}$ |
| Morocco | 37 | $\boldsymbol{\nabla}$ |
| Norway | 34 | $\boldsymbol{\nabla}$ |


| Country average vs. |  |
| :---: | :---: |
| International average: |  |
| Higher | $\mathbf{A}$ |
| Not different | O |
| Lower | $\nabla$ |

Country average vs. International average:

| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| NUMBER | Whole Numbers | Solving Routine Problems |

How long to wash windows

It takes Chris 4 minutes to wash a window. He wants to know how many minutes it will take him to wash 8 windows at this rate. He should
(A) multiply $4 \times 8$
(B) divide 8 by 4
(C) subtract 4 from 8
(D) add 8 and 4

## Overall Percent Correct

| Chinese Taipei | 94 | $\boldsymbol{\Delta}$ |
| :--- | :--- | :--- |
| Singapore | 93 | $\boldsymbol{\Delta}$ |
| Netherlands | 92 | $\boldsymbol{\Delta}$ |
| Hong Kong, SAR | 91 | $\boldsymbol{\Delta}$ |
| Japan | 91 | $\boldsymbol{\Delta}$ |
| Belgium (Flemish) | 89 | $\boldsymbol{\Delta}$ |
| Lithuania | 88 | $\boldsymbol{\Delta}$ |
| United States | 88 | $\boldsymbol{\Delta}$ |
| England | 88 | $\boldsymbol{\Delta}$ |
| Cyprus | 85 | $\boldsymbol{\Delta}$ |
| Hungary | 84 | $\boldsymbol{\Delta}$ |
| Latvia | 83 | $\boldsymbol{\Delta}$ |
| Russian Federation | 83 | $\boldsymbol{\Delta}$ |
| Australia | 81 | $\boldsymbol{\Delta}$ |
| Italy | 79 | $\mathbf{O}$ |
| Scotland | 79 | 0 |
| Moldova, Republic of | 77 | 0 |
| International average | 77 |  |
| Armenia | 73 | $\boldsymbol{\nabla}$ |
| New Zealand | 73 | $\boldsymbol{\nabla}$ |
| Slovenia | 69 | $\boldsymbol{\nabla}$ |
| Norway | 68 | $\boldsymbol{\nabla}$ |
| Philippines | 56 | $\boldsymbol{\nabla}$ |
| Iran, Islamic Republic of | 51 | $\boldsymbol{\nabla}$ |
| Morocco | 40 | $\boldsymbol{\nabla}$ |
| Tunisia | 40 | $\boldsymbol{\nabla}$ |

Country average vs. International average:

| Higher | $\Delta$ |
| :--- | :--- |
| Not different | O |
| Lower | $\nabla$ |

Item Number: M011011

## Correct Response: <br> A

| Content Domain | Main Topic | Cognitive Domain |
| :---: | :---: | :---: |
| NUMBER | Whole Numbers | Solving Routine Problems |

## Estimate number of cabbages

Mark's garden has 84 rows of cabbages. There are 57 cabbages in each row. Which of these gives the BEST way to estimate how many cabbages there are altogether?
(A) $100 \times 50=5,000$
(B) $90 \times 60=5,400$
(C) $80 \times 60=4,800$
(D) $80 \times 50=4,000$

Overall Percent Correct

| Singapore | 84 | $\Delta$ |
| :---: | :---: | :---: |
| Hong Kong, SAR | 71 | A |
| United States | 70 | - |
| Netherlands | 68 | $\Delta$ |
| Belgium (Flemish) | 68 | - |
| Hungary | 66 | $\Delta$ |
| Moldova, Republic of | 62 | $\Delta$ |
| Chinese Taipei | 61 | $\Delta$ |
| Japan | 59 | $\Delta$ |
| Cyprus | 55 | $\Delta$ |
| England | 51 | 0 |
| International average | 50 |  |
| Australia | 48 | 0 |
| Lithuania | 46 | $\nabla$ |
| Armenia | 45 | $\nabla$ |
| Russian Federation | 45 | 0 |
| Slovenia | 45 | $\nabla$ |
| Scotland | 42 | $\nabla$ |
| Latvia | 40 | $\nabla$ |
| New Zealand | 36 | $\nabla$ |
| Philippines | 35 | $\nabla$ |
| Italy | 34 | $\nabla$ |
| Norway | 32 | $\nabla$ |
| Tunisia | 31 | $\nabla$ |
| Iran, Islamic Republic of | 30 | $\nabla$ |
| Morocco | 26 | $\nabla$ |


| Country average vs. |  |
| :---: | :---: |
| International average: |  |
| Higher | $\mathbf{A}$ |
| Not different | O |
| Lower | $\nabla$ |

Country average vs. International average:

Item Number: M012117


[^0]:    Country average vs.

