

TRENDS IN INTERNATIONAL MATHEMATICS AND SCIENCE STUDY

TIMSS

63 (1.7) ▲

62 (1.4) ▲

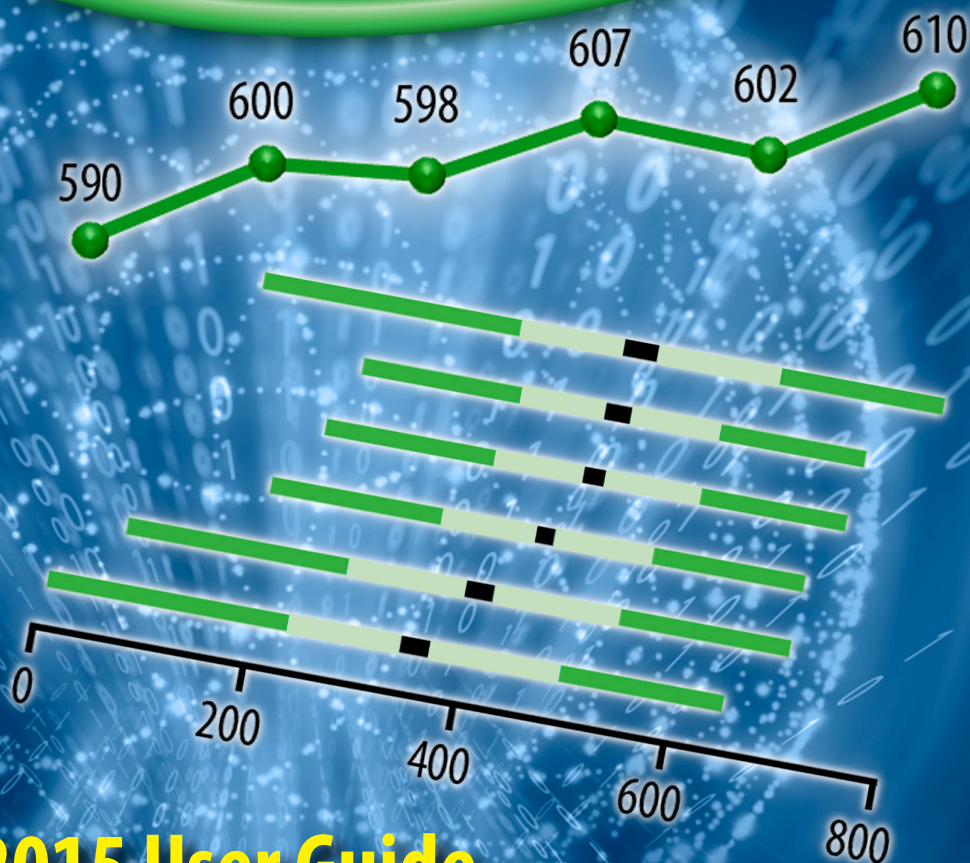
57 (2.0) ▲

53 (0.7) ▼

50 (1.3) ▼

41 (1.3) ▼

38 (1.9) ▼



TIMSS Advanced 2015 User Guide for the International Database

ITEM PERCENT CORRECT STATISTICS

Physics



TIMSS & PIRLS
International Study Center
Lynch School of Education, Boston College

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P1_01 (PA13011): Fraunhofer lines
Multiple Choice (Key is B)

Country	Percent Correct	
Norway	87 (1.2)	▲
France	76 (1.5)	▲
Portugal	64 (2.6)	▲
Slovenia	60 (2.7)	
International Avg.	56 (0.7)	
Lebanon	47 (2.6)	▼
Sweden	44 (1.8)	▼
Russian Federation	43 (2.5)	▼
Italy	42 (1.5)	▼
United States	41 (2.8)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P1_02 (PA13012): Force on connected springs
Multiple Choice (Key is C)

Country	Percent Correct	
Russian Federation	35 (2.9)	▲
Slovenia	35 (2.4)	▲
Norway	34 (2.1)	▲
United States	23 (3.1)	
International Avg.	21 (0.7)	
Sweden	20 (1.5)	
Lebanon	13 (1.8)	▼
France	10 (0.8)	▼
Portugal	10 (1.7)	▼
Italy	9 (1.2)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P1_03 (PA13013): Rutherford experiment
Multiple Choice (Key is C)

Country	Percent Correct	
Russian Federation	49 (2.5)	▲
United States	40 (2.2)	▲
Norway	40 (1.7)	▲
Italy	35 (1.7)	
International Avg.	34 (0.7)	
Sweden	32 (1.9)	
Slovenia	31 (2.6)	
France	30 (1.4)	▼
Portugal	29 (2.4)	▼
Lebanon	23 (2.2)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P1_04 (PA13014): Speed of aircraft
Multiple Choice (Key is B)

Country	Percent Correct	
Russian Federation	74 (1.7)	▲
Norway	68 (2.0)	▲
Slovenia	59 (2.7)	▲
Portugal	55 (2.5)	▲
International Avg.	49 (0.8)	
United States	43 (3.2)	▼
Italy	39 (2.0)	▼
Sweden	38 (2.3)	▼
Lebanon	34 (2.7)	▼
France	28 (1.5)	▼

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- ▲ Percent significantly higher than international average
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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P1_05 (PA13015): Heat transfer
Multiple Choice (Key is C)

Country	Percent Correct	
Portugal	88 (1.4)	▲
Russian Federation	84 (1.8)	▲
France	82 (1.5)	▲
Sweden	81 (1.1)	▲
International Avg.	71 (0.7)	
Italy	71 (1.7)	
Norway	68 (1.6)	▼
Slovenia	63 (2.5)	▼
United States	53 (3.3)	▼
Lebanon	52 (2.8)	▼

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P1_06 (PA13016): Direction of magnetic force on wire
Multiple Choice (Key is D)

Country	Percent Correct	
Russian Federation	51 (2.5)	▲
Norway	31 (1.7)	▲
Slovenia	28 (2.1)	▲
International Avg.	22 (0.6)	
Sweden	20 (1.3)	
Italy	19 (1.4)	▼
Lebanon	18 (2.0)	▼
United States	15 (1.8)	▼
Portugal	13 (1.8)	▼
France	8 (0.9)	▼

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P1_07 (PA13017): Photoelectric effect
Multiple Choice (Key is D)

Country	Percent Correct	
Slovenia	68 (2.5)	▲
Russian Federation	67 (1.5)	▲
Sweden	64 (1.7)	▲
United States	59 (1.8)	
Norway	56 (1.6)	
International Avg.	56 (0.7)	
Italy	49 (2.2)	▼
Portugal	48 (2.8)	▼
France	47 (1.6)	▼
Lebanon	44 (2.6)	▼

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P1_08 (PA13018): Bulbs using least power
Multiple Choice (Key is C)

Country	Percent Correct	
Slovenia	59 (1.9)	▲
Sweden	51 (1.5)	▲
Norway	50 (1.9)	▲
Lebanon	50 (2.4)	▲
International Avg.	44 (0.7)	
United States	43 (2.4)	
Russian Federation	41 (2.4)	
Italy	36 (1.5)	▼
Portugal	36 (3.2)	▼
France	28 (1.5)	▼

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P1_09 (PA13019): Nuclear change in an atom
Multiple Choice (Key is B)

Country	Percent Correct	
Russian Federation	73 (1.9)	▲
Lebanon	57 (3.6)	▲
Slovenia	41 (2.5)	▲
International Avg.	32 (0.7)	
United States	26 (2.0)	▼
Norway	24 (1.7)	▼
Sweden	22 (1.4)	▼
France	19 (1.1)	▼
Portugal	14 (2.4)	▼
Italy	13 (1.4)	▼

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P2_01A (PA33061A): Acceleration of vertically Multiple Choice (Key is D)

Country	Percent Correct	
Norway	56 (2.2)	▲
United States	51 (2.7)	▲
Slovenia	48 (2.5)	▲
Portugal	45 (2.8)	▲
Russian Federation	45 (2.4)	▲
International Avg.	34 (0.7)	
Sweden	25 (1.7)	▼
Lebanon	19 (2.6)	▼
France	9 (1.0)	▼
Italy	9 (1.1)	▼

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P2_01B (PA33061B): Time duration of vertically thrown ball
Constructed Response (1 Point)

Country	Percent Correct	
Slovenia	72 (2.3)	▲
United States	64 (3.4)	▲
Norway	63 (1.9)	▲
Portugal	55 (2.5)	▲
Sweden	49 (1.5)	
Russian Federation	49 (2.0)	
International Avg.	48 (0.8)	
France	30 (1.5)	▼
Lebanon	30 (3.2)	▼
Italy	20 (1.3)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P2_02 (PA33004): Expected temperature of water Constructed Response (1 Point)

Country	Percent Correct	
Slovenia	59 (2.5)	▲
Portugal	47 (3.1)	▲
Sweden	32 (1.7)	
International Avg.	31 (0.7)	
United States	31 (2.2)	
Norway	31 (1.6)	
Russian Federation	28 (2.3)	
Italy	26 (1.4)	▼
France	18 (1.3)	▼
Lebanon	9 (1.6)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P2_03 (PA33044): Path of curved bar through air
Multiple Choice (Key is D)

Country	Percent Correct	
United States	45 (2.4)	▲
Portugal	42 (2.2)	▲
Italy	39 (1.5)	▲
France	38 (1.5)	▲
Lebanon	35 (2.7)	
International Avg.	33 (0.7)	
Slovenia	30 (2.2)	
Norway	29 (1.6)	▼
Sweden	20 (1.8)	▼
Russian Federation	15 (3.3)	▼

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P2_04 (PA33075): Energy to heat water Constructed Response (1 Point)

Country	Percent Correct	
Slovenia	77 (2.2)	▲
Russian Federation	68 (2.4)	▲
Portugal	57 (2.9)	▲
Sweden	53 (2.3)	▲
International Avg.	42 (0.7)	
Italy	39 (1.7)	▼
France	29 (1.9)	▼
United States	26 (2.1)	▼
Norway	17 (1.4)	▼
Lebanon	12 (1.8)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

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▼ Percent significantly lower than international average

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P2_05A (PA33102A): Forces in electric field (DERIVED)
Constructed Response (1 Point)

Country	Percent Correct	
Portugal	77 (2.2)	▲
France	76 (1.2)	▲
Norway	75 (1.5)	▲
Russian Federation	73 (2.0)	▲
United States	68 (2.3)	
International Avg.	68 (0.8)	
Slovenia	67 (3.1)	
Italy	66 (1.9)	
Sweden	66 (1.3)	
Lebanon	41 (3.8)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P2_05AA (PA33102AA): Direction of force at Point X
Multiple Choice (Key is B)

Country	Percent Correct	
Portugal	82 (1.7)	▲
Norway	81 (1.4)	▲
France	80 (1.1)	▲
Russian Federation	78 (1.9)	▲
United States	76 (1.9)	
Sweden	74 (1.3)	
International Avg.	73 (0.7)	
Slovenia	73 (2.4)	
Italy	73 (1.7)	
Lebanon	44 (3.8)	▼

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P2_05AB (PA33102AB): Direction of force at Point Y
Multiple Choice (Key is C)

Country	Percent Correct	
Portugal	82 (2.0)	▲
France	82 (1.0)	▲
Norway	81 (1.5)	▲
Russian Federation	79 (1.7)	▲
Slovenia	77 (2.9)	
International Avg.	74 (0.7)	
United States	74 (2.1)	
Italy	72 (1.7)	
Sweden	71 (1.4)	▼
Lebanon	47 (4.0)	▼

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P2_05AC (PA33102AC): Direction of force at Point Z
Multiple Choice (Key is E)

Country	Percent Correct	
France	94 (0.7)	▲
Norway	93 (0.7)	▲
Portugal	92 (1.2)	▲
Sweden	90 (0.7)	▲
Russian Federation	89 (1.3)	▲
Slovenia	87 (2.3)	
International Avg.	86 (0.6)	
Italy	86 (1.2)	
United States	85 (2.3)	
Lebanon	60 (3.8)	▼

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P2_05B (PA33102B): Order points by field strength
Constructed Response (1 Point)

Country	Percent Correct	
Portugal	69 (2.8)	▲
Slovenia	58 (2.7)	▲
France	54 (2.0)	▲
International Avg.	50 (0.8)	
Lebanon	50 (3.2)	
Russian Federation	50 (2.3)	
Norway	47 (1.7)	▼
Sweden	46 (1.4)	▼
United States	43 (3.4)	▼
Italy	35 (1.9)	▼

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P2_06 (PA33121): Heating an iron plate
Multiple Choice (Key is B)

Country	Percent Correct	
Norway	67 (2.8)	▲
Italy	65 (1.8)	▲
Russian Federation	64 (2.2)	▲
Slovenia	59 (3.0)	▲
Sweden	53 (2.0)	
International Avg.	50 (0.8)	
France	45 (1.5)	▼
United States	38 (3.5)	▼
Portugal	36 (2.2)	▼
Lebanon	23 (2.4)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P2_07 (PA33115): Nuclear power plant fuel
Multiple Choice (Key is A)

Country	Percent Correct	
Norway	60 (2.2)	▲
Russian Federation	54 (1.9)	▲
Slovenia	43 (2.7)	
Italy	42 (2.0)	▲
International Avg.	38 (0.8)	
Lebanon	37 (2.8)	
Sweden	36 (1.9)	
United States	29 (2.7)	▼
Portugal	26 (2.6)	▼
France	14 (1.1)	▼

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P2_08 (PA33005): Sound wavelength in air
Constructed Response (1 Point)

Country	Percent Correct	
Portugal	73 (2.5)	▲
Slovenia	72 (2.4)	▲
Russian Federation	64 (3.0)	▲
Norway	59 (1.9)	
Lebanon	59 (3.0)	
International Avg.	58 (0.9)	
Sweden	53 (2.2)	▼
United States	53 (3.9)	
France	47 (1.6)	▼
Italy	43 (2.3)	▼

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P2_09A (PA33101A): Temperature and frequency intensity Multiple Choice (Key is C)

Country	Percent Correct	
Portugal	69 (2.5)	▲
Norway	67 (1.7)	▲
United States	57 (1.9)	
Russian Federation	54 (2.6)	
Sweden	54 (1.5)	
International Avg.	54 (0.7)	
Slovenia	54 (2.6)	
France	47 (1.6)	▼
Italy	47 (2.0)	▼
Lebanon	34 (2.2)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P2_09B (PA33101B): Wavelength of max intensity radiation
Constructed Response (1 Point)

Country	Percent Correct	
Lebanon	33 (3.1)	▲
Slovenia	26 (2.3)	▲
Sweden	16 (1.5)	
Russian Federation	14 (1.6)	
International Avg.	14 (0.6)	
United States	11 (1.5)	▼
France	9 (0.8)	▼
Norway	6 (1.0)	▼
Portugal	6 (1.5)	▼
Italy	3 (0.6)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

**P3_01 (PA23071): Graph of ball's potential energy
Multiple Choice (Key is B)**

Country	Percent Correct	
Slovenia	64 (2.5)	▲
Sweden	61 (1.6)	▲
Portugal	60 (2.3)	
Lebanon	60 (3.8)	
United States	60 (2.0)	
Norway	58 (1.8)	
International Avg.	57 (0.8)	
France	57 (1.6)	
Italy	51 (1.7)	▼
Russian Federation	45 (2.6)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P3_02 (PA23146): Direction of acceleration of body
Constructed Response (1 Point)

Country	Percent Correct	
Norway	83 (1.6)	▲
Russian Federation	82 (1.8)	▲
Portugal	66 (2.7)	▲
Slovenia	60 (3.4)	▲
United States	56 (3.3)	
Sweden	55 (2.4)	
International Avg.	53 (0.8)	
Italy	34 (1.9)	▼
Lebanon	24 (2.3)	▼
France	22 (1.5)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P3_03 (PA23029): Explain tennis ball rebound height
Multiple Choice (Key is D)

Country	Percent Correct	
Norway	58 (2.0)	▲
Slovenia	58 (2.7)	▲
Portugal	55 (2.6)	▲
Russian Federation	51 (2.2)	▲
United States	46 (3.2)	
Sweden	44 (1.8)	
International Avg.	43 (0.8)	
Lebanon	33 (3.2)	▼
Italy	23 (1.6)	▼
France	18 (1.4)	▼

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P3_04 (PA23104): Direction of electric force
Multiple Choice (Key is C)

Country	Percent Correct	
Russian Federation	65 (2.1)	▲
Slovenia	59 (2.7)	▲
Norway	59 (1.9)	▲
Portugal	56 (2.7)	
Sweden	54 (1.9)	
International Avg.	51 (0.8)	
Italy	48 (2.1)	
Lebanon	43 (3.8)	▼
United States	43 (2.0)	▼
France	35 (1.2)	▼

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P3_05 (PA23038): Connections in decreasing resistance
Multiple Choice (Key is A)

Country	Percent Correct	
Slovenia	61 (2.6)	▲
Russian Federation	60 (2.1)	▲
Norway	42 (2.0)	
International Avg.	39 (0.7)	
Sweden	38 (1.6)	
United States	36 (2.5)	
Lebanon	32 (2.4)	▼
Italy	32 (2.0)	▼
Portugal	31 (2.7)	▼
France	23 (1.3)	▼

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▼ Percent significantly lower than international average

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P3_06 (PA23041): Explain what symbols represent Constructed Response (1 Point)

Country	Percent Correct	
Norway	75 (2.0)	▲
Russian Federation	71 (2.3)	▲
Slovenia	71 (2.6)	▲
Italy	66 (2.2)	▲
Sweden	54 (2.3)	
Lebanon	51 (2.7)	
International Avg.	50 (0.8)	
Portugal	34 (2.4)	▼
United States	25 (2.7)	▼
France	5 (0.6)	▼

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P3_07 (PA23053): Gas volume when pressure doubled Constructed Response (2 Points)

Country	Percent Full Credit	Percent at Least 1 Point
Slovenia	50 (2.9) ▲	67 (2.7) ▲
Russian Federation	42 (2.5) ▲	58 (2.7) ▲
Lebanon	21 (2.4)	42 (2.8) ▲
International Avg.	18 (0.6)	36 (0.8)
Italy	12 (1.2) ▼	34 (1.9)
Sweden	12 (1.0) ▼	30 (2.2) ▼
United States	11 (1.6) ▼	34 (3.2)
Norway	6 (0.8) ▼	19 (1.4) ▼
Portugal	6 (1.0) ▼	28 (2.3) ▼
France	1 (0.2) ▼	9 (0.9) ▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P3_08 (PA23148): Why temp decrease when air rises
Multiple Choice (Key is B)

Country	Percent Correct	
Norway	82 (1.5)	▲
Slovenia	71 (3.0)	▲
Russian Federation	71 (1.8)	▲
United States	69 (1.8)	▲
Sweden	66 (1.7)	
International Avg.	65 (0.7)	
Italy	59 (2.0)	▼
Portugal	59 (2.6)	▼
France	57 (1.4)	▼
Lebanon	47 (2.8)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

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▼ Percent significantly lower than international average

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P3_09 (PA23119): Why food stays at same temp in Sun Constructed Response (2 Points)

Country	Percent Full Credit	Percent at Least 1 Point
Slovenia	23 (2.3) ▲	28 (2.6) ▲
Portugal	18 (1.9) ▲	26 (2.2) ▲
Norway	16 (1.3) ▲	16 (1.3)
Sweden	12 (1.0) ▲	15 (1.1)
United States	10 (1.2)	15 (1.6)
International Avg.	10 (0.4)	15 (0.5)
Russian Federation	7 (0.9) ▼	20 (1.5) ▲
France	4 (0.6) ▼	5 (0.7) ▼
Italy	3 (0.6) ▼	10 (1.1) ▼
Lebanon	0 (0.0) ▼	1 (0.4) ▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P3_10 (PA23088): Protons and neutrons in isotopes
Constructed Response (1 Point)

Country	Percent Correct	
Russian Federation	71 (1.9)	▲
Norway	63 (2.2)	▲
Lebanon	61 (3.3)	▲
Slovenia	55 (2.9)	▲
Sweden	48 (1.9)	
International Avg.	46 (0.8)	
United States	35 (3.5)	▼
Portugal	35 (2.1)	▼
France	22 (1.2)	▼
Italy	20 (1.6)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P3_11 (PA23066): Complete equation for reaction
Constructed Response (1 Point)

Country	Percent Correct	
Norway	52 (2.0)	▲
Russian Federation	51 (2.6)	▲
Lebanon	40 (3.0)	▲
Sweden	34 (1.9)	▲
Slovenia	32 (2.9)	
International Avg.	28 (0.7)	
Portugal	17 (2.1)	▼
France	17 (1.1)	▼
United States	9 (1.1)	▼
Italy	4 (0.9)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P4_01 (PA33078): Oxygen temperature ratio
Multiple Choice (Key is A)

Country	Percent Correct	
Russian Federation	67 (2.0)	▲
Slovenia	61 (2.7)	▲
Portugal	44 (2.2)	
Italy	43 (2.1)	
International Avg.	43 (0.7)	
United States	43 (3.1)	
Lebanon	42 (2.7)	
Norway	35 (1.7)	▼
Sweden	32 (1.8)	▼
France	23 (1.3)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P4_02 (PA33088): Force of Sun on two planets
Multiple Choice (Key is A)

Country	Percent Correct	
Russian Federation	77 (1.5)	▲
Slovenia	75 (2.8)	▲
Norway	66 (1.7)	▲
United States	60 (3.6)	
Portugal	57 (2.6)	
Sweden	55 (2.1)	
International Avg.	55 (0.8)	
Italy	54 (2.0)	
France	28 (1.7)	▼
Lebanon	26 (2.8)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P4_03 (PA33058): Skiing collision
Constructed Response (2 Points)

Country	Percent Full Credit	Percent at Least 1 Point
Norway	57 (2.4) ▲	67 (2.2) ▲
Slovenia	49 (3.0) ▲	64 (2.9) ▲
Lebanon	47 (2.9) ▲	64 (3.2) ▲
Russian Federation	37 (2.4)	70 (2.4) ▲
United States	35 (2.7)	52 (3.5)
International Avg.	34 (0.8)	47 (0.9)
Portugal	29 (2.9)	34 (3.3) ▼
Sweden	25 (2.5) ▼	34 (2.3) ▼
Italy	12 (1.4) ▼	18 (1.9) ▼
France	11 (1.3) ▼	17 (1.4) ▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P4_04 (PA33057): Final velocity of colliding balls
Multiple Choice (Key is C)

Country	Percent Correct	
Norway	55 (1.8)	▲
United States	50 (2.8)	▲
Slovenia	48 (2.7)	▲
Portugal	43 (2.4)	
Sweden	40 (2.0)	
International Avg.	39 (0.7)	
Russian Federation	36 (2.0)	
Italy	33 (1.7)	▼
Lebanon	25 (2.2)	▼
France	24 (1.3)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P4_05 (PA33047): Rubbed balloon sticks to wall
Constructed Response (1 Point)

Country	Percent Correct	
United States	16 (1.8)	▲
Sweden	14 (1.4)	▲
Slovenia	12 (1.7)	▲
Russian Federation	9 (1.2)	
Lebanon	8 (1.6)	
International Avg.	8 (0.4)	
Italy	6 (0.7)	▼
Norway	5 (1.0)	▼
Portugal	2 (0.5)	▼
France	1 (0.3)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P4_06 (PA33012): Pacemakers and electrical fields
Multiple Choice (Key is C)

Country	Percent Correct	
Slovenia	57 (2.5)	▲
Norway	44 (1.9)	▲
United States	41 (3.6)	▲
Russian Federation	35 (2.6)	
Sweden	34 (2.2)	
International Avg.	33 (0.8)	
Italy	28 (1.9)	▼
Portugal	26 (2.4)	▼
France	19 (1.3)	▼
Lebanon	12 (2.0)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P4_07 (PA33120): Deflected electron beam
Multiple Choice (Key is B)

Country	Percent Correct	
Russian Federation	50 (2.3)	▲
Norway	39 (1.8)	▲
Sweden	39 (1.5)	▲
Slovenia	36 (2.5)	
International Avg.	32 (0.7)	
Lebanon	28 (2.2)	▼
Italy	27 (1.6)	▼
United States	23 (1.7)	▼
Portugal	13 (1.6)	▼
France	- -	

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A dash (-) indicates comparable data not available

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P4_08A (PA33079A): Electromagnetic radiation Multiple Choice (Key is D)

Country	Percent Correct	
Russian Federation	56 (2.2)	▲
Norway	49 (1.8)	▲
Slovenia	46 (2.5)	▲
Portugal	44 (2.6)	
International Avg.	41 (0.7)	
France	40 (2.0)	
Sweden	39 (1.6)	
United States	34 (2.0)	▼
Italy	32 (1.9)	▼
Lebanon	26 (2.5)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P4_08B (PA33079B): Harmful radiation Constructed Response (1 Point)

Country	Percent Correct	
Norway	53 (2.1)	▲
Portugal	38 (2.3)	▲
Lebanon	36 (2.3)	▲
Slovenia	35 (2.4)	
United States	35 (1.8)	
Russian Federation	33 (2.1)	
International Avg.	32 (0.7)	
Sweden	30 (1.9)	
Italy	15 (1.4)	▼
France	12 (1.2)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P4_09 (PA33116): Nuclear reaction mass
Multiple Choice (Key is A)

Country	Percent Correct	
Norway	60 (1.9)	▲
Slovenia	59 (2.9)	▲
Russian Federation	51 (2.0)	▲
Sweden	50 (1.9)	▲
Lebanon	44 (2.8)	
International Avg.	44 (0.7)	
United States	42 (2.6)	
France	33 (1.5)	▼
Italy	29 (1.8)	▼
Portugal	26 (2.1)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P4_10 (PA33070): Wavelength of water wave
Constructed Response (1 Point)

Country	Percent Correct	
Slovenia	76 (2.3)	▲
Norway	72 (1.7)	▲
Portugal	72 (2.0)	▲
Sweden	63 (2.0)	
Russian Federation	60 (2.1)	
International Avg.	59 (0.8)	
France	56 (1.7)	
United States	56 (3.4)	
Lebanon	40 (3.1)	▼
Italy	40 (1.9)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P4_11 (PA33011): Semiconductor in solar panels
Constructed Response (1 Point)

Country	Percent Correct	
Slovenia	57 (2.4)	▲
Portugal	54 (2.7)	▲
United States	51 (2.3)	▲
Norway	50 (1.8)	▲
France	45 (1.6)	
International Avg.	44 (0.7)	
Sweden	42 (2.1)	
Russian Federation	39 (1.9)	▼
Lebanon	35 (2.5)	▼
Italy	27 (2.0)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P5_01 (PA23048): Interval with wavelengths of light
Multiple Choice (Key is C)

Country	Percent Correct	
France	96 (0.6)	▲
Norway	91 (1.1)	▲
Slovenia	89 (1.8)	▲
Portugal	83 (2.3)	
Sweden	83 (1.6)	
Lebanon	82 (2.3)	
International Avg.	81 (0.6)	
Russian Federation	77 (1.9)	
United States	65 (2.2)	▼
Italy	59 (2.1)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P5_02 (PA23039): Internal resistance of battery
Multiple Choice (Key is A)

Country	Percent Correct	
Russian Federation	55 (2.5)	▲
Slovenia	41 (2.4)	▲
Lebanon	39 (3.0)	
International Avg.	35 (0.7)	
Norway	32 (1.8)	
Sweden	32 (1.3)	▼
France	30 (1.5)	▼
United States	29 (1.9)	▼
Portugal	28 (2.5)	▼
Italy	27 (1.5)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P5_03 (PA23035): Resistance of bulb when it shines
Constructed Response (1 Point)

Country	Percent Correct	
Slovenia	68 (2.7)	▲
Lebanon	52 (2.5)	▲
Russian Federation	49 (2.3)	▲
Sweden	39 (2.1)	
International Avg.	38 (0.8)	
Norway	32 (2.0)	▼
United States	31 (2.7)	▼
Portugal	27 (2.6)	▼
Italy	26 (2.1)	▼
France	15 (1.1)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P5_04 (PA23042): Paths particles follow
Multiple Choice (Key is A)

Country	Percent Correct	
Russian Federation	67 (1.8)	▲
Norway	64 (1.8)	▲
Slovenia	57 (2.5)	▲
International Avg.	49 (0.8)	
Sweden	49 (2.1)	
United States	45 (2.6)	
Portugal	45 (3.2)	
Italy	42 (2.1)	▼
France	42 (1.6)	▼
Lebanon	33 (2.6)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P5_05 (PA23012): Tension of string as system falls
Constructed Response (1 Point)

Country	Percent Correct	
Slovenia	34 (2.6)	▲
Norway	29 (1.9)	▲
United States	25 (2.2)	▲
Russian Federation	22 (1.7)	▲
International Avg.	18 (0.6)	
Sweden	18 (1.4)	
Portugal	12 (1.6)	▼
Lebanon	9 (1.9)	▼
France	6 (0.8)	▼
Italy	5 (0.7)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P5_07 (PA23051): Energy released for temp to fall
Constructed Response (1 Point)

Country	Percent Correct	
Slovenia	72 (2.3)	▲
Russian Federation	57 (2.4)	▲
Sweden	40 (2.0)	▲
Portugal	33 (2.2)	
International Avg.	32 (0.6)	
Norway	28 (1.7)	▼
United States	20 (2.4)	▼
France	16 (1.1)	▼
Italy	13 (1.2)	▼
Lebanon	5 (1.0)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P5_08 (PA23085): Temp when two rods have same length
Multiple Choice (Key is C)

Country	Percent Correct	
United States	49 (2.1)	▲
Slovenia	48 (2.6)	▲
Russian Federation	47 (2.3)	
Norway	47 (1.7)	▲
Portugal	43 (1.8)	
International Avg.	43 (0.7)	
Sweden	40 (1.2)	▼
France	40 (1.5)	▼
Lebanon	39 (2.9)	
Italy	33 (1.6)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P5_09 (PA23130): Why petals look black in green light Constructed Response (2 Points)

Country	Percent Full Credit	Percent at Least 1 Point
Norway	26 (2.1) ▲	35 (2.2) ▲
Slovenia	19 (2.3) ▲	31 (3.0) ▲
United States	19 (1.7) ▲	26 (1.9) ▲
Portugal	15 (1.9)	23 (2.6)
Sweden	15 (1.1)	22 (1.5)
International Avg.	14 (0.5)	22 (0.7)
Russian Federation	13 (1.5)	27 (2.5) ▲
France	12 (0.9) ▼	16 (1.2) ▼
Italy	6 (0.9) ▼	9 (1.1) ▼
Lebanon	3 (1.0) ▼	8 (1.6) ▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P5_10 (PA23086): Explain blue as hotter than red
Constructed Response (1 Point)

Country	Percent Correct	
United States	46 (2.7)	▲
France	33 (1.5)	▲
Slovenia	32 (2.7)	▲
Norway	29 (1.8)	▲
International Avg.	25 (0.6)	
Sweden	24 (1.3)	
Russian Federation	23 (1.9)	
Italy	19 (1.3)	▼
Portugal	12 (1.3)	▼
Lebanon	11 (1.8)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P5_11 (PA23064): Years passed since mammoth died
Multiple Choice (Key is B)

Country	Percent Correct	
Norway	66 (1.8)	▲
United States	58 (2.7)	▲
Slovenia	57 (2.7)	▲
Sweden	57 (2.0)	▲
Portugal	52 (2.9)	
International Avg.	51 (0.7)	
Russian Federation	49 (1.7)	
Lebanon	42 (2.4)	▼
Italy	41 (1.7)	▼
France	38 (1.3)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P6_01 (PA33059): Work done on a gas
Multiple Choice (Key is C)

Country	Percent Correct	
Slovenia	81 (2.0)	▲
Portugal	80 (1.9)	▲
Russian Federation	77 (1.6)	▲
United States	71 (2.0)	
Norway	70 (1.6)	
International Avg.	69 (0.6)	
France	64 (1.5)	▼
Sweden	62 (1.4)	▼
Italy	61 (1.7)	▼
Lebanon	53 (3.0)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P6_02 (PA33073): Skiing down a hill
Constructed Response (2 Points)

Country	Percent Full Credit	Percent at Least 1 Point
Norway	53 (2.5) ▲	79 (1.8) ▲
Lebanon	49 (2.9) ▲	66 (2.3) ▲
Sweden	40 (2.1) ▲	59 (2.2)
Slovenia	39 (2.2) ▲	71 (2.5) ▲
Portugal	37 (2.8)	72 (2.3) ▲
Russian Federation	34 (1.9)	64 (2.1) ▲
International Avg.	33 (0.7)	58 (0.8)
United States	19 (1.8) ▼	63 (3.7)
Italy	16 (1.5) ▼	31 (1.9) ▼
France	7 (0.8) ▼	15 (1.1) ▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P6_03 (PA33019): Reaction force on roller coaster
Multiple Choice (Key is D)

Country	Percent Correct	
Russian Federation	42 (2.3)	▲
Norway	40 (1.7)	▲
Slovenia	36 (2.9)	
Portugal	36 (3.0)	
Italy	33 (1.6)	
International Avg.	32 (0.8)	
United States	31 (2.4)	
Sweden	26 (1.6)	▼
Lebanon	24 (2.7)	▼
France	22 (1.4)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P6_04 (PA33015): Acceleration of box along slope
Multiple Choice (Key is C)

Country	Percent Correct	
Lebanon	61 (2.9)	▲
Russian Federation	60 (1.8)	▲
Norway	49 (2.0)	▲
United States	49 (2.5)	
Slovenia	49 (2.5)	
Portugal	48 (2.8)	
International Avg.	45 (0.7)	
Sweden	37 (1.6)	▼
Italy	37 (1.9)	▼
France	17 (1.2)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P6_05 (PA33086): Speed of satellite orbit
Multiple Choice (Key is B)

Country	Percent Correct	
Norway	59 (2.0)	▲
Portugal	57 (2.3)	▲
Sweden	49 (2.2)	▲
Russian Federation	46 (2.4)	
Slovenia	45 (2.5)	
International Avg.	42 (0.7)	
United States	36 (2.5)	▼
France	32 (1.7)	▼
Italy	30 (1.9)	▼
Lebanon	22 (2.3)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

**P6_06 (PA33035): Direction of current in moving coil
Constructed Response (1 Point)**

Country	Percent Correct	
Norway	60 (1.9)	▲
Slovenia	60 (3.1)	▲
Lebanon	59 (2.5)	▲
Sweden	54 (1.7)	▲
Russian Federation	52 (2.0)	
International Avg.	50 (0.7)	
Italy	46 (1.9)	▼
France	43 (1.5)	▼
United States	40 (2.3)	▼
Portugal	37 (2.4)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P6_07 (PA33119): Magnet moves aluminum (explain) Constructed Response (2 Points)

Country	Percent Full Credit	Percent at Least 1 Point
Norway	13 (1.4) ▲	20 (1.9) ▲
Slovenia	7 (1.4)	10 (1.6)
Sweden	7 (0.9)	9 (0.8)
International Avg.	5 (0.4)	9 (0.5)
Lebanon	4 (1.2)	11 (1.9)
United States	4 (1.0)	6 (1.2) ▼
Italy	3 (0.9) ▼	4 (1.0) ▼
Russian Federation	2 (0.4) ▼	10 (1.5)
Portugal	1 (0.5) ▼	1 (0.5) ▼
France	- -	- -

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A dash (-) indicates comparable data not available

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P6_08 (PA33046): Beads as point charges
Constructed Response (1 Point)

Country	Percent Correct	
Sweden	52 (1.9)	▲
Norway	50 (1.9)	▲
Slovenia	49 (2.2)	▲
Russian Federation	48 (2.4)	▲
Italy	43 (2.0)	
Portugal	41 (2.8)	
International Avg.	40 (0.7)	
United States	35 (2.2)	▼
Lebanon	27 (2.5)	▼
France	15 (1.0)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P6_09 (PA33083): Ray of light through prism
Multiple Choice (Key is A)

Country	Percent Correct	
Norway	68 (1.9)	▲
Russian Federation	62 (2.1)	▲
France	60 (1.5)	▲
Slovenia	60 (2.7)	▲
Sweden	57 (1.4)	▲
United States	55 (3.5)	
Portugal	54 (2.7)	
International Avg.	54 (0.8)	
Lebanon	38 (2.5)	▼
Italy	31 (1.9)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P6_10 (PA33069): Wavelength of musical note
Constructed Response (1 Point)

Country	Percent Correct	
Slovenia	80 (2.3)	▲
Russian Federation	79 (1.8)	▲
Sweden	71 (2.1)	
United States	69 (2.7)	
Norway	69 (2.0)	
International Avg.	67 (0.7)	
Portugal	66 (2.5)	
Lebanon	63 (1.9)	▼
Italy	58 (2.1)	▼
France	50 (1.4)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P6_11 (PA33114): Characteristics of electromagnetic radiation
Multiple Choice (Key is B)

Country	Percent Correct	
Russian Federation	81 (1.6)	▲
Norway	74 (1.6)	▲
Slovenia	70 (2.6)	
United States	69 (1.8)	
Sweden	69 (1.4)	
International Avg.	66 (0.7)	
Italy	64 (2.0)	
France	62 (1.7)	▼
Lebanon	55 (2.5)	▼
Portugal	51 (2.6)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P6_12 (PA33080): Iron bars radiate visible light
Constructed Response (1 Point)

Country	Percent Correct
Norway	47 (1.9) ▲
Sweden	27 (1.5)
Russian Federation	26 (2.0)
Slovenia	26 (2.2)
United States	25 (1.9)
International Avg.	24 (0.6)
Portugal	24 (2.1)
France	19 (1.3) ▼
Lebanon	13 (2.3) ▼
Italy	12 (1.2) ▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P7_01 (PA33065): Coefficient of friction of sled
Multiple Choice (Key is B)

Country	Percent Correct	
Russian Federation	75 (2.0)	▲
Slovenia	63 (2.7)	▲
United States	59 (2.3)	▲
Norway	58 (1.9)	▲
International Avg.	52 (0.8)	
Sweden	51 (1.5)	
Portugal	48 (3.0)	
Italy	46 (2.1)	▼
France	38 (1.4)	▼
Lebanon	32 (3.3)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

**P7_02A (PA33009A): Estimation of mass of planet
Constructed Response (2 Points)**

Country	Percent Full Credit	Percent at Least 1 Point
Portugal	24 (2.2) ▲	41 (3.2) ▲
Russian Federation	21 (2.2) ▲	34 (2.6) ▲
Norway	20 (1.7) ▲	38 (2.4) ▲
Sweden	13 (1.6)	18 (2.1)
Slovenia	13 (1.6)	18 (2.2)
International Avg.	12 (0.5)	21 (0.7)
United States	9 (1.2) ▼	17 (2.1)
Italy	4 (0.8) ▼	8 (1.1) ▼
France	4 (0.6) ▼	8 (1.0) ▼
Lebanon	2 (0.8) ▼	2 (0.7) ▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P7_02B (PA33009B): Spacecraft height in orbit
Multiple Choice (Key is D)

Country	Percent Correct	
Portugal	55 (3.0)	▲
Norway	55 (2.0)	▲
Sweden	53 (1.7)	▲
United States	50 (2.4)	▲
Slovenia	49 (2.9)	
Russian Federation	47 (2.1)	
International Avg.	45 (0.8)	
France	36 (1.6)	▼
Italy	30 (1.8)	▼
Lebanon	30 (2.9)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P7_03 (PA33002): Energy in meteor explosion
Multiple Choice (Key is A)

Country	Percent Correct	
Sweden	85 (1.2)	▲
United States	84 (2.1)	▲
Slovenia	83 (1.7)	▲
France	77 (1.4)	▲
Portugal	77 (2.2)	
Norway	77 (1.6)	
International Avg.	75 (0.6)	
Russian Federation	74 (1.6)	
Italy	61 (2.2)	▼
Lebanon	54 (2.7)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P7_04 (PA33098): Antenna transmitting signal
Multiple Choice (Key is D)

Country	Percent Correct	
Russian Federation	54 (1.8)	▲
Portugal	45 (2.6)	
Norway	45 (1.9)	
France	42 (1.5)	
International Avg.	41 (0.7)	
Italy	41 (1.8)	
Slovenia	40 (2.5)	
Lebanon	39 (3.0)	
United States	36 (2.0)	▼
Sweden	30 (1.8)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P7_05A (PA33028A): Electric force on charged dust Constructed Response (2 Points)

Country	Percent Full Credit	Percent at Least 1 Point
Slovenia	36 (3.0) ▲	45 (3.1) ▲
Sweden	31 (1.5) ▲	37 (1.8) ▲
Russian Federation	29 (2.3) ▲	40 (2.5) ▲
Norway	25 (1.7) ▲	35 (2.0) ▲
Italy	21 (1.9)	29 (2.1)
Portugal	21 (2.2)	27 (2.3)
International Avg.	21 (0.6)	28 (0.7)
United States	11 (1.3) ▼	17 (1.7) ▼
France	9 (0.9) ▼	15 (1.1) ▼
Lebanon	5 (1.2) ▼	10 (1.6) ▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P7_05B (PA33028B): Path of charged dust particle
Multiple Choice (Key is C)

Country	Percent Correct	
Norway	75 (1.7)	▲
Slovenia	69 (2.4)	▲
Portugal	63 (2.1)	▲
Sweden	62 (1.8)	▲
Russian Federation	61 (1.9)	▲
International Avg.	56 (0.7)	
United States	53 (2.1)	
France	51 (1.7)	▼
Italy	39 (2.2)	▼
Lebanon	32 (2.5)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P7_06A (PA33054A): Induced emf changes in polarity
Multiple Choice (Key is C)

Country	Percent Correct	
Russian Federation	55 (1.5)	▲
Lebanon	43 (3.1)	▲
Italy	41 (1.7)	▲
Slovenia	36 (2.8)	
Portugal	36 (2.7)	
International Avg.	36 (0.7)	
Norway	36 (2.2)	
Sweden	29 (1.9)	▼
United States	28 (2.0)	▼
France	19 (1.3)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P7_06B (PA33054B): Magnitude of peak emf
Constructed Response (1 Point)

Country	Percent Correct	
Slovenia	33 (2.6)	▲
Norway	29 (2.2)	▲
Sweden	18 (1.6)	
International Avg.	15 (0.6)	
United States	13 (1.7)	
Portugal	13 (1.7)	
France	11 (1.0)	▼
Russian Federation	9 (1.1)	▼
Lebanon	7 (1.6)	▼
Italy	6 (0.9)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P7_07 (PA33040): Tube light near charged balloon
Multiple Choice (Key is B)

Country	Percent Correct	
Portugal	83 (1.8)	▲
Russian Federation	71 (1.7)	▲
Slovenia	62 (2.5)	▲
France	61 (1.6)	
International Avg.	58 (0.7)	
Italy	55 (1.9)	
Norway	52 (1.8)	▼
Lebanon	48 (3.3)	▼
United States	44 (2.5)	▼
Sweden	42 (1.4)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P7_08A (PA33095A): Speed of wave down a rope Constructed Response (1 Point)

Country	Percent Correct	
Slovenia	82 (2.1)	▲
Portugal	79 (1.8)	▲
Russian Federation	74 (1.7)	▲
Norway	72 (2.0)	
Sweden	70 (2.0)	
International Avg.	70 (0.7)	
Lebanon	68 (3.0)	
United States	64 (2.6)	▼
France	60 (1.3)	▼
Italy	59 (2.5)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P7_08B (PA33095B): Speed of wave with heavier rope
Multiple Choice (Key is A)

Country	Percent Correct	
Slovenia	69 (2.7)	▲
Sweden	57 (1.6)	▲
Lebanon	53 (2.6)	▲
Norway	51 (1.9)	
International Avg.	48 (0.7)	
France	44 (1.5)	▼
Russian Federation	43 (2.2)	▼
Portugal	41 (2.8)	▼
United States	41 (1.9)	▼
Italy	34 (1.6)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P8_01A (PA33066A): Net force on swinging ball
Multiple Choice (Key is A)

Country	Percent Correct	
Norway	66 (2.0)	▲
Russian Federation	63 (2.1)	▲
Portugal	63 (2.7)	▲
Sweden	55 (1.9)	▲
International Avg.	51 (0.8)	
United States	49 (2.5)	
Slovenia	45 (2.8)	▼
France	43 (1.6)	▼
Italy	39 (1.8)	▼
Lebanon	37 (2.8)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P8_01B (PA33066B): Direction of ball when released
Multiple Choice (Key is C)

Country	Percent Correct	
Norway	86 (1.2)	▲
Sweden	85 (1.2)	▲
United States	85 (1.7)	▲
Slovenia	78 (2.0)	▲
Portugal	77 (2.5)	
Russian Federation	73 (1.7)	
International Avg.	73 (0.6)	
Italy	68 (1.6)	▼
France	54 (1.7)	▼
Lebanon	50 (2.8)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

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▼ Percent significantly lower than international average

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P8_02 (PA33090): Accuracy of digital thermometer Constructed Response (2 Points)

Country	Percent Full Credit	Percent at Least 1 Point
Slovenia	45 (2.4) ▲	57 (2.1) ▲
Norway	33 (1.7) ▲	51 (2.0) ▲
Sweden	28 (1.9) ▲	50 (1.9) ▲
Russian Federation	27 (1.9) ▲	41 (2.1)
International Avg.	21 (0.6)	41 (0.7)
Portugal	15 (2.1) ▼	36 (2.6)
United States	14 (1.1) ▼	45 (2.7)
Italy	11 (1.1) ▼	31 (1.5) ▼
France	8 (0.7) ▼	38 (1.6)
Lebanon	6 (1.4) ▼	15 (2.0) ▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P8_03A (PA33064A): Normal force on mass in cylinder
Constructed Response (1 Point)

Country	Percent Correct	
Portugal	53 (2.3)	▲
Slovenia	51 (2.7)	▲
Russian Federation	50 (2.2)	▲
Sweden	50 (1.9)	▲
Norway	48 (1.9)	▲
International Avg.	44 (0.8)	
United States	42 (2.8)	
Italy	41 (1.9)	
France	31 (1.6)	▼
Lebanon	30 (2.9)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P8_03B (PA33064B): Speed of block in trajectory
Constructed Response (2 Points)

Country	Percent Full Credit	Percent at Least 1 Point
Norway	17 (1.5) ▲	25 (1.7) ▲
Lebanon	15 (2.3) ▲	27 (2.4) ▲
Portugal	14 (1.7) ▲	31 (2.6) ▲
Slovenia	14 (1.5) ▲	22 (2.0)
Russian Federation	13 (1.7)	21 (2.4)
International Avg.	11 (0.5)	19 (0.6)
Sweden	10 (1.2)	15 (1.7) ▼
United States	9 (1.2)	18 (1.7)
Italy	2 (0.4) ▼	4 (0.6) ▼
France	1 (0.4) ▼	3 (0.6) ▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P8_04 (PA33110): Magnet falls through coil
Multiple Choice (Key is B)

Country	Percent Correct	
Russian Federation	80 (1.9)	▲
Portugal	79 (1.9)	▲
Slovenia	77 (1.8)	▲
United States	71 (2.5)	
International Avg.	71 (0.6)	
France	69 (1.4)	
Sweden	67 (1.4)	▼
Norway	66 (1.9)	▼
Italy	66 (1.8)	▼
Lebanon	62 (2.6)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P8_05 (PA33118): Predict the pole of an electromagnet
Multiple Choice (Key is D)

Country	Percent Correct	
Russian Federation	55 (2.4)	▲
Lebanon	49 (3.4)	
Norway	48 (1.8)	▲
Slovenia	47 (2.7)	
Sweden	44 (1.8)	
International Avg.	44 (0.7)	
Portugal	43 (2.6)	
France	39 (1.3)	▼
United States	36 (1.6)	▼
Italy	34 (1.9)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P8_06 (PA33109): Resistance of unknown in graph
Multiple Choice (Key is A)

Country	Percent Correct	
Portugal	63 (2.7)	▲
Slovenia	62 (2.9)	▲
Norway	57 (2.1)	▲
Russian Federation	56 (2.4)	▲
International Avg.	49 (0.7)	
Sweden	46 (1.1)	▼
United States	45 (2.0)	▼
Lebanon	42 (2.7)	▼
Italy	41 (1.8)	▼
France	30 (1.7)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
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- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P8_07 (PA33029): Index of refraction of glass
Multiple Choice (Key is D)

Country	Percent Correct	
Portugal	59 (2.8)	▲
Slovenia	58 (2.9)	▲
Russian Federation	46 (2.4)	▲
Sweden	46 (2.1)	▲
International Avg.	40 (0.8)	
Lebanon	36 (2.5)	
Italy	34 (2.0)	▼
France	33 (1.7)	▼
United States	27 (2.5)	▼
Norway	22 (1.4)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
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- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P8_08 (PA33097): Wavelength of graphed wave
Constructed Response (1 Point)

Country	Percent Correct	
Slovenia	76 (2.3)	▲
Portugal	73 (2.3)	▲
France	67 (1.5)	▲
Norway	59 (1.9)	
International Avg.	57 (0.8)	
Russian Federation	55 (2.3)	
Sweden	54 (2.4)	
United States	51 (3.5)	▼
Lebanon	47 (2.3)	▼
Italy	33 (2.2)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P8_09 (PA33099): Order of photon energies
Multiple Choice (Key is C)

Country	Percent Correct	
Russian Federation	68 (2.3)	▲
Norway	62 (1.9)	▲
Portugal	55 (2.7)	
United States	55 (2.5)	
Slovenia	53 (2.6)	
International Avg.	51 (0.8)	
France	45 (1.7)	▼
Italy	43 (2.1)	▼
Sweden	43 (1.9)	▼
Lebanon	32 (2.8)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P8_10 (PA33008): Nuclear decay chain (DERIVED)
Constructed Response (2 Points)

Country	Percent Full Credit	Percent at Least 1 Point
Russian Federation	69 (1.9) ▲	88 (1.5) ▲
Lebanon	67 (2.5) ▲	83 (2.0) ▲
France	60 (1.6) ▲	85 (1.3) ▲
Norway	45 (1.7) ▲	82 (1.2) ▲
International Avg.	43 (0.7)	70 (0.7)
Portugal	43 (3.0)	78 (2.6) ▲
Slovenia	36 (2.6) ▼	70 (2.7)
Sweden	30 (1.6) ▼	68 (2.0)
United States	29 (2.1) ▼	55 (3.5) ▼
Italy	10 (1.2) ▼	19 (1.6) ▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P8_10A (PA33008A): Nuclear decay chain part 1 Constructed Response (1 Point)

Country	Percent Correct	
Russian Federation	81 (1.5)	▲
Lebanon	79 (2.4)	▲
France	78 (1.6)	▲
Norway	74 (1.5)	▲
Portugal	72 (2.8)	▲
Slovenia	67 (2.5)	
Sweden	65 (1.9)	
International Avg.	65 (0.7)	
United States	50 (2.7)	▼
Italy	19 (1.6)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
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- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P8_10B (PA33008B): Nuclear decay chain part 2
Constructed Response (1 Point)

Country	Percent Correct	
Russian Federation	81 (1.7)	▲
Lebanon	74 (2.1)	▲
France	72 (1.4)	▲
Norway	57 (1.8)	▲
Portugal	54 (2.9)	
International Avg.	53 (0.8)	
Slovenia	46 (2.7)	▼
Sweden	40 (1.7)	▼
United States	39 (3.5)	▼
Italy	13 (1.4)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P8_10C (PA33008C): Nuclear decay chain part 3
Constructed Response (1 Point)

Country	Percent Correct	
Norway	88 (1.2)	▲
Russian Federation	87 (1.5)	▲
France	86 (1.2)	▲
Lebanon	82 (2.1)	▲
Portugal	80 (2.2)	▲
Slovenia	77 (2.2)	▲
Sweden	75 (1.8)	
International Avg.	73 (0.7)	
United States	61 (3.2)	▼
Italy	19 (1.6)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P9_02 (PA33072): Work by sliding block
Constructed Response (1 Point)

Country	Percent Correct	
Slovenia	86 (1.6)	▲
Lebanon	74 (2.9)	▲
United States	73 (3.2)	▲
Portugal	73 (2.7)	▲
Norway	72 (1.9)	▲
Italy	64 (2.0)	
International Avg.	63 (0.8)	
Sweden	58 (1.9)	▼
France	52 (1.4)	▼
Russian Federation	13 (2.2)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
- () Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P9_03 (PA33063): Estimate elevator acceleration
Multiple Choice (Key is B)

Country	Percent Correct	
Russian Federation	75 (2.4)	▲
Norway	70 (1.8)	▲
Slovenia	65 (3.0)	▲
Sweden	59 (1.9)	▲
United States	56 (2.2)	
International Avg.	55 (0.7)	
Portugal	46 (2.2)	▼
France	43 (1.7)	▼
Italy	43 (1.7)	▼
Lebanon	39 (2.5)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
- ▼ Percent significantly lower than international average
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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P9_04 (PA33077): Car cylinder temperature
Constructed Response (2 Points)

Country	Percent Full Credit	Percent at Least 1 Point
Slovenia	62 (2.7) ▲	76 (2.5) ▲
Russian Federation	47 (2.5) ▲	62 (2.3) ▲
Sweden	29 (2.0)	36 (2.1)
Portugal	28 (2.3)	34 (2.8)
International Avg.	27 (0.7)	38 (0.8)
United States	22 (2.7) ▼	37 (3.5)
Italy	20 (1.5) ▼	30 (2.0) ▼
Lebanon	20 (1.9) ▼	34 (2.6)
Norway	12 (1.3) ▼	20 (1.7) ▼
France	6 (0.7) ▼	9 (0.8) ▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P9_05A (PA33111A): Proton in magnetic field (magnitude)
Constructed Response (2 Points)

Country	Percent Full Credit	Percent at Least 1 Point
Slovenia	50 (2.3) ▲	65 (2.1) ▲
Norway	50 (2.1) ▲	66 (2.3) ▲
Russian Federation	45 (2.7) ▲	57 (2.5) ▲
Sweden	28 (2.2)	34 (2.5)
International Avg.	27 (0.7)	37 (0.8)
Italy	26 (1.9)	44 (2.3) ▲
Lebanon	15 (2.2) ▼	24 (2.4) ▼
United States	15 (1.8) ▼	24 (3.1) ▼
Portugal	11 (1.6) ▼	18 (1.9) ▼
France	2 (0.3) ▼	3 (0.5) ▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P9_05B (PA33111B): Proton in magnetic field (direction)
Multiple Choice (Key is A)

Country	Percent Correct	
Norway	68 (2.2)	▲
Russian Federation	56 (2.6)	▲
Slovenia	53 (2.6)	▲
Italy	48 (1.6)	
International Avg.	46 (0.9)	
Sweden	45 (2.1)	
Lebanon	35 (3.2)	▼
United States	34 (2.7)	▼
Portugal	26 (2.0)	▼
France	- -	

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

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A dash (-) indicates comparable data not available

TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P9_06 (PA33003): Shaking flashlight to light
Multiple Choice (Key is C)

Country	Percent Correct	
Portugal	91 (1.4)	▲
Norway	90 (1.2)	▲
Russian Federation	89 (1.1)	▲
International Avg.	79 (0.6)	
Slovenia	79 (2.1)	
Sweden	79 (1.7)	
Italy	77 (1.5)	
United States	73 (2.7)	▼
France	69 (1.5)	▼
Lebanon	67 (2.8)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P9_07 (PA33081): Light passes from air to water
Multiple Choice (Key is D)

Country	Percent Correct	
Russian Federation	60 (2.2)	▲
Slovenia	59 (2.7)	▲
Lebanon	57 (3.9)	▲
Sweden	47 (1.8)	▲
International Avg.	43 (0.8)	
Portugal	42 (2.3)	
Norway	34 (2.2)	▼
United States	34 (2.3)	▼
Italy	30 (1.6)	▼
France	23 (1.3)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

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- ▼ Percent significantly lower than international average
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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P9_08 (PA33045): Different patterns of particles
Multiple Choice (Key is D)

Country	Percent Correct	
Slovenia	74 (2.6)	▲
France	72 (1.2)	▲
Norway	66 (1.8)	▲
Sweden	61 (2.3)	
International Avg.	59 (0.8)	
Lebanon	59 (2.9)	
Italy	57 (1.8)	
Russian Federation	51 (2.8)	▼
United States	47 (2.9)	▼
Portugal	42 (2.4)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

**P9_09A (PA33094A): Reactant pair for nuclear fusion
Constructed Response (1 Point)**

Country	Percent Correct	
Portugal	48 (2.5)	▲
France	47 (1.6)	▲
Slovenia	46 (2.4)	▲
United States	41 (2.8)	▲
International Avg.	34 (0.7)	
Sweden	33 (1.6)	
Norway	29 (1.9)	▼
Lebanon	23 (2.1)	▼
Italy	20 (1.3)	▼
Russian Federation	20 (1.4)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

▲ Percent significantly higher than international average

▼ Percent significantly lower than international average

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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P9_09B (PA33094B): Fusion energy production Multiple Choice (Key is C)

Country	Percent Correct	
Slovenia	53 (2.5)	▲
United States	53 (3.6)	▲
Russian Federation	48 (1.9)	▲
Sweden	47 (1.7)	▲
Norway	45 (1.9)	
France	45 (1.5)	
Portugal	45 (3.0)	
International Avg.	43 (0.8)	
Italy	27 (1.5)	▼
Lebanon	23 (2.3)	▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

- ▲ Percent significantly higher than international average
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TIMSS Advanced 2015 Percent Correct Statistics for Achievement Items

P9_09C (PA33094C): Loss of mass after fusion Constructed Response (2 Points)

Country	Percent Full Credit	Percent at Least 1 Point
Slovenia	16 (1.7) ▲	39 (2.5) ▲
Norway	16 (1.3) ▲	33 (1.8) ▲
Russian Federation	11 (1.4) ▲	18 (1.7)
Lebanon	10 (1.6)	23 (2.3)
Sweden	8 (1.0)	22 (1.7)
International Avg.	8 (0.4)	20 (0.6)
United States	3 (0.9) ▼	14 (2.1) ▼
Portugal	2 (0.7) ▼	13 (1.8) ▼
Italy	2 (0.4) ▼	7 (0.8) ▼
France	1 (0.3) ▼	10 (0.7) ▼

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015

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