

Physics: Mechanics / Applying (PA13001 - P1\_01)  
 Label: Comparing notes on oscilloscope  
 Type: MC Key: A

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	437	60.3	23.8	11.6	2.6	1.8	60.3	1.8	0.0	62.3	57.8
Iran, Islamic Rep. of	1207	28.1	17.3	18.1	27.6	8.8	28.1	8.5	0.3	27.6	28.5
Italy	929	57.2	9.9	15.6	13.3	4.0	57.2	3.6	0.5	61.9	54.3
Lebanon	789	52.4	16.8	12.2	14.5	4.0	52.4	3.5	0.5	56.4	50.9
Netherlands	742	82.0	2.2	2.0	13.3	0.5	82.0	0.0	0.5	82.1	81.9
Norway	819	67.4	8.1	10.7	13.2	0.6	67.4	0.5	0.1	65.4	68.2
Russian Federation	1579	81.6	11.7	4.8	1.4	0.4	81.6	0.4	0.0	83.7	79.9
Slovenia	562	76.6	8.7	12.4	2.2	0.2	76.6	0.0	0.2	74.7	77.3
Sweden	1150	59.7	9.3	13.1	17.3	0.6	59.7	0.5	0.1	62.5	58.2
International Avg.	913	62.8	12.0	11.2	11.7	2.3	62.8	2.1	0.2	64.0	61.9

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Atomic and Nuclear Physics / Applying (PA13002 - P1\_02)  
 Label: Half-life of thorium  
 Type: MC Key: B

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	438	12.3	44.2	29.0	7.6	7.0	44.2	7.0	0.0	39.0	50.4
Iran, Islamic Rep. of	1207	8.3	38.6	22.1	4.1	27.0	38.6	26.6	0.4	30.3	45.0
Italy	929	8.0	37.1	34.9	4.5	15.5	37.1	15.0	0.5	32.1	40.1
Lebanon	789	5.1	54.2	25.8	4.8	10.0	54.2	9.4	0.6	52.3	55.0
Netherlands	743	2.5	88.1	8.1	0.7	0.6	88.1	0.1	0.5	79.3	90.2
Norway	820	5.7	75.7	16.8	1.0	0.8	75.7	0.7	0.1	68.1	78.7
Russian Federation	1579	6.4	65.0	22.2	4.6	1.9	65.0	1.9	0.0	62.3	67.3
Slovenia	562	8.6	64.1	20.6	3.4	3.2	64.1	3.0	0.2	59.1	66.0
Sweden	1150	6.8	76.5	15.1	1.2	0.3	76.5	0.3	0.1	69.7	80.3
International Avg.	913	7.1	60.4	21.6	3.5	7.4	60.4	7.1	0.3	54.7	63.7

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Mechanics / Applying (PA13003 - P1\_03)  
 Label: Tension in thread between two points  
 Type: MC Key: C

COUNTRY	N	A	B	C	D	E	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	438	9.2	21.6	56.8	8.1	3.8	0.4	56.8	0.4	0.0	57.0	56.6
Iran, Islamic Rep. of	1208	7.8	18.8	46.3	9.3	4.2	13.6	46.3	13.1	0.5	29.9	58.9
Italy	929	18.5	18.8	48.5	4.7	1.9	7.7	48.5	7.2	0.5	37.7	55.0
Lebanon	789	14.3	31.1	42.9	5.3	3.8	2.6	42.9	1.9	0.7	39.0	44.5
Netherlands	743	4.4	2.7	90.8	1.3	0.1	0.6	90.8	0.1	0.5	81.2	93.1
Norway	819	8.8	6.5	81.0	2.7	0.6	0.5	81.0	0.4	0.1	74.3	83.7
Russian Federation	1579	11.1	19.0	63.9	3.3	1.7	1.0	63.9	1.0	0.0	54.0	72.3
Slovenia	562	8.8	4.3	83.5	2.4	0.7	0.4	83.5	0.2	0.2	70.1	88.6
Sweden	1150	10.0	10.3	74.6	3.2	1.5	0.4	74.6	0.3	0.2	62.8	81.1
International Avg.	913	10.3	14.8	65.4	4.5	2.0	3.0	65.4	2.7	0.3	56.2	70.4

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Electricity and Magnetism / Applying (PA13004 - Pl\_04)  
 Label: Circuit in box  
 Type: MC Key: D

COUNTRY	N	A	B	C	D	E	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	438	5.2	3.8	16.9	49.8	19.6	4.6	49.8	4.6	0.0	48.7	51.2
Iran, Islamic Rep. of	1208	3.2	1.6	7.7	64.5	9.8	13.3	64.5	12.3	1.0	62.0	66.5
Italy	929	1.0	1.6	3.2	82.2	6.3	5.9	82.2	5.3	0.6	80.4	83.2
Lebanon	789	3.8	2.5	9.3	66.7	11.6	6.1	66.7	5.4	0.7	71.0	65.0
Netherlands	741	0.5	1.4	0.5	95.0	2.0	0.6	95.0	0.0	0.6	93.5	95.3
Norway	820	1.2	0.8	2.7	89.3	4.4	1.6	89.3	1.4	0.2	85.5	90.8
Russian Federation	1579	2.4	2.2	4.6	83.9	5.9	1.1	83.9	1.1	0.0	80.0	87.3
Slovenia	562	1.1	1.6	3.5	89.3	3.7	0.8	89.3	0.6	0.2	85.8	90.7
Sweden	1150	2.3	1.9	4.8	86.3	3.2	1.5	86.3	1.3	0.2	82.0	88.7
International Avg.	913	2.3	1.9	5.9	78.6	7.4	3.9	78.6	3.6	0.4	76.6	79.8

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Mechanics / Applying (PA13005 - P1\_05)  
 Label: Depth of well  
 Type: MC Key: C

COUNTRY	N	A	B	C	D	E	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	438	7.7	8.0	70.7	7.1	5.0	1.5	70.7	1.3	0.2	72.4	68.7
Iran, Islamic Rep. of	1208	4.4	4.9	77.7	4.9	0.6	7.4	77.7	6.4	1.0	74.1	80.5
Italy	929	7.8	6.3	69.0	11.8	0.4	4.8	69.0	4.2	0.6	69.8	68.5
Lebanon	789	10.6	9.5	54.6	13.8	4.6	6.8	54.6	5.8	1.0	55.9	54.1
Netherlands	743	1.3	4.1	81.5	11.5	0.9	0.6	81.5	0.0	0.6	76.9	82.6
Norway	820	1.8	3.5	87.9	5.6	0.7	0.5	87.9	0.3	0.2	84.2	89.4
Russian Federation	1579	6.7	3.1	83.8	5.4	0.6	0.5	83.8	0.5	0.0	81.6	85.7
Slovenia	562	4.1	5.6	72.7	15.1	1.7	0.8	72.7	0.6	0.2	75.1	71.8
Sweden	1150	5.1	6.3	78.4	8.4	1.1	0.7	78.4	0.5	0.3	75.1	80.2
International Avg.	913	5.5	5.7	75.1	9.3	1.7	2.6	75.1	2.2	0.5	73.9	75.7

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Electricity and Magnetism / Applying (PA13006 - P1\_06)  
 Label: Placement of third charge  
 Type: MC Key: D

COUNTRY	N	A	B	C	D	E	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	438	13.1	9.5	12.2	49.5	10.4	5.3	49.5	4.9	0.3	50.1	48.7
Iran, Islamic Rep. of	1208	10.2	11.8	7.2	43.3	12.9	14.5	43.3	13.5	1.0	39.4	46.2
Italy	928	16.5	14.5	7.8	35.8	11.3	14.1	35.8	13.4	0.7	31.4	38.5
Lebanon	787	18.6	14.8	11.0	31.7	14.2	9.8	31.7	8.5	1.3	27.3	33.4
Netherlands	743	23.4	29.0	13.5	27.0	5.5	1.7	27.0	1.1	0.6	32.0	25.8
Norway	819	16.5	21.6	11.3	36.8	11.4	2.5	36.8	2.3	0.2	34.1	37.9
Russian Federation	1579	17.4	12.6	8.0	44.3	15.8	1.9	44.3	1.9	0.0	40.4	47.6
Slovenia	562	15.2	19.3	10.2	39.2	13.4	2.7	39.2	2.5	0.2	41.3	38.3
Sweden	1150	22.0	23.6	11.1	30.0	10.9	2.5	30.0	2.1	0.4	30.2	29.8
International Avg.	913	17.0	17.4	10.3	37.5	11.8	6.1	37.5	5.6	0.5	36.3	38.5

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Electricity and Magnetism / Reasoning (PA13009 - P1\_09)  
 Label: Circuit readings of closed switch  
 Type: MC Key: A

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	438	39.5	22.7	23.0	11.9	2.9	39.5	2.3	0.6	34.4	45.6
Iran, Islamic Rep. of	1208	36.3	25.6	19.7	11.2	7.2	36.3	4.4	2.9	28.3	42.6
Italy	929	32.2	22.8	27.8	8.5	8.7	32.2	7.0	1.7	32.2	32.2
Lebanon	788	29.7	26.9	29.0	9.8	4.6	29.7	2.1	2.5	29.1	29.9
Netherlands	743	42.3	22.3	12.9	20.7	1.8	42.3	1.1	0.7	32.3	44.7
Norway	820	37.9	25.8	15.0	19.8	1.4	37.9	0.8	0.6	34.9	39.1
Russian Federation	1579	38.9	23.7	24.2	11.4	1.8	38.9	1.5	0.3	35.5	41.8
Slovenia	562	39.2	22.8	17.9	19.3	0.8	39.2	0.6	0.2	34.4	41.1
Sweden	1150	30.0	25.2	18.4	23.9	2.5	30.0	1.9	0.6	30.8	29.5
International Avg.	913	36.2	24.2	20.9	15.2	3.5	36.2	2.4	1.1	32.4	38.5

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Atomic and Nuclear Physics / Knowing (PA13011 - P2\_01)  
 Label: Fraunhofer lines  
 Type: MC Key: B

COUNTRY	N	A	B	C	D	E	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	440	11.3	38.6	10.6	22.9	12.1	4.5	38.6	4.5	0.0	37.6	39.7
Iran, Islamic Rep. of	1217	2.7	65.0	10.1	8.3	6.7	7.2	65.0	7.2	0.0	68.3	62.4
Italy	929	10.0	52.7	10.8	6.7	6.1	13.7	52.7	13.7	0.0	55.0	51.1
Lebanon	802	22.8	52.5	10.0	3.7	5.4	5.7	52.5	5.7	0.0	56.8	50.7
Netherlands	745	4.3	64.5	22.1	2.5	6.0	0.6	64.5	0.6	0.0	73.6	62.5
Norway	819	4.2	74.4	11.0	2.8	6.6	1.0	74.4	1.0	0.0	79.1	72.4
Russian Federation	1576	32.2	39.7	9.8	9.3	8.1	0.9	39.7	0.9	0.0	41.2	38.5
Slovenia	544	11.4	53.2	12.2	11.4	10.3	1.4	53.2	1.4	0.0	60.4	50.6
Sweden	1153	9.1	50.7	18.2	8.5	12.6	0.9	50.7	0.8	0.2	59.9	45.6
International Avg.	914	12.0	54.6	12.8	8.4	8.2	4.0	54.6	4.0	0.0	59.1	52.6

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.



Physics: Mechanics / Applying (PA13012 - P2\_02)  
 Label: Force on connected springs  
 Type: MC Key: C

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	440	36.7	10.0	23.0	29.0	1.3	23.0	1.3	0.0	22.7	23.4
Iran, Islamic Rep. of	1217	49.7	1.8	20.6	22.0	5.9	20.6	5.9	0.0	11.0	28.1
Italy	927	53.0	2.2	10.8	29.0	5.0	10.8	5.0	0.0	8.7	12.2
Lebanon	804	56.0	0.5	10.3	30.9	2.2	10.3	2.2	0.0	11.2	10.0
Netherlands	745	27.7	1.7	39.7	30.8	0.0	39.7	0.0	0.0	28.4	42.2
Norway	819	43.0	0.8	23.4	32.6	0.1	23.4	0.1	0.0	19.4	25.1
Russian Federation	1576	33.8	1.3	30.3	34.4	0.2	30.3	0.2	0.0	24.4	34.9
Slovenia	544	38.9	1.1	29.5	30.4	0.0	29.5	0.0	0.0	21.0	32.6
Sweden	1153	34.7	1.2	23.6	40.2	0.3	23.6	0.2	0.2	15.8	27.9
International Avg.	914	41.5	2.3	23.5	31.0	1.7	23.5	1.7	0.0	18.1	26.3

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Atomic and Nuclear Physics / Applying (PA13013 - P2\_03)  
 Label: Rutherford experiment  
 Type: MC Key: C

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	440	19.3	26.4	30.5	15.6	8.1	30.5	8.1	0.0	29.6	31.6
Iran, Islamic Rep. of	1217	15.2	13.0	33.7	22.8	15.3	33.7	15.2	0.0	32.6	34.6
Italy	929	8.0	10.7	36.8	27.5	17.0	36.8	17.0	0.0	32.4	39.8
Lebanon	804	12.0	18.2	26.0	31.0	12.8	26.0	12.8	0.0	22.0	27.6
Netherlands	745	4.9	9.7	50.6	34.7	0.1	50.6	0.1	0.0	50.5	50.5
Norway	819	7.2	8.5	37.1	45.4	1.9	37.1	1.9	0.0	27.4	41.2
Russian Federation	1576	6.6	15.2	48.0	29.3	0.8	48.0	0.8	0.0	42.3	52.6
Slovenia	544	10.4	22.8	32.2	33.1	1.5	32.2	1.5	0.0	30.0	33.0
Sweden	1153	8.1	13.3	40.6	36.1	1.9	40.6	1.7	0.2	39.3	41.3
International Avg.	914	10.2	15.3	37.3	30.6	6.6	37.3	6.6	0.0	34.0	39.1

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Mechanics / Reasoning (PA13014 - P2\_04)  
 Label: Speed of aircraft  
 Type: MC Key: B

COUNTRY	N	A	B	C	D	E	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	440	12.1	57.1	11.6	11.4	5.4	2.5	57.1	2.5	0.0	62.5	51.2
Iran, Islamic Rep. of	1217	7.1	42.6	4.1	17.5	11.2	17.5	42.6	17.5	0.0	33.6	49.8
Italy	929	14.4	46.0	11.0	12.6	8.5	7.5	46.0	7.5	0.0	45.7	46.2
Lebanon	803	14.9	41.4	7.1	13.5	16.1	7.1	41.4	7.1	0.0	43.8	40.5
Netherlands	745	20.1	40.5	7.0	21.5	10.1	0.8	40.5	0.8	0.0	41.9	40.3
Norway	818	4.8	71.1	3.4	9.0	10.2	1.4	71.1	1.4	0.0	69.8	71.7
Russian Federation	1576	10.4	73.0	4.5	5.9	5.8	0.4	73.0	0.4	0.0	71.6	74.1
Slovenia	544	7.9	63.7	4.9	11.6	10.0	1.8	63.7	1.8	0.0	65.2	63.2
Sweden	1153	18.7	42.1	6.6	12.2	18.3	2.1	42.1	1.9	0.2	44.7	40.6
International Avg.	914	12.3	53.1	6.7	12.8	10.6	4.6	53.1	4.5	0.0	53.2	53.1

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Heat and Temperature / Knowing (PA13015 - P2\_05)  
 Label: Heat transfer  
 Type: MC Key: C

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	440	3.1	5.0	64.2	26.3	1.5	64.2	1.5	0.0	66.2	62.1
Iran, Islamic Rep. of	1217	0.8	1.5	57.4	36.7	3.6	57.4	3.5	0.1	52.6	61.2
Italy	928	0.9	1.9	70.9	23.8	2.5	70.9	2.5	0.0	64.7	75.0
Lebanon	804	0.8	1.2	50.6	41.0	6.4	50.6	6.4	0.0	46.5	52.3
Netherlands	744	0.4	0.0	90.4	9.3	0.0	90.4	0.0	0.0	81.5	92.3
Norway	819	0.2	0.7	82.8	15.9	0.3	82.8	0.3	0.0	79.0	84.4
Russian Federation	1576	1.3	1.5	75.7	21.5	0.1	75.7	0.1	0.0	70.1	80.1
Slovenia	544	3.1	1.9	66.4	27.8	0.9	66.4	0.9	0.0	53.5	71.1
Sweden	1153	0.1	0.3	89.6	9.6	0.4	89.6	0.3	0.2	85.5	91.8
International Avg.	914	1.2	1.5	72.0	23.5	1.7	72.0	1.7	0.0	66.6	74.5

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Electricity and Magnetism / Applying (PA13016 - P2\_06)  
 Label: Direction of magnetic force on wire  
 Type: MC Key: D

COUNTRY	N	A	B	C	D	E	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	440	24.5	26.1	15.5	20.3	11.1	2.6	20.3	2.6	0.0	19.7	21.0
Iran, Islamic Rep. of	1217	11.0	13.2	22.8	29.5	16.8	6.6	29.5	6.5	0.1	20.8	36.4
Italy	929	15.4	11.2	21.8	27.4	15.3	8.8	27.4	8.8	0.0	28.8	26.5
Lebanon	800	14.4	18.6	25.2	20.5	17.4	3.9	20.5	3.9	0.0	18.6	21.3
Netherlands	745	6.9	10.3	28.1	45.9	8.4	0.5	45.9	0.5	0.0	47.0	45.7
Norway	819	14.0	18.8	26.3	29.3	10.6	1.1	29.3	1.1	0.0	25.9	30.8
Russian Federation	1576	10.2	17.3	21.4	41.3	8.7	1.0	41.3	1.0	0.0	39.3	43.0
Slovenia	544	16.2	18.2	26.5	27.7	10.5	0.9	27.7	0.9	0.0	27.8	27.7
Sweden	1153	15.2	19.0	25.4	26.9	12.3	1.1	26.9	0.9	0.2	27.0	26.9
International Avg.	914	14.2	17.0	23.7	29.9	12.3	2.9	29.9	2.9	0.0	28.3	31.0

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Atomic and Nuclear Physics / Applying (PA13017 - P2\_07)  
 Label: Photoelectric effect  
 Type: MC Key: D

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	440	31.1	17.2	14.1	34.8	2.9	34.8	2.9	0.0	35.9	33.6
Iran, Islamic Rep. of	1217	11.4	8.2	9.7	61.4	9.3	61.4	9.2	0.1	65.7	58.0
Italy	928	9.8	9.2	16.1	46.9	18.0	46.9	17.9	0.1	49.2	45.4
Lebanon	803	17.0	15.8	11.0	54.1	2.1	54.1	2.1	0.0	60.4	51.6
Netherlands	745	11.6	6.4	20.1	61.0	0.9	61.0	0.9	0.0	60.0	61.1
Norway	819	12.8	11.6	12.0	60.8	2.8	60.8	2.8	0.0	68.0	57.7
Russian Federation	1576	8.7	14.5	7.9	68.1	0.8	68.1	0.8	0.0	67.9	68.2
Slovenia	544	16.3	4.0	11.0	68.0	0.6	68.0	0.6	0.0	73.3	66.0
Sweden	1153	8.8	7.4	12.4	70.4	1.1	70.4	0.9	0.2	78.3	66.0
International Avg.	914	14.2	10.5	12.7	58.4	4.3	58.4	4.2	0.0	62.1	56.4

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Electricity and Magnetism / Reasoning (PA13018 - P2\_08)  
 Label: Bulbs using least power  
 Type: MC Key: C

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	440	23.9	15.9	33.5	23.3	3.4	33.5	3.4	0.0	34.0	33.1
Iran, Islamic Rep. of	1217	24.5	12.0	32.5	21.5	9.5	32.5	9.5	0.1	23.4	39.8
Italy	929	29.2	7.7	40.4	18.5	4.1	40.4	4.0	0.1	40.9	40.1
Lebanon	802	22.6	11.4	51.3	12.6	2.2	51.3	2.2	0.0	53.6	50.4
Netherlands	745	13.4	11.1	66.1	8.8	0.5	66.1	0.5	0.0	63.4	66.6
Norway	818	25.8	7.5	54.0	12.5	0.3	54.0	0.3	0.0	49.1	56.1
Russian Federation	1576	26.2	14.0	35.6	23.9	0.2	35.6	0.2	0.0	28.4	41.5
Slovenia	544	17.0	10.3	57.6	14.5	0.6	57.6	0.6	0.0	57.3	57.6
Sweden	1153	17.7	17.5	58.4	5.7	0.7	58.4	0.6	0.2	55.3	60.1
International Avg.	914	22.2	11.9	47.7	15.7	2.4	47.7	2.4	0.0	45.0	49.5

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Atomic and Nuclear Physics / Applying (PA13019 - P2\_09)  
 Label: Nuclear change in an atom  
 Type: MC Key: B

COUNTRY	N	A	B	C	D	E	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	440	15.5	44.1	14.2	17.9	0.2	8.1	44.1	8.1	0.0	42.6	45.9
Iran, Islamic Rep. of	1217	12.2	31.8	5.6	15.3	17.0	18.0	31.8	18.0	0.1	30.4	32.9
Italy	929	10.0	15.2	10.2	20.2	21.7	22.7	15.2	22.5	0.2	16.4	14.3
Lebanon	798	6.3	60.4	5.3	9.2	11.7	7.1	60.4	7.0	0.1	67.8	57.5
Netherlands	744	4.2	55.3	2.0	22.4	14.9	1.1	55.3	1.0	0.1	52.7	56.0
Norway	819	19.2	15.0	10.0	28.4	24.2	3.3	15.0	3.3	0.0	9.4	17.3
Russian Federation	1576	12.1	61.3	6.3	10.7	8.4	1.2	61.3	1.2	0.0	61.1	61.5
Slovenia	544	13.2	46.9	7.7	12.7	18.0	1.5	46.9	1.5	0.0	51.6	45.2
Sweden	1153	18.0	29.5	10.2	19.5	20.6	2.2	29.5	2.1	0.2	31.3	28.5
International Avg.	913	12.3	40.0	8.0	17.4	15.2	7.2	40.0	7.2	0.1	40.4	39.9

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.



Physics: Electricity and Magnetism / Knowing (PA13021 - P3\_01)  
 Label: Wavelengths of radiation types  
 Type: MC Key: A

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	444	37.5	17.3	21.5	17.2	6.5	37.5	6.5	0.0	37.7	37.4
Iran, Islamic Rep. of	1212	69.0	4.8	10.7	10.9	4.7	69.0	4.5	0.2	72.5	66.2
Italy	924	43.1	10.0	19.1	20.1	7.7	43.1	7.5	0.2	41.0	44.5
Lebanon	799	39.6	18.7	18.8	18.7	4.2	39.6	4.1	0.1	36.4	40.9
Netherlands	763	51.5	11.3	10.5	26.1	0.6	51.5	0.4	0.2	37.4	55.3
Norway	807	56.4	9.2	12.7	21.1	0.6	56.4	0.6	0.0	51.9	58.2
Russian Federation	1593	57.6	10.5	12.9	17.2	1.8	57.6	1.7	0.1	54.2	60.1
Slovenia	547	50.1	11.5	13.9	23.8	0.6	50.1	0.6	0.0	47.4	51.2
Sweden	1144	46.6	11.3	15.4	25.1	1.6	46.6	1.4	0.2	45.8	47.1
International Avg.	915	50.1	11.6	15.1	20.0	3.1	50.1	3.0	0.1	47.1	51.2

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Heat and Temperature / Applying (PA13022 - P3\_02)  
 Label: Temperature of a system  
 Type: CR Key: X

COUNTRY	N	20	10	11	19	70	71	79	99	OMIT	NOT REACH ED	V1	V2	1.GIRL % Right	2.BOY % Right
Armenia	441	31.9	1.7	0.2	0.2	1.0	7.2	17.6	40.2	39.8	0.3	34.0	31.9	33.4	30.3
Iran, Islamic Rep. of	1212	11.2	21.3	2.3	2.2	24.4	0.4	20.3	18.0	17.4	0.6	37.0	11.2	8.4	13.4
Italy	925	10.6	3.4	0.6	0.9	7.5	0.2	25.5	51.2	49.2	2.0	15.5	10.6	9.2	11.6
Lebanon	799	2.1	1.7	1.9	0.1	1.9	0.1	36.1	56.1	56.0	0.1	5.8	2.1	2.1	2.1
Netherlands	763	26.4	9.8	0.8	1.8	25.7	0.8	29.4	5.4	5.2	0.2	38.8	26.4	22.6	27.4
Norway	809	7.5	4.8	1.1	0.1	24.1	0.2	23.0	39.1	39.0	0.1	13.6	7.5	5.3	8.4
Russian Federation	1593	26.9	4.6	1.8	1.0	18.0	1.0	17.4	29.4	28.7	0.7	34.2	26.9	23.0	29.8
Slovenia	547	18.9	9.8	2.3	0.4	4.2	0.3	57.3	6.7	6.7	0.0	31.4	18.9	23.2	17.1
Sweden	1144	7.5	5.0	0.1	0.0	5.0	0.2	52.8	29.3	29.1	0.2	12.6	7.5	7.5	7.5
International Avg.	915	15.9	6.9	1.2	0.7	12.4	1.2	31.0	30.6	30.1	0.5	24.8	15.9	15.0	16.4

V1 = Percent scoring 1 or better      V2 = Percent scoring 2 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Mechanics / Applying (PA13023 - P3\_03)  
 Label: Wavelength in shallow water  
 Type: CR Key: X

COUNTRY	N	10	70	71	72	79	99	OMIT	NOT	V1	1.GIRL % Right	2.BOY % Right
									REACH ED			
Armenia	441	44.4	0.6	1.9	9.6	7.0	36.7	32.1	4.6	44.4	46.6	41.9
Iran, Islamic Rep. of	1212	49.0	7.8	7.7	2.7	9.1	23.7	20.5	3.3	49.0	50.8	47.6
Italy	925	32.1	1.7	4.4	5.5	11.6	44.7	35.6	9.1	32.1	32.4	32.0
Lebanon	799	46.5	8.3	8.9	3.6	20.1	12.6	11.0	1.6	46.5	47.2	46.3
Netherlands	763	75.2	3.3	12.4	2.1	4.5	2.4	2.0	0.5	75.2	76.7	74.8
Norway	809	60.0	5.3	7.2	2.6	12.9	12.0	10.4	1.6	60.0	55.3	62.0
Russian Federation	1593	49.6	2.7	7.3	6.9	11.7	21.8	17.8	4.0	49.6	49.7	49.5
Slovenia	547	62.1	0.9	14.0	1.6	12.7	8.7	8.7	0.0	62.1	65.8	60.5
Sweden	1144	56.7	4.1	6.4	5.5	14.0	13.4	11.1	2.3	56.7	63.2	53.1
International Avg.	915	52.8	3.9	7.8	4.4	11.5	19.6	16.6	3.0	52.8	54.2	51.9

V1 = Percent scoring 1 or better      V2 = Percent scoring 2 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Electricity and Magnetism / Applying (PA13024 - P3\_04)  
 Label: Magnitude of electric field strength  
 Type: CR Key: X

COUNTRY	N	20	10	19	70	71	72	79	99	OMIT	NOT REACH ED	V1	V2	1.GIRL % Right	2.BOY % Right
Armenia	441	24.6	3.1	0.0	11.9	0.1	0.0	5.4	54.8	49.8	5.0	27.7	24.6	23.3	26.1
Iran, Islamic Rep. of	1212	10.9	22.3	1.5	8.4	0.9	0.2	23.8	31.9	26.6	5.3	34.7	10.9	8.3	12.9
Italy	924	12.5	10.0	1.2	8.3	1.1	0.0	16.1	51.0	39.6	11.4	23.6	12.5	9.2	14.7
Lebanon	799	3.2	4.0	0.2	0.9	0.0	0.0	34.8	57.0	54.8	2.2	7.4	3.2	2.6	3.4
Netherlands	763	19.4	17.9	1.5	5.0	0.4	0.0	34.9	20.8	20.2	0.6	38.8	19.4	20.9	19.1
Norway	809	16.8	22.4	0.9	8.3	0.4	0.0	21.4	29.9	27.8	2.0	40.1	16.8	18.7	16.0
Russian Federation	1592	29.9	15.4	0.1	3.3	1.6	0.1	13.8	35.9	31.0	4.9	45.4	29.9	26.0	32.9
Slovenia	547	23.9	15.7	0.0	9.7	1.1	0.2	24.9	24.6	24.4	0.2	39.6	23.9	29.8	21.4
Sweden	1144	12.7	15.0	0.1	1.6	1.0	0.0	32.9	36.7	33.3	3.5	27.8	12.7	17.7	10.0
International Avg.	915	17.1	14.0	0.6	6.4	0.7	0.1	23.1	38.1	34.2	3.9	31.7	17.1	17.4	17.4

V1 = Percent scoring 1 or better      V2 = Percent scoring 2 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Atomic and Nuclear Physics / Reasoning (PA13025 - P3\_05)  
 Label: Photoelectric effect in 3 metals  
 Type: CR Key: X

COUNTRY	N	20	21	10	11	12	19	70	71	79	99	OMIT	NOT REACHED	V1	V2	1.GIRL % Right	2.BOY % Right
Armenia	441	16.3	0.9	2.1	2.3	0.0	0.8	0.0	0.0	16.7	60.9	52.1	8.8	22.4	17.3	16.6	17.9
Iran, Islamic Rep. of	1212	6.5	0.5	1.3	4.8	2.2	5.1	5.8	1.0	26.7	46.2	38.5	7.7	20.3	7.0	4.0	9.3
Italy	925	2.9	0.6	0.1	1.0	0.2	0.3	0.3	1.2	12.7	80.6	64.6	16.0	5.2	3.6	2.7	4.2
Lebanon	799	20.7	0.2	1.2	8.5	9.2	6.0	11.7	0.0	19.6	22.7	17.1	5.6	45.9	21.0	21.7	20.7
Netherlands	763	24.9	0.9	2.5	7.2	1.9	3.5	4.9	1.0	37.6	15.8	14.7	1.1	40.7	25.7	21.9	26.8
Norway	809	10.9	0.5	0.5	4.3	1.1	0.5	1.7	2.8	29.9	48.0	42.9	5.1	17.6	11.3	9.1	12.3
Russian Federation	1593	16.3	1.6	0.9	9.5	3.1	1.4	1.8	1.4	23.7	40.1	31.3	8.8	32.9	18.0	12.4	22.2
Slovenia	547	18.3	0.7	0.2	12.1	0.5	0.2	4.7	0.0	37.7	25.7	24.6	1.1	32.0	19.0	18.5	19.2
Sweden	1144	14.1	0.9	0.8	3.0	0.6	1.3	1.3	4.1	33.5	40.3	33.5	6.8	20.7	15.0	15.3	14.8
International Avg.	915	14.6	0.7	1.1	5.9	2.1	2.1	3.6	1.3	26.5	42.3	35.5	6.8	26.4	15.3	13.6	16.4

V1 = Percent scoring 1 or better      V2 = Percent scoring 2 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Electricity and Magnetism / Reasoning (PA13026 - P3\_06)  
 Label: Period of charged particle in field  
 Type: CR Key: X

COUNTRY	N	10	19	70	71	72	79	99	OMIT	NOT REACH ED	V1	1.GIRL % Right	2.BOY % Right
Armenia	441	27.7	0.0	7.9	1.1	1.6	6.8	54.9	43.4	11.5	27.7	29.5	25.8
Iran, Islamic Rep. of	1213	4.0	0.3	0.0	2.5	0.9	39.6	52.8	41.3	11.5	4.3	1.3	6.6
Italy	924	11.7	1.0	0.7	1.7	0.3	22.2	62.5	40.6	21.9	12.7	13.5	12.1
Lebanon	799	0.2	0.0	0.4	0.0	0.3	30.9	68.2	62.0	6.2	0.2	.	0.3
Netherlands	763	3.8	0.3	0.1	6.1	1.8	61.0	26.9	25.5	1.4	4.0	1.2	4.8
Norway	809	10.1	0.3	0.0	20.8	0.3	35.3	33.2	26.3	6.9	10.4	11.4	10.0
Russian Federation	1593	21.1	0.4	1.6	2.0	2.1	22.1	50.7	37.1	13.5	21.5	18.4	23.9
Slovenia	547	5.6	0.0	0.0	5.4	2.0	53.0	34.0	31.6	2.4	5.6	5.0	5.9
Sweden	1144	1.9	0.1	0.3	3.5	0.8	45.1	48.2	39.0	9.2	2.0	2.0	2.1
International Avg.	915	9.6	0.3	1.2	4.8	1.1	35.1	47.9	38.5	9.4	9.8	10.3	10.2

V1 = Percent scoring 1 or better      V2 = Percent scoring 2 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Mechanics / Reasoning (PA13027A - P3\_07A)  
 Label: Value of gravity g  
 Type: CR Key: X

COUNTRY	N	10	11	19	70	71	72	79	99	OMIT	NOT	V1	1.GIRL % Right	2.BOY % Right
											REACH ED			
Armenia	441	9.0	0.2	1.1	1.0	0.1	0.0	17.9	70.6	51.7	18.9	10.4	10.3	10.5
Iran, Islamic Rep. of	1213	0.8	23.2	1.0	1.6	7.4	2.1	18.6	45.2	29.1	16.1	25.1	23.1	26.6
Italy	924	0.1	9.6	0.4	0.3	8.4	2.1	11.4	67.7	43.0	24.7	10.0	12.4	8.5
Lebanon	799	4.4	2.8	1.7	10.1	9.2	0.7	34.8	36.4	22.6	13.8	8.8	10.8	8.1
Netherlands	763	11.3	24.9	0.4	10.1	20.3	2.2	22.5	8.4	5.5	2.9	36.6	36.3	36.7
Norway	809	3.3	16.3	1.3	3.6	21.7	2.5	22.4	28.8	19.8	9.0	20.9	18.0	22.2
Russian Federation	1593	1.8	32.5	0.0	0.6	5.2	0.6	12.9	46.4	28.3	18.1	34.3	30.5	37.3
Slovenia	547	1.2	34.7	0.0	0.9	31.4	0.2	21.3	10.3	6.9	3.4	35.9	36.8	35.5
Sweden	1144	2.6	11.3	0.2	6.7	11.6	3.3	25.9	38.5	24.6	13.9	14.1	14.8	13.8
International Avg.	915	3.8	17.3	0.7	3.9	12.8	1.5	20.9	39.1	25.7	13.4	21.8	21.4	22.1

V1 = Percent scoring 1 or better      V2 = Percent scoring 2 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Mechanics / Applying (PA23071 - P4\_01)  
 Label: Graph of ball's potential energy  
 Type: MC Key: B

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	454	15.0	33.8	21.8	27.1	2.4	33.8	2.4	0.0	31.8	36.1
Iran, Islamic Rep. of	1216	28.5	53.6	8.4	7.4	2.1	53.6	2.1	0.0	52.7	54.3
Italy	929	26.4	52.5	6.7	12.6	1.8	52.5	1.8	0.0	52.7	52.3
Lebanon	791	35.9	56.0	3.7	2.7	1.7	56.0	1.4	0.3	54.0	56.8
Netherlands	766	13.9	79.2	1.2	5.6	0.0	79.2	0.0	0.0	77.2	79.9
Norway	821	25.6	65.0	3.5	5.5	0.3	65.0	0.3	0.1	57.3	68.0
Russian Federation	1590	42.9	43.6	7.2	5.7	0.6	43.6	0.6	0.0	39.6	46.8
Slovenia	553	30.3	62.7	3.2	3.5	0.2	62.7	0.2	0.0	58.0	64.5
Sweden	1138	14.9	63.6	6.2	14.8	0.5	63.6	0.4	0.1	61.2	64.9
International Avg.	918	25.9	56.7	6.9	9.5	1.1	56.7	1.0	0.1	53.8	58.2

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.



Physics: Mechanics / Knowing (PA23146 - P4\_02)  
 Label: Direction of acceleration of body  
 Type: CR Key: X

COUNTRY	N	10	70	71	79	99	OMIT	NOT REACHED	V1	1.GIRL % Right	2.BOY % Right
Armenia	451	68.0	0.2	0.0	14.6	17.2	17.2	0.0	68.0	70.4	65.3
Iran, Islamic Rep. of	1216	48.3	12.4	2.0	28.4	9.0	9.0	0.0	48.3	46.0	50.2
Italy	932	38.8	16.2	4.2	21.9	18.9	18.9	0.0	38.8	38.0	39.3
Lebanon	791	30.9	14.4	0.6	43.8	10.2	9.9	0.3	30.9	33.0	30.1
Netherlands	766	40.3	29.7	3.7	24.1	2.2	2.2	0.0	40.3	34.7	41.6
Norway	821	86.0	4.5	2.1	6.0	1.4	1.3	0.1	86.0	87.1	85.5
Russian Federation	1590	73.0	8.7	0.7	11.4	6.2	6.2	0.0	73.0	67.3	77.7
Slovenia	553	59.2	17.8	3.7	17.0	2.3	2.3	0.0	59.2	63.1	57.7
Sweden	1138	54.4	21.3	6.2	14.8	3.2	3.2	0.1	54.4	54.4	54.4
International Avg.	918	55.4	13.9	2.6	20.2	7.8	7.8	0.1	55.4	54.9	55.8

V1 = Percent scoring 1 or better      V2 = Percent scoring 2 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Mechanics / Knowing (PA23029 - P4\_03)  
 Label: Explain tennis ball rebound height  
 Type: MC Key: D

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	454	24.9	20.7	12.4	41.4	0.6	41.4	0.6	0.0	39.9	43.1
Iran, Islamic Rep. of	1216	33.3	6.7	9.8	49.3	1.0	49.3	1.0	0.0	48.3	50.0
Italy	931	47.9	14.3	3.4	30.4	4.0	30.4	4.0	0.0	30.1	30.7
Lebanon	784	35.6	14.8	13.4	33.9	2.2	33.9	1.9	0.3	31.8	34.8
Netherlands	766	25.2	4.4	1.9	68.0	0.5	68.0	0.5	0.0	55.2	71.1
Norway	820	32.3	5.9	2.7	58.5	0.6	58.5	0.5	0.1	54.8	59.9
Russian Federation	1590	27.2	19.6	7.6	45.4	0.2	45.4	0.2	0.0	40.1	49.8
Slovenia	553	34.3	4.5	4.4	56.4	0.4	56.4	0.4	0.0	56.0	56.6
Sweden	1138	30.7	9.9	2.8	55.7	0.9	55.7	0.9	0.1	52.7	57.3
International Avg.	917	32.4	11.2	6.5	48.8	1.1	48.8	1.1	0.1	45.4	50.4

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Electricity and Magnetism / Applying (PA23104 - P4\_04)  
 Label: Direction of electric force  
 Type: MC Key: C

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	454	22.0	19.8	45.2	11.7	1.3	45.2	1.3	0.0	43.9	46.7
Iran, Islamic Rep. of	1216	21.1	12.6	55.7	7.4	3.1	55.7	3.1	0.0	48.5	61.3
Italy	931	26.1	6.6	59.9	5.7	1.7	59.9	1.7	0.0	57.5	61.5
Lebanon	791	24.4	14.0	47.2	10.5	3.8	47.2	3.5	0.3	47.3	47.2
Netherlands	766	14.9	3.3	69.8	11.9	0.2	69.8	0.1	0.1	70.6	69.5
Norway	821	25.7	8.4	56.9	8.3	0.7	56.9	0.6	0.1	53.6	58.2
Russian Federation	1590	21.1	14.3	56.4	7.3	0.9	56.4	0.9	0.0	55.4	57.2
Slovenia	553	23.4	10.6	55.0	10.8	0.3	55.0	0.3	0.0	60.6	52.8
Sweden	.	.	.	.	.	.	.	.	.	.	.
International Avg.	890	22.3	11.2	55.8	9.2	1.5	55.8	1.4	0.1	54.7	56.8

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Electricity and Magnetism / Applying (PA23038 - P4\_05)  
 Label: Connections in decreasing resistance  
 Type: MC Key: A

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	454	43.3	14.9	22.9	17.1	1.7	43.3	1.7	0.0	40.7	46.2
Iran, Islamic Rep. of	1216	37.9	18.1	25.4	13.8	4.8	37.9	4.8	0.0	32.1	42.5
Italy	931	38.9	28.8	15.5	13.7	3.1	38.9	3.1	0.0	32.6	43.0
Lebanon	790	36.0	21.5	26.4	13.8	2.2	36.0	1.9	0.3	35.0	36.5
Netherlands	765	67.4	9.5	16.7	6.0	0.4	67.4	0.2	0.1	63.0	68.5
Norway	821	45.5	19.9	21.8	11.4	1.4	45.5	1.3	0.1	40.3	47.5
Russian Federation	1590	55.9	20.6	13.5	9.6	0.5	55.9	0.5	0.0	50.1	60.7
Slovenia	553	58.1	23.5	8.0	9.4	1.0	58.1	1.0	0.0	59.7	57.5
Sweden	1138	43.2	18.6	22.9	14.3	1.0	43.2	0.9	0.1	35.7	47.3
International Avg.	918	47.4	19.5	19.2	12.1	1.8	47.4	1.7	0.1	43.3	50.0

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Electricity and Magnetism / Knowing (PA23041 - P4\_06)  
 Label: Explain what symbols represent  
 Type: CR Key: X

COUNTRY	N	10	70	79	99	OMIT	NOT	V1	1.GIRL % Right	2.BOY % Right
							REACH ED			
Armenia	451	74.2	4.4	5.1	16.3	16.3	0.0	74.2	74.1	74.4
Iran, Islamic Rep. of	1216	66.2	24.1	6.9	2.9	2.9	0.0	66.2	68.9	64.0
Italy	932	77.3	13.0	4.5	5.3	5.3	0.0	77.3	81.3	74.7
Lebanon	791	52.2	29.7	10.4	7.6	7.3	0.3	52.2	59.8	49.1
Netherlands	766	73.2	22.4	3.7	0.6	0.5	0.1	73.2	71.2	73.7
Norway	821	78.7	17.5	3.2	0.6	0.6	0.1	78.7	83.4	76.8
Russian Federation	1590	70.7	19.9	5.6	3.8	3.8	0.0	70.7	68.1	72.8
Slovenia	553	79.1	17.1	3.1	0.7	0.7	0.0	79.1	86.1	76.4
Sweden	1138	63.1	23.2	10.0	3.7	3.7	0.1	63.1	67.0	60.9
International Avg.	918	70.5	19.0	5.8	4.6	4.6	0.1	70.5	73.3	69.2

V1 = Percent scoring 1 or better      V2 = Percent scoring 2 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Heat and Temperature / Applying (PA23053 - P4\_07)  
 Label: Gas volume when pressure doubled  
 Type: CR Key: X

COUNTRY	N	20	10	11	70	71	79	99	OMIT	NOT	V1	V2	1.GIRL % Right	2.BOY % Right
										REACH ED				
Armenia	451	43.2	2.8	1.1	0.0	0.2	17.7	35.1	35.1	0.0	47.0	43.2	43.5	42.9
Iran, Islamic Rep. of	1217	43.5	22.3	3.7	0.1	2.2	17.4	10.9	10.9	0.0	69.5	43.5	40.2	46.0
Italy	932	20.4	6.4	16.2	0.2	3.5	23.9	29.3	29.3	0.0	42.9	20.4	20.0	20.6
Lebanon	791	26.7	8.8	20.7	1.9	0.3	21.4	20.2	19.9	0.3	56.2	26.7	21.6	28.8
Netherlands	766	46.9	6.4	20.1	0.1	2.6	18.0	5.9	5.8	0.1	73.4	46.9	43.6	47.6
Norway	821	16.5	7.4	24.1	0.2	8.2	18.0	25.7	25.6	0.1	48.0	16.5	14.2	17.3
Russian Federation	1590	41.9	10.4	7.4	0.8	1.1	17.0	21.4	21.4	0.0	59.8	41.9	38.9	44.4
Slovenia	553	42.8	14.9	11.3	0.3	4.7	22.6	3.4	3.4	0.0	69.0	42.8	52.7	38.9
Sweden	1138	8.0	3.4	16.3	0.1	4.4	43.2	24.5	24.4	0.1	27.8	8.0	9.5	7.2
International Avg.	918	32.2	9.2	13.4	0.4	3.0	22.1	19.6	19.5	0.1	54.8	32.2	31.6	32.6

V1 = Percent scoring 1 or better      V2 = Percent scoring 2 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Heat and Temperature / Applying (PA23148 - P4\_08)  
 Label: Why temp decrease when air rises  
 Type: MC Key: B

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	454	24.2	41.1	14.5	16.5	3.7	41.1	3.7	0.0	40.5	41.7
Iran, Islamic Rep. of	1217	7.7	62.3	4.9	19.7	5.4	62.3	5.4	0.0	58.1	65.6
Italy	932	10.7	64.5	12.3	6.9	5.5	64.5	5.1	0.5	62.3	66.0
Lebanon	789	10.6	48.6	15.8	17.4	7.6	48.6	7.3	0.3	47.8	49.0
Netherlands	766	11.4	71.0	7.1	9.6	0.9	71.0	0.7	0.2	73.3	70.6
Norway	821	3.8	79.2	9.1	7.0	0.9	79.2	0.8	0.1	76.7	80.2
Russian Federation	1590	12.3	72.0	8.0	6.8	0.9	72.0	0.9	0.0	69.0	74.6
Slovenia	553	12.0	62.6	6.7	17.9	0.8	62.6	0.8	0.0	63.4	62.3
Sweden	1138	8.9	65.0	17.8	7.5	0.8	65.0	0.8	0.1	62.8	66.2
International Avg.	918	11.3	62.9	10.7	12.2	3.0	62.9	2.8	0.1	61.5	64.0

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Heat and Temperature / Reasoning (PA23119 - P4\_09)  
 Label: Why food stays at same temp in Sun  
 Type: CR Key: X

COUNTRY	N	20	21	10	70	71	79	99	OMIT	NOT REACH ED	V1	V2	1.GIRL % Right	2.BOY % Right
Armenia	451	13.2	0.3	1.1	0.8	0.5	22.4	61.6	61.6	0.0	14.6	13.5	15.7	11.1
Iran, Islamic Rep. of	1217	5.5	2.7	8.9	1.6	5.8	51.1	24.4	24.4	0.0	17.0	8.1	8.8	7.6
Italy	931	4.5	2.0	3.9	1.1	6.0	32.8	49.6	49.1	0.5	10.4	6.5	5.9	6.9
Lebanon	791	0.9	0.2	7.8	7.3	0.0	44.6	39.2	38.9	0.3	8.8	1.0	1.8	0.7
Netherlands	766	43.6	2.1	6.2	4.4	12.1	27.4	4.2	3.9	0.4	51.9	45.7	42.5	46.5
Norway	821	14.2	3.3	1.8	8.6	12.6	33.9	25.6	25.5	0.1	19.3	17.5	11.0	20.0
Russian Federation	1590	8.5	2.1	10.6	2.1	4.5	41.1	31.1	31.1	0.0	21.2	10.6	8.3	12.5
Slovenia	553	14.7	3.4	8.8	5.4	18.6	32.0	17.1	16.9	0.2	26.9	18.1	19.7	17.5
Sweden	1138	15.2	1.4	5.1	4.8	11.9	41.2	20.4	20.3	0.1	21.7	16.6	12.9	18.6
International Avg.	918	13.4	1.9	6.0	4.0	8.0	36.3	30.4	30.2	0.2	21.3	15.3	14.1	15.7

V1 = Percent scoring 1 or better      V2 = Percent scoring 2 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent.



Physics: Atomic and Nuclear Physics / Knowing (PA23088 - P4\_10)  
 Label: Protons and neutrons in isotopes  
 Type: CR Key: X

COUNTRY	N	10	70	71	79	99	OMIT	NOT REACHED	V1	1.GIRL % Right	2.BOY % Right
Armenia	451	73.2	0.8	1.1	9.8	15.1	15.1	0.0	73.2	75.6	70.6
Iran, Islamic Rep. of	1215	50.9	0.7	1.0	32.0	15.3	15.3	0.1	50.9	46.2	54.6
Italy	932	26.6	5.4	0.6	30.5	36.9	36.4	0.5	26.6	27.4	26.1
Lebanon	791	71.2	1.3	1.3	19.2	7.0	6.6	0.5	71.2	70.9	71.4
Netherlands	766	73.1	1.9	1.0	22.5	1.6	1.2	0.4	73.1	69.8	74.0
Norway	821	51.3	7.4	1.8	34.1	5.4	5.3	0.1	51.3	50.1	51.8
Russian Federation	1590	66.3	2.6	2.0	21.7	7.4	7.4	0.0	66.3	64.6	67.7
Slovenia	553	52.5	4.5	1.3	34.8	6.9	6.7	0.2	52.5	62.4	48.7
Sweden	1138	53.0	5.4	2.0	34.6	5.0	4.9	0.2	53.0	53.2	52.9
International Avg.	917	57.6	3.3	1.3	26.6	11.2	11.0	0.2	57.6	57.8	57.5

V1 = Percent scoring 1 or better      V2 = Percent scoring 2 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Atomic and Nuclear Physics / Applying (PA23066 - P4\_11)  
 Label: Complete equation for reaction  
 Type: CR Key: X

COUNTRY	N	10	11	70	79	99	OMIT	NOT REACHED	V1	1.GIRL % Right	2.BOY % Right
Armenia	451	49.9	1.4	2.5	13.6	32.6	32.6	0.0	51.3	51.1	51.5
Iran, Islamic Rep. of	1215	14.5	9.6	9.1	25.0	41.9	41.6	0.2	24.0	20.9	26.5
Italy	932	6.8	6.5	6.8	14.1	65.8	65.3	0.5	13.3	11.1	14.7
Lebanon	791	36.6	0.0	10.2	39.7	13.5	13.1	0.5	36.6	36.9	36.5
Netherlands	766	62.4	7.2	15.6	13.1	1.6	1.2	0.5	69.6	67.1	70.4
Norway	821	21.9	22.3	15.1	26.0	14.7	14.6	0.1	44.2	46.3	43.4
Russian Federation	1590	45.3	4.0	12.7	25.4	12.7	12.7	0.0	49.2	45.4	52.4
Slovenia	553	32.6	14.0	14.7	21.4	17.3	17.1	0.2	46.6	52.0	44.4
Sweden	1138	16.9	18.2	16.7	28.1	20.1	19.9	0.2	35.1	36.7	34.2
International Avg.	917	31.9	9.2	11.5	22.9	24.5	24.2	0.2	41.1	40.8	41.6

V1 = Percent scoring 1 or better      V2 = Percent scoring 2 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Electricity and Magnetism / Knowing (PA23048 - P5\_01)  
 Label: Interval with wavelengths of light  
 Type: MC Key: C

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	456	19.6	9.5	51.4	17.6	1.9	51.4	1.8	0.1	58.4	44.3
Iran, Islamic Rep. of	1226	5.6	4.0	60.6	21.2	8.7	60.6	8.3	0.4	56.0	64.3
Italy	932	8.2	4.9	60.9	17.8	8.2	60.9	7.9	0.4	56.4	64.1
Lebanon	802	4.6	1.4	80.6	13.1	0.4	80.6	0.1	0.3	78.6	81.4
Netherlands	768	0.2	0.4	96.9	1.5	1.0	96.9	0.1	0.8	96.6	97.1
Norway	820	1.8	0.6	93.8	3.1	0.7	93.8	0.6	0.1	94.7	93.4
Russian Federation	1587	6.6	3.6	78.0	11.5	0.4	78.0	0.4	0.0	76.9	78.8
Slovenia	535	2.6	4.2	82.6	9.9	0.6	82.6	0.6	0.0	78.7	84.1
Sweden	1141	1.8	2.1	91.2	4.2	0.7	91.2	0.5	0.2	90.9	91.4
International Avg.	919	5.7	3.4	77.3	11.1	2.5	77.3	2.2	0.3	76.3	77.7

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Electricity and Magnetism / Applying (PA23039 - P5\_02)  
 Label: Internal resistance of battery  
 Type: MC Key: A

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	456	43.8	15.0	26.6	10.6	3.9	43.8	3.8	0.1	46.9	40.7
Iran, Islamic Rep. of	1226	35.6	17.0	15.3	6.1	26.0	35.6	25.6	0.4	28.5	41.3
Italy	932	30.4	19.6	20.5	6.1	23.4	30.4	23.0	0.4	27.9	32.1
Lebanon	805	45.9	17.2	12.0	11.7	13.2	45.9	12.9	0.3	42.4	47.4
Netherlands	766	51.9	17.5	14.6	10.9	5.2	51.9	4.3	0.8	47.2	53.0
Norway	818	38.1	28.1	20.4	5.6	7.8	38.1	7.7	0.1	30.6	41.2
Russian Federation	1587	57.4	18.3	17.1	4.9	2.2	57.4	2.2	0.0	54.6	59.6
Slovenia	535	38.1	24.1	22.9	7.7	7.1	38.1	7.1	0.0	37.8	38.2
Sweden	1141	36.4	24.1	21.7	11.7	6.1	36.4	5.8	0.2	33.1	38.2
International Avg.	918	42.0	20.1	19.0	8.4	10.5	42.0	10.3	0.3	38.8	43.5

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Electricity and Magnetism / Applying (PA23035 - P5\_03)  
 Label: Resistance of bulb when it shines  
 Type: CR Key: X

COUNTRY	N	10	70	71	79	99	OMIT	NOT	V1	1.GIRL	2.BOY
								REACH ED		% Right	% Right
Armenia	453	79.9	1.7	0.0	5.4	13.0	12.7	0.3	79.9	83.3	76.4
Iran, Islamic Rep. of	1226	36.9	18.2	0.0	18.8	26.1	25.4	0.7	36.9	34.6	38.7
Italy	932	32.6	4.7	0.1	18.8	43.8	43.0	0.8	32.6	29.8	34.5
Lebanon	805	66.1	9.0	0.0	12.4	12.4	11.9	0.5	66.1	67.8	65.4
Netherlands	768	77.2	7.4	0.1	12.7	2.6	1.5	1.1	77.2	77.9	77.1
Norway	820	53.9	6.1	0.0	27.0	12.9	12.9	0.1	53.9	53.5	54.1
Russian Federation	1586	57.4	5.5	0.7	15.4	21.0	21.0	0.0	57.4	52.4	61.4
Slovenia	535	67.6	9.0	0.0	18.5	4.9	4.9	0.0	67.6	74.8	65.0
Sweden	1141	42.8	4.5	0.0	35.2	17.5	17.2	0.2	42.8	47.1	40.5
International Avg.	918	57.2	7.4	0.1	18.2	17.1	16.7	0.4	57.2	57.9	57.0

V1 = Percent scoring 1 or better      V2 = Percent scoring 2 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Electricity and Magnetism / Knowing (PA23042 - P5\_04)  
 Label: Paths particles follow  
 Type: MC Key: A

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	456	44.4	19.5	24.4	7.9	3.9	44.4	3.6	0.3	42.4	46.4
Iran, Islamic Rep. of	1226	60.9	3.2	23.7	8.0	4.1	60.9	3.4	0.7	58.2	63.2
Italy	932	43.4	6.5	29.7	12.8	7.6	43.4	6.6	1.0	44.7	42.5
Lebanon	799	28.9	7.5	20.3	34.4	8.8	28.9	8.4	0.5	36.5	25.7
Netherlands	768	52.3	2.8	27.6	15.3	1.9	52.3	0.7	1.2	52.3	52.5
Norway	819	64.3	2.5	22.4	9.5	1.4	64.3	1.3	0.1	66.4	63.4
Russian Federation	1587	62.4	7.3	21.1	8.5	0.7	62.4	0.7	0.0	61.6	62.9
Slovenia	535	54.8	7.8	29.1	7.4	0.9	54.8	0.9	0.0	59.7	53.0
Sweden	1141	45.3	5.1	32.5	15.3	1.8	45.3	1.3	0.5	43.9	46.0
International Avg.	918	50.7	6.9	25.6	13.3	3.5	50.7	3.0	0.5	51.8	50.6

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Mechanics / Reasoning (PA23012 - P5\_05)  
 Label: Tension of string as system falls  
 Type: CR Key: X

COUNTRY	N	10	70	71	79	99	OMIT	NOT	V1	1.GIRL	2.BOY
								REACH ED		% Right	% Right
Armenia	452	34.8	3.8	1.3	11.1	49.0	48.7	0.3	34.8	33.3	36.4
Iran, Islamic Rep. of	1226	19.4	7.9	16.9	27.5	28.2	27.4	0.8	19.4	14.2	23.7
Italy	932	5.4	6.0	8.4	19.1	61.2	60.1	1.1	5.4	3.5	6.7
Lebanon	805	5.6	15.3	8.8	41.3	28.9	27.9	1.0	5.6	5.2	5.8
Netherlands	768	31.8	13.9	18.1	27.7	8.6	7.2	1.3	31.8	19.1	34.8
Norway	820	30.6	11.5	19.9	17.8	20.3	20.0	0.2	30.6	14.0	37.5
Russian Federation	1587	29.8	19.4	7.8	21.0	22.1	22.0	0.0	29.8	22.9	35.1
Slovenia	535	22.7	7.6	7.7	47.3	14.7	14.7	0.0	22.7	11.1	27.0
Sweden	1141	18.6	3.2	10.0	40.7	27.6	27.0	0.6	18.6	12.3	22.0
International Avg.	918	22.1	9.8	11.0	28.2	28.9	28.3	0.6	22.1	15.1	25.4

V1 = Percent scoring 1 or better      V2 = Percent scoring 2 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Mechanics / Knowing (PA23131 - P5\_06)  
 Label: Description of person measurements  
 Type: MC Key: B

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	456	12.6	50.5	20.3	12.5	3.9	50.5	3.6	0.3	52.6	48.5
Iran, Islamic Rep. of	1226	16.3	21.9	36.5	15.8	9.4	21.9	8.0	1.4	19.6	23.8
Italy	931	15.6	36.3	29.7	7.9	10.6	36.3	9.1	1.5	31.8	39.4
Lebanon	805	15.3	22.8	34.4	21.6	5.9	22.8	4.5	1.4	20.8	23.6
Netherlands	768	12.8	29.8	50.8	4.9	1.6	29.8	0.3	1.3	28.8	30.0
Norway	820	11.7	42.6	37.3	6.8	1.6	42.6	0.9	0.7	33.4	46.4
Russian Federation	1587	14.5	53.9	23.5	6.6	1.6	53.9	1.5	0.1	50.5	56.5
Slovenia	535	17.2	26.2	51.4	3.7	1.5	26.2	1.5	0.0	23.6	27.2
Sweden	1141	13.7	41.9	34.2	8.5	1.7	41.9	1.0	0.7	34.3	46.1
International Avg.	919	14.4	36.2	35.4	9.8	4.2	36.2	3.4	0.8	32.8	37.9

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.



Physics: Heat and Temperature / Applying (PA23051 - P5\_07)  
 Label: Energy released for temp to fall  
 Type: CR Key: X

COUNTRY	N	10	70	79	99	OMIT	NOT REACHED		V1	1.GIRL % Right	2.BOY % Right
							ED				
Armenia	452	65.6	1.6	3.5	29.3	29.0	0.3	65.6		65.7	65.6
Iran, Islamic Rep. of	1226	30.3	40.1	13.9	15.8	13.8	2.0	30.3		22.7	36.4
Italy	932	14.1	16.9	15.0	53.9	52.4	1.5	14.1		8.6	18.1
Lebanon	805	4.1	3.9	30.7	61.3	59.2	2.1	4.1		3.7	4.3
Netherlands	768	69.9	12.2	12.0	5.8	4.4	1.5	69.9		66.3	70.8
Norway	820	38.3	10.0	15.0	36.7	36.0	0.7	38.3		34.8	39.8
Russian Federation	1587	50.8	18.2	9.8	21.2	21.1	0.2	50.8		45.9	54.5
Slovenia	535	70.4	12.9	9.9	6.9	6.9	0.0	70.4		72.3	69.7
Sweden	1141	34.1	12.4	20.7	32.8	32.1	0.7	34.1		33.5	34.4
International Avg.	918	42.0	14.2	14.5	29.3	28.3	1.0	42.0		39.3	43.7

V1 = Percent scoring 1 or better      V2 = Percent scoring 2 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Heat and Temperature / Applying (PA23085 - P5\_08)  
 Label: Temp when two rods have same length  
 Type: MC Key: C

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	455	12.2	26.6	48.3	4.6	8.3	48.3	8.0	0.3	50.9	45.6
Iran, Islamic Rep. of	1226	9.6	14.0	31.3	5.6	39.5	31.3	36.6	2.9	26.1	35.4
Italy	932	6.0	21.3	38.0	8.4	26.3	38.0	23.6	2.7	34.0	40.8
Lebanon	804	9.2	20.7	28.9	10.9	30.3	28.9	26.8	3.4	23.0	31.4
Netherlands	761	4.3	10.5	41.4	37.9	5.8	41.4	3.8	2.0	31.5	43.7
Norway	815	3.4	22.5	53.5	11.1	9.5	53.5	8.2	1.2	56.6	52.3
Russian Federation	1586	13.2	27.1	46.3	6.2	7.2	46.3	6.7	0.4	45.8	46.7
Slovenia	535	5.6	12.4	53.5	12.9	15.5	53.5	15.2	0.4	49.5	55.0
Sweden	1141	5.8	19.7	46.4	20.2	7.9	46.4	6.8	1.1	46.9	46.1
International Avg.	917	7.7	19.4	43.1	13.1	16.7	43.1	15.1	1.6	40.5	44.1

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Heat and Temperature / Applying (PA23130 - P5\_09)  
 Label: Why petals look black in green light  
 Type: CR Key: X

COUNTRY	N	20	10	70	79	99	OMIT	NOT REACHED	V1	V2	1.GIRL % Right	2.BOY % Right
Armenia	452	34.7	5.5	0.6	12.7	46.5	45.9	0.6	40.2	34.7	33.7	35.6
Iran, Islamic Rep. of	1226	10.2	6.5	2.8	42.1	38.3	30.6	7.7	16.7	10.2	7.0	12.9
Italy	931	10.0	5.8	2.3	28.1	53.8	50.1	3.7	15.8	10.0	5.5	13.1
Lebanon	805	4.8	7.7	2.6	46.0	38.9	35.1	3.8	12.5	4.8	5.1	4.7
Netherlands	768	55.3	12.8	8.2	18.0	5.8	3.6	2.1	68.0	55.3	53.4	55.7
Norway	820	37.7	10.0	8.2	24.6	19.5	17.9	1.6	47.7	37.7	38.4	37.4
Russian Federation	1587	19.8	6.6	2.4	44.1	27.2	26.4	0.8	26.4	19.8	18.7	20.7
Slovenia	535	16.1	12.4	4.9	40.8	25.8	24.6	1.2	28.6	16.1	18.3	15.3
Sweden	1141	19.5	12.5	4.7	38.0	25.3	24.1	1.2	32.1	19.5	21.7	18.3
International Avg.	918	23.1	8.9	4.1	32.7	31.2	28.7	2.5	32.0	23.1	22.4	23.8

V1 = Percent scoring 1 or better      V2 = Percent scoring 2 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Heat and Temperature / Reasoning (PA23086 - P5\_10)  
 Label: Explain blue as hotter than red  
 Type: CR Key: X

COUNTRY	N	10	11	79	99	OMIT	NOT	V1	1.GIRL	2.BOY
							REACH		% Right	% Right
							ED			
Armenia	452	13.3	4.3	15.3	67.1	65.2	1.8	17.7	19.1	16.2
Iran, Islamic Rep. of	1226	1.8	18.4	39.2	40.5	32.2	8.4	20.3	20.7	20.0
Italy	932	1.1	23.2	26.7	49.0	42.7	6.3	24.3	22.0	25.9
Lebanon	805	11.0	1.8	33.9	53.3	48.3	5.0	12.8	14.8	12.0
Netherlands	768	14.1	35.1	40.2	10.6	7.7	2.9	49.2	47.0	49.8
Norway	820	4.2	42.4	30.6	22.8	20.0	2.8	46.6	38.2	50.0
Russian Federation	1587	1.8	13.9	30.4	53.9	52.3	1.6	15.7	13.7	17.3
Slovenia	535	3.4	13.3	50.6	32.7	31.1	1.6	16.7	16.4	16.9
Sweden	1141	3.0	41.8	30.6	24.6	22.9	1.7	44.9	43.4	45.7
International Avg.	918	6.0	21.6	33.1	39.4	35.8	3.6	27.6	26.1	28.2

V1 = Percent scoring 1 or better      V2 = Percent scoring 2 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Atomic and Nuclear Physics / Applying (PA23064 - P5\_11)  
 Label: Years passed since mammoth died  
 Type: MC Key: B

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	456	8.7	34.7	38.4	10.4	7.8	34.7	6.0	1.8	34.5	34.9
Iran, Islamic Rep. of	1226	6.2	25.0	24.0	7.9	36.9	25.0	25.9	10.9	15.6	32.6
Italy	932	6.7	45.4	21.9	7.7	18.3	45.4	9.9	8.3	36.7	51.5
Lebanon	804	5.3	42.9	27.3	8.2	16.3	42.9	9.8	6.5	42.3	43.1
Netherlands	768	4.0	78.0	7.8	5.7	4.5	78.0	1.3	3.2	81.6	77.3
Norway	818	3.2	63.8	16.4	10.2	6.3	63.8	3.1	3.2	62.8	64.3
Russian Federation	1587	10.2	43.1	29.6	10.0	7.0	43.1	3.5	3.5	38.0	47.1
Slovenia	535	5.2	59.0	18.5	11.1	6.2	59.0	3.9	2.3	57.5	59.5
Sweden	1141	6.3	61.4	19.0	9.8	3.5	61.4	1.7	1.8	58.6	63.0
International Avg.	919	6.2	50.4	22.6	9.0	11.9	50.4	7.3	4.6	47.5	52.6

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Heat and Temperature / Applying (PA23050 - P6\_01)  
 Label: Statements of metal colder than wood  
 Type: MC Key: C

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	1.GIRL % Right	2.BOY % Right
Armenia	224	13.1	16.8	60.4	8.7	1.0	60.4	1.0	64.6	55.0
Iran, Islamic Rep. of	606	28.1	6.8	52.4	11.6	1.1	52.4	1.1	50.4	53.9
Italy	468	47.8	6.1	39.6	2.7	3.8	39.6	3.8	33.5	43.2
Lebanon	391	25.2	16.3	39.9	13.2	5.3	39.9	5.3	47.4	36.7
Netherlands	373	29.5	5.7	64.0	0.8	0.0	64.0	0.0	54.5	66.2
Norway	416	45.3	5.6	41.6	6.8	0.7	41.6	0.7	30.1	46.0
Russian Federation	788	47.2	10.4	40.0	2.4	0.1	40.0	0.1	31.8	47.5
Slovenia	284	32.4	9.8	54.2	2.1	1.5	54.2	1.5	39.1	59.6
Sweden	572	37.0	5.0	51.5	6.3	0.2	51.5	0.2	45.3	54.9
International Avg.	458	33.9	9.2	49.3	6.1	1.5	49.3	1.5	44.1	51.4

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Heat and Temperature / Knowing (PA23056 - P6\_02)  
 Label: Statement of greenhouse effect  
 Type: MC Key: B

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	1.GIRL % Right	2.BOY % Right
Armenia	224	20.2	52.5	16.7	8.6	2.0	52.5	2.0	45.7	60.8
Iran, Islamic Rep. of	606	6.3	71.0	20.1	0.9	1.6	71.0	1.6	68.4	73.1
Italy	468	17.1	73.6	8.8	0.0	0.5	73.6	0.5	68.0	76.8
Lebanon	391	22.3	35.3	33.2	5.3	4.0	35.3	4.0	36.2	34.9
Netherlands	373	4.3	88.1	7.6	0.0	0.0	88.1	0.0	87.5	88.2
Norway	416	7.2	82.0	10.1	0.7	0.0	82.0	0.0	76.9	83.9
Russian Federation	788	22.0	49.5	26.2	2.0	0.4	49.5	0.4	51.0	48.1
Slovenia	284	12.9	67.9	18.5	0.4	0.4	67.9	0.4	66.3	68.4
Sweden	572	10.7	79.8	9.2	0.1	0.2	79.8	0.2	74.2	82.8
International Avg.	458	13.7	66.6	16.7	2.0	1.0	66.6	1.0	63.8	68.6

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Heat and Temperature / Knowing (PA23142 - P6\_03)  
 Label: Electromagnetic radiation of Earth  
 Type: MC Key: B

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	1.GIRL % Right	2.BOY % Right
Armenia	224	32.7	36.5	12.8	16.8	1.2	36.5	1.2	39.5	32.7
Iran, Islamic Rep. of	605	19.6	36.9	14.1	23.6	5.8	36.9	5.8	28.4	43.3
Italy	468	16.3	48.0	7.8	24.8	3.1	48.0	3.1	32.4	57.1
Lebanon	390	26.4	22.9	19.8	27.3	3.7	22.9	3.7	19.8	24.2
Netherlands	373	2.2	84.3	1.3	12.2	0.0	84.3	0.0	70.3	87.3
Norway	416	7.2	60.1	5.0	27.5	0.2	60.1	0.2	42.1	67.0
Russian Federation	788	18.0	58.9	2.0	20.8	0.3	58.9	0.3	49.2	67.9
Slovenia	284	5.2	57.0	6.0	31.5	0.4	57.0	0.4	41.1	62.7
Sweden	572	9.7	55.7	4.9	29.5	0.2	55.7	0.2	48.4	59.7
International Avg.	458	15.2	51.1	8.2	23.8	1.7	51.1	1.7	41.3	55.8

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.



Physics: Mechanics / Applying (PA23072 - P6\_04)  
 Label: Max distance spring will compress  
 Type: CR Key: X

COUNTRY	N	10	11	70	71	79	99	OMIT	V1	1.GIRL % Right	2.BOY % Right
Armenia	224	42.8	2.4	0.0	0.0	11.9	43.0	43.0	45.2	44.3	46.3
Iran, Islamic Rep. of	605	18.6	10.6	3.2	0.0	57.0	10.7	10.7	29.2	19.7	36.4
Italy	468	22.8	7.1	0.3	0.0	26.2	43.6	43.6	29.9	27.3	31.5
Lebanon	391	53.3	15.5	1.2	0.2	19.3	10.4	10.4	68.8	72.0	67.4
Netherlands	373	70.8	10.2	0.5	0.0	16.8	1.7	1.7	81.0	87.3	79.6
Norway	416	16.0	3.5	1.2	0.0	52.0	27.4	27.4	19.5	18.8	19.8
Russian Federation	788	42.4	9.8	0.4	0.1	22.7	24.6	24.6	52.2	44.1	59.7
Slovenia	284	52.7	12.0	3.6	0.0	27.6	4.2	4.2	64.6	64.2	64.8
Sweden	572	25.7	5.5	1.2	0.2	49.9	17.5	17.5	31.2	27.4	33.2
International Avg.	458	38.4	8.5	1.3	0.1	31.5	20.3	20.3	46.8	45.0	48.7

V1 = Percent scoring 1 or better      V2 = Percent scoring 2 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Mechanics / Reasoning (PA23022 - P6\_05)  
 Label: Show Venus moves faster than Earth  
 Type: CR Key: X

COUNTRY	N	20	10	70	79	99	OMIT	V1	V2	1.GIRL % Right	2.BOY % Right
Armenia	224	29.0	1.8	0.9	14.1	54.2	54.2	30.8	29.0	30.3	27.3
Iran, Islamic Rep. of	605	9.1	9.7	21.3	26.9	33.0	33.0	18.8	9.1	6.1	11.4
Italy	468	5.0	4.6	14.6	26.9	48.9	48.9	9.7	5.0	4.8	5.2
Lebanon	391	3.8	6.9	7.7	36.8	44.9	44.9	10.7	3.8	4.3	3.5
Netherlands	373	5.0	9.2	34.3	40.1	11.4	11.4	14.2	5.0	1.7	5.8
Norway	416	27.6	11.8	8.7	26.4	25.5	25.5	39.4	27.6	26.2	28.1
Russian Federation	788	20.2	7.0	25.1	20.3	27.4	27.4	27.2	20.2	14.8	25.3
Slovenia	284	10.0	4.1	29.8	35.0	21.1	21.1	14.1	10.0	10.4	9.9
Sweden	572	4.2	5.6	13.4	39.7	37.0	37.0	9.8	4.2	3.0	4.9
International Avg.	458	12.7	6.7	17.3	29.6	33.7	33.7	19.4	12.7	11.3	13.5

V1 = Percent scoring 1 or better      V2 = Percent scoring 2 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Electricity and Magnetism / Applying (PA23030 - P6\_06)  
 Label: Figure describing forces on q and 2q  
 Type: MC Key: B

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	224	35.6	36.5	8.9	18.4	0.6	36.5	0.6	0.0	35.6	37.6
Iran, Islamic Rep. of	605	26.3	28.7	31.9	11.5	1.5	28.7	1.5	0.0	21.6	34.2
Italy	466	51.2	15.7	24.1	6.4	2.6	15.7	2.6	0.0	13.6	16.9
Lebanon	390	45.1	10.0	28.0	15.7	1.2	10.0	0.9	0.2	11.8	9.2
Netherlands	373	47.5	16.3	31.9	3.5	0.8	16.3	0.8	0.0	11.5	17.3
Norway	416	47.8	17.3	26.4	8.1	0.4	17.3	0.4	0.0	12.3	19.2
Russian Federation	788	39.4	26.0	23.4	10.8	0.4	26.0	0.4	0.0	21.5	30.0
Slovenia	284	37.5	20.3	29.7	11.6	0.8	20.3	0.8	0.0	17.7	21.2
Sweden	572	37.9	30.0	25.3	5.3	1.4	30.0	1.4	0.0	23.4	33.6
International Avg.	458	40.9	22.3	25.5	10.2	1.1	22.3	1.0	0.0	18.8	24.4

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Electricity and Magnetism / Reasoning (PA23078 - P6\_07)  
 Label: Combined force of A and B on C  
 Type: CR Key: X

COUNTRY	N	10	11	12	70	79	99	OMIT	NOT REACH ED	V1	1.GIRL % Right	2.BOY % Right
Armenia	224	45.1	2.0	7.1	1.9	31.1	12.8	12.8	0.0	54.2	51.3	57.9
Iran, Islamic Rep. of	605	3.1	34.5	3.3	30.1	21.6	7.4	7.4	0.0	40.9	36.0	44.6
Italy	468	2.8	21.3	3.2	30.2	31.6	10.9	10.9	0.0	27.4	20.6	31.4
Lebanon	391	17.2	12.8	1.5	12.4	45.6	10.5	10.3	0.2	31.5	39.1	28.2
Netherlands	373	15.2	20.4	10.6	23.2	29.1	1.4	1.4	0.0	46.3	34.5	48.9
Norway	416	7.9	32.1	3.9	25.2	28.8	2.1	1.9	0.2	43.9	37.9	46.1
Russian Federation	788	2.5	16.0	3.4	42.2	29.8	6.0	6.0	0.0	22.0	19.8	24.1
Slovenia	284	18.4	32.8	5.4	11.4	30.6	1.4	1.4	0.0	56.6	58.3	56.0
Sweden	572	9.9	37.0	3.0	15.2	32.0	2.9	2.9	0.0	49.9	42.4	53.9
International Avg.	458	13.6	23.2	4.6	21.3	31.1	6.1	6.1	0.0	41.4	37.8	43.5

V1 = Percent scoring 1 or better      V2 = Percent scoring 2 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Electricity and Magnetism / Reasoning (PA23113 - P6\_08)  
 Label: Statements about red laser pointer  
 Type: MC Key: D

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	224	25.9	21.7	20.6	25.2	6.5	25.2	6.5	0.0	18.6	33.4
Iran, Islamic Rep. of	605	20.6	16.5	12.1	39.9	10.8	39.9	10.8	0.0	36.1	42.7
Italy	468	27.3	13.4	12.3	36.6	10.4	36.6	10.4	0.0	25.2	43.3
Lebanon	389	28.5	17.8	20.8	27.2	5.7	27.2	5.1	0.6	27.6	27.1
Netherlands	372	24.8	4.4	7.7	62.8	0.2	62.8	0.2	0.0	42.8	67.2
Norway	415	21.6	6.6	3.6	67.8	0.4	67.8	0.2	0.2	58.8	71.3
Russian Federation	787	31.2	7.1	9.5	51.7	0.6	51.7	0.6	0.0	47.2	55.8
Slovenia	284	41.9	9.8	11.2	36.0	1.1	36.0	1.1	0.0	26.4	39.4
Sweden	572	20.3	7.9	11.9	58.3	1.5	58.3	1.5	0.0	46.6	64.6
International Avg.	457	26.9	11.7	12.2	45.1	4.1	45.1	4.1	0.1	36.6	49.4

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Electricity and Magnetism / Knowing (PA23128 - P6\_09)  
 Label: Why don't sunburn behind glass  
 Type: CR Key: X

COUNTRY	N	10	70	71	72	79	99	OMIT	NOT REACHED	V1	1.GIRL % Right	2.BOY % Right
Armenia	224	50.0	6.7	1.0	0.0	15.8	26.5	26.5	0.0	50.0	49.2	50.9
Iran, Islamic Rep. of	605	28.9	11.6	7.2	11.4	33.2	7.7	7.7	0.0	28.9	30.4	27.9
Italy	468	16.8	24.8	10.1	4.0	22.2	22.2	22.2	0.0	16.8	16.3	17.0
Lebanon	391	16.1	24.7	1.1	2.0	35.6	20.5	19.9	0.6	16.1	13.6	17.2
Netherlands	373	57.8	22.3	4.4	0.8	12.7	2.1	2.1	0.0	57.8	63.7	56.5
Norway	416	41.3	36.2	8.7	3.4	6.7	3.7	3.6	0.2	41.3	46.9	39.2
Russian Federation	788	47.9	19.2	8.5	0.7	14.2	9.4	9.4	0.0	47.9	45.8	49.9
Slovenia	284	52.7	34.6	4.7	1.0	3.7	3.3	3.3	0.0	52.7	54.7	52.0
Sweden	572	35.0	33.2	7.0	3.5	15.7	5.6	5.5	0.2	35.0	33.7	35.6
International Avg.	458	38.5	23.7	5.9	3.0	17.8	11.2	11.1	0.1	38.5	39.4	38.5

V1 = Percent scoring 1 or better      V2 = Percent scoring 2 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Atomic and Nuclear Physics / Applying (PA23058 - P6\_10)  
 Label: Pick hypothesis to support results  
 Type: MC Key: C

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	224	15.1	32.0	31.1	18.5	3.2	31.1	3.2	0.0	32.6	29.3
Iran, Islamic Rep. of	605	7.3	21.9	62.9	5.8	2.1	62.9	2.1	0.0	56.8	67.5
Italy	468	3.9	34.4	51.5	3.9	6.2	51.5	6.2	0.0	42.0	57.1
Lebanon	391	16.8	37.8	31.0	9.2	5.3	31.0	4.7	0.6	30.5	31.2
Netherlands	373	6.7	30.5	60.0	2.2	0.5	60.0	0.5	0.0	58.1	60.5
Norway	416	12.2	21.8	63.7	1.7	0.6	63.7	0.4	0.2	60.7	64.8
Russian Federation	788	9.2	28.1	55.0	6.5	1.3	55.0	1.3	0.0	46.4	62.9
Slovenia	284	10.9	39.6	45.5	2.3	1.8	45.5	1.8	0.0	51.6	43.2
Sweden	572	11.9	26.9	58.1	2.2	0.9	58.1	0.7	0.2	57.3	58.5
International Avg.	458	10.4	30.3	51.0	5.8	2.4	51.0	2.3	0.1	48.5	52.8

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Atomic and Nuclear Physics / Applying (PA23115 - P6\_11)  
 Label: Explain origin of emitted electron  
 Type: MC Key: D

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	224	18.9	11.1	20.0	45.1	5.0	45.1	5.0	0.0	46.5	43.4
Iran, Islamic Rep. of	605	28.6	5.3	28.7	25.3	12.1	25.3	12.1	0.0	18.0	30.8
Italy	468	32.7	9.9	20.0	19.6	17.7	19.6	17.7	0.0	17.7	20.8
Lebanon	390	31.8	9.5	17.0	33.8	7.9	33.8	7.3	0.6	34.7	33.5
Netherlands	373	18.4	3.0	20.0	58.4	0.2	58.4	0.2	0.0	42.7	61.9
Norway	416	30.0	5.1	33.5	30.0	1.3	30.0	1.1	0.2	23.9	32.3
Russian Federation	788	30.9	5.2	38.7	22.7	2.6	22.7	2.6	0.0	21.1	24.1
Slovenia	284	21.3	7.4	41.6	27.5	2.2	27.5	2.2	0.0	31.1	26.2
Sweden	572	32.5	4.2	25.4	37.2	0.7	37.2	0.5	0.2	30.2	41.0
International Avg.	458	27.2	6.7	27.2	33.3	5.5	33.3	5.4	0.1	29.5	34.9

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.



Physics: Mechanics / Applying (PA23110 - P7\_01)  
 Label: Statement of magnitude of forces  
 Type: MC Key: C

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	226	29.5	8.6	37.2	17.7	7.1	37.2	6.8	0.3	41.2	33.0
Iran, Islamic Rep. of	615	35.0	5.9	27.1	26.1	6.0	27.1	5.3	0.7	22.0	31.2
Italy	468	23.8	5.4	34.7	25.7	10.4	34.7	10.2	0.2	31.7	36.7
Lebanon	403	9.0	4.7	34.2	47.2	4.9	34.2	4.3	0.6	34.4	34.2
Netherlands	375	12.2	1.0	65.1	20.0	1.7	65.1	0.3	1.5	60.5	65.9
Norway	415	11.9	0.9	67.4	19.0	0.8	67.4	0.8	0.0	66.9	67.6
Russian Federation	785	19.4	5.4	58.4	15.8	1.0	58.4	1.0	0.0	51.9	63.7
Slovenia	266	15.0	2.8	64.6	17.7	0.0	64.6	0.0	0.0	56.7	67.2
Sweden	575	12.5	2.4	68.2	16.3	0.7	68.2	0.7	0.0	56.8	74.3
International Avg.	459	18.7	4.1	50.8	22.8	3.6	50.8	3.3	0.4	46.9	52.6

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Mechanics / Knowing (PA23014 - P7\_02)  
 Label: Forces acting on stone after thrown  
 Type: CR Key: X

COUNTRY	N	10	70	71	79	99	OMIT	NOT REACHED	V1	1.GIRL % Right	2.BOY % Right
Armenia	226	66.8	3.2	1.2	15.1	13.7	13.1	0.6	66.8	67.3	66.2
Iran, Islamic Rep. of	615	57.3	30.8	2.0	3.4	6.6	5.8	0.8	57.3	50.7	62.6
Italy	468	31.3	35.9	0.3	20.1	12.5	12.3	0.2	31.3	26.5	34.5
Lebanon	405	47.0	21.3	1.3	26.1	4.3	3.7	0.5	47.0	60.4	41.3
Netherlands	375	67.3	5.8	0.3	24.9	1.7	0.3	1.5	67.3	74.6	66.2
Norway	415	52.6	25.2	0.2	20.7	1.3	1.3	0.0	52.6	38.3	58.8
Russian Federation	785	42.1	15.9	0.8	33.9	7.3	7.3	0.0	42.1	36.5	46.6
Slovenia	266	63.0	34.5	0.4	1.8	0.4	0.4	0.0	63.0	58.4	64.4
Sweden	575	35.7	26.5	0.2	35.7	1.9	1.7	0.2	35.7	25.0	41.4
International Avg.	459	51.4	22.1	0.7	20.2	5.5	5.1	0.4	51.4	48.6	53.6

V1 = Percent scoring 1 or better      V2 = Percent scoring 2 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Mechanics / Reasoning (PA23025 - P7\_03)  
 Label: Distance 60kg skater moved  
 Type: CR Key: X

COUNTRY	N	20	10	11	70	71	72	79	99	OMIT	NOT REACH ED	V1	V2	1.GIRL % Right	2.BOY % Right
Armenia	226	8.8	2.3	2.6	0.0	0.0	0.0	11.1	75.1	74.5	0.6	13.8	8.8	7.7	9.9
Iran, Islamic Rep. of	615	7.9	0.6	2.9	1.9	2.4	2.5	47.8	34.0	33.2	0.8	11.4	7.9	2.3	12.5
Italy	467	6.5	4.0	0.9	1.3	2.7	0.7	18.6	65.3	65.1	0.2	11.4	6.5	3.2	8.7
Lebanon	405	7.7	3.5	2.4	3.4	0.8	0.0	43.1	39.0	38.5	0.5	13.6	7.7	5.6	8.7
Netherlands	375	36.1	16.2	3.0	2.3	10.6	0.8	24.0	7.0	5.5	1.5	55.4	36.1	39.4	35.4
Norway	415	12.1	4.4	1.3	0.2	13.8	4.3	37.5	26.4	26.4	0.0	17.7	12.1	5.1	15.2
Russian Federation	785	17.3	0.6	3.0	2.3	3.7	1.2	25.5	46.4	46.4	0.0	20.9	17.3	13.1	20.7
Slovenia	266	25.5	11.4	5.1	1.9	7.3	2.8	34.7	11.3	11.3	0.0	42.1	25.5	32.8	23.2
Sweden	575	9.1	3.1	1.8	4.5	10.4	2.6	45.6	23.0	22.8	0.2	13.9	9.1	10.2	8.4
International Avg.	459	14.6	5.1	2.6	2.0	5.7	1.7	32.0	36.4	36.0	0.4	22.2	14.6	13.3	15.8

V1 = Percent scoring 1 or better      V2 = Percent scoring 2 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Mechanics / Applying (PA23028 - P7\_04)  
 Label: Cyclist momentum crossing finish  
 Type: MC Key: B

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	226	16.0	26.3	38.0	12.3	7.4	26.3	6.8	0.6	31.5	20.8
Iran, Islamic Rep. of	615	8.8	33.2	19.4	20.2	18.4	33.2	17.2	1.1	25.3	39.7
Italy	468	12.4	45.6	12.1	10.1	19.9	45.6	19.7	0.2	34.6	53.1
Lebanon	405	9.3	43.2	19.2	23.8	4.4	43.2	3.8	0.5	31.9	48.2
Netherlands	375	3.7	78.2	8.6	7.6	2.0	78.2	0.5	1.5	73.2	79.3
Norway	415	5.7	75.3	11.3	5.7	1.9	75.3	1.9	0.0	72.3	76.7
Russian Federation	785	8.7	52.4	21.4	14.5	2.9	52.4	2.9	0.0	46.7	57.1
Slovenia	266	6.6	74.3	10.5	7.1	1.6	74.3	1.6	0.0	70.4	75.5
Sweden	575	9.0	61.7	21.5	5.5	2.2	61.7	1.8	0.4	59.8	62.8
International Avg.	459	8.9	54.5	18.0	11.9	6.7	54.5	6.3	0.5	49.5	57.0

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Electricity and Magnetism / Applying (PA23034 - P7\_05)  
 Label: Draw direction of electric field  
 Type: CR Key: X

COUNTRY	N	10	70	71	79	99	OMIT	NOT REACHED	V1	1.GIRL % Right	2.BOY % Right
Armenia	226	81.2	3.2	2.8	4.2	8.5	8.0	0.6	81.2	82.8	79.6
Iran, Islamic Rep. of	615	59.1	10.0	4.4	11.9	14.6	13.3	1.3	59.1	58.1	60.0
Italy	468	24.5	21.3	0.9	14.0	39.3	39.1	0.2	24.5	18.9	28.3
Lebanon	405	18.4	33.3	4.0	24.1	20.2	19.4	0.7	18.4	21.5	17.1
Netherlands	375	15.3	53.6	6.6	14.9	9.6	7.9	1.7	15.3	6.7	16.9
Norway	415	16.8	53.3	4.0	10.4	15.4	15.2	0.2	16.8	13.9	18.1
Russian Federation	785	37.5	28.2	2.4	16.1	15.8	15.8	0.0	37.5	31.1	42.6
Slovenia	266	27.2	33.3	4.5	24.6	10.5	10.5	0.0	27.2	31.9	25.6
Sweden	575	13.3	40.2	3.1	19.5	23.9	23.1	0.8	13.3	15.0	12.3
International Avg.	459	32.6	30.7	3.6	15.5	17.5	16.9	0.6	32.6	31.1	33.4

V1 = Percent scoring 1 or better      V2 = Percent scoring 2 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Electricity and Magnetism / Applying (PA23044 - P7\_06)  
 Label: Describe electromagnetic induction  
 Type: CR Key: X

COUNTRY	N	10	11	70	71	79	99	OMIT	NOT REACHED	V1	1.GIRL % Right	2.BOY % Right
Armenia	226	19.0	1.2	0.8	1.6	4.3	73.1	72.5	0.6	20.2	23.6	16.7
Iran, Islamic Rep. of	615	10.9	1.0	4.1	3.1	39.1	41.9	40.5	1.3	11.8	6.4	16.2
Italy	465	10.6	1.5	2.7	2.9	24.1	58.3	58.1	0.2	12.1	9.2	14.1
Lebanon	405	23.1	1.9	8.2	2.8	34.4	29.6	28.2	1.4	25.0	26.8	24.3
Netherlands	375	28.9	4.8	5.0	0.8	45.7	14.7	13.0	1.7	33.7	26.1	35.2
Norway	415	46.9	2.1	8.1	1.7	23.2	18.1	17.9	0.2	48.9	42.5	51.7
Russian Federation	785	16.0	3.7	3.1	2.0	32.2	43.0	43.0	0.0	19.7	13.0	25.1
Slovenia	266	17.0	4.8	2.1	1.2	36.1	38.8	38.8	0.0	21.8	21.1	22.1
Sweden	575	22.7	1.8	5.4	2.6	26.2	41.4	40.4	1.0	24.4	22.2	25.7
International Avg.	459	21.7	2.5	4.4	2.1	29.5	39.9	39.2	0.7	24.2	21.2	25.7

V1 = Percent scoring 1 or better      V2 = Percent scoring 2 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Heat and Temperature / Reasoning (PA23082 - P7\_07)  
 Label: Specific heat capacity of sand  
 Type: CR Key: X

COUNTRY	N	10	70	79	99	OMIT	NOT	V1	1.GIRL	2.BOY
							REACH		% Right	% Right
							ED			
Armenia	226	42.9	6.6	8.4	42.1	41.5	0.6	42.9	48.2	37.3
Iran, Islamic Rep. of	615	63.9	6.0	9.7	20.3	18.4	1.9	63.9	60.3	66.9
Italy	467	32.6	13.2	12.2	42.0	41.6	0.4	32.6	23.8	38.7
Lebanon	405	20.3	20.7	27.7	31.3	29.7	1.7	20.3	20.6	20.1
Netherlands	375	74.0	18.1	5.2	2.7	1.0	1.7	74.0	69.5	74.7
Norway	415	68.5	15.9	9.8	5.8	5.6	0.2	68.5	65.0	70.0
Russian Federation	785	53.4	19.5	11.8	15.3	15.3	0.0	53.4	46.9	58.7
Slovenia	266	64.7	21.0	7.1	7.2	7.2	0.0	64.7	63.8	65.0
Sweden	575	50.1	18.7	21.4	9.8	8.8	1.0	50.1	51.3	49.4
International Avg.	459	52.3	15.5	12.6	19.6	18.8	0.8	52.3	49.9	53.4

V1 = Percent scoring 1 or better      V2 = Percent scoring 2 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Heat and Temperature / Knowing (PA23140 - P7\_08)  
 Label: Temp when radiation visible as light  
 Type: MC Key: C

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	226	9.7	19.9	52.9	7.2	10.3	52.9	9.8	0.6	51.2	54.6
Iran, Islamic Rep. of	615	11.7	23.9	26.0	18.8	19.5	26.0	17.5	2.0	22.0	29.4
Italy	468	9.4	25.4	29.5	15.3	20.4	29.5	19.9	0.4	27.7	30.8
Lebanon	404	24.4	18.2	19.6	17.5	20.4	19.6	18.6	1.8	15.4	21.4
Netherlands	375	8.8	21.1	49.0	18.6	2.5	49.0	0.8	1.7	47.1	49.4
Norway	415	8.3	21.7	51.9	16.1	2.0	51.9	1.6	0.4	43.9	55.4
Russian Federation	785	12.2	26.3	45.1	12.1	4.3	45.1	4.3	0.0	45.3	44.9
Slovenia	266	15.5	22.6	45.7	14.5	1.8	45.7	1.4	0.3	29.2	51.0
Sweden	575	13.9	24.4	43.0	16.1	2.6	43.0	1.6	1.0	37.8	45.7
International Avg.	459	12.7	22.6	40.3	15.1	9.3	40.3	8.4	0.9	35.5	42.5

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.



Physics: Heat and Temperature / Reasoning (PA23084 - P7\_09)  
 Label: Total pressure of combined container  
 Type: CR Key: X

COUNTRY	N	20	10	11	70	79	99	OMIT	NOT REACH ED	V1	V2	1.GIRL % Right	2.BOY % Right
Armenia	225	14.2	3.5	0.0	0.0	6.6	75.7	75.1	0.6	17.7	14.2	17.1	11.2
Iran, Islamic Rep. of	615	12.1	3.3	0.2	13.4	26.0	45.0	42.1	2.9	15.6	12.1	4.6	18.1
Italy	468	3.2	0.1	0.2	6.0	13.8	76.7	76.3	0.4	3.6	3.2	0.8	4.9
Lebanon	405	8.7	3.0	0.5	5.2	31.8	50.8	49.0	1.8	12.2	8.7	11.2	7.7
Netherlands	375	43.9	3.6	2.4	13.1	25.9	11.0	9.3	1.7	50.0	43.9	37.1	45.0
Norway	415	17.4	0.7	1.3	9.8	25.1	45.7	45.3	0.4	19.3	17.4	7.9	21.5
Russian Federation	785	13.8	2.7	1.5	3.9	18.4	59.7	59.7	0.0	17.9	13.8	7.9	18.7
Slovenia	266	24.8	4.4	0.0	11.6	35.5	23.7	23.3	0.3	29.2	24.8	24.0	25.1
Sweden	575	11.0	0.9	0.2	2.7	41.5	43.7	42.8	1.0	12.1	11.0	9.8	11.7
International Avg.	459	16.6	2.5	0.7	7.3	24.9	48.0	47.0	1.0	19.7	16.6	13.4	18.2

V1 = Percent scoring 1 or better      V2 = Percent scoring 2 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Atomic and Nuclear Physics / Knowing (PA23059 - P7\_10)  
 Label: How many neutrons in nucleus of atom  
 Type: MC Key: C

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	225	3.0	11.7	75.2	6.4	3.7	75.2	2.7	1.0	77.4	72.9
Iran, Islamic Rep. of	615	1.3	7.0	82.3	3.8	5.5	82.3	2.0	3.5	80.9	83.5
Italy	468	4.1	23.6	49.2	14.4	8.8	49.2	8.2	0.6	47.2	50.6
Lebanon	405	0.0	3.7	92.8	1.1	2.4	92.8	0.6	1.8	93.9	92.3
Netherlands	375	0.0	10.1	84.3	3.6	2.0	84.3	0.0	2.0	81.9	84.7
Norway	415	0.4	24.4	66.5	7.7	0.9	66.5	0.0	0.9	69.7	65.1
Russian Federation	785	0.9	11.9	79.8	7.3	0.1	79.8	0.1	0.0	76.5	82.4
Slovenia	266	0.3	16.0	77.5	5.0	1.1	77.5	0.8	0.3	80.7	76.5
Sweden	575	0.9	14.4	76.4	6.8	1.5	76.4	0.4	1.1	78.6	75.2
International Avg.	459	1.2	13.6	76.0	6.2	2.9	76.0	1.6	1.2	76.3	75.9

DIFF = Percent correct OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Atomic and Nuclear Physics / Knowing (PA23138 - P7\_11)  
 Label: Description of atomic nucleus  
 Type: MC Key: C

COUNTRY	N	A	B	C	D	OTHER INCOR RECT	DIFF	OMIT	NOT REACHED	1.GIRL % Right	2.BOY % Right
Armenia	225	22.0	18.4	49.8	7.5	2.3	49.8	1.2	1.0	54.3	45.1
Iran, Islamic Rep. of	615	9.9	7.8	76.2	1.7	4.4	76.2	0.7	3.7	73.9	78.2
Italy	468	6.7	11.5	77.2	2.4	2.3	77.2	1.3	1.0	74.8	78.8
Lebanon	405	16.7	14.0	38.8	25.5	5.0	38.8	3.1	1.8	47.6	35.1
Netherlands	375	1.7	2.2	93.1	1.0	2.0	93.1	0.0	2.0	96.5	92.5
Norway	415	7.9	9.7	80.2	1.3	0.9	80.2	0.0	0.9	77.7	81.3
Russian Federation	785	17.9	14.8	62.5	3.2	1.7	62.5	1.7	0.0	60.7	63.9
Slovenia	266	10.8	6.8	77.9	4.1	0.3	77.9	0.0	0.3	78.7	77.6
Sweden	575	8.0	7.0	82.1	1.4	1.5	82.1	0.2	1.3	85.2	80.4
International Avg.	459	11.3	10.2	70.9	5.3	2.3	70.9	0.9	1.3	72.2	70.3

DIFF = Percent correct      OTHER INCORRECT = Sum of invalid, not reached and omitted responses  
 Because of missing gender information, some totals may appear inconsistent.

Physics: Atomic and Nuclear Physics / Knowing (PA23137 - P7\_12)  
 Label: Symbol for atomic nucleus  
 Type: CR Key: X

COUNTRY	N	10	70	71	79	99	OMIT	NOT REACHED	V1	1.GIRL % Right	2.BOY % Right
Armenia	226	82.2	0.0	0.4	3.8	13.6	12.5	1.0	82.2	81.4	83.1
Iran, Islamic Rep. of	615	24.0	4.0	28.9	13.0	30.1	25.9	4.2	24.0	20.2	27.0
Italy	468	10.1	1.8	2.8	16.6	68.7	66.4	2.3	10.1	6.8	12.3
Lebanon	405	55.7	5.2	8.3	15.6	15.2	12.3	2.9	55.7	64.1	52.1
Netherlands	375	64.6	0.2	9.0	20.9	5.3	3.3	2.0	64.6	71.3	63.5
Norway	415	41.6	0.9	5.5	38.4	13.5	12.6	0.9	41.6	46.4	39.5
Russian Federation	785	37.9	0.7	6.2	33.4	21.7	20.4	1.3	37.9	34.3	40.8
Slovenia	266	9.2	1.4	28.2	46.5	14.7	14.4	0.3	9.2	10.2	8.9
Sweden	575	41.2	1.8	4.6	32.7	19.7	18.4	1.3	41.2	45.2	39.1
International Avg.	459	40.7	1.8	10.4	24.5	22.5	20.7	1.8	40.7	42.2	40.7

V1 = Percent scoring 1 or better      V2 = Percent scoring 2 or better  
 Percent right for boys and girls corresponds to the percent obtaining the maximum score on the item.  
 Because of missing gender information, some totals may appear inconsistent.