

TABLE 7-1

Percentage of correct answers to factual knowledge questions in physical and biological sciences, by region or country: Most recent year

(Percent)

Question	United States ^a (2016)	Canada (2013)	China (2015)	EU (2005)	India (2004)	Israel (2016)	Japan ^b (2011)	Malaysia (2014)	Russia (2003)	South Korea (2004)	Switzerland (2016)
Physical science											
<i>The center of the Earth is very hot. (True)</i>	85	93	47	86	57	86	84	75	NA	87	NA
<i>The continents have been moving their location for millions of years and will continue to move. (True)</i>	81	91	51	87	32	86	89	62	40	87	80
<i>Does the Earth go around the Sun, or does the Sun go around the Earth? (Earth around Sun)</i>	73	87	NA	66	70	86	NA	85	NA	86	NA
<i>All radioactivity is man-made. (False)</i>	70	72	41	59	NA	76	64	20	35	48	NA
<i>Electrons are smaller than atoms. (True)</i>	48	58	22	46	30	60	28	35	44	46	39
<i>Lasers work by focusing sound waves. (False)</i>	45	53	19	47	NA	67	26	30	24	31	NA
<i>The universe began with a huge explosion.^c (True)</i>	39	68	NA	NA	34	64	NA	NA	35	67	NA
Biological science											



Question	United States ^a (2016)	Canada (2013)	China (2015)	EU (2005)	India (2004)	Israel (2016)	Japan ^b (2011)	Malaysia (2014)	Russia (2003)	South Korea (2004)	Switzerland (2016)
<i>It is the father's gene that decides whether the baby is a boy or a girl.</i> ^d (True)	59	NA	49	64	38	72	26	45	22	59	60
<i>Antibiotics kill viruses as well as bacteria.</i> ^e (False)	51	53	24	46	39	53	28	16	18	30	56
<i>Human beings, as we know them today, developed from earlier species of animals.</i> ^f (True)	52	74	68	70	56	63	78	NA	44	64	NA

NA = not available; question not asked.

EU = European Union.

^a See Appendix Table 7-9 for U.S. trends.

^b Numbers for Japan are the average from two studies conducted in 2011.

^c An experiment in the 2012 General Social Survey showed that adding the preface "according to astronomers" increased the percentage correct from 39% to 60%.

^d China, EU, and Switzerland surveys asked about "mother's gene" instead of "father's gene." Israel surveys asked about "hereditary material from the father."

^e Japan survey asked about "antibodies" instead of "antibiotics."

^f An experiment in the 2012 General Social Survey showed that adding the preface "according to the theory of evolution" increased the percentage answering correctly from 48% to 72%.

Note(s)

See notes to Table 7-2 for the full list of questions in the trend factual knowledge of science scale. EU data include Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, and the United Kingdom but do not include Bulgaria and Romania.

Source(s)



United States—University of Chicago, National Opinion Research Center, General Social Survey (2016), National Science Board (NSB), *Science and Engineering Indicators 2014* (2014), <http://www.nsf.gov/statistics/seind14>; Canada—Council of Canadian Academies, Expert Panel on the State of Canada's Science Culture, *Science Culture: Where Canada Stands* (2014); China—Chinese Association for Science and Technology/China Research Institute for Science Popularization, Chinese National Survey of Public Scientific Literacy (2015); EU—European Commission, Eurobarometer 224/Wave 63.1: *Europeans, Science and Technology* (2005); India—National Council of Applied Economic Research, National Science Survey (2004); Israel—Israeli Ministry of Science, Technology and Space, Geocartography Knowledge Group, Perceptions and Attitudes of the Israeli Public about Science, Technology and Space (2016); Japan—National Institute of Science and Technology Policy/Ministry of Education, Culture, Sports, Science and Technology, Survey of Public Attitudes Toward and Understanding of Science and Technology in Japan (2011); Malaysia—Malaysian Science and Technology Information Centre/Ministry of Science, Technology and Innovation, Survey of the Public's Awareness of Science and Technology: Malaysia (2014); Russia—Gokhberg L, Shuvalova O, *Russian Public Opinion of the Knowledge Economy: Science, Innovation, Information Technology and Education as Drivers of Economic Growth and Quality of Life*, British Council, Russia (2004), Figure 7; South Korea—Korea Science Foundation (now Korea Foundation for the Advancement of Science and Creativity), Survey of Public Attitudes Toward and Understanding of Science and Technology (2004); Switzerland—University of Zurich, Institute of Mass Communication and Media Research, Department of Science, Crisis and Risk Communication, Science Barometer Switzerland (2016).

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