

CHAPTER 7

Science and Technology: Public Attitudes and Understanding

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APPENDIX TABLE 7-1

Public interest in selected issues: 1979–2016

(Percent)

Issue	1979 (n=1,635)	1981 (n=3,192)	1983 (n=1,615)	1985 (n=1,986)	1988 (n=2,041)	1990 (n=2,005)	1992 (n=1,995)	1995 (n=2,006)	1997 (n=2,000)	1999 (n=1,882)	2001 (n=1,574)	2008 (n=2,021)	2010 (n=1,461)	2012 (n=2,256)	2014 (n=2,130)	2016 (n=1,390)
New medical discoveries																
Very interested	NA	NA	NA	68	72	68	66	69	70	68	65	58	60	58	59	60
Moderately interested	NA	NA	NA	29	25	29	31	27	26	28	32	36	35	36	36	35
Not at all interested	NA	NA	NA	3	3	3	3	4	4	4	4	6	5	5	5	5
Don't know or refused to answer	NA	NA	NA	0	*	0	*	*	*	*	0	1	1	1	*	*
Local school issues																
Very interested	38	46	46	47	51	50	54	57	58	54	59	46	54	51	50	44
Moderately interested	37	36	36	39	33	34	35	31	30	34	31	40	36	37	38	43
Not at all interested	25	18	18	14	15	16	12	12	11	12	10	15	9	11	12	13
Don't know or refused to answer	*	*	*	*	*	0	*	*	*	*	*	*	1	1	*	*
Environmental pollution																
Very interested	NA	NA	NA	NA	NA	64	59	52	52	51	48	47	46	45	43	42

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Issue	1979 (n=1,635)	1981 (n=3,192)	1983 (n=1,615)	1985 (n=1,986)	1988 (n=2,041)	1990 (n=2,005)	1992 (n=1,995)	1995 (n=2,006)	1997 (n=2,000)	1999 (n=1,882)	2001 (n=1,574)	2008 (n=2,021)	2010 (n=1,461)	2012 (n=2,256)	2014 (n=2,130)	2016 (n=1,390)
Moderately interested	NA	NA	NA	NA	NA	31	36	41	40	41	43	42	46	45	47	48
Not at all interested	NA	NA	NA	NA	NA	5	5	6	8	8	8	10	7	9	10	10
Don't know or refused to answer	NA	NA	NA	NA	NA	*	*	*	*	*	0	1	1	1	*	*
Use of new inventions and technologies																
Very interested	33	33	42	39	40	39	37	43	47	41	42	40	40	42	43	42
Moderately interested	51	51	45	49	49	49	53	46	43	48	47	46	48	46	45	46
Not at all interested	15	16	12	12	12	12	10	11	10	10	10	13	10	11	12	12
Don't know or refused to answer	1	*	*	*	*	*	*	*	*	*	1	*	1	1	*	*
New scientific discoveries																
Very interested	36	37	48	44	43	39	36	44	49	45	47	38	41	40	41	42
Moderately interested	49	45	41	43	46	49	49	45	42	43	45	47	50	45	46	42
Not at all interested	15	17	11	12	12	12	15	11	9	11	8	15	8	14	13	15
Don't know or refused to answer	1	*	*	*	0	0	*	*	*	1	*	*	1	1	*	*
Economic issues and business conditions																
Very interested	35	52	57	48	48	51	56	47	47	42	45	46	44	49	43	39

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Issue	1979 (n = 1,635)	1981 (n = 3,192)	1983 (n = 1,615)	1985 (n = 1,986)	1988 (n = 2,041)	1990 (n = 2,005)	1992 (n = 1,995)	1995 (n = 2,006)	1997 (n = 2,000)	1999 (n = 1,882)	2001 (n = 1,574)	2008 (n = 2,021)	2010 (n = 1,461)	2012 (n = 2,256)	2014 (n = 2,130)	2016 (n = 1,390)
Moderately interested	48	37	33	41	42	40	36	42	42	45	45	43	45	40	44	46
Not at all interested	17	10	10	11	10	10	8	11	11	13	10	11	10	10	13	14
Don't know or refused to answer	1	*	1	*	*	*	*	0	*	*	*	*	1	1	*	*
Military and defense policy																
Very interested	NA	NA	43	47	47	55	47	37	35	42	38	38	37	37	35	34
Moderately interested	NA	NA	42	42	42	35	43	46	48	44	44	47	47	47	50	49
Not at all interested	NA	NA	15	11	11	9	10	17	18	14	17	15	15	15	15	17
Don't know or refused to answer	NA	NA	1	*	*	*	*	*	*	*	*	1	1	1	*	*
Space exploration																
Very interested	NA	25	27	29	34	26	22	25	32	28	26	21	23	23	23	24
Moderately interested	NA	43	45	46	44	48	50	49	45	46	47	45	49	44	45	44
Not at all interested	NA	31	28	25	22	26	28	26	22	25	27	34	27	32	31	31
Don't know or refused to answer	NA	*	*	0	1	0	*	*	1	1	*	*	1	1	*	*
International and foreign policy issues																
Very interested	22	35	30	33	33	48	38	21	23	30	28	23	22	21	23	21

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Issue	1979 (n = 1,635)	1981 (n = 3,192)	1983 (n = 1,615)	1985 (n = 1,986)	1988 (n = 2,041)	1990 (n = 2,005)	1992 (n = 1,995)	1995 (n = 2,006)	1997 (n = 2,000)	1999 (n = 1,882)	2001 (n = 1,574)	2008 (n = 2,021)	2010 (n = 1,461)	2012 (n = 2,256)	2014 (n = 2,130)	2016 (n = 1,390)
Moderately interested	53	47	47	51	50	39	47	53	50	47	49	48	48	47	48	49
Not at all interested	24	18	22	16	16	12	15	26	28	23	22	29	29	31	29	29
Don't know or refused to answer	1	*	*	*	*	*	*	*	*	*	*	1	2	1	1	*
Agricultural and farm issues																
Very interested	23	24	NA	30	40	24	NA	21	24	22	29	22	25	22	24	21
Moderately interested	49	47	NA	48	45	48	NA	53	50	50	46	52	55	49	50	48
Not at all interested	28	29	NA	22	15	28	NA	26	26	28	25	26	20	28	26	30
Don't know or refused to answer	*	*	NA	*	0	0	NA	1	*	*	*	*	1	1	*	1

* = < 0.5% responded. NA = not available; question was not asked.

Note(s)

Responses to *There are a lot of issues in the news, and it is hard to keep up with every area. I'm going to read you a short list of issues, and for each one I would like you to tell me if you are very interested, moderately interested, or not at all interested.* Percentages may not add to 100% because of rounding.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1979–2001); NORC at the University of Chicago, General Social Survey (2008–16).

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APPENDIX TABLE 7-2

Public interest in selected issues, by respondent characteristic: 2016

(Percent)

Characteristic	New medical discoveries			Local school issues			Economic issues/ business conditions			Environmental pollution			Use of new inventions/ technologies			New scientific discoveries			Military/ defense policy			Agricultural/ farm issues			Space exploration			International/ foreign policy issues		
	Very interested	Moderately interested	Not at all interested	Very interested	Moderately interested	Not at all interested	Very interested	Moderately interested	Not at all interested	Very interested	Moderately interested	Not at all interested	Very interested	Moderately interested	Not at all interested	Very interested	Moderately interested	Not at all interested	Very interested	Moderately interested	Not at all interested	Very interested	Moderately interested	Not at all interested	Very interested	Moderately interested	Not at all interested	Very interested	Moderately interested	Not at all interested
All adults (n = 1,390)	60	35	5	44	43	13	39	46	14	42	48	10	42	46	12	42	42	15	34	49	17	21	48	30	24	44	31	21	49	29
Sex																														
Male (n = 571)	55	39	5	37	48	14	46	44	10	45	45	10	53	37	9	47	39	13	44	43	12	25	47	27	33	44	22	29	49	21
Female (n = 819)	63	32	4	49	39	11	34	48	18	40	50	9	33	52	14	38	45	17	27	53	20	19	49	32	18	44	38	16	48	36
Formal education																														
Less than high school diploma (n = 169)	60	32	9	47	39	15	29	42	29	48	39	13	34	45	21	33	42	25	37	47	16	33	35	32	20	38	41	13	33	53
High school diploma (n = 415)	60	34	5	41	44	14	33	51	16	40	48	12	41	43	17	38	42	20	34	49	17	22	52	25	21	42	36	14	52	34
Some college (n = 388)	63	33	4	46	45	9	42	44	13	41	51	8	46	44	10	47	40	13	33	51	16	23	48	29	27	43	29	24	47	28
Bachelor's degree (n = 263)	58	39	2	44	43	13	49	42	9	41	51	8	44	50	5	46	44	9	33	50	18	16	50	33	30	46	24	26	54	20
Graduate or professional degree (n = 151)	55	41	4	42	43	15	45	49	6	48	46	7	36	57	7	44	49	7	35	47	18	12	51	37	20	60	20	38	53	9

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Characteristic	New medical discoveries			Local school issues			Economic issues/ business conditions			Environmental pollution			Use of new inventions/ technologies			New scientific discoveries			Military/ defense policy			Agricultural/ farm issues			Space exploration			International/ foreign policy issues		
	Very interested	Moderately interested	Not at all interested	Very interested	Moderately interested	Not at all interested	Very interested	Moderately interested	Not at all interested	Very interested	Moderately interested	Not at all interested	Very interested	Moderately interested	Not at all interested	Very interested	Moderately interested	Not at all interested	Very interested	Moderately interested	Not at all interested	Very interested	Moderately interested	Not at all interested	Very interested	Moderately interested	Not at all interested	Very interested	Moderately interested	Not at all interested
Science and mathematics education ^a																														
Low (n = 776)	60	34	6	44	43	12	36	47	17	41	48	10	40	44	15	38	42	19	36	47	17	22	47	30	21	43	35	17	48	35
Middle (n = 262)	59	37	4	47	41	11	44	43	13	43	48	9	41	47	11	42	45	14	30	51	18	23	46	31	29	40	31	29	44	27
High (n = 275)	61	36	3	40	46	14	44	48	8	43	48	9	49	48	3	55	39	5	32	52	16	18	52	30	32	50	19	30	57	13
Family income (quartile) ^b																														
Bottom (n = 336)	61	31	8	44	39	17	32	43	25	49	39	12	47	36	16	46	34	20	36	44	20	31	40	29	29	36	34	17	43	40
Third (n = 281)	64	31	5	48	42	10	35	49	16	42	48	11	39	48	13	40	43	17	32	50	18	21	51	28	23	43	34	18	51	31
Second (n = 324)	65	30	4	45	44	11	42	44	14	43	47	10	39	51	9	44	44	13	33	51	17	22	50	28	21	47	32	22	50	27
Top (n = 318)	55	43	2	41	48	11	48	47	6	40	54	6	41	49	9	43	47	10	35	53	12	14	52	34	24	51	25	28	55	17
Age (years) ^b																														
18-24 (n = 115)	65	31	4	35	54	11	36	42	21	50	44	6	53	34	12	52	31	16	31	44	25	21	35	44	40	34	26	12	44	44
25-34 (n = 269)	61	36	2	50	41	9	34	52	14	38	55	7	48	43	9	48	42	10	23	58	19	23	45	31	31	40	28	16	49	34
35-44 (n = 206)	59	35	6	57	31	12	38	43	19	33	53	14	32	55	13	38	42	20	28	50	22	22	51	27	22	43	35	16	50	34
45-54 (n = 223)	51	42	6	44	41	14	44	45	10	39	47	13	41	48	10	40	45	14	35	51	13	20	47	32	16	50	32	25	48	26
55-64 (n = 264)	61	34	5	40	46	14	43	46	11	47	46	7	44	45	11	38	49	13	41	49	10	22	56	22	19	47	34	28	46	26
65 or older (n = 310)	64	30	5	36	47	16	40	44	15	49	40	10	35	48	16	39	41	19	44	40	15	21	51	28	22	49	29	28	53	19
Trend factual knowledge of science scale (quartile)																														

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Characteristic	New medical discoveries			Local school issues			Economic issues/ business conditions			Environmental pollution			Use of new inventions/ technologies			New scientific discoveries			Military/ defense policy			Agricultural/ farm issues			Space exploration			International/ foreign policy issues		
	Very interested	Moderately interested	Not at all interested	Very interested	Moderately interested	Not at all interested	Very interested	Moderately interested	Not at all interested	Very interested	Moderately interested	Not at all interested	Very interested	Moderately interested	Not at all interested	Very interested	Moderately interested	Not at all interested	Very interested	Moderately interested	Not at all interested	Very interested	Moderately interested	Not at all interested	Very interested	Moderately interested	Not at all interested	Very interested	Moderately interested	Not at all interested
Bottom (n = 250)	62	27	9	50	35	13	35	41	22	43	41	15	35	41	22	31	41	26	36	43	20	24	41	33	14	40	45	12	36	51
Third (n = 387)	60	36	4	45	43	12	38	49	13	40	51	9	33	52	14	34	47	19	36	47	17	22	51	27	15	44	40	17	48	35
Second (n = 437)	62	36	3	44	43	13	37	46	17	42	49	9	44	47	9	44	45	11	31	53	15	22	48	29	26	47	27	22	53	26
Top (n = 316)	56	39	4	39	49	12	46	47	7	46	47	8	53	40	6	58	34	8	34	50	16	18	50	32	42	44	15	34	54	12

^a For science and mathematics education, "low" equates to five or fewer high school and college science or mathematics courses, "middle" is six through eight courses, and "high" means nine or more courses. Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^b Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

Note(s)

Responses to *There are a lot of issues in the news, and it is hard to keep up with every area. I'm going to read you a short list of issues, and for each one I would like you to tell me if you are very interested, moderately interested, or not at all interested.* Percentages may not add to 100% because of rounding and because "don't know" responses and refusals to respond are not shown.

This table shows the percentage of the nine questions in the trend factual knowledge of science scale that were answered correctly. "Don't know" responses and refusals to respond count as incorrect. Questions in the trend factual knowledge of science scale are:

- *The center of the Earth is very hot.* (True)
- *All radioactivity is man-made.* (False)
- *It is the father's gene that decides whether the baby is a boy or a girl.* (True) or (in 2008) *It is the mother's gene that decides whether the baby is a boy or a girl.* (False) (Split ballot in 2008; 1,506 survey respondents were asked about "father's gene"; 515 survey respondents were asked about "mother's gene.")
- *Lasers work by focusing sound waves.* (False)
- *Electrons are smaller than atoms.* (True)
- *Antibiotics kill viruses as well as bacteria.* (False)
- *The continents on which we live have been moving their locations for millions of years and will continue to move in the future.* (True)
- *Does the Earth go around the Sun, or does the Sun go around the Earth?* (Earth around Sun)
- *How long does it take for the Earth to go around the Sun?* (One year) (Asked only if the respondent answered correctly that the Earth goes around the Sun.)

Source(s)

NORC at the University of Chicago, General Social Survey (2016).



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APPENDIX TABLE 7-3

Primary source of information about current news events, by respondent characteristic: 2016

(Percent)

Characteristic	Newspaper	Magazine	Internet	Book or other print	Television	Radio	Government agency	Family	Friend or colleague	Other	Don't know
All adults (<i>n</i> = 1,390)	7	*	45	*	37	4	*	2	2	1	*
Sex											
Male (<i>n</i> = 571)	7	*	49	*	35	5	0	1	3	1	*
Female (<i>n</i> = 819)	7	1	42	*	40	4	*	4	1	1	*
Formal education											
Less than high school diploma (<i>n</i> = 169)	4	*	17	1	71	2	0	4	1	0	0
High school diploma (<i>n</i> = 415)	8	0	39	0	42	5	0	3	2	1	*
Some college (<i>n</i> = 388)	5	0	54	1	30	4	*	2	3	1	*
Bachelor's degree (<i>n</i> = 263)	8	1	56	0	26	5	0	3	1	1	0
Graduate or professional degree (<i>n</i> = 151)	13	2	54	0	26	4	0	*	*	0	0
Science and mathematics education ^a											
Low (<i>n</i> = 776)	7	*	34	*	48	4	*	3	2	1	*
Middle (<i>n</i> = 262)	7	1	58	0	24	3	0	2	3	1	0
High (<i>n</i> = 275)	7	*	65	*	19	5	0	1	2	1	0

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Characteristic	Newspaper	Magazine	Internet	Book or other print	Television	Radio	Government agency	Family	Friend or colleague	Other	Don't know
Family income (quartile) ^b											
Bottom (<i>n</i> = 336)	5	1	40	0	44	5	0	2	3	1	0
Third (<i>n</i> = 281)	6	*	39	1	44	4	0	2	2	2	0
Second (<i>n</i> = 324)	5	*	47	0	38	3	*	3	3	1	0
Top (<i>n</i> = 318)	10	1	54	*	26	6	0	2	1	*	0
Age (years) ^b											
18-24 (<i>n</i> = 115)	1	0	74	1	13	*	0	4	5	1	0
25-34 (<i>n</i> = 269)	2	0	72	*	17	3	*	2	2	1	0
35-44 (<i>n</i> = 206)	5	0	59	0	28	3	0	2	2	1	0
45-54 (<i>n</i> = 223)	5	1	43	0	36	6	0	6	2	1	1
55-64 (<i>n</i> = 264)	8	1	23	*	58	7	0	1	1	1	*
65 or older (<i>n</i> = 310)	19	1	13	*	62	4	0	*	1	*	1
Verbal ability ^c											
0-4 (<i>n</i> = 276)	7	1	33	*	49	3	0	2	2	1	1
5 (<i>n</i> = 256)	5	0	47	1	39	4	0	3	1	*	0
6 (<i>n</i> = 317)	6	0	44	0	37	4	0	4	3	1	*
7 (<i>n</i> = 256)	6	0	51	*	33	4	0	2	2	2	0
8-10 (<i>n</i> = 285)	12	1	50	0	28	5	*	1	2	*	0

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Characteristic	Newspaper	Magazine	Internet	Book or other print	Television	Radio	Government agency	Family	Friend or colleague	Other	Don't know
Trend factual knowledge of science scale (quartile) ^d											
Bottom (<i>n</i> = 250)	7	1	26	*	54	3	0	4	4	1	2
Third (<i>n</i> = 387)	10	*	39	0	41	4	0	3	1	1	0
Second (<i>n</i> = 437)	6	*	48	*	38	4	0	2	2	1	0
Top (<i>n</i> = 316)	6	1	63	*	21	6	*	1	2	*	0

* = < 0.5% responded.

^a For science and mathematics education, "low" equates to five or fewer high school and college science or mathematics courses, "middle" is six through eight courses, and "high" means nine or more courses. Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^b Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^c Measure is based on correct responses to a 10-item, multiple-choice test of vocabulary knowledge completed by 1,390 survey respondents. Categories represent the number of correct responses.

^d See notes to Appendix Table 7-2 for an explanation of the trend factual knowledge of science scale.

Note(s)

Responses to *We are interested in how people get information about events in the news. Where do you get most of your information about current news events?* Percentages may not add to 100% because of rounding.

Source(s)

NORC at the University of Chicago, General Social Survey (2016).

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APPENDIX TABLE 7-4

Primary source of information about science and technology, by respondent characteristic: 2016

(Percent)

Characteristic	Newspaper	Magazine	Internet	Book or other print	Television	Radio	Government agency	Family	Friend or colleague	Library	Don't know
All adults (<i>n</i> = 1,390)	4	6	55	3	24	2	*	3	2	1	1
Sex											
Male (<i>n</i> = 571)	4	6	59	3	23	2	*	2	1	*	1
Female (<i>n</i> = 819)	4	6	52	3	25	2	*	4	2	1	1
Formal education											
Less than high school diploma (<i>n</i> = 169)	4	5	24	4	51	3	0	2	3	1	4
High school diploma (<i>n</i> = 415)	4	5	51	3	29	1	0	4	2	1	*
Some college (<i>n</i> = 388)	3	6	63	3	18	2	*	2	1	1	1
Bachelor's degree (<i>n</i> = 263)	5	6	67	2	13	3	*	2	1	1	0
Graduate or professional degree (<i>n</i> = 151)	5	8	61	4	15	3	0	3	0	0	0
Science and mathematics education ^a											
Low (<i>n</i> = 776)	5	5	45	3	34	2	*	2	2	1	1
Middle (<i>n</i> = 262)	3	6	67	3	13	2	0	2	2	1	0
High (<i>n</i> = 275)	5	7	73	2	6	3	*	3	1	1	0

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Characteristic	Newspaper	Magazine	Internet	Book or other print	Television	Radio	Government agency	Family	Friend or colleague	Library	Don't know
Family income (quartile) ^b											
Bottom (<i>n</i> = 336)	2	5	44	4	33	3	*	4	2	1	2
Third (<i>n</i> = 281)	4	5	50	2	32	2	0	3	2	*	0
Second (<i>n</i> = 324)	3	7	57	3	23	2	*	3	2	*	0
Top (<i>n</i> = 318)	6	6	69	2	12	2	0	1	1	1	*
Age (years) ^b											
18-24 (<i>n</i> = 115)	0	1	81	3	9	1	0	3	1	1	1
25-34 (<i>n</i> = 269)	2	3	73	*	12	1	*	4	2	2	0
35-44 (<i>n</i> = 206)	1	3	69	2	19	1	0	2	3	*	*
45-54 (<i>n</i> = 223)	2	8	53	3	28	2	0	2	2	*	1
55-64 (<i>n</i> = 264)	4	8	46	4	31	2	*	3	1	*	*
65 or older (<i>n</i> = 310)	13	9	19	6	40	5	0	2	2	1	3
Trend factual knowledge of science scale (quartile) ^c											
Bottom (<i>n</i> = 250)	3	4	36	2	41	2	0	4	4	1	4
Third (<i>n</i> = 387)	6	6	49	4	29	2	0	3	1	1	*
Second (<i>n</i> = 437)	4	5	60	3	20	2	0	3	1	1	1
Top (<i>n</i> = 316)	3	6	70	2	12	4	*	1	1	*	0

* = < 0.5% responded.

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^a For science and mathematics education, "low" equates to five or fewer high school and college science or mathematics courses, "middle" is six through eight courses, and "high" means nine or more courses. Categories do not add to total n because "don't know" responses and refusals to respond are not shown.

^b Categories do not add to total n because "don't know" responses and refusals to respond are not shown.

^c See notes to Appendix Table 7-2 for an explanation of the trend factual knowledge of science scale.

Note(s)

Responses to *We are interested in how people get information about science and technology. Where do you get most of your information about science and technology?*
Percentages may not add to 100% because of rounding.

Source(s)

NORC at the University of Chicago, General Social Survey (2016).

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APPENDIX TABLE 7-5

Primary source respondents used to learn about specific scientific issues, by respondent characteristic: 2016

(Percent)

Characteristic	Newspaper	Magazine	Internet	Book or other print	Television	Radio	Government agency	Family	Friend or colleague	Library	Don't know
All adults (<i>n</i> = 1,390)	3	3	69	7	12	1	2	1	1	1	1
Sex											
Male (<i>n</i> = 571)	2	3	72	6	12	1	1	1	1	*	1
Female (<i>n</i> = 819)	3	3	67	7	12	1	2	2	1	1	2
Formal education											
Less than high school diploma (<i>n</i> = 169)	6	2	44	6	28	2	4	1	1	1	5
High school diploma (<i>n</i> = 415)	4	3	64	7	14	1	1	2	2	*	1
Some college (<i>n</i> = 388)	1	3	75	6	8	1	2	2	*	1	1
Bachelor's degree (<i>n</i> = 263)	2	3	82	5	7	0	1	1	*	0	*
Graduate or professional degree (<i>n</i> = 151)	4	4	74	10	5	1	1	*	0	*	0
Science and mathematics education ^a											
Low (<i>n</i> = 776)	4	4	61	7	17	1	2	2	1	1	2
Middle (<i>n</i> = 262)	2	1	81	5	7	1	2	1	0	*	0
High (<i>n</i> = 275)	2	4	81	8	4	0	1	*	*	*	0

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Characteristic	Newspaper	Magazine	Internet	Book or other print	Television	Radio	Government agency	Family	Friend or colleague	Library	Don't know
Family income (quartile) ^b											
Bottom (<i>n</i> = 336)	4	3	55	6	21	2	2	1	2	1	4
Third (<i>n</i> = 281)	4	2	70	7	12	1	2	2	*	1	0
Second (<i>n</i> = 324)	2	4	73	7	10	*	2	1	*	*	0
Top (<i>n</i> = 318)	1	2	82	6	5	1	1	1	1	0	*
Age (years) ^b											
18-24 (<i>n</i> = 115)	0	4	83	8	3	0	0	0	0	1	1
25-34 (<i>n</i> = 269)	1	3	81	8	5	0	*	1	*	1	0
35-44 (<i>n</i> = 206)	2	2	79	5	6	1	2	1	2	1	0
45-54 (<i>n</i> = 223)	2	4	74	4	10	1	1	1	1	1	2
55-64 (<i>n</i> = 264)	2	3	61	6	20	2	2	3	1	0	1
65 or older (<i>n</i> = 310)	9	3	44	10	24	2	3	2	*	1	4
Trend factual knowledge of science scale (quartile) ^c											
Bottom (<i>n</i> = 250)	4	2	47	7	26	2	3	2	1	*	4
Third (<i>n</i> = 387)	5	4	67	6	14	1	1	1	1	1	2
Second (<i>n</i> = 437)	2	3	73	9	7	*	2	2	*	1	1
Top (<i>n</i> = 316)	1	3	83	5	6	1	1	*	1	*	0

* = < 0.5% responded.

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^a For science and mathematics education, "low" equates to five or fewer high school and college science or mathematics courses, "middle" is six through eight courses, and "high" means nine or more courses. Categories do not add to total n because "don't know" responses and refusals to respond are not shown.

^b Categories do not add to total n because "don't know" responses and refusals to respond are not shown.

^c See notes to Appendix Table 7-2 for an explanation of the trend factual knowledge of science scale.

Note(s)

Responses to *If you wanted to learn about scientific issues such as global warming or biotechnology, where would you get information?* Percentages may not add to 100% because of rounding.

Source(s)

NORC at the University of Chicago, General Social Survey (2016).

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APPENDIX TABLE 7-6

Public interest in selected issues: 1981–2016

(Percent)

Institution	1981 (n = 1,235)	1983 (n = 1,615)	1985 (n = 1,986)	1988 (n = 2,041)	1990 (n = 2,005)	1992 (n = 1,995)	1995 (n = 2,006)	1997 (n = 2,000)	1999 (n = 1,882)	2001 (n = 1,574)	2008 (n = 2,021)	2012 (n = 2,256)	2016 (n = 1,390)
Informal science institution													
Zoo or aquarium	64	49	48	51	51	54	52	51	51	58	52	47	48
Natural history museum	37	29	29	30	30	31	29	30	27	30	28	28	30
Science or technology museum	39	26	24	26	25	21	28	27	30	30	27	25	26
Any informal science institution ^a	72	61	58	59	59	62	61	60	61	66	61	58	58
Public library	NA	NA	67	68	65	69	69	70	72	75	64	60	NA
Art museum	43	32	31	33	31	29	31	30	30	32	34	33	NA

NA = not available; question was not asked.

^a Visited zoo or aquarium, natural history museum, or science or technology museum at least once.

Note(s)

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Responses to *I am going to read you a short list of places and ask you to tell me how many times you visited each type of place during the last year, that is, the last 12 months.* Percentages indicate individuals who visited an institution at least once. Percentages are based on total in the sample, including those who responded "don't know" or refused to respond.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1981–2001); NORC at the University of Chicago, General Social Survey (2008–16).

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 APPENDIX TABLE 7-7 
Visitors to informal science institutions: 2016

(Percent)

Characteristic	Informal science institution			
	Zoo or aquarium	Natural history museum	Science or technology museum	Any informal science institution ^a
All adults (<i>n</i> = 1,390)	48	30	26	58
Sex				
Male (<i>n</i> = 571)	49	30	28	60
Female (<i>n</i> = 819)	47	29	25	57
Formal education				
Less than high school diploma (<i>n</i> = 169)	41	20	13	45
High school diploma (<i>n</i> = 415)	44	23	18	53
Some college (<i>n</i> = 388)	52	31	30	62
Bachelor's degree (<i>n</i> = 263)	49	37	37	64
Graduate or professional degree (<i>n</i> = 151)	51	46	36	70
Science and mathematics education ^b				
Low (<i>n</i> = 776)	41	24	18	51
Middle (<i>n</i> = 262)	54	31	29	66
High (<i>n</i> = 275)	61	43	47	74
Family income (quartile) ^c				
Bottom (<i>n</i> = 336)	35	18	16	43
Third (<i>n</i> = 281)	49	26	18	58
Second (<i>n</i> = 324)	54	30	27	65
Top (<i>n</i> = 318)	55	42	42	71
Age (years) ^c				
18-24 (<i>n</i> = 115)	60	32	36	68
25-34 (<i>n</i> = 269)	62	33	31	71

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Characteristic	Informal science institution			
	Zoo or aquarium	Natural history museum	Science or technology museum	Any informal science institution ^a
35-44 (<i>n</i> = 206)	63	36	33	73
45-54 (<i>n</i> = 223)	44	30	25	58
55-64 (<i>n</i> = 264)	39	27	22	51
65 or older (<i>n</i> = 310)	25	22	14	35
Trend factual knowledge of science scale (quartile) ^d				
Bottom (<i>n</i> = 250)	41	24	15	45
Third (<i>n</i> = 387)	42	23	18	50
Second (<i>n</i> = 437)	50	32	30	62
Top (<i>n</i> = 316)	56	39	39	73

^a Visited zoo or aquarium, natural history museum, or science or technology museum at least once.

^b For science and mathematics education, "low" equates to five or fewer high school and college science or mathematics courses, "middle" is six through eight courses, and "high" means nine or more courses. Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^c Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^d See notes to Appendix Table 7-2 for an explanation of the trend factual knowledge of science scale.

Note(s)

Responses to *I am going to read you a short list of places and ask you to tell me how many times you visited each type of place during the last year, that is, the last 12 months.* Percentages indicate individuals who visited an institution at least once. Percentages are based on the *n* in each row, including those who responded "don't know" or refused to respond.

Source(s)

NORC at the University of Chicago, General Social Survey (2016).

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APPENDIX TABLE 7-8

Correct answers to trend factual knowledge of science questions, by respondent characteristic: 1992–2016

(Percent)

Characteristic	1992 (n = 1,995)	1995 (n = 2,006)	1997 (n = 2,000)	1999 (n = 1,882)	2001 (n = 1,574)	2006 (n = 1,864)	2008 (n = 2,021)	2010 (n = 1,932)	2012 (n = 2,256)	2014 (n = 2,130)	2016 (n = 1,390)
All adults	59	60	60	61	64	64	64	63	65	65	63
Sex											
Male	64	65	66	66	69	69	68	67	70	69	67
Female	55	55	55	57	59	60	60	59	60	61	60
Formal education											
Less than high school diploma	44	44	43	44	45	44	43	42	45	47	43
High school diploma	59	59	60	62	62	62	63	60	62	62	61
Bachelor's degree	73	68	75	77	80	74	77	78	78	77	74
Graduate or professional degree	80	77	80	83	80	82	81	80	81	81	75
Science and mathematics education ^a											
Low	52	52	51	53	55	56	57	54	56	57	55
Middle	66	68	66	71	72	69	70	68	70	72	70
High	79	80	83	82	84	82	82	83	83	82	80
Family income (quartile)											

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Characteristic	1992 (n = 1,995)	1995 (n = 2,006)	1997 (n = 2,000)	1999 (n = 1,882)	2001 (n = 1,574)	2006 (n = 1,864)	2008 (n = 2,021)	2010 (n = 1,932)	2012 (n = 2,256)	2014 (n = 2,130)	2016 (n = 1,390)
Bottom	NA	NA	NA	NA	NA	56	56	54	55	54	57
Third	NA	NA	NA	NA	NA	65	63	63	63	62	58
Second	NA	NA	NA	NA	NA	69	69	69	69	67	64
Top	NA	NA	NA	NA	NA	71	74	73	76	76	73
Age (years)											
18–24	59	63	64	65	66	68	67	64	67	61	61
25–34	64	64	63	65	68	64	67	67	67	66	67
35–44	65	64	66	66	66	67	63	63	67	65	64
45–54	61	62	61	64	68	68	67	65	64	67	65
55–64	53	51	57	58	61	64	65	63	64	68	62
65 or older	47	47	45	46	49	53	54	54	61	59	55
Verbal ability ^b											
0–4	NA	NA	NA	NA	NA	48	47	46	46	50	46
5	NA	NA	NA	NA	NA	60	58	55	59	61	57
6	NA	NA	NA	NA	NA	66	63	63	66	65	62
7	NA	NA	NA	NA	NA	70	73	67	73	70	68
8–10	NA	NA	NA	NA	NA	77	80	80	81	80	79

NA = not available; question was not asked.

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^a For science and mathematics education, "low" equates to five or fewer high school and college science or mathematics courses, "middle" is six through eight courses, and "high" means nine or more courses.

^b Measure is based on correct responses to a 10-item, multiple-choice test of vocabulary knowledge. Categories represent the number of correct responses.

Note(s)

See notes to Appendix Table 7-2 for an explanation of the trend factual knowledge of science scale.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1992–2001); NORC at the University of Chicago, General Social Survey (2006–16).

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APPENDIX TABLE 7-9

Correct answers to factual knowledge questions in physical and biological sciences: 1985–2016

(Percent)

Question	1985 (n = 1,986)	1988 (n = 2,041)	1990 (n = 2,005)	1992 (n = 1,995)	1995 (n = 2,006)	1997 (n = 2,000)	1999 (n = 1,882)	2001 (n = 1,574)	2004 (n = 2,025)	2006 (n = 1,864)	2008 (n = 2,021)	2010 (n = 1,932)	2012 (n = 2,256)	2014 (n = 2,130)	2016 (n = 1,390)
Physical science															
1. <i>The center of the Earth is very hot.</i> (True)	NA	80	79	81	78	82	80	80	78	80	84	84	84	84	85
2. <i>The continents on which we live have been moving their locations for millions of years and will continue to move in the future.</i> (True)	79	80	77	79	78	78	80	79	77	80	78	80	83	82	81
3a. <i>Does the Earth go around the Sun, or does the Sun go around the Earth?</i> (Earth around Sun)	NA	73	73	71	73	73	72	75	71	76	72	73	74	76	73
3b. <i>How long does it take for the Earth to go around the Sun?</i> (One year) ^a	NA	45	48	46	47	48	49	54	NA	55	52	52	55	54	51
4. <i>All radioactivity is man-made.</i> (False)	NA	65	63	73	72	71	71	76	73	70	71	67	72	72	70
5. <i>Electrons are smaller than atoms.</i> (True)	NA	43	41	46	44	43	46	48	45	53	54	51	53	51	48
6. <i>Lasers work by focusing sound waves.</i> (False)	NA	36	37	37	40	39	43	45	42	45	49	47	47	50	45
7. <i>The universe began with a huge explosion.</i> (True) ^b	NA	54	32	38	35	32	33	33	33	33	33	38	39	42	39
Biological science															
1a. <i>It is the father's gene that decides whether the baby is a boy or a girl.</i> (True) ^c	NA	NA	NA	65	64	62	66	65	62	64	62	61	63	59	59
1b. <i>It is the mother's gene that decides whether the baby is a boy or a girl.</i> (False) ^d	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	72	NA	NA	NA	NA

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Question	1985 (n = 1,986)	1988 (n = 2,041)	1990 (n = 2,005)	1992 (n = 1,995)	1995 (n = 2,006)	1997 (n = 2,000)	1999 (n = 1,882)	2001 (n = 1,574)	2004 (n = 2,025)	2006 (n = 1,864)	2008 (n = 2,021)	2010 (n = 1,932)	2012 (n = 2,256)	2014 (n = 2,130)	2016 (n = 1,390)
2. Antibiotics kill viruses as well as bacteria. (False)	NA	25	30	35	40	43	45	51	54	56	54	50	51	55	51
3. Human beings, as we know them today, developed from earlier species of animals. (True) ^b	45	46	45	45	44	44	45	53	42	43	46	47	48	49	52

NA = not available; question was not asked.

^a Question was asked only of survey respondents who answered correctly that the Earth goes around the Sun. Individuals who responded incorrectly that the Sun goes around the Earth also count as having responded incorrectly to the question on the length of the Earth's revolution around the Sun.

^b Question was asked of 1,558 survey respondents in 2004 and 1,152 respondents in 2012.

^c Question was asked of 1,506 survey respondents in 2008.

^d Question was asked of 515 survey respondents in 2008.

Note(s)

"Don't know" responses and refusals to respond count as incorrect.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1985–2001); University of Michigan, Survey of Consumer Attitudes (2004); NORC at the University of Chicago, General Social Survey (2006–16).

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APPENDIX TABLE 7-10

Correct answers to factual knowledge questions in physical and biological sciences, by respondent characteristic: 2016

(Percent)

Characteristic	Physical science								Biological science		
	<i>The center of the Earth is very hot. (True)</i>	<i>The continents on which we live have been moving their locations for millions of years and will continue to move in the future. (True)</i>	<i>Does the Earth go around the Sun, or does the Sun go around the Earth? (Earth around Sun)</i>	<i>All radioactivity is man-made. (False)</i>	<i>How long does it take for the Earth to go around the Sun: one day, one month, or one year?^a (one year)</i>	<i>Electrons are smaller than atoms. (True)</i>	<i>Lasers work by focusing sound waves. (False)</i>	<i>The universe began with a huge explosion.^b (True)</i>	<i>It is the father's gene that decides whether the baby is a boy or a girl. (True)</i>	<i>Human beings, as we know them today, developed from earlier species of animals.^c (True)</i>	<i>Antibiotics kill viruses as well as bacteria. (False)</i>
All adults (n = 1,390)	85	81	73	70	51	48	45	39	59	52	51
Sex											
Male (n = 571)	90	86	81	75	61	53	62	46	46	60	45
Female (n = 819)	82	77	67	66	44	44	33	33	68	48	55
Formal education											
Less than high school (n = 169)	72	67	49	52	27	23	30	32	45	44	20

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Characteristic	Physical science								Biological science		
	<i>The center of the Earth is very hot. (True)</i>	<i>The continents on which we live have been moving their locations for millions of years and will continue to move in the future. (True)</i>	<i>Does the Earth go around the Sun, or does the Sun go around the Earth? (Earth around Sun)</i>	<i>All radioactivity is man-made. (False)</i>	<i>How long does it take for the Earth to go around the Sun: one day, one month, or one year?^a (one year)</i>	<i>Electrons are smaller than atoms. (True)</i>	<i>Lasers work by focusing sound waves. (False)</i>	<i>The universe began with a huge explosion.^b (True)</i>	<i>It is the father's gene that decides whether the baby is a boy or a girl. (True)</i>	<i>Human beings, as we know them today, developed from earlier species of animals.^c (True)</i>	<i>Antibiotics kill viruses as well as bacteria. (False)</i>
High school diploma (<i>n</i> = 415)	84	76	68	63	41	42	42	34	50	47	43
Some college (<i>n</i> = 388)	88	85	77	73	53	52	50	38	61	50	52
Bachelor's degree (<i>n</i> = 263)	89	87	83	80	71	59	52	44	71	63	73
Graduate or professional degree (<i>n</i> = 151)	91	88	87	86	70	61	51	50	71	67	68
Science and mathematics education ^d											
Low (<i>n</i> = 776)	83	76	66	62	41	39	37	35	55	46	41

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Characteristic	Physical science								Biological science		
	<i>The center of the Earth is very hot. (True)</i>	<i>The continents on which we live have been moving their locations for millions of years and will continue to move in the future. (True)</i>	<i>Does the Earth go around the Sun, or does the Sun go around the Earth? (Earth around Sun)</i>	<i>All radioactivity is man-made. (False)</i>	<i>How long does it take for the Earth to go around the Sun: one day, one month, or one year?^a (one year)</i>	<i>Electrons are smaller than atoms. (True)</i>	<i>Lasers work by focusing sound waves. (False)</i>	<i>The universe began with a huge explosion.^b (True)</i>	<i>It is the father's gene that decides whether the baby is a boy or a girl. (True)</i>	<i>Human beings, as we know them today, developed from earlier species of animals.^c (True)</i>	<i>Antibiotics kill viruses as well as bacteria. (False)</i>
Middle (<i>n</i> = 262)	90	84	85	78	61	52	53	33	64	51	62
High (<i>n</i> = 275)	92	92	88	88	80	72	64	57	71	70	72
Family income (quartile) ^e											
Bottom (<i>n</i> = 336)	87	79	64	60	46	47	43	33	51	52	38
Third (<i>n</i> = 281)	79	80	70	66	46	43	41	32	56	45	44
Second (<i>n</i> = 324)	85	78	79	70	51	49	43	37	62	45	56
Top (<i>n</i> = 318)	93	87	84	82	65	55	57	43	68	66	66
Age (years)											

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Characteristic	Physical science							Biological science			
	<i>The center of the Earth is very hot. (True)</i>	<i>The continents on which we live have been moving their locations for millions of years and will continue to move in the future. (True)</i>	<i>Does the Earth go around the Sun, or does the Sun go around the Earth? (Earth around Sun)</i>	<i>All radioactivity is man-made. (False)</i>	<i>How long does it take for the Earth to go around the Sun: one day, one month, or one year?^a (one year)</i>	<i>Electrons are smaller than atoms. (True)</i>	<i>Lasers work by focusing sound waves. (False)</i>	<i>The universe began with a huge explosion.^b (True)</i>	<i>It is the father's gene that decides whether the baby is a boy or a girl. (True)</i>	<i>Human beings, as we know them today, developed from earlier species of animals.^c (True)</i>	<i>Antibiotics kill viruses as well as bacteria. (False)</i>
18-24 (n = 115)	86	82	78	65	46	56	51	52	45	70	41
25-34 (n = 269)	89	86	82	65	67	54	52	47	58	61	54
35-44 (n = 206)	86	84	72	67	55	47	46	43	65	47	51
45-54 (n = 223)	87	78	76	75	52	51	48	33	65	49	54
55-64 (n = 264)	87	79	71	72	47	43	46	34	63	42	52
65 or older (n = 310)	78	75	60	73	40	39	33	27	53	45	48
Verbal ability ^f											
0-4 (n = 276)	77	73	53	52	31	36	31	38	41	51	25

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Characteristic	Physical science								Biological science		
	<i>The center of the Earth is very hot. (True)</i>	<i>The continents on which we live have been moving their locations for millions of years and will continue to move in the future. (True)</i>	<i>Does the Earth go around the Sun, or does the Sun go around the Earth? (Earth around Sun)</i>	<i>All radioactivity is man-made. (False)</i>	<i>How long does it take for the Earth to go around the Sun: one day, one month, or one year?^a (one year)</i>	<i>Electrons are smaller than atoms. (True)</i>	<i>Lasers work by focusing sound waves. (False)</i>	<i>The universe began with a huge explosion.^b (True)</i>	<i>It is the father's gene that decides whether the baby is a boy or a girl. (True)</i>	<i>Human beings, as we know them today, developed from earlier species of animals.^c (True)</i>	<i>Antibiotics kill viruses as well as bacteria. (False)</i>
5 (n = 256)	87	77	69	65	43	40	39	35	60	47	38
6 (n = 317)	86	81	72	69	49	48	41	29	64	43	48
7 (n = 256)	87	83	81	74	58	50	54	45	58	57	63
8-10 (n = 285)	91	90	89	91	76	65	64	50	70	66	80
Trend factual knowledge of science scale (quartile) ^g											
Bottom (n = 250)	53	46	26	30	2	13	15	19	29	30	13
Third (n = 387)	82	76	58	59	25	35	28	31	52	51	37
Second (n = 437)	96	91	91	82	69	48	49	40	65	53	56
Top (n = 316)	99	98	100	97	97	89	85	60	81	70	90

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- ^a Question was asked only of survey respondents who answered correctly that the Earth goes around the Sun. Individuals who responded incorrectly that the Sun goes around the Earth also count as having responded incorrectly to the question on the length of the Earth's revolution around the Sun.
- ^b Question was asked of 457 survey respondents.
- ^c Question was asked of 704 survey respondents.
- ^d For science and mathematics education, "low" equates to five or fewer high school and college science or mathematics courses, "middle" is six through eight courses, and "high" means nine or more courses. Categories do not add to total n because "don't know" responses and refusals to respond are not shown.
- ^e Categories do not add to total n because "don't know" responses and refusals to respond are not shown.
- ^f Measure is based on correct responses to a 10-item, multiple-choice test of vocabulary knowledge. Categories represent the number of correct responses.
- ^g See notes to Appendix Table 7-2 for an explanation of the trend factual knowledge of science scale.

Note(s)

"Don't know" responses and refusals to respond count as incorrect.

Source(s)

NORC at the University of Chicago, General Social Survey (2016).

Science and Engineering Indicators 2018

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 APPENDIX TABLE 7-11 
Correct answers to scientific process questions, by respondent characteristic: 2016

(Percent)

Characteristic	Scientific inquiry ^a	Probability ^b	Experiment ^c	Scientific study ^d
All adults (<i>n</i> = 1,390)	43	64	51	23
Sex				
Male (<i>n</i> = 571)	46	68	52	25
Female (<i>n</i> = 819)	41	62	50	21
Formal education				
Less than high school diploma (<i>n</i> = 169)	13	41	26	2
High school diploma (<i>n</i> = 415)	29	57	37	9
Some college (<i>n</i> = 388)	48	69	55	26
Bachelor's degree (<i>n</i> = 263)	61	76	68	42
Graduate or professional degree (<i>n</i> = 151)	73	80	80	42
Science and mathematics education ^e				
Low (<i>n</i> = 776)	32	57	41	10
Middle (<i>n</i> = 262)	52	71	61	35
High (<i>n</i> = 275)	74	84	77	50
Family income (quartile) ^f				
Bottom (<i>n</i> = 336)	25	50	34	14
Third (<i>n</i> = 281)	35	58	50	16
Second (<i>n</i> = 324)	44	68	52	24
Top (<i>n</i> = 318)	67	81	71	38
Age (years) ^f				
18–24 (<i>n</i> = 115)	42	57	51	24
25–34 (<i>n</i> = 269)	53	70	59	30
35–44 (<i>n</i> = 206)	45	62	56	24
45–54 (<i>n</i> = 223)	47	70	54	28
55–64 (<i>n</i> = 264)	40	65	49	18

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Characteristic	Scientific inquiry ^a	Probability ^b	Experiment ^c	Scientific study ^d
65 or older (<i>n</i> = 310)	31	59	37	13
Verbal ability ^e				
0–4 (<i>n</i> = 276)	16	42	22	4
5 (<i>n</i> = 256)	36	63	45	12
6 (<i>n</i> = 317)	43	63	55	22
7 (<i>n</i> = 256)	53	73	61	29
8–10 (<i>n</i> = 285)	67	82	70	45
Trend factual knowledge of science scale (quartile) ^h				
Bottom (<i>n</i> = 250)	12	41	21	5
Third (<i>n</i> = 387)	27	52	41	9
Second (<i>n</i> = 437)	51	71	56	28
Top (<i>n</i> = 316)	75	86	77	46

^a To be classified as understanding scientific inquiry, the survey respondent had to (1) answer correctly the two probability questions stated in footnote b and (2) either provide a theory-testing response to the open-ended question about what it means to study something scientifically (see footnote d) or a correct response to the open-ended question about experiment (i.e., explain why it is better to test a drug using a control group [see footnote c]).

^b To be classified as understanding probability, the survey respondent had to answer two questions correctly: *A doctor tells a couple that their genetic makeup means that they've got one in four chances of having a child with an inherited illness. (1) Does this mean that if their first child has the illness, the next three will not have the illness?(No) and (2) Does this mean that each of the couple's children will have the same risk of suffering from the illness?(Yes).*

^c To be classified as understanding experiment, the survey respondent had to answer correctly (1) *Two scientists want to know if a certain drug is effective against high blood pressure. The first scientist wants to give the drug to 1,000 people with high blood pressure and see how many of them experience lower blood pressure levels. The second scientist wants to give the drug to 500 people with high blood pressure and not give the drug to another 500 people with high blood pressure, and see how many in both groups experience lower blood pressure levels. Which is the better way to test this drug?* and (2) *Why is it better to test the drug this way?* (The second way because a control group is used for comparison.)

^d To be classified as understanding scientific study, the survey respondent had to answer (1) *When you read news stories, you see certain sets of words and terms. We are interested in how many people recognize certain kinds of terms. First, some articles refer to the results of a scientific study. When you read or hear the term scientific study, do you have a clear understanding of what it means, a general sense of what it means, or little understanding of what it means?* and (2) (If "clear understanding" or "general sense" response) *In your own words, could you tell me what it means to study something scientifically?* (Formulation of theories/test hypothesis, experiments/control group, or rigorous/systematic comparison.)

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^e For science and mathematics education, "low" equates to five or fewer high school and college science or mathematics courses, "middle" is six through eight courses, and "high" means nine or more courses. Categories do not add to total n because "don't know" responses and refusals to respond are not shown.

^f Categories do not add to total n because "don't know" responses and refusals to respond are not shown.

^g Measure is based on correct responses to a 10-item, multiple-choice test of vocabulary knowledge completed by 1,390 survey respondents. Categories represent the number of correct responses.

^h See notes to Appendix Table 7-2 for an explanation of the trend factual knowledge of science scale.

Source(s)

NORC at the University of Chicago, General Social Survey (2016).

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APPENDIX TABLE 7-12

Public assessment of astrology, by respondent characteristic: 1979–2016

(Percent)

Characteristic	1979 (n=1,635)	1983 (n=1,615)	1985 (n=1,986)	1988 (n=2,041)	1990 (n=2,005)	1992 (n=1,995)	1995 (n=2,006)	1997 (n=2,000)	1999 (n=1,882)	2001 (n=1,574)	2004 (n=2,025)	2006 (n=1,864)	2008 (n=2,021)	2010 (n=1,434)	2012 (n=2,256)	2014 (n=2,130)	2016 (n=1,390)
All adults																	
Very scientific	8	10	8	6	6	7	7	7	7	9	6	5	5	6	10	6	8
Sort of scientific	34	35	31	31	29	29	28	29	29	31	26	26	28	28	32	26	29
Not at all scientific	50	51	57	60	60	62	60	59	59	56	66	65	63	62	55	65	60
Don't know	9	4	4	3	5	3	5	5	5	4	3	4	4	3	4	3	3
Sex																	
Male																	
Very scientific	7	9	7	5	5	6	7	7	7	9	5	5	5	7	10	5	8
Sort of scientific	30	29	29	25	23	25	24	27	25	27	21	23	28	24	27	25	26
Not at all scientific	54	58	60	67	66	66	65	63	63	60	72	68	64	67	60	69	64
Don't know	9	4	3	3	5	2	4	2	5	4	2	4	4	2	3	2	2
Female																	
Very scientific	8	10	9	7	6	7	7	7	7	8	6	5	5	6	10	6	9
Sort of scientific	37	41	32	36	35	32	32	31	32	36	30	29	28	32	36	28	32
Not at all scientific	46	44	55	53	55	58	56	55	56	52	61	63	63	58	50	62	57
Don't know	9	5	4	3	5	3	6	7	5	4	3	4	4	4	4	4	3

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Characteristic	1979 (n=1,635)	1983 (n=1,615)	1985 (n=1,986)	1988 (n=2,041)	1990 (n=2,005)	1992 (n=1,995)	1995 (n=2,006)	1997 (n=2,000)	1999 (n=1,882)	2001 (n=1,574)	2004 (n=2,025)	2006 (n=1,864)	2008 (n=2,021)	2010 (n=1,434)	2012 (n=2,256)	2014 (n=2,130)	2016 (n=1,390)
Very scientific	5	5	1	*	1	3	2	4	2	3	*	*	3	2	3	2	2
Sort of scientific	15	23	23	19	17	14	22	15	19	13	16	12	12	16	24	11	23
Not at all scientific	76	69	74	78	80	82	74	78	77	83	83	84	83	79	72	84	73
Don't know	4	3	2	2	2	*	2	2	2	*	1	4	3	3	1	2	1
Age (years)																	
18-24																	
Very scientific	9	13	10	10	5	14	9	11	7	17	10	5	5	11	14	10	11
Sort of scientific	40	43	39	36	37	37	33	38	40	39	36	34	38	43	44	40	33
Not at all scientific	47	42	51	54	56	49	53	50	50	42	52	56	55	46	42	48	54
Don't know	4	3	*	0	2	1	5	1	3	1	2	5	1	0	1	2	2
25-34																	
Very scientific	7	7	6	6	6	4	9	6	5	10	6	8	6	8	10	6	7
Sort of scientific	36	39	32	32	32	33	30	32	30	33	33	28	30	33	35	35	37
Not at all scientific	52	51	60	60	61	62	59	59	61	54	60	60	62	58	52	56	53
Don't know	4	3	1	1	2	1	2	3	3	3	1	4	2	1	2	2	3
35-44																	
Very scientific	6	11	8	6	5	7	4	4	7	7	4	5	5	8	10	8	9
Sort of scientific	37	32	29	31	26	27	32	26	32	32	24	28	31	27	33	26	27

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Characteristic	1979 (n=1,635)	1983 (n=1,615)	1985 (n=1,986)	1988 (n=2,041)	1990 (n=2,005)	1992 (n=1,995)	1995 (n=2,006)	1997 (n=2,000)	1999 (n=1,882)	2001 (n=1,574)	2004 (n=2,025)	2006 (n=1,864)	2008 (n=2,021)	2010 (n=1,434)	2012 (n=2,256)	2014 (n=2,130)	2016 (n=1,390)
Not at all scientific	53	54	61	60	68	64	61	66	59	58	69	65	61	64	51	64	62
Don't know	5	3	2	2	1	3	3	4	1	3	2	2	3	1	5	2	2
45-54																	
Very scientific	8	7	5	4	7	6	4	4	5	5	4	3	4	5	10	7	8
Sort of scientific	28	40	32	26	25	27	26	28	23	27	18	24	24	23	28	22	28
Not at all scientific	54	50	59	66	64	63	67	65	67	66	74	70	68	69	58	69	61
Don't know	10	3	5	4	4	4	3	4	5	3	3	3	4	3	4	2	3
55-64																	
Very scientific	10	8	11	5	5	3	8	7	10	6	6	3	4	6	8	2	9
Sort of scientific	32	33	24	33	25	18	20	17	27	27	25	24	26	24	31	20	27
Not at all scientific	44	56	56	56	59	77	66	69	58	62	66	68	67	65	57	75	62
Don't know	15	3	9	5	10	2	6	7	6	5	3	5	4	5	4	3	1
65 or older																	
Very scientific	5	12	11	6	5	7	10	11	11	6	6	5	5	2	8	5	6
Sort of scientific	26	24	26	27	29	27	22	31	20	31	26	21	21	24	25	21	24
Not at all scientific	50	52	55	60	53	60	55	47	57	54	64	68	65	67	62	70	66
Don't know	19	12	8	6	13	6	12	11	13	9	3	7	9	8	5	4	4
Trend factual knowledge of science scale (quartile) ^a																	

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Characteristic	1979 (n=1,635)	1983 (n=1,615)	1985 (n=1,986)	1988 (n=2,041)	1990 (n=2,005)	1992 (n=1,995)	1995 (n=2,006)	1997 (n=2,000)	1999 (n=1,882)	2001 (n=1,574)	2004 (n=2,025)	2006 (n=1,864)	2008 (n=2,021)	2010 (n=1,434)	2012 (n=2,256)	2014 (n=2,130)	2016 (n=1,390)
Bottom																	
Very scientific	NA	NA	NA	NA	NA	10	8	11	13	10	NA	5	6	9	12	8	12
Sort of scientific	NA	NA	NA	NA	NA	34	34	31	31	38	NA	36	34	32	39	37	30
Not at all scientific	NA	NA	NA	NA	NA	50	45	44	38	42	NA	50	47	52	35	48	49
Don't know	NA	NA	NA	NA	NA	6	14	14	18	10	NA	8	13	6	13	7	8
Third																	
Very scientific	NA	NA	NA	NA	NA	8	11	8	9	9	NA	7	6	11	14	9	8
Sort of scientific	NA	NA	NA	NA	NA	30	30	38	35	38	NA	33	37	33	40	34	38
Not at all scientific	NA	NA	NA	NA	NA	60	55	50	54	49	NA	55	55	53	44	55	52
Don't know	NA	NA	NA	NA	NA	2	4	3	2	4	NA	5	2	2	3	3	2
Second																	
Very scientific	NA	NA	NA	NA	NA	5	6	6	6	13	NA	5	5	5	9	3	9
Sort of scientific	NA	NA	NA	NA	NA	30	28	25	27	31	NA	25	27	30	32	27	28
Not at all scientific	NA	NA	NA	NA	NA	63	64	66	65	54	NA	66	67	62	57	67	61
Don't know	NA	NA	NA	NA	NA	2	2	3	2	2	NA	4	2	3	2	2	2
Top																	
Very scientific	NA	NA	NA	NA	NA	2	3	2	2	3	NA	2	3	1	6	3	3
Sort of scientific	NA	NA	NA	NA	NA	20	18	21	21	20	NA	14	18	18	19	12	20

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Characteristic	1979 (n=1,635)	1983 (n=1,615)	1985 (n=1,986)	1988 (n=2,041)	1990 (n=2,005)	1992 (n=1,995)	1995 (n=2,006)	1997 (n=2,000)	1999 (n=1,882)	2001 (n=1,574)	2004 (n=2,025)	2006 (n=1,864)	2008 (n=2,021)	2010 (n=1,434)	2012 (n=2,256)	2014 (n=2,130)	2016 (n=1,390)
Not at all scientific	NA	NA	NA	NA	NA	76	78	76	75	75	NA	82	78	79	74	84	76
Don't know	NA	NA	NA	NA	NA	2	1	1	1	2	NA	1	1	1	1	1	1
Understanding of scientific inquiry ^b																	
Understands scientific inquiry																	
Very scientific	NA	NA	NA	NA	NA	NA	2	3	4	4	2	4	3	2	5	3	5
Sort of scientific	NA	NA	NA	NA	NA	NA	24	26	22	29	19	19	18	24	26	20	23
Not at all scientific	NA	NA	NA	NA	NA	NA	74	70	73	66	78	75	77	73	68	76	72
Don't know	NA	NA	NA	NA	NA	NA	1	1	2	1	1	2	2	1	1	1	1
Doesn't understand scientific inquiry																	
Very scientific	NA	NA	NA	NA	NA	NA	9	9	9	12	8	5	6	11	12	7	11
Sort of scientific	NA	NA	NA	NA	NA	NA	29	31	32	33	31	31	33	32	35	32	34
Not at all scientific	NA	NA	NA	NA	NA	NA	55	53	53	49	58	58	56	54	48	57	51
Don't know	NA	NA	NA	NA	NA	NA	6	7	7	6	3	5	5	4	5	4	4

* = < 0.5% responded. NA = not available; question was not asked.

^a See notes to Appendix Table 7-2 for an explanation of the trend factual knowledge of science scale.

^b See notes to Appendix Table 7-11 for an explanation of scientific inquiry. Because 41 survey respondents in 2001 were not asked all of the questions related to understanding scientific inquiry, it is not possible to conclude whether they understood scientific inquiry.

Note(s)

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Responses to *Would you say that astrology is very scientific, sort of scientific, or not at all scientific?* Table includes all years for which data were collected. Percentages may not add to 100% because of rounding. For 1979 data, see *Science and Engineering Indicators 2014*, Appendix Table 7-13.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1979–2001); University of Michigan, Survey of Consumer Attitudes (2004); NORC at the University of Chicago, General Social Survey (2006–16).

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 APPENDIX TABLE 7-13 
Understanding of the term "scientific study," by respondent characteristic: 2016

(Percent)

Characteristic	Clear understanding	General understanding	Little understanding	Don't know
All adults (<i>n</i> = 1,390)	31	48	19	2
Sex				
Male (<i>n</i> = 571)	34	47	18	1
Female (<i>n</i> = 819)	29	49	19	3
Formal education				
Less than high school diploma (<i>n</i> = 169)	14	31	50	5
High school diploma (<i>n</i> = 415)	25	49	24	2
Some college (<i>n</i> = 388)	30	55	13	2
Bachelor's degree (<i>n</i> = 263)	46	49	5	0
Graduate or professional degree (<i>n</i> = 151)	48	44	7	1
Science and mathematics education^a				
Low (<i>n</i> = 776)	23	49	26	3
Middle (<i>n</i> = 262)	35	55	10	*
High (<i>n</i> = 275)	54	42	4	0
Family income (quartile)^b				
Bottom (<i>n</i> = 336)	23	40	33	4
Third (<i>n</i> = 281)	27	54	18	1
Second (<i>n</i> = 324)	33	50	15	1
Top (<i>n</i> = 318)	40	52	7	0
Age (years)^b				
18–24 (<i>n</i> = 115)	36	45	17	2
25–34 (<i>n</i> = 269)	43	42	13	2
35–44 (<i>n</i> = 206)	37	43	18	3
45–54 (<i>n</i> = 223)	33	48	19	1
55–64 (<i>n</i> = 264)	24	56	19	1

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Characteristic	Clear understanding	General understanding	Little understanding	Don't know
65 or older ($n = 310$)	19	54	25	3
Trend factual knowledge of science scale (quartile) ^c				
Bottom ($n = 250$)	15	35	44	6
Third ($n = 387$)	22	54	23	1
Second ($n = 437$)	34	53	12	1
Top ($n = 316$)	51	44	4	1

* = < 0.5% responded.

^a For science and mathematics education, "low" equates to five or fewer high school and college science or mathematics courses, "middle" is six through eight courses, and "high" means nine or more courses. Categories do not add to total n because "don't know" responses and refusals to respond are not shown.

^b Categories do not add to total n because "don't know" responses and refusals to respond are not shown.

^c See notes to Appendix Table 7-2 for an explanation of the trend factual knowledge of science scale.

Note(s)

Responses to *When you read or hear the term scientific study, do you have a clear understanding of what it means, a general sense of what it means, or little understanding of what it means?* Percentages may not add to 100% because of rounding.

Source(s)

NORC at the University of Chicago, General Social Survey (2016).

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APPENDIX TABLE 7-14

Understanding of the term "scientific study": 1979–2016

(Percent)

Assessment	1979 (n=1,635)	1981 (n=1,235)	1983 (n=1,615)	1985 (n=1,986)	1988 (n=2,041)	1990 (n=2,005)	1992 (n=1,995)	1995 (n=2,006)	1997 (n=2,000)	1999 (n=1,882)	2001 (n=1,574)	2004 (n=2,205)	2006 (n=1,864)	2008 (n=2,021)	2010 (n=1,454)	2012 (n=2,256)	2014 (n=2,130)	2016 (n=1,390)
Clear understanding	22	34	18	29	31	33	31	34	37	37	35	33	30	29	26	24	28	31
General understanding	61	51	49	50	49	47	50	46	46	47	49	51	52	50	52	54	51	48
Little understanding	17	14	32	20	19	19	18	18	16	17	14	16	17	20	21	20	20	19
Don't know	1	1	*	*	*	*	*	2	1	0	1	1	1	1	2	2	1	2

* = < 0.5% responded.

Note(s)

 Responses to *When you read or hear the term scientific study, do you have a clear understanding of what it means, a general sense of what it means, or little understanding of what it means?* Percentages may not add to 100% because of rounding.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1979–2001); University of Michigan, Survey of Consumer Attitudes (2004); NORC at the University of Chicago, General Social Survey (2006–16).

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APPENDIX TABLE 7-15

Public assessment of benefits and harms of scientific research, by respondent characteristic: 2016

(Percent)

Characteristic	Benefits strongly outweigh harmful results	Benefits slightly outweigh harmful results	Benefits are about equal to harmful results	Harmful results slightly outweigh benefits	Harmful results strongly outweigh benefits	Don't know
All adults (<i>n</i> = 1,390)	45	27	12	6	2	8
Sex						
Male (<i>n</i> = 571)	47	27	13	7	2	4
Female (<i>n</i> = 819)	44	27	12	6	2	10
Formal education						
Less than high school diploma (<i>n</i> = 169)	18	34	15	9	4	20
High school diploma (<i>n</i> = 415)	38	29	17	8	2	7
Some college (<i>n</i> = 388)	42	30	13	6	2	7
Bachelor's degree (<i>n</i> = 263)	62	22	6	4	1	5
Graduate or professional degree (<i>n</i> = 151)	77	17	2	*	2	2
Science and mathematics education ^a						
Low (<i>n</i> = 776)	37	28	15	7	2	11
Middle (<i>n</i> = 262)	50	29	10	6	3	2
High (<i>n</i> = 275)	65	25	7	1	*	1
Family income (quartile) ^b						
Bottom (<i>n</i> = 336)	33	30	13	8	4	12
Third (<i>n</i> = 281)	39	28	15	7	2	9
Second (<i>n</i> = 324)	48	31	10	6	2	4

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Characteristic	Benefits strongly outweigh harmful results	Benefits slightly outweigh harmful results	Benefits are about equal to harmful results	Harmful results slightly outweigh benefits	Harmful results strongly outweigh benefits	Don't know
Top (<i>n</i> = 318)	63	23	8	3	1	3
Age (years) ^b						
18–24 (<i>n</i> = 115)	33	38	17	8	0	5
25–34 (<i>n</i> = 269)	44	29	15	6	2	5
35–44 (<i>n</i> = 206)	43	28	12	8	1	9
45–54 (<i>n</i> = 223)	50	25	10	4	4	7
55–64 (<i>n</i> = 264)	50	21	11	7	3	8
65 or older (<i>n</i> = 310)	47	25	10	4	2	12
Trend factual knowledge of science scale (quartile) ^c						
Bottom (<i>n</i> = 250)	26	30	14	9	2	20
Third (<i>n</i> = 387)	37	30	14	6	3	9
Second (<i>n</i> = 437)	49	28	11	7	2	3
Top (<i>n</i> = 316)	64	19	10	2	1	3

* = < 0.5% responded.

^a For science and mathematics education, "low" equates to five or fewer high school and college science or mathematics courses, "middle" is six through eight courses, and "high" means nine or more courses. Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^b Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^c See notes to Appendix Table 7-2 for an explanation of the trend factual knowledge of science scale.

Note(s)

Responses to *People have frequently noted that scientific research has produced benefits and harmful results. Would you say that, on balance, the benefits of scientific research have outweighed the harmful results, or have the harmful results of scientific research been greater than its benefits?* Percentages may not add to 100% because of rounding.

Source(s)

NORC at the University of Chicago, General Social Survey (2016).

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APPENDIX TABLE 7-16

Public assessment of benefits and harms of scientific research: 1979–2016

(Percent)

Assessment	1979 (n=1,635)	1981 (n=1,581)	1985 (n=1,986)	1988 (n=1,021)	1990 (n=2,005)	1992 (n=974)	1995 (n=2,006)	1997 (n=2,000)	1999 (n=1,882)	2001 (n=1,574)	2004 (n=2,205)	2006 (n=1,864)	2008 (n=2,021)	2010 (n=1,434)	2012 (n=2,256)	2014 (n=2,130)	2016 (n=1,390)
Benefits strongly outweigh harmful results	46	42	44	53	47	42	43	47	47	47	52	48	42	46	50	43	45
Benefits slightly outweigh harmful results	24	28	25	23	25	30	29	28	27	25	27	22	26	23	22	26	27
Benefits are about equal to harmful results	13	12	4	5	7	6	3	6	5	12	3	17	16	14	13	16	12
Harmful results slightly outweigh benefits	7	12	13	8	10	12	10	8	10	7	10	4	7	7	6	7	6
Harmful results strongly outweigh benefits	4	6	6	4	3	5	3	4	5	3	3	2	2	2	2	2	2
Don't know	6	1	8	7	8	5	13	7	6	6	5	6	7	8	8	6	8

Note(s)

Responses to *People have frequently noted that scientific research has produced benefits and harmful results. Would you say that, on balance, the benefits of scientific research have outweighed the harmful results, or have the harmful results of scientific research been greater than its benefits?* Percentages may not add to 100% because of rounding.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1979–2001); University of Michigan, Survey of Consumer Attitudes (2004); NORC at the University of Chicago, General Social Survey (2006–16).

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APPENDIX TABLE 7-17

Public assessment of whether science and technology result in more opportunities for the next generation, by respondent characteristic: 2016

(Percent)

Characteristic	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
All adults (<i>n</i> = 1,390)	39	52	7	1	1
Sex					
Male (<i>n</i> = 571)	40	50	8	1	1
Female (<i>n</i> = 819)	38	54	6	1	2
Formal education					
Less than high school (<i>n</i> = 169)	33	57	6	3	2
High school diploma (<i>n</i> = 415)	32	57	8	2	1
Some college (<i>n</i> = 388)	39	50	9	*	1
Bachelor's degree (<i>n</i> = 263)	47	48	5	*	0
Graduate or professional degree (<i>n</i> = 151)	48	48	4	0	0
Science and mathematics education ^a					
Low (<i>n</i> = 776)	32	56	9	1	2
Middle (<i>n</i> = 262)	41	51	7	1	0
High (<i>n</i> = 275)	54	42	3	*	0
Family income (quartile) ^b					
Bottom (<i>n</i> = 336)	33	56	8	2	1
Third (<i>n</i> = 281)	42	50	6	1	1
Second (<i>n</i> = 324)	37	54	8	*	1
Top (<i>n</i> = 318)	46	46	6	1	*
Age (years) ^b					
18–24 (<i>n</i> = 115)	41	48	9	1	*
25–34 (<i>n</i> = 269)	42	51	5	1	1
35–44 (<i>n</i> = 206)	39	54	6	1	0
45–54 (<i>n</i> = 223)	37	55	6	*	1

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Characteristic	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
55-64 (<i>n</i> = 264)	40	50	9	*	1
65 or older (<i>n</i> = 310)	33	54	7	2	3
Trend factual knowledge of science scale (quartile) ^c					
Bottom (<i>n</i> = 250)	34	49	10	1	5
Third (<i>n</i> = 387)	33	58	6	2	*
Second (<i>n</i> = 437)	38	54	7	1	*
Top (<i>n</i> = 316)	49	45	5	0	0

* = < 0.5% responded.

^a For science and mathematics education, "low" equates to five or fewer high school and college science or mathematics courses, "middle" is six through eight courses, and "high" means nine or more courses. Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^b Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^c See notes to Appendix Table 7-2 for an explanation of the trend factual knowledge of science scale.

Note(s)

Responses to *Because of science and technology, there will be more opportunities for the next generation*. Percentages may not add to 100% because of rounding.

Source(s)

NORC at the University of Chicago, General Social Survey (2016).

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 APPENDIX TABLE 7-18 
Public assessment of whether science and technology result in more opportunities for the next generation: 1985–2016

(Percent)

Assessment	1985 (n = 1,986)	1992 (n = 1,995)	1995 (n = 2,006)	1997 (n = 2,000)	1999 (n = 1,882)	2001 (n = 1,574)	2004 (n = 2,025)	2006 (n = 1,864)	2008 (n = 2,021)	2010 (n = 1,434)	2012 (n = 2,256)	2014 (n = 2,130)	2016 (n = 1,390)
Strongly agree	5	16	10	13	12	21	24	41	37	35	26	33	39
Agree	71	66	71	68	72	64	62	49	53	56	61	56	52
Disagree	18	14	14	14	13	12	12	8	7	6	9	8	7
Strongly disagree	1	2	1	1	1	2	1	1	1	1	1	1	1
Don't know	4	3	3	3	3	2	2	2	3	2	3	1	1

Note(s)

Responses to *Because of science and technology, there will be more opportunities for the next generation*. Percentages may not add to 100% because of rounding.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1985–2001); University of Michigan, Survey of Consumer Attitudes (2004); NORC at the University of Chicago, General Social Survey (2006–16).

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APPENDIX TABLE 7-19

Public assessment of whether science makes life change too fast, by respondent characteristic: 2016

(Percent)

Characteristic	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
All adults (<i>n</i> = 1,390)	12	40	39	8	2
Sex					
Male (<i>n</i> = 571)	12	38	39	10	1
Female (<i>n</i> = 819)	11	41	38	7	3
Formal education					
Less than high school diploma (<i>n</i> = 169)	21	48	23	5	3
High school diploma (<i>n</i> = 415)	12	47	35	4	2
Some college (<i>n</i> = 388)	9	40	40	9	2
Bachelor's degree (<i>n</i> = 263)	9	27	50	12	2
Graduate or professional degree (<i>n</i> = 151)	10	31	46	12	2
Science and mathematics education ^a					
Low (<i>n</i> = 776)	12	47	34	4	2
Middle (<i>n</i> = 262)	12	33	45	8	1
High (<i>n</i> = 275)	8	25	48	19	0
Family income (quartile) ^b					
Bottom (<i>n</i> = 336)	15	42	33	8	2
Third (<i>n</i> = 281)	15	42	34	8	1
Second (<i>n</i> = 324)	10	39	43	5	3
Top (<i>n</i> = 318)	10	33	46	11	*
Age (years) ^b					
18–24 (<i>n</i> = 115)	14	42	34	8	1
25–34 (<i>n</i> = 269)	12	36	40	12	*
35–44 (<i>n</i> = 206)	10	38	41	10	2
45–54 (<i>n</i> = 223)	12	39	40	7	2

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Characteristic	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
55-64 (<i>n</i> = 264)	11	40	39	8	2
65 or older (<i>n</i> = 310)	12	45	35	4	4
Trend factual knowledge of science scale (quartile) ^c					
Bottom (<i>n</i> = 250)	17	52	21	4	6
Third (<i>n</i> = 387)	11	48	35	4	2
Second (<i>n</i> = 437)	12	38	42	7	1
Top (<i>n</i> = 316)	7	23	52	18	1

* = < 0.5% responded.

^a For science and mathematics education, "low" equates to five or fewer high school and college science or mathematics courses, "middle" is six through eight courses, and "high" means nine or more courses. Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^b Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^c See notes to Appendix Table 7-2 for an explanation of the trend factual knowledge of science scale.

Note(s)

Responses to *Science makes our way of life change too fast*. Percentages may not add to 100% because of rounding.

Source(s)

NORC at the University of Chicago, General Social Survey (2016).

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APPENDIX TABLE 7-20

Public assessment of whether science makes life change too fast: 1979–2016

(Percent)

Assessment	1979 (n = 1,635)	1983 (n = 1,615)	1985 (n = 1,986)	1988 (n = 2,041)	1990 (n = 2,005)	1992 (n = 1,995)	1995 (n = 2,006)	1997 (n = 2,000)	1999 (n = 1,882)	2001 (n = 1,574)	2004 (n = 2,025)	2006 (n = 1,864)	2008 (n = 2,021)	2010 (n = 1,434)	2012 (n = 2,256)	2014 (n = 2,130)	2016 (n = 1,390)
Strongly agree	9	6	3	3	3	6	3	4	3	4	5	10	10	9	9	11	11
Agree	44	43	41	37	34	32	34	32	38	34	28	34	37	42	33	40	40
Disagree	40	44	51	55	56	54	56	55	53	53	55	45	43	40	51	40	39
Strongly disagree	4	6	2	3	4	6	4	6	4	5	11	8	7	7	5	7	8
Don't know	3	2	3	2	3	2	3	3	2	3	2	3	3	2	3	2	2

Note(s)

 Responses to *Science makes our way of life change too fast*. Percentages may not add to 100% because of rounding.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1979–2001); University of Michigan, Survey of Consumer Attitudes (2004); NORC at the University of Chicago, General Social Survey (2006–16).

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 APPENDIX TABLE 7-21 
Public opinion on whether the federal government should fund basic scientific research, by respondent characteristic: 2016

(Percent)

Characteristic	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
All adults (<i>n</i> = 1,390)	30	54	13	1	2
Sex					
Male (<i>n</i> = 571)	34	49	14	1	1
Female (<i>n</i> = 819)	26	57	13	1	3
Formal education					
Less than high school diploma (<i>n</i> = 169)	17	61	15	2	5
High school diploma (<i>n</i> = 415)	24	53	19	1	3
Some college (<i>n</i> = 388)	31	56	12	0	2
Bachelor's degree (<i>n</i> = 263)	38	50	10	2	0
Graduate or professional degree (<i>n</i> = 151)	43	49	6	1	0
Science and mathematics education ^a					
Low (<i>n</i> = 776)	25	56	15	1	3
Middle (<i>n</i> = 262)	32	52	13	3	*
High (<i>n</i> = 275)	42	48	9	*	*
Family income (quartile) ^b					
Bottom (<i>n</i> = 336)	25	55	17	1	3
Third (<i>n</i> = 281)	29	57	12	1	1
Second (<i>n</i> = 324)	31	56	12	1	1
Top (<i>n</i> = 318)	36	50	12	1	1
Age (years) ^b					
18–24 (<i>n</i> = 115)	33	51	11	1	4
25–34 (<i>n</i> = 269)	34	54	9	1	2
35–44 (<i>n</i> = 206)	26	57	16	*	1
45–54 (<i>n</i> = 223)	30	57	11	1	1

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Characteristic	Strongly agree	Agree	Disagree	Strongly disagree	Don't know
55-64 (<i>n</i> = 264)	31	47	19	1	2
65 or older (<i>n</i> = 310)	24	56	15	2	3
Trend factual knowledge of science scale (quartile) ^c					
Bottom (<i>n</i> = 250)	22	53	15	1	8
Third (<i>n</i> = 387)	19	63	17	1	1
Second (<i>n</i> = 437)	32	52	13	1	1
Top (<i>n</i> = 316)	45	45	9	1	*

* = < 0.5% responded.

^a For science and mathematics education, "low" equates to five or fewer high school and college science or mathematics courses, "middle" is six through eight courses, and "high" means nine or more courses. Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^b Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^c See notes to Appendix Table 7-2 for an explanation of the trend factual knowledge of science scale.

Note(s)

Responses to *Even if it brings no immediate benefits, scientific research that advances the frontiers of knowledge is necessary and should be supported by the federal government.* Percentages may not add to 100% because of rounding.

Source(s)

NORC at the University of Chicago, General Social Survey (2016).

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APPENDIX TABLE 7-22

Public opinion on whether the federal government should fund basic scientific research: 1985–2016

(Percent)

Opinion	1985 (n = 1,986)	1988 (n = 2,041)	1990 (n = 2,005)	1992 (n = 1,995)	1995 (n = 2,006)	1997 (n = 2,000)	1999 (n = 1,882)	2001 (n = 1,574)	2004 (n = 2,025)	2006 (n = 1,864)	2008 (n = 2,021)	2010 (n = 1,434)	2012 (n = 2,256)	2014 (n = 2,130)	2016 (n = 1,390)
Strongly agree	9	16	18	14	17	22	21	19	29	32	24	23	21	25	30
Agree	70	65	63	63	61	57	61	62	53	55	60	59	62	60	54
Disagree	16	14	15	18	17	15	13	14	15	8	11	12	12	12	13
Strongly disagree	*	1	1	2	2	3	2	1	2	1	1	2	2	1	1
Don't know	5	4	4	3	3	3	3	4	1	3	4	4	4	2	2

* = < 0.5% responded.

Note(s)

Responses to *Even if it brings no immediate benefits, scientific research that advances the frontiers of knowledge is necessary and should be supported by the federal government.* Percentages may not add to 100% because of rounding.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1985–2001); University of Michigan, Survey of Consumer Attitudes (2004); NORC at the University of Chicago, General Social Survey (2006–16).

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APPENDIX TABLE 7-23

Public assessment of spending, by policy area: 1983–2016

(Percent)

Policy area	1983 (n = 1,615)	1985 (n = 1,986)	1988 (n = 2,041) ^a	1990 (n = 2,005)	1992 (n = 1,995)	1997 (n = 2,000)	1999 (n = 1,882)	2001 (n = 1,574)	2002 (n = 1,358) ^b	2004 (n = 1,401) ^c	2006 (n = 2,992) ^d	2008 (n = 3,559) ^e	2010 (n = 4,901) ^f	2012 (n = 4,820) ^g	2014 (n = 2,130) ^h	2016 (n = 2,867) ⁱ
Education																
Too little	71	73	76	77	81	76	75	76	73	73	73	74	74	75	74	72
About right	23	22	19	17	14	16	18	17	20	21	20	21	20	18	19	20
Too much	5	3	4	4	4	6	6	5	6	5	5	5	5	7	6	6
Don't know	2	2	1	2	1	2	1	1	1	1	1	1	1	1	1	1
Assistance for the poor																
Too little	NA	54	55	57	56	43	49	53	66	69	68	68	61	61	63	71
About right	NA	29	30	25	26	30	30	29	24	23	22	23	27	26	23	21
Too much	NA	13	12	15	17	23	19	15	8	6	8	7	10	10	12	7
Don't know	NA	3	3	3	2	4	2	2	2	1	2	2	2	3	2	2
Environment																
Too little	54	69	76	76	72	65	65	63	58	63	67	66	57	58	60	63

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Policy area	1983 (n = 1,615)	1985 (n = 1,986)	1988 (n = 2,041) ^a	1990 (n = 2,005)	1992 (n = 1,995)	1997 (n = 2,000)	1999 (n = 1,882)	2001 (n = 1,574)	2002 (n = 1,358) ^b	2004 (n = 1,401) ^c	2006 (n = 2,992) ^d	2008 (n = 3,559) ^e	2010 (n = 4,901) ^f	2012 (n = 4,820) ^g	2014 (n = 2,130) ^h	2016 (n = 2,867) ⁱ
About right	31	21	18	17	20	23	25	28	32	29	23	23	30	30	27	27
Too much	11	6	4	5	7	8	7	6	7	6	7	8	10	10	10	8
Don't know	4	3	2	2	2	4	3	3	2	2	3	3	2	3	3	2
Health																
Too little	NA	68	67	75	79	68	71	70	73	77	72	75	58	61	57	62
About right	NA	26	28	20	15	23	22	24	21	17	19	17	22	23	24	23
Too much	NA	3	2	3	4	7	6	4	4	4	7	7	17	14	16	12
Don't know	NA	2	2	1	1	2	2	2	1	1	2	2	2	2	3	2
Developing alternative energy sources																
Too little	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	61	60	56	54
About right	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	28	27	31	34
Too much	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7	9	9	8
Don't know	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4	4	4	4

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Policy area	1983 (n = 1,615)	1985 (n = 1,986)	1988 (n = 2,041) ^a	1990 (n = 2,005)	1992 (n = 1,995)	1997 (n = 2,000)	1999 (n = 1,882)	2001 (n = 1,574)	2002 (n = 1,358) ^b	2004 (n = 1,401) ^c	2006 (n = 2,992) ^d	2008 (n = 3,559) ^e	2010 (n = 4,901) ^f	2012 (n = 4,820) ^g	2014 (n = 2,130) ^h	2016 (n = 2,867) ⁱ
Drug rehabilitation																
Too little	NA	NA	NA	NA	NA	NA	NA	NA	56	53	55	51	49	48	54	61
About right	NA	NA	NA	NA	NA	NA	NA	NA	31	34	31	34	36	34	30	26
Too much	NA	NA	NA	NA	NA	NA	NA	NA	10	9	9	10	10	13	11	9
Don't know	NA	NA	NA	NA	NA	NA	NA	NA	3	4	5	5	5	6	5	4
Social Security																
Too little	NA	NA	NA	NA	NA	NA	NA	NA	59	63	61	58	53	54	52	58
About right	NA	NA	NA	NA	NA	NA	NA	NA	33	27	30	32	35	34	37	33
Too much	NA	NA	NA	NA	NA	NA	NA	NA	4	5	5	5	8	7	6	5
Don't know	NA	NA	NA	NA	NA	NA	NA	NA	4	4	4	4	4	4	6	4
Law enforcement																
Too little	NA	NA	NA	NA	NA	NA	NA	NA	56	56	57	54	53	52	49	59
About right	NA	NA	NA	NA	NA	NA	NA	NA	35	36	33	35	36	36	37	30

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Policy area	1983 (n = 1,615)	1985 (n = 1,986)	1988 (n = 2,041) ^a	1990 (n = 2,005)	1992 (n = 1,995)	1997 (n = 2,000)	1999 (n = 1,882)	2001 (n = 1,574)	2002 (n = 1,358) ^b	2004 (n = 1,401) ^c	2006 (n = 2,992) ^d	2008 (n = 3,559) ^e	2010 (n = 4,901) ^f	2012 (n = 4,820) ^g	2014 (n = 2,130) ^h	2016 (n = 2,867) ⁱ
Too much	NA	NA	NA	NA	NA	NA	NA	NA	7	5	8	8	9	9	11	9
Don't know	NA	NA	NA	NA	NA	NA	NA	NA	3	3	2	2	2	3	2	2
Assistance for child care																
Too little	NA	NA	NA	NA	NA	NA	NA	NA	56	54	51	49	46	45	47	54
About right	NA	NA	NA	NA	NA	NA	NA	NA	31	34	35	39	41	39	38	35
Too much	NA	NA	NA	NA	NA	NA	NA	NA	7	6	7	6	7	8	8	5
Don't know	NA	NA	NA	NA	NA	NA	NA	NA	6	6	7	6	6	7	7	6
Highways and bridges																
Too little	NA	NA	NA	NA	NA	NA	NA	NA	35	29	35	43	43	43	45	48
About right	NA	NA	NA	NA	NA	NA	NA	NA	50	55	52	45	45	43	42	40
Too much	NA	NA	NA	NA	NA	NA	NA	NA	12	13	11	9	10	12	11	11
Don't know	NA	NA	NA	NA	NA	NA	NA	NA	3	3	3	3	2	2	2	2
Supporting scientific research																

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Policy area	1983 (n = 1,615)	1985 (n = 1,986)	1988 (n = 2,041) ^a	1990 (n = 2,005)	1992 (n = 1,995)	1997 (n = 2,000)	1999 (n = 1,882)	2001 (n = 1,574)	2002 (n = 1,358) ^b	2004 (n = 1,401) ^c	2006 (n = 2,992) ^d	2008 (n = 3,559) ^e	2010 (n = 4,901) ^f	2012 (n = 4,820) ^g	2014 (n = 2,130) ^h	2016 (n = 2,867) ⁱ
Too little	NA	29	34	30	34	34	37	36	34	38	41	36	36	38	39	38
About right	NA	46	48	47	43	46	43	44	46	45	41	46	47	45	45	45
Too much	NA	18	15	16	19	14	14	14	13	12	11	11	12	12	10	11
Don't know	NA	7	4	6	4	7	6	7	6	5	7	7	5	6	6	6
Mass transportation																
Too little	NA	NA	NA	NA	NA	NA	NA	NA	34	35	39	45	40	38	37	35
About right	NA	NA	NA	NA	NA	NA	NA	NA	50	50	47	42	46	46	48	52
Too much	NA	NA	NA	NA	NA	NA	NA	NA	10	10	8	8	9	10	9	8
Don't know	NA	NA	NA	NA	NA	NA	NA	NA	6	6	6	5	4	6	6	5
Parks and recreation																
Too little	NA	NA	NA	NA	NA	NA	NA	NA	34	31	33	30	32	31	32	34
About right	NA	NA	NA	NA	NA	NA	NA	NA	58	60	59	63	60	61	62	59
Too much	NA	NA	NA	NA	NA	NA	NA	NA	5	7	6	5	6	6	5	6

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Policy area	1983 (n = 1,615)	1985 (n = 1,986)	1988 (n = 2,041) ^a	1990 (n = 2,005)	1992 (n = 1,995)	1997 (n = 2,000)	1999 (n = 1,882)	2001 (n = 1,574)	2002 (n = 1,358) ^b	2004 (n = 1,401) ^c	2006 (n = 2,992) ^d	2008 (n = 3,559) ^e	2010 (n = 4,901) ^f	2012 (n = 4,820) ^g	2014 (n = 2,130) ^h	2016 (n = 2,867) ⁱ
Don't know	NA	NA	NA	NA	NA	NA	NA	NA	3	2	2	2	2	2	2	2
National defense																
Too little	19	11	11	15	15	23	31	29	33	33	26	23	25	24	31	36
About right	31	36	35	42	42	42	40	41	44	38	33	34	39	40	36	34
Too much	47	50	52	40	40	32	25	25	20	26	39	40	33	32	30	26
Don't know	3	3	3	3	2	4	4	5	3	3	3	3	3	3	3	3
Assistance to blacks																
Too little	NA	NA	NA	NA	NA	NA	NA	NA	30	32	29	29	26	27	27	41
About right	NA	NA	NA	NA	NA	NA	NA	NA	45	46	42	44	46	45	43	36
Too much	NA	NA	NA	NA	NA	NA	NA	NA	17	13	18	15	16	16	18	12
Don't know	NA	NA	NA	NA	NA	NA	NA	NA	8	9	11	11	11	13	12	10
Assistance to big cities																
Too little	NA	NA	NA	NA	NA	NA	NA	NA	41	40	32	31	28	27	26	35

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Policy area	1983 (n = 1,615)	1985 (n = 1,986)	1988 (n = 2,041) ^a	1990 (n = 2,005)	1992 (n = 1,995)	1997 (n = 2,000)	1999 (n = 1,882)	2001 (n = 1,574)	2002 (n = 1,358) ^b	2004 (n = 1,401) ^c	2006 (n = 2,992) ^d	2008 (n = 3,559) ^e	2010 (n = 4,901) ^f	2012 (n = 4,820) ^g	2014 (n = 2,130) ^h	2016 (n = 2,867) ⁱ
About right	NA	NA	NA	NA	NA	NA	NA	NA	37	38	36	38	38	38	39	35
Too much	NA	NA	NA	NA	NA	NA	NA	NA	13	12	22	20	24	24	25	22
Don't know	NA	NA	NA	NA	NA	NA	NA	NA	9	10	10	11	10	11	10	9
Space exploration																
Too little	17	9	17	9	12	14	15	11	12	14	14	14	16	22	24	21
About right	42	43	38	37	36	38	36	38	47	43	45	45	44	41	41	45
Too much	39	45	43	52	50	45	46	48	35	37	35	36	35	29	28	25
Don't know	2	2	2	2	1	3	3	3	6	6	6	6	5	7	7	9
Welfare																
Too little	NA	NA	NA	NA	NA	NA	NA	NA	20	23	24	23	22	20	18	22
About right	NA	NA	NA	NA	NA	NA	NA	NA	37	34	36	37	35	33	34	33
Too much	NA	NA	NA	NA	NA	NA	NA	NA	40	40	37	36	41	43	45	42
Don't know	NA	NA	NA	NA	NA	NA	NA	NA	3	2	3	4	3	3	3	3

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Policy area	1983 (n = 1,615)	1985 (n = 1,986)	1988 (n = 2,041) ^a	1990 (n = 2,005)	1992 (n = 1,995)	1997 (n = 2,000)	1999 (n = 1,882)	2001 (n = 1,574)	2002 (n = 1,358) ^b	2004 (n = 1,401) ^c	2006 (n = 2,992) ^d	2008 (n = 3,559) ^e	2010 (n = 4,901) ^f	2012 (n = 4,820) ^g	2014 (n = 2,130) ^h	2016 (n = 2,867) ⁱ
Assistance to other countries																
Too little	NA	NA	NA	NA	NA	NA	NA	NA	7	10	11	11	8	7	6	9
About right	NA	NA	NA	NA	NA	NA	NA	NA	27	26	24	26	28	23	23	28
Too much	NA	NA	NA	NA	NA	NA	NA	NA	63	61	62	59	60	65	68	58
Don't know	NA	NA	NA	NA	NA	NA	NA	NA	3	4	4	4	3	4	3	4

NA = not available; question was not asked.

^a In 1988, "national defense" was asked of 1,021 survey respondents.

^b In 2002, "assistance for the poor" was asked of 1,407 survey respondents; "education," "environment," "Social Security," "child care," "highways and bridges," "mass transportation," "parks and recreation," and "national defense" were asked of 2,765 respondents.

^c In 2004, "assistance for the poor" was asked of 1,411 survey respondents; "education," "environment," "Social Security," "child care," "highways and bridges," "mass transportation," "parks and recreation," and "national defense" were asked of 2,812 respondents.

^d In 2006, "assistance for the poor" was asked of 1,508 survey respondents; "welfare" was asked of 1,484 respondents.

^e In 2008, "assistance for the poor" was asked of 1,781 survey respondents; "welfare" was asked of 1,778 respondents; "environment," "health," "law enforcement," "drug rehabilitation," "assistance to big cities," and "space exploration" were asked of 3,558 respondents.

^f In 2010, "assistance for the poor" was asked of 2,480 survey respondents; "welfare" was asked of 2,421 respondents; "developing alternative energy sources" was asked of 2,044 respondents; "environment," "health," "law enforcement," and "national defense" were asked of 4,900 respondents; "assistance to big cities" was asked of 4,899 respondents; "assistance to blacks" was asked of 4,892 respondents.

^g In 2012, "assistance for the poor" was asked of 2,435 survey respondents; "welfare" was asked of 2,385 respondents; "developing alternative energy sources" was asked of 1,974 respondents.

^h In 2014, "assistance for the poor" was asked of 1,297 survey respondents; "welfare" was asked of 833 respondents; "developing alternative energy sources" was asked of 1,239 respondents.

ⁱ In 2016, "assistance for the poor" was asked of 1,430 survey respondents; "welfare" was asked of 1,437 respondents.

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Note(s)

Responses to *We are faced with many problems in this country, none of which can be solved easily or inexpensively. I'm going to name some of these problems, and for each one, I'd like you to tell me if you think we're spending too little money on it, about the right amount, or too much.* Beginning in 2002, two versions of the question were administered with different wording for some policy areas. Wording also varied for some policy areas in 1983–2001. Table combines data for policy areas with similar wording or meaning (see below). Percentages may not add to 100% because of rounding.

Policy areas with different wording in 1983–2001 or alternate wording in the second version of the question in 2002–16:

- *Education*: "improving education" in 1983–2001; alternate wording "improving the nation's education system" in 2002–16.
- *Assistance for the poor*: "helping low-income persons" in 1983–2001; no alternate wording in 2002–16.
- *Environment*: "reducing pollution" in 1983–2001; alternate wording "improving and protecting the environment" in 2002–16.
- *Health*: "improving health care" in 1983–2001; alternate wording "improving and protecting the nation's health" in 2002–16.
- *Law enforcement*: alternate wording "halting the rising crime rate" in 2002–16.
- *Drug rehabilitation*: alternate wording "dealing with drug addiction" in 2002–16.
- *Assistance to big cities*: alternate wording "solving the problems of the big cities" in 2002–16.
- *Assistance to blacks*: alternate wording "improving the conditions of blacks" in 2002–16.
- *National defense*: "improving national defense" in 1981–2001; alternate wording "military, armaments, and defense" in 2002–16.
- *Space exploration*: alternate wording "space exploration program" in 2002–16.
- *Assistance to other countries*: alternate wording "foreign aid" in 2002–16.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1983–2001); University of Michigan, Survey of Consumer Attitudes (2004); NORC at the University of Chicago, General Social Survey (2002–16).

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APPENDIX TABLE 7-24

Public assessment of spending on science, by respondent characteristic: 2016

(Percent)

Characteristic	Supporting scientific research			
	Too little	About right	Too much	Don't know
All adults (<i>n</i> = 2,867)	38	45	11	6
Sex				
Male (<i>n</i> = 1,276)	41	44	11	5
Female (<i>n</i> = 1,591)	35	46	11	7
Formal education				
Less than high school (<i>n</i> = 328)	31	43	16	10
High school diploma (<i>n</i> = 881)	34	48	12	6
Some college (<i>n</i> = 796)	42	41	12	6
Bachelor's degree (<i>n</i> = 536)	43	46	6	5
Graduate or professional degree (<i>n</i> = 318)	40	50	5	5
Science and mathematics education ^a				
Low (<i>n</i> = 776)	32	47	14	7
Middle (<i>n</i> = 262)	41	43	10	6
High (<i>n</i> = 275)	47	44	5	4
Family income (quartile) ^b				
Bottom (<i>n</i> = 705)	34	46	14	7
Third (<i>n</i> = 586)	39	42	13	6
Second (<i>n</i> = 677)	41	42	11	7
Top (<i>n</i> = 628)	39	49	7	5
Age (years) ^b				
18-24 (<i>n</i> = 228)	36	48	12	4
25-34 (<i>n</i> = 510)	41	43	9	7
35-44 (<i>n</i> = 481)	41	42	10	7
45-54 (<i>n</i> = 489)	34	46	15	6

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Characteristic	Supporting scientific research			
	Too little	About right	Too much	Don't know
55-64 (<i>n</i> = 533)	34	49	13	5
65 or older (<i>n</i> = 617)	41	45	7	7
Trend factual knowledge of science scale (quartile) ^c				
Bottom (<i>n</i> = 250)	31	39	17	12
Third (<i>n</i> = 387)	28	52	11	8
Second (<i>n</i> = 437)	39	47	11	4
Top (<i>n</i> = 316)	51	39	7	2

^a For science and mathematics education, "low" equates to five or fewer high school and college science or mathematics courses, "middle" is six through eight courses, and "high" means nine or more courses. Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^b Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^c See notes to Appendix Table 7-2 for an explanation of the trend factual knowledge of science scale.

Note(s)

Responses to *We are faced with many problems in this country, none of which can be solved easily or inexpensively. I'm going to name some of these problems, and for each one, I'd like you to tell me if you think we're spending too little money on it, about the right amount, or too much.* Percentages may not add to 100% because of rounding.

Source(s)

NORC at the University of Chicago, General Social Survey (2016).

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 APPENDIX TABLE 7-25 
Public assessment of spending on health, by respondent characteristic: 2016

(Percent)

Characteristic	Spending on health			
	Too little	About right	Too much	Don't know
All adults (<i>n</i> = 2,867)	62	23	12	2
Sex				
Male (<i>n</i> = 1,276)	58	26	14	2
Female (<i>n</i> = 1,591)	66	21	11	2
Formal education				
Less than high school (<i>n</i> = 328)	56	31	12	1
High school diploma (<i>n</i> = 881)	64	23	11	2
Some college (<i>n</i> = 796)	65	21	13	1
Bachelor's degree (<i>n</i> = 536)	60	22	15	3
Graduate or professional degree (<i>n</i> = 318)	62	23	12	3
Science and mathematics education ^a				
Low (<i>n</i> = 776)	63	25	10	1
Middle (<i>n</i> = 262)	64	21	13	2
High (<i>n</i> = 275)	58	26	16	1
Family income (quartile) ^b				
Bottom (<i>n</i> = 705)	65	25	8	2
Third (<i>n</i> = 586)	66	22	11	1
Second (<i>n</i> = 677)	62	22	14	1
Top (<i>n</i> = 628)	58	22	17	2
Age (years) ^b				
18-24 (<i>n</i> = 228)	67	23	8	2
25-34 (<i>n</i> = 510)	61	26	11	2
35-44 (<i>n</i> = 481)	66	20	13	1
45-54 (<i>n</i> = 489)	59	24	14	3

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Characteristic	Spending on health			
	Too little	About right	Too much	Don't know
55-64 (<i>n</i> = 533)	63	19	17	1
65 or older (<i>n</i> = 617)	60	27	11	2
Trend factual knowledge of science scale (quartile) ^c				
Bottom (<i>n</i> = 250)	57	29	12	2
Third (<i>n</i> = 387)	67	26	6	1
Second (<i>n</i> = 437)	65	20	14	2
Top (<i>n</i> = 316)	57	26	15	2

^a For science and mathematics education, "low" equates to five or fewer high school and college science or mathematics courses, "middle" is six through eight courses, and "high" means nine or more courses. Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^b Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^c See notes to Appendix Table 7-2 for an explanation of the trend factual knowledge of science scale.

Note(s)

Responses to *We are faced with many problems in this country, none of which can be solved easily or inexpensively. I'm going to name some of these problems, and for each one, I'd like you to tell me if you think we're spending too little money on it, about the right amount, or too much.* Percentages may not add to 100% because of rounding.

Source(s)

NORC at the University of Chicago, General Social Survey (2016).

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 APPENDIX TABLE 7-26 
Public assessment of spending on the environment, by respondent characteristic: 2016

(Percent)

Characteristic	Spending on environment			
	Too little	About right	Too much	Don't know
All adults (<i>n</i> = 2,867)	63	27	8	2
Sex				
Male (<i>n</i> = 1,276)	61	26	10	2
Female (<i>n</i> = 1,591)	64	27	7	2
Formal education				
Less than high school (<i>n</i> = 328)	52	34	10	5
High school diploma (<i>n</i> = 881)	61	28	9	2
Some college (<i>n</i> = 796)	66	24	8	2
Bachelor's degree (<i>n</i> = 536)	63	27	8	2
Graduate or professional degree (<i>n</i> = 318)	73	21	6	1
Science and mathematics education ^a				
Low (<i>n</i> = 776)	59	31	8	2
Middle (<i>n</i> = 262)	70	21	8	1
High (<i>n</i> = 275)	67	25	7	1
Family income (quartile) ^b				
Bottom (<i>n</i> = 705)	64	26	8	2
Third (<i>n</i> = 586)	64	25	7	4
Second (<i>n</i> = 677)	63	27	9	2
Top (<i>n</i> = 628)	64	26	8	1
Age (years) ^b				
18-24 (<i>n</i> = 228)	86	12	2	*
25-34 (<i>n</i> = 510)	68	24	6	2
35-44 (<i>n</i> = 481)	64	27	8	1
45-54 (<i>n</i> = 489)	63	25	9	3

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Characteristic	Spending on environment			
	Too little	About right	Too much	Don't know
55-64 (<i>n</i> = 533)	56	32	8	4
65 or older (<i>n</i> = 617)	52	31	13	3
Trend factual knowledge of science scale (quartile) ^c				
Bottom (<i>n</i> = 250)	54	35	7	3
Third (<i>n</i> = 387)	63	28	6	2
Second (<i>n</i> = 437)	66	24	8	2
Top (<i>n</i> = 316)	63	27	9	1

* = < 0.5% responded.

^a For science and mathematics education, "low" equates to five or fewer high school and college science or mathematics courses, "middle" is six through eight courses, and "high" means nine or more courses. Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^b Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^c See notes to Appendix Table 7-2 for an explanation of the trend factual knowledge of science scale.

Note(s)

Responses to *We are faced with many problems in this country, none of which can be solved easily or inexpensively. I'm going to name some of these problems, and for each one, I'd like you to tell me if you think we're spending too little money on it, about the right amount, or too much.* Percentages may not add to 100% because of rounding.

Source(s)

NORC at the University of Chicago, General Social Survey (2016).

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 APPENDIX TABLE 7-27 
Public assessment of spending on space, by respondent characteristic: 2016

(Percent)

Characteristic	Spending on space			
	Too little	About right	Too much	Don't know
All adults (<i>n</i> = 2,867)	21	45	25	9
Sex				
Male (<i>n</i> = 1,276)	29	41	25	6
Female (<i>n</i> = 1,591)	15	48	26	11
Formal education				
Less than high school (<i>n</i> = 328)	12	40	38	11
High school diploma (<i>n</i> = 881)	16	44	31	9
Some college (<i>n</i> = 796)	23	43	24	9
Bachelor's degree (<i>n</i> = 536)	29	46	17	8
Graduate or professional degree (<i>n</i> = 318)	28	55	11	7
Science and mathematics education ^a				
Low (<i>n</i> = 776)	16	46	28	9
Middle (<i>n</i> = 262)	20	52	20	8
High (<i>n</i> = 275)	34	43	15	7
Family income (quartile) ^b				
Bottom (<i>n</i> = 705)	17	41	33	9
Third (<i>n</i> = 586)	19	44	27	10
Second (<i>n</i> = 677)	20	46	25	9
Top (<i>n</i> = 628)	28	49	17	6
Age (years) ^b				
18-24 (<i>n</i> = 228)	25	47	18	10
25-34 (<i>n</i> = 510)	23	44	21	12
35-44 (<i>n</i> = 481)	19	48	23	10
45-54 (<i>n</i> = 489)	20	41	31	8

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Characteristic	Spending on space			
	Too little	About right	Too much	Don't know
55-64 (<i>n</i> = 533)	21	44	30	6
65 or older (<i>n</i> = 617)	20	46	27	7
Trend factual knowledge of science scale (quartile) ^c				
Bottom (<i>n</i> = 250)	10	44	28	17
Third (<i>n</i> = 387)	14	48	29	9
Second (<i>n</i> = 437)	21	46	24	9
Top (<i>n</i> = 316)	34	46	16	4

^a For science and mathematics education, "low" equates to five or fewer high school and college science or mathematics courses, "middle" is six through eight courses, and "high" means nine or more courses. Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^b Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^c See notes to Appendix Table 7-2 for an explanation of the trend factual knowledge of science scale.

Note(s)

Responses to *We are faced with many problems in this country, none of which can be solved easily or inexpensively. I'm going to name some of these problems, and for each one, I'd like you to tell me if you think we're spending too little money on it, about the right amount, or too much.* Percentages may not add to 100% because of rounding.

Source(s)

NORC at the University of Chicago, General Social Survey (2016).

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APPENDIX TABLE 7-28

Public confidence in institutional leaders, by type of institution: 1973–2016

(Percent)

Year (number)	Military	Scientific community	Medicine	Education	U.S. Supreme Court	Organized religion	Major companies	Banks and financial institutions	Organized labor	Executive branch of the federal government	Television	Press	Congress	Mean ^a
2016 (<i>n</i> = 1,956)	53	40	36	26	26	20	18	14	13	13	10	8	6	22.3
2014 (<i>n</i> = 2,130)	49	41	37	23	20	17	16	13	11	10	9	7	5	20.3
2012 (<i>n</i> = 3,258)	53	41	40	25	27	19	16	11	12	14	9	8	6	22.4
2010 (<i>n</i> = 3,278)	52	40	41	26	30	18	12	10	11	16	11	9	10	23.0
2008 (<i>n</i> = 2,390)	48	38	40	28	29	20	16	20	11	10	9	8	10	22.3
2006 (<i>n</i> = 1,989)	47	41	40	28	33	24	18	30	12	16	9	10	12	24.1
2004 (<i>n</i> = 876)	58	42	38	28	31	23	19	29	13	22	10	9	15	25.5
2002 (<i>n</i> = 912)	56	37	37	26	36	19	17	22	12	27	9	10	14	25.0
2000 (<i>n</i> = 1,896)	40	41	44	27	32	28	28	29	13	14	10	10	13	25.0

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Year (number)	Military	Scientific community	Medicine	Education	U.S. Supreme Court	Organized religion	Major companies	Banks and financial institutions	Organized labor	Executive branch of the federal government	Television	Press	Congress	Mean ^a
1998 (n = 1,911)	36	40	45	27	31	27	26	26	11	13	10	9	10	23.8
1996 (n = 1,925)	39	40	45	23	28	25	24	24	11	10	11	11	7	22.8
1994 (n = 2,011)	37	39	42	26	31	25	26	18	11	11	10	10	8	23.0
1993 (n = 1,057)	41	37	40	22	30	23	21	14	8	11	12	11	7	21.8
1991 (n = 1,017)	61	40	48	30	37	25	20	12	11	27	15	16	18	28.8
1990 (n = 899)	33	38	45	27	34	23	26	17	11	24	14	14	16	25.3
1989 (n = 1,035)	33	41	47	30	35	22	25	19	9	20	14	17	18	25.8
1988 (n = 997)	35	39	52	30	35	21	25	27	11	16	14	19	16	26.0
1987 (n = 1,819)	35	41	51	36	35	30	28	27	12	17	12	19	16	27.5
1986 (n = 1,470)	31	39	47	28	30	25	25	21	9	21	15	19	16	25.4
1984 (n = 989)	36	44	51	28	33	30	30	30	8	19	13	17	13	26.9

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Year (number)	Military	Scientific community	Medicine	Education	U.S. Supreme Court	Organized religion	Major companies	Banks and financial institutions	Organized labor	Executive branch of the federal government	Television	Press	Congress	Mean ^a
1983 (n = 1,599)	30	42	52	28	27	29	24	23	8	14	12	13	10	24.1
1982 (n = 1,860)	29	35	45	35	30	33	21	26	13	17	15	18	13	25.3
1980 (n = 1,468)	28	41	53	30	24	35	27	32	15	12	15	22	9	26.0
1978 (n = 1,532)	30	36	46	28	29	31	21	32	11	12	14	20	13	24.1
1977 (n = 1,530)	36	41	53	40	36	40	27	42	15	27	18	25	19	31.4
1976 (n = 1,499)	40	42	54	37	34	30	21	39	12	13	18	28	13	28.6
1975 (n = 1,490)	35	37	51	31	30	24	19	31	10	13	18	24	13	25.4
1974 (n = 1,484)	39	45	61	49	33	45	31	NA	19	14	23	25	17	33.4
1973 (n = 1,504)	32	37	54	37	31	34	29	NA	15	29	18	23	23	30.1

NA = not available; question was not asked.

^a Excludes banks and financial institutions.

Note(s)

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Respondents expressing "great deal of confidence" when asked *As far as the people running these institutions are concerned, would you say that you have a great deal of confidence, only some confidence, or hardly any confidence at all in them?* Sample size is not exact for all institutions. Table includes all years for which data were collected. Data in institution columns are rounded and may not work out to average shown in Mean column.

Source(s)

NORC at the University of Chicago, General Social Survey (1973–2016).

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 APPENDIX TABLE 7-29 
Public confidence in science leaders, by respondent characteristic: 2016

(Percent)

Characteristic	Great deal of confidence	Only some confidence	Hardly any confidence	Don't know
All adults (<i>n</i> = 1,956)	40	50	6	3
Sex				
Male (<i>n</i> = 877)	45	48	4	3
Female (<i>n</i> = 1,079)	36	52	7	4
Formal education				
Less than high school (<i>n</i> = 216)	28	59	8	5
High school diploma (<i>n</i> = 621)	32	54	8	5
Some college (<i>n</i> = 538)	43	49	6	2
Bachelor's degree (<i>n</i> = 361)	47	48	3	2
Graduate or professional degree (<i>n</i> = 214)	61	38	1	1
Science and mathematics education^a				
Low (<i>n</i> = 276)	37	49	8	6
Middle (<i>n</i> = 82)	38	55	7	*
High (<i>n</i> = 96)	59	38	3	0
Family income (quartile)^b				
Bottom (<i>n</i> = 493)	39	51	8	3
Third (<i>n</i> = 402)	37	51	9	3
Second (<i>n</i> = 455)	39	53	5	3
Top (<i>n</i> = 417)	49	46	3	1
Age (years)^b				
18–24 (<i>n</i> = 169)	47	46	4	3
25–34 (<i>n</i> = 350)	47	44	7	2
35–44 (<i>n</i> = 346)	41	50	6	3
45–54 (<i>n</i> = 331)	36	55	4	4
55–64 (<i>n</i> = 365)	37	52	8	3

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Characteristic	Great deal of confidence	Only some confidence	Hardly any confidence	Don't know
65 and older (<i>n</i> = 389)	35	55	5	5
Trend factual knowledge of science scale (quartile) ^c				
Bottom (<i>n</i> = 82)	24	59	10	7
Third (<i>n</i> = 146)	30	53	11	7
Second (<i>n</i> = 141)	47	47	6	1
Top (<i>n</i> = 110)	61	39	0	0

* = < 0.5% responded.

^a For science and mathematics education, "low" equates to five or fewer high school and college science or mathematics courses, "middle" is six through eight courses, and "high" means nine or more courses. Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^b Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^c See notes to Appendix Table 7-2 for an explanation of the trend factual knowledge of science scale.

Note(s)

Responses to *As far as the people running these institutions are concerned, would you say that you have a great deal of confidence, only some confidence, or hardly any confidence at all in them?* Percentages may not add to 100% because of rounding.

Source(s)

NORC at the University of Chicago, General Social Survey (2016).

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 APPENDIX TABLE 7-30 
Public perception of scientists: 1983, 1985, 2001, 2012, 2016

(Percent and mean score)

Perception	1983 (n = 1,615)	1985 (n = 1,986)	2001 (n = 1,574)	2012 (n = 1,152)	2016 (n = 1,390)
Scientists work for the good of humanity					
Strongly agree	NA	4	11	19	26
Agree	NA	76	74	69	63
Disagree	NA	15	9	6	8
Strongly disagree	NA	1	1	1	1
Don't know	NA	4	4	5	2
Mean score	NA	2.87	3.00	3.11	3.16
Scientists help to solve problems					
Strongly agree	NA	NA	17	21	28
Agree	NA	NA	79	74	66
Disagree	NA	NA	2	1	4
Strongly disagree	NA	NA	*	1	1
Don't know	NA	NA	1	3	2
Mean score	NA	NA	3.15	3.19	3.23
Scientists want to make life better for the average person					
Strongly agree	NA	4	11	14	24
Agree	NA	76	78	72	64
Disagree	NA	15	8	8	9
Strongly disagree	NA	1	1	1	*
Don't know	NA	4	3	5	2
Mean score	NA	2.87	3.02	3.04	3.14
Scientists are odd and peculiar					
Strongly agree	1	NA	2	4	9
Agree	31	NA	22	32	43
Disagree	59	NA	63	51	37

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Perception	1983 (n = 1,615)	1985 (n = 1,986)	2001 (n = 1,574)	2012 (n = 1,152)	2016 (n = 1,390)
Strongly disagree	4	NA	8	6	7
Don't know	4	NA	4	8	4
Mean score	2.31	NA	2.20	2.36	2.57

* = < 0.5% responded. NA = not available; question was not asked.

Note(s)

Respondents who "strongly agree" with the statements *Scientific researchers are dedicated people who work for the good of humanity*, *Scientists are helping to solve challenging problems*; *Most scientists want to work on things that will make life better for the average person*; and *Scientists are apt to be odd and peculiar people*. Mean understanding score is based on a 5-point scale, where 5 equals strongly agree and 1 equals strongly disagree. Percentages may not add to 100% because of rounding.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1983, 1985, 2001); NORC at the University of Chicago, General Social Survey (2012, 2016).
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APPENDIX TABLE 7-31

Public perception of scientists, by respondent characteristic: 2016

(Percent)

Characteristic	Scientists work for the good of humanity	Scientists help to solve problems	Scientists want to make life better for the average person	Scientists are odd and peculiar
All adults (<i>n</i> = 1,390)	89	94	88	52
Sex				
Male (<i>n</i> = 571)	89	95	87	57
Female (<i>n</i> = 819)	88	93	89	48
Formal education				
Less than high school diploma (<i>n</i> = 169)	86	87	87	58
High school diploma (<i>n</i> = 415)	87	93	87	58
Some college (<i>n</i> = 388)	90	95	89	53
Bachelor's degree (<i>n</i> = 263)	89	97	88	44
Graduate or professional degree (<i>n</i> = 151)	93	99	95	37
Science and mathematics education ^a				
Low (<i>n</i> = 776)	88	92	88	56
Middle (<i>n</i> = 262)	86	95	88	53
High (<i>n</i> = 275)	94	99	92	39
Family income (quartile) ^b				
Bottom (<i>n</i> = 336)	87	91	88	55
Third (<i>n</i> = 281)	88	95	90	54
Second (<i>n</i> = 324)	89	97	89	56
Top (<i>n</i> = 318)	92	97	89	44
Age (years) ^b				
18–24 (<i>n</i> = 115)	88	93	92	49

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Characteristic	Scientists work for the good of humanity	Scientists help to solve problems	Scientists want to make life better for the average person	Scientists are odd and peculiar
25-34 (<i>n</i> = 269)	88	97	89	53
35-44 (<i>n</i> = 206)	90	94	91	55
45-54 (<i>n</i> = 223)	91	93	88	56
55-64 (<i>n</i> = 264)	88	96	88	53
65 or older (<i>n</i> = 310)	88	91	85	45
Trend factual knowledge of science scale (quartile) ^c				
Bottom (<i>n</i> = 250)	83	86	83	55
Third (<i>n</i> = 387)	90	93	90	58
Second (<i>n</i> = 437)	90	96	90	54
Top (<i>n</i> = 316)	88	98	88	39

^a For science and mathematics education, "low" equates to five or fewer high school and college science or mathematics courses, "middle" is six through eight courses, and "high" means nine or more courses. Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^b Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^c See notes to Appendix Table 7-2 for an explanation of the trend factual knowledge of science scale.

Note(s)

Respondents who "strongly agree" and "agree" with the statements *Scientific researchers are dedicated people who work for the good of humanity*; *Scientists are helping to solve challenging problems*; *Most scientists want to work on things that will make life better for the average person*; and *Scientists are apt to be odd and peculiar people*.

Source(s)

NORC at the University of Chicago, General Social Survey (2016).

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APPENDIX TABLE 7-32

Public assessment of the danger of river, lake, and stream pollution to the environment, by respondent characteristic: 1993, 1994, 2000, 2010, 2016

(Percent)

Characteristic	1993				1994				2000				2010				2016			
	Extremely or very dangerous	Somewhat dangerous	Not very or not dangerous	Don't know	Extremely or very dangerous	Somewhat dangerous	Not very or not dangerous	Don't know	Extremely or very dangerous	Somewhat dangerous	Not very or not dangerous	Don't know	Extremely or very dangerous	Somewhat dangerous	Not very or not dangerous	Don't know	Extremely or very dangerous	Somewhat dangerous	Not very or not dangerous	Don't know
All adults (<i>n</i> = 1,557; 1,386; 1,276; 1,430; 911)	66	27	4	3	61	29	5	5	66	23	5	7	69	24	4	2	79	17	3	1
Sex																				
Male (<i>n</i> = 663; 617; 560; 607; 399)	64	28	5	3	58	31	6	4	67	22	5	6	68	25	5	1	78	18	3	1
Female (<i>n</i> = 894; 769; 716; 823; 512)	68	25	3	4	63	27	4	6	65	24	4	7	70	23	4	3	79	16	3	2
Formal education ^a																				
Less than high school diploma (<i>n</i> = 283; 225; 216; 220; 112)	57	29	5	9	50	30	9	10	61	21	7	11	62	24	9	5	65	25	7	3
High school diploma (<i>n</i> = 496; 466; 397; 412; 260)	65	30	3	2	58	31	6	5	67	22	3	7	71	22	6	2	79	17	2	2

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Characteristic	1993				1994				2000				2010				2016			
	Extremely or very dangerous	Somewhat dangerous	Not very or not dangerous	Don't know	Extremely or very dangerous	Somewhat dangerous	Not very or not dangerous	Don't know	Extremely or very dangerous	Somewhat dangerous	Not very or not dangerous	Don't know	Extremely or very dangerous	Somewhat dangerous	Not very or not dangerous	Don't know	Extremely or very dangerous	Somewhat dangerous	Not very or not dangerous	Don't know
Some college (<i>n</i> = 410; 346; 354; 390; 258)	70	22	5	2	66	28	3	4	65	23	5	7	70	25	3	3	81	16	3	*
Bachelor's degree (<i>n</i> = 249; 242; 213; 266; 175)	69	25	3	3	63	30	3	4	70	27	2	2	70	26	3	1	79	17	2	1
Graduate or professional degree (<i>n</i> = 114; 102; 89; 139; 104)	66	30	2	2	73	20	4	3	66	26	6	1	69	27	3	1	85	11	3	1
Science and mathematics education ^b																				
Low (<i>n</i> = NA; NA; NA; 116; 500)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	67	24	8	1	77	18	3	2
Middle (<i>n</i> = NA; NA; NA; 52; 180)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	65	29	2	5	84	14	2	1
High (<i>n</i> = NA; NA; NA; 54; 179)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	67	28	5	0	82	14	4	0
Family income (quartile) ^a																				
Bottom (<i>n</i> = NA; NA; NA; NA; 212)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	73	21	5	2

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Characteristic	1993				1994				2000				2010				2016			
	Extremely or very dangerous	Somewhat dangerous	Not very or not dangerous	Don't know	Extremely or very dangerous	Somewhat dangerous	Not very or not dangerous	Don't know	Extremely or very dangerous	Somewhat dangerous	Not very or not dangerous	Don't know	Extremely or very dangerous	Somewhat dangerous	Not very or not dangerous	Don't know	Extremely or very dangerous	Somewhat dangerous	Not very or not dangerous	Don't know
Third (<i>n</i> = NA; NA; NA; NA; 184)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	79	18	2	1
Second (<i>n</i> = NA; NA; NA; NA; 222)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	84	14	2	1
Top (<i>n</i> = NA; NA; NA; NA; 211)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	80	16	4	*
Age (years) ^a																				
18–24 (<i>n</i> = 132; 97; 113; 137; 59)	78	17	4	2	67	25	5	3	66	25	4	5	70	20	7	3	83	15	1	1
25–34 (<i>n</i> = 325; 330; 256; 246; 160)	71	25	3	1	70	23	3	4	67	22	6	5	69	24	4	3	86	11	2	2
35–44 (<i>n</i> = 383; 305; 297; 263; 135)	67	28	2	3	63	27	4	5	66	24	4	6	70	24	3	2	80	16	4	0
45–54 (<i>n</i> = 251; 261; 245; 260; 158)	65	27	4	4	56	33	5	5	66	22	6	6	69	28	2	1	73	21	4	2
55–64 (<i>n</i> = 171; 158; 144; 234; 168)	64	27	6	3	51	38	6	5	67	24	3	6	70	26	3	1	80	17	2	2
65 or older (<i>n</i> = 291; 233; 220; 287; 228)	53	33	6	8	51	34	8	7	60	24	3	13	65	23	8	4	75	20	4	2

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Characteristic	1993				1994				2000				2010				2016			
	Extremely or very dangerous	Somewhat dangerous	Not very or not dangerous	Don't know	Extremely or very dangerous	Somewhat dangerous	Not very or not dangerous	Don't know	Extremely or very dangerous	Somewhat dangerous	Not very or not dangerous	Don't know	Extremely or very dangerous	Somewhat dangerous	Not very or not dangerous	Don't know	Extremely or very dangerous	Somewhat dangerous	Not very or not dangerous	Don't know
Trend factual knowledge of science scale (quartile) ^c																				
Bottom (<i>n</i> = NA; NA; NA; 60; 168)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	61	23	8	7	67	22	5	6
Third (<i>n</i> = NA; NA; NA; 91; 241)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	74	18	8	1	79	18	3	*
Second (<i>n</i> = NA; NA; NA; 103; 296)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	66	28	5	1	82	16	2	1
Top (<i>n</i> = NA; NA; NA; 73; 206)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	67	27	4	1	84	14	3	0

* = < 0.5% responded. NA = not available; question was not asked.

^a Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^b For science and mathematics education, "low" equates to five or fewer high school and college science or mathematics courses, "middle" is six through eight courses, and "high" means nine or more courses. Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^c See notes to Appendix Table 7-2 for an explanation of the trend factual knowledge of science scale.

Note(s)

Responses to the question *In general, do you think that pollution of America's rivers, lakes, and streams is...* [1 Extremely dangerous], [2 Very dangerous], [3 Somewhat dangerous], [4 Not very dangerous], [5 Not dangerous], [8 Don't know]. Percentages may not add to 100% because of rounding.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1993–94); NORC at the University of Chicago, General Social Survey (2000–16).

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APPENDIX TABLE 7-33

Public assessment of the danger of air pollution from industry to the environment, by respondent characteristic: 1993, 1994, 2000, 2010, 2016

(Percent)

Characteristic	1993				1994				2000				2010				2016			
	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know
All adults (<i>n</i> = 1,557; 1,386; 1,276; 1,430; 911)	61	30	4	4	53	37	5	5	62	29	2	6	63	31	4	2	73	23	2	1
Sex																				
Male (<i>n</i> = 663; 617; 560; 607; 399)	57	33	6	4	49	40	7	4	59	33	3	5	59	35	6	1	71	25	2	1
Female (<i>n</i> = 894; 769; 716; 823; 512)	65	28	3	4	57	34	4	6	65	27	2	7	67	27	2	4	75	22	2	2
Formal education ^a																				
Less than high school diploma (<i>n</i> = 283; 225; 216; 220; 112)	52	33	5	9	48	34	7	12	59	27	4	9	68	20	7	5	69	24	5	2

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Characteristic	1993				1994				2000				2010				2016			
	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know
High school diploma (<i>n</i> = 496; 466; 397; 412; 260)	60	32	4	3	51	39	6	4	61	30	2	7	59	33	5	2	69	27	2	2
Some college (<i>n</i> = 410; 346; 354; 390; 258)	70	25	3	2	57	35	4	3	63	28	2	7	65	32	2	2	74	24	2	*
Bachelor's degree (<i>n</i> = 249; 242; 213; 266; 175)	62	31	5	2	54	36	6	4	67	30	2	1	63	33	3	1	76	22	1	*
Graduate or professional degree (<i>n</i> = 114; 102; 89; 139; 104)	56	37	6	0	57	37	4	3	57	38	2	3	62	34	3	2	83	13	2	1
Science and mathematics education ^b																				
Low (<i>n</i> = NA; NA; NA; 116; 500)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	64	30	5	2	71	25	2	2
Middle (<i>n</i> = NA; NA; NA; 52; 180)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	44	51	3	3	77	18	4	1

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Characteristic	1993				1994				2000				2010				2016			
	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know
High (<i>n</i> = NA; NA; NA; 54; 179)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	57	35	6	3	77	22	1	0
Family income (quartile) ^a																				
Bottom (<i>n</i> = NA; NA; NA; NA; 212)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	72	23	2	3
Third (<i>n</i> = NA; NA; NA; NA; 184)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	74	23	2	1
Second (<i>n</i> = NA; NA; NA; NA; 222)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	75	22	2	*
Top (<i>n</i> = NA; NA; NA; NA; 211)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	73	24	2	*
Age (years) ^a																				
18-24 (<i>n</i> = 132; 97; 113; 137; 59)	73	19	5	4	54	35	6	6	66	28	1	5	68	27	4	1	76	23	0	1
25-34 (<i>n</i> = 325; 330; 256; 246; 160)	68	28	3	1	59	33	4	4	62	29	3	6	63	29	5	4	77	19	2	2
35-44 (<i>n</i> = 383; 305; 297; 263; 135)	65	30	3	3	60	31	6	4	66	26	2	5	63	32	3	3	78	19	3	*

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Characteristic	1993				1994				2000				2010				2016			
	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know
45-54 (<i>n</i> = 251; 261; 245; 260; 158)	61	30	4	5	53	37	5	5	62	31	1	5	67	29	1	3	72	26	1	1
55-64 (<i>n</i> = 171; 158; 144; 234; 168)	56	31	9	4	44	44	6	6	59	32	2	7	63	32	4	1	73	22	2	2
65 or older (<i>n</i> = 291; 233; 220; 287; 228)	44	43	6	7	40	47	7	7	54	32	5	9	57	35	6	2	66	28	3	2
Trend factual knowledge of science scale (quartile) ^c																				
Bottom (<i>n</i> = NA; NA; NA; 60; 168)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	55	36	1	8	67	23	4	7
Third (<i>n</i> = NA; NA; NA; 91; 241)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	67	32	1	1	73	25	2	1
Second (<i>n</i> = NA; NA; NA; 103; 296)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	50	42	6	1	75	22	3	*
Top (<i>n</i> = NA; NA; NA; 73; 206)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	60	34	4	3	76	24	*	0

* = < 0.5% responded. NA = not available; question was not asked.

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^a Categories do not add to total n because "don't know" responses and refusals to respond are not shown.

^b For science and mathematics education, "low" equates to five or fewer high school and college science or mathematics courses, "middle" is six through eight courses, and "high" means nine or more courses. Categories do not add to total n because "don't know" responses and refusals to respond are not shown.

^c See notes to Appendix Table 7-2 for an explanation of the trend factual knowledge of science scale.

Note(s)

Responses to the question *In general, do you think that air pollution caused by industry is...* [1 *Extremely dangerous*], [2 *Very dangerous*], [3 *Somewhat dangerous*], [4 *Not very dangerous*], [5 *Not dangerous*], [8 *Don't know*]. Percentages may not add to 100% because of rounding.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1993–94); NORC at the University of Chicago, General Social Survey (2000–16).

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APPENDIX TABLE 7-34

Public assessment of the danger of climate change to the environment, by respondent characteristic: 1993, 1994, 2000, 2010, 2016

(Percent)

Characteristic	1993				1994				2000				2010				2016			
	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know
All adults (<i>n</i> = 1,557; 1,386; 1,276; 1,430; 911)	41	34	14	12	35	35	16	14	40	33	11	15	48	27	18	6	55	26	15	4
Sex																				
Male (<i>n</i> = 663; 617; 560; 607; 399)	35	35	20	9	32	36	23	10	41	33	14	12	48	24	23	5	53	27	18	2
Female (<i>n</i> = 894; 769; 716; 823; 512)	46	32	9	13	37	34	11	18	39	34	8	18	48	30	15	8	56	26	12	6
Formal education ^a																				
Less than high school diploma (<i>n</i> = 283; 225; 216; 220; 112)	36	31	13	21	28	30	16	26	40	23	12	26	50	24	14	12	46	31	13	11

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Characteristic	1993				1994				2000				2010				2016			
	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know
High school diploma (<i>n</i> = 496; 466; 397; 412; 260)	38	35	15	11	31	36	19	14	39	35	9	16	40	35	17	8	46	35	14	4
Some college (<i>n</i> = 410; 346; 354; 390; 258)	46	32	11	10	37	37	15	12	37	36	11	16	55	24	17	4	60	21	17	2
Bachelor's degree (<i>n</i> = 249; 242; 213; 266; 175)	43	36	13	8	41	37	15	8	49	34	15	2	42	28	27	3	54	24	19	4
Graduate or professional degree (<i>n</i> = 114; 102; 89; 139; 104)	44	30	21	5	43	34	14	8	39	38	12	11	54	21	16	10	73	18	8	1
Science and mathematics education ^b																				
Low (<i>n</i> = NA; NA; NA; 116; 500)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	42	39	11	8	50	29	15	5
Middle (<i>n</i> = NA; NA; NA; 52; 180)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	26	53	19	3	59	25	14	2

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Characteristic	1993				1994				2000				2010				2016			
	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know
High (<i>n</i> = NA; NA; NA; 54; 179)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	44	17	36	3	64	18	17	2
Family income (quartile) ^a																				
Bottom (<i>n</i> = NA; NA; NA; NA; 212)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	52	27	14	6
Third (<i>n</i> = NA; NA; NA; NA; 184)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	51	31	13	4
Second (<i>n</i> = NA; NA; NA; NA; 222)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	61	23	11	4
Top (<i>n</i> = NA; NA; NA; NA; 211)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	56	24	18	1
Age (years) ^a																				
18–24 (<i>n</i> = 132; 97; 113; 137; 59)	55	32	8	5	51	30	13	6	48	31	5	16	62	19	15	4	68	21	9	2
25–34 (<i>n</i> = 325; 330; 256; 246; 160)	48	29	13	10	37	36	13	14	47	30	12	11	51	27	17	5	61	28	6	6
35–44 (<i>n</i> = 383; 305; 297; 263; 135)	42	36	14	8	38	37	13	12	43	31	9	17	49	28	16	7	59	22	16	3

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Characteristic	1993				1994				2000				2010				2016			
	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know
45-54 (<i>n</i> = 251; 261; 245; 260; 158)	40	33	13	14	33	34	20	14	41	35	12	11	46	28	20	6	53	26	18	4
55-64 (<i>n</i> = 171; 158; 144; 234; 168)	32	34	18	16	25	37	19	19	28	43	13	17	40	34	19	7	52	29	16	3
65 or older (<i>n</i> = 291; 233; 220; 287; 228)	28	37	17	18	25	33	22	20	29	33	14	23	38	29	24	9	45	29	20	6
Trend factual knowledge of science scale (quartile) ^c																				
Bottom (<i>n</i> = NA; NA; NA; 60; 168)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23	45	13	20	45	27	17	12
Third (<i>n</i> = NA; NA; NA; 91; 241)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	53	32	11	5	50	31	15	3
Second (<i>n</i> = NA; NA; NA; 103; 296)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	37	37	20	6	58	25	14	3
Top (<i>n</i> = NA; NA; NA; 73; 206)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	42	28	25	5	63	22	15	1

NA = not available; question was not asked.

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^a Categories do not add to total n because "don't know" responses and refusals to respond are not shown.

^b For science and mathematics education, "low" equates to five or fewer high school and college science or mathematics courses, "middle" is six through eight courses, and "high" means nine or more courses. Categories do not add to total n because "don't know" responses and refusals to respond are not shown.

^c See notes to Appendix Table 7-2 for an explanation of the trend factual knowledge of science scale.

Note(s)

For 1993, 1994, 2000, and 2016, responses to the question *In general, do you think that a rise in the world's temperature caused by the 'greenhouse effect' is...*[1 Extremely dangerous], [2 Very dangerous], [3 Somewhat dangerous], [4 Not very dangerous], [5 Not dangerous], [8 Don't know]. For 2010, responses to the question *In general, do you think that a rise in the world's temperature caused by climate change is...*[1 Extremely dangerous], [2 Very dangerous], [3 Somewhat dangerous], [4 Not very dangerous], [5 Not dangerous], [8 Don't know]. Percentages may not add to 100% because of rounding.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1993–94); NORC at the University of Chicago, General Social Survey (2000–16).

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APPENDIX TABLE 7-35

Public assessment of the danger of nuclear power stations to the environment, by respondent characteristic: 1993, 1994, 2010, 2016

(Percent)

Characteristic	1993				1994				2010				2016			
	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know
All adults (<i>n</i> = 1,557; 1,386; 1,430; 911)	40	34	16	9	41	35	15	9	45	30	19	7	55	30	13	2
Sex																
Male (<i>n</i> = 663; 617; 607; 399)	33	35	24	8	33	35	24	8	35	32	28	4	43	33	22	1
Female (<i>n</i> = 894; 769; 823; 512)	46	34	9	10	48	35	8	10	52	28	11	9	65	27	6	2
Formal education ^a																
Less than high school diploma (<i>n</i> = 283; 225; 220; 112)	48	29	8	15	45	28	11	16	53	20	10	16	67	23	8	2
High school diploma (<i>n</i> = 496; 466; 412; 260)	44	32	15	9	43	37	11	9	54	27	13	6	54	31	13	2

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Characteristic	1993				1994				2010				2016			
	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know
Some college (<i>n</i> = 410; 346; 390; 258)	41	35	16	8	38	37	16	9	43	35	17	6	58	28	13	*
Bachelor's degree (<i>n</i> = 249; 242; 266; 175)	31	40	22	8	37	35	23	5	37	28	33	2	47	34	16	3
Graduate or professional degree (<i>n</i> = 114; 102; 139; 104)	25	45	28	2	40	33	25	2	22	43	31	4	53	34	13	0
Science and mathematics education ^b																
Low (<i>n</i> = NA; NA; 116; 500)	NA	NA	NA	NA	NA	NA	NA	NA	36	41	13	10	58	29	10	2
Middle (<i>n</i> = NA; NA; 52; 180)	NA	NA	NA	NA	NA	NA	NA	NA	32	32	30	6	59	31	10	0
High (<i>n</i> = NA; NA; 54; 179)	NA	NA	NA	NA	NA	NA	NA	NA	34	29	35	2	44	33	23	0
Family income (quartile) ^a																
Bottom (<i>n</i> = NA; NA; NA; 212)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	60	26	12	2

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Characteristic	1993				1994				2010				2016			
	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know
Third (<i>n</i> = NA; NA; NA; 184)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	56	33	10	1
Second (<i>n</i> = NA; NA; NA; 222)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	58	31	10	1
Top (<i>n</i> = NA; NA; NA; 211)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	49	31	20	0
Age (years) ^a																
18–24 (<i>n</i> = 132; 97; 137; 59)	55	32	7	6	53	36	7	5	52	31	7	9	69	16	15	0
25–34 (<i>n</i> = 325; 330; 246; 160)	45	35	14	7	45	31	15	9	51	25	16	8	55	31	12	2
35–44 (<i>n</i> = 383; 305; 263; 135)	40	38	15	8	44	33	17	6	47	31	15	7	63	28	8	0
45–54 (<i>n</i> = 251; 261; 260; 158)	40	34	18	8	38	36	16	10	49	27	20	3	56	25	17	2
55–64 (<i>n</i> = 171; 158; 234; 168)	31	30	24	15	30	44	17	9	39	35	23	3	52	39	8	1
65 or older (<i>n</i> = 291; 233; 287; 228)	32	33	20	15	33	36	17	13	30	30	32	8	45	33	18	3

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Characteristic	1993				1994				2010				2016			
	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know
Trend factual knowledge of science scale (quartile) ^c																
Bottom (<i>n</i> = NA; NA; 60; 168)	NA	NA	NA	NA	NA	NA	NA	NA	44	30	15	10	58	28	7	6
Third (<i>n</i> = NA; NA; 91; 241)	NA	NA	NA	NA	NA	NA	NA	NA	48	32	11	10	61	27	11	1
Second (<i>n</i> = NA; NA; 103; 296)	NA	NA	NA	NA	NA	NA	NA	NA	38	37	19	5	58	28	13	1
Top (<i>n</i> = NA; NA; 73; 206)	NA	NA	NA	NA	NA	NA	NA	NA	28	39	30	3	42	38	20	0

* = < 0.5% responded. NA = not available; question was not asked.

^a Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^b For science and mathematics education, "low" equates to five or fewer high school and college science or mathematics courses, "middle" is six through eight courses, and "high" means nine or more courses. Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^c See notes to Appendix Table 7-2 for an explanation of the trend factual knowledge of science scale.

Note(s)

Responses to the question *In general, do you think that nuclear power stations are...* [1 Extremely dangerous], [2 Very dangerous], [3 Somewhat dangerous], [4 Not very dangerous], [5 Not dangerous], [8 Don't know]. Percentages may not add to 100% because of rounding.

Source(s)



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National Science Foundation, National Center for Science and Engineering Statistics, Survey of Public Attitudes Toward and Understanding of Science and Technology (1993–94); NORC at the University of Chicago, General Social Survey (2010–16).

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APPENDIX TABLE 7-36

Public assessment of the danger of modifying genes of crops to the environment, by respondent characteristic: 2000, 2010, 2016

(Percent)

Characteristic	2000				2010				2016			
	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know
All adults (<i>n</i> = 1,276; 1,430; 911)	21	32	25	22	25	33	26	16	43	36	18	4
Sex												
Male (<i>n</i> = 560; 607; 399)	16	34	33	16	22	33	34	11	30	41	26	3
Female (<i>n</i> = 716; 823; 512)	25	31	18	26	27	33	19	21	53	31	12	4
Formal education ^a												
Less than high school diploma (<i>n</i> = 216; 220; 112)	21	33	16	30	25	30	23	21	47	32	13	8
High school diploma (<i>n</i> = 397; 412; 260)	25	26	25	24	24	35	24	18	41	37	19	4

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Characteristic	2000				2010				2016			
	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know
Some college (<i>n</i> = 354; 390; 258)	19	38	22	21	29	36	21	14	48	31	19	2
Bachelor's degree (<i>n</i> = 213; 266; 175)	20	37	33	10	21	31	34	14	39	40	18	3
Graduate or professional degree (<i>n</i> = 89; 139; 104)	11	27	46	16	20	26	38	16	36	42	19	3
Science and mathematics education ^b												
Low (<i>n</i> = NA; 116; 500)	NA	NA	NA	NA	32	32	25	11	43	35	17	5
Middle (<i>n</i> = NA; 52; 180)	NA	NA	NA	NA	13	25	46	17	49	36	13	1
High (<i>n</i> = NA; 54; 179)	NA	NA	NA	NA	19	31	40	10	37	37	26	*
Family income (quartile) ^a												
Bottom (<i>n</i> = NA; NA; 212)	NA	NA	NA	NA	NA	NA	NA	NA	42	34	17	8

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Characteristic	2000				2010				2016			
	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know
Third (<i>n</i> = NA; NA; 184)	NA	NA	NA	NA	NA	NA	NA	NA	43	40	15	2
Second (<i>n</i> = NA; NA; 222)	NA	NA	NA	NA	NA	NA	NA	NA	48	30	20	2
Top (<i>n</i> = NA; NA; 211)	NA	NA	NA	NA	NA	NA	NA	NA	38	41	21	1
Age (years) ^a												
18–24 (<i>n</i> = 113; 137; 59)	24	31	27	17	24	37	24	16	44	33	19	4
25–34 (<i>n</i> = 256; 246; 160)	25	34	22	19	26	33	29	12	42	35	19	4
35–44 (<i>n</i> = 297; 263; 135)	19	38	24	19	31	30	25	14	52	34	11	2
45–54 (<i>n</i> = 245; 260; 158)	22	31	26	21	28	35	23	15	43	39	15	3
55–64 (<i>n</i> = 144; 234; 168)	16	32	31	21	20	38	25	17	42	36	20	2
65 or older (<i>n</i> = 220; 287; 228)	21	24	21	34	17	28	30	25	37	34	23	6

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Characteristic	2000				2010				2016			
	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know	Extremely dangerous or very dangerous	Somewhat dangerous	Not very dangerous or not dangerous	Don't know
Trend factual knowledge of science scale (quartile) ^c												
Bottom (<i>n</i> = NA; 60; 168)	NA	NA	NA	NA	16	33	21	30	45	32	11	11
Third (<i>n</i> = NA; 91; 241)	NA	NA	NA	NA	36	33	19	12	44	32	20	3
Second (<i>n</i> = NA; 103; 296)	NA	NA	NA	NA	23	27	45	4	47	35	16	1
Top (<i>n</i> = NA; 73; 206)	NA	NA	NA	NA	18	39	31	13	31	44	23	1

* = < 0.5% responded. NA = not available; question was not asked.

^a Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^b For science and mathematics education, "low" equates to five or fewer high school and college science or mathematics courses, "middle" is six through eight courses, and "high" means nine or more courses. Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^c See notes to Appendix Table 7-2 for an explanation of the trend factual knowledge of science scale.

Note(s)

Responses to the question *Do you think that modifying the genes of certain crops is:* [1 *Extremely dangerous for environment*], [2 *Very dangerous*], [3 *Somewhat dangerous*], [4 *Not very dangerous*], [5 *Not dangerous at all for environment*], [8 *Can't choose*]. Percentages may not add to 100% because of rounding.

Source(s)

NORC at the University of Chicago, General Social Survey (2000–16).



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APPENDIX TABLE 7-37

Public assessment of the benefits and harms of nanotechnology, by respondent characteristic: 2006, 2008, 2010, 2016

(Percent and mean score)

Characteristic	2006				2008				2010				2016			
	Benefits greater	Benefits and harms about equal	Harmful results greater	Don't know	Benefits greater	Benefits and harms about equal	Harmful results greater	Don't know	Benefits greater	Benefits and harms about equal	Harmful results greater	Don't know	Benefits greater	Benefits and harms about equal	Harmful results greater	Don't know
All adults (<i>n</i> = 1,864; 2,021; 963; 911)	40	19	9	32	39	13	9	40	37	9	11	43	50	10	18	21
Sex																
Male (<i>n</i> = 804; 918; 397; 399)	49	18	8	24	46	12	10	32	45	10	9	36	61	10	16	12
Female (<i>n</i> = 1,060; 1,103; 566; 512)	33	20	9	39	32	14	8	46	30	9	11	50	41	11	19	29
Formal education ^a																
Less than high school diploma (<i>n</i> = 227; 283; 119; 112)	14	28	15	43	18	16	18	47	22	13	9	56	33	18	27	22
High school diploma (<i>n</i> = 507; 632; 296; 260)	34	19	11	37	36	13	9	42	26	14	19	41	44	15	18	22
Some college (<i>n</i> = 607; 550; 243; 258)	41	19	9	32	41	13	8	38	41	8	7	44	52	7	22	19

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Characteristic	2006				2008				2010				2016			
	Benefits greater	Benefits and harms about equal	Harmful results greater	Don't know	Benefits greater	Benefits and harms about equal	Harmful results greater	Don't know	Benefits greater	Benefits and harms about equal	Harmful results greater	Don't know	Benefits greater	Benefits and harms about equal	Harmful results greater	Don't know
Bachelor's degree (<i>n</i> = 346; 356; 205; 175)	52	17	4	27	49	10	5	36	49	4	4	43	60	7	12	22
Graduate or professional degree (<i>n</i> = 176; 200; 100; 104)	63	14	2	22	53	13	1	32	53	6	7	34	65	6	7	22
Science and mathematics education ^b																
Low (<i>n</i> = 1,050; 1,199; 236; 500)	29	22	11	39	31	14	11	45	30	14	11	46	43	12	20	25
Middle (<i>n</i> = 354; 340; 130; 180)	49	19	8	24	47	14	8	31	43	8	7	42	55	9	16	20
High (<i>n</i> = 390; 395; 103; 179)	63	13	3	21	60	11	3	27	55	5	2	38	71	9	8	12
Family income (quartile) ^a																
Bottom (<i>n</i> = NA; NA; NA; 212)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	42	11	26	21
Third (<i>n</i> = NA; NA; NA; 184)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	47	13	19	21
Second (<i>n</i> = NA; NA; NA; 222)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	53	10	16	21

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Characteristic	2006				2008				2010				2016			
	Benefits greater	Benefits and harms about equal	Harmful results greater	Don't know	Benefits greater	Benefits and harms about equal	Harmful results greater	Don't know	Benefits greater	Benefits and harms about equal	Harmful results greater	Don't know	Benefits greater	Benefits and harms about equal	Harmful results greater	Don't know
Top (<i>n</i> = NA; NA; NA; 211)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	62	8	13	17
Age (years) ^a																
18-24 (<i>n</i> = 157; 173; 53; 59)	45	22	13	20	44	20	14	23	32	18	18	32	67	12	18	4
25-34 (<i>n</i> = 341; 346; 179; 160)	41	20	9	30	41	15	9	35	41	14	7	38	60	10	12	19
35-44 (<i>n</i> = 382; 377; 165; 135)	38	23	5	34	38	14	9	39	40	7	15	38	41	12	24	23
45-54 (<i>n</i> = 386; 421; 183; 158)	44	16	10	30	38	14	7	41	43	8	6	43	49	10	21	20
55-64 (<i>n</i> = 272; 335; 173; 168)	41	17	9	33	44	10	7	39	35	6	13	46	50	14	19	17
65 or older (<i>n</i> = 321; 354; 204; 228)	30	16	7	47	29	6	7	58	28	7	7	58	44	7	15	34
Trend factual knowledge of science scale (quartile) ^c																
Bottom (<i>n</i> = 351; 375; 202; 168)	13	24	13	50	20	8	12	60	14	8	20	58	29	16	24	31
Third (<i>n</i> = 489; 521; 223; 241)	26	19	13	41	28	14	12	46	30	11	8	51	45	12	22	21

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Characteristic	2006				2008				2010				2016			
	Benefits greater	Benefits and harms about equal	Harmful results greater	Don't know	Benefits greater	Benefits and harms about equal	Harmful results greater	Don't know	Benefits greater	Benefits and harms about equal	Harmful results greater	Don't know	Benefits greater	Benefits and harms about equal	Harmful results greater	Don't know
Second (<i>n</i> = 545; 566; 290; 296)	45	22	7	26	38	16	8	39	42	9	10	38	52	8	18	22
Top (<i>n</i> = 479; 559; 248; 206)	64	13	2	21	61	12	5	22	54	9	5	31	72	8	8	13

NA = not available; question was not asked.

^a For science and mathematics education, "low" equates to five or fewer high school and college science or mathematics courses, "middle" is six through eight courses, and "high" means nine or more courses. Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^b Categories do not add to total *n* because "don't know" responses and refusals to respond are not shown.

^c See notes to Appendix Table 7-2 for an explanation of the trend factual knowledge of science scale.

Note(s)

Data represent responses to the question *Nanotechnology works at the molecular level atom by atom to build new structures, materials, and machines. People have frequently noted that new technologies have produced both benefits and harmful results. Do you think the benefits of nanotechnology will outweigh the harmful results or the harmful results will outweigh the benefits?* Percentages may not add to 100% because of rounding.

Source(s)

NORC at the University of Chicago, General Social Survey (2006–16).

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