

## Survey question wording and topline

**2019 PEW RESEARCH CENTER'S AMERICAN TRENDS PANEL  
WAVE 42 JANUARY  
FINAL TOPLINE  
JANUARY 7-21, 2019  
TOTAL N=4,464**

### OTHER QUESTIONS HELD FOR FUTURE RELEASE

#### ASK ALL:

KNOW1 Here's a different kind of question. (If you don't know the answer, select "Not sure.") As far as you know...

Oil, natural gas and coal are examples of...<sup>12</sup> **[RANDOMIZE OPTIONS 1-4]**

Jan 7-21

2019

68	Fossil fuels (Correct)
32	NET Incorrect/Not sure/No answer
5	Biofuels
3	Geothermal resources
6	Renewable resources
17	Not sure
1	No answer

#### ASK ALL:

KNOW2 A scientist is conducting a study to determine how well a new medication treats ear infections. The scientist tells the participants to put 10 drops in their infected ear each day. After two weeks, all participants' ear infections had healed.

Which of the following changes to the design of this study would most improve the ability to test if the new medication effectively treats ear infections? **[RANDOMIZE OPTIONS 1-4]**

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2019

60	Create a second group of participants with ear infections who do not use any ear drops (Correct)
40	NET Incorrect/Not sure/No answer
5	Create a second group of participants with ear infections who use 15 drops a day
13	Have participants use ear drops for only 1 week
5	Have participants put ear drops in both their infected ear and healthy ear
16	Not sure
1	No answer

<sup>12</sup> This question was adapted with permission from the Educational Testing Service (2018), The Praxis® Study Companion: Middle School Science 5440 – page 21, Sample Question #18. Copyright © 2018 Educational Testing Service.

**ASK ALL:**

KNOW3

Which of the following is an example of genetic engineering? **[RANDOMIZE OPTIONS 1-4]**

Jan 7-21

2019

56	Inserting a gene into plants that makes them resistant to insects (Correct)
44	NET Incorrect/Not sure/No answer
6	Growing a whole plant from a single cell
8	Finding the sequences of bases in plant DNA
9	Attaching the root of one type of plant to the stem of another type of plant
21	Not sure
1	No answer

**ASK ALL:**

KNOW4

What is the main cause of seasons on the Earth? **[RANDOMIZE OPTIONS 1-4]**

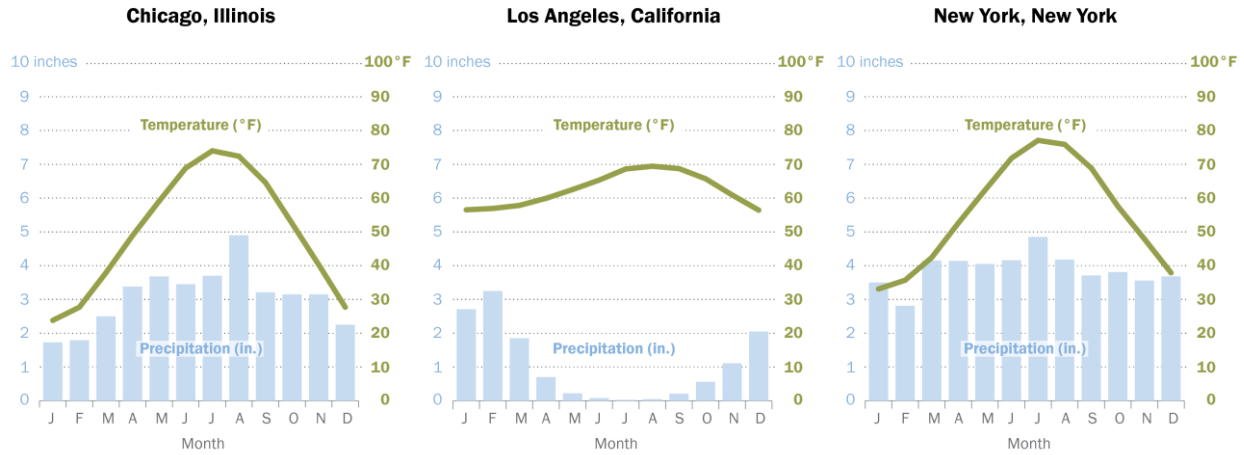
Jan 7-21

2019

63	The tilt of the Earth's axis in relation to the sun (Correct)
37	NET Incorrect/Not sure/No answer
11	The distance between the Earth and the sun
7	The speed that the Earth rotates around the sun
4	Changes in the amount of energy coming from the sun
15	Not sure
1	No answer

**ASK ALL:**  
KNOW5

These graphs show the monthly precipitation and average temperature for three cities in the United States over the course of one year. **[RANDOMIZE ORDER OF GRAPHS]**



Based on the graphs, which city has the greatest annual range of temperatures? **[RANDOMIZE OPTIONS 1-3 IN SAME ORDER OF GRAPHS]**

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- 59 Chicago, Illinois (Correct)
- 41 NET Incorrect/Not sure/No answer
- 20 New York, New York
- 9 Los Angeles, California
- 3 They all have the same annual temperature range
- 8 Not sure
- 1 No answer

**ASK ALL:**  
KNOW6

The time a computer takes to start has increased dramatically. One possible explanation for this is that the computer is running out of memory.

This explanation is a scientific... **[RANDOMIZE OPTIONS 1-4]**

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2019

- 52 Hypothesis (Correct)
- 48 NET Incorrect/Not sure/No answer
- 8 Conclusion
- 4 Experiment
- 19 Observation
- 17 Not sure
- 1 No answer

**ASK ALL:**

KNOW7 Many diseases have an incubation period. Which of the following best describes what an incubation period is? **[RANDOMIZE OPTIONS 1-4]**

Jan 7-21

2019

76	The period during which someone has an infection, but is not showing symptoms (Correct)
24	NET Incorrect/Not sure/No answer
4	The recovery period after being sick
2	The effect of a disease on babies
5	The period during which someone builds up immunity to a disease
12	Not sure
1	No answer

**NO QUESTION KNOWS****ASK ALL:**

KNOW9 When large areas of forest are removed so land can be converted for other uses, such as farming, which of the following occurs?<sup>13</sup> **[RANDOMIZE OPTIONS 1-4]**

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60	Increased erosion (Correct)
40	NET Incorrect/Not sure/No answer
3	Colder temperature
14	Decreased carbon dioxide
3	Greater oxygen production
20	Not sure
1	No answer

**ASK ALL:**

KNOW10 An antacid relieves an overly acidic stomach because the main components of antacids are... **[RANDOMIZE RESPONSE OPTIONS 1-4]**

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2019

39	Bases (Correct)
61	NET Incorrect/Not sure/No answer
11	Acids
13	Neutral
3	Isotopes
33	Not sure
1	No answer

<sup>13</sup> This question was adapted with permission from the Florida Department of Education (2012), Statewide Science Assessment Test Item Specifications, Version 2, Grade 8.

**ASK ALL:**

KNOW11 Which of these is a major concern about the overuse of antibiotics? [**RANDOMIZE**  
**OPTIONS 1-4**]

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79	It can lead to antibiotic-resistant bacteria (Correct)
21	NET Incorrect/Not sure/No answer
2	There will be an antibiotic shortage
5	Antibiotics can cause secondary infections
2	Antibiotics will get into the water system
11	Not sure
1	No answer

**ASK ALL:**

KNOW12 A car travels at a constant speed of 40 miles per hour. How far does the car travel in 45 minutes? [**DO NOT RANDOMIZE**]

Jan 7-21

2019

57	30 miles (Correct)
43	NET Incorrect/Not sure/No answer
4	25 miles
14	35 miles
9	40 miles
15	Not sure
1	No answer

**TOTAL NUMBER CORRECT KNOW1 THROUGH KNOW12:**

Jan 7-21

2019

16	11 out of 11
13	10 out of 11
10	9 out of 11
8	8 out of 11
9	7 out of 11
8	6 out of 11
7	5 out of 11
6	4 out of 11
6	3 out of 11
6	2 out of 11
5	1 out of 11
5	0 out of 11
39	High (9-11 correct)
32	Medium (5-8 correct)
29	Low (0-4 correct)

Previous Pew Research Center surveys with questions on science knowledge can be found in "[The Politics of Climate](#)" and "[A Look at What the Public Knows and Does Not Know About Science](#)."

**ASK ALL:**

KNOW14

Based on what you have heard or read, which of the following statements best describes the scientific method? **[RANDOMIZE OPTIONS 1-2]**<sup>14</sup>

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67

The scientific method produces findings meant to be continually tested and updated over time

15

The scientific method identifies unchanging core principles and truths

17

Not sure

1

No answer

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<sup>14</sup> Note that this question is not included in the science knowledge scale.