TABLE S7-28

Correct answers to scientific process questions: Selected years, 1999–2018

(Percent)

Question	1999	2001	2004	2006	2008	2010	2012	2014	2016	2018
Understanding of scientific inquiry[a]	32	40	39	41	36	42	33	46	43	43
Components of understanding of scientific inquiry										
Understanding of probability[b]	64	67	64	69	64	66	65	66	64	65
Understanding of experiment[c]	34	40	46	42	38	51	34	53	51	49
Understanding of scientific study[d]	21	26	23	25	23	18	20	26	23	24

[a] To be classified as understanding scientific inquiry, the survey respondent had to (1) answer correctly the two probability questions stated in table note b, and (2) provide a theory-testing response to the open-ended question about what it means to study something scientifically (see table note d) or provide 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 table note c]).

[b] To be classified as understanding probability, the survey respondent had to answer 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] (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?* (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 correctly (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?* (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.)

Note(s)

Data represent respondents giving a correct response for each concept. Responses of "don't know" and refusals to respond are counted as incorrect and are not shown.

Source(s)

National Center for Science and Engineering Statistics, National Science Foundation, Survey of Public Attitudes Toward and Understanding of Science and Technology (1999, 2001); University of Michigan, Survey of Consumer Attitudes (2004); NORC at the University of Chicago, General Social Survey (2006–18).

Science and Engineering Indicators