

THE PLACE OF SCIENCE
IN THE SCHOOL
AND IN THE WORLD OUTSIDE

These questions are being given to a number of children in several countries to find out what they think about Science and the part it plays in their lives. For most of the questions there are no right or wrong answers, so this is NOT a test. We just want to know what you think.

Mark your answer by blacking in the appropriate space in Section K of your answer card. If you want to change an answer, be sure to erase the old mark completely.

For each of these four questions, select the best answer, and indicate it by marking the appropriate space on your answer card.

1. The marks I get in Science are usually
 - A. better than in most other subjects.
 - B. about average compared with other subjects.
 - C. worse than in most other subjects.

2. I like Science
 - A. more than most other subjects.
 - B. about the same as other subjects.
 - C. less than most other subjects.

3. I would like to study Science after the end of this school year.
 - A. Yes.
 - B. Not sure.
 - C. No.

4. I hope that in my career I will be able to make use of some of the Science I learned at school.
 - A. Yes.
 - B. Not sure.
 - C. No.

Below is a list of things you might do outside school. Look at each one and if it is something you do very often or used to do very often, mark A. If you have ever done it at all, mark B. If you have never done it, mark C.

5. Visit a Science museum.
 - A. Often.
 - B. Sometimes.
 - C. Never.

6. Go to meetings of a scientific club.
 - A. Often.
 - B. Sometimes.
 - C. Never.

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7. Build working models of ships, cars or aeroplanes.
- A. Often
 - B. Sometimes.
 - C. Never.
8. Build a radio set or other piece of electronic apparatus.
- A. Often.
 - B. Sometimes.
 - C. Never.
9. Visit an airfield to watch the planes.
- A. Often.
 - B. Sometimes.
 - C. Never.
10. Visit a harbour to watch the ships.
- A. Often.
 - B. Sometimes.
 - C. Never.
11. Read a science fiction book.
- A. Often.
 - B. Sometimes.
 - C. Never.
12. Look at the moon or the planets through a telescope.
- A. Often.
 - B. Sometimes.
 - C. Never.
13. Do Chemistry experiments with your own equipment.
- A. Often.
 - B. Sometimes.
 - C. Never.

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Below is a list of some things you may do. If you do, mark A. If you do not, but would like to, mark B. If you are not interested to do it, mark C.

14. Make a hobby of studying or collecting flowers or leaves.

- A. I do it.
- B. I would like to.
- C. I am not interested.

15. Make a hobby of studying or collecting insects.

- A. I do it.
- B. I would like to.
- C. I am not interested.

16. Make a hobby of studying or collecting rocks or fossils.

- A. I do it.
- B. I would like to.
- C. I am not interested.

For each of the following statements, please decide whether or not you agree with it, and then indicate this by choosing the appropriate letter. If you STRONGLY AGREE, mark A. If you AGREE, mark B. If you ARE UNCERTAIN, mark C. If you DISAGREE, mark D. If you STRONGLY DISAGREE, mark E.

17. I like reading about science.

- A. I strongly agree.
- B. I agree.
- C. I am uncertain.
- D. I disagree.
- E. I strongly disagree.

18. Science is steadily destroying the world.

- A. I strongly agree.
- B. I agree.
- C. I am uncertain.
- D. I disagree.
- E. I strongly disagree.

19. Science has many technical terms which are hard to remember.
- A. I strongly agree.
 - B. I agree.
 - C. I am uncertain.
 - D. I disagree.
 - E. I strongly disagree.
20. Science helps to make the world a better place to live in.
- A. I strongly agree.
 - B. I agree.
 - C. I am uncertain.
 - D. I disagree.
 - E. I strongly disagree.
21. Science is a very difficult subject.
- A. I strongly agree.
 - B. I agree.
 - C. I am uncertain.
 - D. I disagree.
 - E. I strongly disagree.
22. Science is no good for people.
- A. I strongly agree.
 - B. I agree.
 - C. I am uncertain.
 - D. I disagree.
 - E. I strongly disagree.
23. I enjoy watching (listening) Science programmes on T.V. (radio).
- A. I strongly agree.
 - B. I agree.
 - C. I am uncertain.
 - D. I disagree.
 - E. I strongly disagree.
24. Science makes life more pleasant.
- A. I strongly agree.
 - B. I agree.
 - C. I am uncertain.
 - D. I disagree.
 - E. I strongly disagree.

25. There are too many facts to learn in Science.
- A. I strongly agree.
 - B. I agree.
 - C. I am uncertain.
 - D. I disagree.
 - E. I strongly disagree.
26. Scientific discoveries will eventually lead to people not thinking for themselves.
- A. I strongly agree.
 - B. I agree.
 - C. I am uncertain.
 - D. I disagree.
 - E. I strongly disagree.
27. I am very interested to learn all I can about Science.
- A. I strongly agree.
 - B. I agree.
 - C. I am uncertain.
 - D. I disagree.
 - E. I strongly disagree.
28. Science is making us slaves to machines.
- A. I strongly agree.
 - B. I agree..
 - C. I am uncertain.
 - D. I disagree..
 - E. I strongly disagree.

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Science in our School

The statements in this quiz are descriptions of the sort of Science lessons students about your age have at school. They cover a range of topics about Science lessons, and it has been found that, for some people, each statement is true always, for some never, and for some occasionally.

For each of the statements on the following pages, indicate your answer according to whether for you the statement is true always, sometimes or never. Begin with question 29, and work through the questions in order.

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29. We learn most of our Science through practical work and experiments..
- Always.
 - Sometimes.
 - Never.
30. Our Science teacher tests us only on what is in the textbook.
- Always.
 - Sometimes.
 - Never.
31. Students are encouraged to read Science magazines and reference books to become familiar with all aspects of Science.
- Always.
 - Sometimes.
 - Never.
32. We have a textbook for Science.
- Always.
 - Sometimes.
 - Never.
33. For Science homework we write up our laboratory and practical work.
- Always.
 - Sometimes.
 - Never.
34. Our Science classes contain more theoretical work than practical work.
- Always.
 - Sometimes.
 - Never.
35. During our Science lessons the amount of time we spend reading our textbooks is about
- $1/4$ or less.
 - Half.
 - $3/4$ or more.

36. The main aim of our Science lessons is to understand our textbooks.
- A. Always.
 - B. Sometimes.
 - C. Never.
37. We are encouraged to take part in fieldwork and scientific research outside school.
- A. Always.
 - B. Sometimes.
 - C. Never.
38. Our Science lessons include laboratory experiments in which we all take part.
- A. Always.
 - B. Sometimes.
 - C. Never.
39. Our Science homework requires using a textbook.
- A. Always.
 - B. Sometimes.
 - C. Never.
40. We make observations and do experiments during our Science lessons.
- A. Always.
 - B. Sometimes.
 - C. Never.

If you do not do any laboratory work during your Science lessons, you do not need to answer questions 41-48.

41. When we work in the laboratory we are given complete instructions from the teacher as to what to do.
- A. Always.
 - B. Sometimes.
 - C. Never.

42. We use a book which tells us how to do our experiments in the laborator
- A. Always.
 - B. Sometimes.
 - C. Never.
43. We usually make up our own problems and then the teacher helps us to solve them experimentally.
- A. Always.
 - B. Sometimes.
 - C. Never.
44. In class we are encouraged to devise our own projects and experiments, either individually or in groups.
- A. Always.
 - B. Sometimes.
 - C. Never.
45. Our Science teacher demonstrates how to carry out the experiments before we do them.
- A. Always.
 - B. Sometimes.
 - C. Never.
46. In our practical work our teacher gives us certain problems to solve and then leaves us to find our own methods and solutions.
- A. Always.
 - B. Sometimes.
 - C. Never.
47. The teacher gives us questions to answer while we do our experiments.
- A. Always.
 - B. Sometimes.
 - C. Never.
48. We do our practical work from laboratory cards or instructions which tell us how to carry out the experiment.
- A. Always.
 - B. Sometimes.
 - C. Never.

Notes for interpretation and translationIEA/2H, IEA/6H and IEA/13H

Like School	(IEA/2H, IEA/6H and IEA/13H) 1, 3, 6, 8, 10, 11, 13, 15, 20, 21, 23, 24
N-ach	(IEA/2H, IEA/6H and IEA/13H) 2, 4, 5, 7, 9, 12, 14, 16, 17, 18, 19, 22
School description	(IEA/2H, IEA/6H and IEA/13H) 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36

Notes for interpretation and translation of IEA/2H, IEA/6H, and IEA/13.

Item 1 The intent of this question is to discover whether the child prefers that part of the day which he spends in school to the time he spends elsewhere.

Item 2 "do well" connotes "get good grades, score high marks, pass examinations, etc."

Item 3 "work" here means academic work.

Item 4 This question deals with the problem of concentration and paying attention. It may be that National Centers will wish to reword this item extensively.

Item 7 This item deals with the perception of self as a discipline problem.

Item 8 National Centers may wish to reword this question. The idea to be included is that of obtaining as much educational experience as possible.

Item 9 See note for item 2.

Item 11 The wording has been somewhat changed from the form in IEA/ATT/GEN/1. If the word "challenging" is difficult to translate, then "exciting" and "stimulating" are possible alternatives.

Item 12 See note for question 4, although this item is concerned with work in general.

Item 14 "hard" means "diligently".

Item 15 Substitute other breaks in the school routine if applicable.

Item 16 Population I : "invented" need not be taken literally. The translation should connote "originated" and "developed".
Populations II and IV : this question may need rewording of homework is not a common practice.

Item 17 Population I : National Centers may substitute another activity implying "initiating" or "competitive" behaviour if more applicable.

Item 18 Populations II and IV : if this item is inapplicable, substitute some other behaviour implying a low priority being given to school work.

Item 19 Population I : "games" here means "sports" and other competitive, non-intellectual pursuits.
Populations II and IV : "leave school" implies "end school career", not "go home at end of day".

Item 21 Substitute other forms of higher education if "College or University" seems unrealistic for the children concerned.

Item 22 "lower marks" could mean "poorer grades" or criticism from the teacher after a test.

Item 23 Another phrase implying high valuation of school can be substituted if desired.

Item 24 An alternative statement implying a preference for not attending school would be acceptable.

Item 25 This item attempts to investigate the pressure for conformity of ideas.

Item 26 Some National Centers do not like this item in its present form, but they are asked to include it if possible. It attempts to measure the extent to which the informal periods spent by the children in school are governed by rules and regulations. National Centers may, of course, substitute an alternative which will measure the existence of these rules.

Item 27 "small" may be translated as "unimportant" and "insignificant". This item probes the emotional authority structure of the school.

Item 28 This item has been extensively reworded since its use in IEA/ATT/GEN/1. Its intention is to examine the existence of formal rules and discipline before the beginning of the academic school day. National Centers may substitute other equivalent behaviours.

Item 30 "good grades" may be translated as "high marks", "examination passes", or the like.

Item 31 "criticize" should be taken in its negative (that is, destructive) sense.

Item 32 In countries where this question seems inappropriate, another may be substituted. The intention is to discover whether any formal mark of respect is paid to the teacher at the beginning of a class session.

Item 33 In countries where no students have this choice, it is suggested that an alternative statement be included, such as the following: "The students can choose special projects to work on in some of our classes".

Item 34 If homework is not applicable, use some other phrase denoting work done by the students while not under the close supervision of their teacher.

Item 35 New item. See note for item 34.

Item 36 New item. National Centers may find it possible to state this item more simply. The distinction required is that between students who will not work and students who can not work. It is suggested that this distinction will be made in the more authoritarian schools and will not be made in permissive schools.