

Views About Sciences Survey

Form C 12

This survey is designed by the Modeling Instruction research team at Arizona State University. It is intended to identify factors that affect people's understanding of chemistry, and to assist in the design of instructional material.

*Your participation is **voluntary**. The results will not affect your grade, even if you choose not to participate. All data are **confidential**. Your identity will not be disclosed to any party. Return of the survey materials will be considered your consent to participate.*

If you have any question about this survey, please call Dr. I. Halloun at (602) 965-8528.

Please:

*Do **not** write anything on this questionnaire.*

Mark your answers on the computer sheet.

*Use a **No. 2 pencil** only, and follow marking instructions on the computer sheet.*

*Make **only one** mark per item.*

*Do **not** skip any question.*

*Avoid guessing. Your answers should reflect what **you** actually and honestly think.*

Plan to finish the survey in 30 minutes.

*The example below illustrates the eight choices that you have for answering the following 31 questions. Please mark your answers to these questions in section **III** of the VASS Answer Sheet.*

Example

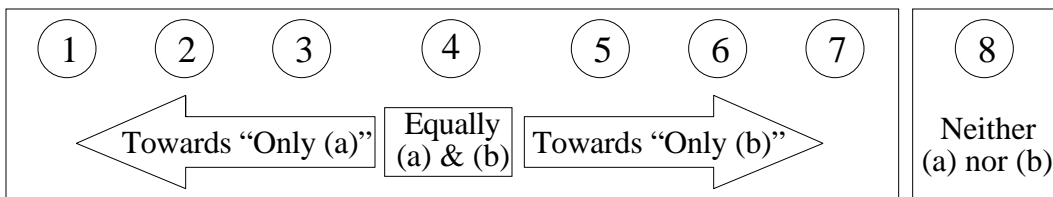
Learning chemistry requires:

(a) a serious effort.

(b) a special talent.

What would each one of the eight choices mean?

- ① Only (a), Never (b): Learning chemistry requires **only** a serious effort and **no** special talent *at all*.
- ② Mostly (a), Rarely (b): Learning chemistry requires **far more** a serious effort than a special talent.
- ③ More (a) Than (b): Learning chemistry requires **somewhat more** a serious effort than a special talent.
- ④ Equally (a) & (b): Learning chemistry **equally** requires **both** a serious effort and a special talent.
- ⑤ More (b) Than (a): Learning chemistry requires **somewhat more** a special talent than a serious effort.
- ⑥ Mostly (b), Rarely (a): Learning chemistry requires **far more** a special talent than a serious effort.
- ⑦ Only (b), Never (a): Learning chemistry requires **only** a special talent and **no** serious effort *at all*.
- ⑧ Neither (a) Nor (b): Learning chemistry requires **neither** a special talent **nor** a serious effort.



1. Learning chemistry requires:
 - (a) a serious effort.
 - (b) a special talent.

2. If I had a choice:
 - (a) I would never take any chemistry course.
 - (b) I would still take chemistry for my own benefit.

3. Reasoning skills that are taught in chemistry courses can be helpful to me:
 - (a) in my everyday life.
 - (b) if I were to become a scientist.

4. I study chemistry:
 - (a) to satisfy course requirements.
 - (b) to learn useful knowledge.

5. My score on chemistry exams is a measure of how well:
 - (a) I understand the covered material.
 - (b) I can do things the way they are done by the teacher or in some course materials.

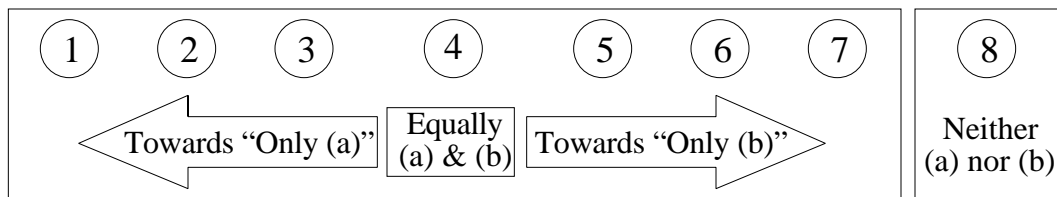
6. For me, doing well in chemistry courses depends on:
 - (a) how much effort I put into studying.
 - (b) how well the teacher explains things in class.

7. When I experience a difficulty while studying chemistry:
 - (a) I immediately seek help, or give up trying.
 - (b) I try hard to figure it out on my own.

8. When studying chemistry in a textbook or in course materials:
 - (a) I find the important information and memorize it the way it is presented.
 - (b) I organize the material in my own way so that I can understand it.

9. For me, the relationship of chemistry courses to everyday life is usually:
 - (a) easy to recognize.
 - (b) hard to recognize.

10. In chemistry, it is important for me to:
 - (a) memorize technical terms, symbols and formulas.
 - (b) learn ways to organize information and use it.



11. In chemistry, mathematical formulas:
 - (a) express meaningful relationships among concepts.
 - (b) provide ways to get numerical answers to problems.

12. After I go through a chemistry text or course materials and feel that I understand them:
 - (a) I can solve related problems on my own.
 - (b) I have difficulty solving related problems.

13. The first thing I do when solving a chemistry problem is:
 - (a) try to visualize the process involved.
 - (b) search for formulas that relate givens to unknowns.

14. In order to solve a chemistry problem, I need to:
 - (a) have seen the solution to a similar problem before.
 - (b) know how to apply general problem solving techniques.

15. For me, solving a chemistry problem more than one way:
 - (a) is a waste of time.
 - (b) helps develop my reasoning skills.

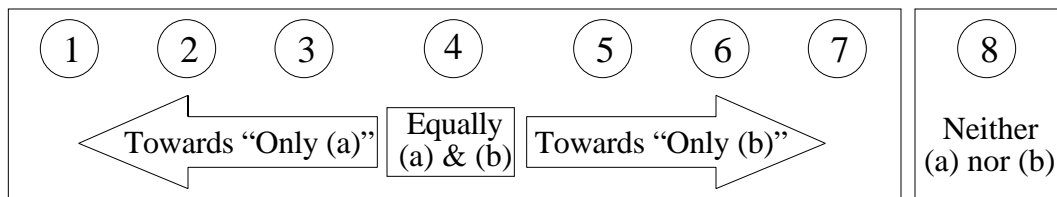
16. After I have answered all questions in a homework chemistry problem:
 - (a) I stop working on the problem.
 - (b) I check my answers and the way I obtained them.

17. After the teacher solves a chemistry problem for which I got a wrong solution:
 - (a) I discard my solution and learn the one presented by the teacher.
 - (b) I try to figure out how the teacher's solution differs from mine.

18. How well I do on chemistry exams depends on how well I can:
 - (a) recall material in the way it was presented in class.
 - (b) solve problems that are somewhat different from ones I have seen before.

19. To me, chemistry is important as a source of:
 - (a) factual information about the natural world.
 - (b) ways of thinking about the natural world.

20. As they are currently used, the ideal gas laws in the kinetic molecular theory:
 - (a) are the same throughout the universe.
 - (b) change depending on where you are in the universe.



21. The laws of chemistry are:
 - (a) inherent in the nature of things and independent of how humans think.
 - (b) invented by chemists to organize their knowledge about the natural world.
22. The laws of chemistry portray the natural world:
 - (a) exactly the way it is.
 - (b) by approximation.
23. Chemists say that electrons and protons exist in an atom because:
 - (a) they have seen these particles in their actual form with some instruments.
 - (b) they have made observations that can be explained by such particles.
24. The ideal gas laws in the kinetic molecular theory:
 - (a) will always be used as they are.
 - (b) could eventually be replaced by other laws.
25. Chemists' current ideas about the particles making up the atom:
 - (a) will always be maintained as they are.
 - (b) could eventually be replaced by other ideas.
26. If we want to apply a method used for solving one chemistry problem to another problem, the processes involved in the two problems must be:
 - (a) identical in all respects.
 - (b) similar in some respects.
27. Different branches of chemistry, like organic chemistry and inorganic chemistry:
 - (a) are interrelated by common principles.
 - (b) are separate and independent of each other.
28. Chemists use mathematics as:
 - (a) a tool for analyzing and communicating their ideas.
 - (b) a source of factual knowledge about the natural world.
29. Scientific findings about the natural world are:
 - (a) dependent on current scientific knowledge.
 - (b) accidental, depending on scientists' luck.
30. Knowledge in chemistry is:
 - (a) related to knowledge in physics.
 - (b) independent of knowledge in physics.
31. I answered all the questions in this survey:
 - (a) to the best of my ability.
 - (b) without thinking seriously about them.