

## Need for Cognition Scale

For each of the statements below, please indicate whether or not the statement is characteristic of you or of what you believe. For example, if the statement is extremely uncharacteristic of you or of what you believe about yourself (not at all like you), please place a "1" on the line to the left of the statement. If the statement is extremely characteristic of you or of what you believe about yourself (very much like you) please place a "5" on the line to the left of the statement. You should use the following scale as you rate each of the statements below.

1	2	3	4	5
Extremely uncharacteristic of me	somewhat uncharacteristic of me	uncertain	somewhat characteristic of me	extremely characteristic of me

1. ____	I prefer complex to simple problems.
2. ____	I like to have the responsibility of handling a situation that requires a lot of thinking.
3. ____	Thinking is not my idea of fun.**
4. ____	I would rather do something that requires little thought than something that is sure to challenge my thinking abilities.**
5. ____	I try to anticipate and avoid situations where there is a likely chance I will have to think in depth about something.**
6. ____	I find satisfaction in deliberating hard and for long hours.
7. ____	I only think as hard as I have to.**
8. ____	I prefer to think about small daily projects to long term ones.**
9. ____	I like tasks that require little thought once I've learned them.**
10. ____	The idea of relying on thought to make my way to the top appeals to me.
11. ____	I really enjoy a task that involves coming up with new solutions to problems.
12. ____	Learning new ways to think doesn't excite me very much.**
13. ____	I prefer my life to be filled with puzzles I must solve.
14. ____	The notion of thinking abstractly is appealing to me.
15. ____	I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.
16. ____	I feel relief rather than satisfaction after completing a task that requires a lot of mental effort.**
17. ____	It's enough for me that something gets the job done; I don't care how or why it works.**
18. ____	I usually end up deliberating about issues even when they do not affect me personally.

## Understanding Mathematics Scale

Make a check mark (x) on the appropriate blank to indicate your response to each item below.

1. I am superior \_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_ inferior  
Extremely Quite Slightly Neutral Slightly Quite Extremely

at moving from a verbal description of a problem to a precise mathematical formulation.

2. I comprehend \_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_ do not comprehend  
Extremely Quite Slightly Neutral Slightly Quite Extremely

the progression of thought in the development of mathematics.

3. I am capable \_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_ incapable  
Extremely Quite Slightly Neutral Slightly Quite Extremely

of thinking about mathematics issues from multiple points of view.

4. I am capable \_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_ incapable  
Extremely Quite Slightly Neutral Slightly Quite Extremely

of filling in the gaps in subtle descriptions of mathematics issues.

5. I am able \_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_ unable  
Extremely Quite Slightly Neutral Slightly Quite Extremely

to do independent thinking to solve mathematics problems.

6. I am capable \_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_ incapable  
Extremely Quite Slightly Neutral Slightly Quite Extremely

of thinking creatively to solve mathematics problems.

7. I comprehend \_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_ do not comprehend  
Extremely Quite Slightly Neutral Slightly Quite Extremely

the purpose of mathematics.

8. I am good \_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_ bad  
Extremely Quite Slightly Neutral Slightly Quite Extremely

at linking mathematics topics together.

9. I am sure \_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_ unsure  
Extremely Quite Slightly Neutral Slightly Quite Extremely

that I can handle mathematics concepts I have never seen before.

10. I am capable \_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_:\_\_\_\_\_ incapable  
Extremely Quite Slightly Neutral Slightly Quite Extremely

of explaining mathematics concepts in writing.

Please answer the following questions:

1. What do you think was most interesting in the projects on Dürer? (You may mention more than one thing.)
2. Was there anything about Dürer's mathematics which surprised you? If yes, what and why?
3. What do you think was least interesting in the projects on Dürer? (You may mention more than one thing.)
4. Do you think that Dürer's mathematics is very much different from the mathematics which you are normally exposed to at the upper division? Why or why not?
5. Is mathematics discovered or invented? Why?
6. Do you then consider mathematics to be a science?

7. Do you believe it to be important for you to learn mathematics? If yes, why? If no, then why not?
8. Do you believe it to be important for people in general to learn mathematics? If 'yes', for whom is it then most important and why? If 'no', why not?
9. How and why do you imagine that the mathematics of your textbooks came into being?
10. Do you think that parts of mathematics can become obsolete? If yes, then in what manner?
11. In your opinion, what are the benefits of learning Mathematics from historical sources?
12. In your opinion, what are the drawbacks of learning Mathematics from historical sources?
13. If you have any praise and/or criticism of the projects from Dürer's mathematics, then you are welcome to state your honest and well argued viewpoints here below.