Students Attitude Toward STEM (S-STEM) Survey

Student Instructions:

Pre-Survey for Students in Grades 3 - 8

Congratulations! You completed a NASA and Department of Education 21st Century Community Learning Collaboration Phase 4 - Engineering Design Challenge (EDC) learning activity!

We would like to know if you enjoyed our activity or if we need to do something different. You can help by completing this survey below. There are no "right" or "wrong" answers to any of the questions. We want your honest answers. We will not state your name or describe you in any way that anyone could tell that it is you. Please do not write your name on this survey.

On this survey we are asking you to write down the time you start and the time you finish.

Thank you very much for your help!

If you wish to participate in this survey, please continue.

Instructions

There are lists of statements on the following pages about your NASA Engineering Design Challenge (EDC) learning activity. Please mark your answer sheets by telling us how you feel about each statement. For example:

Select © for agree D for maybe @ for not sure @ for disagree for each row that says Before EDC and AFTER EDC.

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Paperwork Reduction Act Statement: This information collection meets the requirements of 44 U.S.C. §3507, as amended by section 2 of the Paperwork Reduction Act of 1995. You do not need to answer these questions unless we display a valid Office of Management and Budget (OMB) control number. The OMB control number for this collection is 2700-0159 and expires 06/30/2021. We estimate that it will take 15 minutes to read the instructions and answer the questions. Send only comments relating to this time estimate to: richard.l.gilmore@nasa.gov.

1. Time started.

2. Enter your five-digit number.

3. Enter the name of your state.

Retrospective Survey for Grades 3 to 8

As you read or have read to you, the sentence, you will know whether you agree or disagree. Fill in one "face" that best describes how much you agree or disagree on each row. Even though some statements are very similar, please answer each statement. This is not timed; work fast, but carefully.

There are no "right" or "wrong" answers! The only correct responses are those that are true for you.

Whenever possible, let the things that have happened to you help you make a choice.

For each statement that follows, fill in one "face" that best describes your responses.

Select © for agree D for maybe @ for not sure @ for disagree

4. Math

	Agree	Maybe	Not Sure	Disagree
Before EDC Math has been my worst subject.				
After EDC				
Before EDC When I am older, I might choose a job that uses math.				
After EDC				
Before EDC I am the type of student who does well in math.				
After EDC				
Before EDC I can understand most subjects easily, but math is difficult for me.				
After EDC				
Before EDC In the future, I could do hard math problems.				
After EDC				
Before EDC I can get good grades in math.				
After EDC				
Before EDC I am good at math.				
After EDC				

For each statement that follows, fill in one "face" that best describes your responses.

5. Science

	Agree	Maybe	Not Sure	Disagree
Before EDC I feel good about myself when I do science.				
After EDC				
Before EDC I might choose a career in science.				
After EDC				
Before EDC After I finish high school, I will use science often.				
After EDC				
Before EDC When I am older, knowing science will help me earn money.				
After EDC				
Before EDC When I am older, I will need to understand science for my job.				
After EDC				
Before EDC I know I can do well in science.				
After EDC				
Before EDC Science will be important to me in my future career.				
After EDC				
Before EDC I can understand most subjects easily, but science is hard for me to understand.				

	Agree	Maybe	Not Sure	Disagree
After EDC				
Before EDC In the future, I could do harder science work.				
After EDC				
Before EDC I have fun learning science/engineering.				
After EDC				

Please read this paragraph before you answer the questions. Engineers use math and science to make things and solve problems. Engineers design and improve things like bridges, cars, machines, foods, and computer games. Technologists build, test, and take care of the designs that engineers create.

6. Engineering and Technology

	Agree	Maybe	Not Sure	Disagree
Before EDC I like to imagine making new products.				
After EDC				
Before EDC If I learn engineering, then I can improve things that people use every day.				
After EDC				
Before EDC I am good at building or fixing things.				
After EDC				
Before EDC I am interested in what makes machines work.				
After EDC				
Before EDC Designing products or structures will be important in my future jobs.				
After EDC				

	Agree	Maybe	Not Sure	Disagree
Before EDC Knowing how to use math and science together will help me to invent useful things.				
After EDC				
Before EDC I believe I can be successful in engineering.				
After EDC				
Before EDC I enjoy playing games that teach me about science/engineering.				
After EDC				

7. 21st Century Learning

	Agree	Maybe	Not Sure	Disagree
Before EDC I can lead others to reach a goal.				
After EDC				
Before EDC I like to help others do their best.				
After EDC				
Before EDC In school and at home, I can do things well.				
After EDC				
Before EDC I respect all children my age even if they are different from me.				
After EDC				
Before EDC I try to help other children my age.				
After EDC				
Before EDC When I make decisions, I think about what is good for other people.				
After EDC				
Before EDC When things do not go how I want, I can change my actions for the better.				
After EDC				
Before EDC I can make my own goals for learning.				
After EDC				

	Agree	Maybe	Not Sure	Disagree
Before EDC I can use time wisely when working on my own.				
After EDC				
Before EDC When I have a lot of homework, I can choose what needs to be done first.				
After EDC				
Before EDC I can work well with all students, even if they are different from me.				
After EDC				

Below is a list of types of work that you could do when you are older. As you read about each type of work, you will know if you think that work is interesting. Fill in the circle under the words that describe how interested you are in doing that when you are older. There is no "right" or "wrong" answers. They only correct responses are those that are true for you.

8. Your Future

	Agree	Maybe	Not Sure	Disagree
Before EDC *Biology: People work with animals and plants and how they live. They also study farm animals and the food that they make, like milk. They can use what they know to invent products for people to use.*				
After EDC				
Before EDC **Chemistry**: People work with chemicals. They invent new chemicals and use them to make new products, like paints, medicine, and plastic.				
After EDC				
Before EDC **Computer Science**: People write instructions to run a program that a computer can follow. They design computer games and other programs. They also fix and improve computers for other people.				
After EDC				

	Agree	Maybe	Not Sure	Disagree

Before EDC
Earth Science: People work with the air, water, rocks and soil. Some tell us if there is pollution and how to make the earth safer and cleaner. Other earth scientists forecast the weather.

After EDC

Before EDC
Energy/Electricity: People invent, improve and maintain ways to make electricity or heat. They also design the electrical and other power systems in buildings and machines.

After EDC

Before EDC
Engineering: People use science, math and computers to build different products (everything from airplanes to toothbrushes). Engineers make new products and keep them working.

After EDC

Before EDC
Environmental Work: People study how nature works. They study how waste and pollution affect the environment. They also invent solutions to these problems.

After EDC

	Agree	Maybe	Not Sure	Disagree

Before EDC
Mathematics: People use math and computers to solve problems. They use it to make decisions in businesses and government. They use numbers to understand why different things happen, like why some people are healthier than others.

After EDC

Before EDC
Medicine: People learn how the human body works. They decide why someone is sick or hurt and give medicines to help the person get better. They teach people about health, and sometimes they perform surgery.

After EDC

Before EDC
Medical Science: People study human diseases and work to find answers to human health problems.

After EDC

Before EDC
Physics: People study motion, gravity and what things are made of. They also study energy, like how a swinging bat can make a baseball switch directions. They study how different liquids, solids and gas can be turned into heat or electricity.

After EDC

	Agree	Maybe	Not Sure	Disagree

Before EDC

Veterinary Work: People who prevent disease in animals. They give medicines to help animals get better and for animal and human safety.

After EDC

9. About Yourself

	Agree	Maybe	Not Sure	Disagree
Before EDC Do you know any adults who work as scientists?				
After EDC				
Before EDC Do you know any adults who work as engineers?				
After EDC				
Before EDC Do you know any adults who work as mathematicians?				
After EDC				
Before EDC Do you know any adults who work as technologists?				
After EDC				

How curious are you about these topics?

10. Curiosity

	Agree	Maybe	Not Sure	Disagree
Before EDC Science				
After EDC				
Before EDC Technology				
After EDC				
Before EDC Engineering				
After EDC				
Before EDC Math				
After EDC				

11. Demographic Information

What is your birthday (MM/DD/YYYY)? Month:_____Day:_____Year: _____

[   ]

12. What grade did you enter this school year?

○ ○

3rd ○   6th ○

○ 4th 5th   ○ 7th 8th

13. Are you Hispanic or Latino/Latina?

○

Yes ○

No

14. What is your Race (One or more categories may be selected)?

○ American Indian or Alaska

Native ○ Asian

○ Black or African American

○ Native Hawaiian or other Pacific Islander

○ White or Caucasian

15. Are you (Select only one)?

○

○ Female

Male

---End of Test Survey---

Please provide feedback on your experience with this survey by answering the following questions.

16. Please indicate the level to which you agree or disagree with each statement.

	Agree	Maybe	Not Sure	Disagree
Before EDC The survey instructions were clear.				
After EDC				
Before EDC The questions were easy to understand.				
After EDC				

17. Time Finished