

## Retrospective Survey for Grades 3 to 8

### 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 😐 for maybe 😞 for not sure 😡 for disagree for each row that says Before EDC and AFTER EDC.

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OK

0 of 17 answered


al

\* 1. Time started.

\* 2. Enter your five-digit number.

\* 3. Enter the name of your state.

NEXT

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### 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 🤔 for maybe 😐 for not sure 😞 for disagree

\* 4. Math 📄

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

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### Retrospective Survey for Grades 3 to 8

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

#### \* 5. Science

	Agree	Maybe	Not Sure	Disagree
<b>Before EDC</b> I feel good about myself when I do science.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> I might choose a career in science.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> After I finish high school, I will use science often.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> When I am older, knowing science will help me earn money.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> When I am older, I will need to understand science for my job.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> I know I can do well in science.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> Science will be important to me in my future career.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> I can understand most subjects easily, but science is hard for me to understand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> In the future, I could do harder science work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> I have fun learning science/engineering.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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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	😞 No Sure	👎 Disagree
<b>Before EDC</b> I like to imagine making new products.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> If I learn engineering, then I can improve things that people use every day.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> I am good at building or fixing things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> I am interested in what makes machines work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> Designing products or structures will be important in my future job.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> Knowing how to use math and science together will help me to invent useful things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> I believe I can be successful in engineering.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> I enjoy playing games that teach me about science/engineering.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### Retrospective Survey for Grades 3 to 8

\* 7. 21st Century Learning


	Agree	Maybe	Not Sure	Disagree
<b>Before EDC</b> I can lead others to reach a goal.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> I like to help others do their best.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> In school and at home, I can do things well.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> I respect all children my age even if they are different from me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> I try to help other children my age.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> When I make decisions, I think about what is good for other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> When things do not go how I want, I can change my actions for the better.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> I can make my own goals for learning.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> I can use time wisely when working on my own.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> When I have a lot of homework, I can choose what needs to be done first.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> I can work well with all students, even if they are different from me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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### Retrospective Survey for Grades 3 to 8

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
<p><b>Before EDC</b>  <b>Biology:</b> 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.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p><b>After EDC</b></p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p><b>Before EDC</b>  <b>Chemistry:</b> People work with chemicals. They invent new chemicals and use them to make new products, like paints, medicine, and plastic.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p><b>After EDC</b></p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p><b>Before EDC</b>  <b>Computer Science:</b> 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.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p><b>After EDC</b></p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p><b>Before EDC</b>  <b>Earth Science:</b> 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.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p><b>After EDC</b></p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



<p><b>Before EDC</b>  <b>Energy/Electricity:</b> People invest, improve and maintain ways to make electricity or heat. They also design the electrical and other power systems in buildings and machines.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p><b>Before EDC</b>  <b>Engineering:</b> People use science, math and computers to build different products (everything from airplanes to smartphones). Engineers make new products and keep them working.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p><b>Before EDC</b>  <b>Environmental Work:</b> People study how nature works. They study how waste and pollution affect the environment. They also invent solutions to these problems.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p><b>Before EDC</b>  <b>Mathematics:</b> 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.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p><b>Before EDC</b>  <b>Medicine:</b> 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.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p><b>Before EDC</b>  <b>Medical Science:</b> People study human diseases and work to find answers to human health problems.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p><b>Before EDC</b>  <b>Physics:</b> 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.</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>







<b>Before EDC</b> <b>Medicine:</b> 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.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> <b>Medical Science:</b> People study human diseases and work to find answers to human health problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> <b>Physics:</b> People study atoms, 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.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> <b>Veterinary Work:</b> People who prevent disease in animals. They give medicines to help animals get better and for animal and human safety.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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## Retrospective Survey for Grades 3 to 8

### \* 9. About Yourself W

	 Agree	 Maybe	 Not Sure	 Disagree
<b>Before EDC</b> Do you know any adults who work as scientists?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> Do you know any adults who work as engineers?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> Do you know any adults who work as mathematicians?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> Do you know any adults who work as technologists?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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## Retrospective Survey for Grades 3 to 8

How curious are you about these topics?

\* 10. Curiosity W

	 Agree	 Maybe	 Not Sure	 Disagree
<b>Before EDC</b> Science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> Technology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> Engineering	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> Math	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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## Retrospective Survey for Grades 3 to 8

### \* 11. Demographic Information

What is your birthday (MM/DD/YYYY)? Month: \_\_\_ Day: \_\_\_ Year: \_\_\_\_\_

w

### \* 12. What grade did you enter this school year? w

- |                           |                           |
|---------------------------|---------------------------|
| <input type="radio"/> 3rd | <input type="radio"/> 6th |
| <input type="radio"/> 4th | <input type="radio"/> 7th |
| <input type="radio"/> 5th | <input type="radio"/> 8th |

### \* 13. Are you Hispanic or Latino/Latina?

w

- Yes
- No



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

American Indian or Alaska Native

Native Hawaiian or other Pacific Islander

Asian

White or Caucasian

Black or African American

\* 15. Are you (Select only one)? W

Female

Male

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## Retrospective Survey for Grades 3 to 8

---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. W

	 Agree	 Maybe	 Not Sure	 Disagree
<b>Before EDC</b> The survey instructions were clear.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Before EDC</b> The questions were easy to understand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>After EDC</b>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 17. Time Finished W

PREV DONE

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