



FIRST at Home Activity

Coder Says

PROBLEM STATEMENT

Many technologies today like cars, computers, or smart phones need to receive a set of commands to do a job or complete a task. Engineers need to write a code to tell the technology how to complete a specific set of instructions. This takes a lot of communication and teamwork.

To create smart technology, you must learn how to speak and write in this code. In this challenge you will be a coder and your team members are the technology. Write a code to make them do a specific job or task. Remember to use your *FIRST* Core Values!

CRITERIA & CONSTRAINTS

- You must use the set of coding commands provided to help you and others to learn to “speak” code.
 - One person is the Coder the other person is the Robot(s). The “Coder” will hold up or say each coding block and have the technology person act out the motion listed for each.
 - Say “Coder Says” then hold up or say a coding block. The technology person should act out the step that each block represents.
 - Continue reading coding blocks until the task is complete.
 - If a task cannot be completed, troubleshoot your code and try again.
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ENGINEERING DESIGN PROCESS & FIRST CORE VALUES

[FIRST Engineering Design Process](#) | [Explore FIRST Core Values](#)

BUILDING THE BACKGROUND & BRAINSTORMING

[Watch this Video on coding and technology](#)

What are some other technologies that use code?

Could you use code to give a person direction to get somewhere or complete a task?

SKETCH YOUR DESIGN

Sketch your ideas for the code, then speak your code to your partner and see if it works.

What task will be attempted with this code?	Write your Code Here								
<table border="1"><tbody><tr><td data-bbox="185 466 389 646">Move Forward </td><td data-bbox="418 466 623 646">Move Backward </td></tr><tr><td data-bbox="185 667 389 848">Turn Right </td><td data-bbox="418 667 623 848">Turn Left </td></tr><tr><td data-bbox="185 882 389 1062">Grab </td><td data-bbox="418 882 623 1062">Drop </td></tr><tr><td data-bbox="185 1096 389 1276">Stop </td><td data-bbox="418 1096 623 1276">Repeat </td></tr></tbody></table>	Move Forward 	Move Backward 	Turn Right 	Turn Left 	Grab 	Drop 	Stop 	Repeat 	
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REFLECTION QUESTIONS

1. What did you discover about writing the code?
2. How did you innovate during this activity?
3. Did communication and teamwork affect your success?

GO FURTHER!

Watch this [Video](#) on coding and technology:

Now create a new program using your own coding blocks and have someone complete a task. Do more complex movements with less steps.

CORE VALUES SELF-REFLECTION

	Amazing Skill	Great Job	Making Progress	Could Be Better
Discover	I approached the tasks looking for all possible answers independently and used perseverance to discover the answer on my own.	I approached the tasks and asked questions from one other person but persevered to discover the answer on my own.	I approached tasks but needed assistance multiple times to reach a point of discovery.	I depended on others to make the discovery for me.
Innovation	I used creativity and perseverance to solve problems on my own, coming up with unique solutions for the tasks I was given.	I used creativity and perseverance to solve problems on my own coming up with different solutions for the tasks I was given.	I used creativity but struggled with perseverance to solve problems on my own.	I struggled with being creative and only used the information given and needed a lot of encouragement from others to complete the task.
Impact	I approached the tasks applying understanding of the information with the impact it can have on me and my future as well as how I could help others.	I approached the tasks knowing and applying the information with impact it can have on me and my future.	I understand the tasks but struggle to apply how it will help me in my future or to influence others.	I understand the tasks but did not approach it with understanding the impact it can have on my future or others.
Inclusion	I approached all tasks with inclusion of others' ideas, I showed tremendous kindness by including others' views in my projects and work. I approached my solution thinking how all people would interact with the solution.	I approached most with inclusion of others' ideas, I tried to understand others' views and include them in my projects and work. My solution mostly incorporates needs of others.	I approached some tasks with inclusion of others' ideas, I tried to understand others' views and include them in my projects and work. My solution meets only a few needs of others.	I did not approach tasks with inclusion of others' ideas, I tried to understand others' views and include them in my projects and work. My solution is not inclusive of different types of people.
Teamwork	I used collaboration, communication and project management to get all tasks accomplished for myself as well as the others.	I used collaboration, communication and project management to get most tasks accomplished for myself as well as the others.	I used collaboration, communication and project management to get some tasks accomplished for myself as well as the others.	I only sometimes used collaboration, communication and project management and accomplished a few tasks for myself as well as the others.
Fun	I kept a positive attitude throughout and found opportunities to have fun even through struggle. I looked for additional opportunities to have fun in my tasks.	I kept a positive attitude throughout and found opportunities to have fun even through struggle.	I saw the enjoyment and fun after the activity but struggled to see it during.	I only saw struggle in completing my tasks and did not look for times to have fun.