

## Introduce Activity: Binary Message Device Challenge

*Students will build a device from classroom supplies in order to send information to a classmate on the other side of the room.*

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### Challenge 1: Send a Binary Question

For the first challenge, the partners will construct a **Device and a Process** that will allow them to answer a Binary Question. Partner A will write a Binary Question on a Post-it-Note. Partner B will use their Device to answer the question



#### Rules:

1. Partners will get together and have 5 minutes to construct a **Device and a Process** out of any supplies they see in the class.
2. Partner A will write a Binary Question on a Post-it-Note. (*Partner B may not see the question prior to the moment the teacher hands them the note.*)
3. The teacher will carry the note from Partner A to Partner B.
4. Partner B will use their Device to answer the question sent from Partner A. It must be answered with: Yes or No, True or False, Either/Or.). The teacher will then return the note to Partner A and will ask Partner A, "What answer did Partner B send you via the device?" Partner A will respond. Then the teacher will ask Partner B if this is the correct answer they sent via the device.
5. You should try to make it fail-proof. Consider obstacles that might be thrown in your way.
6. The game ends when the first group has 3 questions answered correctly. GO!

#### Journal

What is the Tool and Process you developed in order to respond to a Binary Question?

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### Challenge 2: Four Possible Answers

Not all questions have only two possible answers. First, write a question that has at least four possible answers. Second, invent a way to use your device to send an answer to a question that has 4 possible answers! Think about these things:

#### Journal

Did you need to modify your tool or process in order to respond to four Answers? If so, what were the changes?

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### Challenge 3: Eight Possible Messages

What if you wanted to ask an even more complex question with at least 8 possible answers? First, write a question that has at least eight possible answers. Second, invent a way to use your device to send an answer to a question that has 8 possible answers!

#### Journal

Did you need to modify your tool or process in order to respond to eight Answers? If so, what were the changes?