

## Challenge 5: Will It Work?

### Get Prepared

**Challenge Goal:** Understand that engineers revise their designs to make them better before they build

**Time Needed:** One 45-minute session

**Before You Begin:** Before the participants come in for the afternoon, set up the tablets so that their browsers are at [www.scholastic.com/sparks](http://www.scholastic.com/sparks).



### What You Will Need:

#### Tablet Flip Book

- Innovation Flip Book



#### Materials

- Samsung tablets
- Engineer's Notebook (from Challenge 1)
- pencils

### Will It Work?

1. Ask if anyone would like to share the innovation they drew. Allow two or three volunteers to share. Then explain that engineers don't build an innovation after just one drawing. Explain that there are a lot of steps that engineers go through before they build. That's how they decide if their innovation will work.
2. Distribute the Engineer's Notebooks and have students flip to page 6. Tell them there are steps they can follow to find out how they can make their innovation better. Read the "Steps to Make Innovations Better" out loud. Have kids check off the steps they have completed.
3. Explain that engineers use many types of drawings to show others what their idea is and how it will work. Have kids click on the Innovation Flip Book tab on the K-2 landing page on their tablets and tap the number 3. Have them look at three examples of design blueprints, diagrams, and 3D drawings. Explain that drawings help an engineer demonstrate how his or her invention will work. They also help everyone think about what problems may arise when it's built.



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## Challenge 5: Will It Work? (continued)

### Challenge Time!

Separate kids into groups of three or four. Younger participants will need a leader or assistant leader in each group. Have kids explain their design and share their drawings with their groups. Guide them to interview group members about their designs by asking the following questions: ***What did you like the most about their idea? What was confusing about their idea? What would you add to their idea?*** Remind students that they should respect everyone's ideas the way they would like their own ideas to be respected.

### Reflection Time

1. After the interviews, groups should come back together as a class. Ask: ***What did you learn? What are you most proud of in your design? Do you have ideas to make your design even better? Each of you received and provided ideas from others (called feedback). Was this challenging or not? Why?***
2. Explain that engineers, architects, and other builders revise, or change, their plans to make them better. For example, an architect would have to redesign a building plan to make sure that someone in a wheelchair has easy access to every room: bigger doorways, elevators and ramps wherever there are stairs, etc. Explain that revising means fixing a few parts to make the whole better.
3. Have kids go to page 6, "My Innovation: Revision," and make a new drawing of their innovation. Explain that this new drawing should be a revised version, or different, from their first drawing. They should change at least one thing to make their innovation even better.

