

Communicate to Innovate

STEAM (science, technology, engineering, art, and math) doesn't just encourage innovation through art and design, it encourages collaboration with peers. Help your students hone their communication skills to better prepare for working with classmates on future STEAM projects with this ready-to-use lesson.

ADVANCEMENT COURSES™

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Objective: Students will be able to demonstrate how to effectively communicate with a partner.

Grades: 3–5

Time: 45–50 minutes

Materials: copy of Sample Planning Page #1, student copies of Sample Planning Page #2, document camera (If a document camera is not available, make student copies of Sample Planning Page #1.)

Optional materials: student copies of the recording sheet, building materials (linking cubes, pencils, rulers)

DIRECTIONS

Bell-Ringer Activity

1. Write the following question on the board:
When you work with a partner or small group, what should your interactions look like and sound like?
2. Have each child write his or her response on a sheet of paper or in a bell-ringer notebook. Encourage younger students to draw and label a picture instead of writing.

Whole-Group Instruction

1. Explain to students that in many jobs it is important to know how to talk to and work with others. In fact, it's hard to think of jobs that don't need good communication. Ask students to provide examples of jobs that need good

communication. Tell students that it's important to have good communication skills at school, too.

2. Project a copy of the Sample Planning Page #1 onto the board. Explain to students that this is a student's design plan for a project in which he or she was asked to build a structure that could be balanced on one finger. The structure was to include five or more parts that could be found at school, like pencils, linking cubes, and rulers.
3. Model for students how you might assess the design. Ask think-aloud questions like, "Does it have five or more parts?" and "Does this look like it might balance on a finger? Why or why not?" Also show students how elements might be added to or changed on the design by



drawing on the plan. For example, you might lengthen the pencil on the right side of the design and move the cube over.

4. Tell students that when they work on STEAM plans, classmates may look over their plans and offer ideas. Model what that might sound like. Start with a positive comment (*"I noticed you..."*) followed by a statement that leads to an improvement or change (*"I wondered why you ___ instead of..."*). If desired, write the statements in the space at the bottom of the page.
5. Guide students to discuss what they noticed about your feedback. Then write the sentence starters from Step 4 on the board. Have students repeat the sentence starters aloud, starting with the positive comment followed by the improvement statement.

Partner Practice

1. Give each student a copy of the Sample Planning Page #2. Tell students that the design was created by an imaginary student named Sam. Have the child review the design and add improvements to it.
2. After a few minutes, pair students. Explain that each partner will take turns pretending that he or she is Sam and sharing feedback on the design. Lead students to discuss the design in the same manner you did, starting with a positive statement (*"I noticed you..."*) followed

by an improvement statement (*"I wondered why you ___ instead of..."*). Also encourage students to share what they added to the design and why. While students are discussing the plans, circulate around the room and note examples of well-communicated statements.

3. Lead students to discuss what went well during their discussions. Share examples of well-worded comments. Remind students that during a STEAM project, they would have time to test and improve their designs after receiving feedback, so clearly communicating feedback is an important part of the process.

Progress Check

Instruct younger students to draw a short cartoon showing two people communicating about a project. Have older students write a dialogue between two people who are working together on a project.

To extend the activity on another day, set out a variety of building materials. Give each student a copy of the recording sheet and challenge students to use some of the materials to plan their own versions of the balancing structure. Then have each child share his or her plan with a classmate and practice the communication skills discussed in the lesson. If desired, provide time for students to create and test their structures too.

Add the arts and turn STEM into STEAM

Our popular course **The A in STEAM Stands for Art** helps you develop **meaningful projects for incorporating the arts in science, technology, engineering, and math**. Students will learn how effective collaboration, creativity, critical thinking, and communication improve STEM projects and results.

Other courses you may like:

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- *Closing the Gender Gap in STEM*
- *Building Effective Communication Skills in the Classroom*
- *The Four C's of Project-Based Learning*

Courses are self-paced, graduate level, and available online.

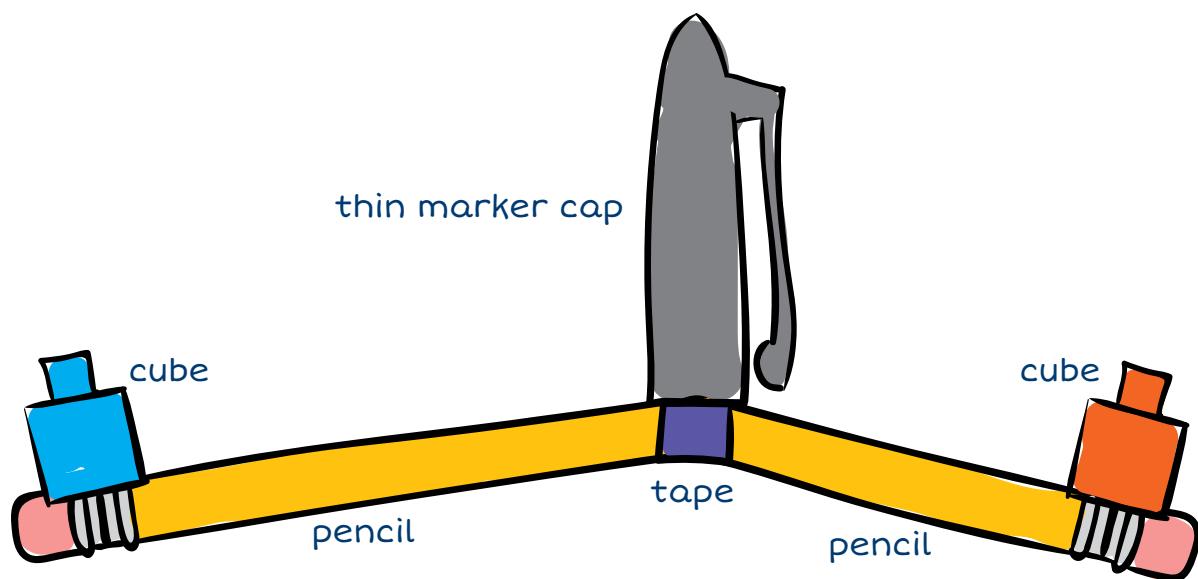
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Design It! #1

Make a plan for designing your structure.

It must have five or more parts and it must balance on your finger.

Draw and label your plan.

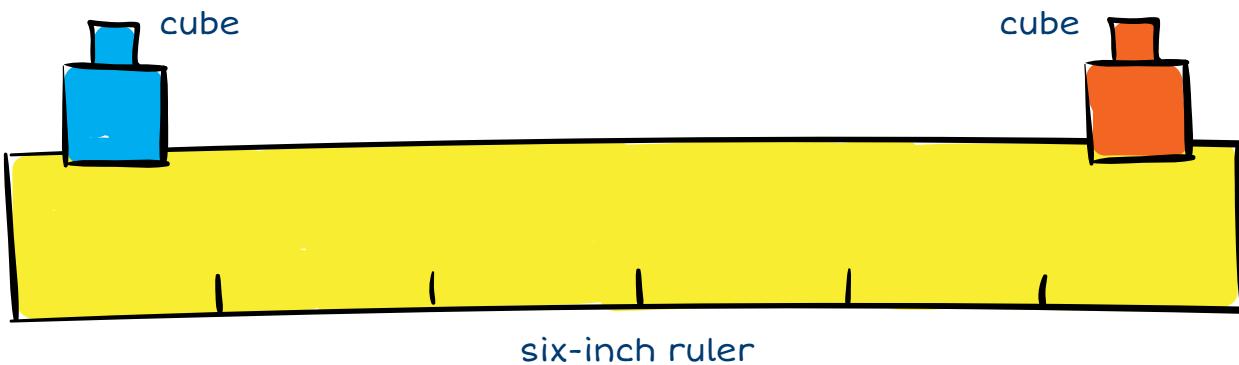


Design It! #2

Make a plan for designing your structure.

It must have five or more parts and it must balance on your finger.

Draw and label your plan.



Review the plan. What might you do differently?

Take turns with your partner pretending that he or she developed the plan and that you are giving feedback.

Start by saying "I noticed you..." and tell something positive.

Next, say "I wondered why you..." and tell what was done. Tell how it might be improved.

Then explain anything you added to the plan.

Design It!

Make a plan for designing your structure.

It must have five or more parts and it must balance on your finger.

Draw and label your plan.