

CUP STACKING CHALLENGE

Standard Alignment: Use social-awareness and interpersonal skills to establish and maintain positive relationships.

2.C.1a. Identify ways to work and play well with others

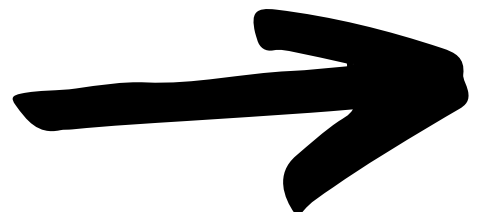
2.C.1b. Demonstrate appropriate social and classroom behavior

Summary: Participants are introduced to engineering by working in teams of 4-6 to solve a problem. They create a tool using a string and a rubber band that could be used to stack a group of cups into a pyramid. Team members must work cooperatively to:

- Pull their strings to expand the rubber band
- Lower the rubber band around a cup
- Release the string so that the rubber band grabs the cup
- Pick up the cup to stack it



Step 1: Each team should have 4-6 members, depending on the size of your group. At each table, put a rubber band and 10 plastic cups, and one piece of string for each team member. Explain the goal of the activity is to make a tool with the strings and the rubber band to stack the cups into a pyramid shape. Note all team members have to help in stacking the cups so they must create a tool that involves all team members.



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Step 2:

Allow 10 minutes for teams to make their tools and practice stacking the cups. You might have to ask questions to encourage their thinking like, "Since you cannot touch the cup, how can the strings help with the task?" If one group figures out that you have to tie the strings to the rubber band, you can call attention to this design and say that the other groups might want to learn from this design.

****For younger students, you can pre-make the tool****

Explain The Challenge:

Ask everyone to stop working and then visit each table and scatter their cups around the table.

Remind them that arms must not extend over the table. Then, signal the beginning and start the timer.

Discussion Questions

- How well did your team work together to stack the cups? Was there a difference when you could communicate?
- At what point did you feel like everyone was working together?
 - What would you do differently for the next time around? How did you come up with the design of your device?
- How might this be like the work of an engineer who designs cars, airplanes or cell phones?