LESSON PLAN: TEAMWORK ACTIVITY 1.10
ROCKET POWER CHALLENGE I

INTRODUCTION

Teamwork is a group of individuals who use the strengths of each team member to work cooperatively towards a shared goal.

Teamwork is a way of working together which cares for each person as the tasks are being accomplished. The teamwork process has two basic components: belonging and accomplishing.

- Belonging: Each person must feel welcome and important to the team.
- Accomplishing: Each person must have opportunity to contribute to the work of the team.

Belonging is the beginning of motivation for teamwork and the source of commitment to accomplish the necessary tasks. Team building begins with the open and supportive relationships among team members. Team members share the tasks which enable them to carry out their plans. A team builds on the strengths of each of its members. Teamwork does not make fewer tasks, it redistributes tasks so that all who belong may be equally involved.

Communication is the lifeblood of the team. Communication begins with caring and continues with listening, with being sure that the concerns of each person are heard. Communication is transmitted through clear verbal and non-verbal messages and adequate well timed information. Communication is verified through feedback (by checking to be sure that what was heard was the message which was originally intended). Communication must occur for a team to achieve its goals.

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ACTIVITY INSTRUCTIONS

INTRODUCTION ACTIVITY (10 MINUTES)

Ask and discuss with youth:

1. What do you think of when I say the word team? Do you know what teamwork is? Why is it important for people to work together?

2. Brainstorm the characteristics of a good team member.
   - Be Reliable
   - Communicate
   - Be an Active Listener
   - Cooperate
   - Commit

3. Have you ever heard of NASA? (Explain what NASA is and does) Do people at NASA have to use teamwork? Why or why not?

ACTIVITY PART 1: NO ASSIGNED ROLES (10 MINUTES)

Youth will be working on a team to complete an engineering activity. Their challenge is to build a rocket model. NASA uses models in the process of building rockets.

Directions

1. Assign youth into groups of 4 with each group at their own table or other level surface.

2. Hand out supplies. Give each team 12 pieces of spaghetti, 10 marshmallows and 10 gumdrops. Tell the youth not to touch or eat the supplies.

3. Tell the youth they will have to work together and build a model of a rocket.

4. The goal is to make the rocket as tall as possible, and it has to stand on its own. When they’re done building, it should not tip over.

5. Have the youth briefly discuss and make a plan of what their rocket may look like and how they might use the limited supplies they have been given. No other supplies may be used.

6. Tell the youth they have 5 minutes to build their rocket. Display a countdown clock if possible.

7. Allow the teams to begin to build.

ACTIVITY PART 2: NO ASSIGNED ROLES (10 MINUTES)

Directions

1. Within their teams, allow each team member 15 seconds to share. Have each member answer one of the following questions:
   - What is going well?
   - What is not working?
   - What could we do better?
   - Are we working as a team? Why or why not?

2. Allow each team a chance to move about the room as a group for 1 minute to view the other teams’ projects to get ideas.

3. Give teams 5 minutes to finish their rocket model. Remind them to think about what they heard from their teammates and what they viewed from the other teams’ models.

4. When time is up, have the youth step away from their table and have each team showcase their final model design. Use the yardstick to measure the final rocket model height. Use class applause to celebrate all of the teams’ efforts!

DISCUSSION QUESTIONS (10 MINUTES)

1. Ask the youth to give a quick nonverbal feedback response of the activity with thumbs up, thumbs side-ways, or thumbs down. Ask for verbal sharing of why they chose to rate the activity the way they did.

2. What did you learn about teamwork?

3. What was one thing your team did well?

4. What was one thing your team could do better next time?

5. Did your team try more than one way to complete the challenge?

6. Why do scientists and engineers at NASA have to use teamwork?
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DEBRIEF ACTIVITY: WHAT’S MY REFLECTION QUESTION? (10 MINUTES)

MATERIALS LIST
Reflection question notecards (see questions below).

1. Hand each youth a card face down so that they cannot see the question.
2. Ask them to hold their card up to their forehead with the question visible to all but themselves.
3. Instruct youth to move around to individuals answering the question the other person is holding. Remind them not to read the question out loud.
4. Each youth should hear answers from a minimum of 3 people before guessing what their reflection question is. After most or all have discovered their reflection question, ask a few to share the responses they received and how those answers helped them determine what their question was.

Sample Reflection Questions
What are some ways you like to learn?
What have you learned about making decisions?
How did others help you?
Why was this an important/useful thing to do?
What surprised you about this activity?
What was most challenging?

SAFETY NOTE
Teams should be closely monitored to ensure that the untangling process is done safely. Remind youth not to pull anyone over and to be careful not to accidently step on or kick anyone.

Discuss:
1. Can anyone share a feeling they had during the activity? (i.e. happy because it was fun, frustrated because you could not get untangled, mad because people would not listen, proud because you were able to untangle the knot, etc.)
2. How did this activity require teamwork? What could your team have done better?
3. How can you use teamwork during your daily lives at school, at home, in extra-curricular activities, etc.?

FUN FACTS
• There is no set number of people in an astronaut candidate class; NASA selects candidates on an as-needed basis.
• Lonnie Johnson, the man who invented the Super Soaker was a NASA engineer. He also helped develop the Stealth Bomber.

DID YOU KNOW
NASA will send you a text message whenever the International Space Station (ISS) passes over your location.
https://spotthestation.nasa.gov/signup.cfm

INSTRUCTOR’S NOTES
ACTIVITY 1.10: LEARNER ASSESSMENT

These questions are about things you learned during this activity. Please check the circle that best describes you.

Q1 I can identify three different ways to communicate with someone.
   - Not at all like me
   - A little like me
   - Somewhat like me
   - A lot like me

Q2 I can find more than one way to solve a problem.
   - Not at all like me
   - A little like me
   - Somewhat like me
   - A lot like me

Q3 I know how to work as part of a team.
   - Not at all like me
   - A little like me
   - Somewhat like me
   - A lot like me