



United States Department of Agriculture National Institute of Food and Agriculture

https://nifa.usda.gov/ program/4-h-positive-youthdevelopment



National Aeronautics and Space Administration



LESSON PLAN: ACTIVITY 1.9

DEPENDING ON OTHERS

LESSON DETAILS

AGE/GRADE LEVEL Elementary School

LEARNER OUTCOMES

Youth will have a greater understanding of working in a team and utilizing nonverbal cues.

SUCCESS INDICATORS

Youth will demonstrate the use of nonverbal communication skills while completing a team challenge.

LIFE SKILLS

Teamwork, Leadership, Cooperation, Problem Solving

NATIONAL STANDARDS

21st Century Skills/Learning and Innovation Skills/COMMUNICA-TION AND COLLABORATION/ Communicate clearly, collaborate with others

21st Century Skills/Learning and Innovation Skills/CRITICAL THINK-ING AND PROBLEM SOLVING/

Reason effectively, use systems thinking, makes judgements and decisions, solve problems

21st Century: Life and Career Skills / FLEXBILITY AND ADAPTABILITY /

Develop thinking skills, content knowledge, and social and emotional competencies to navigate complex life and work environments

PREP TIME

None

ACTIVITY TIME

1 hour 10 minutes (all activities combined)

MATERIALS LIST

- Yard stick (or broom stick, or something like either one)
- · Flip chart paper
- Markers
- Playing cards

SUGGESTED SPACE

An open space with minimal obstructions and space for youth to move around

SUGGESTED GROUP SIZE

Minimum of 4 youth

REFERENCES

Life in Space https://www.esa.int/esaKIDSen/ SEMG2JWJD1E_LifeinSpace_0.html

Gravity Facts

http://www.sciencekids.co.nz/sciencefacts/gravity.html

How Do Astronauts Communicate in Space?

https://tellmewhyfacts. com/2007/12/how-do-astronautscommunicate-in-space.html

INTRODUCTION

onflict is a natural event and can be necessary to move relationships and projects forward. It provides an opportunity for discussion and supports open-mindedness. Without conflicts there may not be change or innovation.

On the International Space Station, astronauts are weightless and float unless they are held down by seatbelts. There is no up or down. There is no difference between a floor and a ceiling. This can make it very challenging to move from one place to another, to eat a meal, or to conduct a science experiment.

Movement is not the only challenge that astronauts have to overcome when living and working on the International Space Station. Sound can also be a challenge.

In order for one to hear sound it must travel through air (gas particles) of which space has very little. Sound can only travel through a solid, liquid or gas. Space, being an almost perfect vacuum, does not allow sound to travel and be heard by the ears. Sound is vibrations of air particles, so any "sound" that is heard in space has to come from another source.

As such, astronauts communicate with each other in space when they are spacewalking through the use of radio waves. Radio wave signal are sent to their headsets which then translates the signal into the form of sound. Astronauts can however, talk to each other as if they were on Earth only when they are in their space ship. Here, there are enough air particles to vibrate and take the sound to their ear drum.

continued next page >>





PAGE 2

LESSON PLAN: ACTIVITY 1.9

DEPENDING ON OTHERS, CONTINUED

>> continued from previous page

ACTIVITY INSTRUCTIONS

ACTIVITY: WEIGHTLESS STICK (30 MINUTES)

Explain that in space, gravity - or the lack thereof - is an issue our astronauts have to deal with every single day. To help prepare you for the challenges of working in a weightless environment, NASA has provided you and your team with a "Weightless Stick" (the yard stick). This stick is very fragile and needs to be handled carefully. Your team's mission is to lower the stick to the ground, without letting it fall and break.

Directions:

- 1. Divide the group into small teams of 4-6 youth per team.
- 2. Have each team line up in two columns, shoulder to shoulder. The columns should face each other with about two feet between the columns.
- 3. Youth should stand with their index finger extended; all fingers should be level and at about waist height.
- 4. Once youth are situated, explain that the youth are completing this task in space so there is no verbal communication. That means they cannot speak to each other but must communicate with their eyes, expressions, gestures, and other non-verbal cues.
- 5. The facilitator places the yard stick on the outstretched index fingers of the youth. One yard stick per team.
- 6. Allow the teams to lower their sticks.

Note:

Though the object is to have the "Weightless Stick" lowered to the ground, there is a natural inclination to 'raise' the stick. No one wants to be the person to drop the stick, and as such they find themselves actually raising the stick. If there is more than one facilitator available, teams can "race" against each other to see who can lower their Weightless Stick first. Throughout the activity, the facilitator is encouraged to remind the teams that this task is to be completed without verbal communication.

- What did you learn while working with the experimental anti-gravity stick?
- Describe how you communicated with each other while working with the anti-gravity stick in ways that did not involve talking.
- Describe how the stick seemed to be "weightless" at some points. Why do you think that happened?
- How did you start to realize what needed to be done to accomplish the goal?
- How were decisions made?
- What problems came up?
- How were they handled?
- What was most challenging?
- What key elements did you learn?
- Why is it important to vary communication styles when working as a team?
- In what ways did you help each other?

DEBRIEF: PLAYING CARD MATCH-UP (20 MINUTES)

Explain that you are going to hand out cards to everyone but youth cannot speak to one another, nor can they show their card to anyone else. Make sure youth understand these two restrictions before beginning the game because it is these two rules that force youth to engage in meaningful nonverbal communication in order to work together. Give each youth a card and instruct them that their job is to organize themselves into groups according to the suit (spade, diamond, club or heart) on their card.

Discuss:

- How did you communicate to come together as a group with the same suit?
- Was the communication used the same or different from the last activity? Why or why not?
- Did anyone take on a leadership role? If so, what did that role look like?

continued next page >>

Discuss:







PAGE 3

DEPENDING ON OTHERS, CONTINUED

>> continued from previous page

- Were there multiple leaders?
- Did the role of the leader or the person acting as a leader change during the activity?
- What was the role of the followers (non-leaders)?
- Could this task have been completed if everyone was a leader? What if everyone was a follower?
- Why is it important to have both leaders and followers for a group task to be successful?

APPLIED CHALLENGE: DEPENDING UPON OTHERS (20 MINUTES)

Ask the group, "What does it mean to depend on other people?" Brainstorm ideas and write them on a large sheet of paper. Tell them: There are many things you can do on your own, but some require the cooperation, help and special talents of others. When you work with others to achieve a goal, you build trust and friendship. When you ask for help and depend on someone else, the other person feels needed and that you care about them.

If you needed help with each of the tasks below, who would you depend on? Why did you choose that person?

- Learning how to ride a bike
- Getting better at a sport
- Learning a new idea
- Raking leaves
- Shopping for clothes
- Doing your homework
- Deciding what to wear to a party

Ask for volunteers to share an example of something they plan to do in the next week that they will need to depend on someone else. Have them identify who they will ask for help and tell why they chose that person.

FUN FACTS

Gravity keeps Earth and the other planets in our solar system in orbit around the Sun. It also keeps the Moon in orbit around Earth.

Tides are caused by the rotation of the Earth and the gravitational effects of the Moon and Sun.

QUOTE

"I am enough of an artist to draw freely upon my imagination. Imagination is more important than knowledge.

Knowledge is limited. Imagination encircles the world."

Albert Einstein

INSTRUCTOR'S NOTES





ACTIVITY 1.9: LEARNER ASSESSMENT

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

- If I want to tell someone on my team something without speaking, I can still find a way to communicate with them.
 - O Not at all like me
 - A little like me
 - Somewhat like me
 - A lot like me
- Q I understand that I can't do everything by myself.
 - O Not at all like me
 - A little like me
 - O Somewhat like me
 - A lot like me
- If my team wants to do something together, we can find many ways to reach our goal.
 - O Not at all like me
 - A little like me
 - Somewhat like me
 - A lot like me





ACTIVITY 1.9: LEARNER ASSESSMENT

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

- 1 If I want to tell someone on my team something without speaking, I can still find a way to communicate with them.
 - O Not at all like me
 - O A little like me
 - Somewhat like me
 - A lot like me
- Understand that I can't do everything by myself.
 - Not at all like me
 - O A little like me
 - Somewhat like me
 - A lot like me
- If my team wants to do something together, we can find many ways to reach our goal.
 - O Not at all like me
 - A little like me
 - Somewhat like me
 - A lot like me





ACTIVITY 1.9: LEARNER ASSESSMENT

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

- 1 If I want to tell someone on my team something without speaking, I can still find a way to communicate with them.
 - O Not at all like me
 - O A little like me
 - O Somewhat like me
 - A lot like me
- 2 I understand that I can't do everything by myself.
 - O Not at all like me
 - O A little like me
 - O Somewhat like me
 - A lot like me
- If my team wants to do something together, we can find many ways to reach our goal.
 - O Not at all like me
 - A little like me
 - Somewhat like me
 - A lot like me





ACTIVITY 1.9: LEARNER ASSESSMENT

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

- If I want to tell someone on my team something without speaking, I can still find a way to communicate with them.
 - O Not at all like me
 - O A little like me
 - O Somewhat like me
 - A lot like me
- Understand that I can't do everything by myself.
 - O Not at all like me
 - \bigcirc A little like me
 - O Somewhat like me
 - O A lot like me
- If my team wants to do something together, we can find many ways to reach our goal.
 - O Not at all like me
 - A little like me
 - Somewhat like me
 - O A lot like me