ACTIVITY 2

BRIDGE BUILDERS: COLLABORATIVE CONSTRUCTION CHALLENGE

SKILL/S COVERED: Teamwork and relationship building
APPROXIMATE TIME NEEDED: 50 minutes
AGE GROUP: 12-14 years old

BRIEF INTRODUCTION
This activity is designed to strengthen teamwork and build strong relationships among students through a collaborative construction challenge. Students will work together to design and build a bridge using limited materials, emphasizing the importance of communication, creativity, and cooperation.

AUTHOR OF THE TOOL/EXERCISE WITH REFERENCING LINK
Team of teachers from “Prof. Ivan Apostolov” high school based on Spaghetti Tower Marshmallow Challenge, invented by Peter Skillman and popularized by Tom Wujec.

GOAL
To enhance students’ teamwork and relationship-building skills by engaging them in a creative and collaborative construction project.

NUMBER OF PARTICIPANTS
Suitable for the whole class; students work in small groups.

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NECESSARY MATERIALS

- Building materials (e.g., popsicle sticks, glue, string, cardboard, tape)
- Scissors
- Measuring tape or ruler
- Weights (e.g., small books, toy cars) to test the bridge strength
- Timer or stopwatch

DETAILED DESCRIPTION

INSTRUCTIONS

1. **Introduction to the Activity:**
   - Start by discussing the importance of teamwork and how working together can lead to innovative solutions and stronger relationships.
   - Explain the challenge: each team will design and build a bridge that can hold a certain amount of weight using only the provided materials.
2. **Formation of Teams:**
   - Divide students into small groups of 4-5 members.
   - Encourage them to come up with a team name and assign roles within the team (e.g., project manager, designer, builder, tester).
3. **Planning Phase:**
   - Give each team 10-15 minutes to brainstorm and sketch their bridge design.
   - Emphasize the importance of planning and discussing ideas before starting the construction.
   - Encourage teams to consider factors like stability, balance, and weight distribution in their designs.
4. **Construction Phase:**
   - Provide each team with the building materials and allow 30-45 minutes for construction.
   - Remind students to communicate and collaborate effectively, sharing tasks and supporting each other.
5. **Testing Phase:**
   - Once the construction time is up, gather all teams and their bridges.
   - Test each bridge by gradually adding weights until the bridge holds the maximum weight or collapses.
   - Record the results and discuss the design features that contributed to each bridge's success or failure.
6. **Reflection and Discussion: ask the debriefing qustions**
7. **Reflection Sheets:** Provide each student with a reflection sheet or journal to write about their experiences and what they learned about teamwork and collaboration.

DEBRIEFING QUESTIONS

1. What was your team's strategy for building the bridge?
2. How did your team communicate and share responsibilities during the construction?
3. What challenges did you face, and how did you overcome them?
4. How did working together help your team succeed?
5. What did you learn about teamwork and relationship building from this activity?

OTHER USEFUL INFORMATION

- Encourage creativity and innovation in bridge designs.
- Remind students that the goal is to work together and learn from the experience, not just to build the strongest bridge.
- Consider repeating the activity with different construction challenges to continually develop teamwork skills.
- This activity helps students practice teamwork and build strong relationships through a fun and challenging collaborative project.