

SEEK2LEARN Montessori Nursery

STEM Activity: Creating Phones with Paper Cups and String

Learning Objective: To explore the principles of sound transmission and communication technology through the construction of simple telephones using paper cups and string.

Learning Outcomes:

1. Students will understand the basic principles of sound transmission through solids and learn how vibrations can be used to carry sound.
2. Students will experiment with different materials and designs to optimize the clarity and volume of sound transmitted through their homemade telephones.
3. Students will engage in collaborative problem-solving and teamwork as they work together to construct and test their telephones.
4. Students will develop communication skills as they communicate with their peers through the telephones they create.

Procedure:

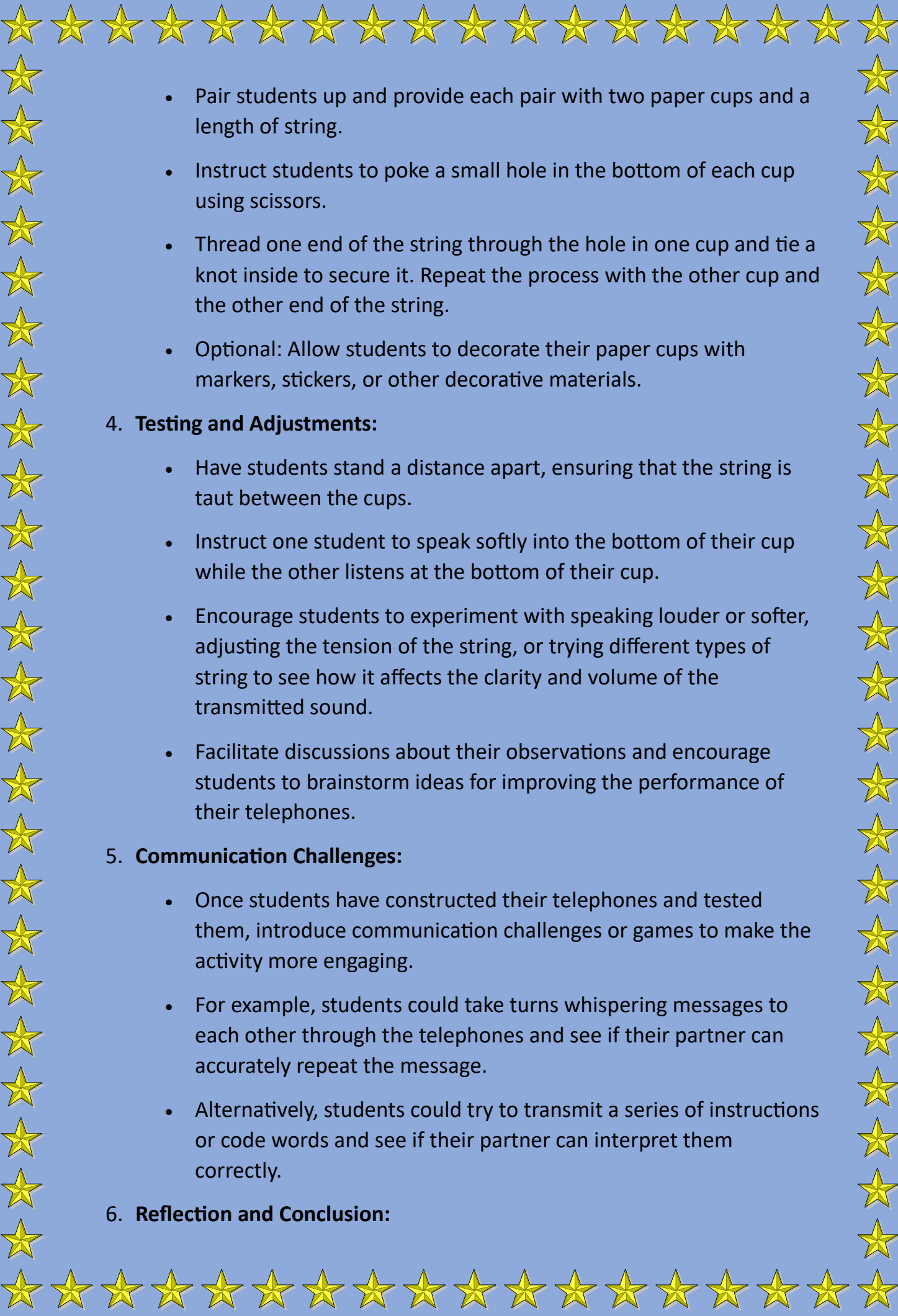
1. Introduction:

- Begin by discussing the concept of sound transmission and how telephones work.
- Introduce the activity of making telephones using paper cups and string, explaining that students will explore how vibrations travel through the string to carry sound.

2. Materials:

- Paper cups (2 per pair of students)
- String (yarn or thin thread works well)
- Scissors
- Optional: Decorative materials for decorating the cups

3. Construction:

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- Pair students up and provide each pair with two paper cups and a length of string.
 - Instruct students to poke a small hole in the bottom of each cup using scissors.
 - Thread one end of the string through the hole in one cup and tie a knot inside to secure it. Repeat the process with the other cup and the other end of the string.
 - Optional: Allow students to decorate their paper cups with markers, stickers, or other decorative materials.

4. Testing and Adjustments:

- Have students stand a distance apart, ensuring that the string is taut between the cups.
- Instruct one student to speak softly into the bottom of their cup while the other listens at the bottom of their cup.
- Encourage students to experiment with speaking louder or softer, adjusting the tension of the string, or trying different types of string to see how it affects the clarity and volume of the transmitted sound.
- Facilitate discussions about their observations and encourage students to brainstorm ideas for improving the performance of their telephones.

5. Communication Challenges:

- Once students have constructed their telephones and tested them, introduce communication challenges or games to make the activity more engaging.
- For example, students could take turns whispering messages to each other through the telephones and see if their partner can accurately repeat the message.
- Alternatively, students could try to transmit a series of instructions or code words and see if their partner can interpret them correctly.

6. Reflection and Conclusion:

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- Gather the students to discuss their experiences with the activity and share any insights or discoveries they made.
 - Reflect on the challenges they encountered and how they worked together to overcome them.
 - Reinforce the concepts of sound transmission and communication, emphasizing the role of vibrations in carrying sound through the string.
 - Encourage students to continue exploring and experimenting with sound and communication technology in their everyday lives.



Cup Phone STEM Project



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