

LESSON: IMPACTS OF PLASTIC ON ECOSYSTEMS



Activity 3: Entangled Flight

OVERVIEW

This activity will show participants how to write and test hypotheses while learning about how entanglement impacts wildlife.

LEARNING OBJECTIVES

After completing this activity, participants will be able to:

- Describe the main ways that plastic can impact living organisms.
- Learn the steps to plan and conduct a simple experiment (form questions & hypotheses, collect data, communicate results).

SETUP AND MATERIALS

This activity takes approximately 30 minutes.

- This activity can be done alone or in small groups (ideally up to 3 participants).
- For each participant or group, provide:
 - A copy of the worksheet and a pen or pencil
 - Paper plane bird template (print or create your own)
 - Markers to decorate bird
 - Tape measure
 - Scissors
 - Assortment of plastic materials for entanglement, such as cut up strips of plastic bags, 6-pack rings, or any other plastic waste found in your home.
 - *Optional: Paperclip to help attach plastic to their bird.*

INSTRUCTIONS

1. Introduce what a hypothesis is.

- Explain to participants that in this activity they are going to make and test a hypothesis and learn more about entanglement.
- Ask participants if they have heard of a hypothesis before and ask them to share what they think it might be before sharing the definition.

Definition: A possible answer to a question or explanation of a phenomenon. It accounts for all of the observed facts and is testable.

- Test this out! Ask everyone in your household to try and touch their nose with their tongue to see if the hypothesis is correct or not.
- Remind participants that a good hypothesis is testable and share the same example but instead of people in their household, ask participants if you could test a hypothesis using aliens from outer space? The answer is no! Because you can't test if aliens can touch their noses, this means it's not a good hypothesis.

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INSTRUCTIONS (CONTINUED)

- Explain that we're now going to make and test a hypothesis about how entanglement might impact a bird's ability to fly. Remind them that entanglement is when wildlife have plastic or any litter item wrapped up somewhere on their bodies.

Tips:

- If there are many participants, designate different fly zones so all birds are flying in the same direction and not into each other.
- For groups with three participants, have them designate roles and record these on page 1 of their worksheet (flight tester, distance measurer, recorder). If you have only one person, they will be responsible for all the roles.

2. Provide step by step instructions of flight activity.

Step 1: Create and decorate the paper plane bird.

- Ask each participant or group them to create their own bird by folding the paper plane bird template provided or by creating their own design. Encourage them to decorate their bird however they like.

Step 2: Fly the bird and make initial observations.

- Have participants fly their "birds" normally and make observations about how it flies, including measuring the distance they fly, then write these observations on page 1 of the worksheet. Remember, if participants are in a group, the recorder will write down this information.
 - **Suggested prompts: How would you describe the way the bird flew? Did it fly in a straight line? Did it loop or curve when flying? How far did it travel?**

Step 3: Attach plastic to entangle the bird.

- Ask participants what type of plastic material they think their bird would become entangled by. Record this on page 1 of the worksheet and then attach it to the bird in a way they think is realistic.
 - **Tip: Use a paperclip to help attach the plastic.**

Step 4: Create a testable hypothesis.

- After recording the initial observations, ask participants to work together to create a testable hypothesis about how entanglement might impact the flight of their bird. Write this down on page 2 of the worksheet.
- Make sure it is a testable hypothesis before they move on to step 4.

Step 5: Test hypothesis and fly the entangled bird.

- Have participants fly their bird a second time, now with plastic wrapped around it to mimic entanglement, then record their observations on page 2 of the worksheet.
- Remember, if participants are in groups the measurer will measure distance while the recorder writes all their observations on the worksheet.

Step 6: Check hypothesis and form conclusions.

- Ask the participants to share if their hypotheses were correct and to answer the questions in the conclusions section on page 2 of their worksheet.
- Was their hypothesis correct?
- Did the plastic impact how the bird flew?
- Remind participants to think about changes in distance and changes in the pattern the bird flew.

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FINAL REFLECTION

Now that you have completed this activity, it's time to reflect back on what participants have learned.

- Have participants return to the last page of their worksheet to answer the questions below.
 - What are some the types of objects birds or other wildlife become entangled in and where might these objects come from?
 - What other examples of wildlife can get entangled in plastic?
 - How could birds or other wildlife be impacted by entanglement? (Highlight difficulties feeding, migrating, avoiding predators, etc.).
 - What are some things you can do to prevent these types of items from entangling wildlife? (e.g., cut six-pack rings before disposing of them, dispose of fishing line properly, etc.)

Coming up next: We'll explore how ingested plastic moves up a food chain in Activity 4: Plastics for Dinner.