

GRADE 2

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Teachers' Corner

Science

Science with Sophie – Adaptations

Curriculum Connection:

Science:

This lesson integrates concepts of biology by exploring the concept of adaptations in animals and plants. Students learn that adaptations are features that help living things survive in their environments. They will understand how genes play a role in these adaptations. Through a hands-on experiment, students will understand the practical aspects of adaptations by simulating how different beaks function for birds in their natural habitats.

Learning Goals:

Science:

- Students will comprehend the concept of adaptations in living organisms.
- They will learn about the role of genes in determining these adaptations.
- Students will engage in an experiment that simulates how different adaptations (beaks) are suited for various tasks (picking up different objects).

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Materials:



Access this episode free on:

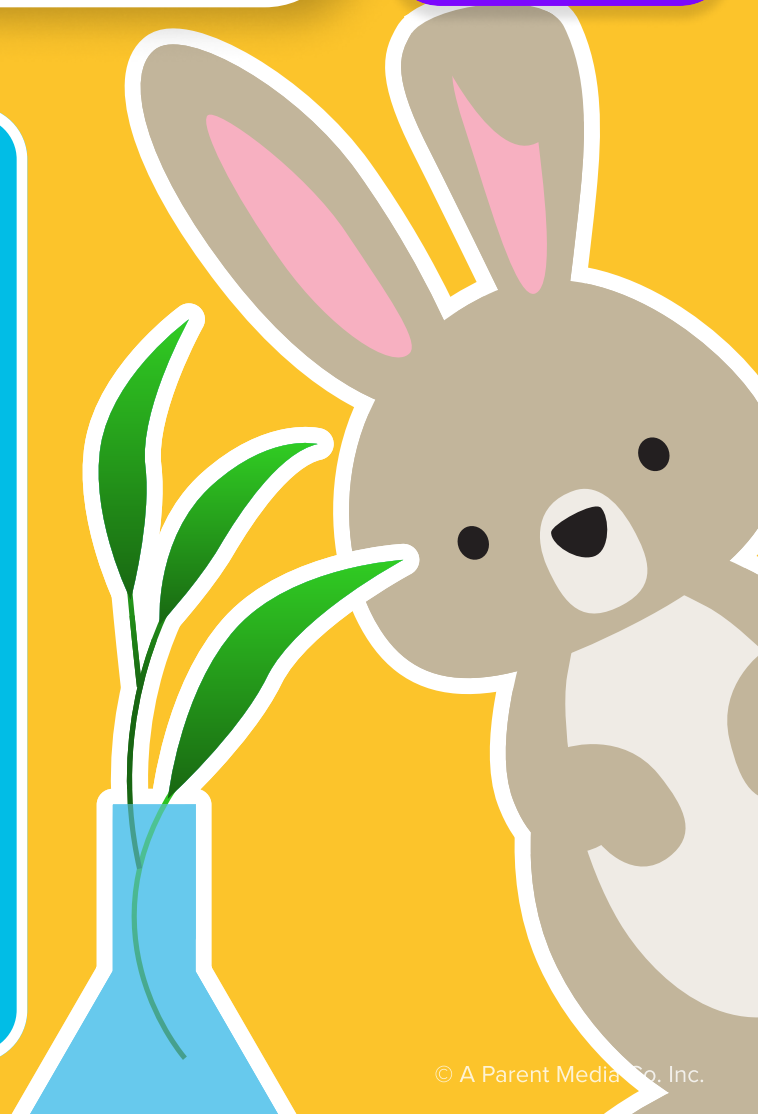
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Lesson Supplies:

- ☒ **Science with Sophie: Adaptations S2E03**
- ☐ **Tongs and tweezers**
(to represent different types of bird beaks)
- ☐ **Various objects**
(ping pong balls, marbles, rubber bands, cotton balls)
- ☐ **Bin for holding objects**
- ☐ **Experiment recording sheets** (provided)



Lesson:



Introduction:

Circle Time Discussion: Gather the students and invite them to think about the vast array of living things that share our world. Pose thought-provoking questions to pique their curiosity, such as, "Have you ever wondered why certain animals are found only in specific places, or why some plants grow well in our gardens while others do not?"

Use this as a segue to introduce the day's key topic: adaptations. Clarify that adaptations are unique features or behaviours that help living things thrive in their specific environments. To make this concept tangible for second graders, offer relatable examples such as how fish have gills that allow them to breathe underwater.

Viewing the Episode:

Interactive Viewing:

- Show Kidoodle.TV's "Science with Sophie: Adaptations" episode.
- Pause at 1:24 and have a discussion with students about what plants and animals they have found in their neighbourhoods.

Experiment:

Hands-On Experiment: In this experiment, students explore the concept of adaptations, specifically how different beak shapes affect a bird's ability to feed, by simulating this process using tongs and tweezers as beaks and ping pong balls and marbles as food items.

To begin, prepare a bin mixed with both types of "food." Students are divided into groups, each taking turns in roles: one as the timer, another as the recorder, and one as the participant.

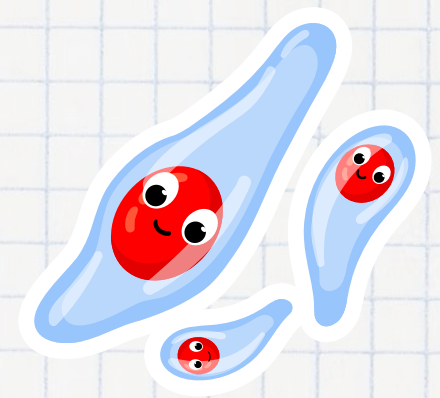
- In the first round, participants use tongs to pick up as many ping pong balls as possible in 30 seconds, with the recorder noting the quantity retrieved.
- The second round mirrors the first, but tweezers are used instead of tongs.
- Rounds three and four repeat this process, but with marbles as the target items.
- After completing all rounds, students compare the effectiveness of each "beak" type with the different food items, discussing which tool was more efficient for large versus small items and relating these observations back to how real birds use their beaks to survive.
- The findings are recorded on the provided experiment sheet, detailing the number of items collected with each tool and observations.

Discussion:

Reflection and Understanding: Discuss the results of the experiment. Lead a conversation about which tools were more effective for different objects and relate this back to how animals' adaptations help them survive.

Conclusion:

Summarize the key lesson points, reinforcing the importance of adaptations in survival. Encourage students to continue observing the natural world around them for examples of adaptations.



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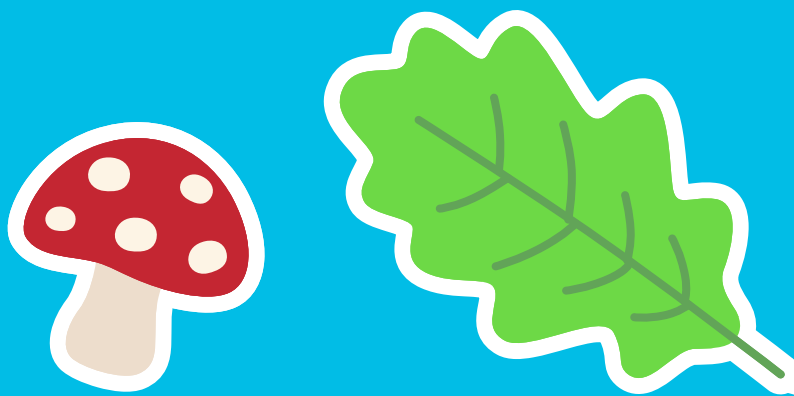
Lesson:

Extension

Design a Beak: Allow students to choose their own "beaks" using items such as spoons or chopsticks. They can then test how well their creations work with various objects such as rubber bands and cotton balls fostering creativity and deeper understanding of adaptations.

Assessment

Assess students based on their participation in the discussion, the accuracy and completeness of their experiment sheets, and their engagement in the hands-on activity. Look for understanding of adaptation concepts and the ability to apply them to real-world observations.



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