ACES WILDLIFE RESCUE
AMBERGRIS CAYE, BELIZE

LESSON plan

Grade: Standard 3

Subject: Science

Cycle 4 Week 2 of 3 Lesson #9
Duration: 60 Minutes Page 1

lesson Standards: SC 6.07 Determine, describe, and investigate how selected plants and animals grow and discuss the factors that affect the plant and animal growth rate.

Learning objective/s:

- Investigate and describe how selected local plants and animals grow.

Materials needed:

- Plant Life Cycle and the Red Mangrove Video
- Bean Seedling Journal Handout from lesson 7
- Magnifying glass or hand lens
- Colored Pencils

Key Vocabulary:

Propagule (PRAH-puh-gyool)
Cotyledon *(kädəˈlēdn)*
Hypocotyl *(hīpəˈkät)*
Plumule *(plōomyōol)*

Hook/Intro: (10 min)

"Imagine if a baby tree seed could grow before it even left its mother! Sounds like something out of a fairy tale, right? But guess what, there's a real tree that does just that, and it grows right here in Belize! It's called the red mangrove, and its life cycle is unlike any other.

Lead Into:
"Today, we're going to take a journey through the amazing life of this amazing tree that helps protect beaches, gives animals a home, and even grows while hanging from its parent!"

Direct Instruction:

- "We have learned a lot about the mangrove trees on Ambergris Caye. What animals depend on the mangrove trees? (fish, crabs, crocodiles, birds, raccoons)
- What do mangroves do for the island? (act as natural buffers against storms, protect coastlines from erosion, provide oxygen, and provide vital habitat for a wide array of species.)
- Let's look at how these magnificent trees go from seeds to trees.
- Show Plant Life Cycles and the Mangrove Tree (3:05 minutes)

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Direct Instruction (Continued)

- Show "Mangroves - Guardians of the Coast Next Generation Science" (2:50 minutes) on YouTube
- Show the "Life Cycle of the Red Mangrove" and review the steps of the lifecycle
- Explain, "Viviparity, also called viviparous, is when a baby plant or animal starts growing before the seed leaves its parent plant. For example, the red mangrove tree has seeds that germinate and start growing into a seedling while it is still attached to the tree! The baby plant, called a propagule, hangs on the tree until it's ready to drop into the water and float away to grow somewhere new. It's like the plant is getting a head start before it even leaves home!"

- "Now let's go back to our pinto beans, are they viviparous?" (No, the seed germinates and develops once it drops from the parent plant.)
- Carefully carry the hydroponic seed chambers to each group of students. Remind students open them carefully and to **not** remove the seedlings form the chamber.

Independent Practice:

Students will draw and color the seedling, then add arrows to attach the vocabulary word to the corresponding part of the plant.

Closure:

"So now you know, the red mangrove doesn't just drop a seed into the ground and hope for the best. It grows a baby tree on the branch, and then sends it off on an adventure to find its own home. That's one smart plant!
Red mangroves are amazing, not just for how they grow, but for how they protect our shores and give homes to fish, birds, and even crocodiles! The more we understand them, the better we can take care of them.
Now I want you to think: What would the beach look like without the red mangrove? What can we do to help protect these important trees?"