

Rays of Sunshine: Electroreception Activity

Hunt like a Stingray!

Objective

While hunting for food, stingrays don't use their eyes like other predators do. Similar to its shark relatives, the stingray is equipped with jelly-filled pores that are electrical sensors called the "Ampullae of Lorenzini" that are located near the stingray's mouth. These organs sense the natural electrical charges of potential prey. Being bottom feeders, stingrays have two hard plates as their "teeth" to enable them to crush mollusks such as clams, oysters, and mussels. Try this activity to see if you can hunt like a stingray!



Materials

- Paper clips
- Magnet
- Cardstock, paper, or thin piece of cardboard
- Glue or tape
- Optional:
 - Stingray puppet craft
 - Shells
 - Sand
 - Markers, crayons, coloring pencils

Steps

1. Prepare the cardstock, paper, or a thin piece of cardboard (Optional: You can decorate it by drawing pictures or adding pieces like sand and shells to create the bottom of the ocean!) and either glue or tape down random paper clips spread throughout the bottom-side of the cardstock or cardboard.

Steps cont.

2. The paper clips represent the food the stingray likes to hunt embedded down in the ocean floor. Once your cardstock or cardboard is finished, flip it over to hide the paper clips and keep the paper clip side upside down while you prepare to hunt like a stingray.
3. Optional: You can use the stingray puppet craft to be fully immersed in this experience. Next, you will have someone that did not see where the paper clips were placed and have them hold a magnet in their hand.
4. Keeping their hand level and a couple inches away from the cardstock, have them search along the ocean floor and see if they can find a piece of food! The paper clip should attach to the magnet they are holding!

Discussion

- If you have multiple people that can try this have them participate and then compare the results and discuss the following questions:
 - Who found food the fastest?
 - Are there any challenges with finding food using a different sense than your sight?
 - How would magnetic receptors help a stingray to find its food?
 - Next time you are preparing and eating a meal, note what you see, hear, smell, and feel. Which of your senses do you use most?