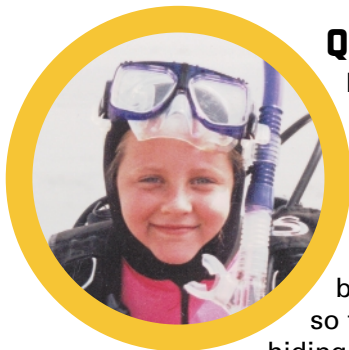


Investigations To Explore

Kelp Forest

Scuba divers Megan and Ian explored an underwater kelp forest, to find out about the animals that lived there.



Question

Do larger animals live at the top of the kelp forest, or at the bottom?

Investigation

Megan and Ian brought a damaged holdfast (kelp roots) from the bottom of the forest to the surface so they could see what animals were hiding in it. They counted the number of creatures, and identified them using a picture book. They returned these creatures to the sea, and gathered part of a kelp frond (leaf) from the top of the kelp forest, and examined it also.

Results

- At the bottom of the kelp, they found many small creatures.
- At the top of the kelp, they found fewer animals, all of them small.

Conclusion

Their original hypothesis was that larger animals lived at the bottom and smaller ones lived at the top. They found small creatures in both locations, and more at the bottom, perhaps because there are better hiding places.

Scientist: Liz Stryjewski

Liz is a scientist at the Kennedy Space Center. She is exploring the possibility of growing plants in space. If she is able to cultivate agricultural crops in this gravity-reduced atmosphere, future space travelers will have a reliable source of food while exploring!



Leaves

Maddie, Mia, Mikki and Ally spend a lot of time outdoors and especially enjoy autumn's vibrant colors.

Question

Why do some trees turn colors sooner than others?

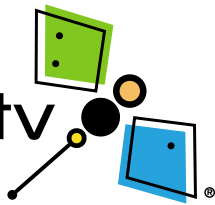
Investigation

The girls read that sunlight is one factor affecting a tree's color change. They found maples and oaks in both sunny and shaded locations, and watched them to see when they changed colors.

Conclusion

They found that many factors affect when a tree changes color. Their sunny oak changed sooner than the shaded oak, but the two maples turned at about the same time.

Find out more: pbskids.org/dragonflytv.



Challenge Cards

Classroom Inquiry

1) Getting Started

- Have you ever explored a field or forest to see what kinds of creatures live there? What did you find?
- In what ways do those creatures depend on the plants where they live? For food, or for shelter? Compare the kinds of creatures that live in a grassy field to those that live in the woods.

2) Going Deeper

- What's living in a pond or stream near your house? Take an adult with you, and use a small fish net to look for small fish, tadpoles, and even freshwater shrimp! See what lurks in that stand of cattails!
- Look for animal nests in different trees in your neighborhood. Why do some animals choose pine trees, while others choose oak trees for their nests? What kind of protection do different trees offer?

3) Investigate with DragonflyTV

- Watch the video and see how Megan and Ian investigated kelp forests – OR – give your students the results from the video (see opposite page) and have them draw their own conclusions.
- What was Megan and Ian's starting hypothesis about the kinds of animals living in the kelp forest?
- Did they find evidence to support their hypothesis? What do you do if your data do not support your hypothesis? Is that good science?

4) Investigate On Your Own

- Using Kelp Forest or Leaves as a model, ask your students to design their own plant investigation. Here are some challenge cards to hand to student teams to get things rolling.

1) Time Lapse Study

Create a picture of spring! As warm weather approaches, choose four branches, and draw them. Draw these same branches on 6 different days, noting the time and date of each drawing. Do all the buds on the same tree leaf out at the same time? Does it matter if the tree is on the north or south side of a building? How does weather affect budding/leafing? Is there a relationship between the length of the day and budding/leafing? How about rainfall?

2) Plants Rule

Find some friends and see who can last four hours without touching any plants or anything made from plants. Keep track of all of the unexpected places you find plant-based products, such as paper products, foods, clothing, etc.

3) Plant Partner Mystery

Ask a parent or a teacher to locate a partner in a mystery location. Exchange information via e-mail, phone, or traditional mail with your partner, but only about the plants in your areas. How high are the daffodils? Has your partner started mowing the lawn or planting vegetables in the garden? Exchange budding, flowering, or leafing out information on a common plant in both areas such as sugar maple, lilac, forsythia, or redbud. Take photos or make drawings of the common plant on the same day. Can you guess each other's location based only on what you find out about the plants?