Lesson 5: Hermit Crabs

Primary Lesson Standard: 1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.

Essential Questions:

1) What are some examples of living, or *organisms,* things that can be found in the Salish Sea?
2) How do their different body parts help them survive, grow, and thrive in their environment?
3) Inquiry:
    - What do you notice?
    - What do you wonder?
4) How do hermit crabs interact with their environment?

Career Connections:

1) How do people work with hermit crabs?
2) What different jobs do people have related to this field?

Learning Objectives:

Students will be able to:

1) Identify hermit crabs.
2) Understand how the body parts of hermit crabs help them survive, grow, and thrive in their environment.
3) Recognize how people work with hermit crabs.

Key Concept: Hermit crabs are fascinating crustaceans found primarily in marine environments, ranging from shallow waters to deep ocean floors. What sets them apart is their unique housing strategy – they utilize discarded shells from other marine organisms, such as snails, as protective shelters for their soft, vulnerable abdomens. As hermit crabs grow, they must periodically seek out larger shells to accommodate their increasing size, engaging in a fascinating behavior known as "shell switching." These creatures are more closely related to lobsters and crabs than true crabs. While their exoskeletons provide some protection, the use of shells allows hermit crabs to inhabit diverse habitats, from sandy beaches to rocky tide pools. Hermit crabs are opportunistic omnivores and scavengers, feeding on a variety of items such as algae, detritus, small invertebrates, and even carrion. Their dietary habits contribute to the ecological balance of their habitats by participating in the breakdown of organic matter. Observing hermit crabs in the classroom can provide

valuable insights into animal behavior, adaptation, and the interdependence of organisms within ecosystems. Exploring their unique housing behaviors, feeding habits, and life cycles can engage students in discussions about marine biology, ecology, and the broader interconnectedness of life in the oceans.

Vocabulary: Scavenger, ocean acidification, wildlife biologist, restoration expert, environmental policy maker

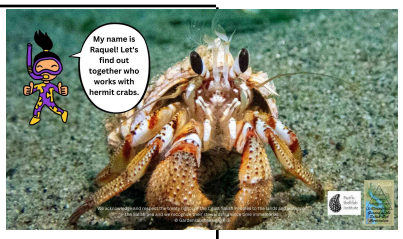
Assessment: Worksheet in GSSC Student Notebook.

Lesson Instructions: *All parts of this lesson can be found in this document. Please read the page and click on the links as you go.*
Teacher Prep/Considerations: Set up computer and projector. Review the Power Point to be sure background information is adequately understood to explain to students. Have the slideshow chart from Lesson 5 ready to review and add to if necessary.

Watch: Hermit Crabs of the Salish Sea

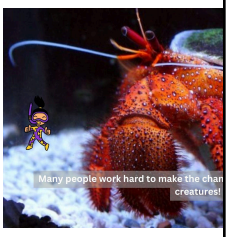
Slideshow: 2023 Who works with hermit crabs.pdf.pptx

Slide 1: Hermit crabs are small creatures that live in the ocean. They have soft bodies and use empty shells from other animals as their homes, carrying them on their backs. As they grow, hermit crabs need to find new, larger shells to move into. These crabs are scavengers, which means they eat leftover food and small particles in the water. They are interesting animals known for their habit of changing homes and adapting to different environments.



Slide 2: There's something happening in the ocean called "ocean acidification." It's like the ocean is getting a bit more sour or acidic. This change is not so good for hermit crabs. You know, hermit crabs really like to find shells to live in. But because of the ocean becoming a bit sour, it's harder for them to find good shells. It's like if your home suddenly became a little tricky to find or wasn't as comfy as before. So, scientists are trying to understand and help the hermit crabs because they're having a bit of trouble finding the perfect shells due to these changes in the ocean. It's like a big puzzle, and they're working to figure out how to keep the ocean a great place for all the underwater friends, including the hermit crabs.

Slide 3: People are like the ocean's superheroes! They are working really hard to pick up the trash from the beaches, stop using things that can hurt the ocean, and find new ways to help sea animals have a better home.



Scientists and ocean lovers are studying the ocean to understand how it works and how we can keep it clean and healthy. They're like friends who want to make sure the ocean stays a fantastic place for all the fish, turtles, dolphins, and shellfish to swim and play. So, by being careful and making good choices, we can all be ocean heroes too!

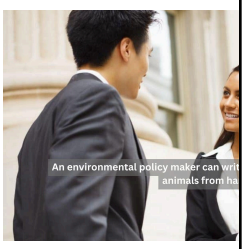
Slide 4: Imagine you really love watching and understanding how animals, like hermit crabs, live and do their daily activities. Well, that's what wildlife biologists do – they are like animal detectives!

Wildlife biologists who study hermit crabs wear special hats (not really, but it's fun to imagine) and use tools like magnifying glasses and tiny cameras to watch these crabs in their homes, which are usually shells. They want to know how hermit crabs find their homes, what they eat, and how they talk to each other (not with words, but in their own crabby way).
Sometimes, these biologists visit the beach or the rocky shores where hermit crabs live. They take notes and pictures, just like how you might draw or write in your notebook about things you see.
By doing all these things, wildlife biologists learn how to keep hermit crabs safe and happy. It's like having friends who want to understand and protect these little ocean buddies!

Slide 5: Sometimes, the ocean and the shore gets a bit messy, and that's where restoration experts come in – they're like the superhero cleaners!

These experts work to make sure the ocean stays a fantastic home for hermit crabs. They do things like picking up trash from the beach so that the crabs' homes don't get all cluttered with stuff that doesn't belong there. They also help make sure the water in the ocean is clean and good for the hermit crabs to swim and play in.
Sometimes, these superhero cleaners even create special places for hermit crabs to find new shells or set up their homes. It's like giving them a cozy spot to live and play.

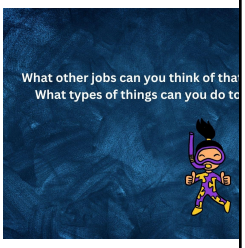
Slide 6: Think of a friend who loves to make sure everyone plays nicely and takes care of the playground. Well, an environmental policy maker is a bit like that friend but for the whole world, especially for our underwater buddies like hermit crabs.



These special friends, the policy makers, create rules and plans to keep the ocean clean and safe for the hermit crabs and their friends. They might say, "Let's not use things that can make the water too yucky for the crabs," or "We need to be careful with where we put our trash so it

doesn't bother the crabs."
So, these policy makers help everyone understand how important it is to take care of the ocean so that hermit crabs have a wonderful and clean home. They're like the protectors of the sea, making sure it stays a happy place for all the little sea creatures to live and have fun.

Slide 7: Ask students to share who they can help hermit crabs, and improve local beaches.



Worksheet:

1. Circle the correct word and write it on the line then color in the hermit crab.

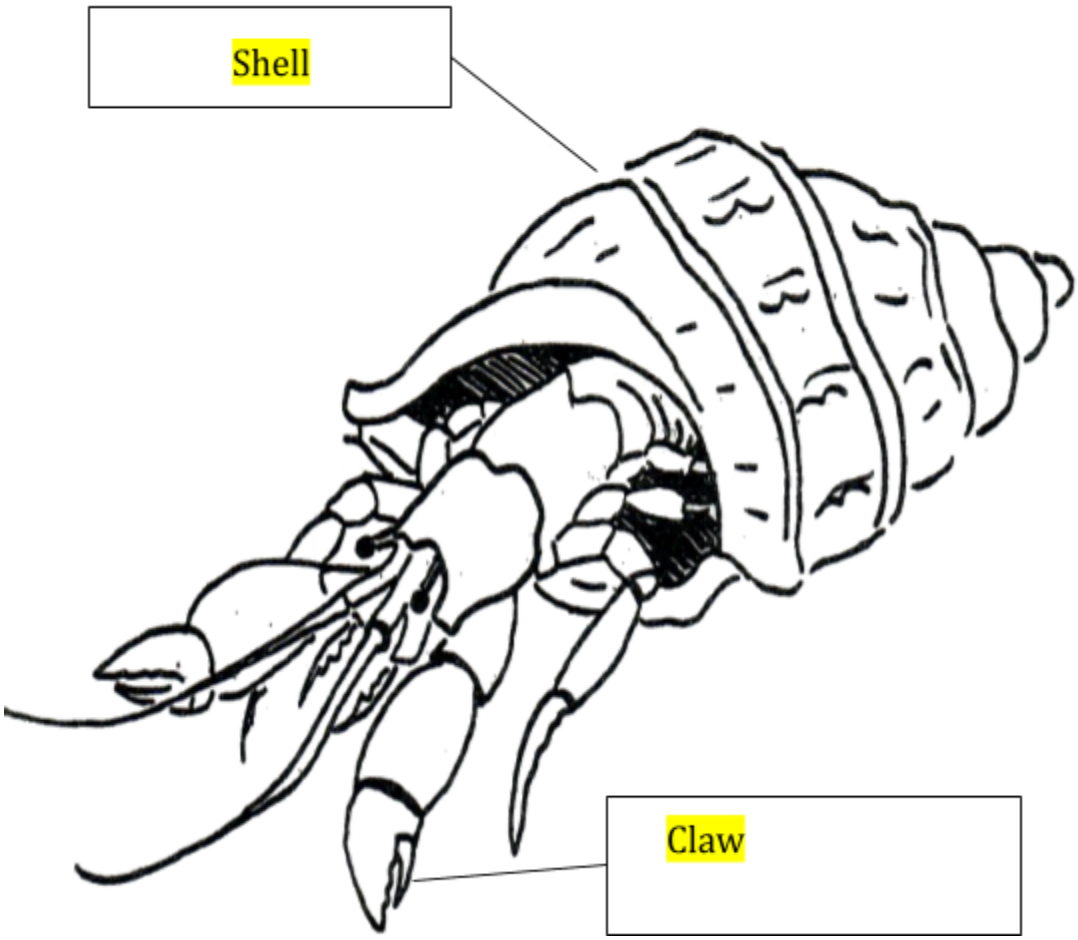
A. Hermit crabs are _____.

Plants Animals

B. Hermit crabs use _____ as their homes.

Shells Rocks

2. Use these words to label your picture: **shell, claw.** Color in your hermit crab!



Salish Sea Challenge- Ask students to update their Salish Sea Challenge tracker.

Optional Extensions:

- 1st Grade STEAM Activities
- Explore the Salish Sea: A Nature Guide for Kids by Joe Gaydos (provided by GSSC upon request)
- Garden of the Land and Sea Worksheets additional materials
- Want to look at how kelp interacts with other sea creatures in the food chain? Watch this video.
- Want more worksheets and coloring pages? You can print and work through this seashore packet.
- Sea Creature Yoga Video - follow along with the yoga poses inspired by some of our favorite sea creatures, including kelp!