INTERTIDAL SCAVENGER HUNT

Created by Seaquaria Ocean Education

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Grade level: 2-5

Subject Areas: Science, Physical

Theme: Our beaches are full of discoveries.

Goal: Learn about the different intertidal zones and how tides affect life on the beach

Activity: Scavenger hunt & beach bingo

Initial Questions:

What do you notice about the beach? What can you smell, hear, or even taste?

The Lesson

Materials Required

- Scavenger Hunt Worksheet
- Bingo sheet
- Weather appropriate clothing
- A beach!

Useful Materials

- Intertidal animal guide – we recommend “The Beachcomber’s Guide to the Pacific Northwest” by J. Duane Sept
- Seaquaria animal guide

Please note the tides before heading out! We like to use:

https://www.tide-forecast.com/locations/Victoria-British-Columbia/tides/latest

To see lower intertidal: tides should be 1m or less
To see middle intertidal: tides should be 2m or less

Recommended Beaches	• Clover Point • McCaulay Point Park • Cattle Point • Esquimalt Lagoon • Whiffin Spit

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Introduction	Recommendation: go over the different intertidal zones before heading to the beach Go over safety and beach entities: • no running, especially over the rocks • lift any rocks straight up and gently roll them back into place to prevent any animal injuries • only pick up rocks that are the size of your fist or smaller • put anything you remove back in its place – that shell or rock might be home to a critter! Take a moment to let the students observe and reflect what they see, smell, hear, and even taste! Do you notice the tide lines?
Body	Starting from the spray zone, follow the provided scavenger hunt sheet and explore the beach! See if you can find all the animals on the bingo sheet too
Closing	Reflect on the differences in the zones. What do you think animals or plants/algae need to adapt to live in that particular zone?

Background Information

The **intertidal zone** is the are between the high tide and low tide mark. When the tide goes out, the intertidal zone is revealed, along with the organisms that live in it!

Intertidal organisms (animal, plant, algae) deal with changing, and often difficult environmental conditions including (but not limited to):

- desiccation – drying out
- sunlight
- wave impact – physical force
- increase predation – often from terrestrial animals such as racoons

Zonation is the different ways species (plants and animals) are distributed in a habitat. This is usually determined by temperature, altitude, latitude, and other conditions. The zones are not definitive and describes a gradient of distribution.

On a typical beach you have approximately 4-5 zones.

Splash Zone: this is the area farthest from the water and barely have any forms of seaweed because water never fully covers this area. You often will find salt resistant land plants such as gumweed (*Grindellia integrifolia*).

High Intertidal Zone: this area is first to be uncovered during a low tide and last to be submerged during a high tide. Living organisms are exposed to air for the longest time. You can often find algae such as rockweed and sea lettuce and animals like barnacles, snails, and shore crabs. Species that are tolerant to air (and drying out) can be found here.

Middle Intertidal Zone: for about half a day, the tide will submerge this area so there are more species of organisms here. There is a mix of red, brown, and green algae such as rockweed, coralline algae, iodine seaweed. Animals such as chitons and sea stars can usually be found here.

Lower Intertidal Zone: for most of the day, this zone will be covered by the tide. You will find species that are less tolerant to drying out here. Seaweeds such as sugar kelp, wrack kelp, irish moss can be found here. Animals such as sea urchins, nudibranchs, sponges, and sea cucumbers can usually be found here.

Under the Sea: often inaccessible unless you are diving! The sea has huge amounts of diversity, think of an animal or plant that won't do so well out of the water!

Scavenger Hunt

Can you Find….

- 3 different kinds of empty shells
- 3 different kinds of seaweed
- Food for an animal
- Something that hides
- An animal living on another animal
- Baby animals hiding in seaweed
- Something beautiful

Spray Zone

Why is this area called a spray zone?

What do you notice about this zone? What colours do you see?

What animals can you find in this zone?

Smell the air, what does it smell like?

High Intertidal

Can you find an animal with a shell? What is it?

Find a piece of rockeweed – what colour is it? Can you describe the texture?

Can you hear a sound made by people? What about a sound made by an animal?

Middle Intertidal

How many of these sounds can you hear today?

- Waves crashing on the shore
- Seagulls squabbling over food
- Crabs scurring over and under rocks

- Rockweed popping under someone’s foot
- Crows squacking

What else do you hear?

Try to find a sea anemone with its tentacles out. Gently brush your fingers against the tentcales, what does it feel like? What do you think it eats?

Find a shore crab and carefully let it walk across you palm, what does it feel like? Can you find its home?

Low Intertidal

Can you find something that is stinky?

Can you find something that is squishy?

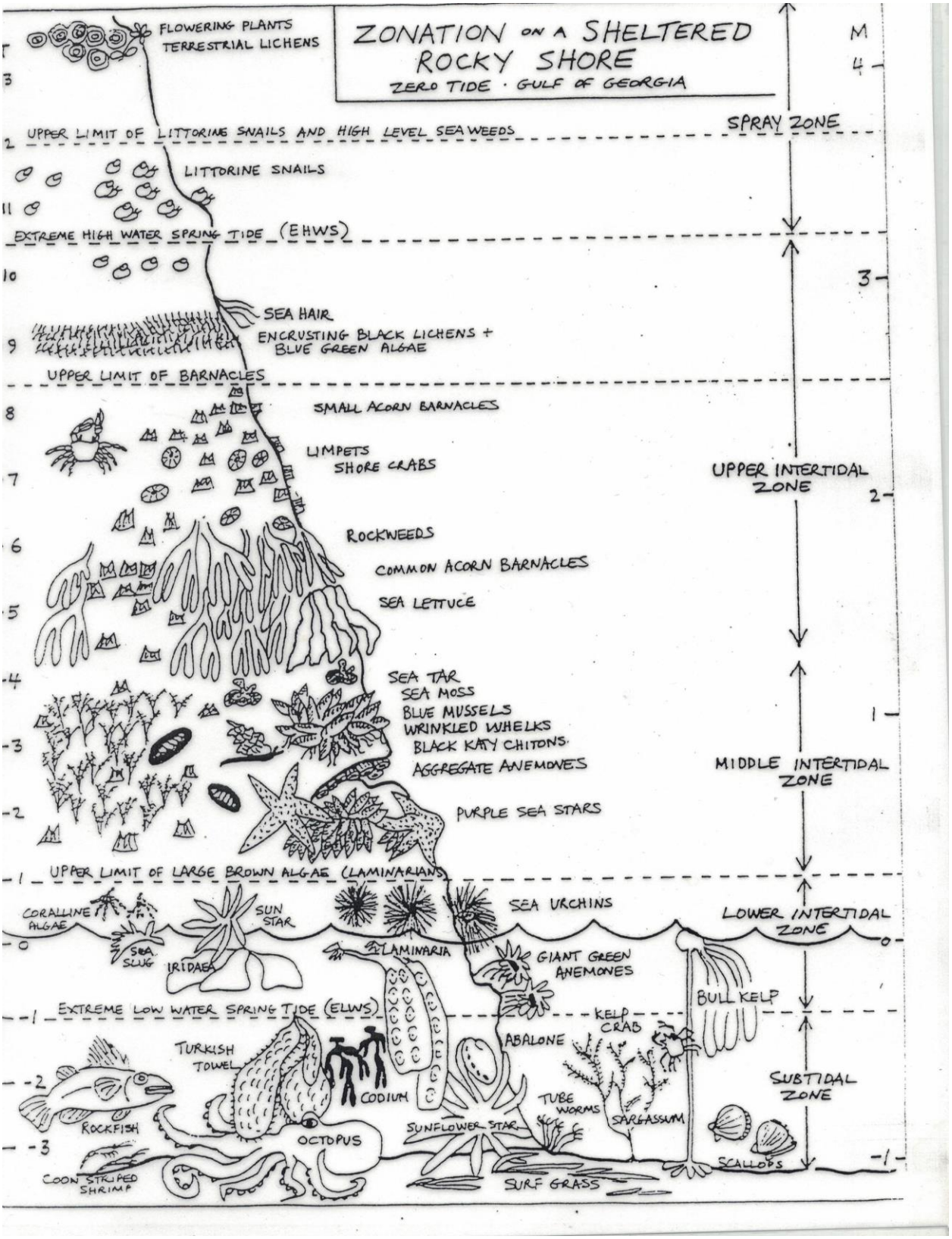
Smell the air again. Does it smell the same as it did in the spray zone?

What colours do you see in the low intertidal? Are there more colours than you saw in the spray zone?

Try to find an animal or plant that is yellow.

What’s you faviourite thing you’ve seen so far today?

Additional Resources



Rough guide to zonation:

https://www.bestbeachbookever.com/1---intertidal-interactions.html

CRD specific intertidal information:

https://www.crd.bc.ca/education/our-environment/ecosystems/coastal-marine/intertidal-zone

More information on life in the intertidal zone:

https://untamedscience.com/biology/biomes/intertidal-zone-aquatic-biome/