LESSON 2

LET'S FIND OUT HOW TO SPRING INTO MAINE

Hands - On Distance Learning
Provided By Downeast Institute

May 5, 2020

LET'S FIND OUT HOW TO SPRING INTO MAINE
LESSON 2

HANDS-ON DISTANCE LEARNING provided by Downeast Institute

May 1, 2020

Exploration at the rocky shore is just plain fun and educational, too. This lesson trains us to observe and learn about our marine habitat. We live in a beautiful place and now is the time to learn about it while enjoying the outdoors. The lesson can be done as a class, as a small group or individually as necessary.

Materials:

- Pencil
- Field work list "Scavenger Hunt at the Rocky Shore" (on a clipboard inside waterproof bag) OR small notebook with copied list (weather proof paper if available)
- Boots, hat, gloves and appropriate outerwear
- Sunscreen, water, snack
- First Aid Kit
- A partner in case of emergency, but practicing safe physical distancing
- Small bucket or waterproof backpack for carrying materials
- Cell phone or camera (optional)
- Magnifying lens (optional)

Lesson Instructions

1. **Teacher preparation** – Prior to having the students do the Scavenger Hunt, investigate to find out what the plant or animal looks like and note other identifying features. If the group is together, using actual species if possible, show each item, plant, or animal on the list or show a picture or video to the students or explain other identifying features that might help the search. If this is not possible, have students use their computers to research the plants, animals, or items beforehand. The time needed to do the prep work will depend on the prior knowledge of the students and their familiarity with the marine habitat.
2. Students will need to know the parts of a clam shell - chondrophore and umbo; the parts of a gastropod (snail) - radula and proboscis.
3. Select an outside area that has easy shore access. For safety, if the group cannot be together, make sure that someone is able to go or be close by in an emergency - a family member or safe distance partner. Students should not go alone (safe social distancing please).
4. During the Scavenger Hunt, have the students show the instructor the live creature and return it to the shore OR in the absence of the instructor snap a picture of the live creature or do a sketch.

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5. On a notebook page or right on the Scavenger Hunt list, have students record their name, the date, time of day, weather conditions, location, and tidal height (low tide, mid tide, or high tide).
6. Have students keep track of their findings in the notebook or on the Scavenger Hunt list.
7. Have students keep observing tidal changes so they do not get caught by an incoming tide.

Tip 1 - Weatherproof notebooks or plastic protectors are helpful for saving scavenger lists from the elements.
Tip 2 - Common names are provided with the current scientific name in italics on the list. Scientific names can change as more is discovered about each species.
Tip 3 - Our practice is to put a coin or similar object beside the object before taking the picture, in order to give a realistic size comparison.
Tip 4 - The World Register of Marine Species (WoRMS) is the authority that Downeast Institute uses for scientific names.

DEI Connections/Real Life Applications
Scientists study many species in their fieldwork by looking at what they can find in a specific area of land, rock, water, sky, vegetation or other locations. Studies often document species found in the same area over a period of time. Scientific names are critical as observations of species are made from locations all over the world. Those names allow scientists to know the exact species that is being discussed. At DEI, we often update our scientific names as they may change for various reasons.

Adaptations, Extensions, and Helpful Hints
Include photographs if possible; make at least one statement about what they have learned and document it on a separate page in their notebook or on the Scavenger list, "Today I learned . . ."; or write down anything that they noticed about the species that they do not want to forget.

Please let us know if the Scavenger Hunt list could be completed in the areas chosen by the students.

NEXT GENERATION SCIENCE STANDARDS
All Grades
Practice: Obtaining, Evaluating, and Communicating Information

Grade 2
Life Sciences Discipline
2-LS4-1 Biological Evolution: Unity and Diversity
- Make observations of plants and animals to compare the diversity of life in different habitats. https://www.nextgenscience.org/pe/2-ls4-1-biological-evolution-unity-and-diversity

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SCAVENGER HUNT ON THE ROCKY SHORE

This lesson is for older students. The next page contains the Scavenger Hunt list for younger students.

- Preparation: Look at the list below BEFORE the hunt. Investigate to find out what the plant or animal looks like or another identifying feature.
- A common name is provided and the current scientific name is written in italics. Scientific names can change as more is discovered about each species.
- On the day of the Scavenger Hunt, show the instructor the live creature and return it to the shore OR in the absence of the instructor snap a picture of the live creature.

Tip 1 - Our practice is to put a coin or similar object beside the object before taking the picture, to give a realistic size comparison.

Tip 2 - The World Register of Marine Species (WoRMS) is the authority that DEI uses for scientific names.

Instructions: Listed below are the common names and the scientific names of many marine species at the shore. See how many you can find:

1. Periwinkle – *Littorina littoria*
2. Periwinkle – *Littoria obtusata*
3. A live blue mussel or blue mussel shell – *Mytilus edulis*
4. A large whelk shell – There are many species of snail
5. A dog whelk shell – *Nucella lapillus*
6. A hermit crab – *Pagurus acadianus*
7. A piece of dried or live knotted wrack/seaweed – *Ascophyllum nodosum*
8. A piece of dried or live rockweed/seaweed – *Fucus vesiculosus*
9. Female green crab – *Carcinus maenas*
10. Male green crab – *Carcinus maenas*
11. A piece of very smooth sea glass
12. An acorn barnacle on a small rock – *Semibalanus balanoides*
13. A tortoise shell limpet on a small rock – *Acmaea testudinalis*
14. A worm casting in the sand
15. A sea urchin shell – *Strongylocentrotus droebrachiensis*
16. A clam shell showing the chondrophore – *Mya arenaria*
17. A clam shell showing the umbo
18. A piece of driftwood less than a foot long – cannot be snapped off from a bigger piece
19. A dark colored rock with a lighter colored ring all the way around it
20. An amphipod – *Gammarus oceanicus*
21. A mussel shell or clam shell with a tiny round hole in it (caused by moon snail or other snail that uses its radula to drill a hole, and proboscis to suck up the inner contents)
22. Moon snail shell – *Lunatia heros*

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SCAVENGER HUNT ON THE ROCKY SHORE

Lesson for younger students.

Instructions: Listed below are the common names and the scientific names of many marine species at the shore. See how many you can find:

- Clam or Clam shell – *Mya arenaria*
- Periwinkle or Periwinke Shell – *Littorina littoria*
- Blue mussel or Blue mussel Shell – *Mytilus edulis*
- Hermit crab – *Pagurus acadianus*
- Seaweed (knotted wrack) – *Ascophyllum nodosum*
- Rockweed/seaweed – *Fucus vesiculosus*
- Green crab – *Carcinus maenas*
- Barnacle – *Semibalanus balanoides*
- Sea urchin shell – *Strongylocentrotus droebrachiensis*
- Amphipod (sea flea)– *Gammarus oceanicus*
- Rock with a light colored ring all the way around it