

Grades K-2
Next Generation Science Standards
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Exploring Marine Science and Aquaculture Grades K-2

Crab Soccer

Developed by the University of Maine Cooperative Extension
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Activity Description:

Students play a game using crab-like movement. They will then compare crab to human movement noting anatomical differences

Learning Objectives:

Students will:

- Use gross motor skills in a version of soccer.
- Compare the physical structure of crabs to human structure through pictures, writing, and dictation.
- Describe the challenges associated with moving like a crab

Essential Questions:

1. How do human and crab legs compare?
2. How do the legs of humans and crabs cause them to walk in a different way?

Background Information::

Crabs are an important species on the rocky intertidal coast of Maine. Researchers are studying the invasive green crab species and its effect on the marine ecosystem. Crabs are marine animals that must move on land and in the water, and they have special qualities that allow them to do that. Plants and animals develop special qualities that allow them to live in their specific habitat.

Quick Crab Facts

- Crabs are **crustaceans**.
- Crabs live along coastlines in cracks and under plants in tide pools, or in burrows in the sand.
- A crab's shell protects it from attackers.
- A crab has two claws for holding and tearing food and for fighting. If a crab's claw breaks off, a new one grows back!
- When a crab grows too big for its shell, the shell splits and the crab climbs out of it. The crab then grows a new shell.
- A crab's shell can match the color of the rocks, plants, or sand where it lives.
- A crab moves quickly, moving sideways on its eight back legs.
- Our knees bend forward and that allows us to take steps forward whereas crabs' legs are on the side and their knees bend outwards, so they can only move sideways.



Vocabulary List:

Crustacean (crust-ae-shun): a type of animal (such as a crab or lobster) that has several pairs of legs and a body made up of sections that are covered in a hard outer shell.

Materials:

- 1 Kickball
- 4 Cones (or equivalent “goal” indicator”)
- Scrap Paper
- Colored Pencils/Markers
- Crab pictures
- 2 Large Hula Hoops
- Hula Hoop Venn diagram labels (Humans, Crabs, and Blank)
- Dry Erase markers

Procedure:

Engage

1. Access the student’s prior knowledge; how many of you have ever seen a crab? What does it look like? How does it move? Can you make your body move like a crab? (Pictures of different crabs included).
2. Explain that they will be playing a version of soccer, but they will only be allowed to move like a crab.
3. Demonstrate the “crab walk” by sitting on the ground with your legs extended out in front of you. Place your hands by your side with your fingers pointed toward your feet. Lift your body up into the air. Please note: modification may be needed if there is a participant who has trouble balancing or moving in this position, but a form of “crabwalk” is intentional for the purpose of this activity and discussion. A physically handicapped participant could act as referee and/or scorekeeper.

Explore

4. Introduce the game rules:
 - a. *In crab soccer, we will have two teams. Each team will have one goalie that will try to keep the ball from going in between the orange cones.*
 - b. *The two teams will be facing each other during the game.*
 - c. *There are two very important rules: 1) we need to be careful where we are kicking, and 2) we need to move like a crab the entire time.*
 - d. *Each time the beach ball goes between the two cones, the team that kicked it will get one point for scoring a goal.*
 - e. *When a goal has been scored, we will start a new round.*
 - f. *Behavioral expectations/rules are:*
 - o Please stay moving like a crab for the entire game.
 - o Please be careful where you are kicking, so that we can all stay safe, and have fun.
 - o Please pass the ball to your peers so that everybody gets a turn.
5. An adult facilitator should throw the ball into the middle of the play area to start each round.
6. After each round, or every 5 minutes, substitute the goalies so everyone gets a turn to kick the ball.

Explain

7. After about 15-25 minutes (depending on the students), have everybody sit in a circle in the play area for a group discussion.
8. Direct the youth to do a “Think/Pair/Share” to think about why crabs move the way they do. First, have them think quietly to themselves about the questions. Some example questions may be (you can assign different questions to different pairs):
 - a. *How did we have to change our bodies to move like a crab?*
 - b. *Why are crabs better at moving this way than we are?*
 - c. *Why do crabs need to be able to move the way that they do?*
 - d. *What can our bodies do better than crab walking? How do you know?*



- e. *What features do crabs have?*
 - f. *Why do they have these features?*
 - g. *What other animals have similar features? Why?*
 - h. *Where do crabs live?*
 - i. *Do you think that the place that an animal lives, and the features or characteristics the animal has, go together? Why or why not?*
 - j. *What would have made playing this game easier?*
9. Then, direct them to turn the person sitting next to them to discuss their ideas about the questions above.
 10. After the students discuss or draw out their ideas, encourage them to share a picture or explanation of the questions they talked about (drawings may be more appropriate for younger youth).
 11. Show YouTube video: <https://www.youtube.com/watch?v=rEX3ehXQs9o>

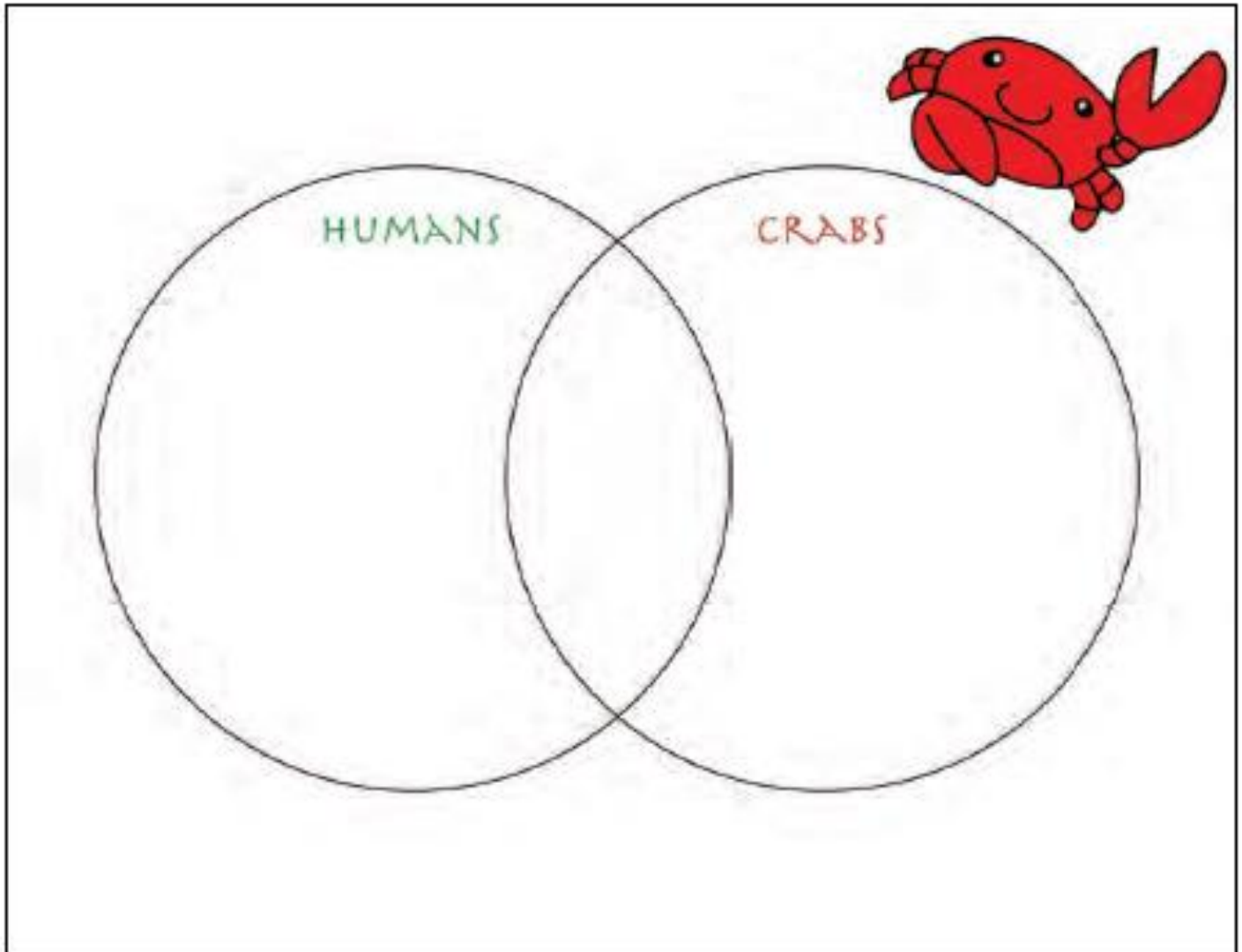
Evaluate

11. Set up a Hula Hoop Venn Diagram with 2 large hula-hoops.
12. Tell the students that one hula-hoop represents HUMAN movement, the other hoops represent CRAB movement, and the center represents the movement that humans and crabs have in common.
13. Prompt students to think about the ways humans and crabs move and write these on the labels as you hear them from the youth. Example questions are:
 - a. *Can humans and crabs move? (yes, they both move)*
 - b. *How many legs do they have? (humans - 2; crabs- 8 for moving)*
 - c. *Where are the legs? (humans- front; crabs- side)*
 - d. *How do they move? (humans- front, back, sideways; crabs - side only)*
14. Direct the students to decide where in the hula-hoops you should put the label.
15. Encourage students to come up with other similarities and differences to add to the hula-hoop Venn diagram (below).



Additional Resources:

- Online “C for Crab” Jigsaw Puzzle that allows youth to move crab pieces on his or her own.
http://www.first-school.ws/puzzlesonline/alphabet/c_crab.htm



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<http://www.publicdomainpictures.net/hledej.php?hleda=crab>



<https://pixabay.com/en/crab-animal-aquaticarchipelago-298346/>





https://en.wikipedia.org/wiki/Coenobita_perlatus



<https://www.flickr.com/photos/davidstanleytravel/25685360425>





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https://en.wikipedia.org/wiki/Cancer_productus



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Human

Crab

