

OIMB GK12 CURRICULUM

1st Grade

30-45 minutes

Crustaceans – Classification

Oregon Science Content Standards:

- 1.1 Structure and Function: Living and non-living things have characteristics and properties.
- 1.1L.1 Compare and contrast characteristics among individuals within one plant or animal group.
- 1.2 Interaction and Change: Living and non-living things interact.
- 1.2L.1 Describe the basic needs of living things.
- 1.3 Scientific Inquiry: Science explores the natural world using evidence from observations.
- 1.3S.1 Identify and use tools to make careful observations and answer questions about the natural world.
- 1.3S.2 Record observations with pictures, numbers, or written statements.

Ocean Literacy Essential Principles:

- 5. The ocean supports a great diversity of life and ecosystems
- 6. The ocean and humans are inextricably interconnected.

Goals:

- To remind students that scientists categorize or sort animals based on their similarities.
- To introduce students to the group Crustaceans and to learn about some rocky shore crustaceans.

Concepts:

- Scientists put animals into groups based on characteristics that they share.
- Crustaceans are invertebrates with a hard exoskeleton and jointed arms and legs, and often eyes, antennae, or pinchers.
- Crabs, hermit crabs, beach hoppers, shrimp, lobsters and barnacles are crustaceans.

Materials:

- crustacean PowerPoint
- crustacean worksheets
- drawing of a crab to label
- live animals or movies from arkive.org

Tip: A lot of crabs can be found on not very low tides under rocks at the rocky shore. Hermit crabs, shorecrabs, and porcelain crabs live high up at the rocky seashore.

Lesson Plan:

1. Introduce the students to classification. Ask the class why scientists classify things, or put things into groups. Ask for 6 volunteers and put them into two groups based on a characteristic they share (wearing shorts vs. wearing pants) and have the rest of the class

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guess why you grouped them the way you did. Then tell them that you could close your eyes, pick anyone out of the shorts group, and know that that person is wearing shorts. Repeat this exercise until it is clear that scientists group things based on characteristics they have in common. Emphasize that by putting things into groups, you learn something about those items (e.g. wearing shorts, has curly hair, is wearing sneakers, etc.).

2. Introduce crustaceans and show the PowerPoint. Use the following discussion points:
 - Ask students what they think the word Crustacean means. Ask them what Crust means. Tell them that crustaceans have a hard exoskeleton that protects their body (like armor).
 - Have the students look for the jointed arms and legs on all of the animals.
 - Talk about how some crabs decorate themselves for camouflage from predators, and some (pea crabs) live inside of clams.
 - Tell the class that the only way for these animals to get bigger is to molt, or pull off their hard exoskeleton. As a crustacean grows, its exoskeleton becomes too small and it grows a new (soft, flexible) one under the old one. The process of shedding the old exoskeleton is called molting. When the crustacean molts, it essentially walks out of a slit in its old skeleton! It fills its new, larger exoskeleton with water to expand it to its new size. The new skeleton hardens and provides space for the animal to grow. When the new exoskeleton is still soft, the animal is vulnerable to predators. Usually an animal that has recently molted will hide under some rocks until its new exoskeleton hardens.
 - Tell them that a lot of the crab shells they find on the beach are probably molts.
 - Ghost shrimp (the big pink one) live in the mudflats and makes tunnels in the mud.
 - Some isopods turn the color of whatever food they eat. For instance, if they eat only brown seaweed they will be brown, but if they start feeding on green seaweed they will turn green.
3. Look at a picture of a crab, and point out all of its characteristics (exoskeleton, jointed arms and legs, eyes, pinchers, antennae, etc.).
4. Ask how many students eat crab or shrimp?
5. If you have live animals, break the class into groups and while looking at the animals have them point out these different characteristics. Be sure to go over live animal etiquette first.
6. As a class, work together to fill out the worksheets (one possibility is for students to point out the body parts on a projected image, with the teacher then writing in the words).

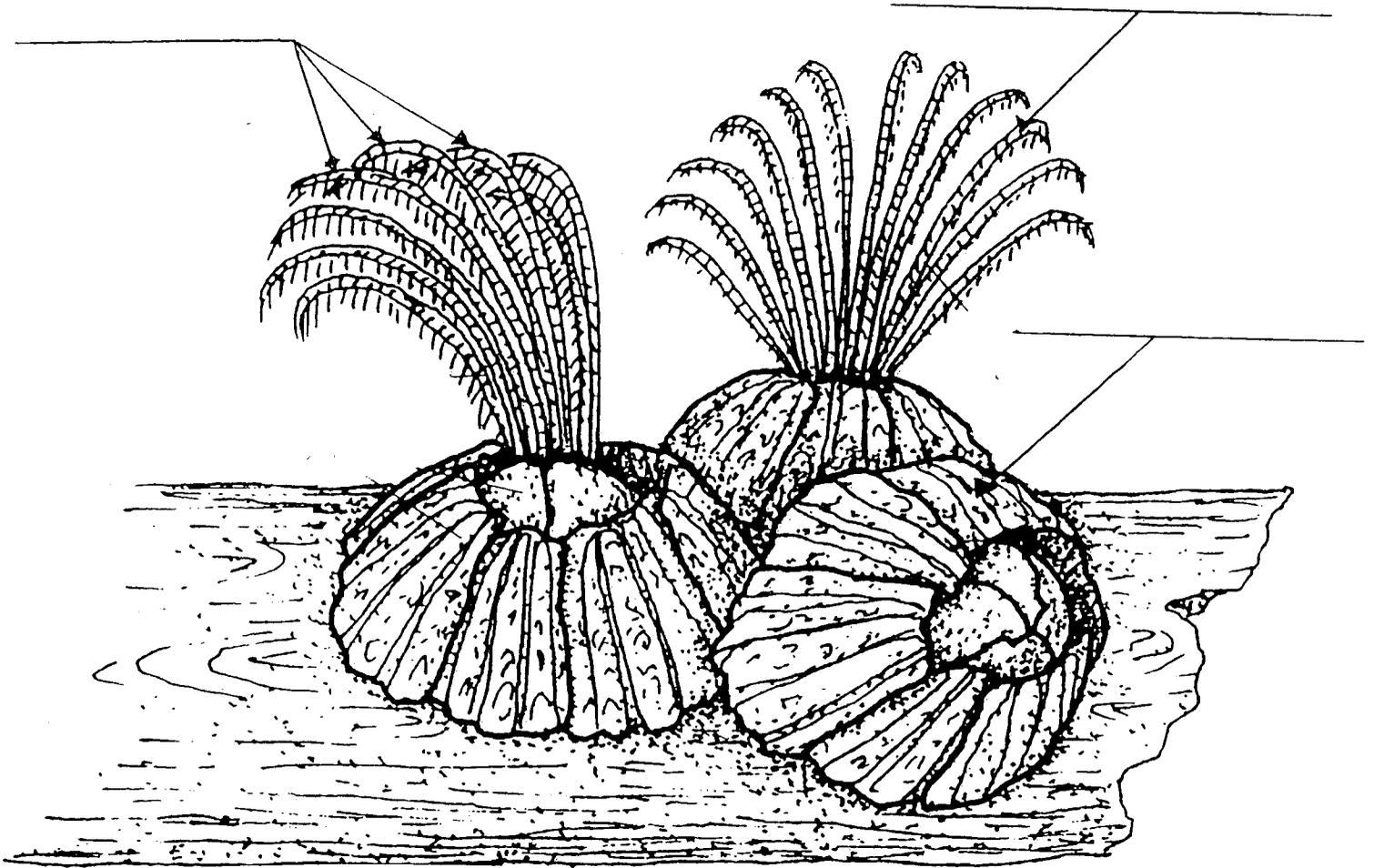
Assessment: Ask the students for the things that all crustaceans have in common.

GK12 Fellows: Maya Wolf, Zair Burris

Junior Scientist _____

Crustacean Parts Worksheet:

Barnacle



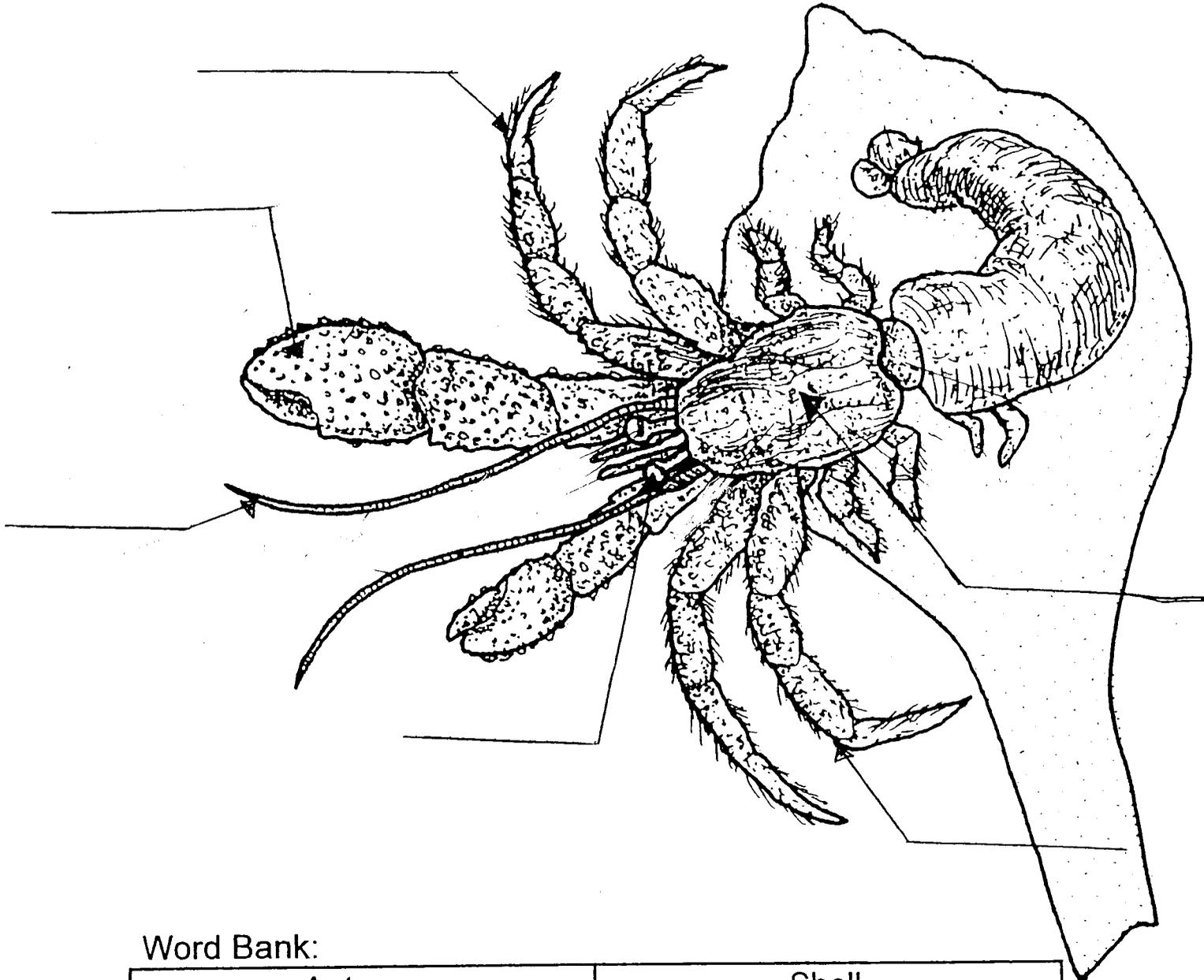
Word Bank:

Legs	Shell
	Joint

Junior Scientist _____

Crustacean Parts Worksheet:

Hermit Crab



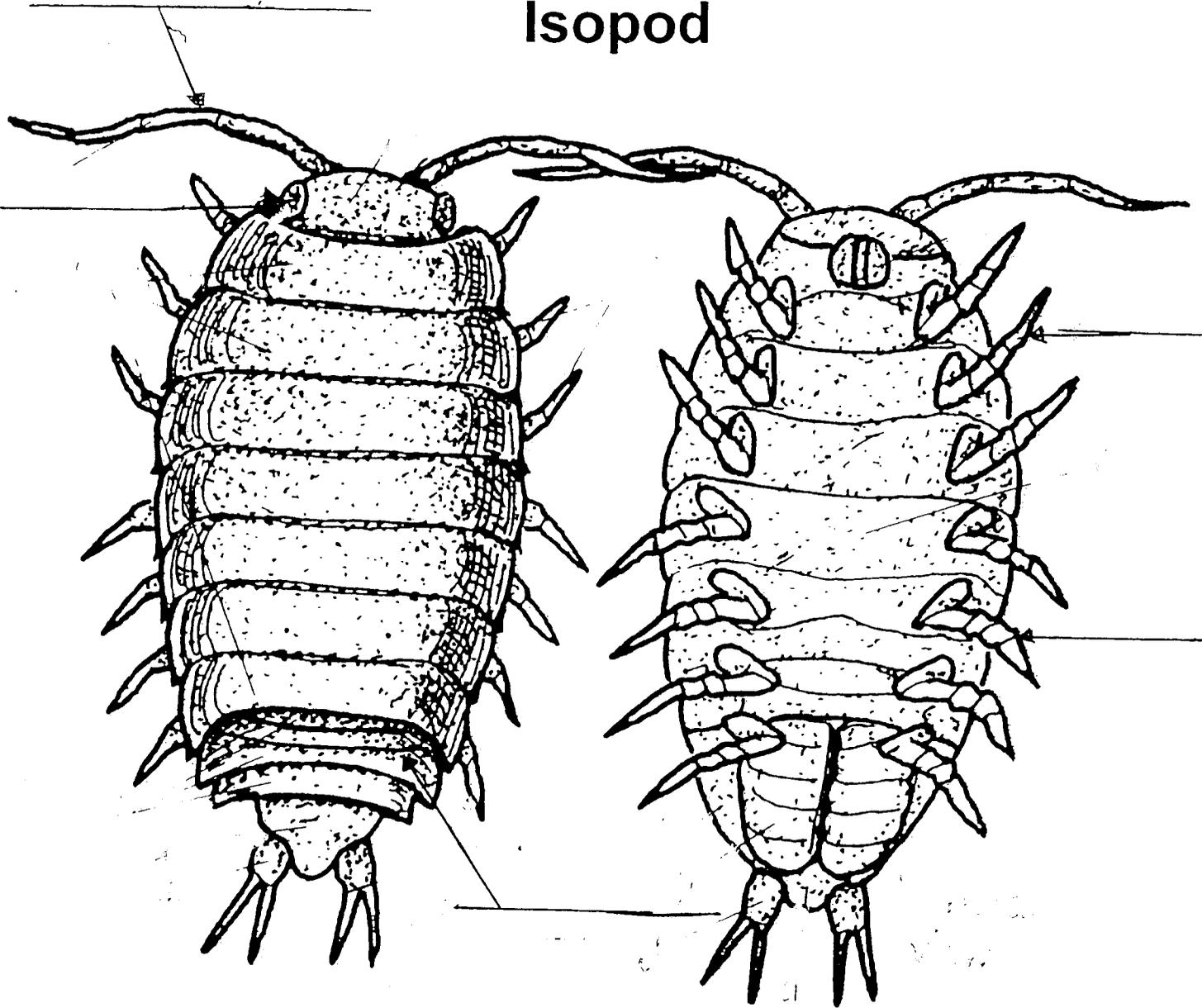
Word Bank:

Antenna	Shell
Pincher	Eye
Leg	Joint

Junior Scientist _____

Crustacean Parts Worksheet:

Isopod



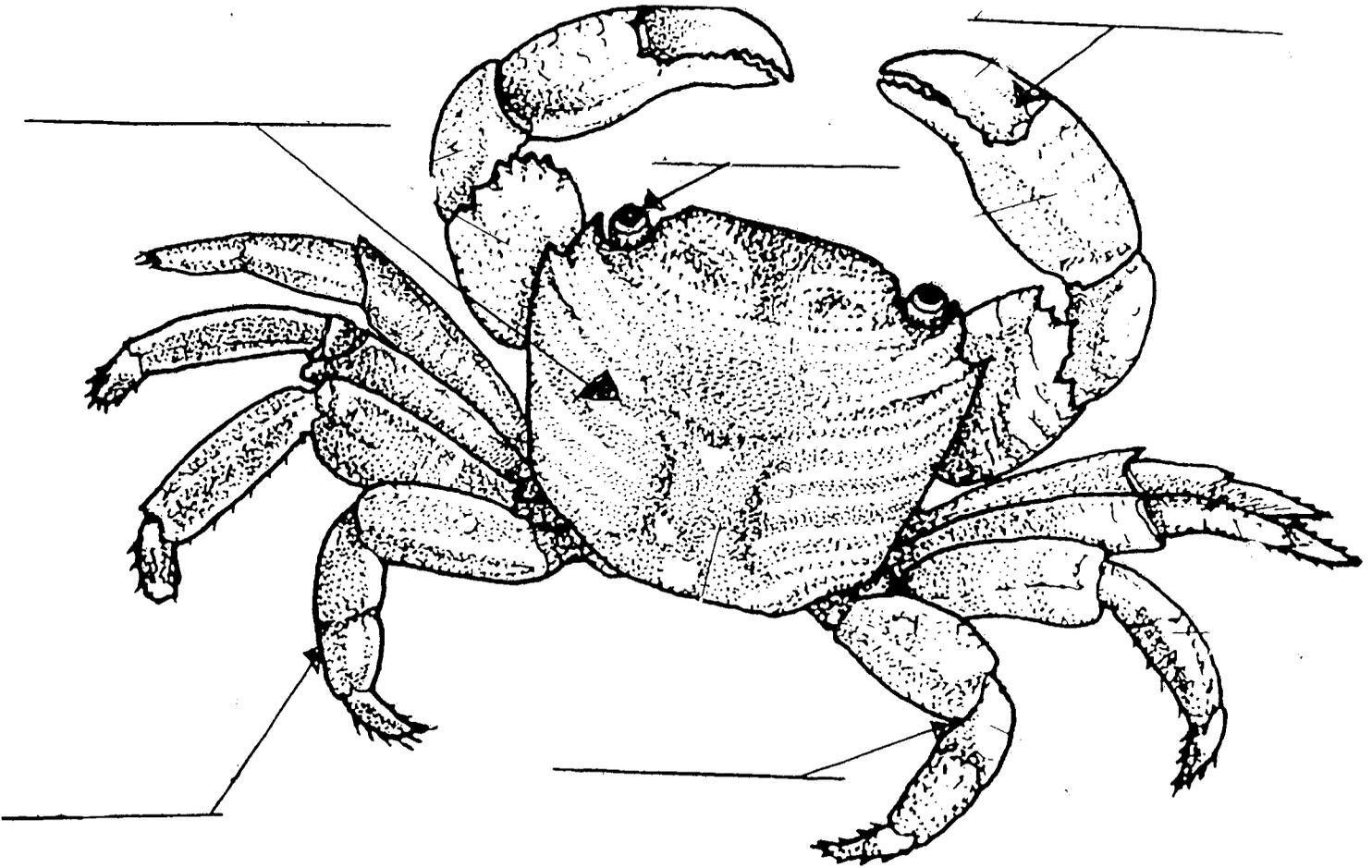
Word Bank:

Leg	Shell
Joint	Eye
Antenna	

Junior Scientist _____

Crustacean Parts Worksheet:

Purple Shore Crab



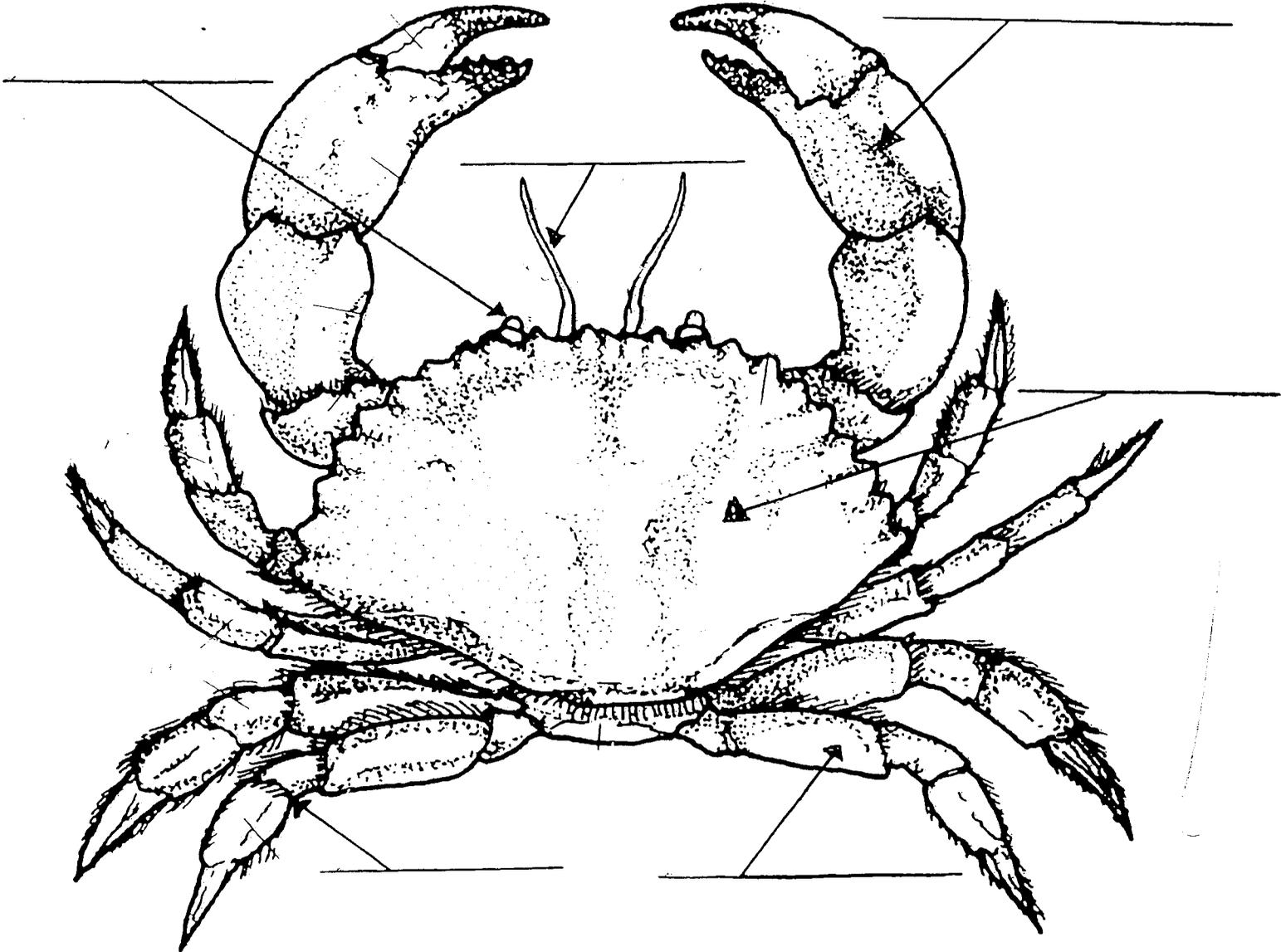
Word Bank:

Pincher	Shell
Leg	Eye
	Joint

Junior Scientist _____

Crustacean Parts Worksheet:

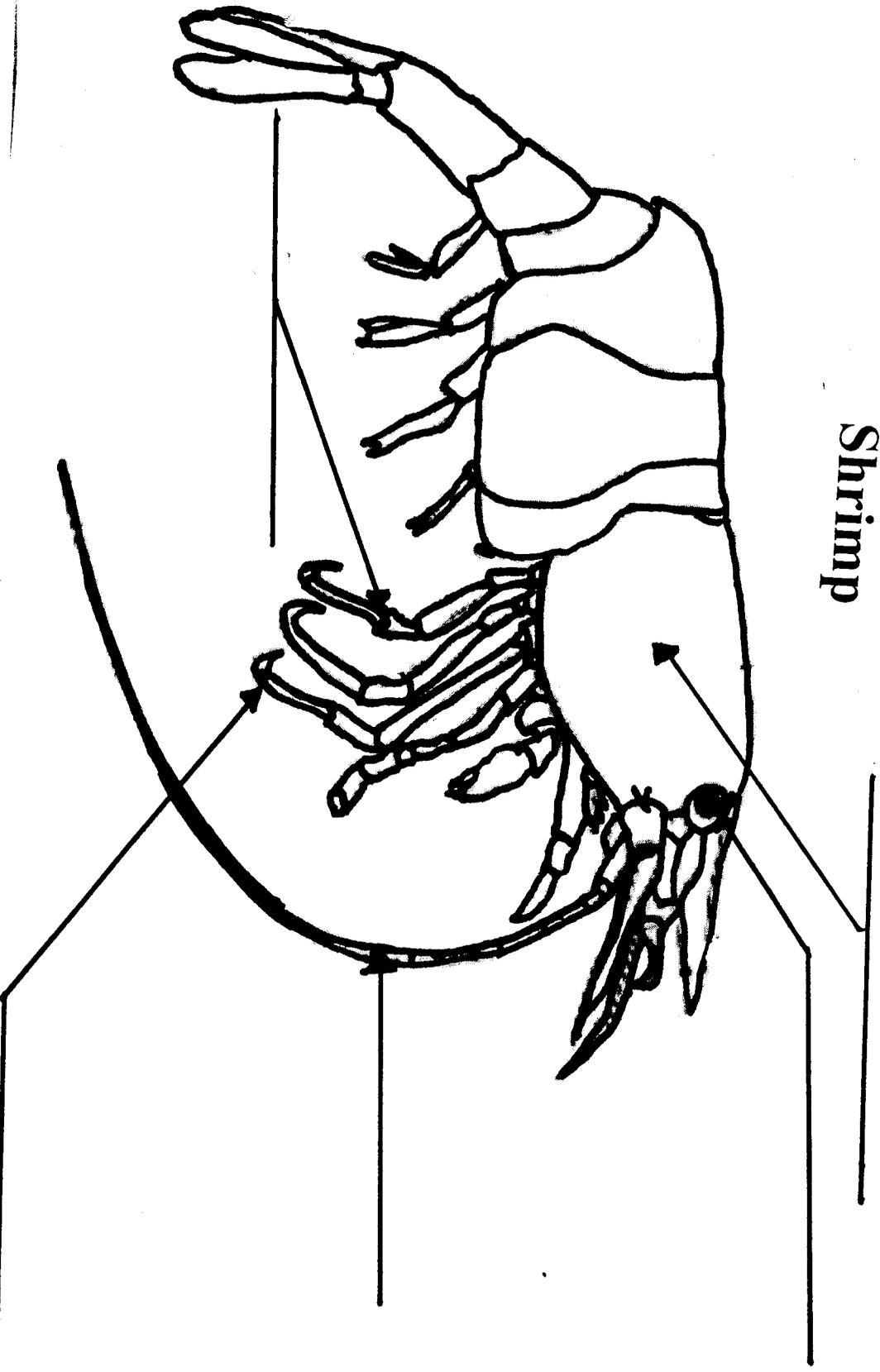
Red Rock Crab



Word Bank:

Antenna	Shell
Pincher	Eye
Leg	Joint

Shrimp



Word Bank:

Leg	Shell
Joint	Eye
Antenna	