Specimen Collection and Classification Activity

Understanding the classification of animals is an important building block of science education, yet most adults cannot tell you how to group the most common animals. Developing a classification collections with students helps to familiarize them with the classification hierarchy and how things fit into the system. This activity should follow your lecture and reading on animal classification to reinforce what they have learned.

Age: This suits older students who are learning classification in life science and biology.

Materials:

1. Collect 10-15 plastic clamshells* (in which you buy strawberries or salad greens).

2. Start a collection of animal "parts." This can include old seashells, a shark's tooth, snail shell, sand dollar, dead spider or insect (fly or ladybug), feather, egg shell, piece of a wasp nest, bird nest, rattlesnake rattle, feather, antler, skull, porcupine quill, starfish, old wasp nest, etc.

3. If you cannot put together a real collection, you can use magazine pictures (or even a fake collection with plastic animals). Either works the same way, though may not be quite as compelling as a real collection.

4. Print out and laminate enough animal classification sheets for each pair of students.

* Reusing plastic containers (that would have been thrown out) makes this a green activity. Combining reuse of materials with educational enhancement - win-win!

Procedure:

1. Put one animal example in each clamshell.

2. Lay them out on the table numbered (and provide a numbered answer sheet).

3. Ask students to study the animals' characteristics and use the classification sheet to identify in which class, subphyla (if applicable) and phylum each it belongs.

5. Talk about their answers.

6. Talk to them about other animals they have seen while visiting the beach, desert, forest, etc. (i.e. jellyfish, tick, slug, etc.)

Additional Activity:

1. Ask students to bring in pictures of animals and try to stump the class with their classification. They will bring everything from sea slugs to sea cucumbers, so be prepared!

Supplemental Questions:

You can spur them on to think about each animals' characteristics with 10 simple questions. Here are our suggestions, but you may want to write a few of your own.

Specimen Collection and Classification Activity
Supplementary Questions

1. Does this specimen represent an animal that has a backbone (Phylum Chordata)?

2. Does this specimen represent an animal that has an exoskeleton (Phylum Arthropoda)?

3. Does this specimen represent an animal that is worm-shaped and segmented (Phylum Annelida)?

4. Does this specimen represent an ocean animal that consumes food though an opening underneath it and has a symmetrical body shape (Phyla Echinoderm or Cnidaria)?

5. Does this specimen represent an animal that is soft-bodied but lives inside a shell or has a defensive beak (Phylum Mollusca)?

6. Does this specimen represent an animal that has 6 legs or more? (Class Insecta or Arachnid or SubPhylum Crustacean, etc.)?

7. Does this specimen represent an animal that has feathers, a shell, scales, fins, etc. (Class Aves, Reptilia, Bony Fish, Cartilagenous Fish)?

8. Does this specimen represent an animal that has a backbone, is warm-blooded and has fur (Class Mammalia)?

9. Does this specimen represent an animal that has a backbone and lays eggs in the water (Class Amphibia)?

10. Does this specimen represent an animal that has two matching shells or one spiral shell (Class Bivalve vs. Gastropoda)?

Specimen Collection and Classification Answer Sheet

To which Phylum, Subphylum, Class, Order or Family does this specimen belong?

1._____

2._____

3._____

4._____

5._____

6._____

7._____

8._____

9._____

10._____

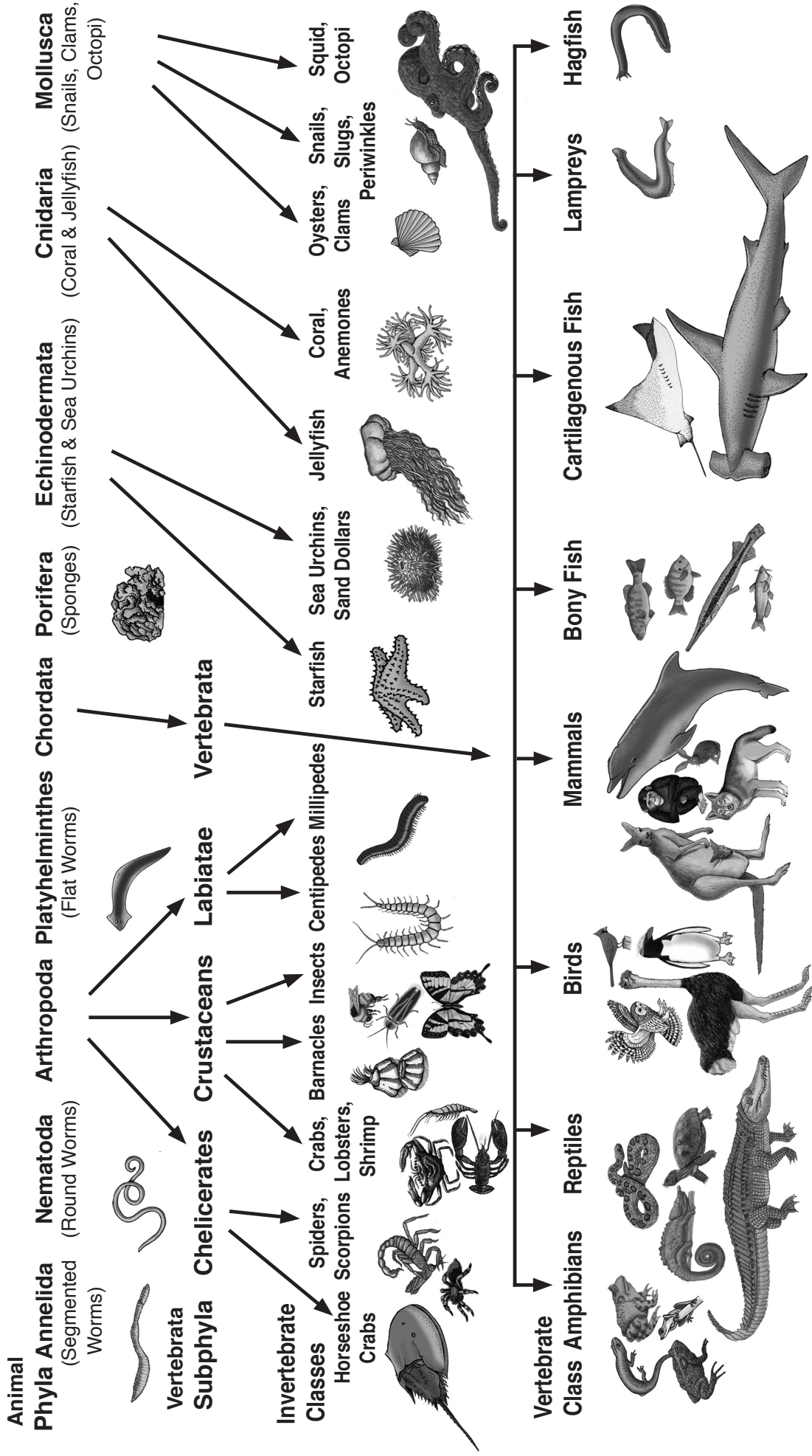11_____

12._____

13. _____

14. _____

15. _____

16. _____

17. _____

18. _____

19. _____

20. _____

The Animal Kingdom

Animal

Phyla

| Annelida (Segmented Worms) | Nematoda (Round Worms) | Arthropoda | Platyhelminthes (Flat Worms) | Chordata | Porifera (Sponges) | Echinodermata (Starfish & Sea Urchins) | Cnidaria (Coral & Jellyfish) | Mollusca (Snails, Clams, Octopi) |

Vertebrata Subphyla

Vertebrata

Invertebrate Classes

Chelicerates — Crustaceans — Labiatae

- Horseshoe Crabs
- Spiders, Scorpions
- Crabs, Lobsters, Shrimp
- Barnacles
- Insects
- Centipedes
- Millipedes

Squid, Octopi

Snails, Slugs, Periwinkles

Oysters, Clams

Coral, Anemones

Jellyfish

Sea Urchins, Sand Dollars

Starfish

Vertebrate Class

| Amphibians | Reptiles | Birds | Mammals | Bony Fish | Cartilagenous Fish | Lampreys | Hagfish |

Animal Kingdom

Phyla

- Annelida (Segmented Worms)
- Nematoda (Round Worms)
- Arthropoda
- Platyhelminthes (Flat Worms)
- Porifera (Sponges)
- Echinodermata (Starfish & Sea Urchins)
- Chordata
- Cnidaria (Coral & Jellyfish)
- Mollusca (Snails, Clams & Octopi)

Subphyla

- Chelicerates
- Crustaceans
- Labiatae
- Vertebrata

Class

- Horseshoe Crabs (Merostomata)
- Spiders, Ticks & Scorpions (Arachnids)
- Crabs, Shrimp & Lobsters (Malacostraca)
- Barnacles (Maxillopoda)
- Insects
- Centipedes
- Millepedes
- Starfish (Asteroidea)
- Sea Urchins & Sand Dollars (Echinoidea)
- Jellyfish (Scyphozoa)
- Coral & Anemones (Anthozoa)
- Oysters & Clams (Bivalves)
- Snails, Slugs & Periwinkles (Gastropoda)
- Squid & Octopi (Cephalopods)

Class

- Amphibians
- Reptiles
- Birds
- Mammals
- Bony Fish (Osteichthyes)
- Cartilagenous Fish (Chondrichthyes)
- Lampreys (Cephalaspidomorphi)
- Hagfish (Myxini)