

Classifications - Pre & Post Visit Activities

The following are optional activities that you may choose to do with your class to supplement their visit to the Greater Vancouver Zoo.

1. Create a classification scheme

Choose a variety of everyday objects from around your home or classroom and have the class create a classification scheme for them. Choose toys, office supplies, electronics, etc. Have the class think of different groups, and how one group might lead to another. For example, an “electronics” category might be divided into items with power cords and items that run on batteries. The power-cord group might be subdivided into items with detachable power cords. Things made out of wood might be placed in a different group. Try to classify the objects based on what they are made of, not their purpose. It may sound silly, but animals are classified in a similar fashion. Think about the following: if scientists were to create a classification group for all animals with wings, then birds, bats, and pterodactyls would all be in the same group, even though they are avians, mammals, and reptiles, respectively.

2. Complete the Animal Kingdom Word Search

Learn about the different phyla in the animal kingdom by completing the word search on page two of this document and reading the text below it.

3. Explore Phylum Arthropoda and Phylum Chordata

Divide the class into nine groups and have them research key taxonomic classes on computers:

Phylum Arthropoda:

- Class Insecta
- Class Arachnia
- Class Crustacea

Phylum Chordata:

- Class Chondrichthyes
- Class Osteichthyes
- Class Amphibia
- Class Reptilia
- Class Aves
- Class Mammalia

Have each group fill out the worksheet on page three of this document and present the information to the class.

The Animal Kingdom Word Search

The nine phyla in the kingdom Animalia are hidden in the word search below – forwards, backwards, and diagonally. Can you find them? See the list and explanations below.

S	G	C	A	R	T	H	R	O	P	O	D	A	M	A
M	E	I	L	T	A	O	Y	D	T	H		E	U	P
T	A	H	N	U	M	E	S	Y	L	M	F	P	A	I
H	R	A	T	A	R	E	T	N	E	L	E	O	C	H
U	Y	O	E	N	L	N	N	O	G	C	A	P	S	T
F	C	H	A	N	I	O	L	E	P	R	L	N	U	M
E	R	W	P	E	R	M	I	U	M	S	P	O	L	E
P	O	A	C	L	F	H	L	A	T	A	O	Y	L	S
O	A	Y	R	I	G	E	N	E	A	Y	T	N	O	N
R	L	N	L	D	P	E	A	T	H	A	I	O	M	G
I	R	Y	M	A	T	I	N	O	S	Y	L	T	D	F
F	I	A	S	U	A	T	U	A	R	I	T	M	E	A
E	C	H	I	N	O	D	E	R	M	A	T	A	W	T
R	E	T	L	Y	E	T	A	D	G	M	R	P	L	A
A	M	A	U	A	T	A	D	R	O	H	C	M	U	P

Porifera (Sponges): Sponges have an asymmetrical, porous bodies that allow water to flow through and food particles to get caught inside. They live on rock substrates in marine habitats.

Coelenterata (includes jellyfish, hydra, corals): Coelenterates have inner and outer layers called the echinoderm and the ectoderm, respectively, with a jelly layer in between. Their bodies have radial symmetry, an incomplete digestive system and a very basic nervous system.

Platyhelminthes (Flatworms; includes planaria and tapeworms): Flatworms have bilateral symmetry and a definite head and tail on their flattened body. Some have eye spots which detect light.

Nematoda (Roundworms): Roundworms are bilaterally symmetrical, have long, smooth bodies that are tapered at each end, and are covered in a protective cuticle. They are plentiful in soil and help produce good soil quality. Other varieties are intestinal parasites.

Annelida (Segmented worms; includes earthworms): The bilaterally symmetrical bodies of these worms are segmented internally and externally, allowing them to move faster. They have complete digestive systems, definite anterior and posterior ends, and dorsal and ventral surfaces.

Arthropoda (Arthropods; includes crustaceans, insects, spiders): Arthropods are characterized by their hard chitin exoskeleton and their segmented bodies with jointed limbs. They are bilaterally symmetrical. Arthropods are the most successful animal group, containing millions of different species.

Mollusca (Mollusks; includes clams, oysters, octopus) Mollusks have a soft body and moves using a strong, muscular foot. They are surrounded by a soft skin called a mantle, which may secrete a hard shell. They have bilateral symmetry. They are known for their tongue used to scrape food from rocky surfaces.

Echinodermata (Echinoderms; includes sea stars, urchins) Echinoderms are radially symmetrical with an internal skeleton and spiny outer surface for protection and support. They have a vascular system made of tubes through which they pump water to help them move.

Chordata (Chordates; includes mammals, birds, amphibians, reptiles, fish) Chordates are characterized by their internal skeleton made of bone or cartilage. They are bilaterally symmetrical and feature a dorsal nerve cord. The internal skeleton allows chordates to grow to large sizes.

Taxonomic Classes Activity Sheet

Phylum: (Circle) Arthropoda or Chordata

Class: _____

What are some examples of animals existing in this class?

One level lower in the classification scheme is *Orders*. What orders are listed under your class? Are there any important sub-classes associated with your class?

Imagine that you discovered a brand-new, never-before-seen animal, and scientists are placing it in the *Class* you were assigned! Help us describe this new animal:

- Is it asymmetrical, radially symmetrical, or bilaterally symmetrical?
- Is the body segmented?
- Does it have any specialized appendages (arms, legs, wings, etc.)? What do they look like?
- What is their external body covering made out of?
- How does it reproduce?
- What might it eat?
- What adaptations do these animals have to help them survive?