



Fur, feathers, skin or scales?

This lesson is designed to introduce students to a variety of animal body coverings and the concept of grouping animals according to their body covering – fundamental to the scientific process of classification. This is a great segue for your class to discuss how different body coverings help an animal to survive in its environment and will support further learning back in the classroom.

Students Will Be Able To:
 [1] identify different animal body coverings
 [2] group animals according to their body covering
 [3] discuss how body coverings help animals to survive in their environment

LEARNING

ENVIRONMENT

- ★ Small groups with adult chaperone (eg. 5:1)

MATERIALS

- ★ Activity sheet (included here)
- ★ Pencil
- ★ Nametags
- ★ Optional: Clipboard and/or magnifying glasses
- ★ Collect a map at Admissions for each group

Steps

This lesson is designed to be versatile - how you choose to undertake this lesson will depend on the grade level and dynamic of your class. Two alternate activity sheets are provided for you to use at your discretion and each one can easily be tailored. Please see the section, 'Helpful Information' for further information.

- 1) Exploring the Vancouver Aquarium (30-45 min).** For students of this age we strongly recommend allowing them time for free exploration. The Aquarium is a highly stimulating environment and if students are not given this time to roam and discover then they may be distracted and overexcited throughout the more structured part of this lesson. This also provides a chance for students to tune-in to the theme of the lesson, so remind them to keep their eyes peeled for the different body coverings the

animals at the Aquarium have. Ensure students remain within their small groups, accompanied by adult chaperones at all times.

- 2) Class Re-group (10 min).** In a pre-arranged meeting spot (see the section 'Helpful Information' for tips about meeting spots), discuss students' experience in the galleries. What did they see? What animal body coverings did they discover? The next part of the lesson is where you and your class have lots of flexibility to tailor this lesson to suit your needs. **TIP:** a) This activity will be the most successful if student groups are given a specific animal (preferably animals that are in different galleries) as their starting point. This also avoids too many students in one gallery at any one time! b) If you choose to have students completing activity sheets, then provide them with clipboards so they have a hard surface on which to draw and/or write.
 - 3) Fur, feathers, skin or scales? Activity (20-30 mins).** However you decide to undertake this activity, remind students the importance of closely observing the animals. As an example, at first glance it may be hard to see the outline of scales on a fish's body but these will become obvious when you focus on the animal and imagine 'zooming-in' with a magnifying glass. **TIP:** a) If students need extra help focusing, then provide them with magnifying glasses! b) You can easily tailor this activity and the way you use these activity sheets. Please see 'Helpful Information' for more details.
 - 4) Class sharing and reflection on-site (10 mins).** Gather as a class in your pre-arranged meeting location for a whole-class discussion. This is an important time for students to share their observations and chosen groupings with you and their peers. Suggested guiding questions include:
 - a. What are some animals that had the same type of body covering?
 - b. Were there any animals you didn't find or could not tell what their body covering was?
 - c. Did all animals with (skin) look the same? What was different about them?
 - 5) Enjoy the rest of your visit!**
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Helpful Information

Tailoring this lesson to your class needs: This lesson is designed to be versatile – not only are there two alternate activity sheets, but each one can easily be tailored to suit your class' needs. Here are some suggestions...

- Pick one of the activity sheets and give to chaperones to simply use as a reference to guide student learning. Chaperones can use the sheet to generate dialogue and ask questions around predicting, observing and discussing the animal body coverings. *What body covering does this animal have? How might that help it to survive? What other animals also have this type of body covering?* Alternatively, give chaperones a list of these key questions to ask at each animal and eliminate the activity sheet entirely.
- This is further supported if you collect a list of common and unique animals in the aquarium and their body coverings, so that you and the students can discuss and categorise them back in the classroom.
- If group sizes are small and group dynamics are conducive, then the chaperone can act as scribe (recording on the activity sheet the results of their group's discussion) so that group results can be discussed and utilised back in the classroom.
- This lesson can also be modified to create an extension for students to explore classes of animals – mammals, birds, reptiles, fish and amphibians simply by inserting these categories in place of the body coverings.

Aquarium Meeting Spot: The Vancouver Aquarium can be a busy place so locating a pre-arranged meeting space for your class is essential to reinforce learning during your visit. Some spots to consider include the Underwater Dolphin and Arctic Galleries, the Exploration Gallery, and outdoors, weather permitting.

Working with Chaperones: Education staff at the Aquarium believe strongly in the effectiveness of small group learning, particularly with younger students in our often bustling galleries. Suggestions for adult chaperones include parent helpers, student teachers, and responsible high school students. The

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maximum student to chaperone ratio recommended is five to one. Pre-briefing your adult chaperones and organizing student groupings before you arrive at the Aquarium is ideal and will ensure all parties are best supported. Name tags are highly recommended for your students and chaperones to assist with group management.

Teacher Background Information: On the same page as you found this lesson ([link](#)), under the heading ,Lesson Enrichment' you will find a link to the Aquarium AquaFacts and a detailed 'Vancouver Aquarium Resource Guide' which contain relevant background information pertaining to marine species. The Vancouver Aquarium recommends pre-teaching relevant content as means of making your class visit a more meaningful learning experience.

Extension Activities

- On a large piece of paper, write the words 'Fur', 'Feathers', 'Scales', and 'Skin' in 4 rows. Look through the pictures in nature magazines, either individually or as a class. Put a tally mark by the appropriate body covering each time an animal comes up that fits into that group. Discuss the results with the class. (Math)
- Have students create animals using art supplies with a variety of textures. Ask them to describe their animals to the class and explain why their body coverings are important.
- Divide the students into groups and give each group a large sheet of paper or posterboard which is divided into quarters. Put the headings 'Mammals', 'Birds', 'Reptiles', 'Fish' and 'Amphibians' at the top of the sections. Have student, draw or cut and paste animals into their appropriate grouping.
- Have students bring a stuffed animal to class and before-hand have them estimate, either individually or as a class, how many of the animals will be mammals, birds, reptiles, fish, insects or amphibians. The next day, students sort the animals they have brought in to determine the actual results. Draw a large bar graph to present the results. Compare the actual number of animals in each group to the predictions. (Math)
- Create an activity sheet where students draw a bird, mammal, reptile and amphibian. What features do these animals have? Put a check mark in the appropriate boxes :

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For example:

Animal	Fur	Skin	Feathers	Scales	Gills	Beak	Fins	Claws
Draw a Bird here								

CURRICULUM CONNECTIONS/BRITISH COLUMBIA, CA.

Kindergarten:

- Science - Plants and animals have observable features (Big Ideas)
- Science - Make exploratory observations using their senses (curricular competencies)
- Science - Represent observations and ideas by drawing (curricular competencies)
- Science - Features of local animals that help them to meet their basic needs (content)

Grade 1:

- Science - Living things have features and behaviours that help them survive in their environment (Big Ideas)
- Science - the classification of living and non-living things (content)
- Science - behavioural adaptations of animals in the local environment i.e. camouflage (content)
- Science - communicate observations and ideas using oral or written language, drawings, or role-playing (curricular competencies)

Grade 2:

- Science - All living things have a life cycle (Big ideas)
- Science - Make and record observations [with predictions through discussions] (Curricular content)
- Science - Communicate observations and ideas through drawing, oral and written language or role-playing (Curricular Competencies)
- Science - Understanding the concept of change through life-cycle [similarities and differences between offspring and parent] (content)

These Prescribed Learning Outcomes (PLOs) are related to sustainability & the environment as per the BC Ministry of Education Framework, Environmental Learning and Experience Curriculum Map: Complexity and Aesthetics

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Find the animals listed below and look at them carefully and closely. Can you tell what type of body covering they have? Think of another animal at the Aquarium (that isn't listed below) that also has the same type of body covering.

ANIMAL	BODY COVERING Does the animal have fur, feathers, scales or skin?	GROUPING Can you think of another animal in the Aquarium that has the same body covering?
BAT		
MACAW (parrot)		
ANACONDA		
CAIMAN		
REEF SHARK		
SEA TURTLE		
BULL FROG		
SEA OTTER		
DOLPHIN		
ROCKFISH		
OCTOPUS		
JELLY		

Fur, feathers, skin or scales?

Explore the Vancouver Aquarium and make sure you look very closely and imagine 'zooming in' on the animal's body covering. Can you tell what category they are in? Write the animals name or draw a picture of it in the space below its body covering.

	Feathers
	Fur
	Skin
	Scales

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