

Adaptation, Migration, Hibernation

Overview: Wild animals have adapted features and behaviours to guarantee their best chance of survival. Acknowledging that is crucial to understanding animal behaviour and recognizing the impact of humans on their survival.

Key Questions:

- How do animals survive seasonal changes in the wild?
- What are the differences between adaptation, migration, and hibernation?
- What animals rely on adaptation? Migration? Hibernation?
- How do humans affect animals' ability to survive in the wild? Global warming, urban sprawl, noise pollution, etc.

Big Idea:

- Living things have features and behaviours that help them survive in their environment
- Daily and seasonal changes affect all living things
- Living things have life cycles adapted to their environment
- We shape the local environment, and the local environment shapes who we are and how we live

**curriculum links listed at the end of this packet*

Activity:

Go over the terms adaptation, migration and hibernation and give examples of some BC animals that employ these survival strategies. Then give the students the Adaptation, Migration, Hibernation worksheet where they are tasked to match the terms adaptation, migration, and hibernation with their definitions. Students then have to draw a line from the BC animal to the survival strategy they think they employ. Finally, students are then given the opportunity to see an adaptation in action with the polar bear blubber experiment, where students insulate their hands with a plastic bag covered in shortening before dipping their hands into ice water to simulate a polar bear's blubber.

Questions for discussion:

- Do we use any of these survival strategies? Do we use other survival strategies?
- What other animals can you think of that use adaptation? Migration? Hibernation?
- Can you think of any other survival strategies that animals use?
- How do humans influence adaptation? Migration? Hibernation?
- If our planet is getting warmer because of climate change do you think this will effect polar bears? Will their life get easier or harder? How come?

Extension Options:

- Have your students further research an animal that employs adaptation, migration, or hibernation to survive cold weather and have them draw a picture of that animal in their environment in winter and in summer.

Adaptation, Migration, Hibernation Answer Key



Adaptation

Some animals sleep until the weather is better and it is easier to find food and keep warm.



Migration

Animals can change their fur or plumage (feathers!) to hide them when outside. Or they can change their behaviour and collect more food or stay in their home more.



Hibernation

Animals move to other places where its easier to find food and keep warm.

Adaptation	Migration	Hibernation
Arctic Fox Snowshoe Hare Ptarmigan Wolf Chickadee	Beluga Canada Geese Grey Whale Elk Salmon	Black Bear Some squirrels Toad Bat Groundhog

Adaptation, Migration, Hibernation

As it gets colder and the colours outside change from green to white, animals need to change their looks, how they act and even sometimes where they live in order to survive. There are three ways animals respond to these changes: adaptation, migration and hibernation.

Instructions: Draw a line to match the ways animals change to survive with their definitions.



Adaptation

Some animals sleep until the weather is better and it is easier to find food and keep warm.



Migration

Animals can change their fur or plumage (feathers!) to hide them when outside. Or they can change their behaviour and collect more food or stay in their home more.



Hibernation

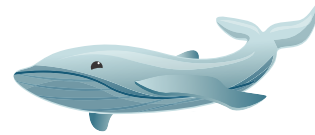
Animals move to other places where its easier to find food and keep warm.

Name: _____

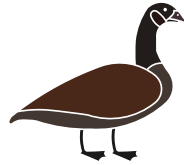
Instructions: These animals all live in British Columbia! Draw a line from the animal to the way you think they change to survive.



Elk



Grey Whale



Canada Goose



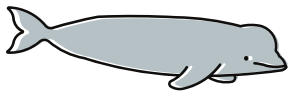
Wolf



Bat

Adaptation
(change their behaviour
or fur/feathers)

Migration
(move to a new place)



Beluga

Hibernation
(sleep)



Ptarmigan



Chickadee



Arctic Fox



Snowshoe
Hare



Groundhog



Squirrel



Black Bear



Salmon



Toad

Polar Bear Blubber Experiment

How does a warm-blooded mammal like a polar bear survive in cold water?
Let's do an experiment to find out!

Materials: Large bowl, ice cubes, cold water, shortening, spoon, 2 plastic baggies, duct tape (optional)

Instructions:

1

Fill the bowl with water and ice cubes

2

Place your hand briefly in the water (no longer than 20 seconds!). How does it feel?

3

Time to get a little messy! Add 3-4 big spoonfuls of shortening to one of the plastic baggies

4

Now place one hand in the other plastic baggie. Now place your bagged hand inside the shortening filled bag.

5

Make sure to move the shortening around so it covers your bagged hand completely.
Optional: Get some help to seal the tops with duct tape so water can't get into the bags!

6

Put plastic bag and shortening covered hands into the ice water. What do you notice? Does the water feel less cold or not? Why do you think that is?



Are polar bears covered in shortening? Definitely not, but they do have a layer of fat called blubber that works together with a polar bear's thick fur to keep them warm in icy seas! Polar bear blubber can be up to 11.5 cm thick!



Adaptation, Migration, Hibernation Curriculum Links

Curricular Competencies and Content:

Science:

- Observe objects and events in familiar contexts
- Ask questions about familiar objects and events
- Make simple predictions about familiar objects and events
- Make and record observations
- Safely manipulate materials to test ideas and predictions
- Experience and interpret the local environment
- Compare observations with predictions through discussion
- Identify simple patterns and connections
- Consider some environmental consequences of their actions
- Communicate observations and ideas using oral or written language, drawing, or role-play

Social Studies:

- Recognize causes and consequences of events, decisions or developments in their lives (cause and consequence)
- Identify fair and unfair aspects of events, decisions or actions in their lives and consider appropriate courses of action (ethical judgement)

Core Competencies:

Personal and Social:

- I can think critically about how my personal decisions also affect others and the environment.