

Name: _____

My country is Winter

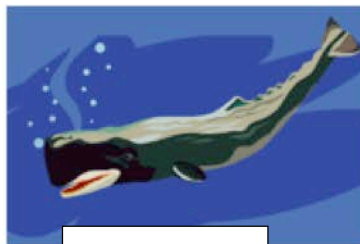


What keeps an animal warm?

What I retain from the discussion



Observe the pictures that follow and formulate a hypothesis on the next page.



Whale



Ptarmigan



Artic Fox



Polar bear



Musk ox



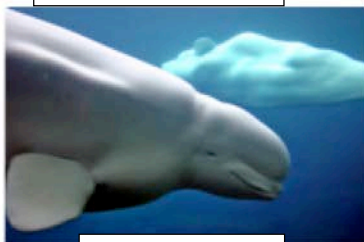
Seal*



Weasel



Snowy owl*



Beluga



Walrus



Black bear*

*The pictures of black bear, common seal, and the snowy owl are used thanks to the cooperation of the Zoo sauvage de Saint-Félicien.

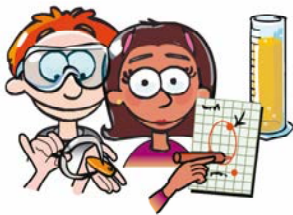


My hypothesis:

I think that _____ keeps the animal warmer
the leather, the skin, the fur, the feathers, the down, the fat

because _____

Cr1 Appropriate description of the problem	Formulation of a tentative explanation	
--	--	--



Planning and carrying out

Experiment to test your hypothesis.

Objective: Test the efficiency of various substances to conserve heat.

Materials at your disposal:



Down



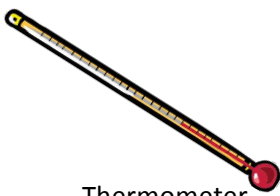
Leather



Fat



Fur



Thermometer



Timer



Ice

To test the efficiency of various substances, which experimental factors should remain identical during the experiment? Which should vary?

Tick what should remain identical and what should vary.

Experimental factors	Remain identical	Vary
Initial temperature of the ice		
Time in the ice		
Substance tested		

Protocol

1. Note the initial temperature.



2. Insert the thermometer between two samples of the first substance to be tested.

3. Place this assembly, samples and thermometer, in the ice and start the timer at the same time.

4. Wait _____ minutes.

5. Note the results.



6. Repeat steps 1 to 5 for the 3 other substances.

Important!

Wait for the thermometer to return to room temperature between each trial.

Cr2 Application of an appropriate procedure	Planning the work	
	Implementation of procedure	
Cr3 Appropriate use of instruments, tools or techniques	Handling of objects, tools or instruments	
	Observance of safety rules	

Results

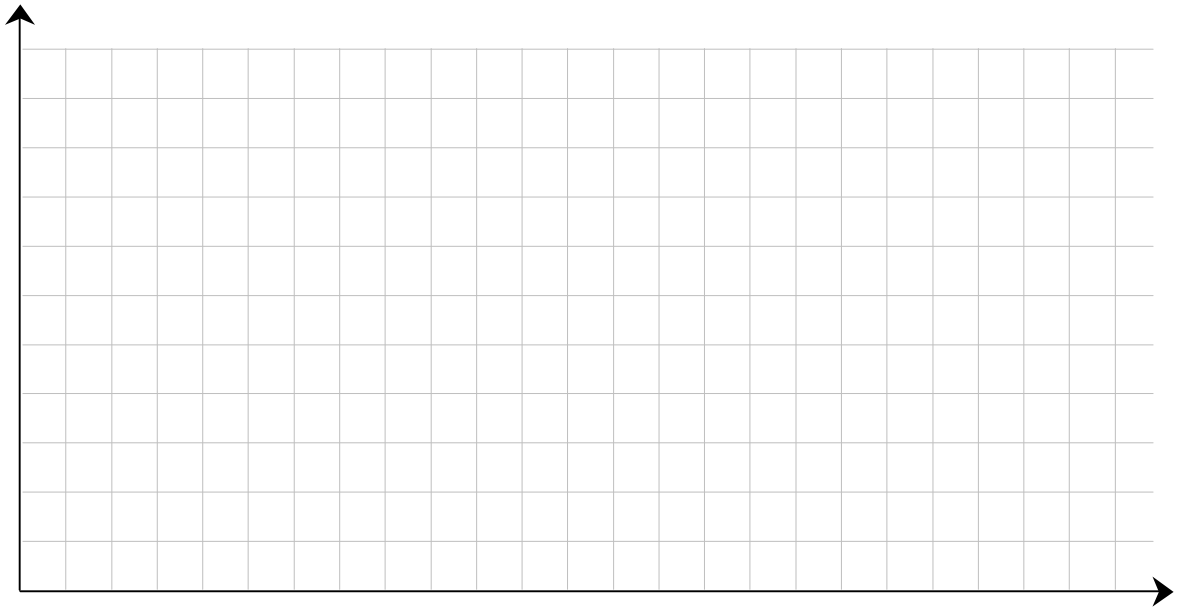
Collect your data using the following table

Variation in temperature observed for various substances

Substances	Initial temperature of the substance (°C)	Final temperature of the substance (°C)	Difference in temperature (°C)
Leather or suede (skin)			
Fat (vegetal fat)			
Fur			
Down			

Represent your data using a bar graph

Variation in temperature observed for various substances



Cr2 Application of an appropriate procedure	Implementation of procedure	
---	-----------------------------	--

b) For which substance did you see the greatest difference in temperature?

c) For an animal outside in winter, what does a large temperature difference indicate?

Cr4 Appropriate use of scientific and technological knowledge	Production of explanations or solutions	
---	---	--



Outcome

a) Does your experiment confirm what you thought (initial ideas and hypothesis)? Explain your answer.

b) Explain an unforeseen event or difficulty that occurred during the experiment.
Write what you did.

c) If you could start over, explain what you would do differently.

Cr4 Appropriate use of scientific and technological knowledge	Production of explanations or solutions	
Cr2 Application of an appropriate procedure	Readjusting the process, as required	

Activity 5 – Short research project

Choose one of the animals shown. Explain what allows it to retain its body heat. Cite the information sources consulted.



Human



Whale



Ptarmigan



Arctic fox



Polar bear



Musk ox



Seal*



Weasel



Snowy owl*



Beluga



Walrus



Black bear*

*The pictures of the black bear, common seal, and the snowy owl are used thanks to the cooperation of the Zoo sauvage de Saint Félicien

Proficiency of subject-specific knowledge targeted in the <i>Progression of Learning</i>	Describe the activities related to living beings' metabolism (energy transformation, growth, system maintenance, retaining body heat)	
	Adequately use the terminology associated to the living world	

Outcome
What I learned



Definitions



Hypothesis: _____

Variation in temperature: _____

Experimental factor: _____

Protocol: _____

Thermometer: _____

