

# Animals Prepare for the Winter

**Target Grade Level: 1<sup>st</sup>-5<sup>th</sup>**

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**UNIVERSITY OF MONTANA GK-12 PROGRAM**

1. CONTRIBUTOR'S NAME: HOLLIE SEXTON AND TAMMY MILDENSTEIN
2. NAME OF INQUIRY: ANIMALS PREPARE FOR THE WEATHER.
3. GOALS AND OBJECTIVES:
  - a. Inquiry Questions: Is weather important to animals?  
Do animals think about the weather or prepare for the weather?
  - b. Ecological Theme(s): Weather, habitat, ecological connectivity
  - c. General Goal: To help students understand how animals and weather events are connected.
  - d. Specific Objectives: Have students understand the importance of habitat choice to an animal. Have students think about the grand impact of everyday weather events and disasters on organisms. To gain experience working in pairs. Learn to construct something out of organic materials with their hands. Experience verbally communicating ideas to a class of their peers.
  - e. Grade Level: 1-5
  - f. Duration/Time Required: 1 1/2 hours
    - Prep time: 30 min
    - Implementing Exercise During Class: 45min
    - Assessment: 15min
4. ECOLOGICAL AND SCIENCE CONTEXT:
  - a. Background (for Teachers): General knowledge of habitats and habitat animal interactions.
  - b. Background (to present to Students): This is a good inquiry conduct along with a unit on weather, habitats or animals. A general understanding of what a habitat is and how habitat choice is important to the survival of the organism.
5. MOTIVATION AND INCENTIVE FOR LEARNING: This is an exciting event for the students. The knowledge that they are going to be presenting and explaining their habitat to the class helps motivate them to create the best habitat they can.
6. VOCABULARY:

**Adaptation:** A change in an organism that better enables it to survive and produce offspring.

**Camouflage:** the act of concealing ones self by modifying their appearance to blend in with their surroundings.

**Hail:** small balls of frozen precipitation that accumulate in cold bands of air

**Lightning storm:** a storm often with wind and rain that includes electrical activity in the form of lightning bolts or heat lightning

**Environment:** All the factors that influence an organism's life such as soil, water, minerals, trash, sun, plants and other animals. Everything that surrounds an organism.

**Habitat:** A specific organism's immediate surroundings, its immediate environment.
7. SAFETY INFORMATION: Do not add too much fuel when lighting the habitat on fire (for the lightning storm) and have students stand at least 5 ft away from the tub when lit.
8. MATERIALS LIST (including any handouts or transparency masters):

- Plastic tub for each pair of students
- Hair dryer
- Fan
- Lighter fluid/match
- Crushed ice
- Snow (snow if possible)
- Bucket of water
- Cup with holes or garden watering pot
- 9-10 note cards each with a separate weather pattern or disaster named on it (for example: flash flood, wind, hail, snow, heat wave, lightning storm, heavy rain...)
- Extension cord (this is best done outside)

In each tub place:

- 4 cups soil
- leaves, grass, twigs, rocks
- plastic cup with one green grape and a tsp of white pearl tapioca (or other egg like grain)

#### 9. METHODS/PROCEDURE FOR STUDENTS:

a. Pre-investigation work: Prepare each plastic tub with the supplies listed above, run the extension cord outside with the other supplies. The 9-10 note cards should be prepared by writing a weather disaster on each card: snow (shaved ice/crushed ice), severe wind (fan), hail (crushed ice), heat wave (hair dryer), wind and rain, lighting storm (fuel and match ), flash flood (huge wave of water), slow rising river (pour water in slowly from the side until everything is floating), sunshine and light rain (good comparison) and any other event or combination of events you can think of.

b. Investigation work:

1) Split students in to pairs and give each pair a tub. Explain that the grape represents an amphibian and the tapioca its eggs. Each pair is to create a habitat for their amphibian and the eggs in the tub using the materials provided. The last step is more exciting if you do not inform the students of the disasters before hand.

2) When they are finished have the students quickly journal a couple of sentences on why they built their habitat they way they did. Many may have disregarded the weather.

3) When the group is assembled together again, have each pair of students present their habitat to the rest of the class and explain why they build it the way they did. Then have the pair draw a weather card and inflict the disaster on their habitat while the class is observing. After each disaster, conduct a quick investigation to see if the amphibian or its eggs have been harmed or if they where well protected.

- 1) What evidence (data, samples) do students collect? Observe the effects of weather on animal habitats.
- 2) How do students present the evidence (data)? Reflections/observations in their science journals.
- 3) What conclusions are drawn from the evidence students collect? How weather and animals are connected. Animals are affected by the weather and often prepare for weather events in the habitats they choose.
- 4) Include examples of data sheets.

10. ASSESSMENT: Pre and post reflections in their science journals.

11. EXTENSION IDEAS: Connect it to humans and our need to build habitats that protect us from weather.

12. SCALABILITY: This could focus on one area or climate or extend to all climates and areas of the world. You could also extend into animal adaptations to weather such as fur and scales.

13. REFERENCES:

UNIT E: WEATHER AND CLIMATE; DISCOVERY WORKS; HOUGHTON MIFFLIN SCIENCE TEXTBOOK

14. LIST OF EXPERTS AND CONSULTANTS:

15. EVALUATION/REFLECTION BY FELLOWS AND TEACHERS OF HOW IT WENT: The students were extremely excited about this investigation, and it was talked about for days afterwards! Many asked if they could do it again and re-design their habitat. We also chose not to tell the students that their habitat was going to be struck by a weather disaster before they built it. This helped bring home the message that if you are not prepared, you probably will not survive.