Unit 3  Week 4	***Outdoor Learning Opportunities:*** Hibernation Experiment	**Standards:** **S.LS.PS.3, 4, 7** **SS.G.PS.3** **ALT.RPS.PS.2-5**

Materials:	***Vocabulary:***
• Film canisters (or some type of small container with a lid) • Liquid Jello (one tablespoon of gelatin per cup of hot water) • Examples of natural insulations (fur, down, cattail seeds) • A cold winter day	• Hibernation • Insulation • Survival • Adaptation

All living things need food, water, shelter, and air to survive. What animals do in order to survive the winter varies based on their abilities to adapt to their environment. Animals that hibernate are often cold blooded and unable to migrate, such as amphibians and reptiles. Some mammals hibernate because they can't find food in the winter. Some are deep sleepers (bats, frogs, snakes, groundhogs) and others are light sleepers (bears, chipmunks, skunks). Deep sleepers go into a long period of inactivity where their heart rate and body temperature drop drastically. These are considered "true" hibernators. Light sleepers may wake and forage on a warm winter day.

This activity focuses on deep sleepers such as a frog. Reptiles and amphibians need to hibernate in order to survive. Many will bury themselves below the frost line or in some type of shelter that insulates them from the cold, such as a decaying pile of leaves or in a group (i.e. snakes) to keep from freezing. In this activity children will help a pretend frog to survive the winter.

Give each child a small container filled with liquid Jello. They each need to find an appropriate place for their frog to hibernate and not freeze. They can use materials found outside as insulation (decaying leaves, cattail seeds, fur, down feathers, mud, etc.). Each child should mark the place that they put their container so they can find it again later in the day. Go for a hike looking for other places that animals could hibernate. When you get back everyone can check their container. If the Jello has solidified then the frog did not survive. If it is still liquid, then the frog is still alive.

Guiding Questions:

- What happens to reptiles and amphibians in the winter?
- Which animals hibernate? What does it mean to be a "true" hibernator (deep sleeper) vs. a light sleeper?
- Where do animals need to be and what types of insulation are needed in order to survive the
  Winter as they hibernate?