

## Hibernation Experiment

Some animals such as brown bears, black bears, and the arctic ground squirrel hibernate during the Arctic's long harsh winter when food is scarce. This means that they find shelter and go into a deep, deep sleep for months at a time. During this time the animal's body is using very little energy because they lay motionless. They are using such little energy that they require no additional food, only the fat stored on their body. Complete the experiment below to see how an animal at rest will use the stored fat at a slower rate than an animal in motion!

### You will need:

- 2 small jars (with lids) filled with water—baby food jars work best
- 1 pat of butter in each jar

### Steps:

1. Label the jars as “hibernating animal” and “awake animal”. Tell the children that we are going to pretend that it is winter. These jars are two arctic animals. One hibernates. The other won't go to sleep.
2. Remind the children that moving around burns up stored fat in our body. It makes us tired and hungry as we burn up the fat. The butter inside the jar represents the stored fat the animals have inside their bodies. This stored fat gives them the energy that they need to live.
3. Place the “hibernating animal” jar on a table. Give the other, tightly sealed, “awake animal” jar to your students. Have them take turns shaking the jar. Instruct students that the shaking represents the animal running around, looking for food, playing, and trying to fish. Remind them that the butter is the stored fat in the animal's body. All the shaking represents the animal running around instead of sleeping. He is using up his energy.
4. After a good amount of shaking, kids will notice that butter begins to melt and break apart.
  - a. This shows how our body melts fat we have stored to give us energy to move around.

- b. Point out that once the butter is all melted, it is used up. The animal is really hungry now and needs to eat. But it is winter, and there is little to no food to be found. Ask them what might happen to the "awake animal" if it cannot find food. Sad but true, the animal could die. That is why they must sleep in winter when the food supply is scarce.
5. The hibernating animal will use up his stored food too. But it will take months for the food to get used up because he does not move around much. His stored fat lasts a long time because he is sleeping.
6. Compare the jars to each other. Allow for as much conversation as you have time for, and use the science journal if it suits your needs.