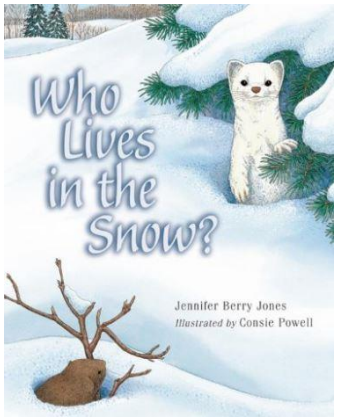
Life under the Snow

Outdoor Activity

Curriculum: Science, Physical and Outdoor Education



Introduction:

Exploring the magical world under the snow is an exciting adventure. In this activity, you will simulate what the subnivean world might feel like for your students and then spend time exploring for evidence of animals living in this hidden world.

Materials:

- Parachute or large tarp
- Extendable hiking pole or long stick
- Thermometers
- Picture Book for Division 1 students: *"Over and Under the Snow*" by Kate Messner
- Picture Book for Division 2 students: "*Who Lives in the Snow*? By Jennifer Berry Jones
- Sit cushions such as blue foamy sleeping mats cut into squares (optional)

Instructions:

- Gather the students outdoors and have them gather around the outside of a large tarp or school parachute. You are going to welcome them to come under the parachute/ tarp with you but discuss the guidelines first. You will all lift the parachute together, step forward (2 steps is usually enough) while holding the parachute, then bring the parachute down behind you and sit on it (you will create a mushroom).

- If you are using sit cushions, have the students place that under their bottoms, ensuring the parachute is still firmly tucked under. You do not want any gaps or holes where heat can escape.
- Place a large stick or pole in the middle of the parachute or tarp to ensure it does not collapse too quickly. This also helps all the students in being able to see you and your story.
- Before going under the parachute, you will want to place one thermometer outside and you'll bring the other one underneath with your class.
- Once all the students are sitting comfortably, tell them that they are all subnivean animals and the tarp/parachute represents the snow on top of them.
- Read the picture book "Over and Under the Snow" or "Who Lives in the Snow".
- Before coming out from under your tarp be sure to note the temperature, once outside take the outside temperature.
- After a discussion about life under the snow, allow some time for the students to explore the snowy world and look for evidence of animals. Look specifically for tracks, tunnel holes, and entrances or exits near logs or stumps.
- Consider making it a common practice to look for animal signs on all your winter walks.

Discussion:

Snow acts as a blanket in the winter, trapping or insulating the heat from the ground. If there is enough snow depth (typically more than 30 cm) then the temperature at ground level will hover around 0 degrees Celsius. The blanket of snow also protects animals from the winter winds. Students should have been able to feel the subnivean environment you created with the tarp/parachute heat up. The subnivean world you created will also heat up due to the warm bodies together – similar to a group of meadow voles huddled together. The heat that is trapped in the blanket of snow also causes the snow at the bottom of the snowpack to change in size and shape. The snow nearest the ground becomes more like sugar and does not stick together like fresh snow. This allows animals to tunnel and find food more easily. There are many benefits to living under the snow but there are also many dangers and challenges. Ask your students what some of these might be and how animals and plants adapt to these challenges.

Learning Extension – Subnivean Predator / Prey:

Introduction:

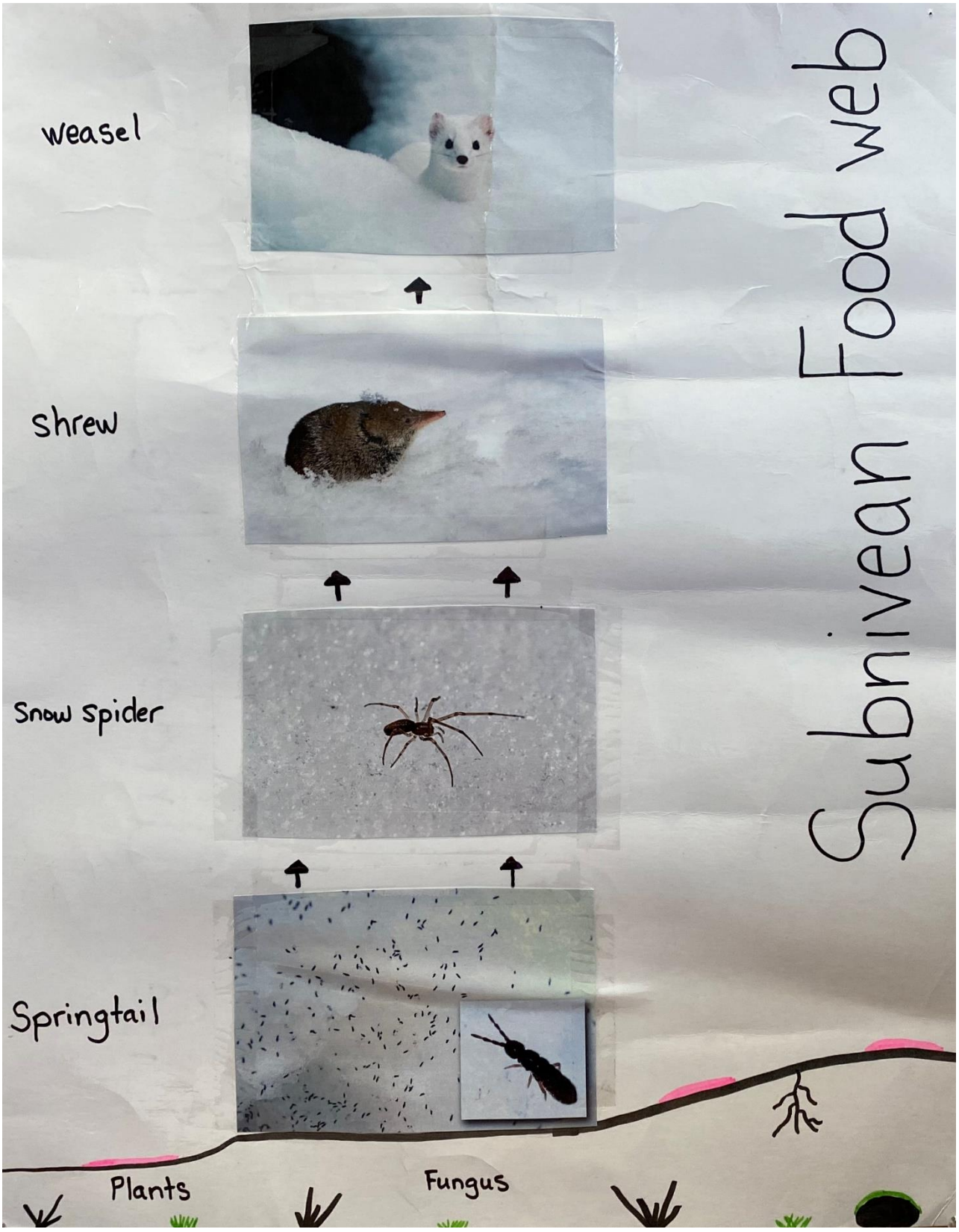
Life under the snow is challenging. One of the many challenges is avoiding predators (if you're prey) and finding food if you're a predator. This game highlights that dynamic playing out under the snow.

Materials:

- Subnivean Poster (attached below) to demonstrate the predator / prey dynamic
- Four different coloured tags or arm bands (green, yellow, blue, red work well).
- Four different coloured paper chips or poker chips
- Small plastic snack bags to carry the chips

Instructions:

- This is a typical predator / prey running game except it consists of the plants / animals in the subnivean world. If you would like a detailed account of how to play these types of games, refer to the "Winter Wildlife Game" for additional information.
- You will need a large space that ideally has a combination of open space and some treed areas for hiding.
- With a class size of 25, consider having the following roles: 10 Plants, 8 Spiders, 5 Voles, and 2 Weasels. Adjust the number in each food chain stage as required for your class; typically, you should have more students in roles at the bottom of the food chain to ensure the game can be played longer. Consider playing multiple rounds to allow students to play the varying roles.
- Provide the plants, spiders and voles with 3 lives (3 coloured chips or paper cards). They can store these in their plastic bag. Students will need to give up a life card when they are caught by the predator above them on the food chain. Weasels will receive a bag but no life cards as they need to collect cards from the voles (food chain level below them) when they catch them.
- Let the game continue until several students start to lose all their lives. Switch roles and start again or dole out additional life tickets.


Subnivean Food web
weasel
shrew
Snow spider
Springtail
Plants
Fungus