

Low Salt Diet

Activity Overview: Students will spin the “weather wheel” which will give them a corresponding temperature and weather condition. Based on what option is chosen from the wheel, students will have to determine how much or how little salt should be placed on the driveway.

Objectives:

Students should learn:

- We need safe roads, driveways and sidewalks in the winter to help prevent slips, trips, falls, and traffic collisions. Rock salt works to prevent icy conditions and is inexpensive to use.
- Some of this salt is getting into our groundwater and surface water -the sources of our drinking water.
- It is possible to protect groundwater from salt and still keep roads, driveways and sidewalks safe.

Materials:

- Wheel
- Laminated chart with answers (for instructor)
- Jar containing a lot of salt
- Jar containing a little bit of salt
- Jar containing sand
- Shovel
- LessSalty Cup
- Picture of proper salting (driveway)
- Picture of over-salting (driveway)
- Snowplow (optional)

Set-up:

- Place wheel and props on table
- Keep on hand the laminated weather chart with appropriate actions to refer to for answers

Takedown: At the end of the day, make sure all props are present and back in their box.

Reminders:

Before you start your presentation, check with the teacher or chaperone that the entire group is present and ready to start.

*Remember that kids have more fun when they are **doing** an experiment and **discovering** the answer, rather than watching and listening.*

Part 1 (Intro):

Say: “Hello and welcome to ‘Low Salt Diet!’ My name is _____. Before we begin, I need to ask your teacher to make sure your whole group is here – can you please do a head count? Thank you. Please remember to raise your hand when you want to ask a question or answer a question.”

Ask: “Do you think salt is harmful to our groundwater?”

Answer: Yes. When snow melts or when it rains, the salt travels underground. If we keep using too much salt, it will make our drinking water taste salty.

Ask: "Is drinking salt water a good idea?"

Answer: *No. Having too much salt in our water can be bad for our health. It can be harmful to the creatures that live in our water system as well. Too much salt in the water can prevent these creatures from getting oxygen.*

Ask: "Does anyone know how salt works on ice?" (Take answers).

Answer: *Salt lowers the freezing temperature of water from 0 °C to -10 °C. If you add salt to ice, the salt changes the water's freezing temperature so the ice melts, changing the water from a solid state to a liquid state. Salt works best when air temperatures are between 0 °C to -10 °C.*

Part 2 (Activity):

Say: "I will ask for some volunteers to spin the weather wheel. On this wheel, we have different weather conditions: snow, icy patches, freezing rain, rain, and clear pavement. Each weather condition also has a corresponding color representing the air temperature. Green = warmer than 0 degrees, blue = 0 degrees to -10 degrees, and red = colder than -10 degrees."

Say: "Based on the weather condition and temperature, you will have to decide which option you should use to handle it. Your options are to shovel, use a lot of salt, use a little amount of salt, use sand, or do nothing – have fun!" (Hold up the props as you list each option).

Ask: "Who remembers the freezing temperature of water?"

Answer: 0 degrees Celsius.

Ask: "Who remembers at what temperature salt works best?"

Answer: 0 to -10 degrees Celsius.

Say: "OK, let's begin!"

- Spin wheel or ask for volunteer to spin.
- When the arrow stops, read aloud the selected weather condition and air temperature range.
- Ask group to identify the prop or props they can use to keep the sidewalks and driveways safe for this weather condition. Instructor to refer to laminated chart.
- If they choose "use a lot of salt" explain this is never an option. A little salt goes a long way.

After a few turns, Ask: "Does following these rules help protect the groundwater?"

Answer: *Yes. We are using less salt.*

Ask: "Should you ever use a lot of salt?" **Answer:** No.

Ask: "Why is using a lot of salt harmful?"

Answer: *It has an impact on drinking water quality overtime as freshwater bodies take in more salt. It harms roadside plants, trees, and soils.*

Say: "We should always try to find a balance between safety, salt usage, and protecting the environment!"

Part 4 (Wrap-up):

Discuss ways to use less salt while keeping roads, driveways, and sidewalks safe.

Red Colour Group - Intermediate

- Move it don't melt it (Shovel first! – Clearing snow from driveways and walkways as soon as possible).
- Only use salt once the snow is removed in areas needed for safety
- Only use small amounts of salt and spread evenly (only need 1-2 cups of salt for a single car driveway)
- Check the weather to find out when using salt is the right choice
- Use alternatives such as sand or non-clumping kitty litter to create traction

Say: “Thank you for joining us at Low Salt Diet! We hope you had fun and learned something new.”

