

A Taste of Salt

VELS Links

Science
English
Humanities—Geography
Thinking
Health & Physical Education

Theme:

Different types of animals and plants can handle different levels of salt (but none can tolerate massive amounts).

Message:

We need to act to stop salinity!

Background:

We use electrical conductivity or EC to measure salinity. EC measures inorganic materials including calcium, bicarbonate and other ions dissolved in water.

This activity aims to teach students about varying EC levels or salinity readings and what they mean, by inviting them to taste a variety of salty water solutions. It also serves as a timely reminder of just what salty water is really like!

Before starting this activity, discuss the concept that salt occurs naturally in our environment, however man has changed this environment (removal of trees, farming and towns). These changes have caused salinity levels to increase therefore causing major problems to our environment.

Preparation:

- Prepare 4 different salty solutions by adding various amounts of salt to 500ml of tap or distilled water (pg. 3) .
- Lay the coloured ribbon on the ground, the different colours correspond to different levels of salinity. **green** = <800EC, **yellow** = 800-5000EC and **red** = >5000EC.
- Using the EC tolerance table as a guide, place the props/pictures next to the appropriate colour ribbon.

MATERIALS

4 x Salty Solutions varying EC's

Salt & distilled water

Plastic cups

Cotton wool buds

Coloured Ribbons (green, yellow, red)

Salinity props & pictures

EC Tolerance Table

Props/Pictures	EC Tolerance	Distance along ribbon
Rain Water	10	5cm (green ribbon)
Apricots/peaches	330	1.30m (green ribbon)
Grape vines	370	1.50m (green ribbon)
Humans	800	3m (green ribbon)
Tomatoes	2,300	4.50m (yellow ribbon)
Wheat	5,000	6m (yellow ribbon)
Beef Cattle	6,250	7m (red ribbon)
Sheep	15,700	9m (red ribbon)
Ocean	55,000	20m after end of red ribbon

Procedure:

Stage 1

- Show the students the ribbon and explain that;
 - It represents how much salt is in the water
 - There are different props on the ribbon, indicating how much salt different animals and plants can tolerate

The ribbon is coloured to indicate **good (green)**, **ok (yellow)** and **bad (red)** levels of salinity. Use 9m of ribbon (3m green, 3m yellow and 3m red).

To show how salty the 'ocean' is, have a volunteer pace out 20m beyond the end of the ribbon and explain that this represents the salt content of sea water. Also explain that this means that even the salt tolerant props (ones along the red ribbon), can't tolerate this enormous amount of salt.

Stage 2

- Split students into small groups with a sample of each of the Salty Solutions in a plastic cup.
- Students taste each of the salty solutions by dipping a cotton wool bud into the salty water and placing it on their tongue.
- At the end of the tasting students place their cups of salty solutions in order of least salty to most salty.
- Discuss the differences between each solution and what implications the varying concentrations might have on our environment.

Discussion:

- How did you feel about tasting all of the different solutions?
- Would you prefer to drink water with a high or low EC reading?
- Do you think this is like the real situation, do you think there are places that might have this much salt in them?
- Do you think plants and animals would be able to survive if they had to live in areas where salinity levels are high?
- What problems do you think high salinity levels in our environment might cause?
- How can you help? List actions that everyone can do to help reduce the amount of salt in our environment.
- What are some of the ways we could get the salinity message across to the whole community?

Salty Solution Preparation:

Each salty solution simulates the following EC:

1. Low EC
2. Moderate EC
3. High EC
4. Very High EC

Into 4 containers with lids add 500ml of tap or distilled water to each and the following amounts of salt -

Container No.	1	2	3	4
Amount of Salt (teaspoon)	0	1	5	15

Make sure to mix each salty solution well.