

Name: _____ Date: _____

Salt Tolerance

The shrubs and trees that make up mangrove forests grow only in intertidal zones, or the area between high and low tides, along tropical coasts. Mangroves can tolerate water 100 times saltier than most other plants can handle. In this activity, you'll design an experiment to test how salt affects the growth of a typical plant.

PREDICT: How does the concentration of salt in water affect the growth of a plant? Write a hypothesis, or possible explanation to this research question.

MATERIALS: fast-growing plants, such as wheatgrass, bean, or pea plants • pots • potting soil • water • salt • spray bottles • measuring cup • measuring spoons • ruler • marker

PLAN AN EXPERIMENT: Using the materials listed above, design an experiment that tests how exposure to salt water affects plants (use 2-3 plants). Write down the steps you'll take on a separate piece of paper. Questions to think about:

- What is your independent variable, or the factor you will change? **Hint:** Vary the amount of salt given to plants.
- What is your dependent variable, or the factor you will measure and test? **Hint:** Think about how different amounts of salt could affect plant growth.
- What will you use as a control, or standard against which you will compare your results? **Hint:** Use water without salt added for one plant.
- How will you measure changes to the plants?
- How long will you carry out your investigation? **Hint:** Allow 2 weeks to see differences.

CONDUCT YOUR EXPERIMENT: Gather the necessary materials and carry out your experiment. Record your results.

→ **DRAW CONCLUSIONS:** Summarize the results of your experiment. Do your results support your hypothesis? Use data from your experiment to explain your conclusions. Make a drawing of your plants!