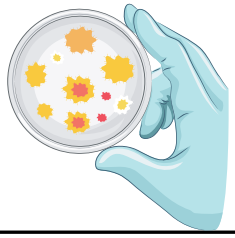
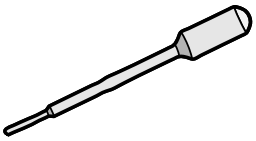
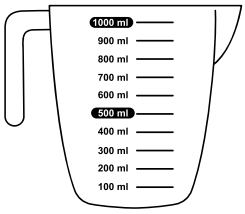
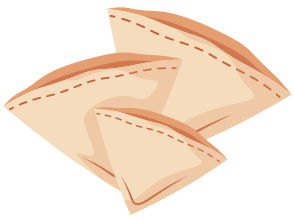
Name: _____ Date: _____

Equipment for Experiment

Look at the pictures and write the names of the images. Use the last three boxes to add your own new or important words.

NaCl	Filter paper	100 mL graduated cylinder
Petri dish	Seeds	Pipette
Distilled water	1000 mL beaker	Procedure

Exploring Salt Toxicity in Seed Germination

In various scientific fields, **bioassays** involving biological organisms play a crucial role in testing different substances. While canaries have been replaced by electronic devices, bioassays are commonly used in chemistry and environmental science to assess **herbicide residue** in soil, harmful chemicals in water, and the impact of **de-icing substances**.

In this experiment, you will explore the **toxicity** of salt (NaCl) on **seed germination**. By conducting a bioassay using lettuce seeds or other sensitive seeds, you can determine the concentration at which salt becomes toxic for seeds.

This project can be modified to test the toxicity of local **environmental factors**, such as de-icing substances or industrial waste, on plant life. The experiment involves preparing solutions with different concentrations of salt, setting up bioassay samples, and observing seed germination and **root length** over a period of five days.

Analyzing the results will allow you to draw conclusions about the effects of salt toxicity on seeds and consider further applications of bioassays, such as testing herbicides or de-icing chemicals in their local area.

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Using the information above, answer the following questions:

1. What are bioassays, and why are they used in chemistry and environmental science?

2. List three examples of what bioassays are used to test for in the fields of chemistry and environmental science.
   a)
   b)
   c)

3. What is the purpose of the experiment described in the article?

4. Why are lettuce seeds recommended for this experiment?

5. How can the experiment be modified to test toxicity in a local environment? Provide two examples.
   a)
   b)
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CREATE AN EXPERIMENT FLOWCHART

Beginning with your first activity, list and explain each step of your experiment.

1. Prepare solutions:

2.

3.

4.

5.

6. Reflection:

REFLECTION QUESTIONS

Instructions: Answer the following questions based on your understanding of the experiment and the flowchart you created.

1.Why is it important to measure the radicle length of germinated seeds? What does it indicate about seed growth?

2. What are two factors that could affect the results of the experiment?

a)

b)

3. How accurately did your flowchart represent the steps of the experiment? Explain any modifications or improvements you made.

4. What conclusions can you draw from the results of the experiment regarding the toxicity of salt (NaCl) on seed germination?

5. How could you apply the concept of bioassays to test other substances or environmental factors in your local area?