

Vocabulary Review

An **ecological disturbance** is an event that results in a sustained disruption of an ecosystem's structure and function.

SAFETY FIRST: ASK & ANSWER

Warning: This simulation uses BTB (bromothymol blue).

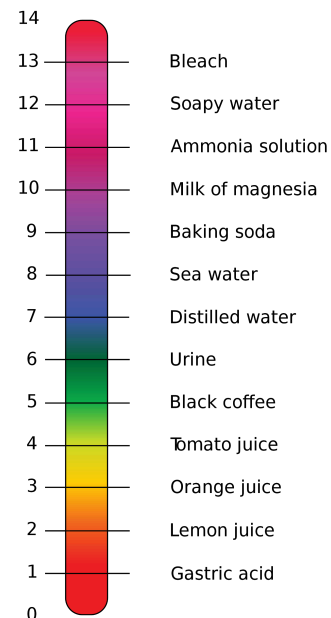
1. What are the hazards?
2. What is the worst that could happen?
3. What do I do to prevent it?
4. What do I do if it happens?

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pH scale
14 Alkaline

7 Neutral

0 Basic

**1. INTRODUCTION**

Marine organisms that make calcium carbonate shells or hard skeletons are negatively impacted by increasing CO₂ levels. When the ocean pH decreases, corals cannot make their skeletons.

**2. MATERIALS**

Read with your group the list of materials needed. Make sure everyone in your group knows what the items are.

- ☐ Vinegar
- ☐ Baking soda
- ☐ BTB (bromothymol blue) (**absorbed through skin!**)
- ☐ 1 plastic cup
- ☐ 1 paper cup
- ☐ Spoon
- ☐ Masking tape



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Read the procedures on the back. THEN check your group's understanding:

1. What is the control setup in this experiment?
2. What is the test setup in this experiment?
3. What do we have to make sure about the paper cup?

STAMP HERE TO GET MATERIALS

3. PROCEDURES

✓ **Role** **Job**

Safety
Officer

1. Instruct everyone to put on their safety goggles.
2. Pour 50 mL of BTB into each plastic cup.



Time
Keeper

3. Measure and add 2 grams (1/2 tsp.) of baking soda to the paper cup.

Recorder

4. Tape the paper cup inside one of the clear plastic cups, making sure the top of the paper cup is about 1/2 inch (roughly 1 centimeter) below the top of the plastic cup.
(Make sure the bottom of the paper cup is not touching the surface of the liquid in the plastic cup—you don't want the paper cup to get wet.).

5. Place the cup on a white sheet of paper.

Materials
Manager

6. **Carefully** add 5 mL of vinegar to the paper cup.
DO NOT SPILL THE VINEGAR.
7. **Immediately** put a cover on top of each plastic cup. Wait 10 seconds.



4. DATA & ANALYSIS

1. Write down 2 observations about what you see. *(Include details like color, time, etc.)*

a) _____

b) _____

2. Discuss with your group: what do you think is causing this inside the cup? Draw and label a model in the space below that explains what you think is causing the changes inside the cup.

3. Why do you think the vinegar did not need to touch the water?

4. What are some possible ways this relates to how much carbon there is on Earth?

