



SCIENCE EXPERIMENT



Testing which household substances cause the most corrosion

Name: _____ Date: _____ Scientist: _____

QUESTION

Which common household substances cause the most corrosion on metal?

HYPOTHESIS

I think _____
will cause the most corrosion because _____.

MATERIALS

- 8 clean steel nails (or paper clips)
- 8 clear cups or jars
- Household substances to test (see ideas below)
- Water
- Spoon or stir stick
- Paper towels
- Ruler (optional)
- Camera or phone (optional)

IDEAS FOR SUBSTANCES TO TEST

- Water (control)
- Salt water
- Vinegar
- Lemon juice
- Baking soda solution
- Ammonia
- Bleach
- Cola (soda)

You may test more or less—choose 6–8 total.

PROCEDURE

1. Label each cup with the name of the substance you will test.
Use one cup for water as your control.
2. Pour each substance into a cup. Use enough to fully cover the metal.
3. Place one clean nail (or paper clip) into each cup. Make sure they are fully submerged.
4. Leave the cups in the same place for 24–48 hours.
5. After 24–48 hours, remove the nails and rinse each gently with water.
6. Pat each nail dry with a paper towel.
7. Observe the nails and compare the amount of corrosion (rust or discoloration).
8. Record your results in the table below.
9. (Optional) Repeat for up to 3 days and record changes each day.



WHAT IS CORROSION?

Corrosion is when metal reacts with a substance in its environment (such as water or chemicals) and gets damaged. On steel, it often looks like rust (reddish-brown flakes).

RESULTS – After 24–48 Hours

Substance	Observations (What do you see?)	Corrosion Rating (0–5) 0 = None 5 = Extreme	Notes / Draw a Sketch (Optional)

ANALYSIS

1. Which substance caused the most corrosion? _____
2. Which substance caused the least corrosion after water? _____
3. How does your control (water) compare to the other substances? _____
4. What do you think caused some substances to be more corrosive than others? _____
5. How could this information be useful in everyday life? _____



SAFETY FIRST!

- Wear gloves if you have them, especially when handling ammonia or bleach.
- Do not drink any of the substances.
- Work in a well-ventilated area.
- Wash your hands when finished.
- Ask an adult for help if needed.



GOOD SCIENTISTS:

- ✓ Ask questions
- ✓ Make a plan
- ✓ Test carefully
- ✓ Record data
- ✓ Think and explain