

## Rust and Corrosion

Lesson Title: *The Transfer of Energy 3: Rust and Corrosion*

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### Lab Instructions

1. Put the thermometer in the jar and close the lid. Allow the temperature to steady, and record the temperature as the “Start” temperature in the chart on the second page.
2. Remove the thermometer from the jar.
3. Soak a piece of steel wool in vinegar for one minute.
4. Squeeze the vinegar out of the steel wool pad. Wrap the steel wool around the bulb of the thermometer.
5. Place the thermometer and steel wool back into the jar and close the lid.
6. Wait two minutes and record the temperature and the appearance of the steel wool. Record the temperature and the appearance every two minutes up to ten minutes total (or longer if desired).
7. Repeat the above procedure using water and then oil instead of vinegar. Record all of your observations on the chart as you did with the vinegar.

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In the chart below, record the temperature of the jar and the appearance of the steel wool at two minute intervals up to ten minutes:

Time	Vinegar		Water		Oil	
	Temp	Appearance	Temp	Appearance	Temp	Appearance
Start						
2 mins						
4 mins						
6 mins						
8 mins						
10 mins						

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## **Rust and Corrosion**

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### **Analysis Questions**

What changes in temperature and appearance did you observe with each liquid?

Did the reactions release or absorb heat from the environment?

What substances are necessary for rusting to take place?

How can one account for the changes in each jar? Recall what the process of rusting requires.