

## Handout M03-1: Why Does the Match Go Out?

Name: \_\_\_\_\_

Organize your team. Change jobs if you repeat the experiment. On a team of 4:

- The **Observer** should light the matches.
- The **Timer** should measure the duration of burning (in seconds).
- The **Measurer** should measure the length of flames.
- The **Recorder** should record data.

Steps:

1. Place the metal tray on a heat-resistant surface. Set the support stand in the center of the metal tray. Attach the clamp to the stand. Attach the cross-piece with alligator clips to the clamp, so it forms a "+" with the stand.
2. Clip a wooden match to each alligator clip. Attach one match so the ignitable tip points straight up. Attach the other so the ignitable tip points down.
3. Light a third match and use it to ignite the downward-pointing match. Record your observations (A and B in first column below). Always dispose of burned matches in the ashtray or on the metal tray.
4. Use another match to ignite the upward-pointing match. Record your observations (A and B in second column below).
5. You may repeat the experiment to get more observations. If you do, use the oven mitt to handle the alligator clips. If you forget, you will quickly learn about *conduction*.
6. Answer question C for the downward-pointing match, then for the upward-pointing match.
7. **Clean up:** Make sure all burned materials and matches are out before you dispose of them – that is, there is no smoke and no heat being released. Use a metal trash can without a plastic liner. If in doubt, dump them in a bucket of water before putting them in the trash.



Match is pointing...	Down	Up
A. With the ruler near the flame <u>but not in it</u> , measure the flame length (centimeters). Record up to 3 observations.		
B. How long did the match burn (seconds)? Record up to 3 observations.		
C. Use the Fire Triangle to explain why the match went out.		