

## Praxis “Making Science Fun”

### Shadow Dance

Today we'll experiment with shadows and light sources and to understand the relationship between the angle of illumination and the position of the light source.

#### Materials:

- cardboard
- tooth pick
- flashlight
- pencil



**Procedure:** (Remember to be sure to have your parent's permission and they have the time to watch and help as you do your experiment.)

- Cut a small rectangular piece out of the cardboard approximately 2 cm wide and 10 cm long.
- Next, push a toothpick into the center of the small cardboard or Styrofoam piece. Put this piece on top of a larger piece of cardboard.
- Shine your flashlight on the toothpick to create a shadow line.
- Without moving the flashlight, but keeping it pointed at the toothpick, move the toothpick around and observe what happens to the shadow. Have a helper draw the shadow lines on the cardboard.
- Repeat this experiment using direct sunlight – outside or at a window that faces the Sun.
- What happens to the shadow when you move the toothpick around in the sunlight?
- How is it similar or different to the flashlight shadows?

#### What's happening?

You should notice some interesting differences between shadows created by the flashlight and those created by the Sun. Because the Sun is so far away the angle of the shadow remained the same when you moved the toothpick. However, the light source of the flashlight was much closer, the shadow changes direction and size.

#### Extension:

For this experiment and many others like it see:

<http://cse.ssl.berkeley.edu/AtHomeAstronomy/index.html>

This experiment is based on our “Astronomy and Sky Science” Learning Kit. Our teaching kits are loaned out FREE to provide classroom teachers and parents of home schooled children an opportunity to explore Science in interesting ways. Please consider volunteering to speak to a class about any one of our Science learning kits described on our website. We would be most appreciative to hear from you.



On January 30<sup>th</sup>, Praxis will be hosting Operation Minerva, a conference for grade 9 girls, that promotes Science, Technology, Engineering and Mathematical (STEM) based careers where students get a chance to job shadow and attend workshops. Please see our website for more details. If you are a woman currently employed in a STEM related field and are interested in volunteering 2 hours of your time so that girls attending the conference may job shadow you, please contact us.

Lorne Cooper, Regional Executive Director

PRAXIS, “Making Science Fun”. Contact Praxis at [praxis@praxismh.ca](mailto:praxis@praxismh.ca), [www.praxismh.ca](http://www.praxismh.ca), Tweet or follow us @PraxisMedHat, or friend us on Facebook. Address: c/o 200 7<sup>th</sup> Street S.W., Medicine Hat, AB, T1A 4K1 Phone: 403-527-5365, Fax: 403-527-6570.