

# Worksheet A: Lab Instruction Sheet

## Materials required:

- 1 set of 6 labeled fabric samples [*cotton, linen, silk, polyester, nylon, rayon*]
- Balance beam or electronic balance accurate to 0.01 g.
- 250 ml beaker
- 1/2 teaspoon
- scissors
- paper towels
- a watch with a second hand

Perform the following tests on each of your fabric samples. **THE STRENGTH TEST MUST BE DONE FIRST.**

### Strength

- Make a 1/2 inch cut on the side of the fabric at point A on the fabric (see attached sketch).
- With fingers on the edge of the fabric, pull until the fabric tears. Grade the strength of the fabric using a rubric (1 for tears easily and 5 for will not tear at all).
- Do this for each type of fabric.

### Permeability

- Lay **one** of the fabric sections on a piece of paper towel and put 1/2 teaspoon of water in the center.
- Time how long it takes for the water to permeate through the fabric. Time until no 'bubble' of water remains on top of the fabric.
- Rate the permeability of the fabric using a rubric (1 for very fast permeation and 5 for no permeation).
- Do this on **one** fabric section for each type of fabric.

### Absorbency

- **Use the dry fabric samples for this test.**
- Mass (weigh) a section from each of the cloth samples used in this test and record your results.
- Place the fabric in a beaker (~250 ml) of water for 30 seconds.
- Take the fabric out of the water and hold it until it stops dripping.
- Mass (weigh) each of the cloth samples again and record your results.
- Determine how many times its own weight a fabric can hold by dividing the mass (weight) when wet by the mass (weight) when dry.
- Do this for each type of fabric.