**ALESS Week 1: Brainstorming for your experiment**

## Choose 2 topics from the 4 listed and additionally, come up 1 of your own topics. For each topic, think about a research question that would be interesting to investigate. Your questions must be ones that you don’t know the answers to. Consider your immediate environment, and easily accessible materials (for example, from the supermarket or hardware store). These questions will form the basis of your ALESS experiment.

**Example:**

**Topic**:

Plants

**Research question:**

What kitchen waste products make the best fertilizer for tomato plants?

Topics:

1. Plants
2. Sound
3. Light
4. Food

## For each topic you choose, answer the following questions:

1. What is the question you are asking or the problem you are trying to solve?
2. How could you investigate this question / problem? Using what materials?
3. Why is this question interesting to you? Does it have a practical use? What kind of people could benefit from the information you provide?

**For example, if the research topic is Plants:**

1. What kitchen waste products make the best fertilizer for tomato plants?
2. This question can be investigated by comparing the growth of tomato plants treated with various kinds of homemade fertilizers for a period of time (2 weeks). The methods will include obtaining tomato seedlings and adding different homemade fertilizers to groups of 2-3 plants. Homemade fertilizers will include eggshells, coffee grounds, tealeaves and water used to wash rice. Control conditions will be no fertilizer and commercial fertilizer. To determine if there is a difference between experimental groups, several measurements will be made such as height of plants, color of plants and size of leaves.
3. This question is interesting because it has direct relevance to daily life, since many people like to grow vegetables in their garden or on the veranda. If a particular homemade fertilizer has a good effect on tomato plant growth, it could be used to grow vegetables organically without use of commercial fertilizer.

**Homework**

1. Complete this brainstorming activity. You can download the Word version of this document and complete it electronically. Afterwards, please upload your document to the ALESS website. Don’t forget to type your name and class period (Monday 2, Monday 3 or Friday 3) in the top right corner of your document.

**You will need to print and bring your completed homework for the following class because you will be discussing your ideas with your classmates.**

1. Complete Homework Assignment #2 on the class website.
2. Upload a recent photo of yourself to the class website.
3. Read 2 papers from the ALESS Collection. Write one paragraph for each study (2 paragraphs total) that explains the basic experiment plus the dependent, independent, and control variables for each paper.
4. Watch the “Your ALESS Experiment” video on the ALESS Website (can be found under “EXPERIMENT HELP”).