Reclaiming Waste - Teacher Notes

This is a module that should be done in pairs
They will need timers for this module

Set Up:

Premade Trash Solution:

You will want to make a trash solution prior to starting this module. This will consist of oil, steel wool, and plastic beads, simulating the different types of waste that would be found in the ocean, around the great pacific garbage patch.

- Oil
- Steel wool (cut into small pieces)
- Plastic Beads

Each student will need 2 clear plastic cups to allow them to see the solution before and after the separation occurs. Be sure to ask about the types of waste that would be removed with each separation and think about real waste items that would be separated using these methods.

Give each student a portion of the mystery trash solution, but make sure that each student has a little bit of everything in their cup

Make sure they time each of the experiments that they do, so they can get a feeling for which is the fastest, and most efficient separation technique

Control Data:

Materials:

- Scale
- Clear plastic Cup
- ~ 4 oz water

Have them weigh the cup with the water to get control data for this module. For each section, they should be using this data to find the amount of waste separated during each experiment

Experiment #1: Recovering Metals

Materials per pair:

- 1 magnet
- Mystery solution in clear plastic cup

Experiment #2: Recovering Plastics

Materials per pair:

- 4 bowls
- 1 pair of scissors
- 2 clean clear plastic cups

After they finish this separation, have them keep their original cup to deposit the oil from the next experiment

Experiment #3: Recovering Liquids

Materials per pair:

- 2 pipettes