

## **Materials - Unit One Investigation 1**

### **Activity 1 (For teacher demo)**

- Van de Graaff generator and grounding wand
- Balloon
- Wig
- Aluminum pie pans
- Magnets

### **Activity 2 (For each pair)**

- Translucent (cloudy) Scotch tape. (Clear tape does not work as well.)
- Pen or pencil for labeling
- Magnets

### **Activity 3 (For each pair)**

- Fur pad
- Dry, empty plastic bottle with cap
- Small pieces of paper (or tissue)
- Isopropanol wipes

### **Activity 4 (For each group)**

- Scotch tape
- Balloon
- Piece of thread (about 1 meter long)
- Several rods to charge (Teflon, glass, wood, acrylic or rubber)
- Fur
- Silk
- Isopropanol wipes

### **Activity 5 (For each group)**

- Scotch tape
- Thread
- Teflon rod
- Glass rod
- Fur pad
- 3 neutral objects (plastic straws, toothpicks, paper clips, wax paper, aluminum foil, feathers, fabric or ribbon)
- At least 1 neutral object of student's' choice (not from the above list)

## Materials – Unit One Investigation 2

### Activity 1 (For classroom demo)

- Van de Graaff generator
- Pointer – aluminum pie pan, thread, paper clip, wooden rod (See teacher guide for instructions on how to construct this in advance)

### Activity 2 (For each pair)

- Van de Graaff generator
- Wooden rod
- Tape
- Balloon
- Fur
- Thread

### Activity 3 (For classroom demo)

- Van de Graaff generator
- Piece of wire stripped on both ends
- 2 soda cans
- Pith ball (or other small object that can act as a clapper, such as the tab from one of the soda cans)
- Stand from which to hang pith ball
- Thread
- Tape
- Scissors

## Materials – Unit One Investigation 3

### Activity 1 (For classroom demo)

- Paper
- Scissors

### Activity 2 (For each group)

- Two 10 mL graduated cylinders (fairly skinny with at least 1 mL graduations)
- Water
- Ethanol (10 ml) in container with lid and droppers
- Two stoppers (each stopper should fit the opening of the graduated cylinder)

### Activity 3 (For each group)

- Syringe with hole in plunger (see teacher guide for how to construct in advance)
- Syringe stopper
- Nail
- Digital balance (sensitive to 1/100 of a gram)
- Water to put in the syringe

### Activity 4 – NONE

## Materials – Unit One Investigation 4

### Activity 1

For optional activity (each group)

- Piece of PVC pipe (~10 cm diameter)
- Cinnamon red hot candy
- Long-grain rice (~1 mm in diameter)

For main activity:

- Meter stick
- 2.5 cm (1 in.) diameter wood rod
- Beach ball (~1 m in diameter)
- Measuring tape (60 meters)

### Activity 2

- Mystery box – a box, a piece of paper with grid, plastic water bottle \*\* (See teacher guide for how to make this in advance)
- Laser pointer
- Projector screen or white wall

### Activity 3 – NONE

### Activity 4 (For each group)

- Pencil

## Materials – Unit One Investigation 5

### Activity 1 - NONE

### Activity 2 (For each group)

- Teflon rod
- Glass rod
- Plastic bottle
- Fur
- Silk

### Activity 3 (For classroom demo)

- Balloon
- Fur

### Activity 4 (For optional demo)

- Van de Graaff
- Aluminum pie pan
- Franklin's bell