

APPENDIX C

A COMPLETE LIST OF LAB SUPPLIES

Module #1

- Safety goggles
- A wooden board, about 1 meter long (Any long, flat surface that you can prop up on one end will do. It needs to be as smooth as possible.)
- A pencil (Anything that you can use to mark the board will do.)
- A stopwatch (A watch with a second hand will do.)
- A pile of books between 18 and 27 centimeters thick
- A ball that will easily roll down the board
- Masking tape or electrical tape
- An uncarpeted floor

Module #2

- Safety goggles
- A large (at least 21 cm by 27 cm), heavy book
- A small (about 10 cm by 10 cm) piece of paper
- A ruler, preferably metric
- Another person to help you
- Four small (about 10 cm by 10 cm) pieces of paper, all the same size

Module #3

- Safety goggles
- Modeling clay (Play-Doh[®] or Silly Putty[®] will work as well.)
- A pencil (It should be at least 6 inches long and have a sharp point on the end.)
- A wooden ruler (It needs to have a flat end at zero inches.)
- A plain 8.5-in. x 11-in. sheet of paper
- A pen
- A protractor
- Ruler
- Map given in book and on course website

Module #4

- Safety goggles
- A rubber band
- A stopwatch
- A person to help you
- A toy car or a ping-pong ball
- A meterstick
- A flat table in a room with plenty of space on at least one side of the table

Module #5

- Safety goggles
- Someone to help you
- A small beanbag, or any object that does not bounce when dropped
- A sidewalk, driveway, or long, flat yard outside
- Three rocks
- A plastic tub (like the kind that holds margarine) with lid
- A board that is at least a meter long and wider than the plastic tub listed above
- A rubber band (Thin rubber bands work better than thick ones.)
- Scissors
- Aluminum foil
- Liquid soap (Dish detergent or body wash will work as well.)
- A washcloth
- A ruler
- Sand or kitty litter

Module #6

- Safety goggles
- A building with an elevator (In other words, it's time for a field trip!)
- A bathroom scale (A digital scale may not work. It needs to be a scale that responds quickly.)
- A large nut and bolt. The nut should be at least 1/4 inch in diameter and the bolt should fit the nut.
- A board or something that has a hole big enough for the bolt to fit through
- Either one wrench that has a long handle or three wrenches that are of different lengths but nevertheless all fit the nut
- Another wrench or a pair of pliers that can hold onto the head of the bolt
- A board that is at least half a meter long
- A block of wood or metal that can fit on the surface of the board. If you don't have a block of metal or wood, try a small cardboard box.
- A meter stick

Module #7

- Safety goggles
- A pen that can be disassembled
- String
- A ruler
- Four washers
- One washer that is a bit smaller than the four washers used above
- A marker
- A stopwatch

Module #8

- Safety goggles
- A piece of string at least 25 cm long
- A ruler
- A desk or table
- Some tape
- Some books
- A mass (a ball or a nut, for example) to hang on the string. It should be heavy enough to keep the string taught when it hangs at the end.
- The inner cardboard tube from a roll of paper towels
- Scissors
- A golf ball or marble
- Someone to help you
- A desk, table, or counter that you can tape things to. Make sure the finish won't come off with tape, or that your parents don't care if it does. There should be plenty of space on at least one side.

Module #9

- Safety goggles
- Two helpers (wearing old clothes or large aprons)
- Old clothes or an apron for yourself
- Two eggs
- A reasonably large board or some other hard, flat surface such as a big cookie sheet
- A fitted bed sheet
- Four ping pong balls
- Some thread
- Some tape
- A ruler or meterstick
- Several books

Module #10

- A spring with loops on each end (These are available at any hardware store. You need one that is 3-5 cm long. You should be able to stretch it to a length of 10-15 cm with your hands. There is a test at the beginning of the experiment to let you know whether or not your spring is acceptable.)
- 2 paper clips
- A Ziploc[®] plastic bag
- Some sand, kitty litter, or fine gravel
- A mass scale (You can get these at any supermarket, as dieters use them to weigh out their food. It should probably have a range of 0 - 1,000 grams, but a smaller range will work.)
- A few heavy books
- Two rulers (One of these needn't be a ruler. It just needs to be a long, flat object from which you can hang the spring.)
- A stopwatch

Module #11

- Safety goggles
- 16 inches of copper pipe, ½-inch diameter preferred (This is available at any hardware store. A good hardware store will even cut it for you. You need two 6-inch pieces and one 4-inch piece.)
- Freezer
- Hacksaw or pipe cutter (You won't need these if the store cuts the pipe for you.)
- File (Depending on the way the pipes are cut, you may not need this.)
- Hot tap water
- Large bowl
- Warm gloves
- A car with a horn and a parent to drive the car
- The street you live on or a country road
- A bicycle

Module #12

- Safety goggles
- A flat mirror. The mirror can be very small, but it needs to be flat. You can always tell if a mirror is flat by looking at your reflection in it. If the image you see in the mirror is neither magnified nor reduced, the mirror is flat.
- A white sheet of paper
- A pen
- A protractor
- A flashlight
- A ruler
- Black construction paper or thin cardboard
- Tape
- A dark room
- A magnifying makeup mirror that you can hold in your hands
- A square or rectangular glass or clear plastic pan (Depending on how slanted the sides of your pan are, you might need a helper to hold the pan during the experiment. A piece of glass with two flat sides would work even better.)

Module #13

- Safety goggles
- Two balloons. Round balloons work best, but any kind will do.
- Thread
- Cellophane tape
- A glass
- A plastic lid that fits over the glass. This lid can be larger than the mouth of the glass, but it cannot be smaller. The top of a margarine tub or something similar works quite well.
- A paper clip
- Two 5-cm x 1.5-cm strips of aluminum foil (the thinner the better)
- A pair of pliers

Module #14

- Safety goggles
- Two Styrofoam[®] plates (Paper plates will not work nearly as well.)
- Aluminum foil
- Tape
- Scissors
- A metal paper clip
- Balloon

Module #15

- Safety Goggles
- A 1.5 -volt battery (Any AA, C, or D-cell battery will work. Do not use any battery other than one of those, though, because a higher voltage can make the experiment dangerous.)
- Aluminum foil
- Scissors
- A tabletop to which you can tape things or a flat piece of cardboard (The tabletop can't be metal.)
- Insulated wire, 20-14 gauge (It is best to use wire that has several small conductors twisted together. This is typically called "braided wire")
- Tape
- Flashlight
- 5 spoons (They cannot be silver. They must be stainless steel flatware. Most people use this kind of flatware as their "every day" spoons.)

Module #16

- A compass
- Insulated wire like you used in the experiments from the previous module
- A 1.5- volt battery (Any size cell will do, just make sure it is a 1.5-volt battery. A battery of higher voltage could make the experiment dangerous.)
- Tape
- Two iron nails (One should be large.)
- Insulated wire like that used in the previous experiment
- A metal paper clip
- A wooden match stick or toothpick

