

## Items Needed To Complete Each Lesson

Every child will need his own notebook, blank paper, lined paper, and colored pencils.

### Lesson 1

- ◆ Another person
- ◆ Two hair dryers or personal-sized electric fans
- ◆ Glitter or pepper
- ◆ A long casserole dish
- ◆ A clear plastic 2-liter bottle with a lid
- ◆ A small (the smaller the better) balloon
- ◆ A box (A large box is best, but even a shoebox will work.)
- ◆ Enough blue paper to line the inside and outside of the box
- ◆ Glue
- ◆ A large clear bowl or container (It could even be the bottom half of a plastic soda bottle.)
- ◆ A paper or Styrofoam<sup>®</sup> cup
- ◆ A nail or pen to puncture a hole in the cup
- ◆ Blue and yellow food coloring
- ◆ A spoon with which to stir
- ◆ Hot water and ice cold water

### Lesson 2

- ◆ Two pieces of cardstock or poster paper (8½ x 11 works best)
- ◆ Tape
- ◆ Two cups
- ◆ A tablespoon
- ◆ Salt
- ◆ A freezer
- ◆ Someone to help you
- ◆ 2 paper (or Styrofoam) cups
- ◆ A sharp object that can make a tiny hole in the bottom of each cup (like the tip of a straightened paper clip)
- ◆ A sharpened pencil
- ◆ 30 feet of 100% cotton yarn (Synthetics tend to stretch too much.)

### Lesson 3

- ◆ A big bowl of ice water
- ◆ A large container of Vaseline<sup>®</sup> or shortening
- ◆ Latex or dish gloves (You'll need four for every child doing the experiment.)
- ◆ A timer clock (like a stopwatch)
- ◆ Someone to help you

### Lesson 4

- ◆ Chalk
- ◆ Tape measure
- ◆ A balloon
- ◆ A box
- ◆ A teaspoon
- ◆ Vanilla
- ◆ Two tadpoles (Check the course website to find where you can order them)
- ◆ Two covered tanks (or large glass bowls with covers) that are the same size
- ◆ A lamp with a 50 or 60-Watt bulb

### Lesson 5

- ◆ Chalk
- ◆ Tape measure
- ◆ A sea shell
- ◆ A Cheerio<sup>®</sup> (or similar piece of breakfast cereal)
- ◆ Two glasses
- ◆ A container in which to mix water and dirt
- ◆ Water
- ◆ Dirt
- ◆ 3 small plastic disposable containers
- ◆ A cup of sand
- ◆ A cup of clay (Real clay is preferable, but modeling clay is okay.)
- ◆ A cup of soil from your yard (Collect your soil at least 12 inches below the surface.)
- ◆ A detailed shell of some sort (It should have ridges or other specific features. If you can't get a shell, you can use a toy that has detail in its shape.)
- ◆ A craft stick or plastic spoon for stirring
- ◆ 2 cups plaster of Paris
- ◆ A cup of water
- ◆ A disposable container for plaster
- ◆ A permanent marker

### Lesson 6

- ◆ A fish in a small bowl or a glass (A goldfish is best, because it can handle large changes in water)

temperature. Do not use a tropical fish, as it will not be able to handle large temperature changes.)

- ◆ A lamp with a bendable neck that can face down into your fish bowl (The light bulb should be 100-Watt.)
- ◆ A large bowl of ice water into which you can place the fish bowl or glass
- ◆ A thermometer (It should read temperatures above and below room temperature.)

### Lesson 7

- ◆ A ruler
- ◆ A large battery (see picture on the next page)
- ◆ 3 pieces of insulated electrical wire
- ◆ 2 metal nails (They must conduct electricity.)
- ◆ Electrical tape
- ◆ A glass of distilled water (You can buy this at any large supermarket. Make sure it is *distilled* water, not mineral water.)
- ◆ A small light bulb holder with a light bulb (These can be found in hobby stores. Look at the picture below to see what I mean.)
- ◆ Salt

### Lesson 8

- ◆ Markers
- ◆ A blank file folder
- ◆ A set of index cards
- ◆ Dice
- ◆ Animal game pieces for each player (You can make these or use small plastic animals.)
- ◆ Sea monkeys or triops (See the course website for where they can be purchased.)

### Lesson 9

- ◆ Several bottles of different sizes
- ◆ A least one shoebox
- ◆ Scissors
- ◆ Glue
- ◆ Some cardboard (You can cut up cereal boxes or other thin cardboard boxes.)
- ◆ Cotton batting or a sheet of foam

### Lesson 10

- ◆ A small eyedropper
- ◆ 1 empty, clear water bottle or soda pop bottle with a lid

- ◆ A glass of water
- ◆ Optional: a google eye
- ◆ Optional: 1 chenille stick (pipe cleaner) or yarn
- ◆ Optional: double sided tape

### Lesson 11

- ◆ 5 six-inch segments of cotton string
- ◆ 3 cups of water
- ◆ A lot of salt
- ◆ Food coloring (any color)
- ◆ Wide-mouthed glass jar (A glass measuring cup will do.)
- ◆ Pan for boiling water
- ◆ A wooden spoon for stirring

### Lesson 12

- ◆ A glass baking dish
- ◆ Hot water
- ◆ A fruit popsicle (For best results, use one made from real fruit, like an Edy's frozen fruit bar.)

### Lesson 13

- ◆ Jar
- ◆ A clipping from a vine or a rose
- ◆ Pond water
- ◆ Two water bottles
- ◆ Black paint
- ◆ 1 cup of water mixed with 1 tablespoon of salt
- ◆ Plastic tubing
- ◆ Clay
- ◆ A nice sunny window
- ◆ A stack of books