

Materials at a Glance

Experiment 1	Experiment 3	Experiment 4	Experiment 5	Experiment 6
non-living object to observe (such as a rock or piece of wood) living thing to observe (such as an ant, frog, bird, cat, or dog) colored pencils	cotton balls rubber ball tennis ball banana apple rocks Legos other objects colored pencils	internet access and/or reference books colored pencils	milk, .25 l (1 cup) plain yogurt, .5 liter (2 cups) fork spoon cups or small bowls (several) food items such as honey, berries, chopped fruit or vegetables, spices, herbs, cocoa, chocolate chips, etc. (<i>Just For Fun</i> section)	microscope with a 10x or 20x objective lens (see the following How to Buy a Microscope section) plastic microscope slides ¹ eye dropper pond water or protozoa kit ¹ Protists (protozoa) can also be observed in hay water. To make hay water, cover a clump of dry hay with water and let it stand for several days at room temperature. Add water as needed
Experiment 2				
magnifying glass colored pencils				

Experiment 7	Experiment 8	Experiment 9	Experiment 10	Experiment 11
(see Experiment 6) small piece of chocolate Optional baker's yeast Eosin Y stain ² distilled water	6-8 sealable plastic bags waterproof disposable gloves piece of newspaper or plastic 2 pieces of fruit 2-3 pieces of bread (works best if bread does not have preservatives) marking pen water Optional colored pencils	notebook or drawing pad with blank pages (not ruled) to make a nature journal pencil colored pencils Optional camera and printer tape backpack snack and bottle of water	2 small houseplants of the same kind and size 2 more small houseplants of the same kind and size water measuring cup closet or cardboard box colored pencils	2-4 white carnations 1 or more other white flowers (rose, lily, etc.) 2-3 small jars food coloring water tape knife colored pencils Optional magnifying glass

¹ As of this writing, the following materials are available from Home Science Tools, www.hometrainingtools.com: plastic microscope slides, MS-SLIDSPL or MS-SLPL144, Basic Protozoa Set, LD-PROBASC

² Eosin Y stain, CH-EOSIN (Home Science Tools)

Experiment 12	Experiment 13	Experiment 14	Experiment 15	Experiment 16
1-2 small clear glass jars 2 or more dried beans (white, pinto, soldier, etc.) 2 or more additional dried beans (different kind) or other seeds absorbent white paper scissors knife plastic wrap clear tape rubber band water Optional magnifying glass	student's field notebook pencil, pen colored pencils Optional camera and printer tape backpack snack and bottle of water	large tray or plastic box, at least .3 m (1 ft.) on each side, and cover garden dirt (with lots of organic material) spoon or garden trowel 12 snails/slugs and/or 20–40 worms ³ holding box for the snails/worms to keep them moist and dark water experimental snail and worm barriers. Set the amount you are going to use in an open container in the sun for a few days. table or rock salt plus three of the following: cinnamon baking soda black pepper cornstarch flour borax an active anthill	butterfly kit small cage Butterfly kits can be purchased from a variety of different sources, such as: Home Science Tools: www.hometrainingtools.com Insect Lore: www.insectlore.com	tadpole kit (or tadpoles or frog eggs collected locally) A tadpole kit can be purchased from Home Science Tools: www.hometrainingtools.com. aquarium water tadpole food

³ Look for online or local sources of snails and/or earthworms. Or you and your students may be able to collect them yourselves.

Materials: Quantities Needed for All Experiments

Equipment	Materials	Materials (continued)
aquarium cage, small cup, measuring cups or small bowls (several) eye dropper fork jars, 2-3 small, clear glass knife Legos magnifying glass microscope with a 10x or 20x objective lens ¹ scissors spoon spoon or garden trowel tray or plastic box, large, at least .3 m (1 ft.) on each side, and cover Optional camera and printer magnifying glass camera backpack	ball, rubber ball, tennis box for snails/worms to keep them moist and dark butterfly kit ² carnations, 2-4 white cotton balls dirt, garden (with lots of organic material) flowers (rose, lily, etc.), white, 1 or more (not carnations) food coloring gloves, waterproof, disposable houseplants, 2 small - same kind and size houseplants, 2 additional, small - same kind and size living thing to observe (such as an ant, frog, bird, cat, or dog) microscope slides, plastic ² newspaper or plastic, 1 piece notebook or drawing pad with blank pages (not ruled) non-living object to observe (such as a rock or piece of wood) objects, misc. paper, absorbent white pen pen, marking pencil pencils, colored plastic bags, sealable, 6-8 plastic wrap pond water or protozoa kit protists (protozoa) ² rocks rubber band snail and worm barriers, student choice of materials snails/slugs, 12, and/or 20–40 worms ³	table or rock salt plus three of the following: cinnamon, baking soda, black pepper, cornstarch, flour, borax tadpole food tadpole kit (or tadpoles or frog eggs collected locally) ² tape tape, clear water Optional Eosin Y stain ² water, distilled
Foods		Other
apple banana beans, dried (white, pinto, soldier, etc.), 2 or more beans, dried (different from above) or other seeds, 2 or more bread, 2-3 pieces (best without preservatives) chocolate, small piece food items such as honey, berries, chopped fruit or vegetables, spices, herbs, cocoa, chocolate chips, etc. fruit, 2 pieces milk, .25 l (1 cup) yogurt, plain, .5 liter (2 cups) Optional baker's yeast snack and bottle of water		anthill, active closet or cardboard box internet access and/or reference books

¹ See the following *How to Buy a Microscope* section for recommendations.

² As of this writing, the following materials are available from Home Science Tools, www.hometrainingtools.com:

Butterfly kit (can also be purchased from Insect Lore: www.insectlore.com)

Eosin Y stain, CH-EOSIN

Plastic microscope slides, MS-SLIDSPL or MS-SLPL144

Basic Protozoa Set, LD-PROBASC

Tadpole kit

³ Look for online or local sources of snails and/or earthworms. Or you and your students may be able to collect them.

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