

**FOSS NG Teacher-supplied Materials
Kindergarten**

Investigation	Material Needed	Comments
Animals Two by Two		
Most Investigations	<ul style="list-style-type: none"> • Chart paper and marking pens • Drawing utensils (crayons, pencils, colored pencils, marking pens) • Glue sticks • Paper towels 1 Pitcher or water container • Science notebooks (composition books) 1 Scissors • Tape, transparent 	
Outdoor Investigations	<ul style="list-style-type: none"> • Collecting bags for carrying materials • Clipboards (optional) 	
Investigation 1: Goldfish and Guppies	<ul style="list-style-type: none"> 1 Bird guide 1 Bunch of eleodea (<i>Anacharis</i>), 6–8 sprigs • Clipboard 1 Computer with Internet access 32 Envelopes (optional) 2 Goldfish 6 Guppies (4 females and 2 males) 1 Hole punch 1 Paper cutter (optional) 1 Projection system 10 Scissors 1 Piece of scratch paper 1 Stapler • String, 27 m 64 Toilet paper tubes (empty) 3 Sheets of white paper • Water, aged or treated 	

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Investigation	Material Needed	Comments
Investigation 2: Water and Land Snails	<ul style="list-style-type: none"> • Aged or treated water 1 Bunch of elodea (<i>Anacharis</i>) • Chalk or egg shells 1 Computer with Internet access 12–15 Land snails • Lettuce or carrot 10 Pieces of construction paper 1 Projection system 24 Water snails (pond snails and ramshorn snails) 	Collect land snails locally or within your state; see Step 2 or Preparing the Kit for Your Classroom for more information
Investigation 3: Big and Little Worms	<ul style="list-style-type: none"> • Flower petals or weeds and leaves • Leaf litter • Carrot, apple, or lettuce 5 Sheets of construction paper or file folder 5 Index cards (optional) 12 Night crawlers • Oatmeal • Packing tape, clear • Paperclips, regular and jumbo • Paper towels • Pitcher • Newspaper (no glossy sheets) 150 Redworms 8 Small objects, such as blocks, pencils, and centimeter cubes 	

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Investigation	Material Needed	Comments
Investigation 4: Pill Bugs and Sow Bugs	<ul style="list-style-type: none"> • Carrot, potato, lettuce 1–2 Flat rocks 25 Pill bugs • Leaf litter • Paper towels • Scissors 1 Small garden plant 8 Small objects, such as blocks, pencils, and centimeter cubes 25 Sow bugs 1 Stopwatch or clock • Tree bark • Water 	

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Investigation	Material Needed	Comments
Materials and Motion		
All Investigations	<ul style="list-style-type: none"> • Chart paper and marking pens 1 Computer with Internet access • Drawing utensils (crayons, pencils, colored pencils, marking pens) • Glue, white • Glue sticks • Newspaper • Paper towels 1 Pitcher or empty 2 L soft-drink bottle 1 Projection system • Science notebooks (composition books) 1 Scissors 	
Outdoor Investigations	<ul style="list-style-type: none"> 1 Bag for carrying materials 32 Collecting bags for carrying materials 	
Investigation 1: Getting to Know Wood	<ul style="list-style-type: none"> 1 Container, large zip bag, or jar • Cornstarch, 1 or 2 boxes 2–3 Small objects that sink 1 Plane (optional) 32 Safety goggles • Saucepan 1 Saw (optional) • Scratch paper 1 Spoon, long-handled 2 Spoons, plastic 32 Sticks, about 20 x 1 cm (8" x 0.5") 1 Turkey baster (optional) 	

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Investigation	Material Needed	Comments
Investigation 2: Getting to Know Paper	<ul style="list-style-type: none"> • Basins or bins, recycling 1 Clothesline and clothespins (optional) • Construction paper, white • Facial tissue, white • Flour, 3/4 – 1 L (3–4 cups) • Newsprint (plain) or brown paper towels (from school) 1 Paper, white, sheet, 22 x 28 cm (8.5" x 11") 1 Screwdriver or mat knife 1 Spoon, large, long-handled 1 Tissue paper, roll, single ply 	
Investigation 3: Getting to Know Fabric	<ul style="list-style-type: none"> 1 Box cutter 5 Cardboard boxes or brown-paper grocery bags • Clothespins or binder clips 1 Clothesline (optional) 2 Contact paper (optional) • Fabric scraps, small 1 Hot glue gun • Mat-board scraps or cardboard scraps (optional) • Natural materials (leaves, sticks, bark – optional) • Paper scraps • Magnets • Materials for recycling center (empty plastic bottles, steel cans, aluminum cans, newspapers, cardboard boxes, scrap wood) • Scissors 1 Stapler (optional) 1 Thermometer (optional) • Wood scraps, small 	

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Investigation	Material Needed	Comments
Investigation 4: Getting Things to Move	2–4 Balls, different sizes (kickball, soccer ball, tennis ball) 2 Bath towel or small blanket 2–3 Books 8 Bottles, smpty, soft-drink, 1–2 L 2 Chairs 1 Meter tape or stick 1 Toy that rolls on wheeels	

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Investigation	Material Needed	Comments
Trees and Weather		
Most Investigations	1 Camera • Chart paper and marking pen • Drawing utensils (crayons, pencils, colored pencils, marking pens) * Glue sticks • Glue, white • Paper, white 1 Pen, marking, permanent, black • Science notebooks (composition books) 1 Scissors • Tape, transparent	
Outdoor Investigations	• Collecting bags for carrying materials • Clipboards (optional)	
Investigation 1: Observing Trees	2 Cardboard pieces, 31 x 46 cm (12.25" x 18.25") 1 Clipboard 20 Paper, construction, pieces, different colors 30 x 45 cm (12" x 16") *Paper, contact • Phone books or catalogs • Planting tools (shovel, hose, bucket) 1 Tree in a container • Water • Yarn, cord, or ribbon	
Investigation 2: Observing Leaves	2–3 Basins or boxes for leaves 1 Cardboard box, small, or shopping bag 1 Felt board • Leaves from trees 16 Paper, white, pieces 5 Sheet protectors, clear-plastic (optional)	

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Investigation	Material Needed	Comments
Investigation 3: Observing Weather	2 Basins 5–6 Cups or envelopes <ul style="list-style-type: none"> • Paper, construction, fadeless: orange, yellow, green, blue, purple • Paper, construction, pieces, 10 x 23 cm (4" x 9") 1 Pen, watercolor or overhead transparency <ul style="list-style-type: none"> • Tape, masking 1 Ruler <ul style="list-style-type: none"> • Water, warm and cold 	
Investigation 4: Trees through the Seasons	32 Bark photos <ul style="list-style-type: none"> • Bottles, soft-drink, 2 L • Evergreen leaves, needs, and scales • Fruits, edible • Gravel or pebbles 1 Knife, sharp 1 Laminator (optional) 8 Paper, drawing, pieces, 11 x 14 cm (4.25" x 5.5") <ul style="list-style-type: none"> • Paper towels 1 Bag for seeds, plastic, 1 L 1 Pruning shears (optional) <ul style="list-style-type: none"> • Twigs • Water 	

FOSS NG Teacher-supplied Materials	
Grade 1	
Investigation	Material Needed
Air and Weather	
All Investigations	<ul style="list-style-type: none"> • Drawing utensils (pencils, crayons, colored pencils, marking pens) • Glue sticks • Paper towels and/or sponges 1 Projection system and computer with Internet access • Science notebooks (composition books) • Water
Outdoor Investigations	<ul style="list-style-type: none"> 1 Bag for carrying materials 32 Clipboards (optional) • Pencils 1 Whistle or bell
Investigation 1: Exploring Air	<ul style="list-style-type: none"> 4 Chairs • Craft sticks (optional) 1 Fork, metal 1 Marking pen, permanent, black 1 Meter tape (optional) 40 Paper napkins, folded, 15 cm (6") square 2 Paper towels 1 Pitcher or other wide-mouthed container 1 Scissors • Scratch paper • Small fish crackers or small pretzels • Toothpicks, flat (optional)
Investigation 2: Observing the Sky	<ul style="list-style-type: none"> • Art paper or construction paper, fadeless, several small pieces of each color: orange, yellow, green, blue, purple 2 Buckets (optional) 32 Construction paper, pieces, red, 4 x 17 cm (1.5" x 7") 32 Construction paper, pieces, red, 2 x 6.5 cm (1" x 2.5") 3 Construction paper, pieces (optional) 5 Cups or envelopes 1 Marking pen, permanent, black 1 Ruler 32 Scissors

FOSS NG Teacher-supplied Materials	
Grade 1	
Investigation	Material Needed
Investigation 3: Wind Explorations	2 Bottles, plastic, soft-drink, 2 L 1 Cardboard or poster board, piece lightweight 56 x 71 cm (22" x 28") 1 Compass, magnetic (optional) 1 Fan or hair dryer, variable speed • Light corn syrup or glycerin, 30 mL (6 tsp.) (optional) • Liquid dishwashing detergent, 250 mL (1 cup) 1 Marking pen, permanent, black 1 Measuring cup 1 Measuring teaspoon 1 Ruler 32 Scissors
Investigation 4: Looking for Change	1 Construction paper, piece, 30.5 x 45.75 cm (12" x 18") • Local newspaper, weather page 32 Scissors

FOSS NG Teacher-supplied Materials	
Grade 1	
Investigation	Material Needed
Plants and Animals	
All Investigations	<ul style="list-style-type: none"> • Chart paper and marking pen • Drawing utensils (pencils, craysons, colored pencils, marking pens) • Glue sticks 1 Marking pen, wet-erase • Newspaper • Paper towels 1 Projection system • Science notebooks (composition books)
Outdoor Investigations	<ul style="list-style-type: none"> 1 Bag for carrying materials 1 Camera (optional) 1 Whistle or bell
Investigation 1: Grass and Grain Seeds	<ul style="list-style-type: none"> 1 Computer with Internet access 4 Pieces of construction paper, 2 brown, 2 green 32 Paper cups or plastic bags (optional) • White glue 1 Metric ruler 1 Paper cutter (optional) • Potting soil, 4 L (4 qt.) 8 Scissors • Transparent tape 1 Weed and leaf from schoolyard 1 Sheet of white paper • Water

FOSS NG Teacher-supplied Materials	
Grade 1	
Investigation	Material Needed
Investigation 2: Stems	<ul style="list-style-type: none"> • Bottled water (optional) • Drawing paper 2 Flowerpots, plastic, 15–20 cm, with coasters 1 Flowerpot, large (optional) 1 Paring knife • Paint (optional) 1 Pitcher or recycled soft-drink bottle, 2 L • Plants for cuttings 1 Plastic bag, large • Plastic bags, small (optional) 8 Potatoes, small, white 16 Scissors • Potting soil, 6 L (6 qt.)
Investigation 3: Terrariums	<ul style="list-style-type: none"> 1 Computer with Internet access • Food for animals (apple, carrot, lettuce) 20 Index cards (optional) • Isopods (optional) • Pasta, large, uncooked, two varieties, such as large elbow macaroni and rotini, about 200 pieces of each variety 1 Pitcher or recycled soft-drink bottle, 2 L • Potting soil, 8 L (8 qt.) 8 Teaspoons, plastic 1 Timer or stopwatch 1 Whiteboard, portable (optional) • Water
Investigation 4: Growth and Change	<ul style="list-style-type: none"> • Bottled water (optional) 34 Bulbs, onion or garlic 2 Paring knives • Paint (optional) 40 Plastic bags, small (optional) 16 Roots (carrots, radishes) to plant • Rulers (optional) 1 Scissors 1 Transparent tape 16 Sheets of white paper

FOSS NG Teacher-supplied Materials	
Grade 1	
Investigation	Material Needed
Sound and Light	
All Investigations	<ul style="list-style-type: none"> • Chart paper and marking pen 1 Computer with Internet access • Drawing utensils (crayons, pencils, colored pencils, marking pens) • Glue sticks 1 Projection system • Science notebooks (composition books)
Outdoor Investigations	<ul style="list-style-type: none"> 1 Bag for carrying materials 32 Clipboards (optional) • Pencils 1 Whistle or bell
Investigation 1: Sound and Vibrations	<ul style="list-style-type: none"> 32 Books, hardcover • Clay, modeling (optional) 8 Index cards 16 Pencils 16 Pennies 1 Pencil or pen • Rice grains • Pinch of salt 1 Scissors 1 Long table or door with a knob • Transparent tape
Investigation 2: Changing Sounds	<ul style="list-style-type: none"> • Paper cups of different sizes 1 Musical instrument (optional) 8 Pencils • Scissors • String of different kinds 1 Long table or door with a knob
Investigation 3: Light and Shadows	<ul style="list-style-type: none"> 16 Pennies 16 Pencils 16 Marking pens, large, that stand on base 1 Piece of white paper 1 Zip bag, 1 L
Investigation 4: Light and Mirrors	<ul style="list-style-type: none"> 16 Books 1 Scissors

FOSS NG Teacher-supplied Materials Grade 2		
Investigation	Material Needed	Comments
Insects and Plants		
All Investigations	<ul style="list-style-type: none"> • Chart paper and marking pen • Drawing utensils (pencils, crayons, colored pencils, marking pens) • Dry-erase pen, regular and fine tip • Glue sticks 1 Overhead-transparency pen 1 Projection system • Science notebooks (composition notebooks) 32 Scissors • Transparent tape 	
Outdoor Investigations	<ul style="list-style-type: none"> 1 Bag for carrying materials 1 Camera (optional) 1 Whistle or bell 	
Investigation 1: Mealworms	<ul style="list-style-type: none"> • Apple, sweet potato, carrot, or potato 8 Small boxes or berry baskets (optional) 200 Mealworms 1 Paring knife • Wheat bran 	
Investigation 2: Brassica Seeds	<ul style="list-style-type: none"> 1 Computer with Internet access • Extension cord (optional) • Graph paper (optional) 8–16 Marigold seedlings 1 Marking pen, permanent (optional) • Newspaper • Paper towels 2–4 Pitchers or recycled soft-drink bottles (2 L) or gallon jugs 1–2 Planter pots (optional) 1 Plastic bag, about 4 L 1 Potting soil, 4 L (4 qt.) • Rulers • String (optional) • Water 	

FOSS NG Teacher-supplied Materials		
Grade 2		
Investigation	Material Needed	Comments
Investigation 3: Milkweed Bugs	75 Milkweed bug eggs • Paper, light-colored (optional) 8 Paper clips, jumbo • Paper towels 1 Pitcher or recycled soft-drink bottle, 2 L • String (optional) • Water 1 White paper, large sheet 8 White paper, recycled, 8.5" x 11" (optional)	
Investigation 4: Silkworms	1 Flat box or lid, large 8 Card stock pieces, 8.5" x 11" (optional) 1 Corrugated box or clear plastic box, medium-sized 2 Egg cartons, paper 1 Leaf, damaged by insect • Mulberry leaves 1 Paper towel 1 Plastic bag to fit over shoe box 1 Shoe box or other small cardboard box 50 Silkworm eggs 2 White paper, large sheets	

FOSS NG Teacher-supplied Materials Grade 2		
Investigation	Material Needed	Comments
Investigation 5: Butterflies	1 Camera (optional) 1 Computer with Internet access 2 Construction paper pieces, 1 red or orange and 1 any color 1 Flower 1 Mallow plant or fresh mallow leaves (optional) 1 Marking pen, permanent 1 Measuring spoon, 1.25 mL (1/4 tsp.) <ul style="list-style-type: none"> • Microscopes (optional) 1 Orange, fresh (optional) 5–10 Painted lady butterfly larvae in medium <ul style="list-style-type: none"> • Paper towels 1 Paring knife (optional) 1 Projection system 8 Scratch paper, quarter sheets <ul style="list-style-type: none"> • Sugar • Water 	

FOSS NG Teacher-supplied Materials Grade 2		
Investigation	Material Needed	Comments
Pebbles, Sand, and Silt		
All Investigations	<ul style="list-style-type: none"> • Chart paper and marking pen • Drawing utensils (pencils, crayons, colored pencils, marking pens) • Glue sticks • Paper towels and/or sponges 1 Projection system or document camera (optional) • Science notebooks (composition books) • Water 	
Outdoor Investigations	1 Bag for carrying materials 32 Clipboards <ul style="list-style-type: none"> • Containers for water (plastic gallon jugs, 2 L soft-drink bottles) • Pencils 1 Whistle or bell	
Investigation 1: First Rocks	<ul style="list-style-type: none"> • Egg cartons (optional) 16 Pieces of white paper	
Investigation 2: River Rocks	1 Large knife 32 Sheet protectors, clear (optional) <ul style="list-style-type: none"> • Transparent tape 	

FOSS NG Teacher-supplied Materials Grade 2		
Investigation	Material Needed	Comments
Investigation 3: Using Rocks	<ul style="list-style-type: none"> • Clear acrylic spray (optional) 1 Brick 1 Bucket 1 Camera (optional) • Clay soil, 8 L 1 Container or jar with lid, 1 L • Containers for water 1 Box of cornstarch, 454 g (1 lb.) • White glue • Dry grass, straw, or weeds 1 Large knife • Newspaper 32 Paint brushes • Poster paints 1 Sandstone piece, landscaping (optional) 1 Saucepan 1 Scissors • Scratch paper 1 Mixing spoon 1 Plastic tablecloth or place mats (optional) • Tempera paints 1 Old hand towel (optional) 1 Trowel or shovel 16 Pieces of white paper • Yarn, 25 yards 	
Investigation 4: Soil and Water	<ul style="list-style-type: none"> 1 Bucket • Scratch paper • Transparent tape • White paper (optional) 	

FOSS NG Teacher-supplied Materials Grade 2		
Investigation	Material Needed	Comments
Solids and Liquids		
All Investigations	<ul style="list-style-type: none"> • Chart paper and marking pen • Computer with Internet access • Drawing utensils (pencils, crayons, colored pencils, marking pens) • Glue sticks • Projection system • Science notebooks (composition books) 	
Outdoor Investigations	1 Bag for carrying materials 32 Bottles, drinking-water, plastic, with caps, recycled, 1/2 L 32 Clipboards <ul style="list-style-type: none"> • Containers for water (plastic gallon jug, 2 L soft-drink bottles, bucket) • Newspapers • Pencils 1 Whistle or bell	
Investigation 1: Solids	1 Camera 1 Fan, portable with a low setting <ul style="list-style-type: none"> • Pieces of cardboard, lightweight (optional) 1 Paper bag or box 1 Rock, wood block, or other solid object <ul style="list-style-type: none"> • Scissors 1 Twig <ul style="list-style-type: none"> • Water 	

FOSS NG Teacher-supplied Materials		
Grade 2		
Investigation	Material Needed	Comments
Investigation 2: Liquids	5 Books (large) or pieces of cardboard 2 Bottles, drinking-water, plastic, with caps, recycled, 1/2 L <ul style="list-style-type: none"> • Chart paper for collages (optional) • Cooking oil, 1/2 L (1 pt.) • Corn syrup, clear, colorless, 1/2 L (1 pt.) • Liquid dish soap (detergent), blue or green, 1/2 L (1 pt.) • Liquid fabric softener or starch, 1/2 L (1 pt.) • Liquid hand soap, white, 1/2 L (1 pt.) • Magazines (optional) • Paper towels 32 Scissors <ul style="list-style-type: none"> • Tape, transparent • Water 	The sets of liquids can be made somewhat permanent in the kit by hot gluing the lids sealed. Cooking oil will need to be replaced periodically as it goes rancid.
Investigation 3: Bits and Pieces	1 15-bean soup mix (optional) 5 Books (large) or pieces of cardboard 32 Bottles, drinking-water, plastic, with caps, recycled, 1/2 L 1 Broom and dustpan <ul style="list-style-type: none"> • Construction paper (optional) • Glue (optional) 1 Scissors (optional) <ul style="list-style-type: none"> • Water 	

FOSS NG Teacher-supplied Materials Grade 2		
Investigation	Material Needed	Comments
Investigation 4: Solids, Liquids, and Water	1 Bottle, plastic, 4 L (1 gal.), (optional) 6 Chalk pieces 10 Chocolate chips 6 Cookies (small) <ul style="list-style-type: none"> • Cooking oil, about 250 mL (8.5 oz.) • Corn syrup, about 250 mL (8.5 oz.) 1 Freezer 1 Glass (optional) 10 Ice cubes (small) or chunks <ul style="list-style-type: none"> • Liquid dish soap, about 250 mL (8.5 oz.) • Liquid fabric softener or starch, about 250 mL (8.5 oz.) • Liquid hand soap, about 250 mL (8.5 oz.) • Margarine, stick, 15 mL, (1 Tbsp.) • Paper towels • Raisins (6 spoonfuls) • Scissors • Scratch paper • Tape, transparent 1 Tea bag (optional) <ul style="list-style-type: none"> • Vacuum bottles or insulated chest • Water (room temperature and hot water) 1 Writing paper, sheet	

FOSS NG Teacher-supplied Materials Grade 3	
Investigation	Material Needed
Motion and Matter	
All Investigations	<ul style="list-style-type: none"> • Chart paper and marking pen • Computer with Internet access • Drawing utensils (pencils, crayons, colored pencils, marking pens) • Glue sticks 1 Projection system • Science notebooks (composition books)
Outdoor Investigations	1 Bag for carrying materials
Investigation 1: Forces	1 Chair with steel legs
Investigation 2: Patterns of Motion	50 Pennies 32 Scissors <ul style="list-style-type: none"> • Scratch paper
Investigation 3: Engineering	16 Scissors
Investigation 4: Mixtures	1 Bucket <ul style="list-style-type: none"> • Calculators • Chart paper, poster tagboard, marking pens • Paper towels 32 Safety goggles <ul style="list-style-type: none"> • Stopwatches or clocks with second hands • String (optional) • Tape, masking (optional) 1 Trundle wheel (optional) <ul style="list-style-type: none"> • Vinegar, white, 1 L (1 qt.)

FOSS NG Teacher-supplied Materials	
Grade 3	
Investigation	Material Needed
Structures of Life	
All Investigations	<ul style="list-style-type: none"> • Chart paper and marking pen • Drawing utensils (pencils, crayons, colored pencils, marking pens) • Glue sticks • Paper towels 1 Projection system with Internet access 32 Science notebooks (composition books) 32 Scissors • Self-stick notes (for review sessions)
Outdoor Investigations	<ul style="list-style-type: none"> 1 Bag for carrying materials 16 Clipboards • Containers for water (plastic gallon jugs, 2 L soft-drink bottles, buckets) • Pencils
Investigation 1: Origin of Seeds	<ul style="list-style-type: none"> 25–40 Bean or pea pods • Bleach, 50 mL 1 Camera (optional) • Construction paper, several colors • Fruit • Microscope (optional) • Newspaper 16 Paper or plastic plates 1 Pitcher or bucket (optional) • Water • White glue
Investigation 2: Growing Further	<ul style="list-style-type: none"> 1 Camera (optional) • Construction paper, several colors • Hole punch 1 Lamp with 75-watt bulb (optional) 1 Plant with fibrous roots 1 Plant with taproot 2 Shopping bags, large, opaque • Water

FOSS NG Teacher-supplied Materials	
Grade 3	
Investigation	Material Needed
Investigation 3: Meet the Crayfish	1 Bag of elodea (water plant) 12 Crayfish <ul style="list-style-type: none"> • Dechlorinator • Dry beans (pinto, kidney, black, white) • Ice (optional) 1 Marking pen, permanent, fine tip 1 Metric ruler 16 Pieces of recycled paper <ul style="list-style-type: none"> • Popped popcorn, 4–5 L (4–5 qt.) (or beans or acorns) • Swiss chard (optional) 1 Timer/stopwatch <ul style="list-style-type: none"> • Tissues • Water, aged 1 Whistle 1 Whiteboard, portable and marking pens
Investigation 4: Human Body	<ul style="list-style-type: none"> • Adhesive paper • Colored pens or pencils (optional) • Document camera (optional) • Gloves (optional) 16 Jump ropes 1 Nail (optional) <ul style="list-style-type: none"> • Newspaper (optional) 16 Owl pellets 32 Paper plates 32 Pencils, #2 <ul style="list-style-type: none"> • Plastic wrap (optional) • Scratch paper, white 1 Spray mister (optional) <ul style="list-style-type: none"> • Water • White glue

FOSS NG Teacher-supplied Materials Grade 3	
Investigation	Material Needed
Water and Climate	
All Investigations	<ul style="list-style-type: none"> • Chart paper and marking pen • Drawing utensils (pencils, crayons, colored pencils, marking pens) • Glue sticks 1 Projection system and computer with Internet access • Science notebooks (composition books)
Outdoor Investigations	<ul style="list-style-type: none"> 1 Bag for carrying materials 32 Clipboards or cardboard pieces with binder clips • Containers for water (plastic gallon jugs or recycled 2 L soft-drink bottles with caps) • Pencils
Investigation 1: Water Observations	<ul style="list-style-type: none"> 16 Books, thick • Paper towels 8 Scissors 8 Sheets of white paper • Transparent tape
Investigation 2: Hot Water, Cold Water	<ul style="list-style-type: none"> 1 Cooler or ice chest (optional) 1 Freezer 1 Hot plate • Ice cubes • Paper towels 1 Penny 1 Plastic bag 8 Scissors 1 Shovel (optional) 1 Stopwatch • Transparent tape 1 Vacuum bottle
Investigation 3: Weather and Water	<ul style="list-style-type: none"> • Empty soft-drink cans (optional) • Frozen objects (optional) 1 Piece of lightweight cardboard • Ice cubes • Paper towels 1 Scissors • Transparent tape

FOSS NG Teacher-supplied Materials Grade 3	
Investigation	Material Needed
Investigation 4: Seasons and Climate	<ul style="list-style-type: none"> • Transparent tape
Investigation 5: Waterworks	<ul style="list-style-type: none"> • Newspapers • Paper towels 8 Screwdrivers (optional) 1 Shovel or trowel (optional) • Small weights (optional) • Sponges (optional) 1 Stopwatch (or other timers) • Water

FOSS NG Teacher-supplied Materials Grade 4		
Investigation	Material Needed	Comments
Investigation 5: Waves	8 Books • Pitcher or 2 L bottle of water 1 Pencil for demonstration • Rice grains • Salt grains • Water	

FOSS NG Teacher-supplied Materials
Grade 4

Investigation	Material Needed	Comments
Environments		
All Investigations	<ul style="list-style-type: none"> • Chart paper and marking pen • Drawing utensils (pencils, crayons, colored pencils, marking pens) • Glue sticks • Paper towels 1 Projection system • Science notebooks (composition books) 32 Scissors • Self-stick notes (if you need additional for review sessions) 	
Outdoor Investigations	<ul style="list-style-type: none"> 1 Bag for carrying materials 1 Camera (optional) 32 Clipboards 1 Marking pen, whiteboard 1 Timer, minutes • Whistle 1 Whiteboard, portable, or chart paper and cardboard backing 	
Investigation 1: Environmental Factors	<ul style="list-style-type: none"> • Apple, carrot, or potato • Bran, wheat • Cold environment such as a refrigerator 150 Isopods • Leaf and ground litter, moist • Low-power microscopes (optional) 1 Paring knife 150 Mealworms • Newspaper • Potting soil 16 Recycled paper, 20 x 30 cm, sheets 1 Pushpin 1 Sheet, white (optional) • Water 	Acquire organisms locally if possible.

FOSS NG Teacher-supplied Materials
Grade 4

Investigation	Material Needed	Comments
Investigation 2: Aquatic Environments	30 Amphipods (especially <i>Gammarus</i>) 1 Bottle, plastic 4–6 Elodea sprigs 2 Goldfish 10 Guppies 1 Hole punch 520 Food markers, such as raw elbow macaroni or short pieces of plastic straws 1 Paper cutter <ul style="list-style-type: none"> • Paper bags, large (optional) 10–12 Pond snails, small <ul style="list-style-type: none"> • Rice or beans (optional for noisemakers) • Rubber bands (optional for noisemakers) • Tap water, aged or treated • Recycled paper, white, 20 x 30 cm, sheets 	Acquire organisms locally if possible.
Investigation 3: Brine Shrimp Hatching	1 Marking pen, permanent, black 1 Paper cutter 32 Safety goggles <ul style="list-style-type: none"> • Bottle water • White paper • Yeast (optional) 	
Investigation 4: Range of Tolerance	2 Sheets of cardboard or poster board (about 76 x 60 cm) <ul style="list-style-type: none"> • Chart paper 64 Marking pens, pencils, or crayons (8 black, 8 brown, 8 red, 8 green, 8 blue, 8 yellow, 8 orange, 8 purple) <ul style="list-style-type: none"> • Newspaper 8 Paper white, 20 x 30 cm, sheets 32 Safety goggles <ul style="list-style-type: none"> • Potting soil, 24 liters • Water 	

FOSS NG Teacher-supplied Materials
Grade 4

Investigation	Material Needed	Comments
Soils, Rocks, and Landforms		
All Investigations	<ul style="list-style-type: none"> • Chart paper and marking pen 1 Computer with Internet connection • Drawing utensils (pencils, crayons, colored pencils, marking pens) • Glue sticks • Projection system • Science notebooks (composition books) • Self-stick notes (for review sessions) 	
Outdoor Investigations	<ul style="list-style-type: none"> 1 Bag for carrying materials 32 Clipboards or cardboard pieces with binder clips • Containers for water (plastic gallon jugs or recycled 2 L soft-drink bottles with caps) • Pencils • String (optional) 	
Investigation 1: Soils and Weathering	<ul style="list-style-type: none"> 1 Glass bottle with tight-fitting cap • Newspaper 1 Permanent black marking pen • Safety goggles 1 Sturdy plastic bag • Transparent tape • Vinegar, white, about 1.2 L • Water 8 Zip bags, large 	

FOSS NG Teacher-supplied Materials
Grade 4

Investigation	Material Needed	Comments
Investigation 2: Landforms	<ul style="list-style-type: none"> • Cameras (optional) 1 Dustpan and broom • Materials for stream tables (gram pieces, cardboard, craft sticks) • Newspaper • Paper towels • Plaster of Paris, 1 cup for every 8 students 4 Empty recycled soft-drink bottles with caps, 2 L • Transparent tape 1 Water can, large outdoor (optional) 	
Investigation 3: Mapping Earth's Surface	<ul style="list-style-type: none"> • Aluminum foil (optional) • Index cards or half-sentence strips • Transparent tape 	
Investigation 4: Natural Resources	<ul style="list-style-type: none"> 1 Bucket 1 Camera (optional) 1 Cardboard box, ~30 cm (1') square 1 Bag of ready-mix concrete, 5 kg (10 lb.) 1 Garbage bag or piece of plastic • Local gravel, 1 cup 8–16 Local pebbles • Local sand, 1 cup 	

FOSS NG Teacher-supplied Materials
Grade 5

Investigation	Material Needed	Comments
Earth and Sun		
All Investigations	<ul style="list-style-type: none"> • Chart paper and marking pen 1 Computer with Internet access • Drawing utensils (pencils, crayons, colored pencils, marking pens) 1 Extension cord (optional) • Glue sticks 1 Projection system • Science notebooks (composition books) 32 Scissors • Self-stick notes (for review sessions) 	
Outdoor Investigations	<ul style="list-style-type: none"> 1 bag for carrying materials • Pencils 	
Investigation 1: The Sun	<ul style="list-style-type: none"> 1 Clock or watch 1 Earth globe, > 23 cm diameter, with stand 1 File or small knife • Painter's tape 1 Rolling cart (optional) 1 Ruler • Scratch paper 16 Straightedges or rulers • White glue 1 Piece of white paper 	
Investigation 2: Planetary Systems	<ul style="list-style-type: none"> 8–16 Calculators (optional) 1 Earth globe, > 23 cm diameter, with stand 	
Investigation 3: Earth's Atmosphere	<ul style="list-style-type: none"> 1 Local weather report 1 Metal fork 	

FOSS NG Teacher-supplied Materials
Grade 5

Investigation	Material Needed	Comments
Investigation 4: Heating Earth	1 Clock or watch 2 Insulated coolers (optional) 1–2 Infrared heat lamps, 250 watt (optional) 1 Hote pot or hot plate (optional) 1–2 Lamps, clip-on, with ceramic sockets (optional) • Paper or cloth towels 1 Penny 8 Stopwatches (optional) 16 Pieces of white paper 1 Bottle, 1 L (optional) 1 Watch or stopwatch	
Investigation 5: Water Planet	1 Insulated cooler (optional) • Frozen objects such as containers of water, metal objects, small bags of sand (optional) • Hand lenses (optional) • Crushed ice, 1–1.5 L • Ice cubes, 12–15 or more 1 Flat mallet, wooden spoon, rolling pin, or muddler • Paper towels (optional) 1 Plastic bag, sturdy, 4 L 1 Small cloth towel • Soft-drink cans, empty, recycled (optional)	

FOSS NG Teacher-supplied Materials Grade 5

Investigation	Material Needed	Comments
Living Systems		
All Investigations	<ul style="list-style-type: none"> • Chart paper and marking pen • Computer with Internet access • Drawing utensils (pencils, colored pencils, marking pens) • Glue sticks 1 Projection system • Science notebooks (composition books) 8 Scissors • Self-stick notes (for review sessions) 	
Outdoor Investigations	<ul style="list-style-type: none"> 1 bag for carrying materials • Camera (optional) 	
Investigation 1: Systems	<ul style="list-style-type: none"> 1 Crate or carton, about 30 x 50 cm 8 Marking pens • Natural ground litter • Newspaper • Organic kitchen waste 1 Paper cutter 1 Piece of luggage 8 Pieces of recycled paper 150 Redworms (compost worms) • Soil from a garden 	Obtain redworms locally if possible.
Investigation 2: Nutrient Systems	<ul style="list-style-type: none"> 1 Box of animal crackers 4 Bottles, soft-drink, empty, 2 L 1 Construction paper piece, red or orange • Flour, cup, 236 mL (1 cup) 1 Hole punch 1 Ice chest or hote plate/large coffee urn • Mallow leaves, fresh (optional) • Measuring spoon, 1.25 mL (1/4 tsp) • Orange, fresh (optional) 5–10 Painted lady butterfly larvae • Paper towels 1 Paring knife (optional) • Potting soil, about 16 L • Sugar, 350 mL (about 1.5 cups) Water, hot, 40–50°C 	

FOSS Next Generation

FOSS NG Teacher-supplied Materials
Grade 5

Investigation	Material Needed	Comments
Investigation 3: Transport Systems	<ul style="list-style-type: none"> • Bleach, household, 15–30 mL • Blue food coloring • Detergent • Leaves (optional) • Masking tape • Paper towels, very absorbent • Paper towels, ordinary • Transparent tape 	
Investigation 4: Sensory Systems	16 Half sheets of paper (optional) 1 Hole punch <ul style="list-style-type: none"> • Paper towels 16 Pieces of scratch paper <ul style="list-style-type: none"> • Transparent tape 	

FOSS NG Teacher-supplied Materials Grade 5

Investigation	Material Needed	Comments
Mixtures and Solutions		
All Investigations	<ul style="list-style-type: none"> • Chart paper and marking pen • Drawing utensils (pencils, crayons, colored pencils, marking pens) • Glue sticks • Paper towels • Projection system • Safety goggles • Science notebooks (composition books) • Self-stick notes (for review sessions) • Water 	
Outdoor Investigations	1 Bag for carrying materials 16 Bottles, drinking-water, plastic, recycled, 1/2 L 32 Clipborads or cardboard pieces with binder clips <ul style="list-style-type: none"> • Containers for water (plastic gallon jugs or 2 L soft-drink bottles with caps) 	
Investigation 1: Separating Mixtures	<ul style="list-style-type: none"> • Microscopes, low power (optional) • Paper towels • Scratch paper • Tape, transparent 	
Investigation 2: Developing Models	8–10 Chocolate chips <ul style="list-style-type: none"> • Margarine, stick, refrigerated • Masking tape • Water, hot, 60°C 1 Vacuum bottle, coffeepot, or hot pot	
Investigation 3: Concentration	4 Bottles, 1 L 1 Container of sugar-sweetened soft-drink powder 65 Cups, paper, 170 mL (3 oz.) <ul style="list-style-type: none"> • Paper towels 1 Pen, marking, permanent 1 Scissors <ul style="list-style-type: none"> • Scratch paper, white 1 Spoon, stirring, large <ul style="list-style-type: none"> • Tape, transparent 	

FOSS NG Teacher-supplied Materials
Grade 5

Investigation	Material Needed	Comments
Investigation 4: Reaching Saturation	1 Bucket (optional) <ul style="list-style-type: none">• Paper towels• Scratch paper• Tape, transparent	
Investigation 5: Fizz Quiz	1 Bucket (optional) 8 Paper, pieces white <ul style="list-style-type: none">• Paper towels• Scratch paper• Tape, transparent• Vinegar, white, 500 mL (2 cups)	

FOSS NG Teacher-supplied Materials
Grade 6

Type	Material Needed	
Diversity of Life		
Technology Equipment	<ul style="list-style-type: none"> • Computer with Internet access 1 Document camera or overhead projector • Extension cords with multiple outlets (optional) 1 Projection system 	
Measuring Tools	<ul style="list-style-type: none"> 1–2 Balances, electronic, accurate to 0.1 g 1 Beaker, 500 mL 16 Rulers 1 Thermometer, Celsius 	
Paper	<ul style="list-style-type: none"> • Cardboard, paper, or bark 1 Dark paper, small piece • Chart paper • Index cards (optional) • Magazine photographs, colored • Newspaper • Notebook paper • Paper towels • Paper towels, brown • Paper towels, extra-absorbent • Science notebooks (composition books) • Scratch paper • White paper, 22 x 28 cm (8.5" x 11") 	
Resources	<ul style="list-style-type: none"> • Field guides, insects (optional) • Field guides, plants (optional) 	

FOSS NG Teacher-supplied Materials
Grade 6

Type	Material Needed	
Supplies	<ul style="list-style-type: none"> • Bleach (optional) 1 Bucket (optional) • Celery stalks with leaves 8 Cotton balls or pieces of sponge • Dry leaves, grass, soil • Flowers <ul style="list-style-type: none"> • Alstroemeria • Gladiolus • Mixed bouquet • Food for cockroaches (apple, banana, bread, potato chip, etc.) • Food samples <ul style="list-style-type: none"> • Blue chees or other "mold" cheese • Bread with no preservatives • Grain-based foods (optional) • Kimchi or sauerkraut • Mushrooms, button • Swiss cheese • Yogurt, plain 	<ul style="list-style-type: none"> • Gloves, rubber (optional) • Glue sticks (optional) • Honey or syrup • Lima beans, bag • Masking tape • Painter's tape • Paper plates, muffin cups, or waxed paper 1 Petroleum jelly, jar 32 Plastic spoons, small • Potting soil, 1 L (optional) 8 Rubber bands, large • Rubbing alcohol (optional) • Sand, soil, or wood shavings • Sheet protectors, clear-plastic 8 Straws • Sugar, 30 mL • Transparent tape • Water, bottled (optional)

FOSS NG Teacher-supplied Materials
Grade 6

Type	Material Needed	
Other Tools	1 Bottle, plastic, 1.5 L 16 Calculators 8 Cameras (optional) 8 Clipboards (optional) <ul style="list-style-type: none"> • Colored pencils, marking pens, and highlighters • Containers, empty, yogurt 1 Flashlight, large 1 Flowerpot, planter, or cup with hole (optional) 1 Heat source, such as a hot plate 1 Knife, sharp, or single-edged razor blade 8 Marking pens, whiteboard (optional) 16 Microscopes, compound, 40X–400X 2 Microscopes, dissecting, 10X–30X (optional)	8 Mini-whiteboards 1 Net, sweep (optional) 1 Oven mitt 1 Pan, small 1 Pitcher (optional) 1 Plant press (optional) 32 Safety goggles 32 Scissors 16 Slides, prepared, human-cheek tissue (optional) 1 Spray mister 1 Stirring rod 3 Trays 1–2 Tubs 1 Whistle (optional)
Live Organisms	8 Elodea sprigs 16 Madagascar hissing cockroaches <ul style="list-style-type: none"> • <i>Paramecium caudatum</i> culture • Plant cuttings, including ivy and potato 1 <i>Tradescantia zebrina</i> (spiderwort) plant	

FOSS NG Teacher-supplied Materials
Grade 6

Type	Material Needed	
Human Systems Interactions		
Technology Equipment	<ul style="list-style-type: none"> • Computers with Internet access 1 Document camera or overhead projector 1 Projection system • Extension cords with multiple outlets (optional) 	
Measuring Tools	32 Rulers (optional)	
Paper	<ul style="list-style-type: none"> • Butcher paper, dark (optional) 12 Card stock, 22 x 28 cm (8.5" x 11") (optional) • Chart paper • Science notebooks (composition books) • White paper, 28 x 44 cm (11" x 17") • White paper, 22 x 28 cm (8.5" x 11") 	
Supplies	<ul style="list-style-type: none"> • Extracts/scents • Glue sticks (optional) • Nutrition labels • Rubbing alcohol 8 Sheet protectors, plastic (optional) • Transparent tape (optional) • Water bottle with nutrition label 	
Other Tools	<ul style="list-style-type: none"> 16 Calculators 32 Colored pencils, eight different colors, four of each color 1 Dollar bill, crisp 8 Eraser, whiteboard (optional) • Marking pens and highlighters 8 Marking pens, whiteboard (optional) 1 Memory-test set (key, paper, bag, stapler, book, paper clip, ruler, comb, dollar bill, fork, cork) 8 Mini-whiteboards (optional) 32 Scissors 	

FOSS NG Teacher-supplied Materials
Grade 6

Type	Material Needed	
Weather and Water		
Technology Equipment	<ul style="list-style-type: none"> • Computers with Internet access 1 Document camera 1 Projection system • Extension cords with multiple outlets (optional) 	
Measuring Tools	<ul style="list-style-type: none"> 8 Stopwatches or watches 1 Electronic balance 	
Paper	<ul style="list-style-type: none"> 2 Cardboard squares, 6 cm • Chart paper • File folders • Index cards (optional) • Newspaper • Notebook paper • Paper for model roofs, assorted colors and sizes • Paper towels • Science notebooks (composition books) • Self-stick notes (two colors) • White paper, 22 x 56 cm (8.5" x 11") 	
Resources	<ul style="list-style-type: none"> 1 Globe on stand, 30 cm diameter or larger 1 Map of United States 	

FOSS NG Teacher-supplied Materials
Grade 6

Type	Material Needed	
Supplies	<ul style="list-style-type: none"> • Aluminum foil • Glue sticks (optional) • Ice • Insulating materials (See Investigation 5, Part 2) • Lamp oil, blue, 250 mL (8 oz.) • Masking tape • Matches • Mineral oil, 250 mL (8 oz.) • Paper clips (optional) 1 Penny 2 Plastic bags, small • Plastic wrap (optional) 16 Rubber bands, stout • Transparent tape • Water (hot, cold, room-temperature) 	
Other Tools	<ul style="list-style-type: none"> 2 Basins, shallow 16 Calculators (optional) • Colored pencils, marking pens, highlighters 8 Erasers, whiteboard (optional) 2 Forks, metal 1–4 Heat lamps, infrared, 250 watt (optional) 1 Hot plate or microwave oven to heat water (optional) 1 Ice chest 1–4 Lamp fixtures, clip-on, ceramic sockets (optional) 	<ul style="list-style-type: none"> 1 Marking pen, permanent 8 Marking pens, whiteboard (optional) 8 Mini-whiteboards (optional) 2 Pitchers or gallon jugs 2 Plastic bottles, clear, with screw caps, 1/2 L 4 Plastic bottles, clear, with screw caps, 1 L 2 Plastic bottles, clear, 2L (8 more optional) 32 Safety goggles (optional) 8 Scissors 8 Shims, wood or metal (optional) 1 Thermos bottle (optional)

FOSS NG Teacher-supplied Materials Grade 7

Type	Material Needed	
Chemical Interactions		
Technology Equipment	<ul style="list-style-type: none"> • Computers with Internet access 1 Document camera 1 Projection system 	
Measuring Tools	<ul style="list-style-type: none"> 1–2 Balances, electronic (0.1 g accuracy) 1 Clock 1 Ruler 8 Stopwatches (optional) 	
Paper	<ul style="list-style-type: none"> • Black construction paper (optional) • Cardboard (optional) • Chart paper • Index cards (optional) • Paper towels • Science notebooks (composition books) • Scratch paper • White paper, 22 x 28 cm (8.5" x 11") 	
Supplies	<ul style="list-style-type: none"> • Bottles, plastic, 2 L 1 Candy-coated chocolate pieces, 1 lb. bag • Consumer-product packages • Dishwashing detergent, liquid, 25 mL • Glue sticks • Glycerin, a few mL (optional) • Ice • Margarine, 1/4 lb. stick (not tub) • Matches, wooden safety 	<ul style="list-style-type: none"> • Plastic bags, large, sturdy 1 Plastic bag, small (optional) • Recycled materials to use for insulation 16 Sheet protectors, clear-plastic (optional) • Sucrose (granulated sugar), 1 lb. • Vinegar 16 Water bottles, clear-plastic, recycled, with screw cap, 1/2 L

FOSS NG Teacher-supplied Materials
Grade 7

Type	Material Needed	
Other Tools	<ul style="list-style-type: none"> • Basins 1 Beaker, 1 L • Buckets or gallon jugs 16 Calculators (optional) 1 Coffee urn or coffeepot, or other means of heating water in large quantities • Colored pencils, marking pens, and highlighters 1 Cooler or ice chest 1 Cube, cm³ 1 Fork, metal 1 Hot plate 1 Large knife 1 Marking pen, permanent 	<ul style="list-style-type: none"> 8–16 Marking pens, whiteboard (optional) 1 Match-striking surface 8–16 Mini-whiteboards (optional) 1 Paper cutter (optional) 32 Pens, fine-tipped • Pitchers • Pushpins (optional) 32 Safety goggles 8 Scissors 1 Sponge (optional) • Trays, cafeteria 1 Two-by-four lumber, 60 cm long 1 Washclot

FOSS NG Teacher-supplied Materials
Grade 7

Type	Material Needed	
Earth History		
Technology Equipment	<ul style="list-style-type: none"> • Computers with Internet access • Google Earth™ 1 Document camera or overhead projector (optional) 1 Projection system 1 Webcam/laptop camera (optional)	
Measuring Tools	1 Beaker, 1 L 1 Clock or timer 1 Graduated cylinder 16 Meter tapes 16 Rulers, clear-plastic, metric (optional) 16 Thermometers	
Paper	<ul style="list-style-type: none"> • Chart paper • Index cards (optional) • Newspapers • Paper towels • Science notebooks (composition books) • Self-stick notes • White paper, 22 x 28 cm (8.5" x 11") 	
Resources	8 Aerial photos of collection site <ul style="list-style-type: none"> • Earth materials 1 Map of southwest United States or Arizona (optional) 1 Map of your state or region (optional) 1 Rock (any) 1 Rock, cobble-sized (optional) <ul style="list-style-type: none"> • Gravel (optional) 	

FOSS NG Teacher-supplied Materials
Grade 7

Type	Material Needed	
Supplies	<ul style="list-style-type: none"> • Books or boxes 1 Bottle, glass, narrow mouth, tight cap 2–3 Bottles, plastic, 1–2 L • Candy-coated chocolate, at least two different colors • Cotton swabs • Cups, plastic foam (optional) • Distilled water, 2 L • Food coloring • Glue sticks • Ice 	<ul style="list-style-type: none"> 16 Microscope slides (optional) 1 Plastic sheet or trash bag (optional) 8 Plastic spoons • Straws 10 Transparencies (optional) • Transparent tape • Tweezers (optional) • Vinegar, 240 mL (8 oz.) 1 Zip bag, sturdy
Other Tools	<ul style="list-style-type: none"> 1 Air pump (optional) 16 Calculators (optional) 32 Clipboards (optional) • Colored pencils, marking pens, or highlighters • Dissecting microscopes 10–30X (optional) 1 Freezer 1 Funner (optional) 1 Gloves, rubber (optional) 1 Gloves, sturdy 1 Hole punch (optional) 	<ul style="list-style-type: none"> 1 Jar, with lid, 2 L 2 Jugs, plastic, 4 L 1 Marking pen, permanent 8 Marking pens, whiteboard (optional) 1 Nail, small, or pencil compass 32 Safety goggles 32 Scissors 8 Soil augers or hand trowels (optional) 1 Spoon, plastic (optional) 1 Stirring rod

FOSS NG Teacher-supplied Materials
Grade 7

Type	Material Needed	
Populations and Ecosystems		
Technology Equipment	<ul style="list-style-type: none"> • Computers with Internet access 1 Digital camera (optional) 1 DVD player and monitor 1 Projection system 	
Measuring Tools	<ul style="list-style-type: none"> 1 Meter stick or meter tape 1 Metric ruler, 2.5 cm wide 1 Timer or stopwatch 	
Paper	<ul style="list-style-type: none"> • Cardboard pieces, various sizes • Chart paper • Science notebooks (composition books) • File folders • Large paper, such as construction (optional) • Newspaper • Paper towels • Poster boards (optional) • Scratch paper • Self-stick notes • White paper 	
Resources	<ul style="list-style-type: none"> • Field guides (optional) • Reference materials on ecosystems (optional) 	

FOSS NG Teacher-supplied Materials
Grade 7

Type	Material Needed	
Supplies	2 Cardboard boxes, large (optional) <ul style="list-style-type: none"> • Cheese balls or snack food 32 Clipboards (optional) 1 Clothesline, string (optional) <ul style="list-style-type: none"> • Glue sticks • Ground litter (dried leaves and twigs) • Kitchen scraps <ul style="list-style-type: none"> • Carrots • Fruit • Lettuce • Masking tape, regular width • Masking tape, 2.5 cm wide (optional) 	<ul style="list-style-type: none"> • Mini marshmallows, 1 L • Popped popcorn or dry macaroni, 4–5 L • Rocks • Safety matches, wooden • Soil, garden or potting, 0.5–1 L (if more is needed) • String or yarn • Transparent tape (optional)
Other Tools	1 Aquarium, 10 L or larger (optional) 8 Calculators (optional) 1 Coat hanger, wire (optional) <ul style="list-style-type: none"> • Containers (e.g., trays, boxes, buckets) • Colored pencils, marking pens, and highlighters 1 Fork (optional) <ul style="list-style-type: none"> • Jugs, gallon 1 Lamp with incandescent bulb (optional) <ul style="list-style-type: none"> • Microscopes, dissecting (optional) 8 Mini-whiteboards (optional) 1 Paper cutter (optional) 8 Permanent marking pens 2 Pitchers 1 Rack (optional)	32 Safety goggles 32 Scissors 2 Shelters (plastic cups or flowerpots) 4 Sports cones (optional) 1 Tin snips or old scissors 10 Trays, small (optional) 1 Utility knife 1 Whistle (optional) 8 Whiteboard erasers (optional) 8 Whiteboard marking pens (optional)

FOSS NG Teacher-supplied Materials
Grade 7

Type	Material Needed	
Organisms	50 Aquatic snails • Duckweed, 2 oz. jar 50 Earthworms 36 Elodea sprigs 26 Guppies 50 Isopods 24 Landsnails (optional) 30 Milkweed bugs (15 females and 15 males) 150 Redworms 50 Scuds (<i>Gammarus</i> sp.) • Tubifex worms, 1/2 oz. jar (optional)	Obtain land snails locally.

FOSS NG Teacher-supplied Materials
Grade 8

Type	Material Needed
Electromagnetic Force	
Technology Equipment	<ul style="list-style-type: none"> • Computers with Internet access 1 Document camera or overhead projector 1 Projection system • Extension cords with multiple outlets (optional)
Measuring Tools	<ul style="list-style-type: none"> 1 Ruler or measuring tape, metric 1 Teaspoon, 1/4
Paper	<ul style="list-style-type: none"> • Chart paper • Index cards (optional) • Science notebooks (composition books) • Self-stick notes • White paper, 22 x 28 cm (8.5" x 11")
Supplies	<ul style="list-style-type: none"> 1 Bag, paper or plastic (optional) • Friction test surfaces (newspaper, blanket, sandpaper, etc.) 1–2 Incandescent lightbulbs (optional) 2 Nails, 5 cm or longer 1 Rolling cart, rolling chari, or small desk • Talc or flour (optional)
Other Tools	<ul style="list-style-type: none"> • Colored pencils, marking pens, and highlighters 1 Craft knife (optional) 1 Craft stick (optional) 1 Lamp (optional) 32 Mini-whiteboards (optional) 32 Scissors 1 Screwdriver, approximately 3 mm blade 8 Whiteboard erasers (optional) 8 Whiteboard marking pens (optional) 1 Work gloves

**FOSS NG Teacher-supplied Materials
Grade 8**

Type	Material Needed
Gravity and Kinetic Energy	
Technology Equipment	<ul style="list-style-type: none"> • Computers with Internet access 1 Document camera or overhead projector • Extension cords with multiple outlets (optional) 1 Projection system 1 Video recording device (optional)
Measuring Tools	1 Meter stick
Paper	<ul style="list-style-type: none"> • Chart paper 10 Envelopes 2 File folders • Science notebooks (composition books) • Self-stick notes • White paper, 22 x 28 cm (8.5" x 11")
Supplies	<ul style="list-style-type: none"> • Crash protection materials (bubble wrap, newspaper, etc.) 1 Feather 4 Tent stakes (optional) 4 Traffic cones (optional) • Transparent tape 1 Tray
Other Tools	<ul style="list-style-type: none"> 1 Broom 8 Calculators 8 Erasers, whiteboard (optional) 1 Hammer • Marking pens and highlighters 8 Marking pens, whiteboard (optional) 8 Mini-whiteboards (optional) 1 Paper cutter (optional) 1 Punch, one-hole 32 Scissors 1 Stepladder or chair

FOSS NG Teacher-supplied Materials
Grade 8

Type	Material Needed
Heredity and Adaptation	
Technology Equipment	<ul style="list-style-type: none"> • Computers with Internet access 1 Document camera 1 Projection system
Measuring Tools	1 Meter stick
Paper	<ul style="list-style-type: none"> • Chart paper 1 Manila folder • Science notebooks (composition books) • Scratch paper • White paper, 22 x 28 cm (8.5" x 11")
Supplies	<ul style="list-style-type: none"> • Gloves, latex or other material (optional) • Glue sticks (optional) 32 Sheet protectors, plastic (optional) • Paper towels • Transparent tape • White glue (optional)
Other Tools	<ul style="list-style-type: none"> • Colored pencils, marking pens, and highlighters 8 Erasers, whiteboard (optional) 8 Marking pens, whiteboard (optional) 8 Mini-whiteboards (optional) 16 Mirrors (optional) 8 Water misters (optional)

**FOSS NG Teacher-supplied Materials
Grade 8**

Type	Material Needed
Planetary Science	
Technology Equipment	1 Computer with Internet connection <ul style="list-style-type: none"> • Google Earth™ 1 Light sensor (optional, see Investigation 9, Part 2) 1 Projection system
Measuring Tools	1–2 Balances, electronic (0.1 g accuracy) 32 Calculators 1 Meter stick 32 Rulers
Paper	8 Cardboard pieces, 10 x 20 cm (4" x 8") <ul style="list-style-type: none"> • Chart paper 2 Pieces of construction paper, 1 white, 1 other color (optional) <ul style="list-style-type: none"> • Index cards (optional) • Newspaper • Paper towels 1 Piece of poster board, 35 x 50 cm (14" x 20") <ul style="list-style-type: none"> • Science notebooks (composition books) • Self-stick notes • Tagboard (optional) • White paper, 22 x 28 cm (8.5" x 11")
Resources	<ul style="list-style-type: none"> • Aerial photographs of your community (optional) 1 Large ball (e.g., soccer, basketball) 1 Cart, AV (optional) 1 Earth globe on a stand, 23–30 cm in diameter

FOSS NG Teacher-supplied Materials
Grade 8

Type	Material Needed
Supplies	<ul style="list-style-type: none"> • Aluminum foil (narrow roll) or toilet tissue 8 Brass fasteners (optional) • Cocoa powder, about 1 lb. per class • Colored pencils, marking pens, and highlighters 1 Dime • Flour, 20 lb. • Glue sticks 1 Marking pen, wet-erase, fine-tipped, colored 1 Marking pen, wet-erase, black or blue • Marking pens, whiteboard • Masking tape, 2.5 cm wide 1 Quarter 2 Rubber bands, stout 10 Sticky dots, colorful, 13 mm • String, 4 m • Super glue (optional) 2 Transparencies (optional) • Water
Other Tools	<ul style="list-style-type: none"> • Binoculars, spotting scope, or telescope (optional) 32 Calculators 8 Compasses, pencil (optional) 1 Extension cord (optional) • Fluorescent ceiling lights or lamp 1 Hobby or craft knife 1 Knife or nail file 1 Additional light source (optional) 1 Oven mitt or towel 1 Overhead projector or other strong light source 16 Scissors • Shim (tapered piece of wood, metal, or stone; optional)

**FOSS NG Teacher-supplied Materials
Grade 8**

Type	Material Needed
Waves	
Technology Equipment	1 AM/FM radio (optional) <ul style="list-style-type: none"> • Computers with Internet access 1 Document camera or overhead projector <ul style="list-style-type: none"> • Extension cords with multiple outlets (optional) 1 Projections system
Measuring Tools	8 Timers
Paper	<ul style="list-style-type: none"> • Chart paper • Science notebooks (composition books) • White paper, 22 x 28 cm (8.5" x 11")
Supplies	<ul style="list-style-type: none"> • Glue sticks • Insulating materials (packing materials, cloth, etc.) • Milk, 30 mL per class • Mini-whiteboards 8 Sheet protectors, clear-plastic (optional) <ul style="list-style-type: none"> • Pitcher • Shoe boxes • Water
Other Tools	32 Calculators (optional) <ul style="list-style-type: none"> • Colored pencils, marking pens, and highlighters • Musical instruments or noisemakers (optional) 1 Safety pin, large 32 Scissors 1 Scissors, sharp 8 Twist ties 8 Zip bags, 1 L or larger (optional)