

FOSS NG Teacher-supplied Materials Grade 4		
Investigation	Material Needed	Comments
Energy		
All Investigations	<ul style="list-style-type: none"> • Chart paper and marking pen • Computers 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	1 Bag for carrying materials 32 Clipboards or cardboard pieces with binder clips (optional)	
Investigation 1: Energy and Circuits	1 Bag, sturdy paper or plastic (optional) 1 Incandescent bulb (optional) 1 Screwdriver (optional) <ul style="list-style-type: none"> • Scissors 	
Investigation 2: The Force of Magnetism	<ul style="list-style-type: none"> • Metal test objects, such as washers, machine screws, binder clips 2 Steel paper clips 2 Pieces of string, 20–30 cm	
Investigation 3: Electromagnets	<ul style="list-style-type: none"> • Scissors 	
Investigation 4: Energy Transfer	<ul style="list-style-type: none"> • Balls for outdoor extension • Calculator (optional) • Ice cubes • Safety matches • Scissors • Screwdriver, small, for installing battery in tone generator 8 Clear-plastic sheet protectors (optional)	

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Investigation 5: Waves	8 Books • Pitcher or 2 L bottle of water 1 Pencil for demonstration • Rice grains • Salt grains • Water	

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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 <ul style="list-style-type: none"> • Science notebooks (composition books) 32 Scissors <ul style="list-style-type: none"> • Self-stick notes (if you need additional for review sessions) 	
Outdoor Investigations	1 Bag for carrying materials 1 Camera (optional) 32 Clipboards 1 Marking pen, whiteboard 1 Timer, minutes <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • Leaf and ground litter, moist • Low-power microscopes (optional) 1 Paring knife 150 Mealworms <ul style="list-style-type: none"> • Newspaper • Potting soil 16 Recycled paper, 20 x 30 cm, sheets 1 Pushpin 1 Sheet, white (optional) <ul style="list-style-type: none"> • Water 	Acquire organisms locally if possible.

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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 	

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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 	

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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 	