

Axiom Chemistry Lab Materials

CONSUMABLES

Distilled water (available at most grocery stores)

Plain salt (not iodized salt)

Iodized salt

At least two other types of edible salt (e.g. “Lite” salt, kosher salt, rock salt, sea salt, Himalayan pink salt)

Liquid food coloring

Baking soda (also called bicarbonate of soda, not the same as baking powder)

Vinegar (colorless white vinegar works best)

Cornstarch (also called cornflour)

Vegetable oil (or other cooking oil)

Lemon juice

Heavy cream (or double cream)

Baking yeast

Ice cubes

Non-washable colored ink (ideally including brown and black, e.g. from felt tip pens—Berol pens work well)

3 tsp sand (approximate amount)

Epsom salts

Alum (also called fatakdi powder, chemical name potassium aluminum sulfate, typically found in the spice aisle of a grocery store)

Matches

Tea-light candle

Laundry detergent powder (washing powder)

Liquid laundry starch

Eight Alka-Seltzer® tablets (or other effervescent tablets)

Petroleum jelly (e.g. Vaseline®)

Correction fluid (e.g. Tipp-Ex®, or non-water soluble paint and small brush)

Plastic wrap (i.e. cling film)

Sticky tape

Iodine antiseptic solution (Povidone-iodide or iodine tincture, with dropper)

Hydrogen peroxide solution (3% is recommended, but other dilutions can be used)

Nine iron or steel nails (without any rust, not galvanized or stainless steel)

Two galvanized steel nails or screws

One stainless steel nail or screw

Resealable plastic food bag (microwaveable, capacity 1 liter)

Universal indicator paper (available at Amazon and other online stores)

Filter paper (as used in coffee machines)

Chromatography paper (available at Amazon and other online stores)

Iron or steel wool (not stainless steel, suitable brands include Homax)

Several household substances for testing pH (e.g. milk, toothpaste, cleaning fluid)

ADDITIONAL MATERIALS FOR OPTIONAL LAB EXTENSIONS

Isopropyl alcohol (i.e. rubbing alcohol)

Nail polish remover

Sugar

Skittles® (i.e. the colored candy)

M&Ms® (i.e. the colored chocolate candy)

Watercolor paints

Inks

Pastels

Muffin cases

Muffin tray

Small paint brush

Cornmeal or polenta

Eggs

Milk

Butter

Baking powder (not the same as baking soda)

Four additional iron or steel nails (without any rust, not galvanized or stainless steel)

Copper wire (Available at Amazon or other online stores)

Zinc wire (Available at Amazon or other online stores)

Magnesium wire (or magnesium ribbon, available at Amazon or other online stores)

Clear colored juice (e.g. apple or cranberry juice)

Different colors or brands of liquid food coloring

All-purpose flour (or plain flour)

Samples of foods (e.g. pasta, rice, bread, oats, flour)

Small metal objects (e.g. scrap metal weighing at least 150 g)

KITCHEN EQUIPMENT

Stove

Oven

Microwave oven

Refrigerator

Small pan (for heating water on stove)

Oven mitts or gloves (for handling hot objects)

Measuring spoons (various capacities: 0.25 tsp, 0.5 tsp, 1 tsp; 0.5 tbsp, 1 tbsp)

Measuring jug (calibrated in ml, at least 120 ml capacity)

Insulated beakers (polystyrene cups or similar; at least 250 ml capacity; 10 oz is ideal)

Transparent plastic beaker (able to be marked with permanent marker)

Tongs (as used in kitchen or on grill)

Small heatproof ceramic dish (e.g. Ramekin)

Baking tray or dish

Microwaveable plate

Selection of glasses or beakers (different sizes, including heatproof and microwaveable)

Two heatproof plates

Cooking pot with sloped lid (lid higher in center than edges, and ideally transparent lid)

Large bowl or jug (capacity at least 1 liter)

500 ml plastic bottle (disposable water bottle is ideal)

Several dry dishcloths / tea towels

Skewer (wood or metal)

Spoons or stirring rod

Funnel

Heat-proof surface (e.g. wooden board or similar, suitable for hot objects)

Protective gloves (as appropriate for handling household substances)

HOUSEHOLD EQUIPMENT

Balloon

Paperclip

Ruler (marked in cm, suggested length 30 cm)

Several pencils (including two sharpened at both ends)

Several pieces of thick cardboard or expanded polystyrene (slightly larger diameter than the insulated beakers)

9 volt battery

Timer (phone app or stopwatch are ideal)

Permanent marker (e.g. Sharpie)

Steel bolts or other metal objects (ideally weighing at least 150 g)

File suitable for filing metal (not a nail file)

Work surface suitable for painting (e.g. sheet of paper)

OTHER EQUIPMENT

Safety glasses or goggles (regular glasses provide insufficient protection)

Lab coat or apron

Nine test tubes or narrow glasses (one with bung or plastic wrap to cover top; large enough to hold nails)

Thermometer, ideally digital (must read in °C, range at least 0°C to 100°C)

Digital weighing scale (ideally with 0.01 g increments)

Small measuring cylinder or other narrow, flat-bottomed container (a test tube can be used, but the results will be less accurate)

Petri dish or small saucer (ideally glass, white, or another pale color)

Two electrical wires with alligator clips at each end (or two electrical wires and insulating tap)