DESCRIPTION OF LABS

The table presented below indicates the chapter and page of the student book to which each lab is associated. It also provides the type of lab, the concepts targeted and the materials necessary for its realization.

Lab number (Chapter and page of student book)	Lab title (Type of lab)	Concepts	Materials
1 (Chapter 1, page 11)	Solution or colloid? (Observation)	• Homogenous and heterogenous mixtures	• 6 slides • 6 cover slips • light microscope • dropper bottle of milk (not skim) • dropper bottle of toothpaste • dropper bottle of apple juice • dropper bottle of mayonnaise • dropper bottle of shampoo (clear brand) • dropper bottle of black coffee (drip)
2 (Chapter 1, page 13)	Preparing a solution by dissolution (Technique)	• Concentration • Dissolution • Technique of solution preparation	• balance (accurate to 0.01 g) • weighing pan • spatula • 10 g of coloured solid soluble in water • graduated cylinder • wash bottle of distilled water • glass stirring rod • test tube (18 mm × 150 mm) and stopper (No. 1) • test tube (18 mm × 150 mm) of control solution • test-tube rack
3 (Chapter 1, page 13)	The effect of concentration on the colour of a solution (Technique)	• Concentration	• marker • test-tube rack • 3 test tubes (18 mm × 150 mm) and stoppers (No. 1) • balance (accurate to 0.01 g) • weighing pan • spatula • 10 g of coloured solid soluble in water • 25-mL graduated cylinder • wash bottle of distilled water • glass stirring rod • 50-mL graduated cylinder

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Description of labs (*continued*)

Lab number (Chapter and page of student book)	Lab title (Type of lab)	Concepts	Materials
4 (Chapter 1, page 13)	Preparing a solution by dilution (Technique)	• Dilution • Concentration • Preparation of solution by dilution	• test-tube rack • 2 test tubes (18 mm × 150 mm) and stoppers (No. 1) • container of given solution with a concentration of 10 g/L • 25-mL graduated cylinder • 100-mL beaker • 50-mL graduated cylinder • wash bottle of distilled water • glass stirring rod
5 (Chapter 1, page 13)	The effect of dilution on the colour of a solution (Experiment)	• Dilution	• marker • 4 test tubes (18 mm × 150 mm) and stoppers (No. 1) • test-tube rack • 50-mL graduated cylinder • container of given solution with10 g/L concentration • 25-mL graduated cylinder • wash bottle of distilled water
6 (Chapter 1, page 13)	Measuring solubility (Technique)	• Solubility • Characteristic properties	• marker • 4 test tubes (16 mm × 150 mm) and stoppers (No. 1) • test-tube rack • balance (accurate to 0.01 g) • wash bottle of distilled water • 10-mL graduated cylinder • container of solid soluble in water (e.g. table salt, sugar) • spatula
7 (Chapter 1, page 13)	The effect of temperature on the solubility of certain solids (Experiment)	• Solubility	• marker • test-tube rack • 4 test tubes (18 mm × 150 mm) and stoppers (No. 0) • 10-mL graduated cylinder • wash bottle of distilled water • balance (accurate to 0.01 g) • weighing pan • spatula • container of sodium nitrate ($NaNO_3$) • 250-mL beaker • hot plate • thermometer clamp *or* universal clamp and perforated cork stopper • ring stand • thermometer • temperature-resistant gloves

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Description of labs (*continued*)

Lab number (Chapter and page of student book)	Lab title (Type of lab)	Concepts	Materials
8 (Chapter 1, page 23)	Measuring the melting point (Technique)	• Characteristic physical properties • Melting point • Change of state	• 150-mL beaker • hot plate • test tube (18 mm × 150 mm) • test-tube rack • container of powdered solid • spatula • ring stand • universal clamp • thermometer clamp *or* universal clamp and perforated cork stopper • thermometer
9 (Chapter 1, page 23)	Measuring the boiling point (Technique)	• Characteristic physical properties • Boiling point • Change of state	• 100-mL beaker • container of liquid • hot plate • ring stand • thermometer • thermometer clamp *or* universal clamp and perforated cork stopper • beaker tongs • ceramic plate
10 (Chapter 1, page 23)	Measuring the density of a gas (Technique)	• Characteristic physical properties • Density	• 140-mL syringe with pierced plunger and stopper • 4-inch nail • balance (accurate to 0.01 g) • cylinder of gas (e.g. oxygen, carbon dioxide, nitrogen)
11 (Chapter 1, page 23)	Measuring the density of a liquid (Technique)	• Characteristic physical properties • Density	• balance (accurate to 0.01 g) • 25-mL graduated cylinder • wash bottle of distilled water *or* container of methanol
12 (Chapter 1, page 23)	Measuring the density of a solid (Technique)	• Characteristic physical properties • Density	• balance (accurate to 0.01 g) • solid that can be inserted into graduated cylinder (e.g. copper, sulphur, iron) • small rubber stopper • 100-mL graduated cylinder • wash bottle of distilled water

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Description of labs (*continued*)

Lab number (Chapter and page of student book)	Lab title (Type of lab)	Concepts	Materials
13 (Chapter 1, page 23)	Separating a mixture by distillation (Technique)	• Characteristic physical properties • Boiling point • Pure substance • Change of state	• cobalt chloride paper strips • 50 mL of liquid mixture • 125-mL Erlenmeyer flask and two-hole stopper • 2 *or* 3 porous stones • thermometer • hot plate • condenser tube • ring stand • universal clamp • glass elbow tube and one-hole stopper • 2 flexible tubings • 2 100-mL beakers
14 (Chapter 1, page 24)	Determining acidity, alkalinity and neutrality (Observation)	• Characteristic chemical properties • Reaction to indicators	• 7 neutral litmus paper strips • spot plate • dropper bottle of milk • dropper bottle of apple juice • dropper bottle of shampoo • dropper bottle of soft drink • dropper bottle of glass cleaner • dropper bottle of all-purpose cleaner • dropper bottle of tap water
15 (Chapter 1, page 25)	Identifying unknown substances (Experiment)	• Characteristic physical properties • Characteristic chemical properties	• 4 samples of unknown substances (solid insoluble in water, solid soluble in water, liquid and gas) • balance (accurate to 0.01 g) • small rubber stopper • 100-mL graduated cylinder • wash bottle of distilled water • electrical conductivity detector • test-tube rack • 3 test tubes (18 mm $\times$ 150 mm) and stoppers (No. 1) • 10-mL graduated cylinder • spatula • wire loop • Bunsen burner • cobalt chloride paper strips • 100-mL beaker • hot plate • thermometer clamp *or* universal clamp and perforated cork stopper

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Description of labs (*continued*)

Lab number (Chapter and page of student book)	Lab title (Type of lab)	Concepts	Materials
15 (*continued*)			• ring stand • thermometer • 140-mL syringe with perforated plunger and stopper • 4-inch nail • container of limewater • wood splints • matches *or* lighter
16 (Chapter 2, page 36)	The effect of substance quantity on the absorption of thermal energy (Experiment)	• Forms of energy • Thermal energy	• 50-mL graduated cylinder • wash bottle of distilled water • 2 100-mL beakers • hot plate • 2 thermometers • ring stand • 2 thermometer clamps *or* 2 universal clamps and perforated cork stoppers • stopwatch *or* watch • 2 glass stirring rods
17 (Chapter 2, page 39)	Mechanical energy of an object in free fall (Experiment)	• Forms of energy • Mechanical energy	• plasticine (about 400 mL) • large plastic container • 1-m ruler • 3 marbles (different sizes) • balance (optional)
18 (Chapter 2, page 43)	Temperature variation during a change of state (Experiment)	• Physical change • Change of state • Thermal energy	• 100-mL graduated cyllinder • wash bottle of distilled water • 250-mL beaker • hot plate • thermometer • ring stand • thermometer clamp *or* universal clamp with perforated cork stopper • stopwatch *or* watch • glass stirring rod • balance (optional)
19 (Chapter 2, page 46)	The amount of energy involved during dissolution (Experiment)	• Physical change • Dissolution	• wash bottle of distilled water • 25-mL graduated cylinder • polystyrene foam cup • thermometer • spatula • container of table salt (NaCl) • weighing pan • balance (accurate to 0.01 g) • container of ammonium chloride (NH_4Cl) • container of calcium chloride ($CaCl_2$)

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Description of labs (*continued*)

Lab number (Chapter and page of student book)	Lab title (Type of lab)	Concepts	Materials
20 (Chapter 2, page 53)	The synthesis of water (Observation)	• Chemical change • Synthesis	• matches *or* lighter • wood splint • test-tube rack • test tube (25 mm × 150 mm) of hydrogen and stopper (No. 4) • cobalt chloride paper strip • thermometer (optional)
21 (Chapter 2, page 55)	The electrolysis of water (Experiment)	• Chemical change • Decomposition	• wash bottle of distilled water • 600-mL beaker • balance (accurate to 0.01 g) • weighing pan • spatula • container of sodium carbonate (Na_2CO_3) • glass stirring rod • marker • test-tube rack • 2 test tubes (16 mm × 150 mm) and stoppers (No. 1) • 2 electrolysis electrodes (platinum *or* stainless steel) and stand • 2 conductor wires and clamps • source of electric current (battery *or* other) • 30-cm ruler • wood splints • matches *or* lighter
22 (Chapter 2, page 56)	The oxidation of copper (Observation)	• Chemical change • Oxidation • Synthesis • Pure substance (compound, element)	PART I • porcelain dish • balance (accurate to 0.01 g) • spatula • container of copper powder • electrical conductivity detector • hot plate • crucible tongs • 30-cm glass stirring rod • stopwatch *or* watch (optional) • ceramic plate PART II • test tube (25 mm × 150 mm) and one-hole stopper (No. 4) • test-tube rack • balance (accurate to 0.01 g) • porcelain dish (and contents) from PART I

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Description of labs (*continued*)

Lab number (Chapter and page of student book)	Lab title (Type of lab)	Concepts	Materials
22 (*continued*)			• container of carbon (active) • weighing pan • spatula • 30-cm glass stirring rod • ring stand • test-tube clamp • Bunsen burner • glass elbow tube • gas collection apparatus • 3 test tubes (18 mm × 150 mm) and stoppers (No.1) • flexible tubing • stopwatch *or* watch (optional) • 50-mL beaker • wash bottle of distilled water • container of limewater • matches *or* lighter • wood splints
23 (Chapter 2, page 58)	Precipitation (Observation)	• Chemical change • Precipitation	• spot plate • 6 dropper bottles labelled A to F with following solutions: – A – lead nitrate ($Pb(NO_3)_2$) – B – sodium iodide (NaI) – C – copper sulphate ($CuSO_4$) – D – potassium carbonate (K_2CO_3) – E – nickel chloride ($NiCl_2$) – F – sodium hydroxide (NaOH) • glass stirring rod *or* toothpick • wash bottle of distilled water • 250-mL beaker
24 (Chapter 2, page 58)	Physical change or chemical change? (Observation)	• Physical change • Chemical change	• test tube (18 mm × 150 mm) and stopper (No. 1) • test-tube rack • balance (accurate to 0.01 g) • wash bottle of distilled water • 10-mL graduated cylinder • thermometer • cobalt chloride paper strips • container of nickel chloride solid ($NiCl_2$) • spatula • weighing pan • watch glass • hot plate • crucible tongs

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Description of labs (*continued*)

Lab number (Chapter and page of student book)	Lab title (Type of lab)	Concepts	Materials
24 (*continued*)			• container of sodium hydroxide solution (NaOH) • neutral litmus paper strips • container of nickel chloride solution ($NiCl_2$) • 250-mL beaker • 25-mL graduated cylinder • 125-mL Erlenmeyer flask and one-hole stopper • nickel-chromium wire (5 cm) • Bunsen burner • tongs • magnesium ribbon (5 cm) • container of hydrochloric acid (HCl) • container of magnesium powder • glass stirring rod
25 (Chapter 3, page 70)	The effect of force and surface area on pressure (Experiment)	• Pressure	• 5-mL glass syringe • ring stand • universal clamp • flexible tubing • aneroid gauge • weights of 50 g, 100 g, 200 g and 500 g • vernier scale *or* ruler • 10-mL glass syringe • 30-mL glass syringe
26 (Chapter 3, page 73)	Liquid pressure (Experiment)	• Pressure	• balance (accurate to 0.01 g) • 50-mL graduated cylinder • 3 containers each with more than 1 L of different liquid: distilled water, methanol, glycol, saline solution, etc. • 2 30-cm rulers • 1000-mL graduated cylinder *or* container more than 40 cm in height • U-tube manometer • 30-cm glass stirring rod
27 (Chapter 3, page 75)	Gas pressure (Experiment)	• Pressure	• 30-mL syringe and stopper • 3 cylinders each of different gas: nitrogen (N_2), oxygen (O_2) and carbon dioxide (CO_2) • flexible tubing • aneroid gauge

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Description of labs (*continued*)

Lab number (Chapter and page of student book)	Lab title (Type of lab)	Concepts	Materials
28 (Chapter 3, page 83)	Measuring blood pressure (Technique)	• Circulatory pressure	• sphygmomanometer • stethoscope • alcohol wipes
29 (Chapter 4, page 92)	The characteristics of waves (Observation)	• Waves • Frequency • Wavelength • Amplitude	PART I: SPRING • 10-m spring of large diameter • ribbon (15 cm) • masking tape *or* chalk • stopwatch *or* watch indicating seconds • 1-m ruler *or* tape measure PART II: RIPPLE TANK • ripple tank • large sheet of white paper • cork stopper tied to nail • light source • dropper bottle of water • stopwatch *or* watch indicating seconds • 30-cm ruler
30 (Chapter 4, page 92)	Modifying wave amplitude (Experiment)	• Waves • Amplitude • Energy	• 10-m spring *or* rope • masking tape *or* chalk • 1-m ruler *or* tape measure
31 (Chapter 4, page 96)	The colours of light (Observation)	• Electromagnetic spectrum	• ray box • triangular prism (transparent) • sheet of white paper • pencil • eraser • coloured pencils (optional)
32 (Chapter 4, page 100)	The effect of distance on sound intensity (Experiment)	• Decibel scale	• sound source (musical instrument, whistle, alarm, etc.) • sound meter • tape measure
33 (Chapter 4, page 106)	Forming images with a plane mirror (Experiment)	• Reflection	• pencil • eraser • ruler • sheet of white paper • mirror stand • plane mirror • light source (preferably ray box with one-slit comb) • protractor

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Description of labs (*continued*)

Lab number (Chapter and page of student book)	Lab title (Type of lab)	Concepts	Materials
34 (Chapter 4, page 111)	Locating the focal point of a lens (Technique)	• Focal point of a lens	• converging lens(es) • optical bench • ray box • screen (white cardboard) • 1-m ruler
35 (Chapter 4, page 113)	Forming images with a converging lens (Experiment)	• Focal point of a lens	• converging lens • optical bench • screen (white cardboard) • ray box • small light bulb on base *or* candle • 1-m ruler
36 (Chapter 4, page 113)	Forming images with a diverging lens (Experiment)	• Focal point of a lens	• diverging lens • optical bench • screen (white cardboard) • small light bulb on base *or* candle • 1-m ruler
37 (Chapter 5, page 128)	Locating DNA (Observation)	• DNA	• toothpicks • slide • dropper bottle of methyl-green dye • cover slip • light microscope • white paper • pencil • eraser
38 (Chapter 5, page 128)	Extracting DNA (Technique)	• DNA	• electrical mixer • piece of onion (chilled) • spatula • 5 g of table salt • weighing pan • balance (accurate to 0.01 g) • wash bottle of distilled water (chilled) • 150-mL beaker (chilled) • glass stirring rod • 20 mL of liquid detergent • mortar and pestle (chilled) • coarse filter • 100 mL graduated cylinder • 50 mL of ethanol (chilled) • slide • dropper bottle of methyl-green dye • cover slip • light microscope

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Description of labs (*continued*)

Lab number (Chapter and page of student book)	Lab title (Type of lab)	Concepts	Materials
39 (Chapter 5, page 133)	The phases of mitosis (Observation)	• Mitosis	• dropper bottle of acetocarmine solution (dye) • slide • forceps • onion roots *or* garlic roots (trimmed and coloured) • cover slip • blotting paper • light microscope
40 (Chapter 5, page 143)	Observing ovarian follicles (Observation)	• Female reproductive system • Ovarian cycle	• light microscope • commercial slide of a mammal ovary
41 (Chapter 6, page 160)	Detecting simple and complex carbohydrates (Technique)	• Types of foods	• 400-mL beaker • hot plate • wash bottle of distilled water • marker • 3 test tubes (15 mm × 125 mm) • test-tube rack • dropper bottle of distilled water • dropper bottle of glucose solution • dropper bottle of lactose solution • dropper bottle of Fehling's reagent solution A • dropper bottle of Fehling's reagent solution B • test-tube clamp
42 (Chapter 6, page 160)	Detecting starch (Technique)	• Types of foods	• 2 test tubes (15 mm × 125 mm) • test-tube rack • marker • dropper bottle of distilled water • dropper bottle of starch solution • dropper bottle of Lugol's solution
43 (Chapter 6, page 160)	Detecting fats (Technique)	• Types of foods	• 2 test tubes (15 mm × 125 mm) and stoppers (No. 00) • test-tube rack • marker • dropper bottle of distilled water • dropper bottle of vegetable oil • weighing pan containing Sudan IV particles • spatula

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Description of labs (*continued*)

Lab number (Chapter and page of student book)	Lab title (Type of lab)	Concepts	Materials
44 (Chapter 6, page 160)	Detecting proteins (Technique)	• Types of foods	• 2 test tubes (15 mm × 125 mm) • test-tube rack • marker • dropper bottle of distilled water • dropper bottle of protein solution • dropper bottle of Biuret reagent
45 (Chapter 6, page 160)	Detecting vitamin C (Technique)	• Types of foods	• 2 test tubes (15 mm × 125 mm) • test-tube rack • marker • dropper bottle of distilled water • dropper bottle of vitamin C solution • dropper bottle of indophenol solution
46 (Chapter 6, page 160)	Detecting chloride (Technique)	• Types of foods	• 2 test tubes (15 mm × 125 mm) • test-tube rack • marker • dropper bottle of distilled water • dropper bottle of sodium chloride solution • dropper bottle of silver nitrate solution
47 (Chapter 6, page 160)	Detecting calcium (Technique)	• Types of foods	• 2 test tubes (15 mm × 125 mm) • test-tube rack • marker • dropper bottle of distilled water • dropper bottle of calcium salt solution • dropper bottle of ammonium oxalate solution
48 (Chapter 6, page 160)	Detecting nutrients in foods (Observation)	• Types of foods	• marker • 5 test tubes (18 mm × 150 mm) and stoppers (No. 1) • test-tube rack • 400-mL beaker • hot plate • forceps • dropper bottle of colourless soft drink • dropper bottle of rice water • dropper bottle of vegetable oil • dropper bottle of homogenized milk (3.25%) • dropper bottle of maple syrup • glassware soap • test-tube brush • wash bottle of distilled water

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Description of labs (*continued*)

Lab number (Chapter and page of student book)	Lab title (Type of lab)	Concepts	Materials
48 (*continued*)			• dropper bottle of Fehling's reagent solution A • dropper bottle of Fehling's reagent solution B • dropper bottle of Lugol's solution • dropper bottle of Biuret reagent • dropper bottle of indophenol solution • dropper bottle of silver nitrate solution • dropper bottle of ammonium oxalate solution • container of Sudan IV solid • spatula
49 (Chapter 6, page 160)	Do all carbohydrates have the same sweet taste? (Experiment)	• Carbohydrates	• sheet of paper • 7 bottles with perforated caps (e.g. salt shakers) containing: – maltose – glucose – fructose – galactose – lactose – sucrose – starch • drinking glass • wash bottle of water *or* tap water
50 (Chapter 6, page 167)	Observing a mechanical change and a chemical change (Observation)	• Carbohydrates	• 10 elbow macaroni pieces • 2 watch glasses *or* Petri dishes • dropper bottle of Lugol's solution • wash bottle of distilled water • 250-mL beaker • hot plate • stopwatch *or* watch • spatula • 2 droppers • spot plate • beaker tongs • electrical mixer *or* mortar and pestle • dropper bottle of artificial saliva • toothpicks

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Description of labs (*continued*)

Lab number (Chapter and page of student book)	Lab title (Type of lab)	Concepts	Materials
51 (Chapter 6, page 167)	Nutrient absorption (Observation)	• Transformation of foods	• marker • 2 400-mL beakers • 250-mL graduated cylinder • 200 mL of starch solution • 2 dialysis bags • 200 mL of glucose solution • stopwatch *or* watch • 600-mL beaker • hot plate • 2 test tubes (18 mm × 150 mm) • test-tube rack • dropper bottle of distilled water • 2 droppers • dropper bottle of Fehling's reagent solution A • dropper bottle of Fehling's reagent solution B • spot plate • dropper bottle of Lugol's solution • test-tube clamp
52 (Chapter 6, page 167)	The role of bile in digestion (Observation)	• Transformation of foods	• marker • 2 125-mL Erlenmeyer flasks and stoppers (No. 5) • 50-mL graduated cylinder • dropper bottle of distilled water • vegetable oil • dropper bottle of dishwashing liquid
53 (Chapter 6, page 172)	Oxygen content in the air (Observation)	Respiratory system	• wash bottle of distilled water • 600-mL beaker • 2 test tubes (18 mm × 150 mm) • steel wool (diameter of about 20 mm) • Petri dish • 25 mL of white vinegar • 50-mL graduated cylinder • tongs • 30-cm ruler
54 (Chapter 6, page 172)	Determining vital lung capacity (Observation)	• Respiratory system	• wash bottle of water • 100-mL graduated cylinder • plastic bottle (5 L or more) and cap • marker • basin *or* sink • flexible tubing (length of about 50 cm) • cotton ball • alcohol

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Description of labs (*continued*)

Lab number (Chapter and page of student book)	Lab title (Type of lab)	Concepts	Materials
55 (Chapter 6, page 172)	The effect of physical effort on respiratory rhythm (Experiment)	• Respiratory system	• stopwatch *or* watch indicating seconds
56 (Chapter 6, page 177)	Observing the elements found in blood (Observation)	• Blood • Constituents of blood	• light microscope • commercial blood smear slide
57 (Chapter 6, page 180)	Determining blood type (Observation)	• Compatibility of blood types	• marker • spot plate • dropper bottle of blood sample 1 • dropper bottle of blood sample 2 • dropper bottle of blood sample 3 • dropper bottle of blood sample 4 • box of toothpicks • clean cloth *or* paper towel • dropper bottle of anti-A serum • dropper bottle of anti-B serum • dropper bottle of anti-Rh serum • stopwatch *or* watch
58 (Chapter 6, page 184)	Blood circulation in a goldfish's tail (Observation)	• Blood circulation	• light microscope • 50-mL beaker • aquarium • 2 pieces of gauze • Petri dish • fish net • goldfish • dropper
59 (Chapter 6, page 185)	Dissecting a pig's heart (Observation)	• Heart	• gloves • pig heart • dissecting pan • glass stirring rod • dissecting scissors • dissecting forceps
60 (Chapter 6, page 190)	Dissecting a kidney (Observation)	• Urinary system	• gloves • kidney of a mammal • dissecting pan • scalpel *or* knife • dissecting forceps • glass stirring rod

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Description of labs (*continued*)

Lab number (Chapter and page of student book)	Lab title (Type of lab)	Concepts	Materials
61 (Chapter 6, page 192)	The composition of urine (Observation)	• Urinary system	• marker • 4 test tubes (18 mm × 150 mm) and stoppers (No. 1) • test-tube rack • dropper bottle of urine sample A • dropper bottle of urine sample B • dropper bottle of urine sample C • dropper bottle of urine sample D • 400-mL beaker • hot plate • dropper bottle of Fehling's reagent solution A • dropper bottle of Fehling's reagent solution B • test-tube clamp • glassware soap • test-tube brush • wash bottle of distilled water • weighing pan with Sudan IV particles • spatula • dropper bottle of Biuret reagent • dropper bottle of silver nitrate solution
62 (Chapter 7, page 206)	Dissecting a sheep's brain (Observation)	• Central nervous system	• gloves • brain of a sheep • scalpel *or* knife • dissecting forceps • dissecting scissors • dissecting pan • toothpicks • adhesive paper
63 (Chapter 7, page 206)	Reflexes (Experiment)	• Central nervous system • Spinal chord • Nervous impulse • Reflex arc	• 30-cm ruler
64 (Chapter 7, page 213)	Dissecting the eye of a mammal (Observation)	• Sensory receptors • Eye	• gloves • eye of a mammal • scalpel *or* knife • dissecting forceps • dissecting scissors • dissecting pan • 4 watch glasses *or* Petri dishes

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Description of labs (*continued*)

Lab number (Chapter and page of student book)	Lab title (Type of lab)	Concepts	Materials
65 (Chapter 7, page 213)	Adjusting the eye to light (Experiment)	• Sensory receptors • Eye	• flashlight • 1-m ruler *or* tape measure • stopwatch (accurate to 0.10 sec)
66 (Chapter 7, page 217)	Sensory receptors of the skin (Experiment)	• Sensory receptors • Skin	• 200 mL of water • 2 250-mL beakers • hot plate • thermometer • ring stand • thermometer clamp *or* universal clamp and perforated cork stopper • 2 copper wires (20 cm in length and bent in half) *or* 4-inch nails • ice cubes • bandana • cotton thread (6 cm in length) • fine-point pen • paper towel *or* cloth
67 (Chapter 7, page 220)	The relationship between smell and taste (Experiment)	• Sensory receptors • Nose • Tongue	• 6 fruit purées of similar texture (e.g. baby foods) in containers marked A to F • 6 teaspoons • bandana • onion • nose clip (optional)
68 (Chapter 7, page 220)	Studying a fresh calf bone (Observation)	• Bone	• gloves • fresh calf bone sawed lengthwise • dissecting pan • scalpel *or* knife • dissecting needle • watch glass *or* Petri dish • ruler • paper towel • toothpicks • adhesive paper

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Description of labs (*continued*)

Lab number (Chapter and page of student book)	Lab title (Type of lab)	Concepts	Materials
69 (Chapter 8, page 238)	Studying baker's yeast (Observation)	• Conventional biotechnology	• container of dry baker's yeast • spatula • test tube (15 mm × 125 mm) • test-tube rack • wash bottle of distilled water • 10-mL graduated cylinder • glass stirring rod • dropper bottle of methylene blue • dropper • slide • cover slip • light microscope
70 (Chapter 8, page 238)	The gas produced from baker's yeast (Experiment)	• Conventional biotechnology	• gas collection apparatus • 4 test tubes (15 mm × 125 mm) • test-tube rack • 3 stoppers (No. 00) • 500-mL Erlenmeyer flask *or* Florence flask and one-hole stopper (No. 7) • glass elbow tube • 600-mL beaker • flexible tubing • hot plate • ring stand • thermometer • thermometer clamp *or* universal clamp and perforated cork stopper • container of dry baker's yeast • spatula • 50-mL graduated cylinder • container of table sugar (sucrose) • glass stirring rod • wood splints • matches • dropper bottle of limewater

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Description of labs (*continued*)

Lab number (Chapter and page of student book)	Lab title (Type of lab)	Concepts	Materials
71 (Chapter 8, page 240)	Carbohydrates to use in culturing baker's yeast (Experiment)	• Cell culture	• 150-mL beaker • wash bottle of distilled water • hot plate • ring stand • thermometer • thermometer clamp *or* universal clamp and perforated cork stopper • container of dry baker's yeast • spatula • 25-mL graduated cylinder • glass stirring rod • 5 test tubes (18 mm × 150 mm) • marker • 10-mL graduated cylinder • container of glucose • container of fructose • container of galactose • container of lactose • container of table sugar (sucrose) • 5 latex balloons • stopwatch *or* watch
72 (Chapter 8, page 251)	The effect of pasteurization on baker's yeast (Observation)	• Pasteurization	• marker • 2 test tubes (18 mm × 150 mm) • test-tube rack • wash bottle of distilled water • 150-mL beaker • container of dry baker's yeast • spatula • glass stirring rod • hot plate • ring stand • thermometer • thermometer clamp *or* universal clamp and perforated cork stopper • beaker tongs • container of table sugar (sucrose) • 25-mL graduated cylinder • 2 latex balloons • stopwatch *or* watch • heat-resistant plate

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