Electric Circuits: Goals and Assessment Strategies

Concepts	
Goals	**Assessment Strategies**
A complete electric circuit is required for electricity to light a bulb. Lessons 1–5, 7–14, and 16	Lessons 1, 9, 13, 16, and 17 ▪ Pre- and post-unit assessments ▪ Class discussions ▪ Student investigations ▪ Record sheets ▪ Student notebook entries ▪ Building a flashlight ▪ Wiring a house
A complete circuit can be constructed in more than one way using the same materials. Lessons 1–5, 11–13, and 16	Lessons 1–2, 13, 16, and 17 ▪ Pre- and post-unit assessments ▪ Class discussions ▪ Student investigations ▪ Student notebook entries ▪ Building a flashlight ▪ Wiring a house
Different types of electric circuits show different characteristics. Lessons 11 and 13–16	Lessons 11 and 13–16 ▪ Pre- and post-unit assessments ▪ Class discussions ▪ Student investigations ▪ Student notebook entries ▪ Building a flashlight ▪ Wiring a house
A switch can be used to complete or interrupt a circuit. Lessons 1, 12–14, and 16	Lessons 1, 12–14, 16, and 17 ▪ Pre- and post-unit assessments ▪ Class discussions ▪ Student investigations ▪ Student notebook entries ▪ Building a flashlight ▪ Wiring a house
Some materials conduct electricity; these are called conductors. Lessons 7–8, 12–14, and 16	Lessons 7–8, 12–14, and 16 ▪ Pre- and post-unit assessments ▪ Class discussions ▪ Student investigations ▪ Student notebook entries ▪ Building a flashlight ▪ Wiring a house
Some materials do not conduct electricity; these are called insulators. Lessons 7–8, 12–14, and 16	Lessons 7–8, 12–14, and 16 ▪ Pre- and post-unit assessments ▪ Class discussions ▪ Student investigations ▪ Student notebook entries ▪ Building a flashlight ▪ Wiring a house

Goals	Assessment Strategies
Electricity can produce light, heat, and magnetism. Lessons 2–11, 13–14, and 16	Lessons 1–2, 8, 13, 16, and 17 ▪ Pre- and post-unit assessments ▪ Class discussions ▪ Student investigations ▪ Student notebook entries ▪ Building a flashlight ▪ Wiring a house
A diode conducts electricity in one direction only. Lesson 14	Lesson 14 and Assessment 1 ▪ Pre- and post-unit assessments ▪ Class discussions ▪ Student investigations ▪ Student notebook entries ▪ Teacher observations

Skills	
Goals	**Assessment Strategies**
Wiring simple electric circuits. Lessons 2 and 5–16	Lessons 2 and 5–16 ▪ Pre- and post-unit assessments ▪ Class discussions ▪ Student investigations ▪ Student notebook entries ▪ Teacher observations ▪ Building a flashlight ▪ Wiring a house
Predicting, observing, describing, and recording results of experiments with electricity. Lessons 2–9 and 11–16	Lessons 2–9, 11–16, and Assessment 3 ▪ Pre- and post-unit assessments ▪ Class discussions ▪ Student investigations ▪ Student notebook entries ▪ Teacher observations ▪ Building a flashlight ▪ Wiring a house
Drawing conclusions about circuits from the results of experiments. Lessons 2–3, 5–7, 9, and 11–14	Lessons 2–3, 5–7, 9, and 11–14 ▪ Pre- and post-unit assessments ▪ Class discussions ▪ Student investigations ▪ Student notebook entries ▪ Teacher observations
Building and using a simple circuit tester. Lessons 6–9 and 14	Lessons 6–9, 14, and Assessment 3 ▪ Pre- and post-unit assessments ▪ Class discussions ▪ Student investigations ▪ Student notebook entries ▪ Teacher observations

Goals	Assessment Strategies
Using symbols to represent the different parts of an electric circuit. Lessons 10–16	Lessons 10, 12, and 15 ▪ Pre- and post-unit assessments ▪ Class discussions ▪ Student investigations ▪ Student notebook entries ▪ Teacher observations ▪ Building a flashlight ▪ Wiring a house
Building a simple switch. Lessons 12–13 and 15–16	Lessons 12, 13, and 16 ▪ Pre- and post-unit assessments ▪ Class discussions ▪ Student investigations ▪ Student notebook entries ▪ Teacher observations ▪ Building a flashlight ▪ Wiring a house
Applying troubleshooting strategies to complete an incomplete circuit. Lessons 2 and 5–16	Lessons 2 and 5–16 ▪ Pre- and post-unit assessments ▪ Class discussions ▪ Student investigations ▪ Student notebook entries ▪ Teacher observations ▪ Building a flashlight ▪ Wiring a house
Applying information about electric circuits to design and build a flashlight. Lessons 9–13	Lessons 9, 13, and 15–16 ▪ Pre- and post-unit assessments ▪ Class discussions ▪ Student investigations ▪ Student notebook entries ▪ Teacher observations
Applying information about electric circuits to design and wire a house. Lessons 15–16	Lessons 15–16 ▪ Pre- and post-unit assessments ▪ Class discussions ▪ Student investigations ▪ Student notebook entries ▪ Teacher observations
Reading to learn more about electricity. Lessons 4, 8, and 14	Assessments 1 and 2 ▪ Pre- and post-unit assessments ▪ Class discussions ▪ Teacher observations ▪ Observations of free reading materials
Communicating results and ideas through writing, drawing, and discussion. Lessons 1–17	Lessons 1, 8, 13, 16, and 17 ▪ Pre- and post-unit assessments ▪ Class discussions ▪ Student investigations ▪ Student notebook entries ▪ Teacher observations ▪ Building a flashlight ▪ Wiring a house

Attitudes	
Goals	**Assessment Strategies**
Appreciating the need for safety rules when working with electricity. Lessons 1–17	Lessons 1, 8, 13, 16, and 17 ▪ Pre- and post-unit assessments ▪ Class discussions ▪ Student investigations ▪ Student notebook entries ▪ Teacher observations ▪ Building a flashlight ▪ Wiring a house
Developing an interest in electricity. Lessons 1–17	Lessons 1–17 ▪ Pre- and post-unit assessments ▪ Class discussions ▪ Student investigations ▪ Student notebook entries ▪ Teacher observations ▪ Building a flashlight ▪ Wiring a house
Developing confidence in being able to analyze and solve a problem. Lessons 1–17	Lessons 1–17 ▪ Pre- and post-unit assessments ▪ Class discussions ▪ Student investigations ▪ Student notebook entries ▪ Teacher observations