

Electric Circuits Storyline

STC 4th Grade

Unifying Concepts:

- ✓ Systems, order and organization
- ✓ Evidence, models and explanations
- ✓ Change, constancy and measurement
- Evolution and equilibrium
- ✓ Form and function

Big Idea:

Electrical circuits require a complete loop through which an electrical current passes.
Electricity in circuits can produce light, heat and other forms of energy.

Sub Concept I: A complete electric circuit is required to light a light bulb.

Sub Concept II: Different types of materials or devices do different jobs.
Different types of electric circuits show different characteristics.

Sub Concept III: Electricity can produce heat and light

Sub Concept IV: Different strategies can be used to troubleshoot circuits

Sub Concept V: Electrical circuits are used to design and build useful devices

Description of Assessment: End-of-unit assessment, writing prompts; notebooks, review of student work

Science Process Skills: Observing, Questioning, Communicating, Predicting, Inferring, Applying

National Science Standards: K-4 Physical Science (Light, Heat, Electricity and Magnetism) Science as Inquiry (Abilities and Understandings about Inquiry)

Rhode Island Science Standards: Forces of Nature

Electric Circuits Storyline

Lesson 1
Thinking About Electricity and Its Properties
Discussing what students know and would like to know

Lesson 2
What Electricity Can Do
Lighting a light bulb

Lesson 3
A Closer Look at Circuits
Looking at different ways to connect the parts

Lesson 4
What Is Inside a Light Bulb?
Understanding the parts of a bulb and the path of electricity through it

Lesson 5
Building a Circuit
Learning how to use devices to help build circuits

Lesson 6
What's Wrong with the Circuit?
Using a circuit tester to troubleshoot

Lesson 7
Conductors and Insulators
Understanding the behavior of conductors and insulators

Lesson 8
Making a Filament
Learning that electricity can be used to generate light and heat

Lesson 9
Hidden Circuits
Using a circuit tester to locate hidden conductors

Lesson 10
Deciphering a Hidden Language
Using symbols to create circuit diagrams which represent real circuits

Lesson 11
Exploring Series and Parallel Circuits
Identifying and building series/parallel circuits

Lesson 12
Learning About Switches
Building switches and learning why they are important

Lesson 13
Constructing a Flashlight
Using what has been learned about series/parallel circuits to construct a flashlight.

Lesson 14
Working with a Diode
Understanding how a diode works

Lesson 15
Planning and Wiring a House
Using different strategies to

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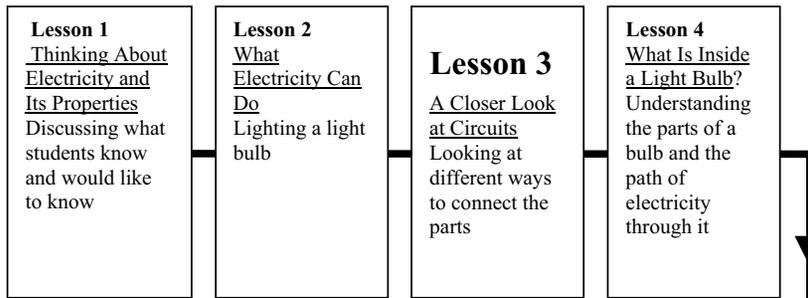
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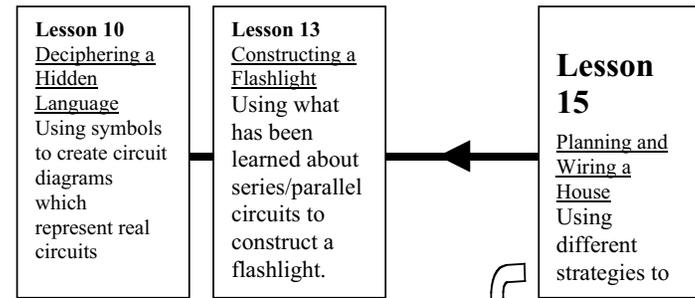
Big Idea:

Electrical circuits require a complete circle through which an electrical current passes.
Electricity in circuits can produce light, heat and other forms of energy.

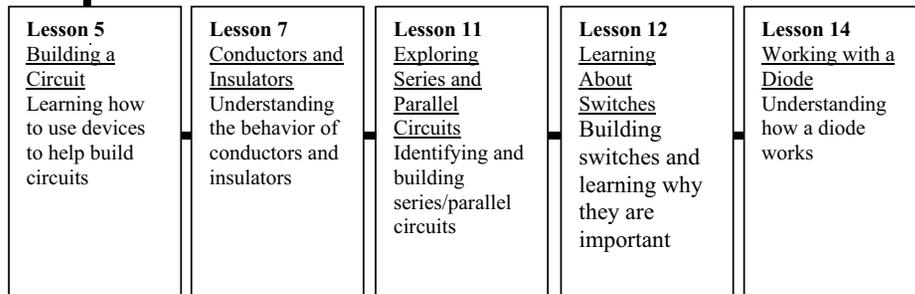
Sub Concept I: A complete electric circuit is required to light a light bulb.



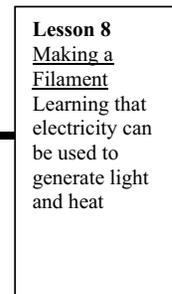
Sub Concept V: Electrical circuits are used to design and build useful devices



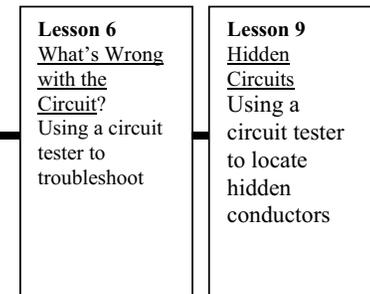
Sub Concept II: Different types of materials or devices do different jobs.
Different types of electric circuits show different characteristics.



Sub Concept III: Electricity can produce heat and light



Sub Concept IV: Different strategies can be used to troubleshoot circuits



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