# **Science Learning Progression**

FOSS Matter and Energy, Investigation 1, Grade 4-5

Prerequisite knowledge: Different forms of energy are used in everyday activities. Grades 2-3

Identify different forms of *energy* in a *system*. 4-5 PS3 A

Inv. 1 Part 1 (3 sessions)

I can observe an electric circuit system and identify forms of energy in the system.

### Formative Assessment:

Exit ticket. Students draw and label forms of energy in an electric circuit system.

Describe how energy can be transformed (changed) from one energy form to another energy form.
4-5 PS3 E

Inv.1 Part 2 (3 sessions)

I can describe how a truck that uses gasoline for fuel can be said to be powered by sunlight.

#### Formative Assessment:

5 minute essay: Embedded. Students complete FOSS Science Notebook Sheet 5, "Energy" Construct diagrams that show energy can be transferred (moved) from one place to another. 4-5 PS3 B, C, D

Inv. 1 Part 3 (3 sessions) Also teach energy diagrams (not in FOSS).

I can\_draw and label diagrams of energy transfers in given energy systems.

#### **Formative Assessment:**

Embedded. Students complete FOSS Sci. Notebook Sheets 6-7, with the addition of a labeled diagram for each system. *Describe* energy in an electrical system:

- Describe the requirements of an electric circuit
- Describe how to complete a circuit
- Describe energy transfers and transformations in a given circuit.

4-5 PS3 E

Extension (not in FOSS)
Students rotate through inquiry centers.

Energy can be transferred from one place to another and changed from one form to another.

4-5 PS3

Given a diagram of a battery-bulb electrical system with a missing part, I can

- draw in the missing part
- label electrical energy transfers from one part to another and/or changes from electrical energy to different form(s) of energy.
- I can explain in writing what an electric circuit requires for the system to be complete.

## **Formative Assessment:**

10 min. Quick Write/Quick Draw

Later big ideas that build on this big idea include:

- Energy can be transformed grades 6-8
- Energy can neither be created nor destroyed (conservation) grades 9-12

