

Performance Assessment—Unit 1.3

Using Schematic Diagrams

Grade 6 Science

Overview

Students build a specified circuit, according to a provided schematic. They must interpret the schematic and connect the components of the circuit correctly. Students must determine the power used by the fan when the circuit is closed by measuring the voltage and calculating the power.

Content Standards

GLE 0607.12.1 Describe how simple circuits are associated with the transfer of electrical energy.

Science GLE 0707.Inq.5 Communicate scientific understanding using descriptions, explanations, and models.

MCS Learning Outcomes: Build electrical circuits in which a light bulb or a combination of light bulbs will light in prescribed ways.

Materials

Circuit systems kit, calculator

Resources

See STCMS Electrical Energy and Circuit Design, Lesson 11, Assessment 1, for a complete description of this assessment.

Assessment Rubric

Criteria	Advanced	Proficient	Below standard
Building the circuit	Students set up the circuit correctly on the first try.	Students set up the circuit correctly on the second try.	Students set up the circuit correctly on the third try or with help.
Using the voltmeter and ammeter	Students use the voltmeter and ammeter correct to make measurements. Students record the voltage and current using the correct units.	Students attempt to use the voltmeter and ammeter to make measurements, but require some assistance. OR Students record the voltage and current with some error.	Students need help to make the required measurements. OR Students need help to record the required measurements.
Power calculation	Students use the correct method to compute correctly the power of the fan. Students convert mA to A. Students use the correct units for power.	Students attempt to compute the power of the fan and recognize the correct units for power. There are errors in their calculations.	Students make no attempt to calculate power.