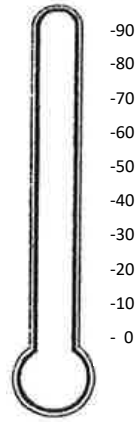
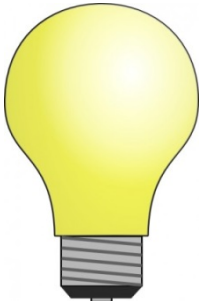


**Multiple Choice**

1. Which sentence shows that the sun gives us heat and light?
  - A. It is warmer and brighter on a sunny day.
  - B. It is warmer indoors on a cold day.
  - C. We need clothes to keep warm in winter.
  - D. Many homes have a fireplace.
  
2. What is the best way to stay cool in the summer?
  - A. Stand in the sun.
  - B. Stand in the shade.
  - C. Wear heavy sweaters.
  - D. Do not wear heavy sweaters
  
3. Why does a jacket keep you warm in winter?
  - A. It produces heat.
  - B. It attracts heat.
  - C. It traps body heat.
  - D. It is dark in color.
  
4. Which of the following is an electrical heat source?
  - A. candle
  - B. engine
  - C. fire
  - D. toaster
  
5. Which of the following is a mechanical heat source?
  - A. computer
  - B. car
  - C. light bulb
  - D. toaster



6. What will happen to the temperature on the thermometer when the light bulb is turned on?
- A. It will stay the same.
  - B. It will go down.
  - C. It will go up.
  - D. It cannot measure light.
7. If you rub your hands together quickly for a little while, what will happen?
- A. They will cool off.
  - B. They will warm up.
  - C. They will give off light.
  - D. They will give off electricity.
8. If you put hand lotion on your hands and rub them together, what difference will you notice?
- A. They will wrinkle.
  - B. They make sparks.
  - C. They heat up quickly.
  - D. They heat up slowly.
9. Why is oil added to a car engine?
- A. To reduce heat made by the engine.
  - B. To give the car energy to move.
  - C. To make it heavier and move faster.
  - D. To make the car shiny.
10. What would happen to plants if you took away light for a long time?
- A. They would have flowers.
  - B. They would die.
  - C. They would make fruit.
  - D. They would grow more slowly.

## **Constructed Response**

1. Students notice that the computer room at school seems warmer than the other rooms. They think the computers are making heat. How could they find out?
  
2. What are two electrical sources of heat?
  
3. What are two mechanical sources of heat?
  
4. What is the difference between a lubricated machine and one that is not?

## Answers to Questions for Grade 3 – Standard V

### Multiple Choice:

1. A
2. B
3. C
4. D
5. B
6. C
7. B
8. D
9. A
10. B

### Constructed Response

1. Students could measure the temperature in the room before the computers are turned on and after.
2. light bulb, electric heater, toaster, electric stove, curling iron, radio, computer
3. engines, body movement (rubbing hands together), spinning wheel
4. A lubricated machine will create less heat and move more easily than a non-lubricated one.

## **Performance Assessment**

### **Title: Seeds and Sunlight**

#### **Activity Description**

Students will investigate the effect of sunlight on sprouting bean seeds.

#### **Materials Needed**

Beans (any variety, lima beans are interesting)

Milk cartons or other small containers

Soil

Boxes large enough to contain milk cartons and sprout (shoe boxes)

Sunlight or other light source

Student sheet (included)

#### **Prior to Assessment**

Students need little prior knowledge.

#### **Time Needed for Assessment**

30 minutes to start, observations and watering will take 15 minutes 3 times a week for 3-4 weeks.

#### **Procedure**

1. Place students in groups. (The size will depend upon what works in your classroom).
2. Each group should plant 203 beans in the soil. Cover with about ½ inch of soil. Water the soil and seed.
3. Cut a small opening (a slit) in the shoe box. All groups should make the cut in a different place.
4. Allow beans to grow for a week. Water them every but do not leave the box open for very long.
5. Students should make drawings of their beans once a week on the student sheet or in a journal.
6. When the plants have grown to a desired size, remove all the boxes and compare different groups. Each group should report on their plant and tell why they think the plant grew as it did (the plants will clearly grow toward the slit of light).
7. Allow students to finish the activity with questions on the student sheet.

#### **Scoring Guide:**

1. Students plant seed according to directions..... 5 pts.
2. Students draw seedlings and write dates ..... 5 pts.
3. Students correctly answer questions ..... 5 pts.

Drawings of beans:

Date:	Date:
Date:	Date:

Questions:

1. What do beans seem to need to grow?
2. How did the hole made for light to enter the box affect your bean sprout?
3. Why did the bean act this way?
4. Where do plants usually get the light they need?
5. What would happen to plants if the sun no longer gave off light?