

DATE:

NAME:

CLASS:

**CHAPTER 4**

**BLM 4-4**

**REINFORCEMENT**

**What Will Happen Next?**

**Goal** € Check your understanding of the rules of static electricity.

**What to Do**

Read each situation below. Tell or draw what will happen next.

**Situations**

1. You are wearing a wool sweater and a nylon ski jacket. You take off the sky jacket. *What will you observe? What will happen next?*
  
2. You rub a plastic ruler with wool and bring it near a cardboard toilet paper tube. *What will you observe? What will happen next?*
  
3. You use a cloth to wipe sawdust off the lenses of a pair of sunglasses. *What will you observe? What will happen next?*
  
4. *An overhead master that is positively charged is held near another overhead master that is positively charged. What will you observe? What will happen next?*

**CHAPTER 4**  
**INFORMATION**  
**HANDOUT**

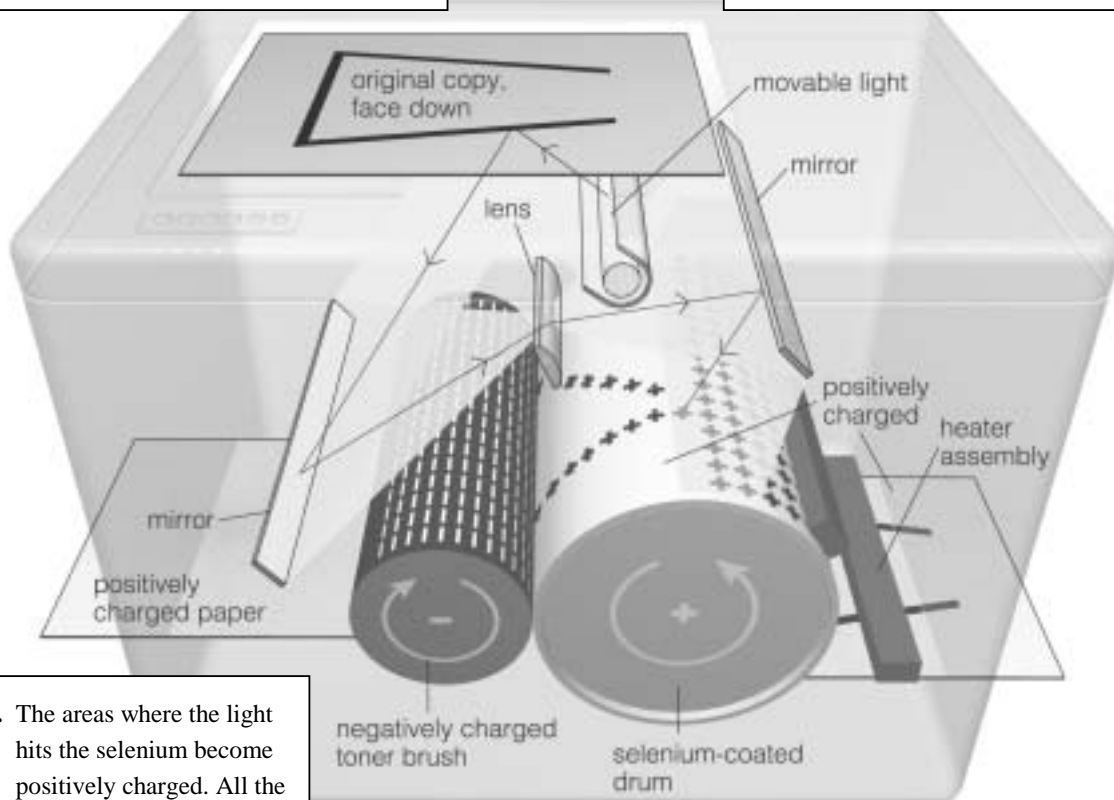
**BLM 4-5**

# How a Photocopier Works

**Goal** • Use a diagram with labels to help you understand how a photocopier works.

1. In the dark, a bar rubs on a turning drum. The drum is coated with a substance called selenium that gets charged when it is rubbed. Selenium also gets charged when light shines on it. The drum is now positively charged.

2. A bright light shines on the page you want to copy. The image on the page passes through a focusing lens. The image then reflects from a mirror onto another mirror and then onto the drum. (Follow the arrows.)



3. The areas where the light hits the selenium become positively charged. All the positive charges on the lit-up areas repel one another and quickly become neutralized. Charge remains only on the parts of the drum that light did not strike. These charged areas are exactly the same shape and pattern as the dark print on the original page that is being copied.

4. A cylinder-shaped brush picks up a powder made of tiny black carbon particles and tiny plastic beads. The powder is called toner and is negatively charged. As the brush rolls against the selenium-coated drum, the negative toner sticks to the positively charged part of the drum. Now the shape and pattern of the toner matches the original image on the page.

5. Positively charged plain paper rolls under the drum and picks up the toner.

6. The paper is heated to melt the tiny plastic beads and to seal the black carbon particles onto the paper.