

## How can you see cells?

Most cells are too small to see with just your eyes. You need a microscope to see them. At school you use a **compound light microscope**. It is a compound microscope because it combines two lenses. It is a light microscope because it uses light to view an object. A compound light microscope is shown on the next page.

### ✓ Reading Check

1. What are two things that a microscope does?

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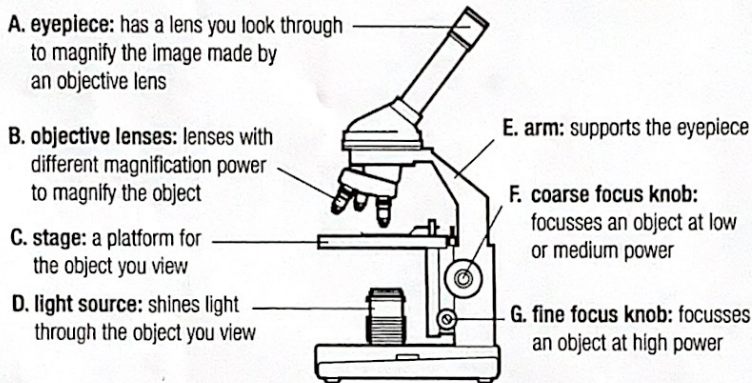


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A microscope helps you focus two objects or details that are close together. This is called **resolving power**. A microscope also makes an object seem larger than it is. This is called **magnification power**. When you look into a microscope, the object you see is magnified, reversed, and turned upside down (inverted). ✓



The eyepiece lens often has a magnification power of 10×. This means that an object seems ten times larger when you look at it with the lens. Each objective lens has its own power of magnification. The low-power lens is 4×. The medium-power lens is 10×. The high-power lens is 40×.

How large does an object look when you combine the eyepiece lens with each objective lens? Use the table below to find out. ✓

Power of objective lens	Power of eyepiece lens	Calculation (power of objective lens multiplied by power of eyepiece lens)	Total magnification of the lens combination
low power: 4×	10×	$4 \times 10 = 40$	40×
medium power: 10×	10×	$10 \times 10 = 100$	100×
high power: 40×	10×	$40 \times 10 = 400$	400×

### Are there stronger types of microscopes?

A light microscope can magnify an object up to 2000×. An electron microscope is much stronger. An electron

### ✓ Reading Check

2. How large will an object look if you use a 4× eyepiece lens with a low-power objective lens?

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### Are there stronger types of microscopes?

A light microscope can magnify an object up to 2000×. An electron microscope is much stronger. An electron microscope uses electrons instead of light to make an object look larger. One type of electron microscope is called a **scanning electron microscope**. It can magnify an object up to 200 000×.

A camera or a monitor can be hooked up to an electron microscope. The picture that appears on the camera film or on the screen is called an **electron micrograph**. Many of the pictures in Chapter 1 of *BC Science 8* are electron micrographs.

Use with textbook pages 11–14.

## Microscopes

### Vocabulary

coarse focus knob	magnification power
compound light microscope	objective lenses
electron micrograph	resolving power
eyepiece	reversed
fine focus knob	right side up
light source	upside down

Use the terms in the vocabulary box to fill in the blanks. Use each term only once. You will not need to use all the terms.

1. The \_\_\_\_\_ is the microscope usually used in science classes and medical laboratories.
2. The \_\_\_\_\_ is used for viewing and contains a lens that magnifies.
3. The \_\_\_\_\_ brings an object into focus at low or medium power.
4. The \_\_\_\_\_ brings an object into focus at high power.
5. The \_\_\_\_\_ have different magnification power to magnify the object.
6. The \_\_\_\_\_ supplies the light needed to view the slide.
7. The ability to distinguish between objects that are very close together is called \_\_\_\_\_.
8. When you look through a microscope, you will observe an image that is magnified, \_\_\_\_\_, and \_\_\_\_\_.
9. A(n) \_\_\_\_\_ is a picture taken by a camera hooked up to an electron microscope.

DATE:

NAME:

CLASS:

CHAPTER 1

# Compound Light Microscope

BLM 1-4

Goal • Use this page to review the parts of a compound light microscope.

What to Do

Label the following parts of a compound light microscope.

