

**Lab 2: Microscope & Somatic Cell Cycle**

You will have to use a microscope in almost every lab in this course and today you will learn and practice how to use a compound microscope (Exercise 3). I will lead you through the activities.

**We will not use the 100X objective (oil immersion) in this course, so do not try to focus using the 100X objective and skip the parts in the lab exercise that refer to it.**

1. What is the total magnification of a microscope when you are using the 40X objective? Assume the oculars are 10X.
2. Which objective should you always begin with? Provide two reasons why this is.
3. Does the field size increase or decrease as you increase the magnification on the scope?
4. At which subphase of mitosis do the sister chromatids separate?
5. At which subphase of mitosis does the nuclear envelope break down?
6. Name the phase and subphase in which genetic material is replicated.

**Slide Assignment: The Somatic Cell Cycle**

After becoming familiar with the use of the microscope, use the whitefish embryo slides available to identify the stages of cell division (mitosis) (Exercise 4, figure 4.5 in lab text, p40 in Histology Text).

Draw and label cells in the following phases and subphases of the somatic cell cycle using the figures in the lab and histology texts as a reference. Use whichever magnification works best to clearly show differences. Please note that not every slide will show all phases and subphases; you will need to look at multiple slides and/or sources.

- **Interphase**
- **Mitosis**
  - Prophase
  - Metaphase
  - Anaphase
  - Telophase
- **Cytokinesis**

