Prep Time, Supply List, and Total Lesson Time

Prep Time:

We recommend 30-45 minutes depending on your expertise level with the content. Each module will vary depending on your previous experience with the content and technology.

Materials:

Each student will need

- access to a computer to view the "Serial Dilution" video (unless you decide to show the video through the class projector unit).
- a "Mixing Dilutions" handout.
- their laboratory notebook that they began to use in Lesson 1.
- resources to video record their group's experimental design and a means to post the video to their class's online collaborative tool.
- their homework added to the online collaborative tool.

You will need

- to print and (laminate if you choose) "Mixing Dilutions" handouts.
- a copy of the "Observation Table" sample to help guide your students in the development of their own.
- to determine the tools/resources your student groups will use to video record their experimental designs.
- to decide whether your classroom will provide ample support for students to upload their videos or whether you will do it (this decision will dictate the tools/resources your students will use to video record).
- to post your students' homework to your class's online collaborative tool.

Total Lesson Time:

Lesson Activity	**Amount of Time in Class**
Guided Discussion: What Is the Experiment?	10 Minutes
Guided Discussion: Why Use Concentration in Place of Dose?	5 Minutes
Guided Discussion: Materials and Methods	5 Minutes
Guided Discussion: Serial Dilution	7 Minutes
Video: Serial Dilution	3 Minutes
Group Activity: Notebooks and Observation Table	10 Minutes
Group Activity: What is Your Experimental System?	15 Minutes
Guided Discussion: Conclusion	1 Minute
Total Time	**56 Minutes**

Lesson Activity	**Amount of Time Out of Class**
Reflective Questions: Comparing Experimental Designs	20 Minutes
Total Time	**20 Minutes**