Teacher instructions for Microbes in Art.

1) Show the students the marine microbe video

 <https://www.youtube.com/watch?v=1TmHlcMDIOQ>

2) Review the objectives for the day.

 1) Using mathematics, **demonstrate** how to scale up a microbe to a specific size.

2) **List** three reasons we scale something up or down.

3) **List** at least two cause and effect relationships that occur while painting (could include mixing of colors, how paints acts on the silk, effect of salt on the paint, etc.)

3) Review definition of microbes from previous day’s lesson. Ask students for the definition before giving it to them.

4) Discuss what a cause and effect relationship is. Cold call students to give examples of cause and effect relationships. Examples are preferably related to science but don’t have to be.

5) Discuss what scaling of an object is. Demonstrate to students how to scale the size of a micro-organism up.

6) Pass out the lab handout, at the top are two scaling practice problems. Have the students complete the problems and then go over the problems as a class.

7) Discuss what silk batik is, the materials they will be using and why they are completing the project.

8) Show the students an example of the completed project.

9) Go over the handout, which contains directions for completing the activity and divide students into groups 2-3 people.

10) Using the microbe sorting cards from the previous microbe lesson, have the groups pick out a microbe they want to paint and discuss. (Students will be given a rubric for the project.) Groups cannot choose the same microbe.

11) Have students properly (with mathematics) scale up their chosen microbe to the silk batik square they are given.

12) Using charcoal, have students begin the outlining of their microbe on the silk, followed by application of the resist.

13) Explain to students, the painting will take place for the next 2 class periods, the 4th class period will be a presentation of their panting and a description of the chosen microbe.

14) Review concepts introduced at beginning of class, use either cold call or show of hands.

15) If time permits, have students start researching their microbe.