

Lesson Title: Microscope Lab: Examining Kale Plant Cells**Time:** 45 min + 15 min prep**Materials:**

Microscopes
Slides
Cover slips
Eye droppers
Jars filled with water
Knives (for preparing garden specimens)
Specimens for observation (kale)
Clipboards
Pencils
Microscope Observation Lab worksheet

Standards:

S7.A.2.2.1: Describe the safe and appropriate use of instruments and scales to accurately and safely make measurements under a variety of conditions.

Objective:

After this lesson, students should be able to use a microscope to make observations and identify the main cell structures of a plant cell

Opening:

Welcome students and introduce the Microscope Observation Lab as an extension of the microscope work they have already completed in the classroom.

1. Explain that all students will rotate through the lab with their working groups at some point during the class.
2. Divide into working groups, taking the first group to the observation lab while the other groups makes salad.

Lesson Plan/Procedure/Activities:**Activity 1:** Observation Lab

1. Have students choose a partner and a microscope station. Each pair should have one microscope and 2 clipboards with [worksheets](#).
2. Invite students to share what they learned in science class about making a wet mount slide and viewing samples. Ask students to practice using the precise vocabulary they learned in science class to describe each step.
3. Have students make and view a wet mount slide using a prepared specimen.
4. Have students draw their observations on the provided worksheet.
5. Have students clean off their slides and prepare the stations for the next group.

Activity 2: Kale salad

1. Students will make a massaged kale salad from the produce in the garden. Make sure to explain that the reason we massage the kale with salt is because the salt breaks down

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the cell wall of the plant (which they should have seen in their lab). At the end, ask students to use a descriptive adjective to describe something they observe about the salad (how it looks, feels, tastes, etc).

Recipe:**Massaged Kale Salad Recipe**

Main ingredient: KALE! Dinosaur Kale, AKA Lacinato; Curly Kale, Red Russian Kale, Winterbor are all good. RATIO = 3 cups Kale : 2-3 tbsp olive oil : 2-3 tbsp lemon : SALT to taste

1. Harvest kale from the garden (each student gets 1-2 leaves). Tear the kale up and add it to a gallon plastic bag.
2. Measure 2-3 tbsp of olive oil and pour in bag.
3. Measure 2-3 tbsp of lemon juice (squeeze lemons into small bowl and sift out seeds) and add to bag
4. Measure 1 tsp salt and add to bag.
5. And massage away. The more you massage, the more tender it will be. The dressing should coat the leaves, and the leaves should wilt and turn a more intense green.
6. When you are finished massaging, add the other ingredients. Have a few students shred carrots. Add those and sunflower seeds to your salad.