

[Narrator] In this 35-minute activity and 10-minute class discussion, students simulate antigen laboratory testing. They use the laboratory test results to calculate incidence and to make public health decisions.

This activity uses data and concepts based on a novel emerging respiratory disease, or NERD. NERD is a fictional disease used for teaching purposes.

Before the activity, you will need to prepare a testing station for each group of 4 students.

Start by preparing the class set of 32 antigen test strips and 32 test tubes or cups. Then, you will divide the 32 test strips equally among the stations. Each station will also include the matching test subject identification cards, forceps or tweezers, and paper towels.

To prepare the class set of antigen test strips, first print them out on office or copy paper.

Color the control line on each strip with white wax or white crayon. The dye-colored water will not absorb into this part of the test strip and indicates the test is working. Next, color the NERD infection line on strips that are positive.

To prepare the 32 sample cups or test tubes, you will need green food dye and enough water to fill all the containers approximately halfway. Fill each sample cup or test tube with enough green-dyed water to allow the inserted test strip to get wet just past the control line. Label one test tube per test subject.

Note, that these sample cups or test tubes can be reused in your subsequent class sections, though 32 new test strips will need to be prepared for each class section.

Note, that if test tubes are not available, disposable cups, bowls, or beakers will also work if students are able to submerge the test strips.

Then, divide the 32 test subjects equally among the stations. For each test subject, include their matching antigen test strip, sample cup or test tube, and test subject identification card.

Okay, now you are ready to start this activity.

Divide the class into groups of 4 students. Explain the scenario. Then, hand out a NERD Laboratory Testing Guide to each group.

Using the demonstration positive and negative strips, demonstrate how to dip the antigen test strips into the corresponding cups or test tubes for each test subject.

Assign each group to complete testing and record results on their test subject identification cards for all test subjects at their station.

Have students make recommendations of self-isolation or self-quarantine as applicable on their test subject identification cards.

When all groups are finished, have them clean up their testing stations, discarding any used testing strips at this time.

Here's a time-saving tip, although the test strips and test subject identification cards will need to be remade for each class, you can reuse the test tubes or cups with dyed water for multiple class sections!

After cleaning up, hand out a NERD Lab Results sheet to each student. Display a large version of the NERD Lab Results sheet on the board.

Have each group share the information for their assigned test subjects with the class. After completing the table, have students agree on a recommendation for self-isolation or self-quarantine for each test subject as applicable.

Hand out a Calculating NERD Incidence Part 1 sheet to each student. Read the overview together. Have students calculate the incidence data during the outbreak for the whole university, off-campus students, and on-campus students. Discuss answers.

Next, hand out a Calculating NERD Incidence Part 2 sheet to each student. Together, review the completed table and answer questions about how the university might use this information to make decisions about re-opening.

Spend the last 10 minutes wrapping up and reviewing "Why do laboratory testing?" Suggested discussion prompts are provided in the lesson plan.