

# Onion Root Online Lab

## Summary

Students will complete an online lab using an onion root undergoing mitosis. By counting the number of cells in each phase, students will infer the length of time cell spend in each phase.

## Time Frame

1 class periods of 60 minutes each

## Group Size

Individual

## Materials

- [students sheet](#)  
(attached)
- student computers or a teacher computer with projector
- student microscopes or a microscope attached to a flex cam and projector
- prepared onion root mitosis slides

## Background for Teachers

The web site used has a nice summary of mitosis.

## Instructional Procedures

If using a projection system, set up and make sure you can get to the site. If using a lab, make sure student computers are operational and that the site will load.

"Hook" the students by asking how an alien could determine what percentage of time people sleep by making observations simultaneously around the globe. If they could count 1,000 people on all parts of Earth in a minute they would find that about 333 of them were asleep. 333 divided by 1,000 is about 33%. If they knew a day was 24 hours long, they could figure that  $.33 \times 24 \text{ hrs} = 8 \text{ hours}$ . Work through these steps with the students, some will struggle with calculating the percent.

Explain to students that they will make the same kind of "snapshot" of cells undergoing mitosis. They will use a web site and a real onion cell to see mitosis.

Go over the directions on the student's sheet and allow students time to work online and in the lab.

Summarize student findings in a class discussion.

## Assessment Plan

### Scoring Guide:

1. Students count and record numbers of cells in various phases.....4
2. Students correctly calculate percentages.....4
3. Students view and record onion roots under the microscope.....4
4. Students correctly answer analysis questions.....4

## Answers:

1. Depending on the stain, the chromosomes will be red or purple.

## Bibliography

Lesson Design by Jordan School District Teachers and Staff.

## Authors

[Utah LessonPlans](#)