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)
  (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 x 24 hrs = 8 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

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