

Cells at Work

Summary

Students will see how cells respond to changes in osmotic pressure by watching red onion cells shrink in salt water and by weighing potato slices before and after being soaking in salt water.

Main Core Tie

SEEd - Grade 7

[Strand 7.3: STRUCTURE AND FUNCTION OF LIFE Standard 7.3.2](#)

Time Frame

1 class periods of 60 minutes each

Group Size

Small Groups

Materials

Elodea or red onion
salt water
5 potatoes/class
balance
beaker

- [student worksheet](#)

optional: a "flex-cam" or other projector for the microscope is nice to have to show the students a teacher preparation on a TV or larger screen.

Background for Teachers

Students may have difficulty understanding that osmosis is the movement of water across a membrane. They will need explanations for why larger size particles do not pass through the small pores in the cell membrane. The potatoes should lose several grams of water to the salt solution and the red onion or elodea noticeably shrink inside their cell walls.

Instructional Procedures

Cut about 100 quarter inch slices of potato and cover with a plastic bag.

Place students in groups of 3-4 and give them the student sheets.

Read the introduction with students and show them where materials are located.

Allow time for students to work with the microscopes and balances.

Have students write the differences in the weight of their potatoes on the board. Discuss why the weight changed and have students answer the analysis questions.

If you have a flex-cam, be sure and show students what differences they should have seen between the normal cell and one in salt water. Many 7th grade students do not have microscope or observational abilities to see this subtle difference.

Assessment Plan

Scoring Guide

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1. Students follow directions and perform lab procedures.....4
2. Students make observations and record data.....4
3. Students correctly answer analysis questions.....4

Use the [correct answers document](#).

Bibliography

Lesson Design by Jordan School District Teachers and Staff.

Authors

[Utah LessonPlans](#)