

# Cells

## Summary

Students will continue their increase their understanding of living and non-living things by investigating yeast.

## Materials

*For the class:*

- Three 1-pint plastic Ziploc bags
- Three packets dried yeast (1 pkg.=2 1/4 tsp.)

*For each group:*

- 1-pint plastic Ziploc bag
- Packet of dried yeast (2 1/4 tsp.)
- Permanent marker

*For the class and each group:*

- 1 tsp. sugar
- 1/4 cup warm water (110 degrees)

*For each student:*

- [A Yeast Feast worksheet](#) (pdf)

## Additional Resources

### *Books*

- *I Know My Cells Make Me Grow*  
, by Kate Rowan; ISBN 0744572347
- *The Reason For a Flower*  
, by Ruth Heller; ISBN 0804566534
- *What's Smaller Than a Pygmy Shrew?*  
, by Robert Wells; ISBN 0807588377

## Background for Teachers

Cells are the building blocks of people and other living things. Cells are tiny, but you can see them through a microscope. Cells make up your muscles, skin, stomach, and every other part of you. Your cells are part of you, and they are alive, too. They need healthy food and oxygen so they can grow and divide to make more you.

## Intended Learning Outcomes

3. Understand Science Concepts and Principles
4. Communicate Effectively Using Science Language and Reasoning

## Instructional Procedures

### Invitation to Learn

Read *What's Smaller Than a Pygmy Shrew?* by Robert Wells or any other book about cells.

### Instructional Procedures

Ask students: What do you need to grow? (e.g., food)

With the groups, pour a yeast packet into a Ziploc bag. Ask: Is yeast a living thing? How can we find out? Record ideas. (Yeast is a one-cell fungus. It grows by dividing or pinching off new cells.)

Ask: If yeast is alive, will this yeast grow all alone? Leave your bagged yeast to observe.

Ask: What might you give yeast to make it grow? When kids say food, let groups add sugar to

their bags. Ask: Will yeast and sugar grow alone? Make class yeast and sugar bag to observe. Ask: Is water food? (No, but it's necessary for cells to function.) What will happen if we just add water to yeast? Make a class yeast and water bag.

Ask: Do you need water to survive? If yeast is alive, does it need water? Let students add water to their yeast-sugar mix.

Have students observe and draw the yeast action. (Water activates yeast. Growing cells give off carbon dioxide gas, which inflates bags.)

Continue to observe. Ask: Is yeast alive? What is your evidence?

### Extensions

#### Pizza Party

Make pizza dough. Ask: What makes dough rise? (Carbon dioxide gas from the feeding yeast cells.)

#### Pizza Crust

6 cups flour

2 cups water (warm)

4 Tbsp. oil

2 tsp. salt

4 Tbsp. yeast

Mix flour and salt. Dissolve yeast in warm water. Add oil to yeast mixture. Add yeast and oil mixture to the flour. Add 1/4 more cup of water and mix. Knead to smooth consistency. Let rise one hour.

Grease four pizza pans and spread dough. Put pizza sauce, meat, and cheese on top. Bake at 425 degrees for 20 minutes.

#### Animal Cell Visual

Fill a five gallon glass fish tank with water-filled balloons. The tank represents the tiny part of an animal's body and the balloons represent its cells. You place the water filled balloons in the tank until the tank is full. The balloons should be tightly packed together with very little space between them.

Then you pour water into the tank, over the balloons to cover them. Explain that in a living animal, fluid keeps the cells alive.

#### Plant Cell Visual

Cut a small square out of an onion, pulling away a thin film of the onion skin with a pair of tweezers, and pressing this onto a windowpane. The students can see the cells with a magnifying glass. This helps the students see that plant cells are not soft and flexible like animal cells and that they have a tough outer wall which helps them keep their shape. Plus, some plant cells are much bigger than animal cells, which makes them easier to see.

Look at different cells under a microscope.

#### Family Connections

Go on a yeast hunt in your kitchen. What things contain yeast? What food recipes use yeast as an ingredient? Make a pizza together.

### Assessment Plan

Check students' *A Yeast Feast* worksheet.

### Authors

[Utah LessonPlans](#)