

Protozoa in the Grass

Overview What makes things alive? There are actually many hints that tell us something is alive. One thing that is true about all living things is that they all have tiny structures called cells. Cells are the smallest objects that can do all the things needed for life. Some people call cells the “building blocks” of life. Cells get put together to make apple trees, elephants, or whatever other living thing you can imagine!

What to Learn This experiment allows you to grow protozoa, tiny single-celled organisms and observe protozoa through a microscope. As multicellular organisms develop, their cells differentiate. While some people can go in their backyard and find a lot of interesting pond scum and dead insects, not everybody has a thriving ecosystem on hand, especially if they live in a city. In this activity, you will learn how to grow a protozoa habitat that you can keep in a window for months (or longer!) using a couple of simple ingredients.

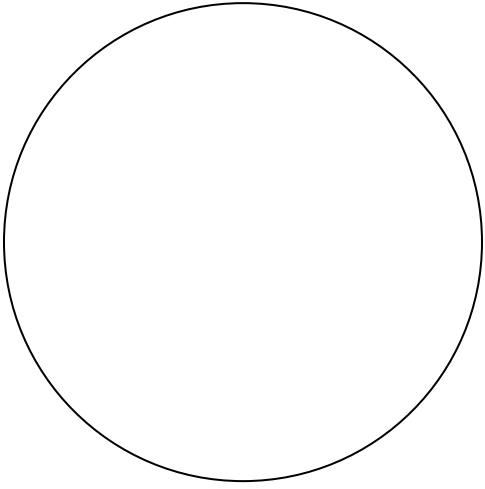
Materials

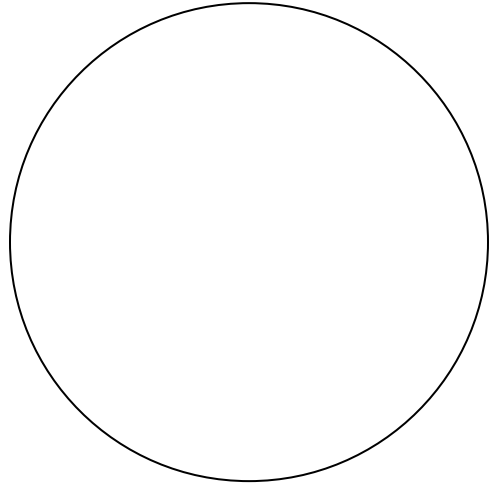
- a glass jar with a lid
- a spoon
- yeast
- dead grass
- water
- an eye dropper
- cover slips
- microscope slide
- a compound microscope

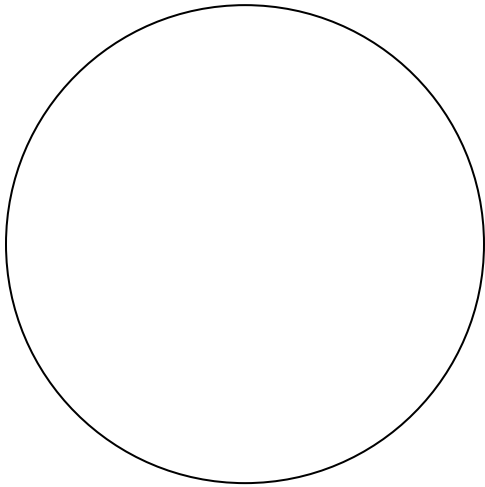
Experiment

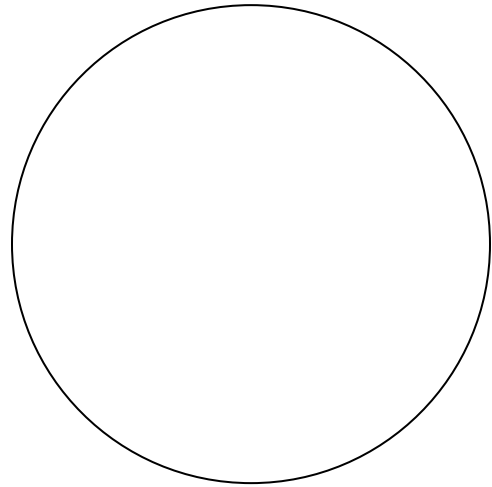
1. Leave a glass of water out overnight, to get rid of chlorine. If you are in a hurry, use filtered water (not distilled) instead.
2. Add dead grass to the glass of water. Stir.
3. Add yeast to the glass. Stir again.
4. Allow the glass to sit overnight in a warm place. For best results, let grow and ferment for several weeks.
5. Each day for a week, observe a sample of water and/or grass under the microscope, after the first 24 hours.
6. Sketch the protozoa you see, and note if there are more or less of a certain type as time goes on in your science journal.
7. Draw what you see under the microscope in the circles below. Be sure to title each drawing and label it with the magnification power level.

Protozoa Microscope Diagrams









Reading

Every living thing, from tiny bacteria to giant oak trees, began life as a single cell. Protozoa are tiny single-celled organisms called protists with animal-like behaviors. Protists live in almost any liquid water environment. Some protists are vital to the ecosystem while others are deadly.

Once you have a protist farm is up and running, you'll be able to view a sample with your compound microscope. If you don't know how to prepare a wet mount or a heat fix, you'll want to review the microscope lessons.

Protozoa have different shapes, so you will examine samples of your protist farm every few days, to see what different shapes occur.

Exercises

1. What is a cell?
2. Why are cells so small?
3. What is a protozoa?
4. How does it develop?

Answers to Exercises: Protozoa in the Grass

1. What is a cell? (A cell is a tiny structure that is the “building block” of life. It is the smallest object that can do all the things needed for life.)
2. Why are cells so small? (To get nutrients in and waste out efficiently. Otherwise they would starve or poison themselves.)
3. What is a protozoa? (A tiny, single-celled organism. It is a protist with animal like behavior.)
4. How does it develop? (It develops in grass, yeast and water.)