Characteristics of Organisms

Classifying Living Things

Name:

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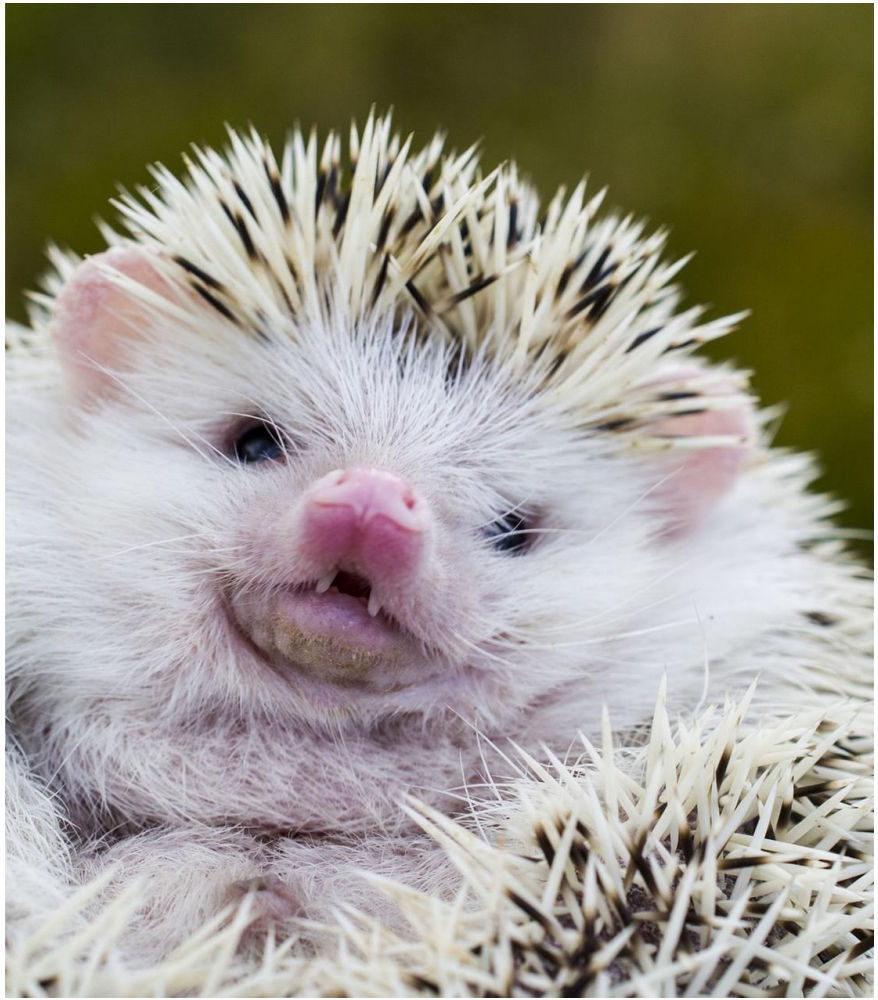

What is a living thing?

For something to be considered an organism, it must contain at least one cell. Within that definition, there is a broad variety of living things that can seem wildly different from one another.

To make things easier, scientists use several main categories to help classify organisms into groups based on similar characteristics.

The main characteristics we will be focusing on are the number of cells an organism contains, the structure of the cells, how the organism gets food, and how it reproduces. With these four categories alone, you will find we can really narrow down the broad spectrum of organisms into much more manageable groups.

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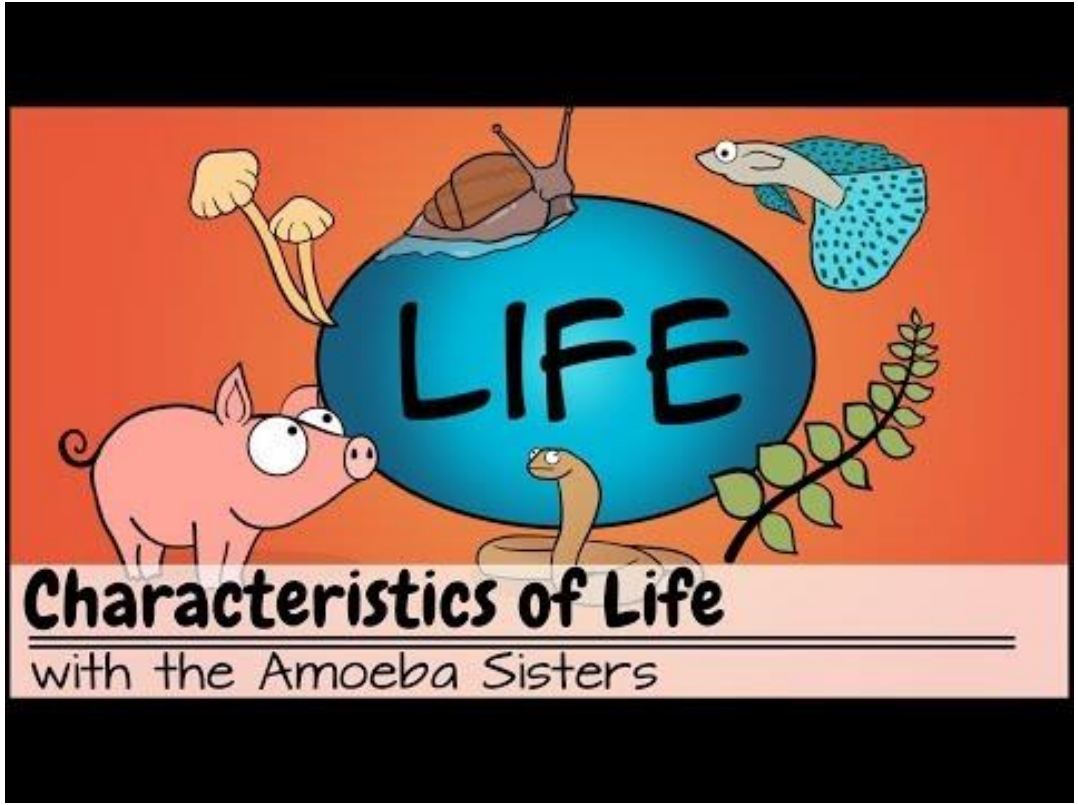
Watch the video explaining the main characteristics of life. Use the information to answer the questions on the next page.

Hint: Flip to the next slide and read the questions before you watch the video. This will help you listen for the answers!



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1. Explain the difference between unicellular and multicellular organisms.

1. Summarize modern cell theory.

1. Bath Tub Pony grew up and changed. Why isn't it a living thing?

1. Classify yourself using the following: Unicellular or multicellular? Heterotrophic or autotrophic? Asexual or sexual reproduction?

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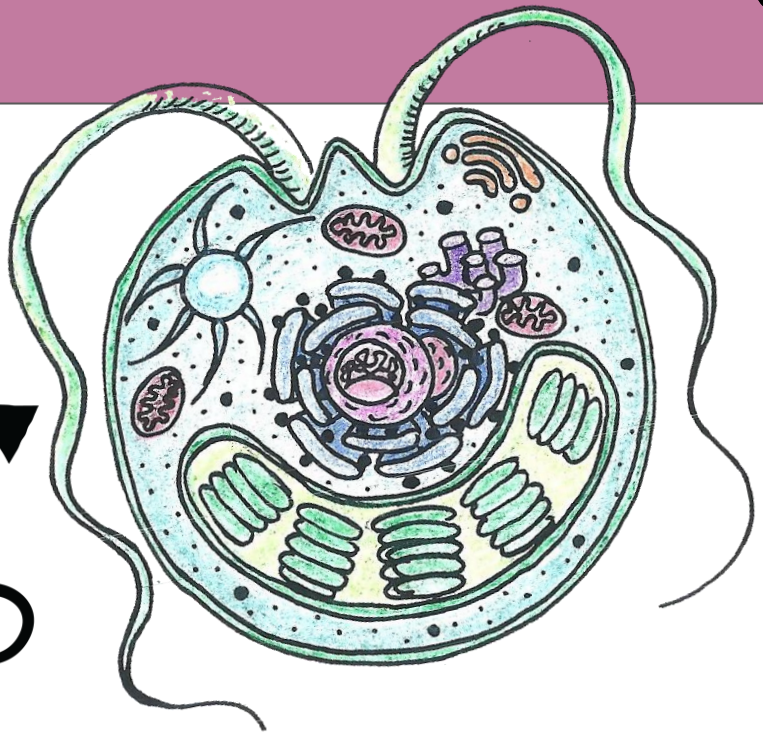
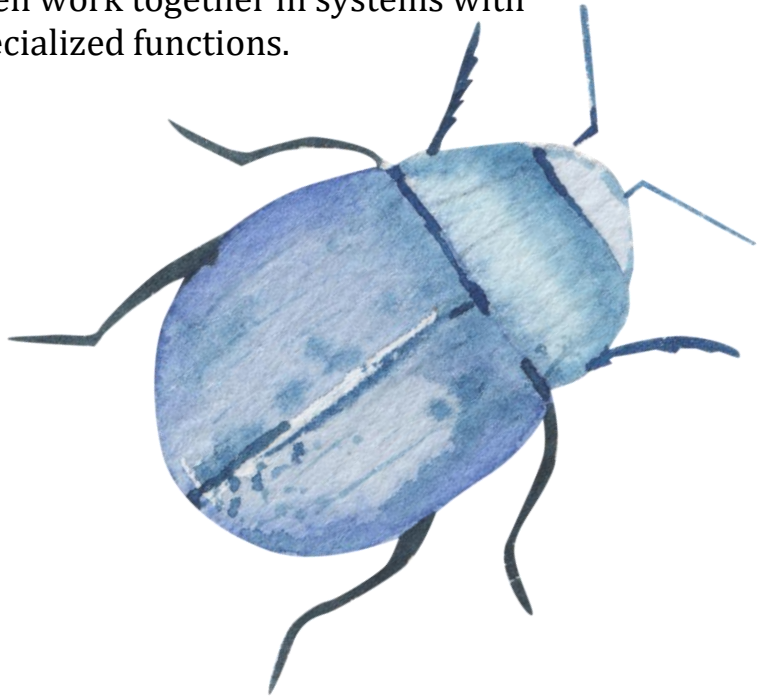


MULTICELLULAR ORGANISMS

These organisms have multiple cell types that often work together in systems with specialized functions.



UNICELLULAR ORGANISMS

These organisms are composed of a single cell that carries out all functions of life.

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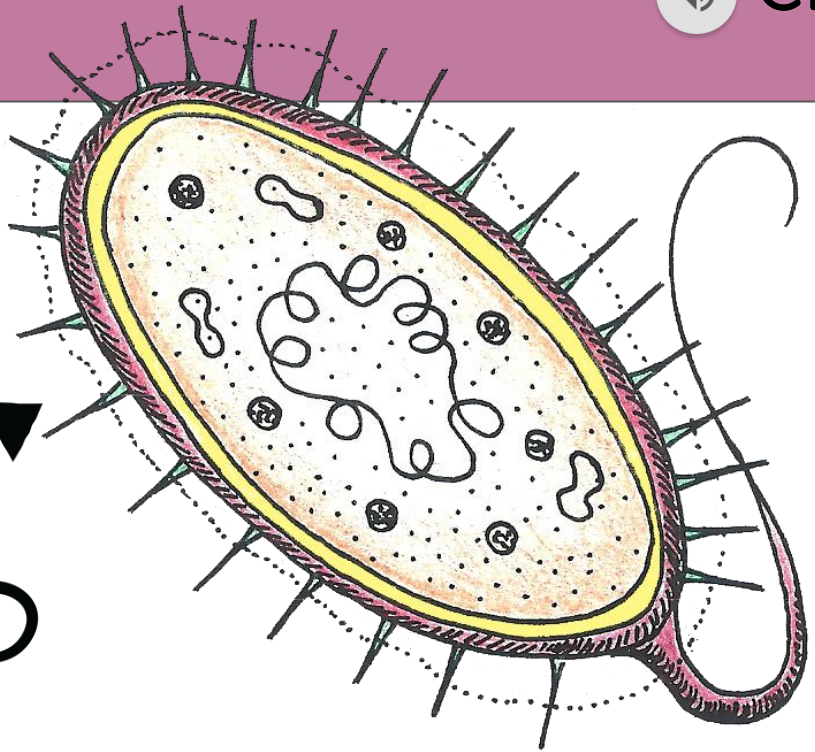
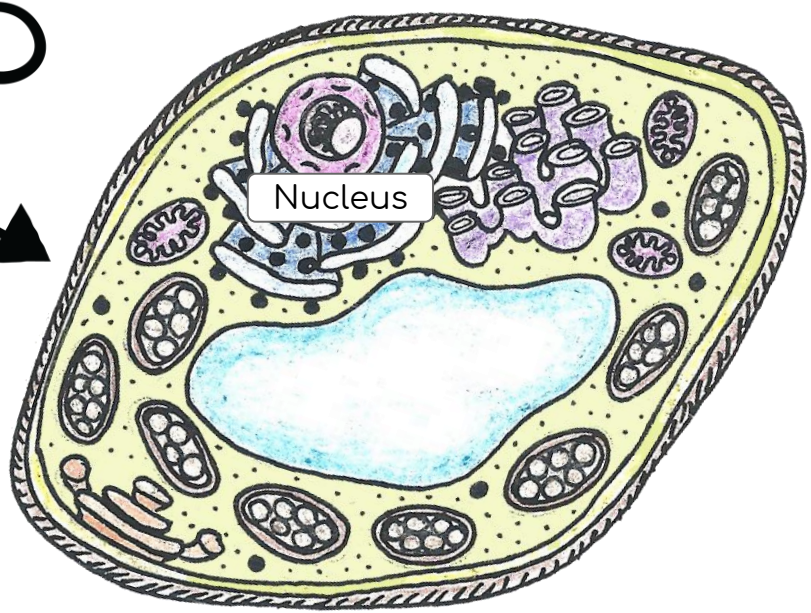


PROKARYOTIC CELLS

Prokaryotic cells have no defined nucleus or organelles. Genetic material floats around freely inside the cell.

EUKARYOTIC CELLS

Eukaryotic cells contain a membrane bound nucleus with genetic information, as well as organelles to carry out specific functions.



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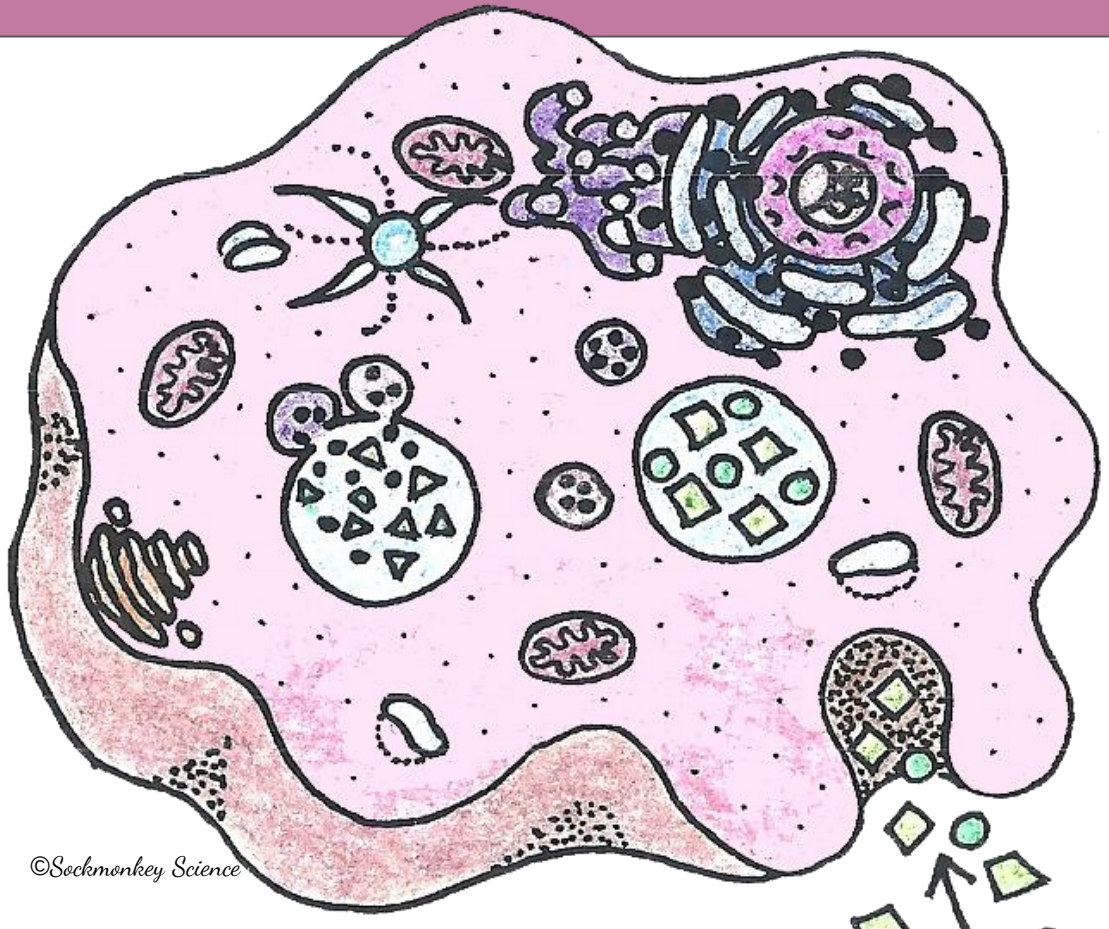

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Look closely at this cell.
Do you think it is Eukaryotic or Prokaryotic?

Eukaryotic ☐ ✓

Prokaryotic ☐

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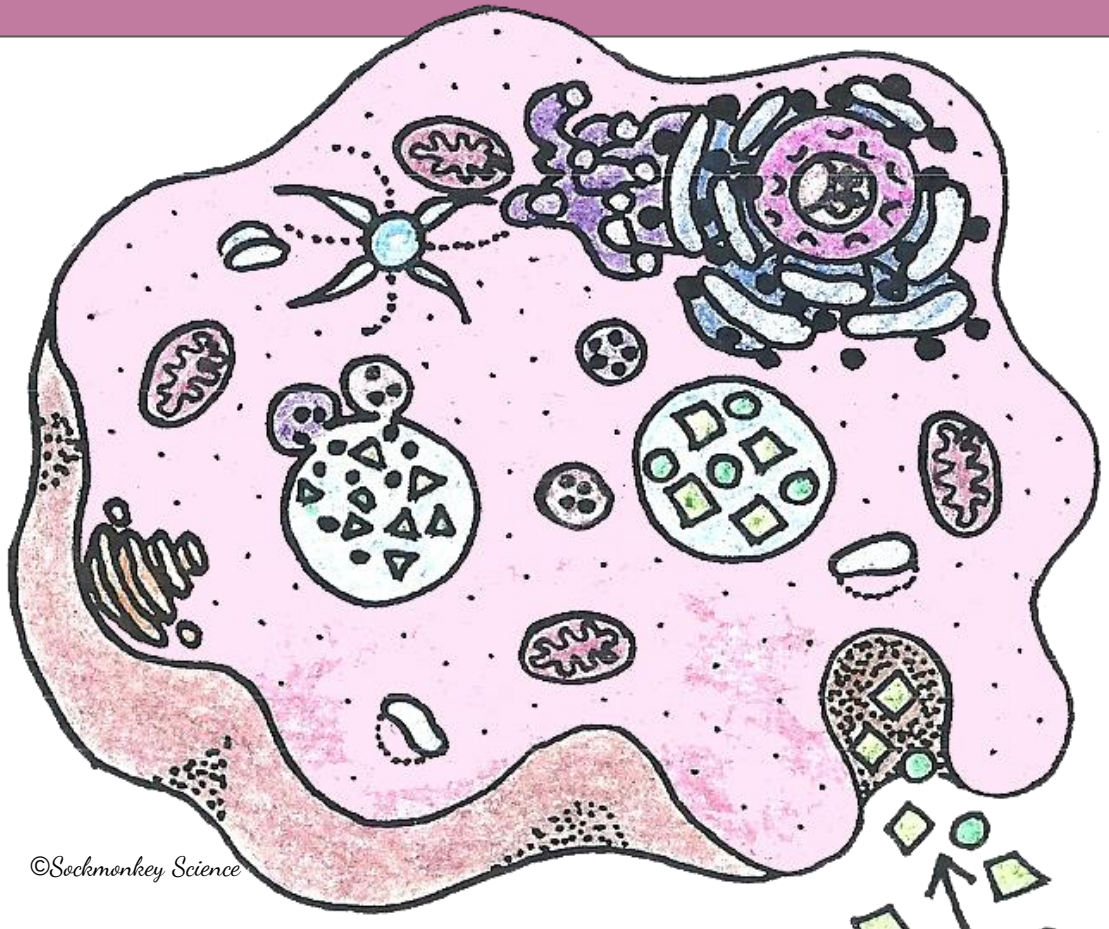

Eukaryotic

This cell is eukaryotic. You can tell because it contains a defined nucleus and organelles.

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AUTOTROPHIC

Autotrophs are able to create their own food through chemical reactions like photosynthesis.

HETEROTROPHIC

Heterotrophs cannot make their own food and must rely on other living things for nourishment.

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Below are some organisms you might find in a forest. Identify each one as autotrophic or heterotrophic.

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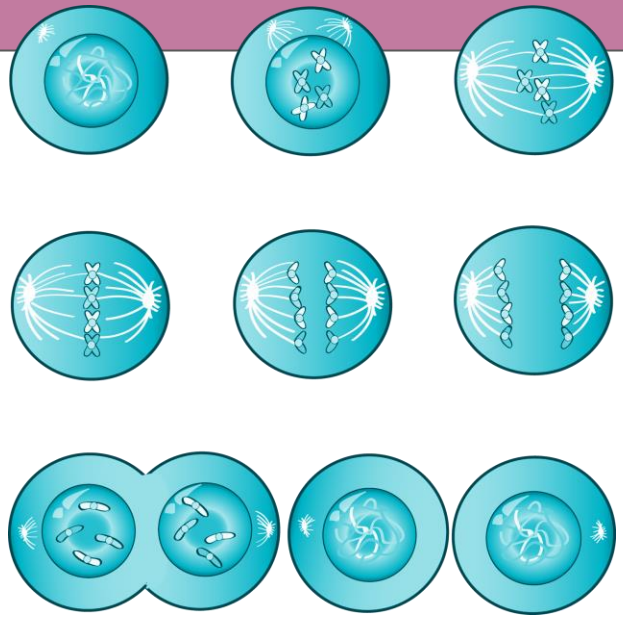

SEXUAL REPRODUCTION

Sexual reproduction requires two sets of DNA from a male and female of the same species to produce offspring.

ASEXUAL REPRODUCTION

Asexual reproduction requires only one parent and occurs through cell division. It's kind of like "copy and paste" on the computer.

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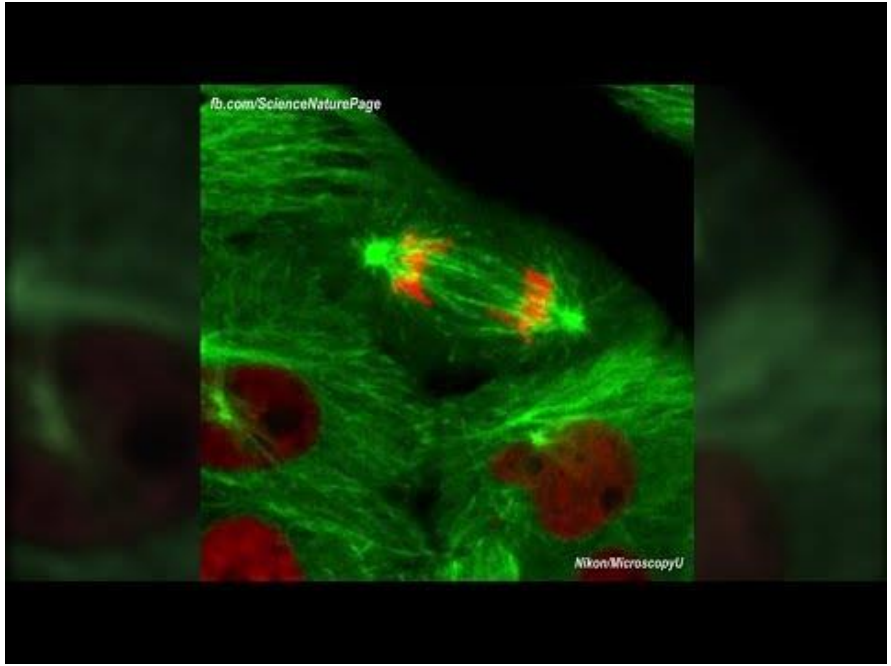
Watch the Process of Cell Division

(asexual reproduction)



Watch a Fertilized Embryo Grow

(sexual reproduction)

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Think about the two types of reproduction you just saw.
Compare and contrast the results of sexual vs. asexual reproduction.

Type here.

Go back and find all of the words highlighted in yellow. Using this chart, define each vocabulary word in YOUR OWN words.

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ORGANISM	A living thing composed of one or more cells
unicellular	
multicellular	
eukaryotic	
prokaryotic	
autotrophic	
heterotrophic	
asexual reproduction	
sexual reproduction	

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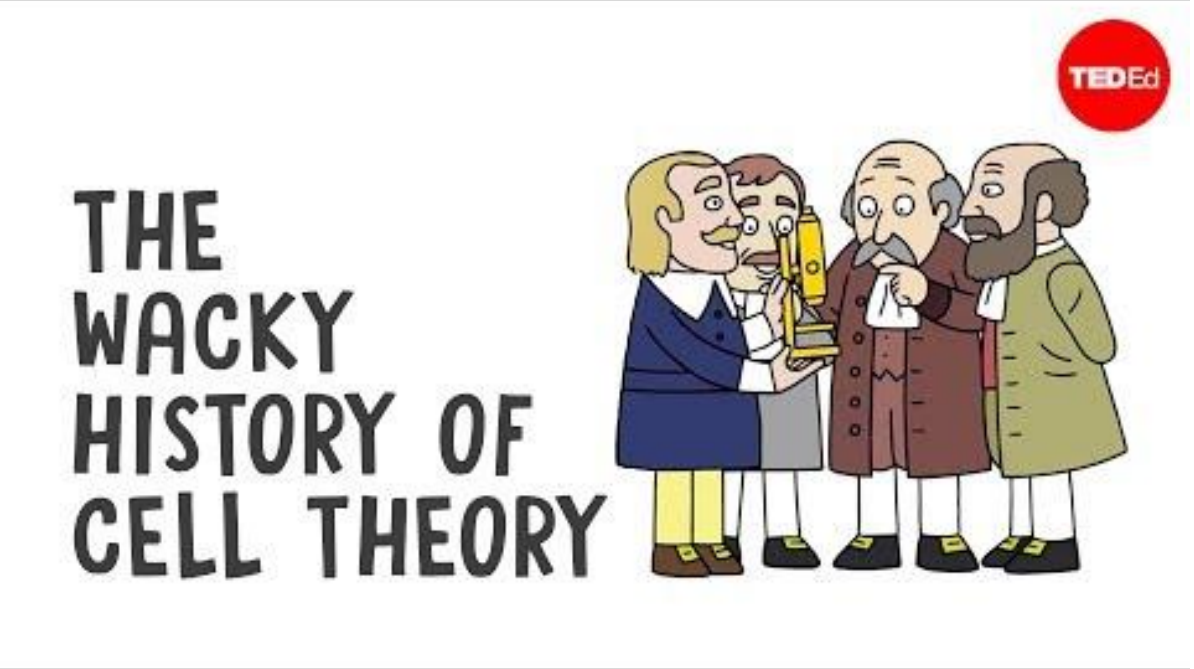

Learn about the crazy history behind cell theory!

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