

SPECIAL ED

CELLS & CELL PROCESSES



INCLUDES GOOGLE SLIDES



For students who:

- are emerging or non-readers
- take alternate assessments
- are in special education
- short-attention span
- lack pre-requisite skills
- benefit from the use of pictures for support
- middle/high school

Table of Contents

Pages	Activity
4-54	Cells and Cell Processes book
55-57	Vocabulary board
58-67	Vocabulary cards
68-84	Vocabulary cut and paste
85-89	Circle map
90-131	Labeling activities
132-142	Venn diagrams
143-153	Matching activities
154-158	Sorting activities
159-160	Making a 3D cell
161-162	Making a pizza cell
163-164	Vocabulary Word search
165-177	Vocabulary Sudoku
178-185	Cloze worksheets
186-203	Assessment
204-205	Terms of Use

Also included with this unit in separate files:

- Lesson plan
- PowerPoint show
- Links and directions for digital activities

This unit contains over 100 pages of material. I have included a detailed lesson plan to help you make the most of everything in this unit including how to add some group activities.

This unit comes in 2 separate files, one in color and one in black and white.

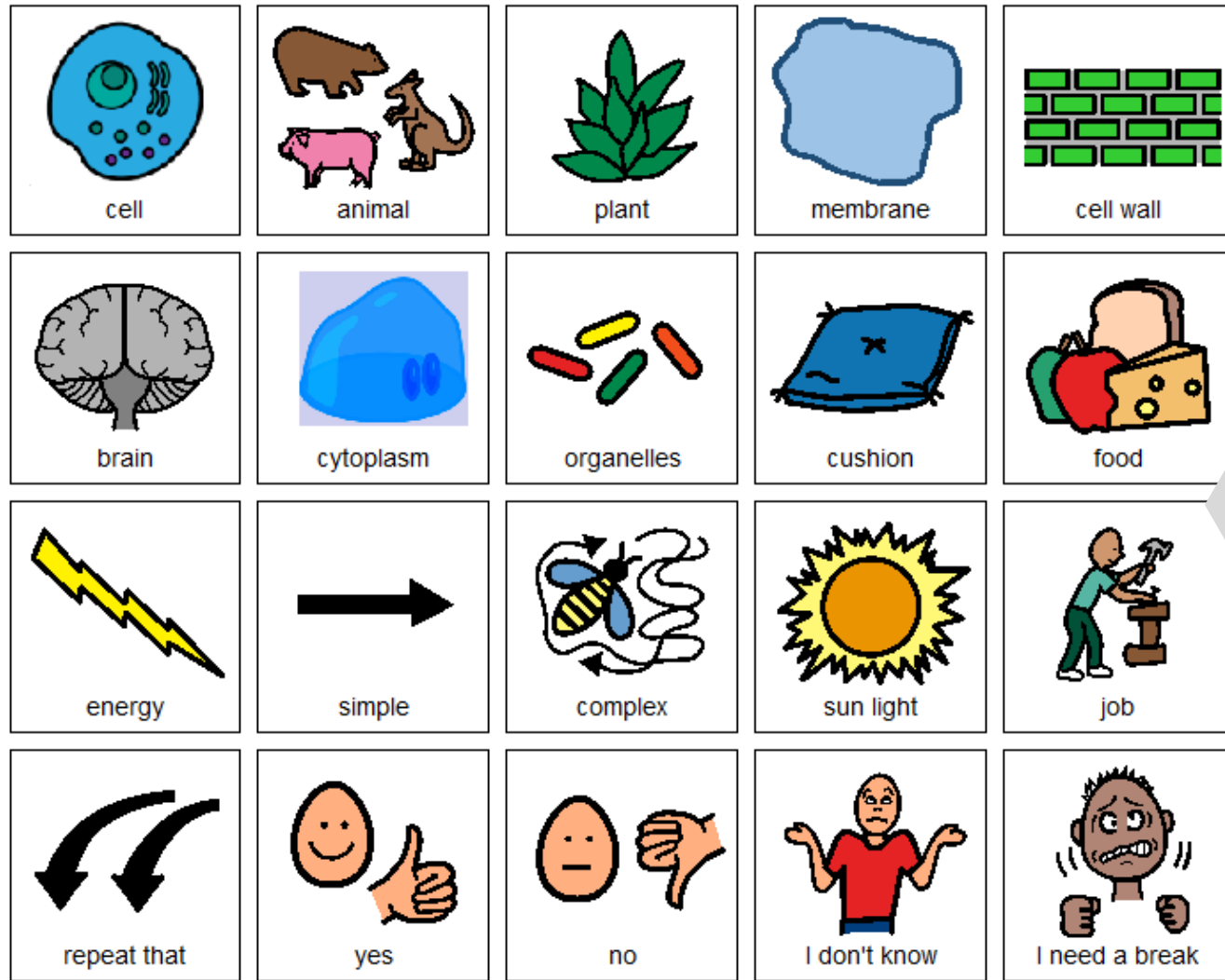
Day 2

Activity	Notes	Materials
Read or listen to a recording of the book (10 minutes)	<ul style="list-style-type: none">• Read through the story, asking lots of questions• Continue to make connections between book and vocabulary board	<ul style="list-style-type: none">• Book• Vocabulary board
Vocabulary cards I Spy Game (10 minutes)	<ul style="list-style-type: none">• I play this game, or variations of it the first few days<ul style="list-style-type: none">◦ Determine how many cards your students can handle in front of them.• Since this is the first time playing this game, I make it easy. Hold up a card, and have students find the matching one and hold it up• Discuss relevant points on the card<ul style="list-style-type: none">◦ You can also play this game in this manner having them find the symbol on their vocabulary board	<ul style="list-style-type: none">• Vocabulary cards (student set and teacher set)• Vocabulary board
Circle map review (5 minutes)	<ul style="list-style-type: none">• Review the circle map completed yesterday	<ul style="list-style-type: none">• Circle map completed yesterday
Labeling activity (10 minutes)	<ul style="list-style-type: none">• Do the cell labeling activities• There are several to choose from, either labeling the parts or making your own cell• Choose 2 to do today and 2 tomorrow• Make connections to the book as necessary	<ul style="list-style-type: none">• Labeling worksheets• Scissors• Glue
Sharing (10 minutes)	<ul style="list-style-type: none">• Each student shares their finished worksheet with the group using the communication method of their choice	<ul style="list-style-type: none">• Completed worksheet• Communication devices

16 days

The lesson plans contain:

- Overall tips for teaching students with significant needs
- A quick look at what you will do each day
- Detailed instructions on how that day's lesson should run

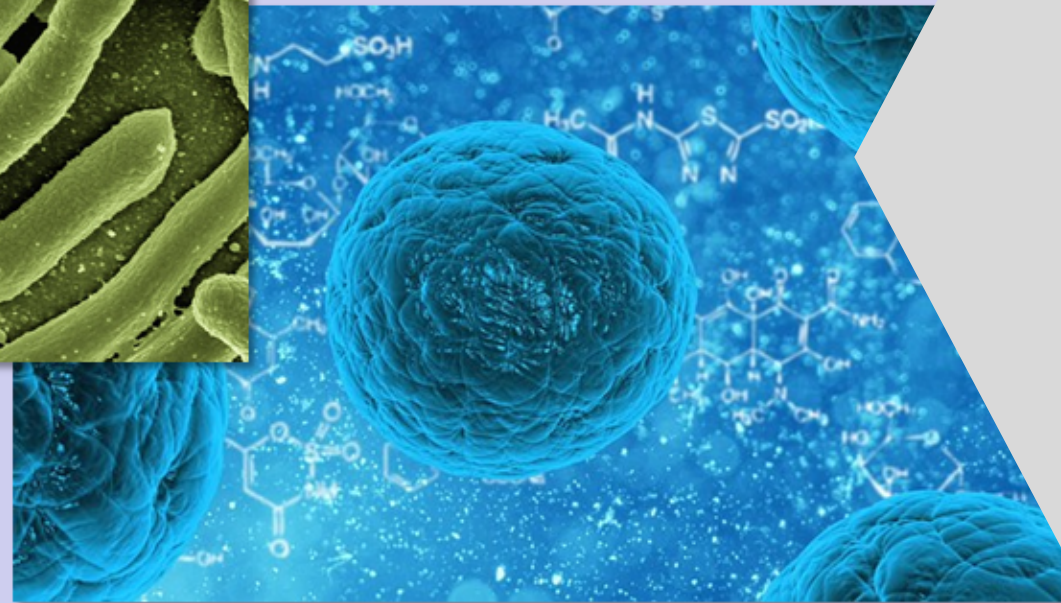


This unit comes with a vocabulary board.

Vocabulary boards are great for ALL students to assist with participation and engagement in group discussions.

Tips on how to use in the unit!!

There are 2 main categories of cells: **prokaryotic** and **eukaryotic**.



There is a book with this unit using simple text and photos. It is 50 pages and is an overview of animal and plant cells.

It comes as a PowerPoint and an mp4 (movie) file so you do not have to print it out.

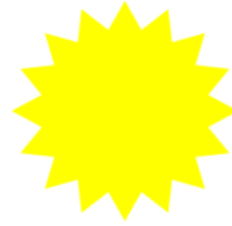
cellular respiration

Occurs in all cells in the mitochondria. Takes food, combines it with oxygen to make energy.



ATP

The energy that is produced in plant and animal cells.



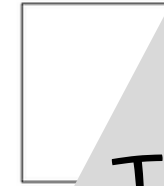
cell

Building block of all living things.



prokaryotic

Very simple cells with no nucleus as an example.



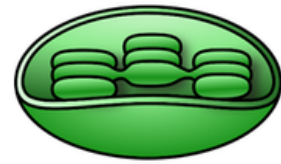
photosynthesis

Occurs in chloroplasts in **plant cells**. Takes sunlight, combines it with water and carbon dioxide to make energy.



chloroplast

Organelle found only in **plant cells** and turns sunlight into energy.



eukaryotic

More complex cells with a nucleus and organelles. Most plant and animal cells are examples.



cell

Goes around and regulates

There are 16 vocabulary cards that come in color and black and white.

cell wall



cytoplasm



Included are suggestions for group activities to do with these each day.

organelle

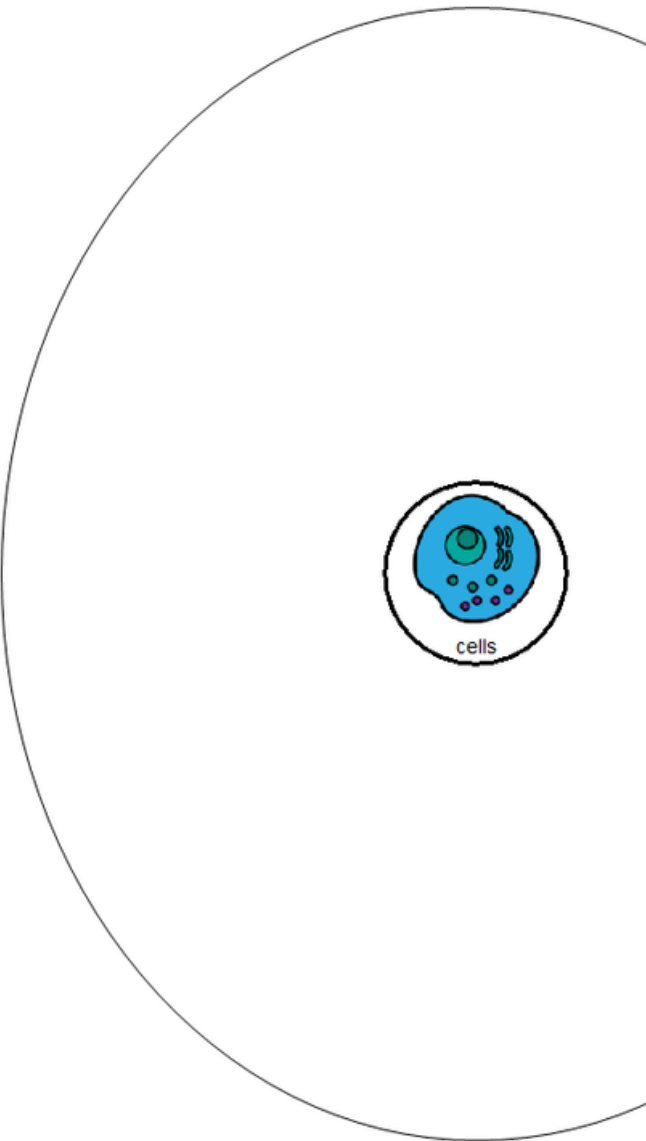


nucleus



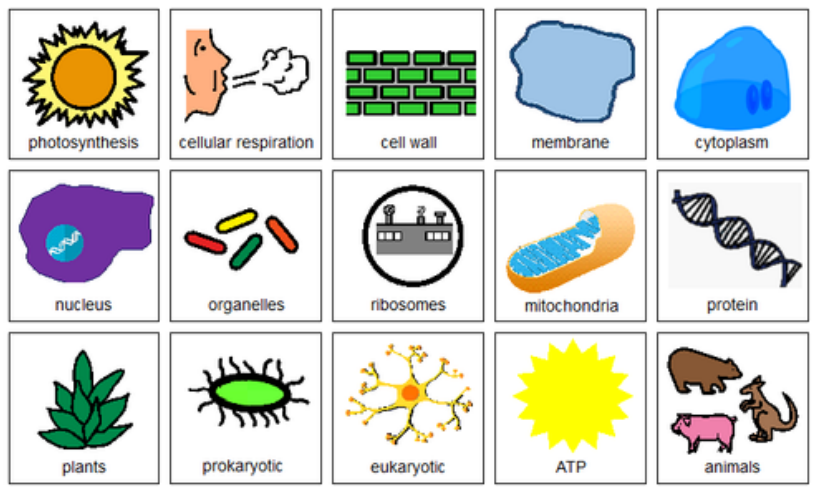
Cut apart and match pictures with definition.





Errorless version

Cut apart pictures and place in circle map about cells.



Cut apart pictures and place in circle map **ONLY IF** they relate directly to cells.



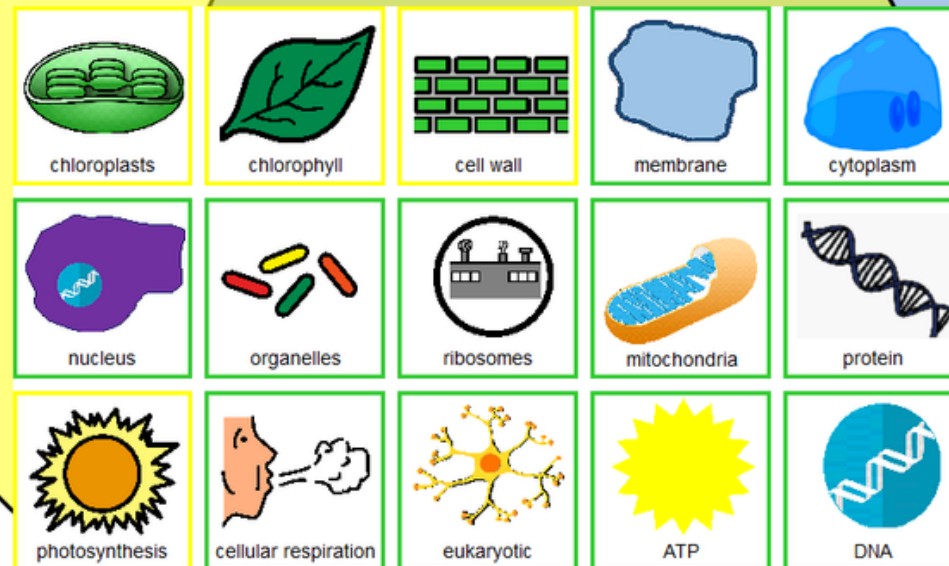
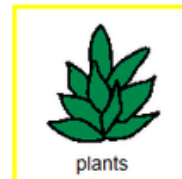
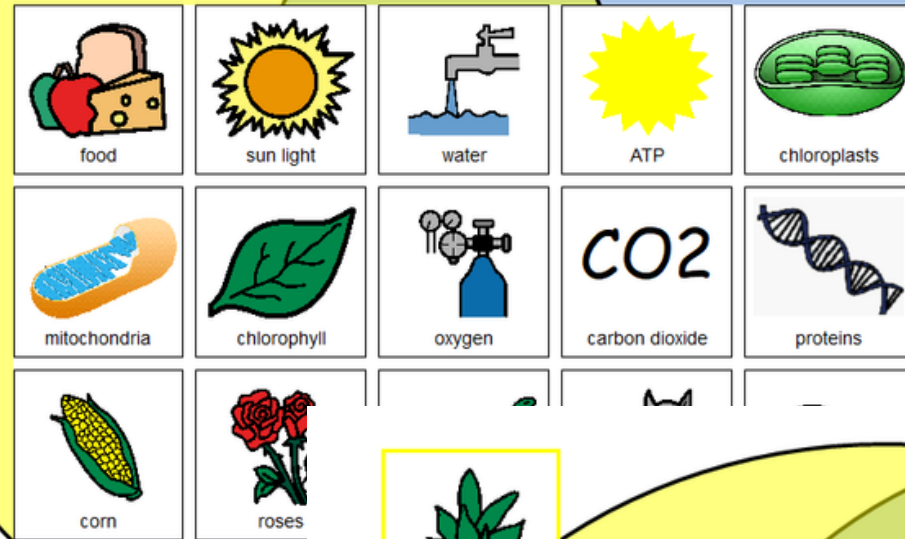
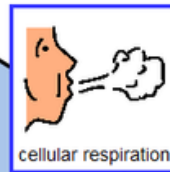
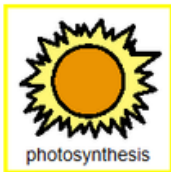
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There are is a circle map reviewing the main parts of animal and plant cells.

Circle maps are a great way for students to see the concept at a glance.

There are 2 versions:

- One is errorless
- One has wrong answers mixed in students will have to set aside

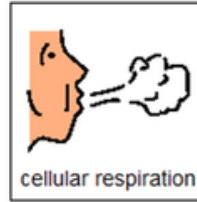
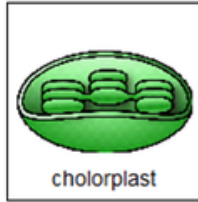
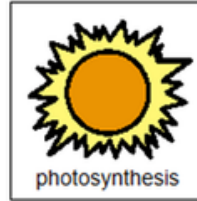
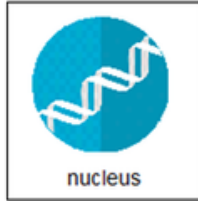
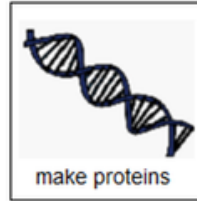
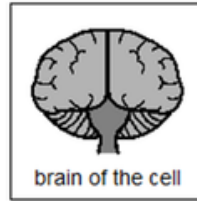
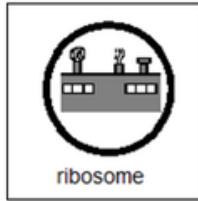


There are 2 Venn diagrams.

- photosynthesis and cellular respiration
- plant and animal cells.

Both come with a color-coded version for more support.

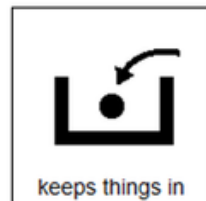
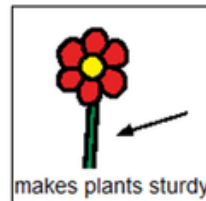
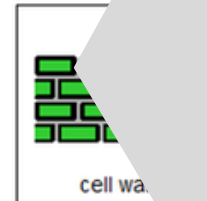
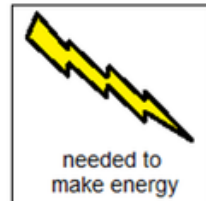
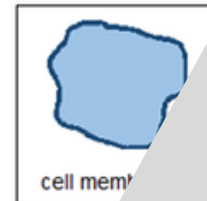
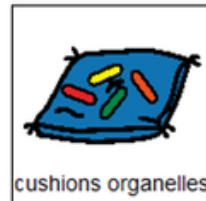
Draw a line matching the organelle to its function.



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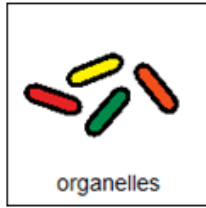
Draw a line matching the function to the cell structure.



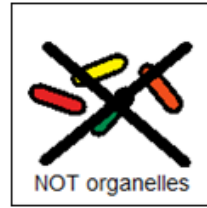
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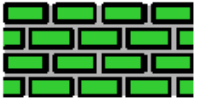




There are matching activities. Matching the organelle to its function and the function to the organelle. Suggestions for differentiation are included.



organelles

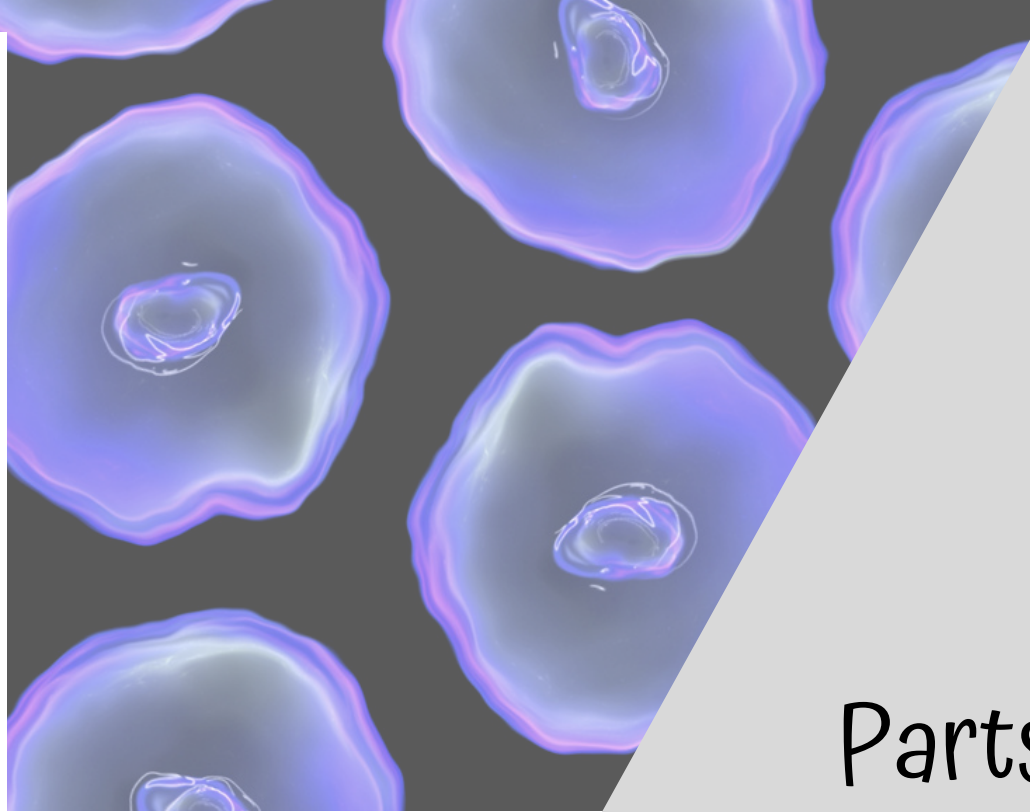
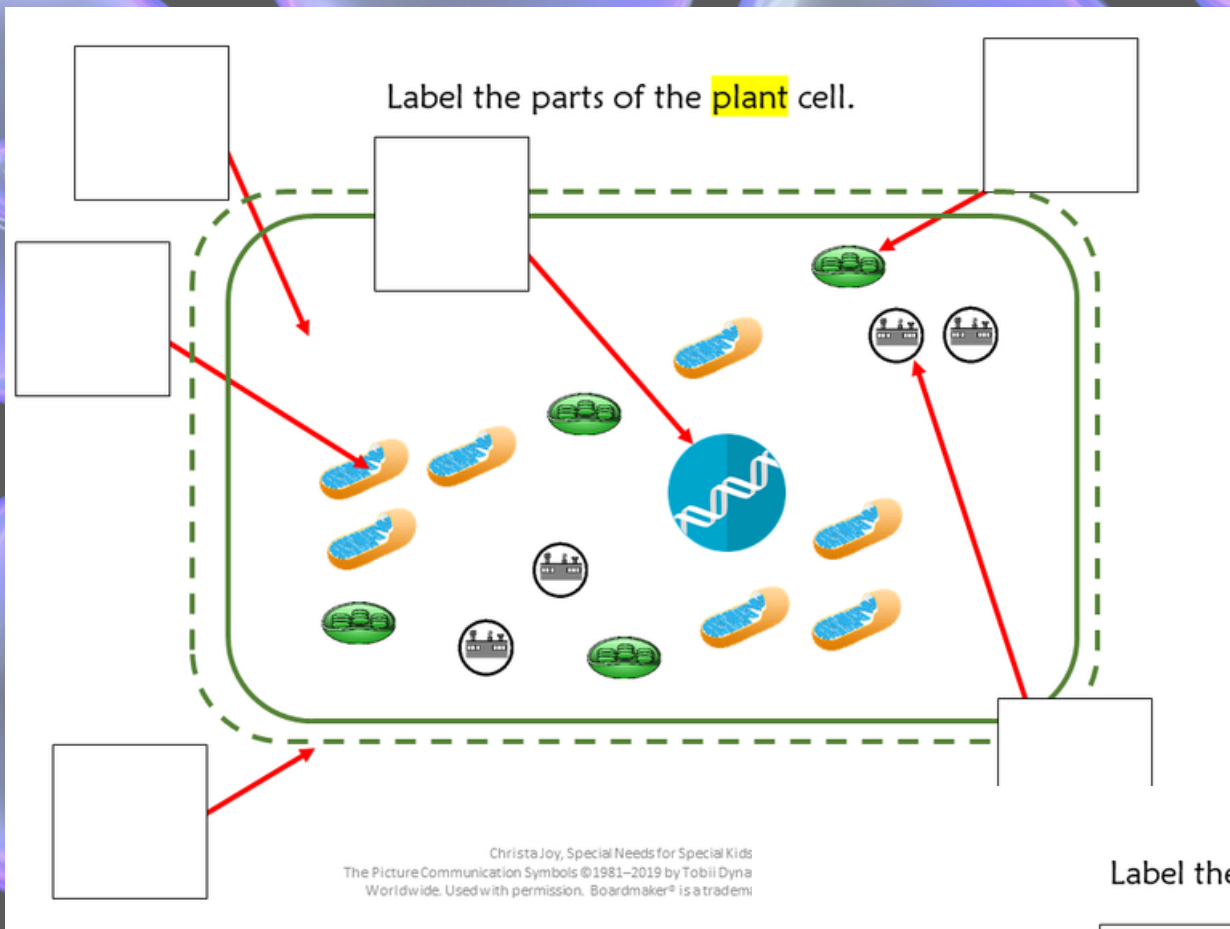


NOT organelles

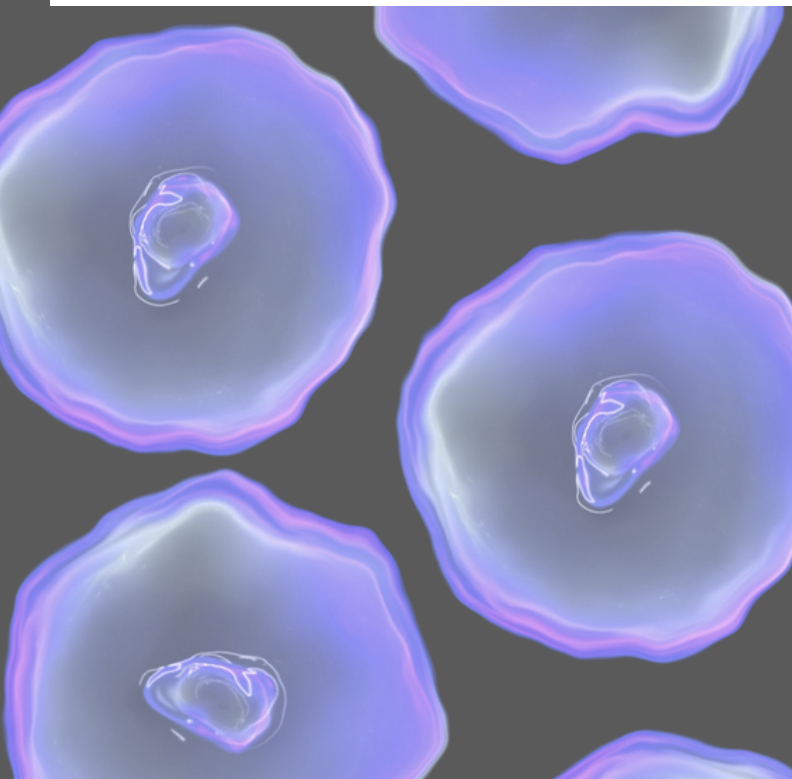
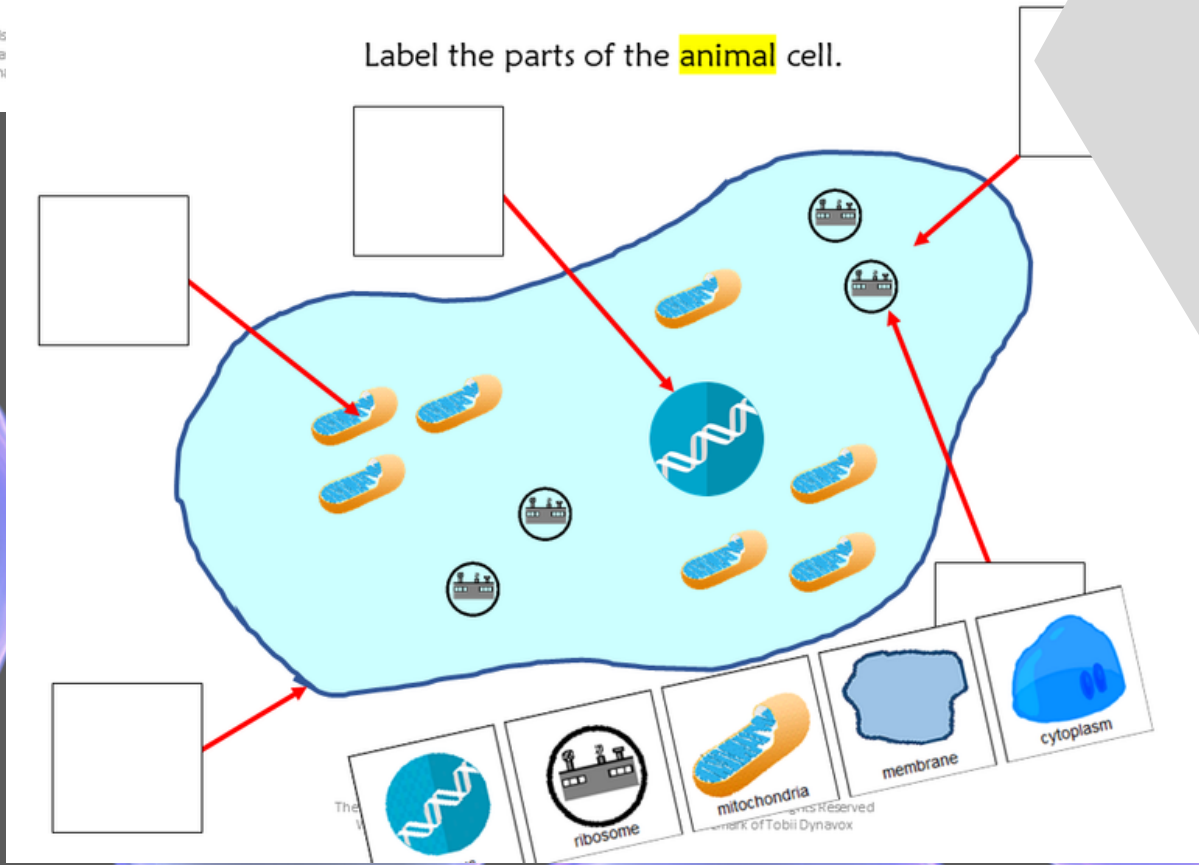
 cell membrane	 ribosome	 protein	 chlorophyll	 nucleus
 cell wall	 ATP	 mitochondria	 cytoplasm	 chloroplast

There is a sorting activity looking at things that are and are not organelles. Suggestions for differentiation are included

Labeling

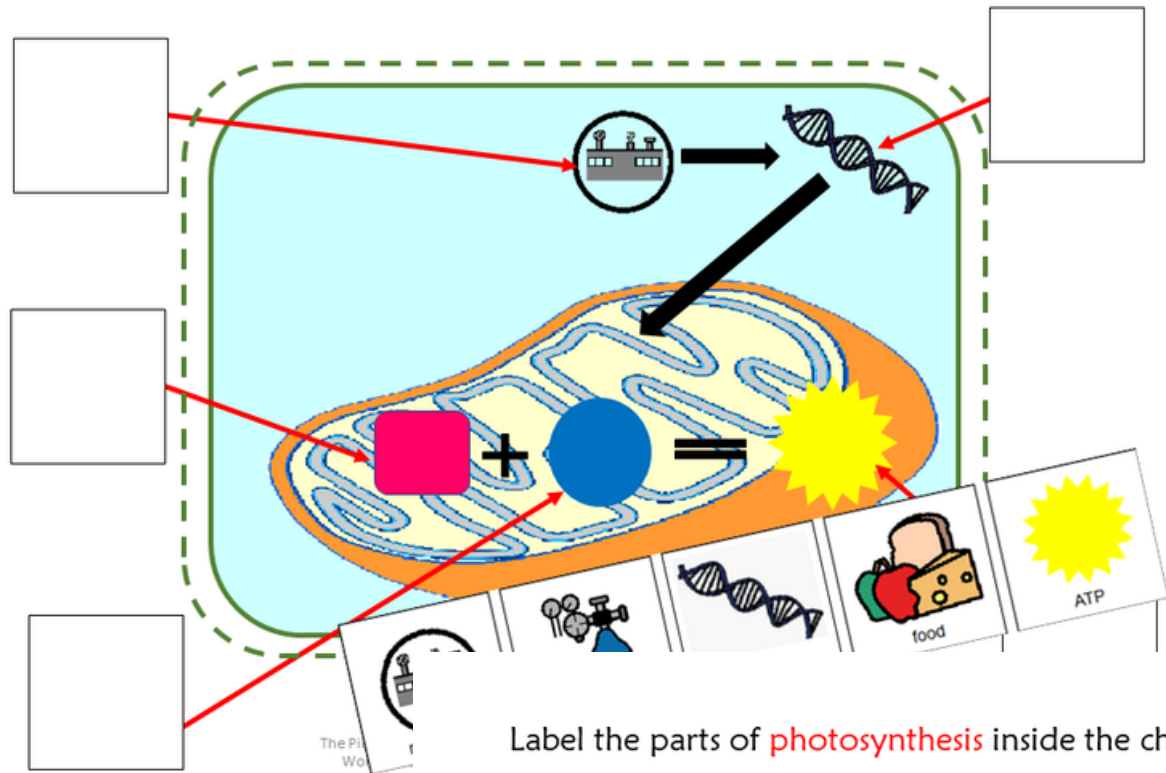


Parts of plant and animal cells.

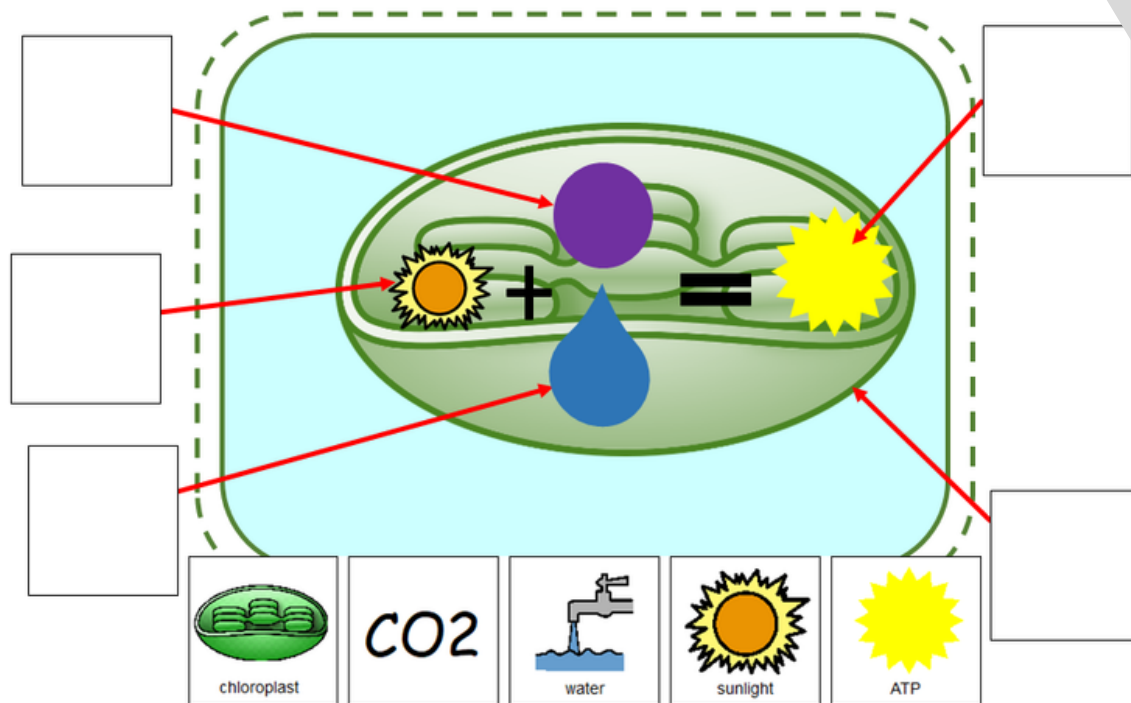


Labeling

Label the parts of **cellular respiration** inside the mitochondria in a **plant** cell.



Label the parts of **photosynthesis** inside the chloroplast in a **plant** cell.



Cellular respiration and photosynthesis.

3D Model of a Plant Cell: Directions

Materials:

- Cell membrane: long piece of yarn
- Cell wall (if doing a plant cell): Hula hoop
- Ribosomes: ping pong or other small ball
- Mitochondria: Legos
- Chloroplasts (if doing a plant cell): Green bean bags
- Nucleus: Pink ball
- Cytoplasm: Piece of yellow felt or fabric cut to fit the interior of the hula hoop
- Proteins: plastic links (Several connected together)

Directions:

- Give each student a piece of the cell; can/should have multiple chloroplasts, mitochondria, and ribosomes
- Have students form the piece of yarn into a circle as the cell membrane.
- *If doing a plant cell:* Have student place hula hoop on floor. Explain that this is the cell wall. Notice how strong, rigid, and hard it is. It helps keep the shape of the cell and keeps all the parts inside.
- Have student fit the yellow felt inside the hula hoop. Explain that this is the cytoplasm and makes a nice cushion for all the parts inside the cell. It is like a big pillow.
- Have student place pink ball in the center of felt. Explain that this is the nucleus of the cell. It is like the brain, and tells all the other parts in the cell what to do. Every cell has a nucleus.

Making a Cell Pizza (Sweet)

Materials

- Crescent dough or premade large cookie (cooked)
- Frosting
- Chocolate chips
- Jelly beans
- Green skittles or M&Ms
- 1 Oreo

Directions

- *Cell membrane/wall*
 - Have students spread crescent dough
 - Talk about how the crust is like the cell wall
 - Provides stiffness/structure
 - Holds all the inner parts of the cell
- *Cytoplasm*
 - Spread the frosting
 - Talk about how the frosting is similar to the cytoplasm
 - Provides cushion
 - Helps hold inner structures in place
- *Organelles*
 - Use chocolate chips for the ribosomes
 - Use jelly beans for the mitochondria
 - Use green skittles or M&Ms as chloroplasts
 - Talk about how they are like the organelles
 - Uniform in size and shape
 - Spread throughout the cytoplasm and cushioned
- *Nucleus*
 - Place whole Oreo in center of pizza as nucleus
 - Talk about how the Oreo is similar to the nucleus
 - Only one present in the cell
 - Round

There are 2 hands-on activities. One has students make a 3D model of a plant cell, and one has students make an edible pizza cell.

Cellular Respiration

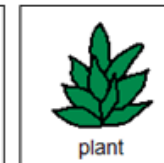
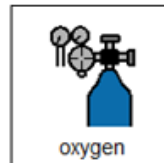
1. Cellular respiration occurs in and cells.

2. It occurs in the .

3. It is how the cell turns into energy.

4. Mitochondria need from the ribosomes to help.

5. The food is combined with to make ATP.



There are 3 close worksheets for review.

- Cells
- Cellular respiration
- Photosynthesis

1. All plant and animal cells are surrounded by a:



2. A cell wall is an extra outer layer found only in:



3. The brain of the cell is the:



4. Which cells do NOT have a nucleus?

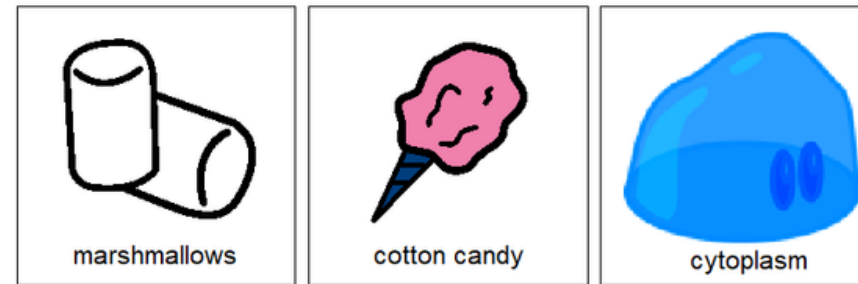


5. What are cells filled with that protect what

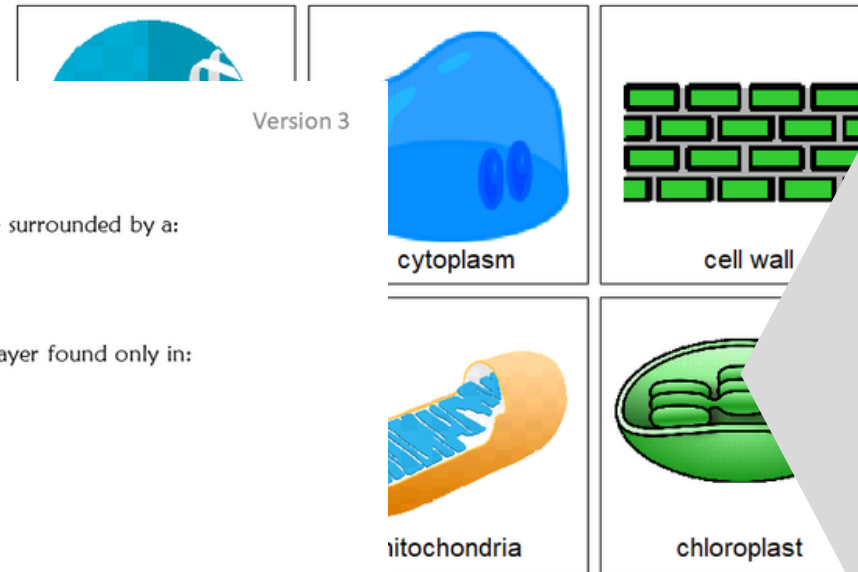


Print onto cardstock or mount on index cards. Cut pictures apart and show student answer choices for each question.

Q 5



Q 6



Version 3

1. All plant and animal cells are surrounded by a:

- A. yarn
- B. membrane
- C. fence

2. A cell wall is an extra outer layer found only in:

- A. animals
- B. plants
- C. octopus

3. The brain of the cell is the:

- A. nucleus
- B. cytoplasm
- C. cell wall

4. Which cells do NOT have a nucleus?

- A. prokaryotic
- B. skin
- C. tongue

5. What are cells filled with that protect what is inside?

- A. marshmallows
- B. cotton candy
- C. cytoplasm

6. Circle all the things that are considered organelles.

- A. nucleus
- B. cytoplasm
- C. cell wall
- D. ribosome
- E. mitochondria
- F. chloroplast

FINALLY the assessment!! There are 3 versions.

- 10 questions with 3 picture choices for each question
- cut out the answer choices and glue them on index cards
- traditional multiple choice

Answer key included.

Watch the movie
on Cells and Cell
Processes

Ribosomes are like tiny factories that make something called **proteins**.



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This unit also has digital activities. There is a movie version of the books students can listen to read aloud.

Great for review

Day 7

Place pictures in correct locations on Venn Diagram.

photosynthesis

cellular respiration

chloroplasts	chlorophyll	food	oxygen
oxygen	CO ₂ carbon dioxide	photosynthesis	protein
protein	corn	roses	snake
snake	kitten	snail	

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The digital activities have students click and drag their answers.

Perfect for every learning level



organelles



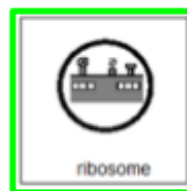
NOT organelles

Day 9
differentiated

Sort the photos depending on if they are an organelle or not.



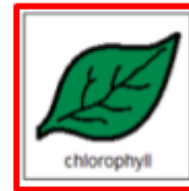
cell membrane



ribosome



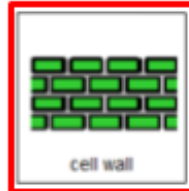
protein



chlorophyll



nucleus



cell wall



ATP



mitochondria



cytoplasm



chloroplast

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There are 2 sets of slides. One set has color-coding for more support.