Cells & Cell Processes for Special Education

Middle/High School

225 pages

16 day lesson plan

Preview

by Christa Joy

Cells and Cell Processes Lesson Plan

Preparation

- Print out a vocabulary board for each student to use throughout unit
  - Laminate or place in page protector
- Book
  - Print out, laminate, and bind
  - OR your students can listen to the pre-recorded version
- Vocabulary cards
  - Print out a set of cards onto cardstock and laminate
  - Make one set for each student and also one for the teacher to use in I Spy games

Preassessment (do day 1 before starting lesson)

- Choose the form of the assessment that best fits the learning level of your students
- Give the assessment to assess what your students may already know
- I cannot emphasize enough how important this step is. If you want to see growth, this preassessment is so important!!

Teaching Tips

- *Color Coding*: this is a really easy way to add more structure to a matching activity. Outline or color in an empty box or sorting label. Outline or color in the corresponding picture symbols the same colors. Becomes a color matching task.
  a. For more info, read more here: https://specialneedsforspecialkids.org/2015/09/05/using-color-coding-for-differentiation/
  b. I also have a blog post on differentiating one activity 3 ways: https://specialneedsforspecialkids.org/2018/10/22/differentiating-1-activity-3-ways-easily-and-effectively/
- *Make you own copies of the activities*: Every day I review the activity we did yesterday. For that reason:
  a. I often complete the activity myself and often laminated it for easy review that I could use year after year.
  b. My copies were also helpful as either a model for students who needed more support or as a way for more advanced students to self-check their work.

16 day lesson plan

Quick Look

Day	Activity	Day	Activity
1	• Book • Vocab cards introduction • Circle map	9	• Book • Vocab cards activity Sorting activity
2	• Book • Vocab cards activity • Labeling activities	10	• Book • Vocab cards activity • Make a 3D cell
3	• Book • Vocab cards activity • Labeling activities	11	• Book • Vocab cards cut and paste • Vocabulary puzzle
4	• Book • Vocab cards activity • Labeling activities	12	• Book • Vocab cards cut and paste • Vocabulary puzzle
5	• Book • Vocab cards activity • Labeling activities	13	• Book • Vocab cards activity • Close worksheet
6	• Book • Vocab cards activity • Venn Diagram	14	• Book • Vocab cards activity • Close worksheet
7	• Book • Vocab cards activity • Venn Diagram	15	• Book • Vocab cards activity • Close worksheet
8	• Book • Vocab cards activity • Matching activity	16	• Assessment • Pizza cell

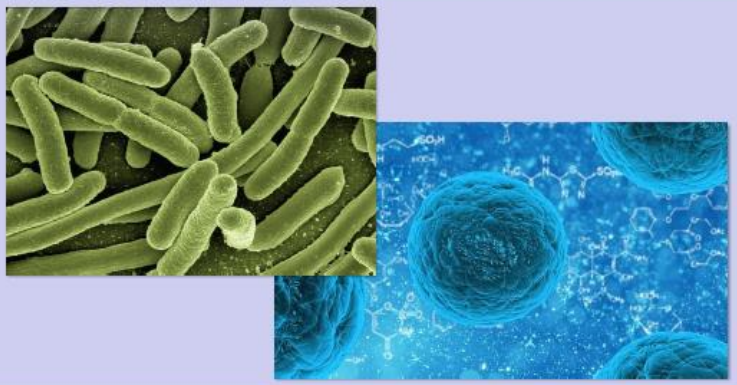
Day 4

Activity	Notes	Materials
Read or listen to a recording of the book (10 minutes)	• Read through the story, asking lots of questions • Continue to make connections between book and vocabulary board	• Book • Vocabulary board
Vocabulary cards Go Fish Game (15 minutes)	• Using several completed student sets of vocabulary cards play a traditional go fish game • Modify/use devices or buddies as needed for additional support	• Vocabulary cards (student sets) • Vocabulary board
Labeling activity review (5 minutes)	• Review the labeling worksheets completed yesterday	• Complete labeling worksheets
Labeling activity (10 minutes)	• Do the cell ***process*** labeling activities • There are several to choose from, either labeling the parts or making your own cell • Choose some to do today and some to do tomorrow (there may be more than you need; can save some for later review) • Make connections to the book as necessary	• Labeling worksheets • Scissors • Glue
Sharing (10 minutes)	• Each student shares their finished worksheet with the group using the communication method of their choice	• Completed worksheet • Communication devices

Day 6

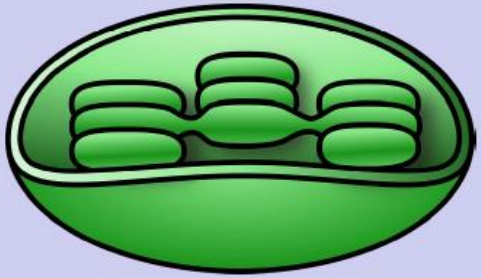
Activity	Notes	Materials
Read or listen to a recording of the book (10 minutes)	• Read through the story, asking lots of questions • Continue to make connections between book and vocabulary board	• Book • Vocabulary board
Vocabulary cards Puzzle Game (10 minutes)	• Give each student a pile of pieces • Have them reassemble the pieces into the correct symbols • They may have to ask each other if someone else has the second half to a piece they have.	• Vocabulary cards (set where each card is cut in half)
Labeling activity review (5 minutes)	• Review the labeling activity completed yesterday	• Completed activity from yesterday
Venn Diagram (10 minutes)	• Do the one of the Venn Diagrams • Choose the best option for your students (either with or without color-coding) • Make connections to the book as necessary	• Venn Diagram worksheet • Scissors • Glue
Sharing (10 minutes)	• Each student shares their finished Venn diagram	• Completed activity • Communication devices

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



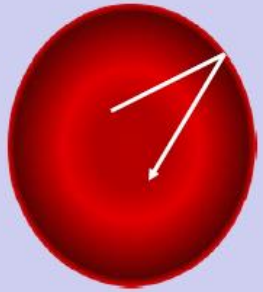
Ribosomes are like tiny factories that make something called proteins.

It is called photosynthesis, and it occurs in a special organelle called a chloroplast.



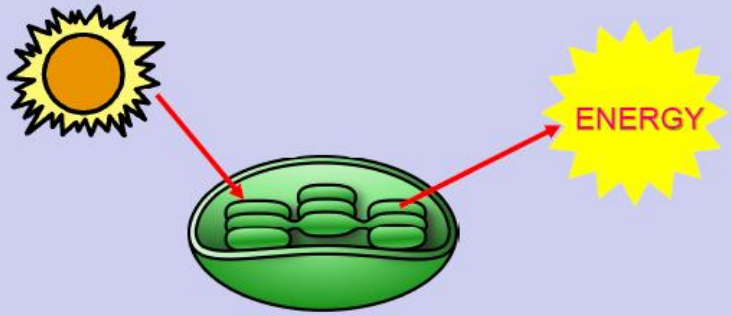
51 page book

This membrane goes around the outside of the cell and keeps everything inside.

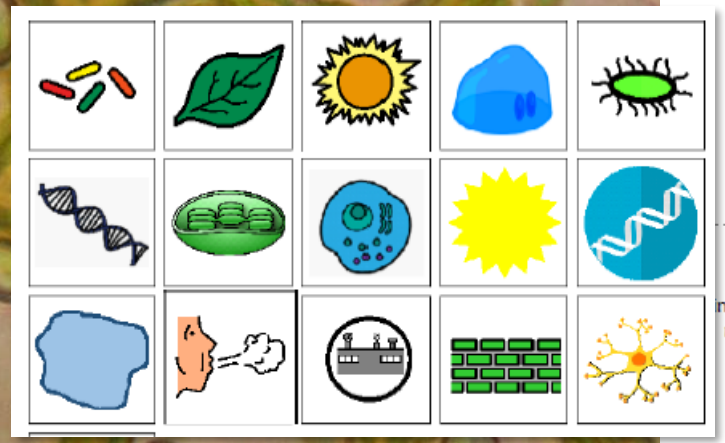


In fact, proteins are necessary for all plants and animals to live. So the ribosomes have a VERY important job.

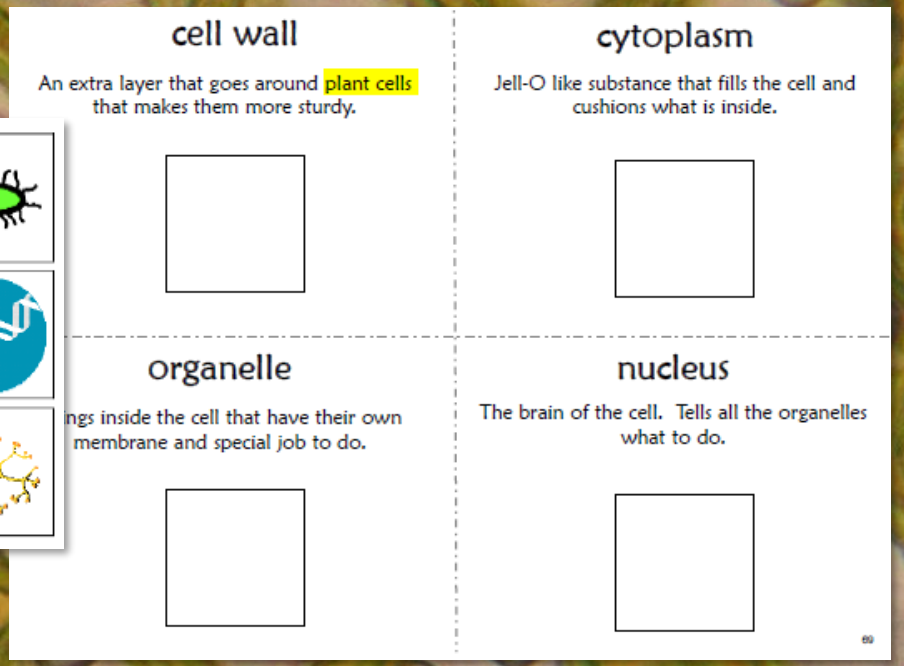
Finally, plants also have chloroplasts that are filled with chlorophyll and turn sunlight into ATP through a process called photosynthesis.

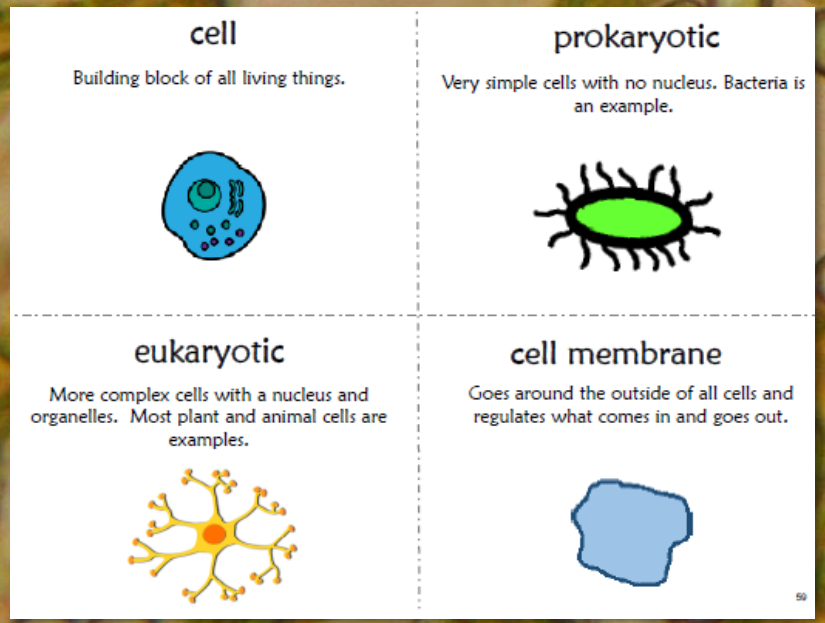


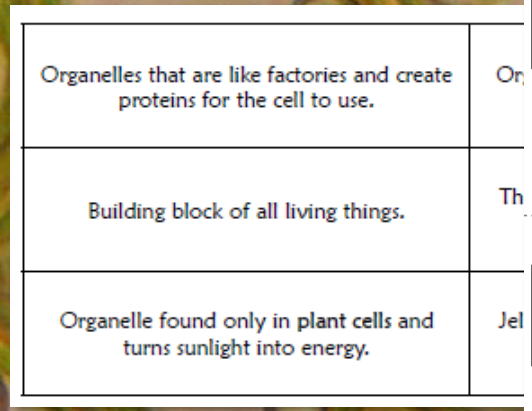
Vocabulary board

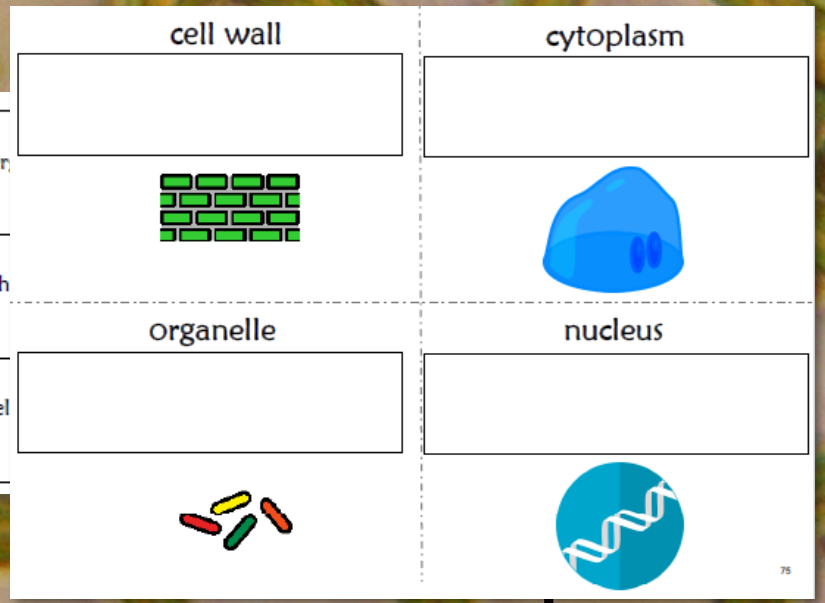


16 Vocab cards

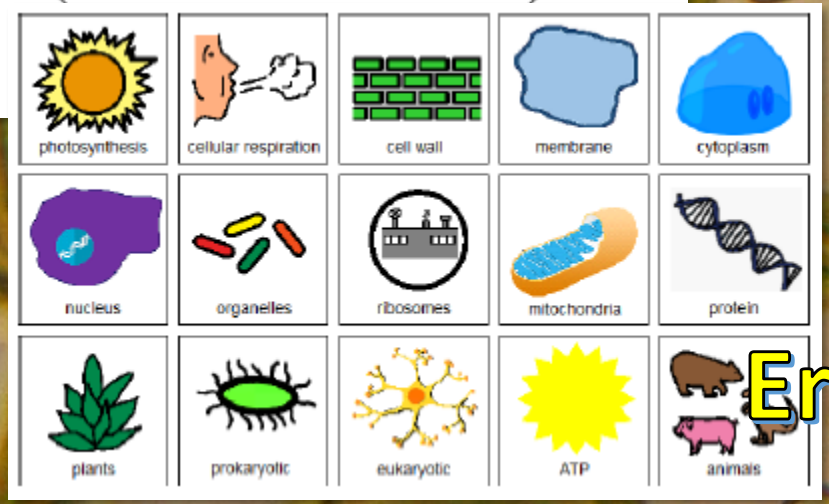








Circle map

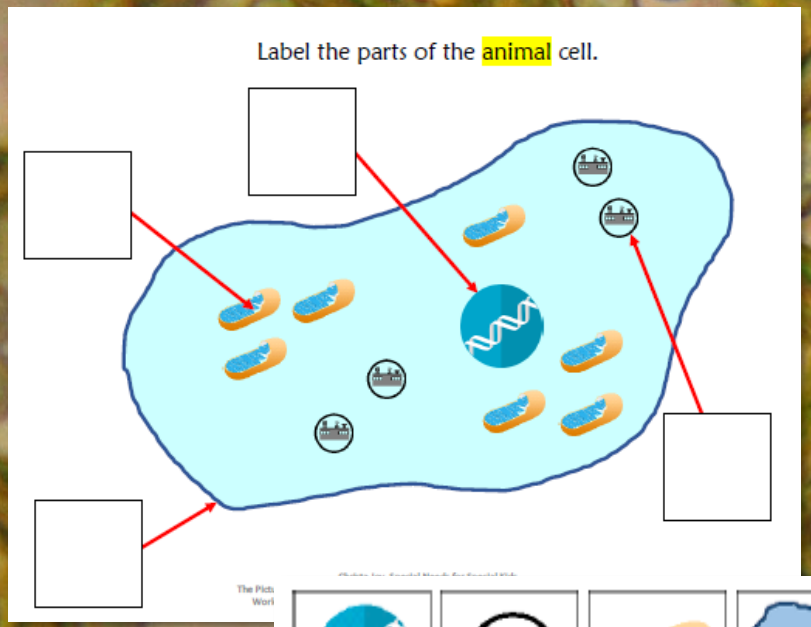


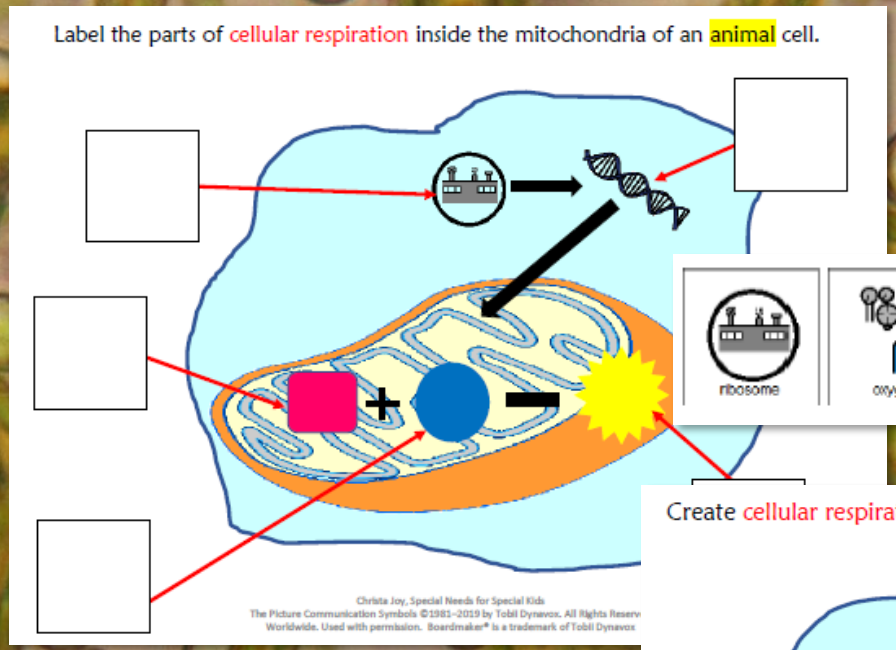
Errorless option

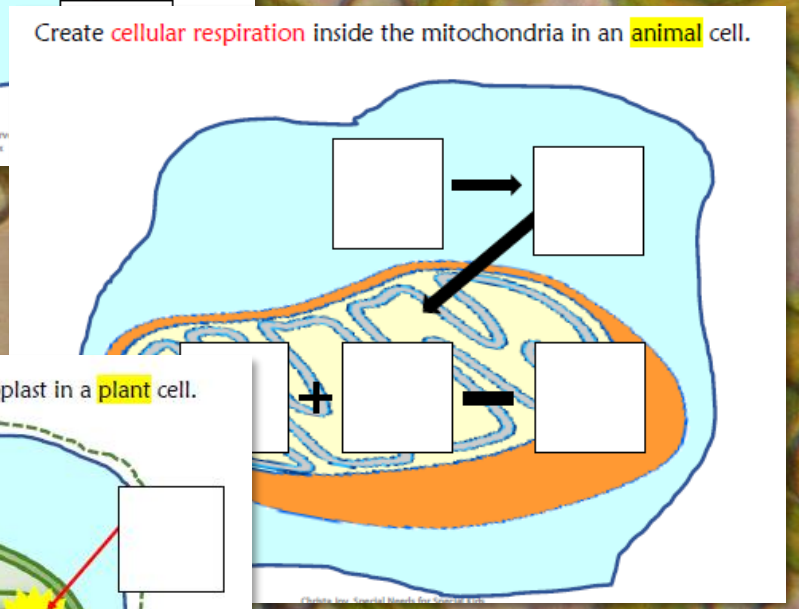
Venn Diagrams

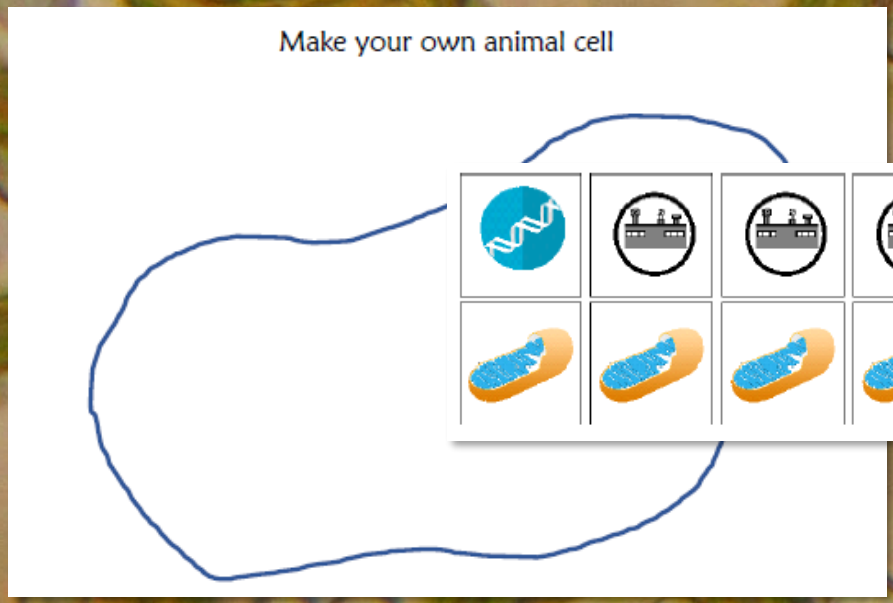
50 µm

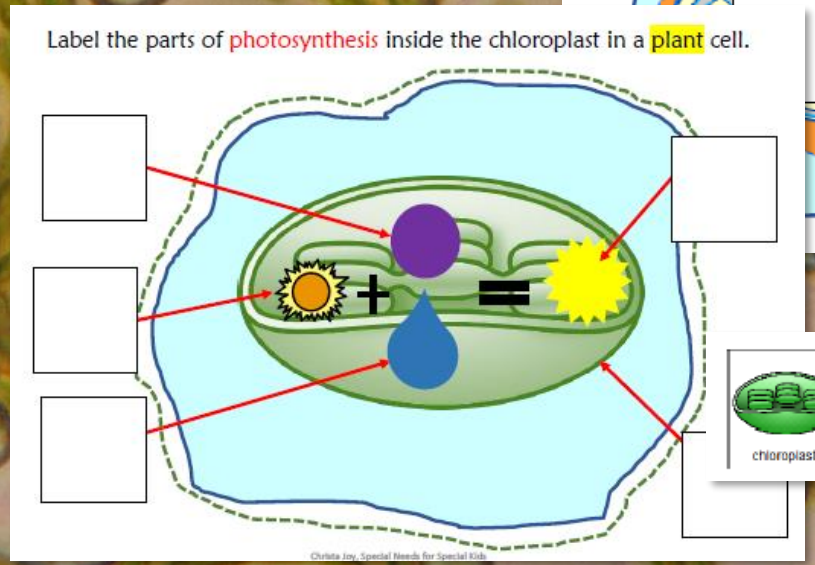
Labeling

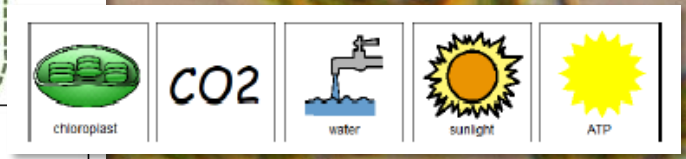








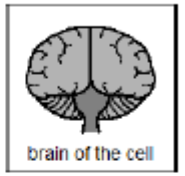




50 µm

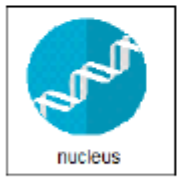
Draw a line matching the organelle to its function.

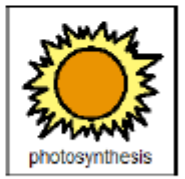

ribosome

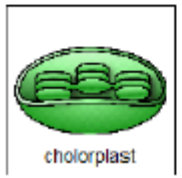

brain of the cell

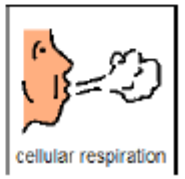

mitochondria


make proteins


nucleus

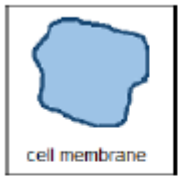

photosynthesis


cholorplast

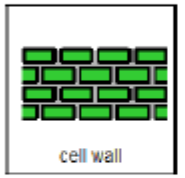

cellular respiration

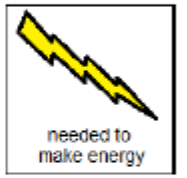
Matching

Draw a line matching the cell structure to its function.

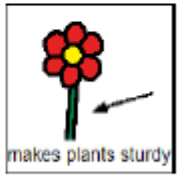

cell membrane


cushions organelles


cell wall


needed to make energy


cytoplasm


makes plants sturdy


protein


keeps things in

Sorting


organelles


NOT organelles

50 µm

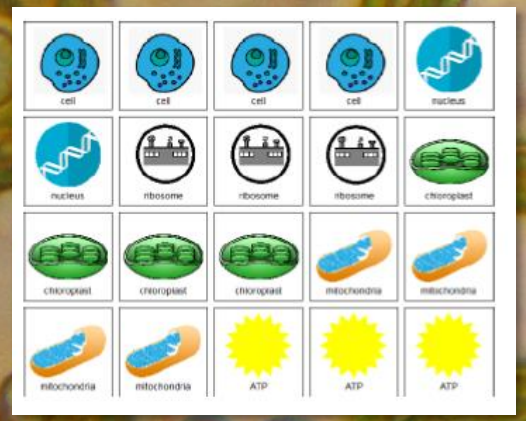
Vocab puzzles

Cells

I	Z	X	M	E	M	B	R	A	N	E	W
P	R	O	K	A	R	Y	O	T	I	C	A
S	A	C	Y	T	O	P	L	A	S	M	L
M	O	R	G	A	N	E	L	L	E	P	L
G	Q	R	I	B	O	S	O	M	E	J	
M	I	T	O	C	H	O	N	D	R	I	
Y	E	U	K	A	R	Y	O	T	I	C	
C	E	L	L	N	U	C	L	E	U	S	U

Find the following words in the puzzle.
Words are hidden → and ↓ .

MITOCHONDRIA
PROKARYOTIC
EUKARYOTIC
CYTOPLASM
ORGANELLE
MEMBRANE
RIBOSOME
NUCLEUS
CELL
WALL



Cells

cell					ribosome
			cell		
ATP		chloroplast	nucleus		
nucleus	ribosome	mitochondria	ATP		
	mitochondria		ribosome	nucleus	ATP
	nucleus		chloroplast		

4 close worksheets

Cells

1. Cells are the ☐ of all living things.
2. All cells are surrounded by a ☐ that protects it.
3. Most cells are eukaryotic and have a ☐ .
4. The nucleus is like the ☐ of the cell.
5. The cell if filled with a Jell-O like substance called ☐

Cells

6. The cytoplasm ☐ the things inside the cell.
7. The ribosomes are like ☐ making proteins.
8. The mitochondria turn ☐ inside the cell into energy.

Cells (page 1)

Cells (page 2)

in ☐ cells and use the

and plant cells make is called ☐ .

50 µm

Assessment

Version 1

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

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

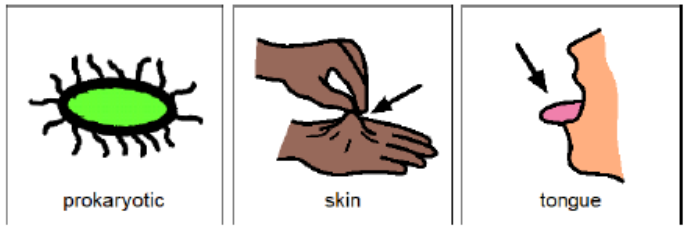
3. The brain of the cell is the:

4. Which cells do NOT have a nucleus?

5. What are cells filled with that protect what is insid

Q 3

Q 4



7. These are the factories of the cell, and make lots of proteins.
   A. ribosomes
   B. cell wall
   C. chlorophyll
8. This is where cellular respiration occurs in plant and animal cells.
   A. protein
   B. nucleus
   C. mitochondria
9. Where does photosynthesis occur?
   A. prokaryotic
   B. teeth
   C. chloroplast
10. True or False. Plants can turn sunlight into food and then i
    energy or ATP for the cell.
    A. true
    B. false
    C. I don't know

Plus directions for making a large 3D interactive cell and directions to make a cell pizza