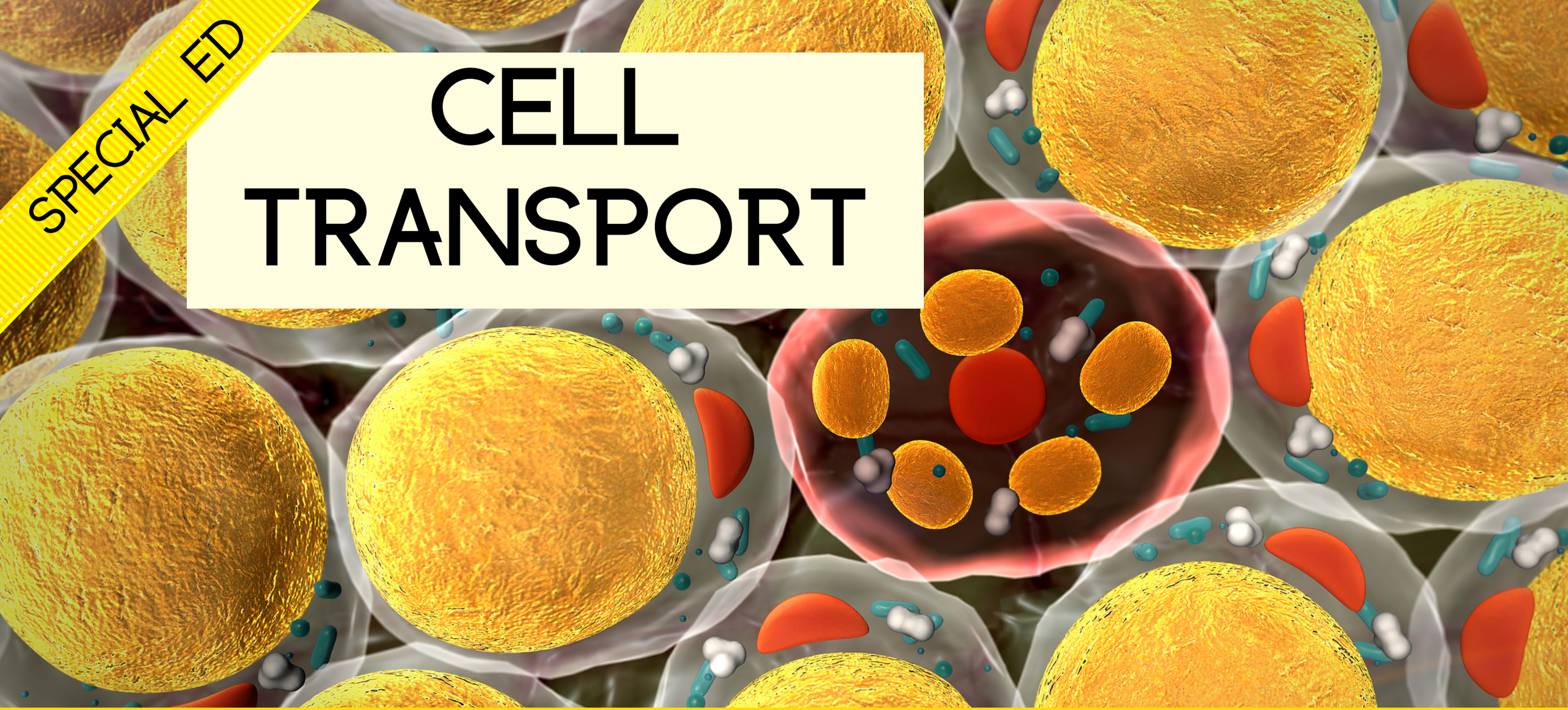


INCLUDES GOOGLE SLIDES

This unit was created with this guy in mind. He has autism and an intellectual disability. He is a non-reader, and loves the sound of piano keys. With some support he is able to do this unit, and enjoys the challenge. He is my tester!!

Table of Contents

In separate files, you will find:

- Lesson plans
- Voice recorded PowerPoint
- Directions and links to digital activities

This unit contains almost 150 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.

Cell Transport 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

1. *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/
2. *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.

The lesson plans contain:

Overall tips for teaching students with significant needs

Quick Look

Day	Activity		Day	Activity
1	• Book • Vocab cards activity • Circle map		8	• Book • Vocab cards activity • Close worksheet
2	• Book • Vocab cards activity • Circle map		9	• Book • Vocab cards activity • Close worksheet
3	• Book • Vocab cards activity • Circle map		10	• Book • Vocab cards cut and paste • Vocabulary puzzle
4	• Book • Experiment #1 • Drawing cells		11	• Book • Vocab cards cut and paste • Vocabulary puzzle
5	• Book • Experiment #2 • Drawing cells		12	• Assessment and reteaching
6	• Book • Experiment #3 • Drawing cells			
7	• Book • Vocab cards activity • Close worksheet			

The lesson plans contain:

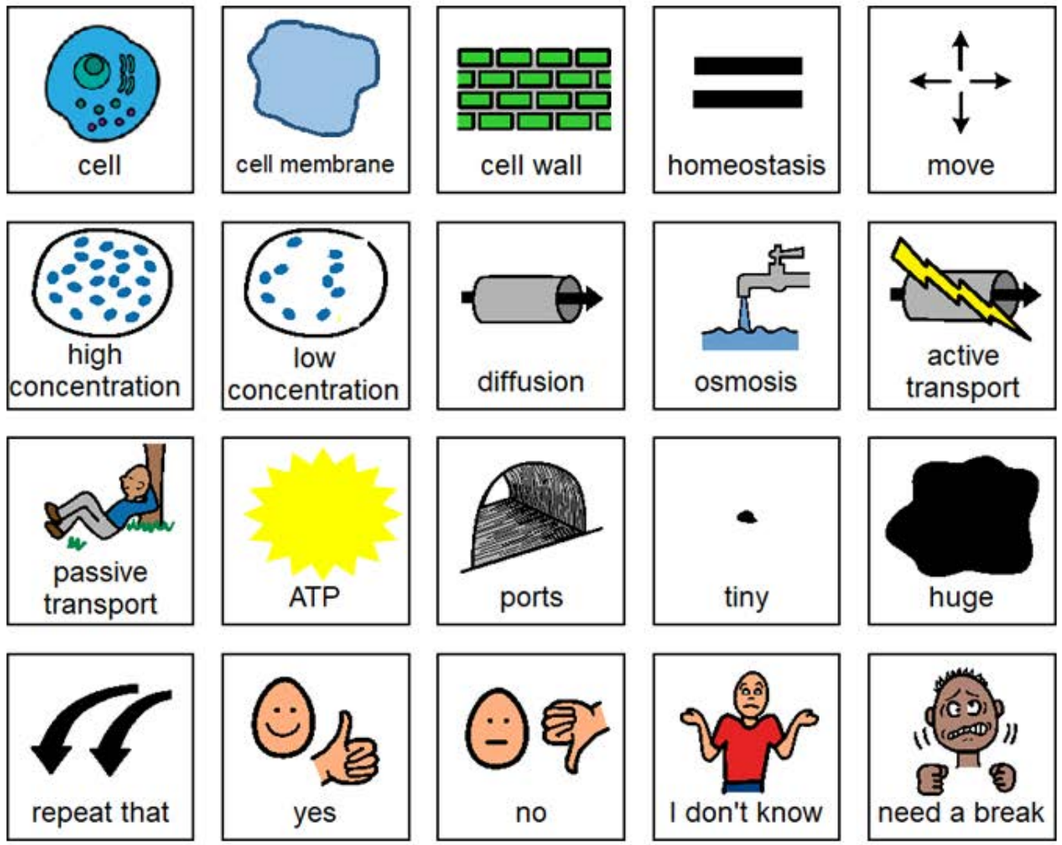
A quick look at what you will do each day

Day 8

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 Speed Matching (10 minutes)	• place all the cards in the middle of the table • hold up a card, and the students race to find it in the pile in the middle of the table ○ NOTE: for students with physical challenges, allow them to simply find the symbol on their board or communication device	• Vocabulary cards (extra sets)
Review close worksheet (5 minutes)	• Review the close worksheet from yesterday	• Finished activity from yesterday
Close Worksheet (10 minutes)	• Complete the second close worksheet on osmosis that focus on the scientific method overview • Use color coding if needed (see note on page 1 for more information) • *This is your first real chance to begin assessing if your students are making connections to the material.*	• Book (if needed for students to find answers) • Vocabulary board • Close worksheet • Scissors • Glue
Sharing (10 minutes)	• Each student shares their finished close worksheet with the group using the communication method of their choice	• Completed worksheets • Communication devices

The lesson plans contain:

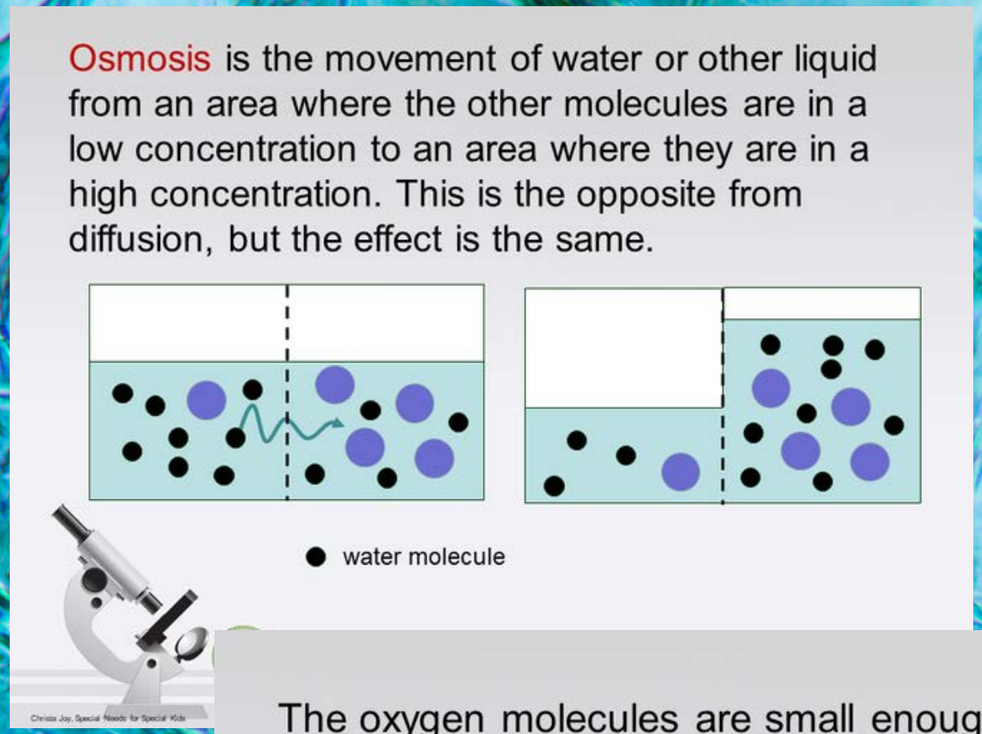
Detailed instructions on how that day's lesson should run

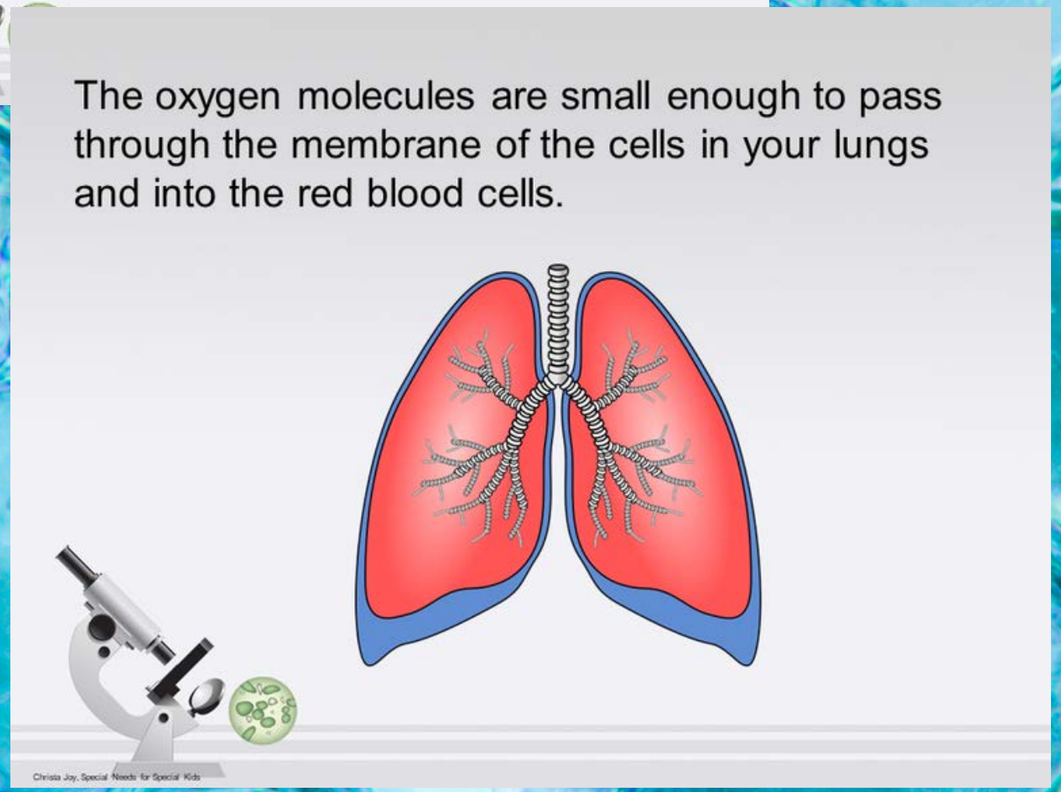


This unit comes with a vocabulary board.

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

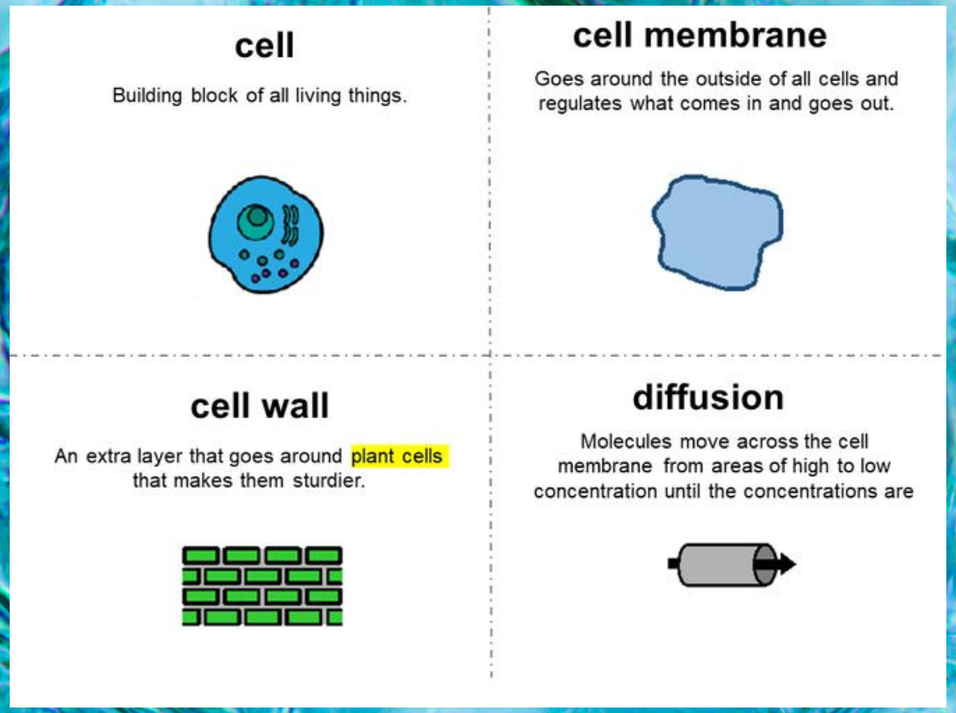
Tips on how to use in the unit!!

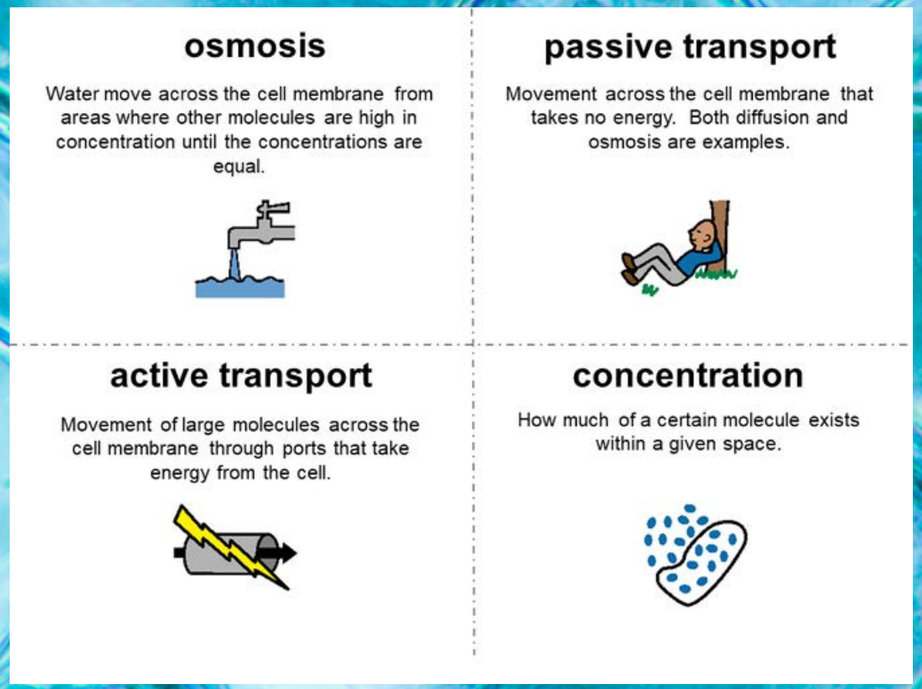




There is a book with this unit using simple text and photos. It is 33 pages and is an overview of diffusion, osmosis and active transport.

Both come in pdf versions as well as a voice-recorded powerpoints (so you don't have to print it out.)





There are 11 vocabulary cards that come in color and black and white.

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

cell

Building block of all living things.

cell membrane

Goes around the outside of all cells and regulates what comes in and goes out.

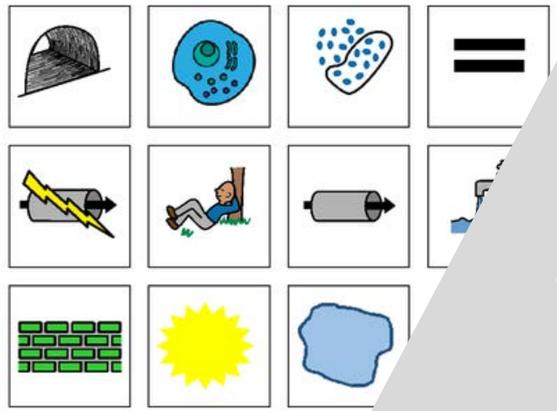
cell wall

An extra layer that goes around plant cells that makes them sturdier.

diffusion

Molecules move across the cell membrane from areas of high to low concentration until the concentrations are equal.

Cut apart and match pictures with definition.



osmosis

passive transport

active transport

concentration

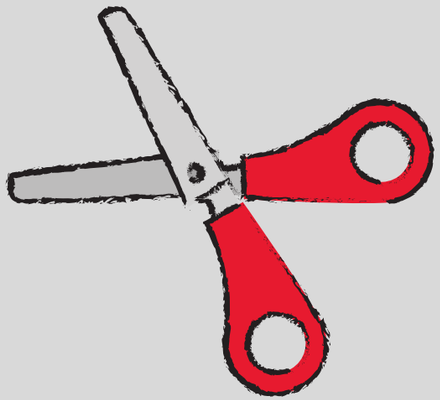
An extra layer that goes around **plant cell**s that makes them sturdier.

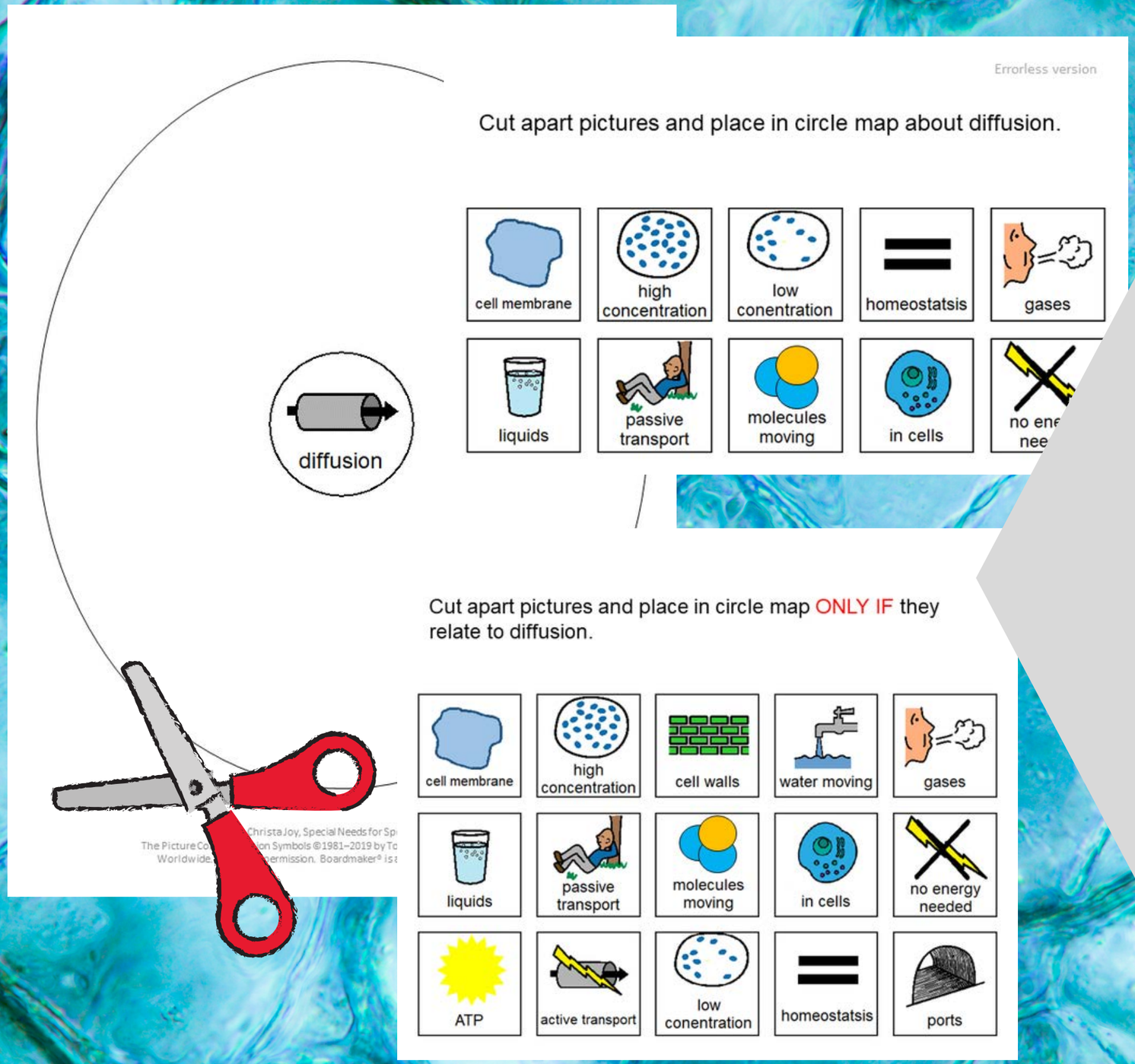
How much of a certain molecule exists within a given space.

Molecules move across the cell membrane from areas of high to low concentration until the concentrations are equal.

Equal co… si…

On days 10&11 there is an activity where students will match either the picture to the definition or the definition to the picture (harder).



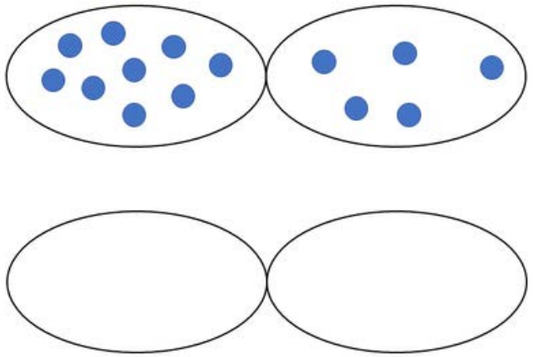


There are 3 circle maps one on diffusion, one on osmosis, and one on active transport.

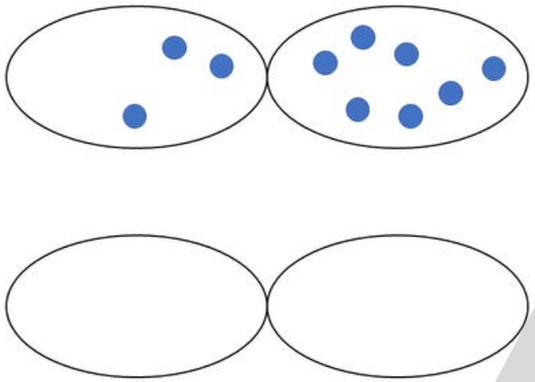
Circle maps are a great way for students to see the concept at a glance. There are 2 versions:

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

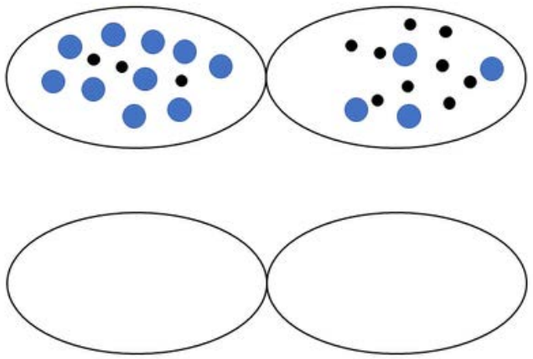
Look at the two cells below. Redraw them to show how homeostasis would look after diffusion. Draw an arrow to show which way the molecules are moving.



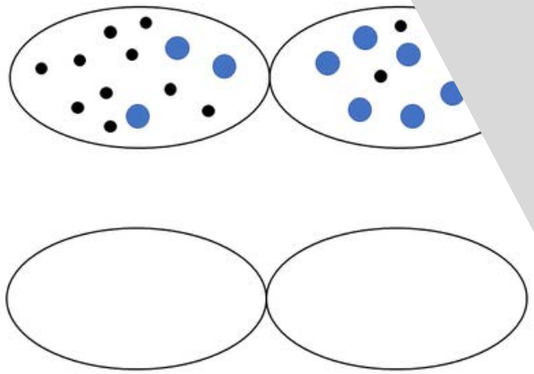
Look at the two cells below. Redraw them to show how homeostasis would look after diffusion. Draw an arrow to show which way the molecules are moving.



Look at the two cells below. Redraw them to show how homeostasis would look after osmosis. *The water molecules are the smaller dots.* Draw an arrow to show which way the molecules are moving.



Look at the two cells below. Redraw them to show how h
osmosis. *The water molecules are the smaller dots.* Draw a
the molecules are moving.



There are 4 activities where students draw what happens in diffusion or osmosis in the two cells in order to achieve homeostasis.

Gummy Bears (Osmosis #2)
Teacher Directions

- I like using the team format to encourage cooperation and communication. It also provides great opportunities to use each other's names and even record them as team members.
- Have students gather materials for the experiment.
- *Note: in this experiment, the gummy bears will act more like plant cells. The gelatin construction keeps the bears from shrinking too much when put in the salt solution. For this reason, I chose to just measure weight rather than circumference. They will swell, however.*
- Record the weight of 5 gummy bears.
- Place 5 gummy bears (weighed) into a cup of plain water.
- Place 5 gummy bears (weighed) into a cup of plain water and then add 3 tablespoons of salt.
- Students will complete pages 1-4 of the handouts that go with this experiment.
- Leave overnight.
- The next day, weigh each set of 5 gummy bears and note ant changes in their appearance.
- The gummy bears placed in plain water will have swelled. The ones in salt water will have shrunken.
- Gummy bears do contain sodium, so the water moves into the gummy bears to lower the concentration of sodium in the gummy bears in the cup with the plain water. In the cup of salt water, the water moves out of the gummy bears to increase the concentration of sodium inside the gummy bears .
- Optional:
  - You can shrink your swollen gummy bears by placing them in a salt solution overnight.

Osmosis Experiment #2

What happened to the gummy bears?

People on my team: _____ _____

_____ _____

Materials needed:

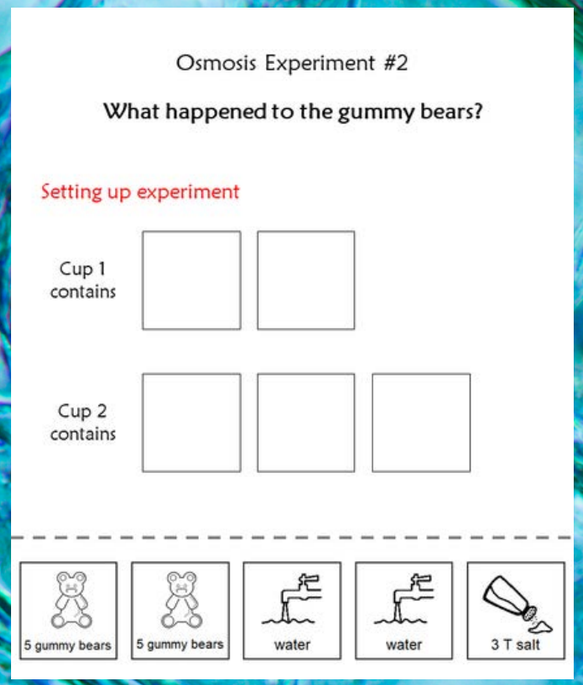
Osmosis Experiment #2

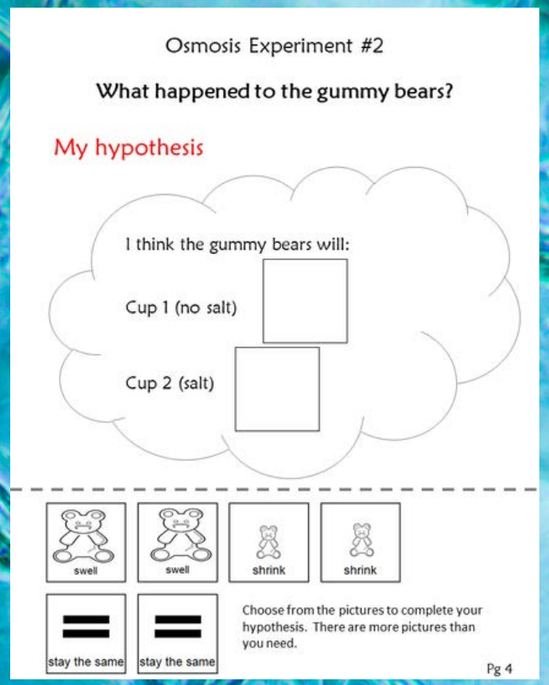
What happened to the gummy bears?

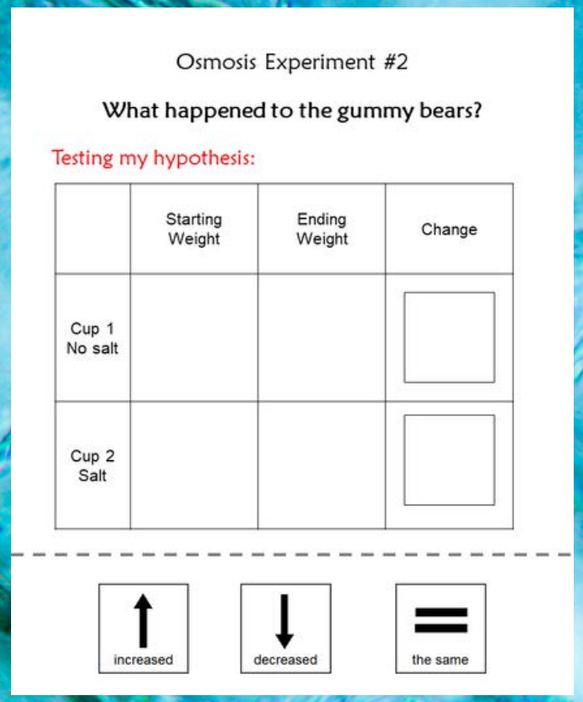
Data collection

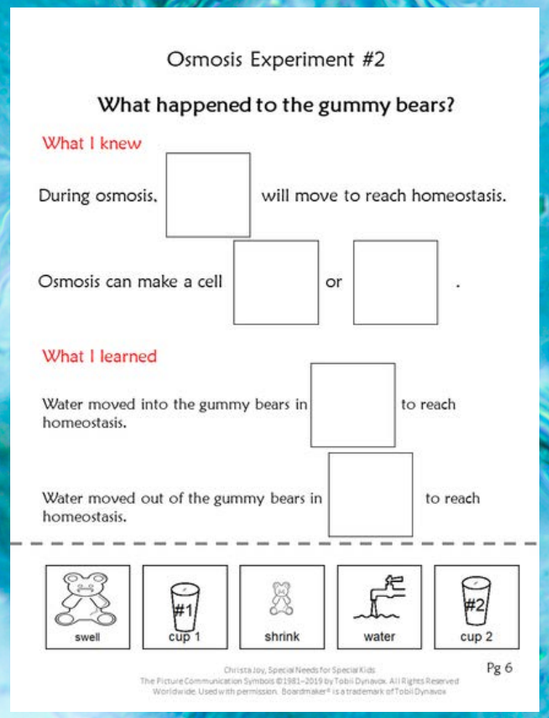
	Weight
Cup 1 5 gummy bears	
Cup 2 5 gummy bears	

There are 3 experiments. One for diffusion and 2 for osmosis. There are teacher directions and worksheets for students to fill out as the experiment is conducted.

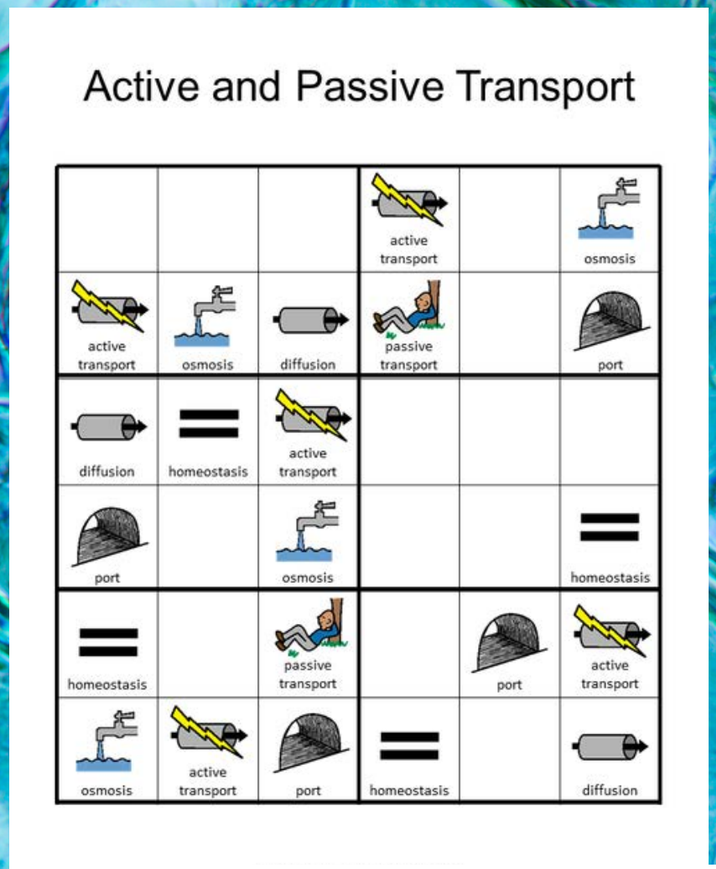


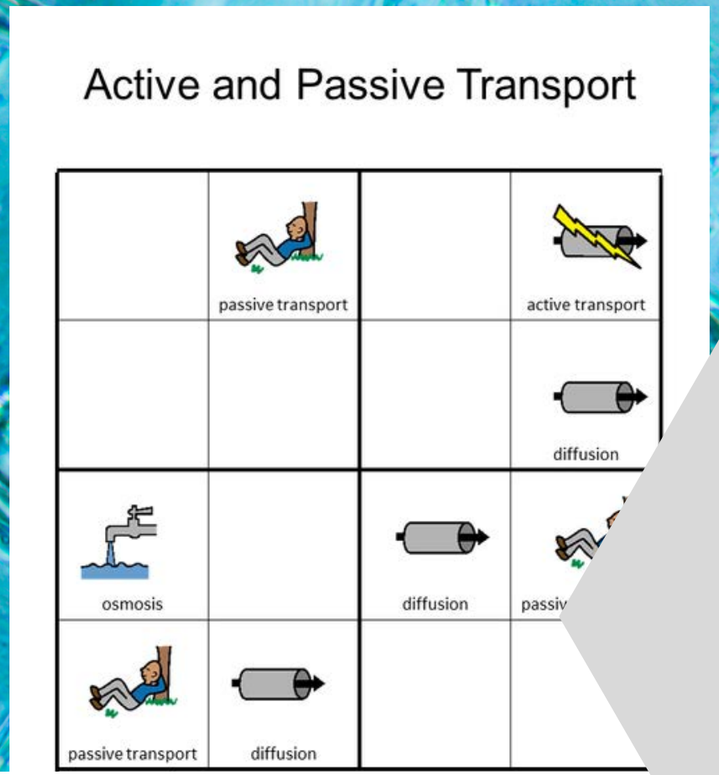




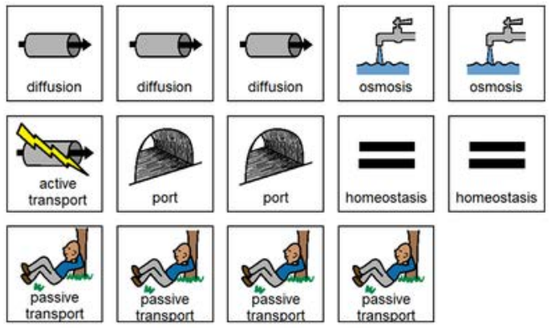


The worksheets will walk students through the steps of the scientific method.



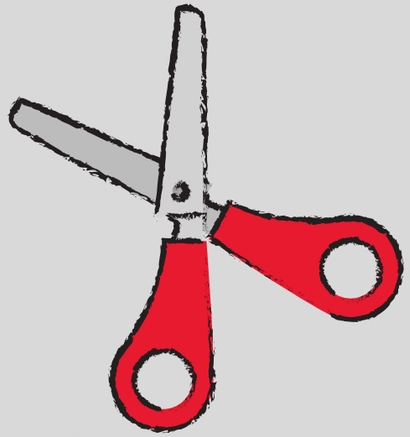


Place the following images in the empty squares on the previous page, completing the sudoku puzzle.



There is a Sudoku puzzle in this unit as well. This is a great way to work with the new vocabulary!!

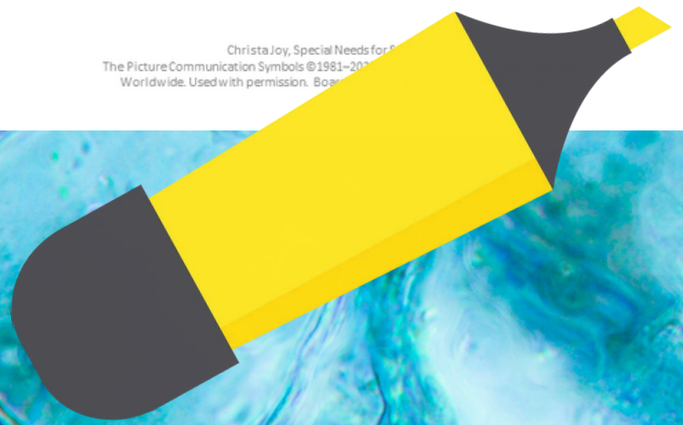
There are 2 versions plus answer keys.



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

cell
membrane
diffusion
osmosis
passive

active
transport
concentration
homeostasis
port



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

cell
membrane
diffusion
osmosis
passive

active
transport
concentration
homeostasis
port

Christa Joy, Special Needs for Special Kids
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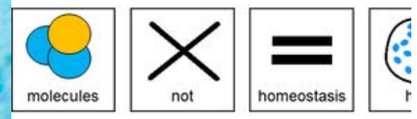
There is also a word search to work with vocabulary. If your students cannot do a word search, have them highlight the circle words on the answer key.

Diffusion

1. Diffusion occurs in an effort to reach [ ].
2. During diffusion [ ] move across the cell membrane.
3. The molecules will move from and area of [ ] concentration to an area of [ ].
4. Diffusion does [ ] take ener
5. Diffusion is a form of [ ]



Osmosis

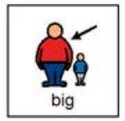
1. Osmosis occurs in an effort to reach [ ].
2. During osmosis [ ] move across the cell membrane.
3. Water will move to where the other molecules are in concentration. [ ]

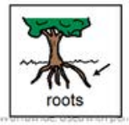
e energy from the cell.

.

Active Transport

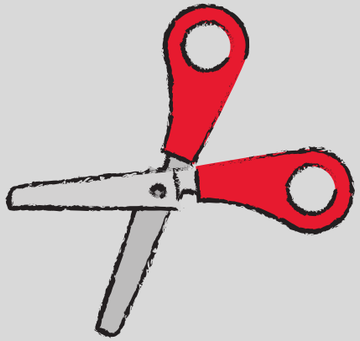
1. Active transport uses energy in the form of [ ] from the cell.
2. Active transport is how [ ] molecules move across the cell membrane.
3. Active transport uses special [ ] in the cell membrane.
4. [ ] use active transport to get nutrients up the stem.
5. White blood cells will release [ ] via active transport to fight viruses.





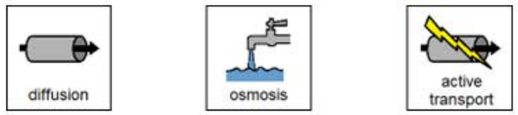
Close worksheets are a great informal assessment. There are three worksheets, one for each type of cell transport.

Answer key included.

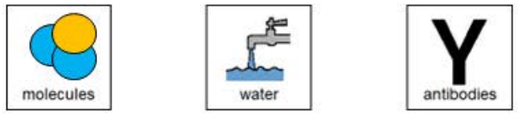


Version 1

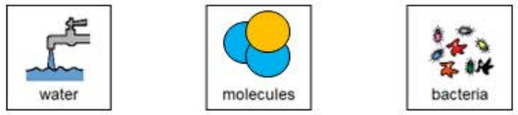
1. Which of the following takes energy from the cell?



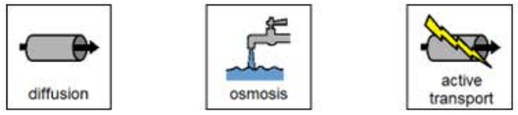
2. What is moving during osmosis?



3. What is moving during diffusion?



4. Molecules move from areas of high to low concentration during:



5. What is the cell trying to achieve during passive transport?

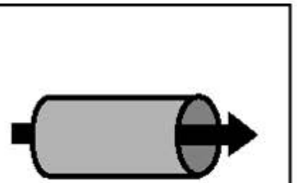
FINALLY the assessment!! There are 3 versions. This version has 10 questions with 3 picture choices for each question.

Answer key included.

Version 2

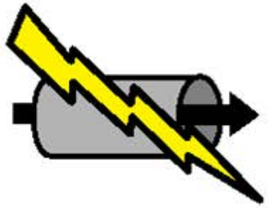
Print onto cardstock or mount on index cards. Cut pictures apart and show student answer choices for each question.

Q 1,4,6



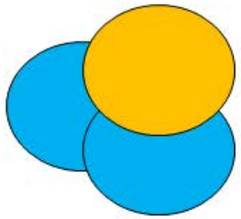
diffusion

osmosis



active transport

Q 2



molecules

water

antibodies

With this version, you cut out the answer choices and glue them on index cards. Ask the student the question, and they point to the correct answer.

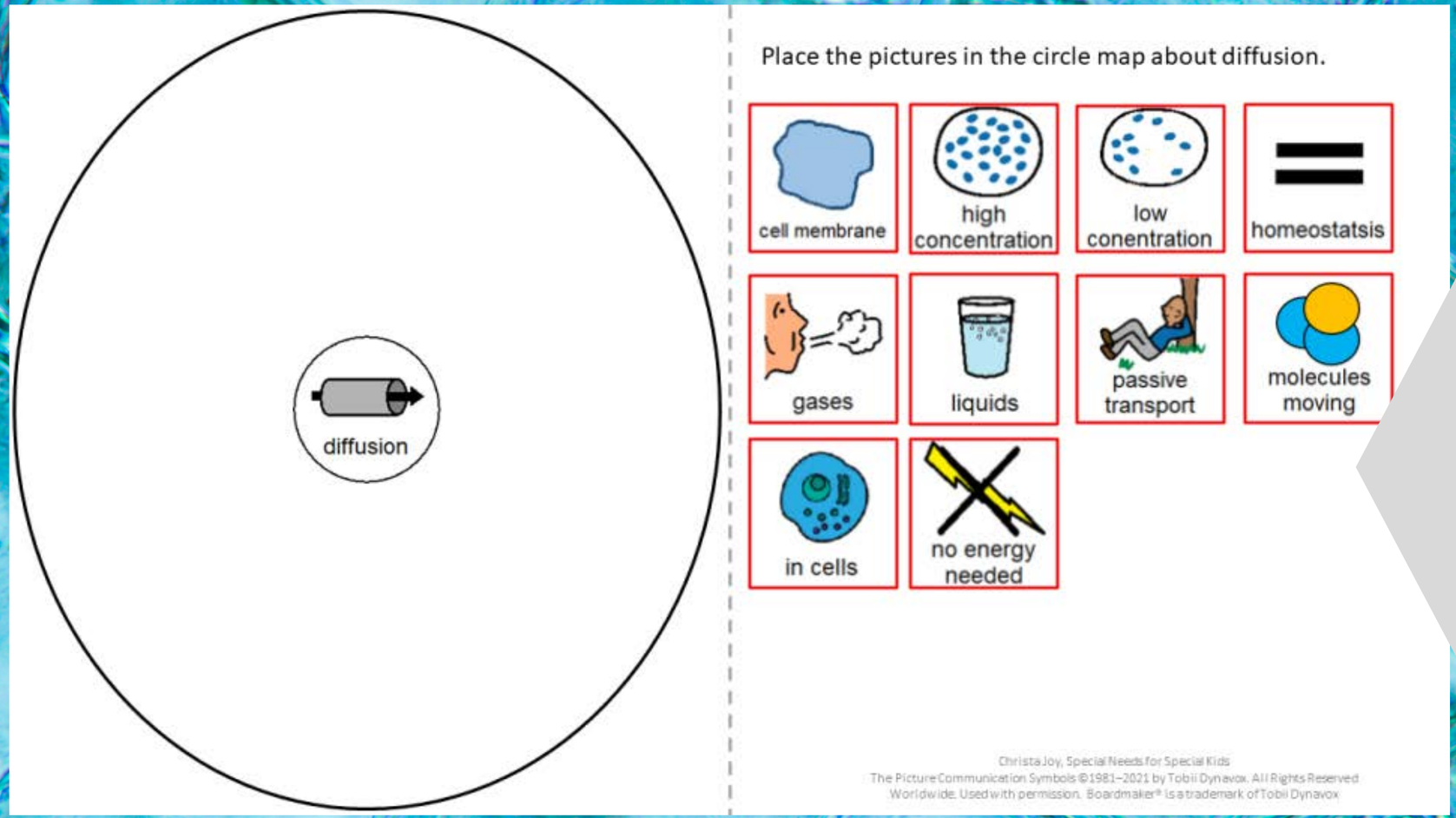
Version 3

1. Which of the following takes energy from the cell?
   A. Diffusion
   B. Osmosis
   C. Active Transport
2. What is moving during osmosis?
   A. Molecules
   B. Water
   C. antibodies
3. What is moving during diffusion?
   A. Water
   B. Molecules
   C. Bacteria
4. Molecules move from areas of high to low concentration during:
   A. Diffusion
   B. Osmosis
   C. Active Transport
5. What is the cell trying to achieve during passive transport?
   A. Homeostasis
   B. Rest
   C. exercise
6. Roots taking nutrient up the stem is an example of:
   A. Diffusion
   B. Osmosis
   C. Active Transport

This is your traditional multiple choice version. It can also be used as a recording sheet if your students are using the version with index cards.

Listen to the book read aloud

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



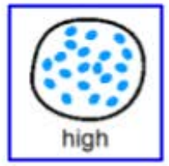
Place the pictures in the circle map about diffusion.

The digital activities have students click and drag their answers.

Osmosis

1. Osmosis occurs in an effort to reach [ ].
2. During osmosis [ ] move across the cell membrane.
2. Water will move to where the other molecules are in concentration. [ ]
4. Osmosis does [ ] take energy from the cell.
5. Osmosis is a form of [ ].

Use the pictures to correctly complete each sentence.



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

Osmosis Experiment #1

What happened to the egg?

Record your initial data in the chart.
Type in your findings.

Data collection

	Weight	Circumference
Egg 1		
Egg 2		

Osmosis Experiment #1

What happened to the egg?

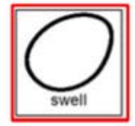
Choose from the pictures below to complete your hypothesis.

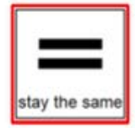
My hypothesis

I think the egg will:

Cup 1 (no salt)

Cup 2 (salt)





There is even a digital version of the 3 experiments for students to complete at home (with supervision). There is some typing required for the experiments.

I realize there will be some students out there unable to do cutting activities. I have a blog post with ways to complete activities without a pair of scissors!!

All of the activities (except the book) come in color and black and white.

Click Here to read more!!