

Cellular Membrane Transport

Passive Transport	Active Transport

Cut out the terms below and place under the correct column for cellular transportation. Check the key prior to gluing them onto the page.

No energy needed, and no ATP required

Down a concentration gradient, from high to low concentration

Against a concentration gradient, from low to high concentration

Requires the use of energy in the form of ATP

Some types require the use of protein carrier/transport molecules

Includes endocytosis – movement of large molecules into a cell (cell membrane folds around the molecules)

Includes osmosis and simple diffusion which do not require any special protein carrier/transport molecules

Facilitated diffusion requires the use of a protein carrier/transport molecule

Plant and Animal Cell Organelles

Cut out the cells, organelles, and functions below. Then sort them onto the cell diagrams on your notebook paper. Draw an arrow to organelles that are in both plant and animal cells. Add color to your drawing and glue the final product onto your notebook paper.

Vacuole

Cell Membrane

Nucleus

Chloroplast

Golgi Body

Cell Wall

Cytoplasm

Mitochondria

A layer of material that supports, protects, and provides strength to plant cells.

The outside boundary that controls what substances can enter or leave a cell. Ex: window screen

The control center of a eukaryotic cell that directs the cells activities & contains DNA

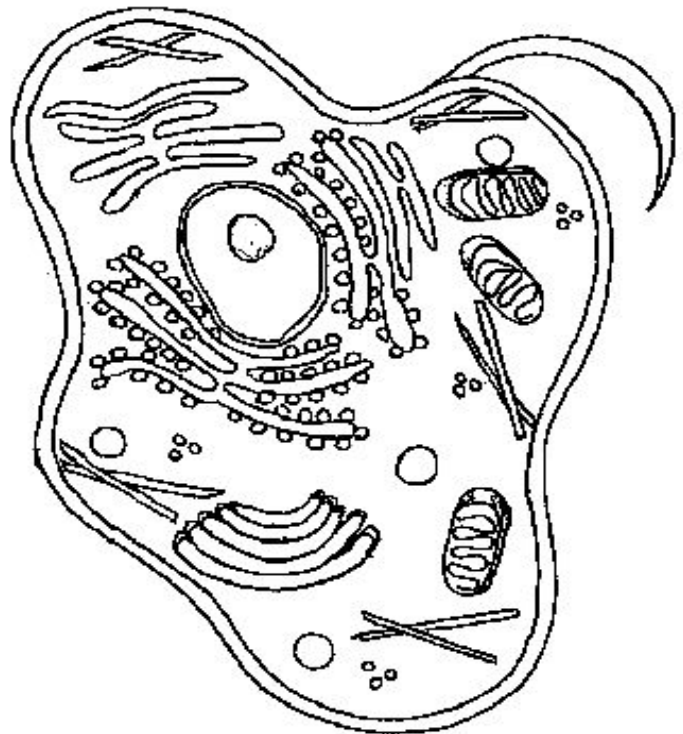
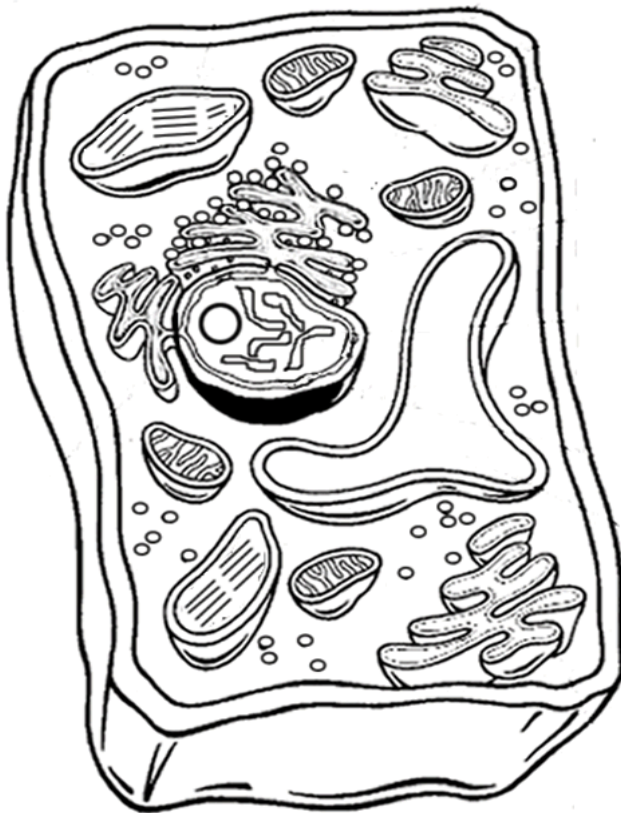
A sac inside cells that store food, water, waste, and enzymes (speed up reactions).

Structure that converts energy in food molecules to energy the cell can use.; 2nd stage of respiration.

Structure in plant cells & other organisms that capture energy from sunlight to make food.

Sorts, packages, and ships proteins from one part of the cell to another. Ex: FedEx

The jelly-like fluid inside the cell holds the organelles in place; 1st stage of respiration.



After completing the activity, answer the following questions onto your notebook paper:

1. What two organelles are ONLY found inside plants?
2. Organelles work together to obtain energy, reproduce, and maintain homeostasis. Predict what would happen if one organelle was removed. How would that affect the function of the cell?

Cells & Organelles

Name _____

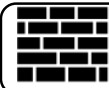
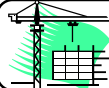
Directions: Match the function cards and memory items by gluing them into the correct locations in the chart below.

Organelle	Function/Description	How can I remember it?
Cell Membrane		
Cell Wall		
Cytoplasm		
Mitochondria		
Lysosomes		
Vacuoles		
Golgi Bodies		
Chloroplasts		
Endoplasmic Reticulum		
Ribosomes		
Nucleus		
Nucleolus		
Chromatin		

Function Cards

Captures energy from the sunlight and uses it to produce food in a plant cells	Receives proteins & materials from the ER, packages them, & distributes them
Controls what comes into and out of a cell; found in plant and animal cells	Produces the energy a cell needs to carry out its functions
Gel-like fluid where the organelles are found	Assembles amino acids to create proteins
Control center of the cell; contains DNA	Stores food, water, wastes, and other materials
Found inside the nucleus and produces ribosomes	Has passageways that carry proteins and other materials from one part of the cell to another
Ridged outer layer of a plant cell	Tiny strands inside the nucleus that contain the instructions for directing the cell's functions
Uses chemicals to break down food and worn out cell parts	

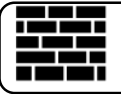
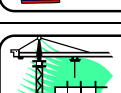
Memory Items

 Make me something sweet to eat	 Members only can come and go.	 I'm a " <u>GOL</u> den" packer.
 I'm a brick wall.	 I am the little nucleus.	 I'm a transport <u>ER</u> .
 I am a "mighty" power house.	 I clean things up! (Hint: Lysol)	 I'll store anything, (Hint: Vacuum Bags)
 I'm the control center.	 I'm a "tin" of information.	 Sail through my plasma.
 I make "some" nice proteins.		

Cells & Organelles

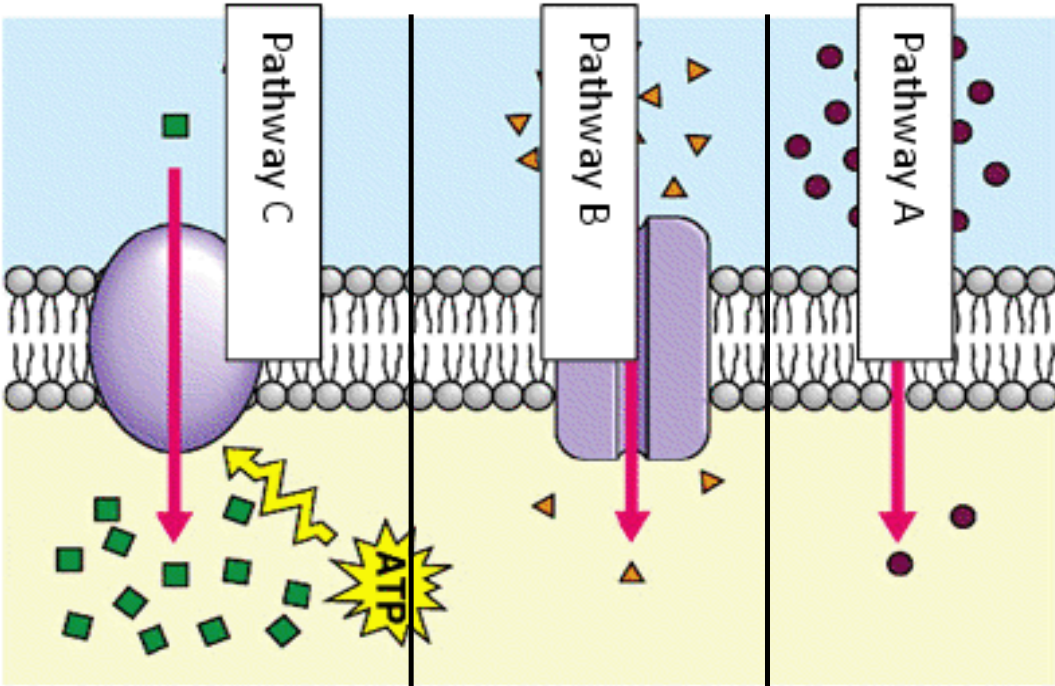
ANSWER KEY

Directions: Match the function cards and memory items by gluing them into the correct locations in the chart below.

Organelle	Function/Description	How can I remember it?
Cell Membrane	Controls what comes into and out of a cell; found in plant and animal cells	 Members only can come and go.
Cell Wall	Ridged outer layer of a plant cell	 I'm a brick wall.
Cytoplasm	Gel-like fluid where the organelles are found	 Sail through my plasma.
Mitochondria	Produces the energy a cell needs to carry out its functions	 I am a "mighty" power house.
Lysosomes	Uses chemicals to break down food and worn out cell parts	 I clean things up! (Hint: Lysol)
Vacuoles	Stores food, water, wastes, and other materials	 I'll store anything, (Hint: Vacuum Bags)
Golgi Bodies	Receives proteins & materials from the ER, packages them, & distributes them	 I'm a "GOLden" packer.
Chloroplasts	Captures energy from the sunlight and uses it to produce food in a plant cells	 Make me something sweet to eat
Endoplasmic Reticulum	Has passageways that carry proteins and other materials from one part of the cell to another	 I'm a transport <u>ER</u> .
Ribosomes	Assembles amino acids to create proteins	 I make "some" nice proteins.
Nucleus	Contains DNA, which controls the functions of the cell and production of proteins	 I'm the control center.
Nucleolus	Found inside the nucleus and produces ribosomes	 I'm in "control" of the number of "ribos".
Chromatin	Tiny strands inside the nucleus that contain the instructions for directing the cell's functions	 I'm a "tin" of information.

Cellular Transportation

Using the diagrams below, and the space to the right of each Pathway image, describe the type of cellular transportation that is occurring, the concentration gradient, and if energy (ATP) is or is not being used.



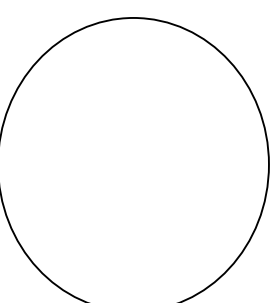
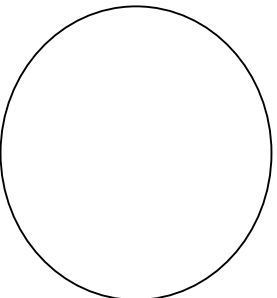
Cellular Transportation	Concentration Gradient	Energy (ATP)

Passive v Active Cellular Transportation

Using the boxes below, describe the type of cellular transportation that is occurring, the concentration gradient, if energy (ATP) is or is not being used, and the types.

<u>Passive Transport</u>		<u>Active Transport</u>
→	Concentration Gradient?	→
→	ATP?	→
→	Types?	→

Draw general image(s) of the concentration gradient for passive and active transportation. Be sure to show the direction the molecules are moving.



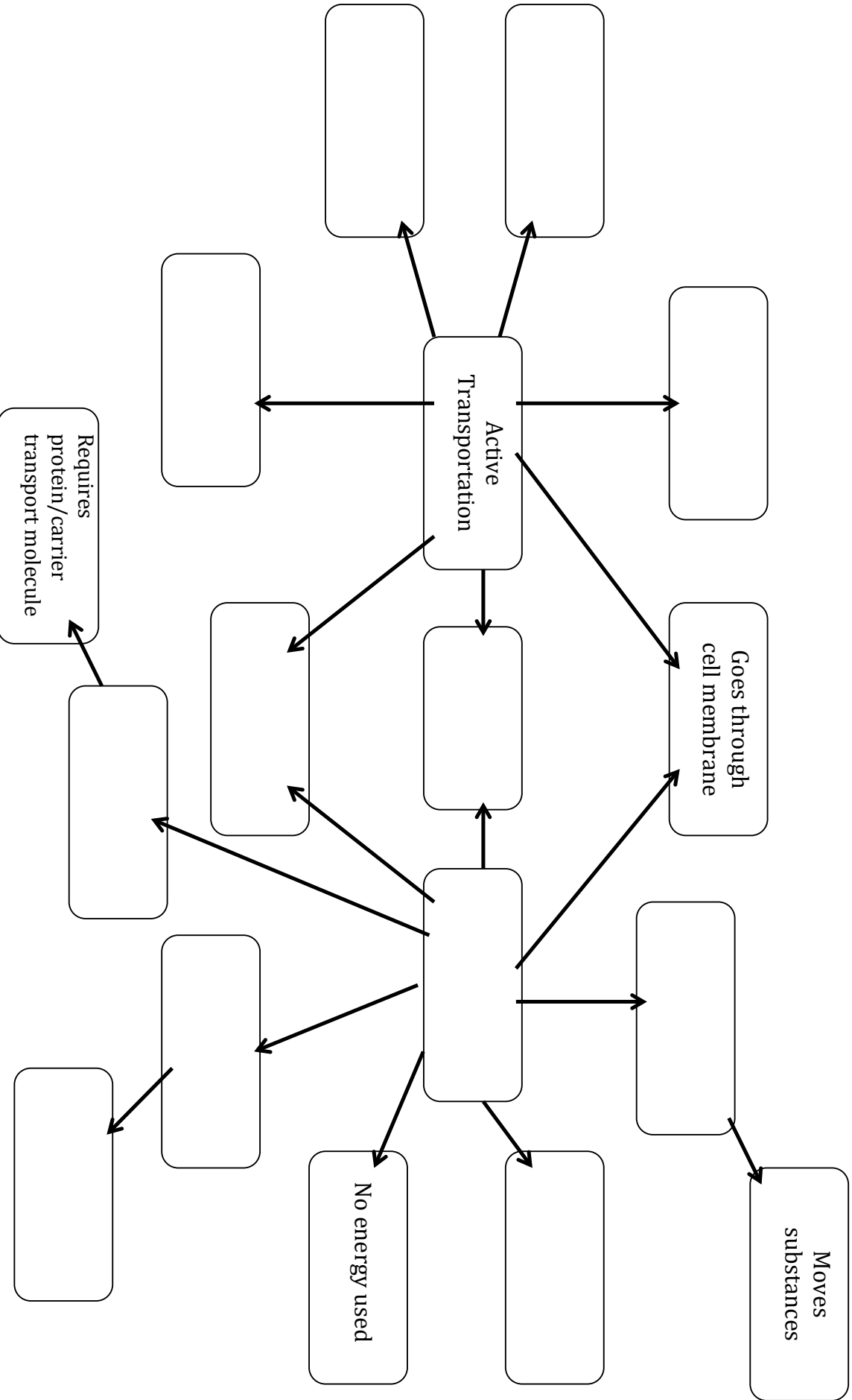
Passive and Active Cellular Transportation
Use the terms below to complete the graphic organizer for passive and active cellular transportation. Write the correct information in each box. Check your answers!

Diffusion
Exocytosis
Osmosis

Moves small molecules
Moves large molecules
Moves water

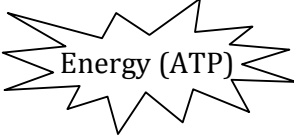
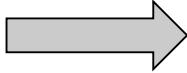
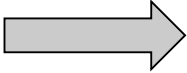
Channels made of proteins
Endocytosis
Passive transportation

Requires energy
Move molecules
Facilitated Diffusion



Photosynthesis and Cellular Respiration Activity

Cut out the boxes below to make the equations for photosynthesis and respiration. Include the organelles that are used in the process. Check your answers then glue the final product onto notebook paper.

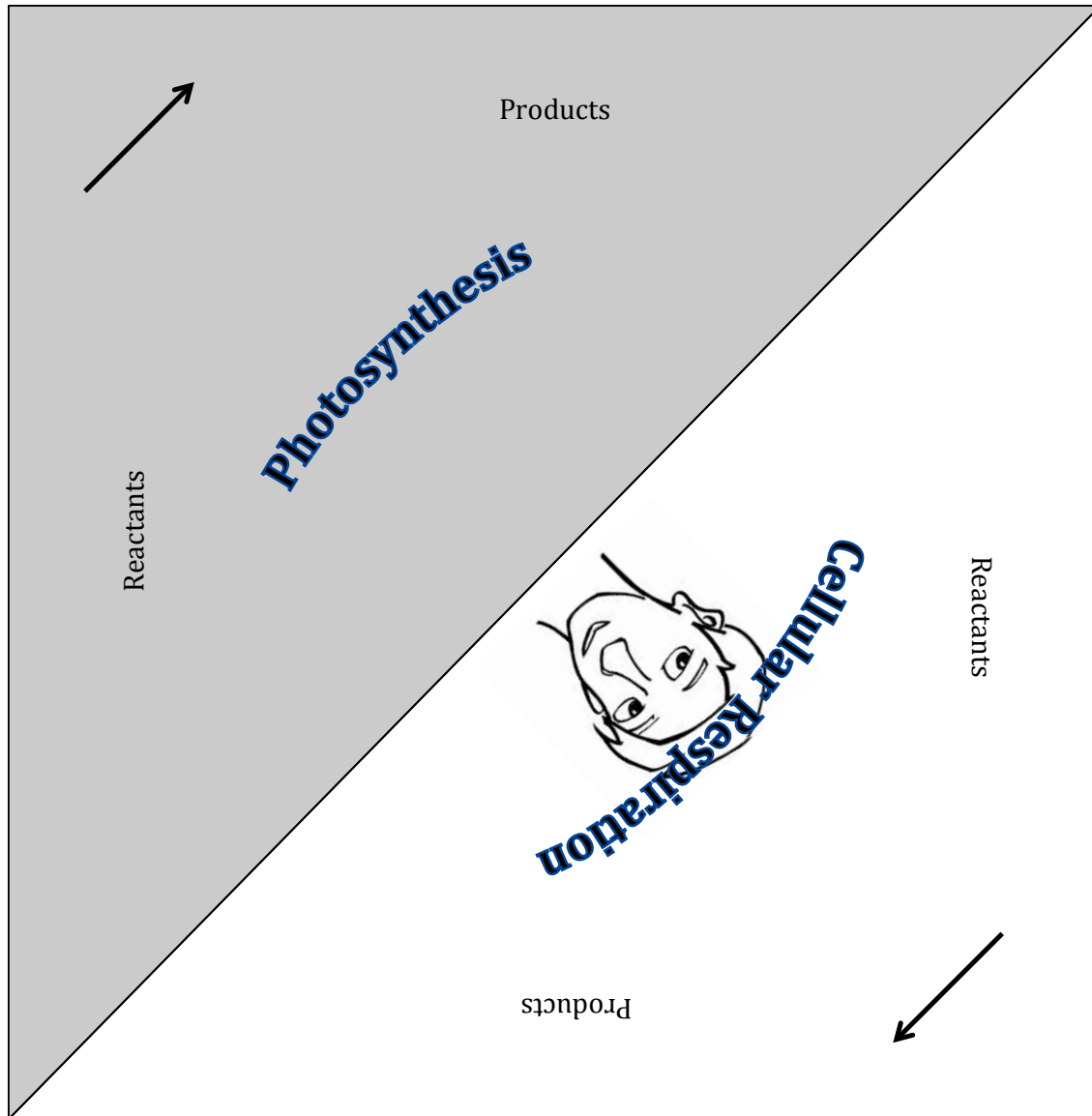
6CO ₂ Six Molecules of Carbon Dioxide	6H ₂ O Six Molecules of Water	Mitochondria
6CO ₂ Six Molecules of Carbon Dioxide	6H ₂ O Six Molecules of Water	Chloroplast
6O ₂ Six Molecules of Oxygen	C ₆ H ₁₂ O ₆ One Molecule of Glucose (sugar)	Cytoplasm
6O ₂ Six Molecules of Oxygen	C ₆ H ₁₂ O ₆ One Molecule of Glucose (sugar)	Sunlight
Reactants	Products	
Reactants	Products	
Yields 	Yields 	
		
		

After completing the activity, answer these questions on your notebook paper:

1. Explain how photosynthesis and respiration are similar.
2. Explain how photosynthesis and respiration are different.

Photosynthesis and Cellular Respiration Activity

On the triangles below make the equations for photosynthesis and respiration. The triangles make a square that should identify the relationship between photosynthesis and respiration. Using the labels at the bottom, show the organelles and elements that are used in the process.



Use the terms below to complete the diagram box for photosynthesis and respiration.

Chloroplasts

Carbon Dioxide

Glucose

Mitochondria

Water

Carbon Dioxide

Sunlight

Oxygen

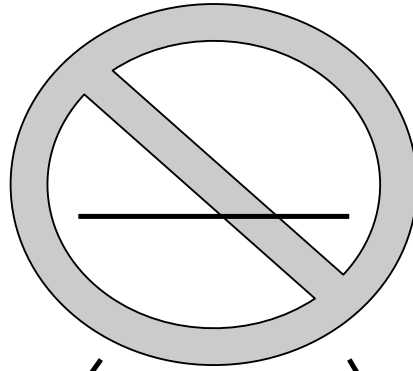
Water

Glucose (sugar)

Oxygen

Energy (ATP)

Fermentation



Two Types

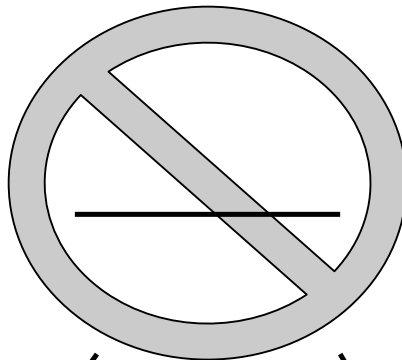
Lactic Acid Fermentation: buildup
of lactic acid in your muscles.

Caused by:

Alcoholic Fermentation:
production of alcohol

Examples:

Fermentation



Two Types

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Examples: