**November Notes: Day 2**

**Cellular Respiration: Harvesting Chemical Energy and Air**

Name: Period: Date:

**Do now:** Where in the cell does respiration happen?

Describe 2 changes in the human body during exercise?

**Energy needs of life**

What do we need energy for?

* (building for growth)


* (making heat)

**Where do we get energy?**

* Energy is stored in molecules: , ,
* Animals these organic molecules → food. Digest food to get
  + fuels for energy ( )
  + raw for building more
    - * carbohydrates, fats, proteins, nucleic acids

**What is energy in biology?**

:Adenosine TriPhosphate

**Harvesting energy stored in food**

* Cellular
  + breaking down to produce
    - Occurs in
    - Using =“ ” respiration
  + usually digesting
    - but could be other , , or

**Copy the formula for Respiration**

**What do we need to make energy?**

* The “power house” for making energy:
* Fuel: food: , ,
* Helpers: , ,
* Product:
* Waste products: ,
* Mitochondria are found in both ,

**Using ATP to do work?**

**Can’t store ATP**

* too
* only used in that produces it
* only short term storage
  + & are long term storage

Why does the body need energy?

After Food is ingested (Eaten) ATP is made.

1st priority is immediate use:

* Energy needed even at
* Control

2nd Priority is synthesis



3rd Priority is storage

* (Animal Starch)

**What if oxygen is missing?**

* No oxygen available = complete
* respiration: also known as
* fermentation
* fermentation
* no or no ( this occurs mostly in bacteria)
  + can only make very
  + large animals cannot survive

**Anaerobic Respiration**

* Fermentation
  1. alcohol fermentation

Occurs in yeast

→ + +

make , ,

* 1. lactic acid fermentation

Done by ,

* + - * → +
      * bacteria make
      * animals feel

Cellular Respiration Brainpop Quiz

1. What do the respiratory system and cellular respiration have in common?

1. Oxygen plays a key role in both.
2. They both rely on the heart.
3. They both expel oxygen as a waste product.
4. They have nothing in common.

2. What are the chemical products of cellular respiration?

1. Water and amino acids.
2. Carbon dioxide, nitrogen, and urea.
3. Oxygen, lactic acid, and ammonia.
4. Carbon dioxide, water, and ATP.

3. ATP is to your cells as \_\_\_\_\_\_ is to a car.

1. the engine
2. gasoline
3. the tires
4. the steering wheel

4. Which cells in your body undergo cellular respiration?

1. Your heart cells
2. Your skin cells
3. Your brain cell
4. Every cell in your body

5. How does your body get rid of the carbon dioxide produced by cellular respiration?

1. Through your lungs.
2. Through your urine.
3. Through your sweat.
4. Through your intestines.

6. In which organelles does cellular respiration take place?

1. Nuclei
2. Mitochondria
3. Ribosomes
4. Golgi bodies

7. Which produces more energy, aerobic respiration or fermentation?

1. Fermentation
2. Respiration
3. They produce the same amount of energy
4. It depends on the type of cell

8. How do we get the glucose we need to power our cells?

1. Breathing
2. Exercising
3. Eating
4. Drinking water

9. In fermentation, what do cells use instead of oxygen to break down glucose?

1. Carbon dioxide
2. Water
3. Lactic acid
4. Nitrogen

10. What's one major reason human cells have evolved to depend on aerobic, and not anaerobic, respiration?

1. There's more oxygen in the atmosphere than any other gas
2. Aerobic respiration is simpler than anaerobic respiration
3. Aerobic respiration is faster than anaerobic respiration
4. Aerobic respiration produces more energy than anaerobic respiration