

Respiration of Glucose:

The first stage of glucose metabolism is:

is made up of steps

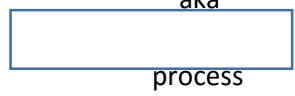
It occurs in the



of a cell

so it does NOT require

aka



process

All steps are reversible except step #s



the "reverse" of this process is called



It begins with the 6-C molecule



Step 1

which is rxn type



to form the molecule



Step 2

is then rxn type



to form the 6-C molecule



Step 3

which is then rxn type



to form the 6-C molecule



Step 4

which is then cleaved into 2 X 3-C molecules,



ketone

&



aldehyde

Step 5

is isomerized into



thus generating 2 X 3-C fragments of



rxn type

Step 6

Yields 2 X 3-C molecules of



*The high-energy phosphates are removed via

Step 7



Rxn type

To form 2 X 3-C molecules of



ENERGY TALLY FOR GLYCOLYSIS

ATP Invested/Lost

ATP made for a net total of # ATP!

& # NADH

Step 8

is then

rxn type

To form 2 X 3-C molecules of

Step 9

Is then

rxn type AGAIN

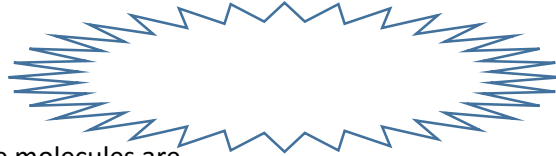
To form 2 X 3-C molecules of

Step 10

* The last high-energy phosphates are removed via

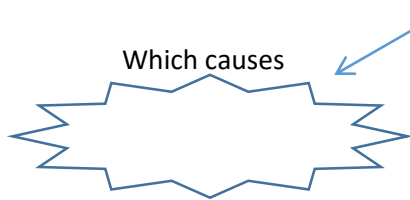
rxn type

TO FINALLY FORM 2 X 3-C molecules of



+ OXYGEN, these molecules are imported into the

of a cell to go the Prep cycle, TCA, & Oxidative Phosphorylation



Which causes

- OXYGEN
* SKELETAL MUSCLE, RBCs

3-C molecule

FOR A NET YIELD OF ATP

When OXYGEN RETURNS, It is converted back into PYRUVATE

In the

Via the process known as the

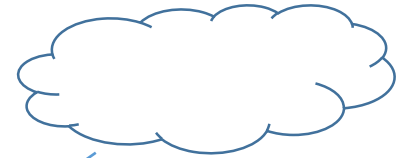
- OXYGEN
YEAST

2-C molecule

and

1-C molecule

aka the process of



PARKING LOT OF TERMS:

Anaerobic

Fermentation

Gluconeogenesis

Glycolysis

Cori Cycle

Liver

Cytoplasm

Mitochondria

Muscle soreness

1

2

2

2

2

3

4

10

10

O₂

Dephosphorylation

Dephosphorylation

Phosphorylated

Phosphorylated

Phosphorylated

Isomerized

Isomerized

Isomerized

CO₂

Lactic Acid/Lactate

Ethanol

Pyruvate

Glucose

Glucose-6-Pi

Fructose-6-Pi

Fructose-1,6-BisPi

Dihydroxyacetone-Pi

1,3-Bisphosphoglycerate

3-Phosphoglycerate

2-Phosphoglycerate

Glyceraldehyde-3-Pi

Phosphoenolpyruvate

