

Creating a Concept/Process Map

An Active Learning Strategy

Taking learning off the screen...

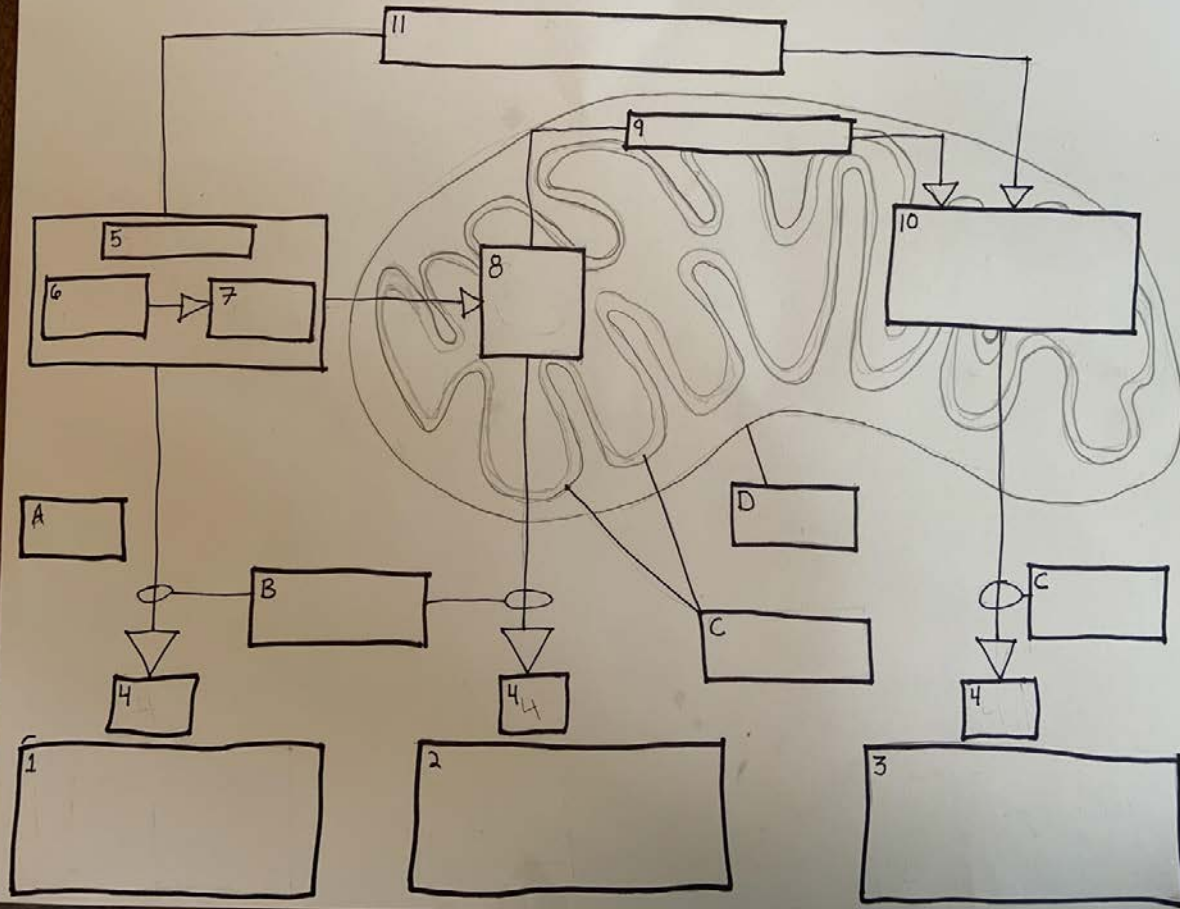
An **active learning strategy** engages your prior knowledge about a subject and allows you to learn through interacting with ideas and materials.

In a course that requires you to integrate topics, such as seeing how the endocrine system interacts with the nervous system, understanding the systems themselves FIRST is key.

Creating concept maps for systems and processes can help you bring your understanding to the next level.

Here's how to do it:

Concept Map: ATP in Cellular Respiration



Step 1:

On a piece of paper, draw out the process you are learning.

Leave blank boxes for each process step and description.

Go through and number the boxes.

Chemical Energy: Electrons that are High Energy

Chemical Energy

Glycolysis

Pyruvic Acid



Electron Transport Chain + oxidative phosphorylation

Mitochondria

Glucose

Via oxidative phosphorylation

Via substrate level phosphorylation

Inner Mitochondrial Membrane (cristae)

Pyruvic acid enter mitochondrial matrix. this is where Citric Acid oxidizes it into CO₂. During CAC + glycolysis, substrate level phosphorylation forms small amounts of ATP

Coenzymes pick up energy rich electrons are transferred to the electron transport chain (in the inner mito. membrane) then carries out oxidative phosphorylation. Generates ATP in Cellular Respiration

In the cytosol, glycolysis breaks down glucose molecules into 2 pyruvic acid molecules

ATP

ATP

Cytosol

ATP

Step 2:

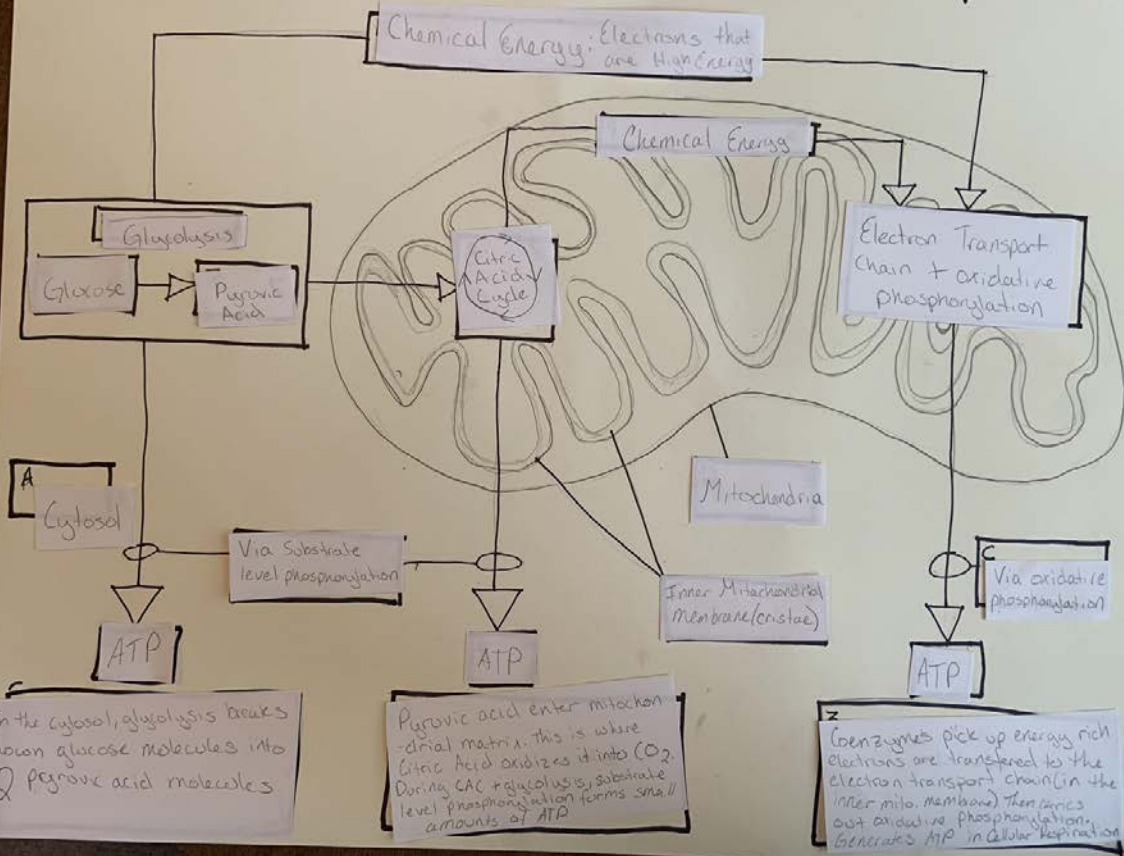
On another piece of paper, write out all the process steps and descriptions.

Leave space between each step and description.

Then cut them out.

Give each a number on the back of the paper that relates to its place on the paper.

Concept Map: ATP in Cellular Respiration

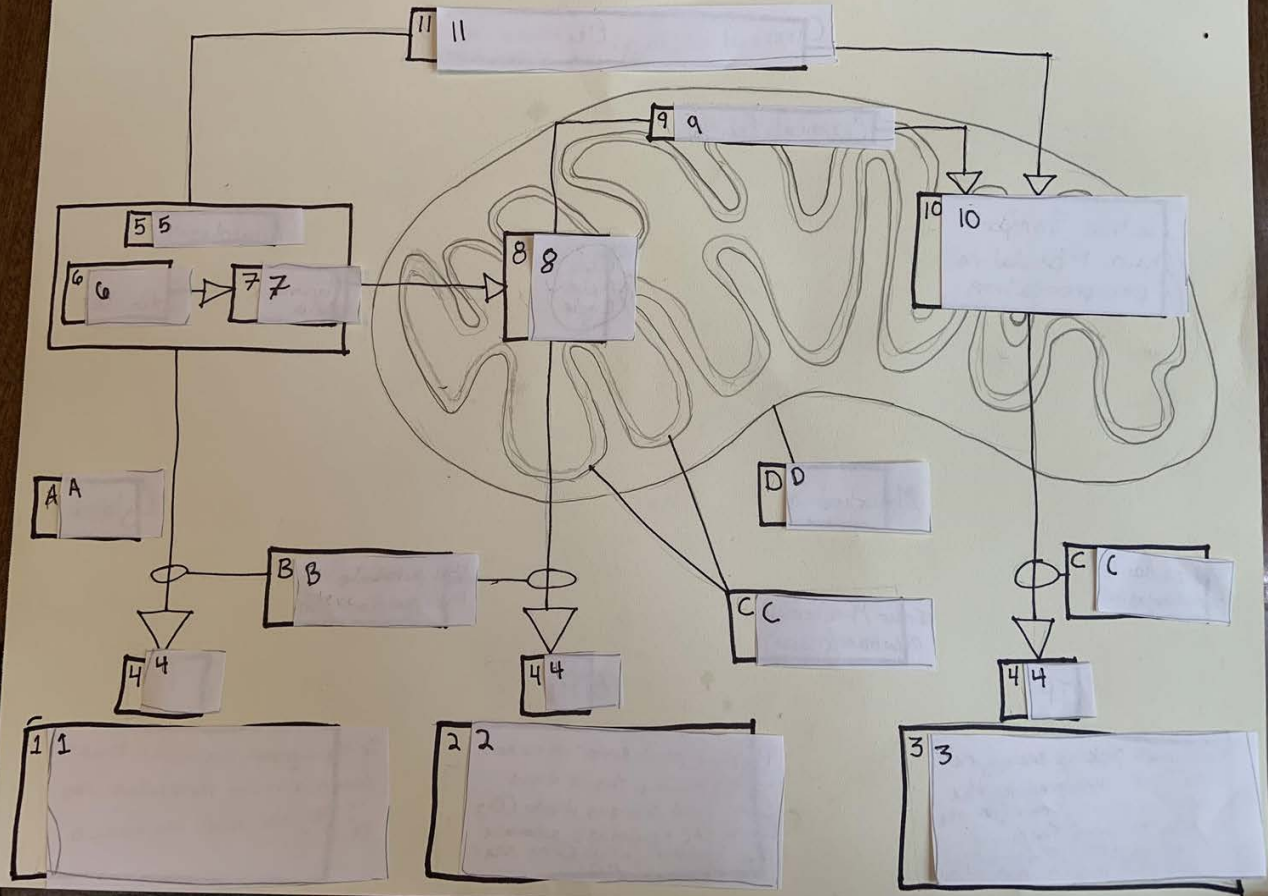


Step 3:

Make sure all the pieces of paper that were cut out all lay face up.

Now place them where you think they go in the process.

Concept Map: ATP in Cellular Respiration



Step 4:

Once you think you have the pieces of paper where they belong, flip the pieces of paper over and see if the number on the back matches its location.

Repeat until it's too easy.

Challenge Activity:

Using a white board or another piece of paper, write out the process, including the process steps and descriptions.

Check yourself with class notes or a textbook.

Repeat process until you are sure you have it down.

