Episode 2: COG LOOKS INTO CO_2 AND CELLS

QUESTION: WHY IS CELLULAR RESPIRATION A VALUABLE PART OF THE CLIMATE DISCUSSION?

Before-Video-Viewing-Activity

Activity 1:

Familiarize yourself with these vocabulary words.

1. Carbohydrate – Carbohydrates are made of simple sugars like glucose, fructose, or galactose. A simple carb is made up of one or two simple sugars. A complex carb is a chain of simple carbs. Carbohydrates are a major source of our body's energy. (Note: You might hear someone say, "I need to stop eating carbs." They are talking about eating fewer simple carbs in candy or donuts. What they *mean to say* is "I need to start eating more healthy carbs like those in whole grains and vegetables."

2. Plant Cell – A plant cell is the basic unit of all plants including trees, herbs, bushes, grasses, vines, ferns, and mosses.

3. Cellular Respiration Pathway – The Cellular Respiration Pathway describes the process in cells using oxygen to break down food molecules. Products are carbon dioxide, water, and chemical energy for the cell.

4. Chemical Energy – Chemical Energy is stored in the bonds of chemical compounds. During cellular respiration, energy released is stored in the bonds of ATP (adenosine triphosphate).

Activity 2:

Increase your visual literacy and "warm up" by pondering what you already know about gas exchange. Draw an icon or icons that represents these words to you.

Inhale	Exhale	Born to Run	Carbs
I'm running on empty	Burning Fat	Brain Food	Healthy Diet

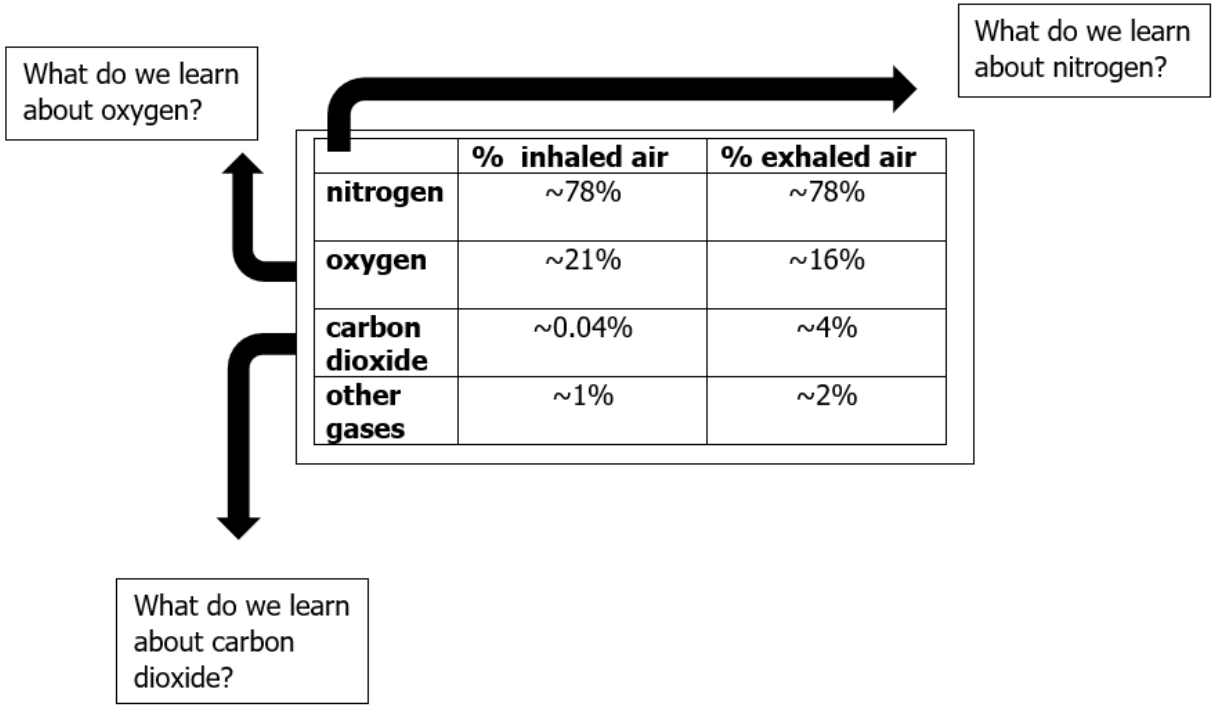
Share your icons with classmates. Add or redraw icons if you choose.

Post-Video-Viewing Activities

Activity 3:

Look at this table. What conclusions can you draw about the air you breathe in and breathe out?
Add balloons to this mind map (brainstorm). Leave room to add more ideas later.

WHY IS CELLULAR RESPIRATION A VALUABLE PART OF THE CLIMATE DISCUSSION?



	% inhaled air	% exhaled air
nitrogen	~78%	~78%
oxygen	~21%	~16%
carbon dioxide	~0.04%	~4%
other gases	~1%	~2%

What does it mean that CO_2 is such a small percentage of the atmosphere, (the air we inhale) and yet it is an important greenhouse gas that warms Earth so life can survive?

Step 4: Discussion

How would you answer the question, "Why is cellular respiration a valuable part of the climate discussion?"