

Cycling of Matter & the Flow of Energy

Name _____
Date _____ Period ____

Brainstorming:

- 1) Make a list of the foods you've eaten (enough to fill up the chart). Next to each item write the word *animal* or *plant* depending on the origin of food source. Some items might be both such as cake in which the flour would be "plant" and eggs would be "animal." Determine whether you are a primary herbivore (vegetarian), carnivore, (meat eater), or omnivore (both plant and animal).

Food Eaten	Source (plant or animal)

I am a (circle one) herbivore, carnivore, omnivore. Explain

- 2) Give three reasons why eating food from plants is a good idea. Give three reasons why eating food from animals is a good idea.

Good to eat plants because: _____	Good to eat animals because: _____
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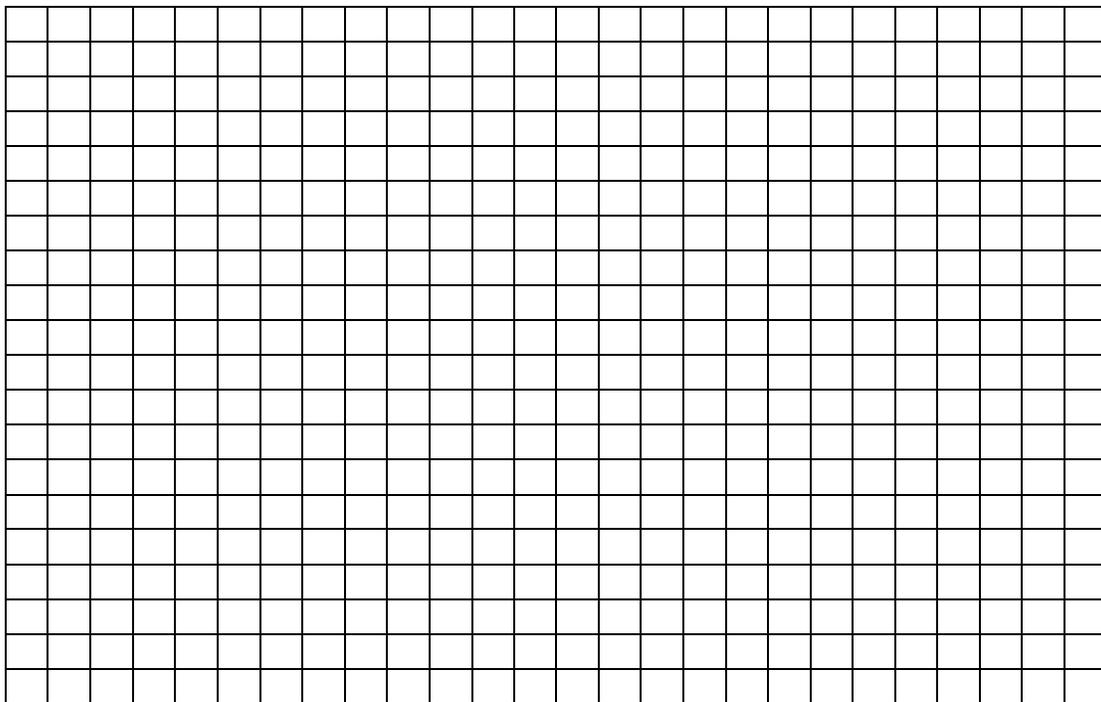
The Flow of Energy

In the box to the right, create a food chain with at least 4 items.

Energy in a Food Chain Activity:

Energy Released along a Food Chain				Add % Energy Released	Subtract from 100%	Multiply by % Transferred
Trophic Level	Energy Source	% Energy Released during Metabolism	% Energy Released to Waste	% Energy Released Total	% Energy Left to be Transferred	Total kcal Transferred based on 20,000 kcal initial
Primary producer						
Herbivore						
Primary carnivore						
Secondary carnivore						

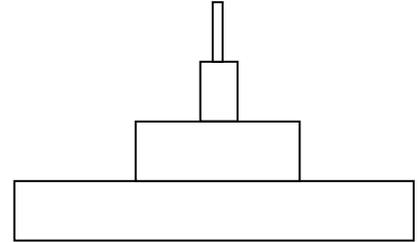
- 1) Construct a graph that shows the amount of energy transfer in this ecosystem: include a title and label both axes



Analysis:

- 1) How much of the original 20,000 kcal of energy is available for
- the secondary carnivore _____
 - tertiary carnivore _____
 - explain what these numbers mean

- 2) Explain what happens to energy as it passes through the different trophic levels.
- 3) Is there more energy transferred to the consumer after eating a pound of rice or a pound of meat? Explain.
- 4) Explain the concept that is illustrated by the pyramid on the right.



- 5) Save the question for class please!
Check out the list of organisms, arrange the organisms represented in the table into trophic levels. Label the organisms as producers or primary, secondary, and/or tertiary consumers. Use arrows to show the energy flow. Justify your labels and arrows in a sentence for each organism.

Going with the Flow

Define:

- 1) Trophic level –
- 2) Decomposer –

Create a concept map (in your notebook) using the following terms: trophic level, food chain, plant, animal, light energy, chemical energy, herbivore, carnivore, consumer, producer, autotroph, heterotroph, decomposer

An Infinite Loop

Read the introduction provided to you.

- 1) Create a color key code for the 4 cycles we will diagram here.
 - a. Carbon/Oxygen
 - b. Nitrogen
 - c. Water
 - d. Phosphorus

Key to symbols:

O₂= oxygen

CO₂=carbon dioxide

N= nitrogen compound

An "Infinite Loop" Cycle Diagrams

*Place all 3 cycles together on this one diagram! (Color code them)

