Food Chain and Food Web

I can identify the organisms that make up a food chain and a food web

Standard 6.1c The chemical elements, such as carbon, hydrogen, nitrogen, and oxygen, that make up the molecules of living things pass through food webs and are combined and recombined in different ways. At each link in a food web, some energy is stored in newly made structures but much is dissipated into the environment as heat.

Slide #1 Motivation/Prior Knowledge

- Think about the last meal you ate. Where did it come from? The cafeteria? Your kitchen? McDonald's?
- It might have come from any of those places, but before that, it came from plants and animals.
- ***WHY*** do you eat? (what does food provide?)

- *For example, this hamburger has meat from a cow, onions that grew in the ground, and bread made from wheat which is also a plant.*

REWIND: ENERGY (from food) is necessary to carry out ***life functions***. Do you remember how food energy is converted to cell energy?

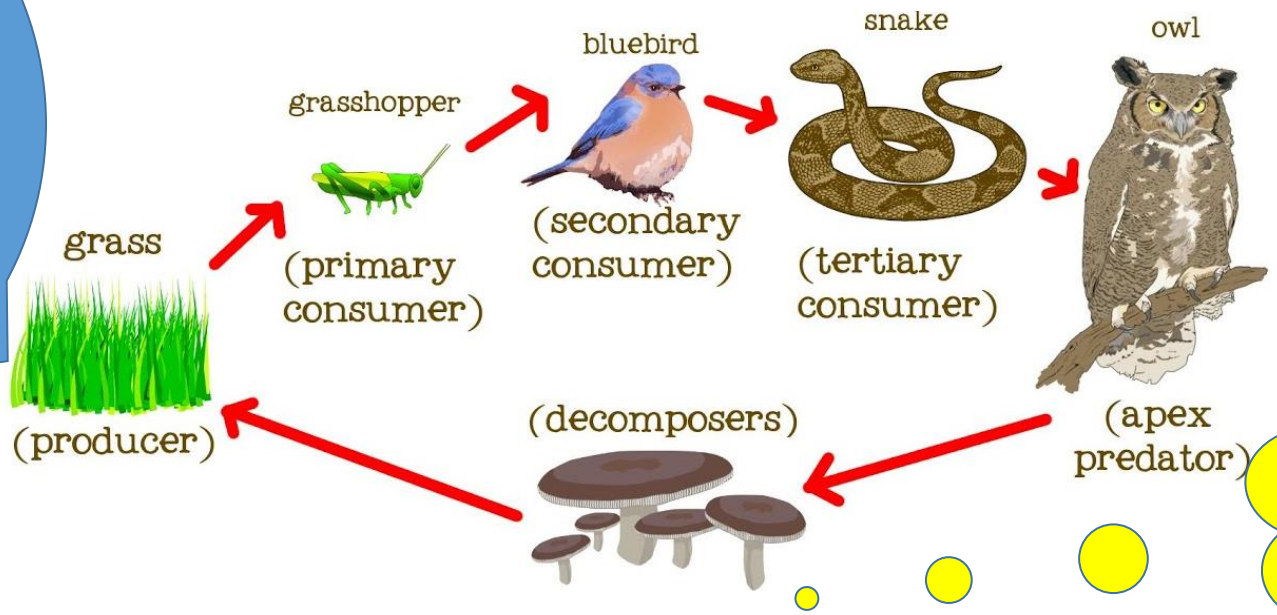
Slide 2: Mini-Lesson What is a food chain?

Food chains are *models* that help us understand how ***energy*** moves through *an ecosystem.* The *arrows* in a food chain show the direction the energy is flowing.

Food chains MUST have 3 components; ***producers***, ***consumers***, and ***decomposers***

Grass (and any plant) are *producers.* Producers are organisms that use the *sun's energy* to PRODUCE food by *photosynthesis*

Consumers are organisms that CANNOT produce their own food. They must *consume (eat)* other organisms to obtain their ***energy***



REGENTS FACT:

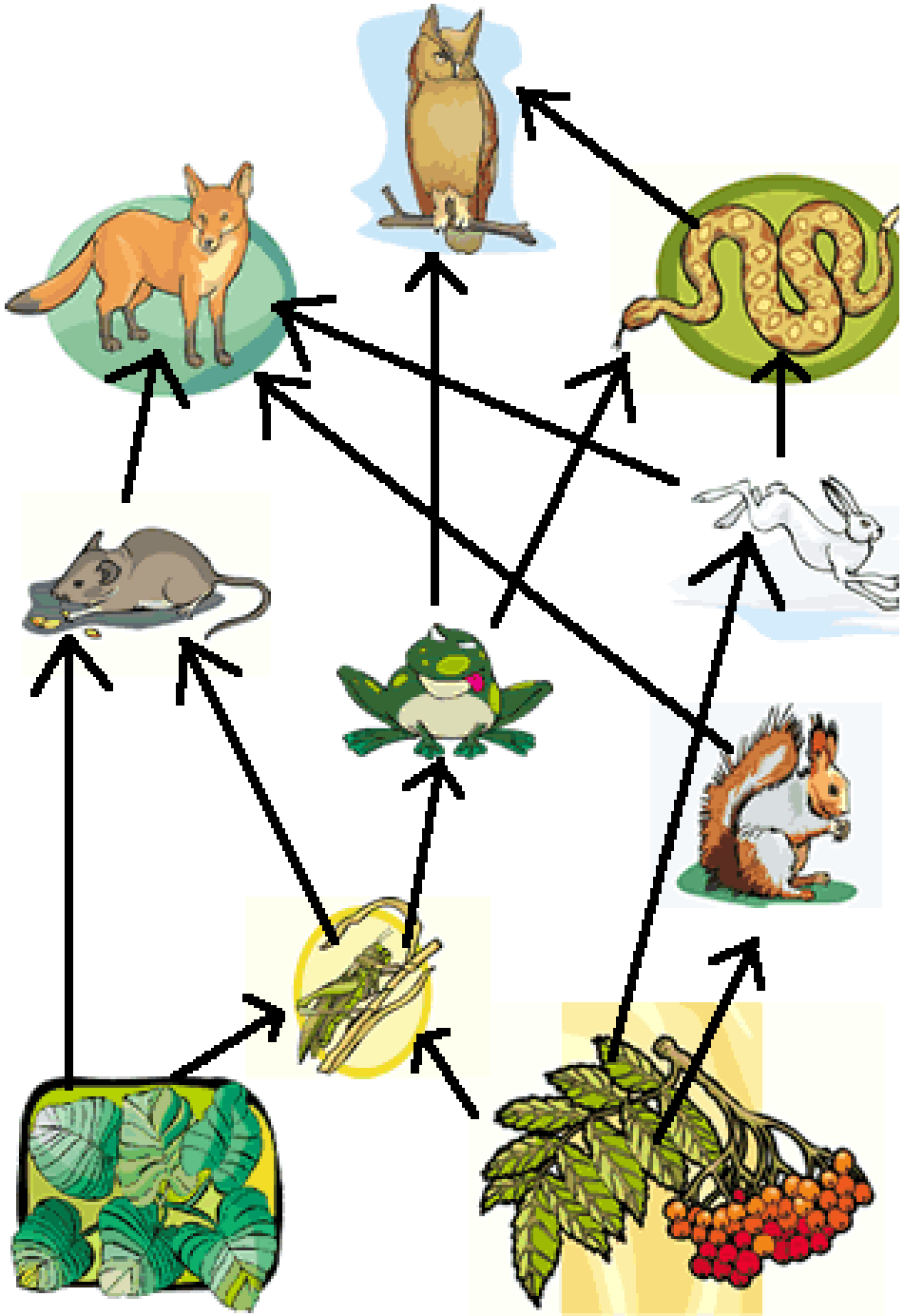
There are 3 types of consumers:

Herbivore: an organism that eats only plants

Carnivore: an organism that eats only animals

Omnivore: an organism that eats both plants and animals

Decomposers are ***BACTERIA and/or FUNGI*** that decompose (break down) ANY dead organisms



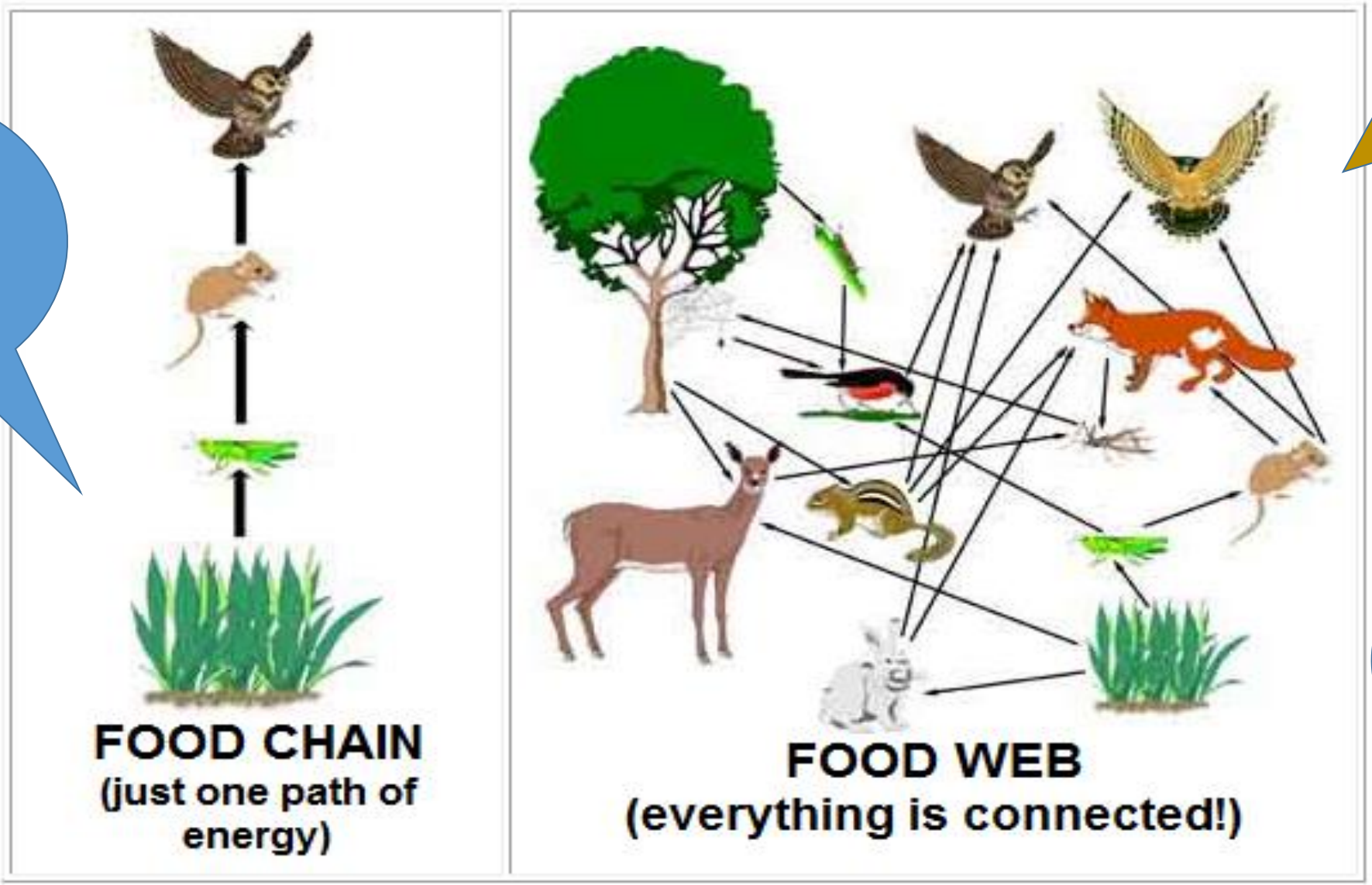
Slide #3: Mini-lesson What is a food web?

A food web shows the ***connections*** between two or more food chains.

- For example, in the food web to the left, a squirrel and a grasshopper eat from the same plant.
- Then, a frog or a mouse might eat the grasshopper.
- The frog might be eaten by a snake or an owl.
- REMEMBER: Each time something is eaten, ***energy is transferred*** from the organism being eaten to the organism doing the eating.
- Can you identify some other overlapping food chains in this food web?

Slide#4- Food chain vs. Food web

In a food chain, ENERGY flows in one direction



In a food web, everything is interconnected

How many food chains can you identify in this food web?

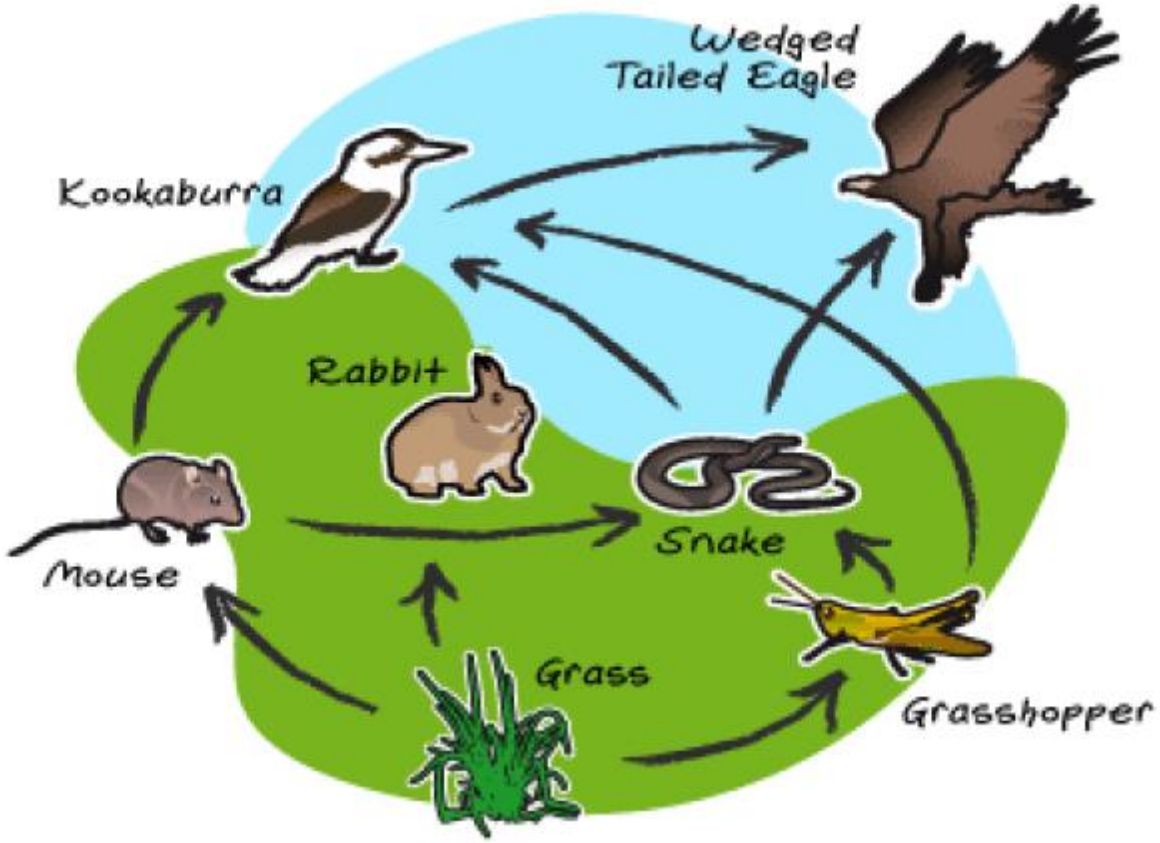
Slide #5- Let's Practice

- <u>1. For the food web, label each organism: (Some may have more than one label)</u>
- producer
- consumer

2. Now label each consumer as either a :

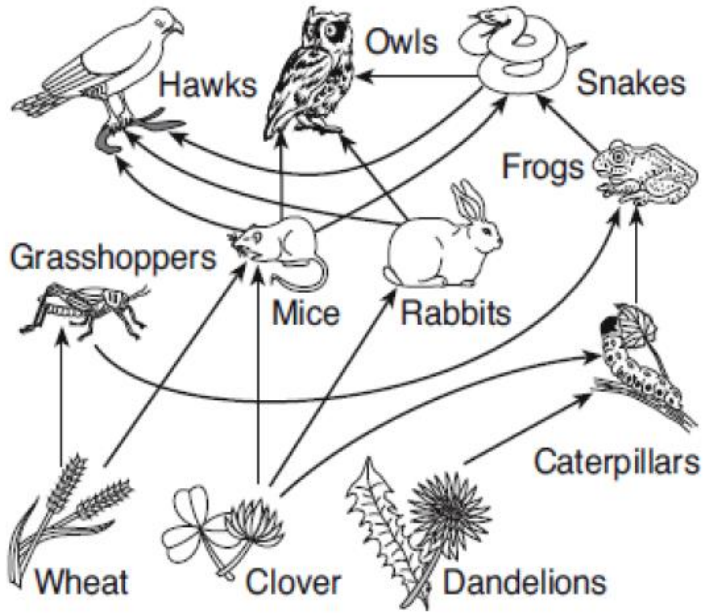
- herbivore
- carnivore
- Omnivore

3. Which organisms are missing from this food web



Slide 6- Regents practice

The diagram represents a food web in an ecosystem.



1 Which row in the chart below best identifies the relationships between the mice and the wheat?

Row	Role of Mice	Role of Wheat
(1)	producer	consumer
(2)	predator	host
(3)	host	predator
(4)	consumer	producer

A) 1 B) 2 C) 3 D) 4

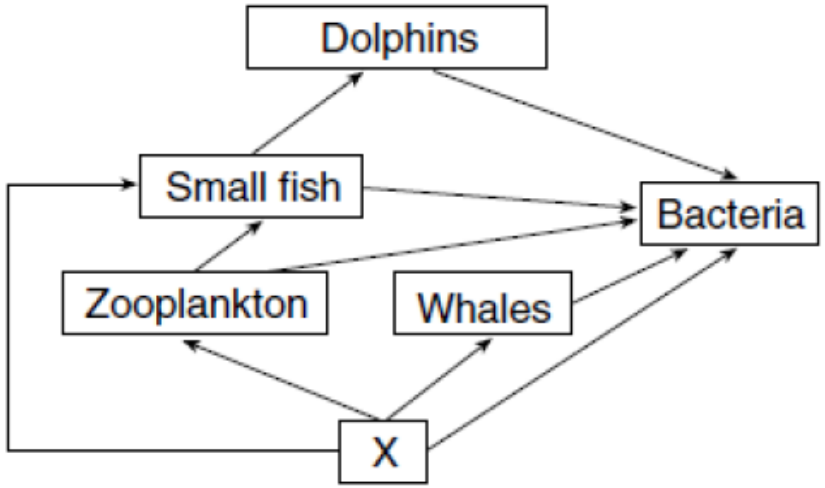
2 Missing from the diagram of this ecosystem are the

A) biotic factors and decomposers
B) abiotic factors and decomposers
C) autotrophs, only
D) heterotrophs, only

3 If the population of hawks in this area increases, their prey populations might decrease. Later, with fewer prey, the hawk population might decrease. The prey populations might then increase. This is an example of

A) an ecosystem that is completely out of balance
B) how ecosystems maintain stability over time
C) interaction between biotic and abiotic factors within an ecosystem
D) ecological succession in an ecosystem

4 The diagram below represents a marine food web.



The organisms represented by *X* are

A) decomposers
B) producers
C) carnivores
D) scavengers

5 A fruit fly is classified as a consumer rather than as a producer because it is unable to

A) reproduce asexually
B) synthesize its own food
C) release energy stored in organic molecules
D) remove wastes from its body

6 A food chain is represented below.

grass → rabbit → hawk

Structures within the rabbit are formed using

A) solar energy from the grass
B) heat energy lost to the environment
C) chemical energy from the hawk
D) chemical energy from the grass

7 Which group would most likely be represented in a food chain?

A) biotic factors
B) abiotic factors
C) inorganic compounds
D) finite resources