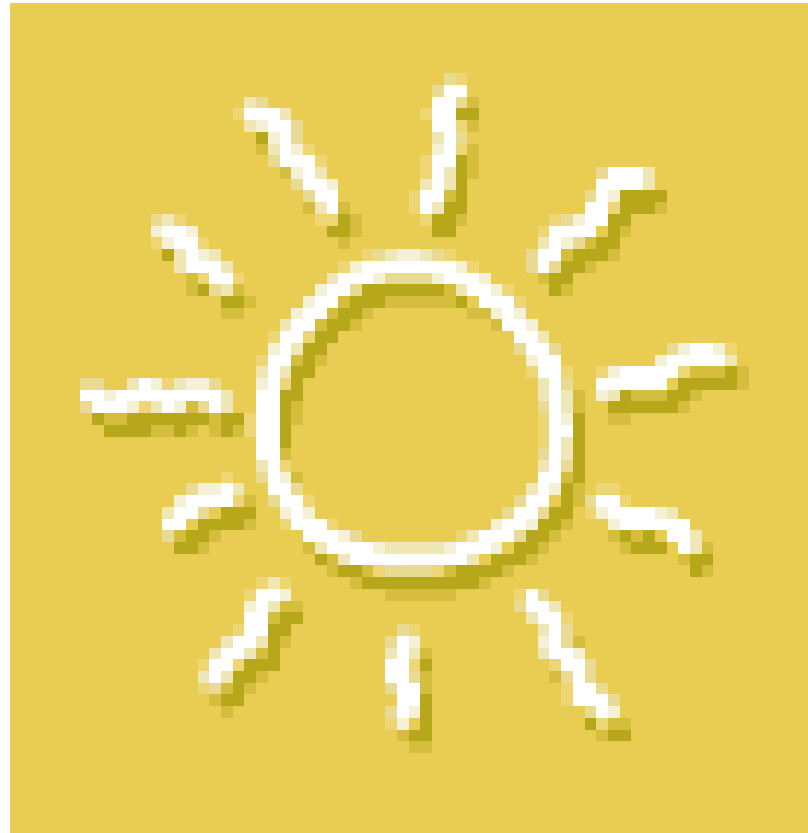


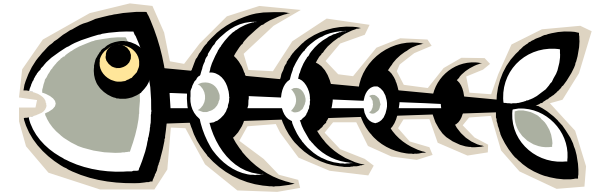
4.1

# Roles of Living Things

What essential component do all living things need?



Organisms of most ecosystems  
gather food in 3 basic ways.



Producers

Consumers

Decomposers

# What are producers?



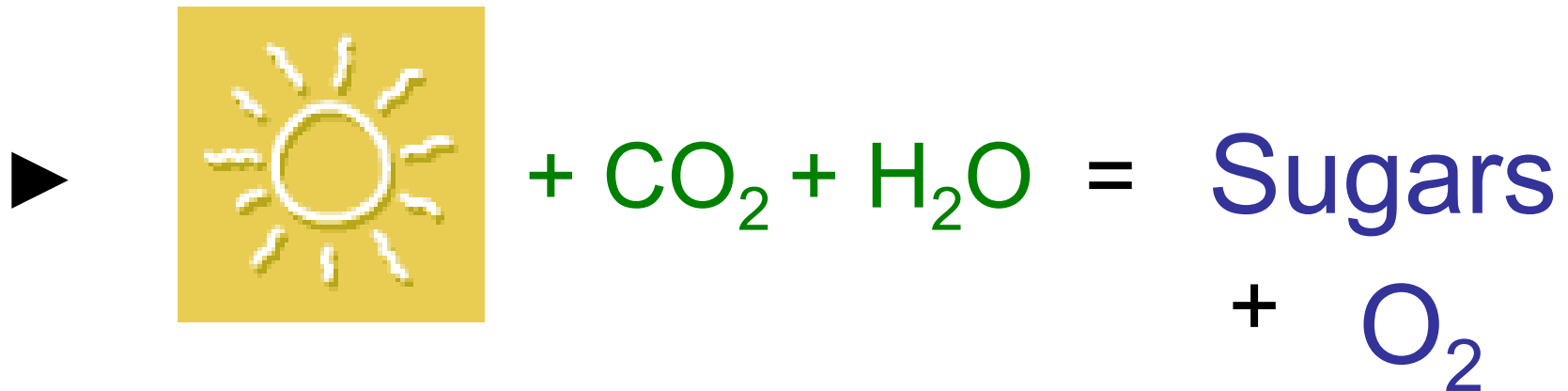
Organisms that make their own food from inorganic molecules and energy.



This process is known as....

## Photosynthesis

- ▶ Nearly all energy entering the biosphere comes from the sun through photosynthesis.



# What level does energy enter the ecosystem?

► Only at the level of the



*PRODUCERS.*

► **Plants** are the most important producers in the terrestrial ecosystems.

► Small **protists** and **bacteria** are the most important producers in aquatic ecosystems.

# What are consumers?



Organisms that cannot make their own food.



All animals are consumers.

As are fungi, many protists, and bacteria.



# What are the 4 basic kinds of consumers?

## ► Primary Consumers



Organisms that eat only plants.

Example: *Herbivores*

Grazing animals, insects, birds...

## ► Secondary Consumers

Organisms that eat primary consumers.

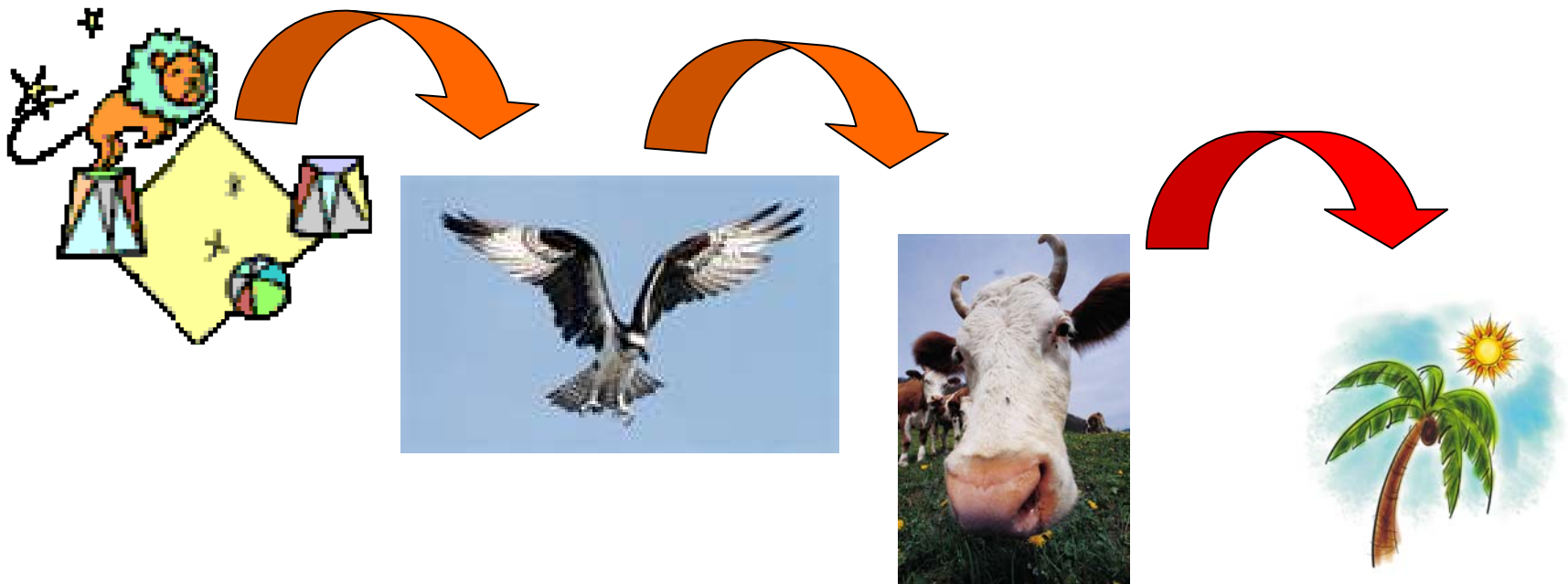
Examples: **Carnivores**



Lions, snakes, hawks.....

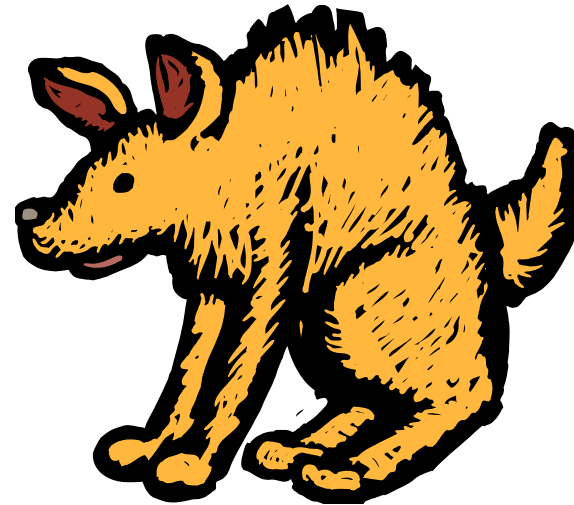
## ► Tertiary Consumers

Organisms that eat secondary consumers.



## ► Scavengers

Organisms that eat both producers and consumers.



Examples: Hyenas, vultures, insects

# What is the primary role of scavengers?

- ▶ Scavengers start the process by which nutrients from dead bodies are returned to the environment.

# Who are omnivores?

- ▶ Consumers that eat both producers and other consumers.

Examples: Human beings, bears, etc.

????????????????

- ▶ A person who eats a potato acts as a

..... *Primary Producer*

- ▶ If the same person eats a hamburger,

they act as a

..... *Secondary Consumer*

# What are decomposers?

- ▶ Bacteria and fungi that consumes the bodies of dead organisms and other organic wastes.
- ▶ Ranging from fallen leaves to dead bodies of herbivores and carnivores.



# Remember.....

- ▶ Decomposers are crucial to the ecosystem because they recycle nutrients from organisms back into the environment.

# How do decomposers recycle nutrients?

- ▶ They convert organic matter in dead organisms back into simple form.
- ▶ These nutrients are then returned to the soil.
- ▶ Here plants use these nutrients as raw materials for building new organic matter in order to grow. **CYCLE REPEATS!**

# What are trophic levels?

- ▶ The root *troph*

means “to feed or nourish”.

- ▶ It is a layer in the structure of feeding relationships in an ecosystem.

Who makes up the first and largest trophic level in all ecosystems?



Producers → Autotrophs →

Make own food

Who makes up the second and higher trophic levels in all ecosystems?



Consumers → Heterotrophs →

Cannot make own food

Most ecosystems have three,  
four, or five trophic levels.

Each trophic level depends on  
the levels below it.