### Energy Flow Through an Ecosystem

#### Food Chains, Food Webs, Energy Pyramids





### •Energy for life begins with the <u>SUN</u>



#### Green plants use raw materials and light from the sun to make glucose.



 ENERGY is stored in the molecules of glucose.







### PRODUCERS can make glucose during photosynthesis AutotrophS



#### Producers keep and use most of the energy they make for themselves.



### Producers use <u>cellular</u> respiration to supply the energy for their life functions.





The energy that is not used by producers can be passed on to organisms that cannot make their own energy.







## consumers: Organisms that cannot make their own energy. heterotrophs

Consumers that eat producers to get energy: • Are called first order or primary consumers

Are <u>herbivores</u> (plant-eaters)



Most of the energy the primary consumer gets from the producer is <u>used by the</u> <u>consumer</u>.



# Some of the energy moves into the atmosphere as heat.



**Energy (in the primary** consumer) that is not lost to the atmosphere or used by the consumer itself can be passed on. This energy is available for

another consumer.

# A consumer that eats other consumers for energy:

- Is called a <u>secondary</u> or <u>second order</u> <u>consumer</u>
- May be a <u>carnivore</u> or a <u>omnivore</u>
  - May be a **predator**
- May be a <u>scavenger</u>



Most of the energy the secondary consumer gets (from the primary consumer) is used by the secondary consumer.



Some of the energy is lost as heat, but some energy is stored and can passed on to the next consumer.



## A consumer that eats a consumer that already ate a consumer:

- Is called a <u>third order</u>
  or <u>tertiary consumer</u>
- May be a <u>carnivore</u> or a <u>omnivore</u>
- May be a predator
- May be a <u>scavenger</u>



## Consumers that eat producers & other consumers



 Are called <u>omnivores</u>

 Omnivores eat plants and animals

#### Consumers that hunt & kill other consumers are called <u>predators</u>.

## The animals that are hunted & killed are called prey.







### Consumers that eat other consumers that have already died are called <u>scavengers.</u>

#### **FOOD CHAIN**





Another way of showing the transfer of energy in an ecosystem is the ENERGY PYRAMID.

### Energy pyramids show

 That the amount of available energy decreases down the food chain

#### **Energy pyramids show**

 It takes a large number of producers to support a smaller number of primary consumers

 It takes a large number of primary consumers to support a smalles number of secondary consumers

#### **Energy** Pyramid



#### Food Webs:



- Are interconnected
  <u>food chains</u>
- They show the feeding relationships in an ecosystem.

#### Food Web



#### Food Web

 Why is a food web a better way of describing the path of food in an ecosystem?



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- Organisms that are able to break down large molecules into smaller parts
- Decomposers return the nutrients that are in a living thing to the soil

