Food Chain Laser Disc Video Notes

1. The main energy source for life on this Earth is: __Sunlight__

2. Chemical energy is stored in the _bonds_ of _sugars_ through the process of photosynthesis.

3. Food chains show how _energy_ flows from organism to organism through a sequence of eating relationships.

4. Describe how food webs differ from food chains.
   - Food webs are interconnected food chains.

5. Energy is not transferred from one organism to the next for the following reasons:
   - Transferred to heat as it is used
   - Still trapped in waste

6. Herbivores feed on:
   - _Autotrophs_

7. Examples of producers include: _Plants, some bacteria, protists_ (phytoplankton).

   - No. Once it is in the form of heat it can not be reused up the food chain.

9. Trophic levels describe relationships between what an organism eats and _what eats it_.

10. Detritus: _Dead organic matter_.

11. Keystone species is: _Have an important ecological role & their numbers are important_.

Describe the example in the video:
- Sea otters were killed for their fur.
- Sea urchins increased in _5's_ since their main predator was gone. Kelp forests were eaten in excess by sea urchins.

**Label the following trophic levels to the left of the energy diagram below**: 1st level, Primary Consumers, Secondary Consumers, Tertiary Consumers.

**Label the following types of organisms to the right**: Top Carnivores, Carnivores, Herbivores, Producers.
1. Why is it more ecologically energy conservative to be a vegetarian versus a meat eater?

There is much more energy available at the bottom of the food chain. Energy transfers out of the food chain as you go up (only 10% transfers at each level).

2. Define biomass: All the mass of a specific trophic level (ex: producers)

3. Explain why there is a pyramid effect of biomass as you move up trophic levels from producers to consumers.

Less energy is available to sustain them. Energy is transferred to heat when used or still trapped in waste.

4. Draw a food chain (using arrows) of the following organisms: algae, large fish (salmon), smaller fish (minnows), micro-organisms (zooplankton), eagles.

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\text{algae} \rightarrow \text{micro-organisms} \rightarrow \text{small fish} \rightarrow \text{large fish} \rightarrow \text{eagles}
\]

5. What do the arrows represent?

Flow of energy

6. Draw a food web using the following trophic organisms: humans, algae, large fish (salmon), Orca whales, smaller fish (minnows), micro-organisms (zooplankton), eagles.

[Diagram showing the connections between different organisms in a food web]