Energy Transfers in Food Chains.

The tissues of all plants and animals give them **biomass**. Biomass contains **energy**, which originates from the sun. In a food chain the energy of the biomass travels along the chain, but at each trophic level some of the **energy is lost**.

Consider the food chain opposite.

Plants convert a small percentage (%) of light energy into glucose

When the **rabbit** eats the **plant** it uses up some of the energy from the plant and stores the remaining energy in its body.

The fox then eats the rabbit and gets some of the energy stored in the rabbits body (its biomass).

At each stage of the food chain energy is being used up to stay alive, for example, during respiration, which powers all life processes, including movement.

Much of the energy from respiration is lost to the surroundings as heat. This is especially true for birds and mammals that are homeothermic.

Biomass and its energy are both lost in animal droppings.

As the energy is lost it means the next animal in the food chain can't use it. This explains why most **food chains** are never more than **5 trophic levels**. So much energy is lost at each stage that there is not enough energy left to support more organisms after 4 or 5 trophic levels.

Pyramids of Biomass.

Biojmass is the weight of all the organisms at each level in a food chain. We already know that biomass is a store of energy. So a pyramid of biomass shows how much energy there is at each trophic level.

Each time you go up one trophic level the biomass of the organisms decreases and goes down. This is because the of the biomass (or energy) is lost, during respiration movement, heat transfers and dupping the so does not become biomass at the perfected up.

This explains why biomass pyramids are always a pyramid shape.

In the exam they will expect you to give units (g or kg) for biomass and be able to **draw pyramids** of biomass to scale.





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They feed by sucking the blood of their host and can reproduce quickly.

The host gains nothing from having fleas.

They mak the blood for food and make