

Topic 1: A Hair Raising Dilemma

Define **NUTRIENTS**.

Chemicals that your body needs to function properly. Broken down food (through the process of digestion) supply nutrients to organisms.

Define **ORGANIC**.

Nutrients that contain carbon.

Define **INORGANIC**.

Nutrients that don't contain carbon.

What are **MACRONUTRIENTS**?

Nutrients that the body needs 100 mg/day of or more.

What are **MICRONUTRIENTS**? What is another name for these?

Nutrients that the body needs 100 mg/day of or less. These may also be referred to as **TRACE ELEMENTS**.

What are the **FOUR** types of **ORGANIC MOLECULES**? Provide examples for each, and what each one does for the human body.

Carbohydrates (rice, grains, fruit etc.) – energy source for the metabolism

Proteins (meat, eggs, dairy products, nuts etc.) – structural molecules for the body that help chemical reactions take place.

Lipids (vegetable oils, nut oils etc.) – storage of unused chemical energy (fats)

Vitamins (B, C, D etc.) – a molecule that helps enzymes function in the body

What is a **FERTILIZER** used for?

It provides additional nutrients to help plants grow.

What are the **THREE** major elements in fertilizer (in order that they appear on the bag)? What does each element promote the growth of?

Nitrogen (nitrates) – promotes the growth of leaves

Phosphorus (phosphates) – promote the growth of roots

Potassium (potash) – promotes the growth of flowers/fruit

There are two ways that a plant is able to uptake nutrients. One requires energy and the other doesn't. Name these two methods.

Passive and active transport.

Passive requires no energy (movement of nutrients/molecules from an area of high concentration to an area of low concentration).

Active requires energy (movement of nutrients/molecules from an area of low concentration to an area of high concentration).

DIFFUSION is an example of passive transport, and it is also the movement of molecules from an area of high concentration to an area of low concentration. This process requires no energy.

A special type of diffusion is known as **OSMOSIS**, and it involves **WATER**.

Topic 2: A Growing Concern

There are three categories of pesticides. Name all three, and indicate which pest each one controls.

Insecticides – control insects

Herbicides – control plants/weeds

Fungicides – control fungus, molds, or mushrooms

What is the name of DDT? What kind of pesticide is it? What is it suppose to control?

The name of DDT is dichlorodiphenyltrichloroethane. It is an insecticide that was a remarkable discovery. It almost completely eliminated the insect it was applied to.

What were some non-target organisms that DDT affected?

It affected birds of prey, fish, frogs, butterflies etc. It made the eggshells of birds of prey very soft, so there were way fewer baby birds being born.

Define **BIOACCUMULATION/BIOMAGNIFICATION**.

A harmful substance moves up the food chain from producers, to primary consumers, to secondary consumers and so on. The build up of the substance is the highest at the top of the food chain (see page 189 for image).

What does it mean for a substance to be **PERSISTENT**?

A persistent substance is going to remain in the environment for a long period of time. DDT is an example of a persistent substance, because even 10 years after it was banned, there were traces of it found in soils/tissues of organisms.