

Chapter 1

Activities of Green Plants

A. Plants and animals are alike

1. All living things are made up of cells.
2. Cell - basic unit of all living things
3. Most living things are made up of many different kinds of cells.
4. All plants and animals need food, water, and air.
5. Animals must get food.
6. Green plants can make their own food.
7. Life Processes - The activities that keep living things alive.
8. 5 of the live processes:
 - a. getting food
 - b. releasing energy in food
 - c. removing wastes
 - d. growing
 - e. reproducing

B. Transporting Materials

Most living things get food by eating it. Green plants make it, not eat it.
Green plants need three things to make food.

- a. water
 - b. carbon dioxide
 - c. light energy
3. Food making usually takes place in leaf cells of green plants.
 4. Things must be transported to leaf cells by the roots, stems, and leaves.
 5. root hair - part of a single cell that grows from a root into the soil
 6. Almost all water taken in by roots is taken in by root hairs.
 7. The rest of the root helps to anchor the plant and store food.
 8. Water transported from roots to stem.
 9. Stem transports water and food to all parts of plant through tubes.
 10. Tubes occur in bundles.
 - a. One type transports water up
 - b. Other type transports food from leaves down.
 11. veins - tubes in leaves
 - a. some carry food
 - b. some carry water
 12. carbon dioxide - gas in air
 13. Carbon dioxide gets into leaves through stomata
 14. stomata - small oval shape openings
 15. Light energy reaches plant through leaves.
 16. Leaf design - thin, flat, broad, allows sun to reach leaf cells for food production
 17. Two types of stems - soft and woody
 18. Two types of roots - tap and fibrous
 19. Xylem cells- Cells that transport water
 20. Phloem cells- Cells that transport food

C. Food making in a leaf

1. Leaf-like factory
2. Water and carbon dioxide are materials transported to leaf factory,
3. sunlight provides energy for product.
4. Food is made in the form of sugar.
5. Photosynthesis - food making process
6. Chloroplasts - small green body in plant cells
7. Chlorophyll - traps sun energy
8. The food cells are located in the middle of the leaf.
9. Water + carbon dioxide + energy = sugar oxygen
10. Most plants make more sugar than they need
11. Plants cells store extract.
12. Sweeter plants contain more sugar. (Grapes, Strawberries, Cherries, Pears)

D. Using the Energy in Food

1. Plants get energy from food. (Needed to carry out life processes.)
2. Energy in food is stored energy. (Has to be released.)
3. Respiration - process by which living things use oxygen to release energy in food.
4. Happens in cells of all living things.
5. Must have food for respiration.
6. Respiration Process:
sugar (food) + oxygen ---> energy + carbon dioxide + water
7. Carbon Dioxide + Water - waste products
8. Energy used for life processes.
9. Photosynthesis and respiration are opposites.
10. Photosynthesis - make food
Respiration - use food

E. Producing New Plants

1. Reproduction - the process in which living things produce new living things
2. Reproduction uses some energy released by plants during respiration.
3. Flower - reproductive part of flowering plant
4. Main parts of a flower:
 - Petals
 - Stamen
 - Pistil
5. Petals are leaf-like outer parts that protect the reproductive parts of flowers.
6. Petals - brightly colored and sometimes have sweet odor
7. Stamen
 - a. male reproductive part of a flower

- b. long stalk with sac at the top
 - c. produce pollen grains which are male reproductive cells
8. If you bump the sac there is colored dust on the skin.
 9. Pistil - female reproductive part of a flower
 10. Ovary - contains ovule which is female reproductive cell
 11. Pollen grains must reach top of pistil for reproduction.
 12. Pollination - process by which pollen grains move from stamen to pistil
 13. Flowers are pollinated mostly by insects but some are pollinated by wind.
 14. Fertilization - joining of male and female reproductive cells
 15. Fertilized ovule becomes seed containing a tiny plant and stored food.
 16. Embryo - tiny young plant
 17. Germination - growth of plant embryo from seed