Lesson 1 – The Microscope

Key points to learn:

1) A microscope makes objects look bigger (magnifies them).
2) The light microscope has two lenses, the objective lens and the eyepiece lens.
3) Objects are placed on a slide to view them under the microscope.
4) A microscope must be focused to see the object clearly.
5) A microscope is delicate and expensive and must be handled carefully.

Ref: CGP Biology page 7

Lesson 2 – Viewing cells with a microscope

Key points to learn:

1) Plant cells can be seen under a light microscope.
2) A thin, flat piece of plant tissue is needed.
3) A stain is needed to show the main parts of the cell.
4) The magnification is the objective lens x eyepiece lens.
5) Slides and coverslips are glass so take care handling them.

Ref: CGP Biology page 8.

Lesson 3 – Plant cells

Key points to learn:

1) Plants are made from tiny building blocks called cells.
2) Plant cells have a nucleus, cytoplasm, mitochondria, cell membrane, cell wall and a large vacuole.
3) Most plant cells have chloroplasts.

Ref: CGP Biology page 10.

Lesson 4 – Animal cells

Key points to learn:

1) Animals are made from tiny building blocks called cells.
2) Animal cells have a nucleus, cytoplasm, mitochondria and a cell membrane.
3) Animal cells do NOT have a cell wall, a large vacuole or chloroplasts.

Ref: CGP Biology page 10.

Lesson 5 – Model cell

Key points to learn:

1) Animal cells have a nucleus, cytoplasm, mitochondria and a cell membrane.
2) Animal cells do NOT have a cell wall, a large vacuole or chloroplasts.
3) Plant cells have a nucleus, cytoplasm, mitochondria, cell membrane, cell wall and a large vacuole.
4) Most plant cells have chloroplasts.

Ref: CGP Biology page 10.

Lesson 6 – Diffusion

Key points to learn:

1) Diffusion is the movement of substances from an area of high concentration to an area of low concentration.
2) Substances move into and out of living cells by diffusion.
3) Glucose and oxygen diffuse into cells and are needed for respiration.
4) Carbon dioxide a waste product of respiration leaves cells by diffusion.

Ref: CGP Biology page 14.

Lesson 7 – Unicellular organisms

Key points to learn:

1) Unicellular organisms are made up of ONE cell.
2) Bacteria and yeast are unicellular.
3) Euglena is a single celled plant with a flagellum.
4) Amoeba is a single celled animal.

Ref: CGP Biology page 11.

Lesson 8 – Multicellular organisms.

Key points to learn:

1) Multicellular organisms are made up of MANY cells.
2) There are many different types of cells in multicellular organisms.
3) Cells are specialised to carry out a particular job.
4) Nerve cells, muscle cells, blood cells are specialised cells in animals.
5) Root hair cells, palisade cells are specialised cells in plants.

Ref: CGP Biology page 13.

Lesson 9 – Organising animals.

Key points to learn:

1) Tissues are made from similar cells which do the same job.
2) Animal tissues include: muscle tissue, nervous tissue and blood.
3) Several different tissues make an organ.
4) Animals organs include: the heart, the stomach and the brain.
5) Organs and tissues work together to form organ systems.
6) Organs systems include: Circulatory, reproductive and nervous systems.

Ref: CGP Biology page 13.

Lesson 10 – Organising plants.

Key points to learn:

1) Plant tissues include: root hair tissue, palisade tissue, xylem tissue and epidermal tissue.
2) Several different tissues make an organ.
3) Plant organs include: roots, stems, leaves and flowers.
4) Organs and tissues work together to form organ systems.
5) Organ systems work together to make the organism.

Ref: CGP Biology page 13.

Lesson 11 – Plants make food.

Key points to learn:

1) Plants make their own food (glucose) in photosynthesis.
2) Photosynthesis is a chemical reaction.
3) Carbon dioxide and water are the reactants.
4) Glucose and oxygen are the products.
5) Light energy is needed for this process.

Ref: CGP Biology page 58.

Lesson 12 – Photosynthesis.

Key points to learn:

1) Starch in a leaf shows that photosynthesis has taken place.
2) Iodine solution turns blue/black if starch is present.
3) Ethanol is flammable.
3) Scientific ideas on photosynthesis have changed over time.
5) Chlorophyll is the green substance in the leaf.

Ref: CGP Biology page 58.

Lesson 13 – Leaf adaptations.

Key points to learn:

1) Leaves vary in size and shape.
2) Leaves with a large surface area absorb more sunlight.
3) Waxy leaves prevent water loss.
4) Spiky leaves do not get eaten.
5) Swollen leaves store water.

Ref: CGP Biology page 59.

Lesson 14 – Minerals requirements for plants.

Key points to learn:

1) Plants need minerals from the soil to be healthy.
2) Minerals are absorbed by the roots.
3) Nitrogen is needed for growth.
4) Magnesium is needed to make chlorophyll.

Ref: CGP Biology page 59.

Lesson 15 – Gas exchange in a leaf.

Key points to learn:

1) Stomata are tiny holes on the surface of the leaf.
2) Stomata allow gas exchange in the leaf.
3) Carbon dioxide and oxygen gases move in and out of a leaf.
4) Stomata are formed from two guard cells.
5) Stomata can open and close.

Ref: CGP Biology page 59.