

Unit 1 - Microscopic Explorations

Investigation 1

1. **Convex Lens** - A curved lens that refracts light. Convex lenses are thicker in the middle than at their edges and can produce a magnified image of an object.
2. **Concave Lens** - A curved lens that refracts light producing an image of an object that is reduced in size. Concave lenses are thinner in the middle than at their edges.
3. **Lens** - A curved piece of transparent material, usually glass or plastic, that refracts light.
4. **Magnify** - When the size of an object's image is increased. Magnification often occurs because of the refraction of light.
5. **Microscope** - A scientific tool that is used to view objects that are too small to see using the naked eye.
6. **Microscopy** - The science of observing very small objects and details of the objects.
7. **Refract** - When light passes through a transparent substance and is bent or redirected in a different direction.
8. **Resolution** - The process that makes fine details more clearly visible.

Investigation 2

Bolded word is a new word

1. Convex Lens - A curved lens that refracts light.
Convex lenses are thicker in the middle than at their edges and can produce a magnified image of an object.
2. Lens - A curved piece of transparent material, usually glass or plastic, that refracts light.
3. **Field of View** - **The portion of an object that is visible through a lens or other viewing device.**
4. Magnify - When the size of an object's image is increased. Magnification often occurs because of the refraction of light.
5. Microscope - A scientific tool that is used to view objects that are too small to see using the naked eye.
6. Microscopy - The science of observing very small objects and details of the objects.
7. Refract - When light passes through a transparent substance and is bent or redirected in a different direction.
8. Resolution - The process that makes fine details more clearly visible.

Investigation 3

Bolded word is a new word

1. **Cell** - the smallest structure of living organisms that can perform functions necessary for life. Most cells are microscopic.
2. **Cell membrane** - the outer layer of a cell. The cell membrane helps control what can enter and exit a cell.
3. **Cytoplasm** - the gel-like area of a cell between the nucleus and cell membrane where many of the functions of the cell occur.
4. **Eukaryotic cell** - a cell that contains a defined nucleus.
5. **Nucleus** - small sac inside a cell that contains or contained DNA. One type of organelle in a cell.
6. **Organelle** - a small structure inside a cell that performs a specific function.
7. **Prokaryotic cell** - a cell that does not contain a clearly defined nucleus.

Investigation 4

Bolded Word is a New Word

1. Cell - the smallest structure of living organisms that can perform functions necessary for life. Most cells are microscopic.
2. Cell membrane - the outer layer of a cell. The cell membrane helps control what can enter and exit a cell.
3. **Cell wall - the non-living structure that surrounds the cell membrane of most plant cells. The cell wall helps the plant cell keep its shape.**
4. **Chloroplast - organelle in plant cells where photosynthesis occurs.**
5. **Chlorophyll pigments - green substances found in the chloroplasts of plants. Chlorophylls give leaves their green color and are important for photosynthesis.**
6. Cytoplasm - the gel-like area of a cell between the nucleus and cell membrane where many of the functions of the cell occur.
7. Eukaryotic cell - a cell that contains a defined nucleus.
8. Nucleus - small sac inside a cell that contains or contained DNA. One type of organelle in a cell.
9. Organelle - a small structure inside a cell that performs a specific function.

10. **Photosynthesis** - The process in which energy from light is converted into the energy of chemical bonds. In plants, water, carbon dioxide and light are used to produce sugar and oxygen. The sugar is used as a source of food for the plant.
11. **Prokaryotic cell** - a cell that does not contain a clearly defined nucleus.
12. **Specimen** - an example, or a small piece of a larger object, animal, or plant.

Investigation 5

Bolded Word is a New Word

1. Cell membrane - the outer layer of a cell. The cell membrane helps control what can enter and exit a cell.
2. Cell wall - the non-living structure that surrounds the cell membrane of most plant cells. The cell wall helps the plant cell keep its shape.
3. Chloroplast - organelle in plant cells where photosynthesis occurs.
4. **Cross section - a piece of specimen that is cut across the long axis of the specimen. A cross section is the opposite of a longitudinal section.**
5. Cytoplasm - the gel-like area of the cell between the nucleus and cell membrane where many of the functions of the cell occur.
6. Eukaryotic cells - a cell that contains a defined nucleus.
7. **Longitudinal section - a piece of specimen that is cut along the long axis of the specimen. A longitudinal section is the opposite of a cross section.**
8. Nucleus - small sac inside a cell that contains or contained DNA. One type of organelle in a cell.
9. Organelle - a small structure inside a cell that performs a specific function.

10. **Organ** - One of the parts of the body that performs a function. Different tissues combine to form organs. The brain, heart, and the stomach are examples of organs.
11. **Prokaryotic cell** - a cell that does not contain a clearly defined nucleus.
12. **Tissue** - a collection of similar cells that form the structures of a plant or animal and work together to perform a function.