Chapter 2

Section 1

1. wave – A disturbance that transfers energy from place to place.
2. energy – The ability to do work or cause change.
3. medium – The material through which a wave travels
4. crest – The highest part of the wave.
5. trough – The lowest part of the wave.
6. amplitude – The maximum distance the particles of a medium move away from their rest positions as a wave passes through a medium.
7. wavelength – The distance between two corresponding parts of a wave.
8. frequency – The number of complete waves that pass a given point in a certain amount of time.
9. hertz – Unit of measurement for frequency.
10. electromagnetic radiation – The energy transferred through space by electromagnetic waves.
11. electromagnetic spectrum – The complete range of electromagnetic waves placed in order of increasing frequency.
12. visible light – Electromagnetic waves that are visible to the human eye.

Section 2

1. transparent – That which transmits light without scattering it.
2. translucent – That which scatters light as it passes through.
3. opaque – That which reflects or absorbs all of the light that strikes it
4. pigment – A colored chemical compound that absorbs light and can be used to color other materials.
5. secondary color – Any color produced by combining equal amounts of any two primary colors.
6. complementary color – Any two colors that combine to form white light or black pigment.
7. primary colors – Three colors that can be used to make any other color.

Section 3

1. reflection – The bouncing back of an object or wave when it hits a surface through which it cannot pass.
2. law of reflection – The rule that the angle of reflection equals the angle of refraction.
3. plain mirror – A flat mirror that produces an upright, virtual image the same size as an object.
4. image – A copy of an object formed by reflected or refracted rays of light.
5. virtual image – An upright image formed where rays of light appear to meet or come from.
6. concave mirror – A mirror with a surface that curves inward.

7. optical axis – An imaginary line that divides the mirror in half.
8. focal point – The point at which light rays parallel to the optical axis, appear to meet, after being reflected or refracted by a mirror or lens.
9. real image – An upside-down image formed where rays of light meet.
10. convex mirror – A mirror with a surface that curves outward.
11. refraction – The bending of waves as they enter a new medium at an angle.
12. lens – A curved piece of glass or other transparent material that is used to refract light.
13. concave lens – A lens that is thinner in the center than at the edges.
14. convex lens – A lens that is thicker in the center than at the edges.

Section 4

1. cornea – The clear tissue that covers the front of the eye.
2. pupil – The opening through which light enters the eye.
3. iris – The circular structure that surrounds the pupil and regulates the amount of light entering the eye.
4. retina- A sheet of light-sensitive cells at the back of the eye on which an image is focused.
5. rods – Light sensitive cells in the retina that work best in dim light and enable you to see black, white, and gray.
6. cones – Light-sensitive cells in the retina that work best in bright light and enable you to see color.
7. near-sighted – A word used to describe a person who can see nearby things clearly, but objects at distance are blurred.
8. far-sighted – A word used to describe a person who can see distant objects clearly, but nearby objects appear blurry.

Section 5

1. camera- An optical instrument that uses lenses to focus light, and film to record an image of an object.
2. telescope- An optical instrumental that forms enlarged images of distant objects.
3. refracting telescope – A telescope that uses two convex lenses to form images.
4. objective- A lens that gathers light from an object and forms a real image.
5. eyepiece- A lens that magnifies the image formed by the objective.
6. reflecting telescope- A telescope that uses a concave mirror to gather light from distant objects.
7. microscope- An instrument that makes small objects look larger.
8. electron microscope- A microscope that uses a beam of electrons to produce a magnified image.