Unit 1- Structure and properties of matter

6. P.2.1

- Atom is the smallest part of an element with same properties as element
- All living and nonliving things are made of atoms in different combinations

6. P.2.2

- States of matter (volume, shape, atom arrangement, atom motion)
- Effect of heat on motion of atoms

6. P.3.1

- Thermal energy is transferred through a material by the collisions of atoms within the material
- Heat in solids-conduction
- Heat in fluids and gases- convection
- Heat flows from warmer object to cooler object until reaches equilibrium

6. P.2.3

- Physical changes
- Density
- Boiling point, Melting point (Temperature remains constant during phase changes)
- Solubility

6. P.3.3

- Why are certain materials more suitable for use in technological design
- Conductors of heat and electricity
- Insulators

Unit 2- Exploring Earth

6. E.2.1

- Layers of Earth (relative position, composition, and density)

6. E.2.2

- Crustal plate movement
- Folding and faulting
- Deposition
- Types of plate boundaries
- Creation of mountains
- Volcanoes
- Earthquakes
- Seismology

6. E.2.3

- Rock cycle
- Minerals
- Soil properties

6. E.2.4

- Human monitoring of soil, air, and water
- Vegetative cover
- Agriculture (contour plowing and conservation plowing)
- Land use
- Nutrient balance (crop rotation)
- Soil as a vector
- Remote sensing technology
- Erosion

Unit 3- Plants

6. L.1.1

- Flowering plants structure and function
- Sexual reproduction of flowering plants

6. L.2.2

- Plant adaptations and response to external stimuli
- Dormancy
- Tropisms

6. L.1.2

- Transpiration
- Photosynthesis
- Cellular Respiration

Unit 4- Ecology

6. L.2.1

- Flow of energy through ecosystems (aquatic and terrestrial) from producers to consumer to decomposers
- Water cycle
- Nitrogen cycle
- Carbon dioxide cycle
- Oxygen cycle
- How decomposers return nutrients to environment
- Role of bacteria in guts of plants and animal roots (recycling matter)

6. L.2.3

- Biomes (freshwater, marine, forest, grasslands, desert, tundra)
- Abiotic factors effect (temperature, water, sunlight, and soil quality)
- Factors affecting survival of organism (food availability, predators, temperature, and other limiting factors)
- Effect on one population can indirectly affect a different population

Unit 5- Exploring Space

6. E.1.1

- Relative motion and position of sun, Earth, and moon
- Seasons
- Tides
- Moon phases
- Eclipses

6. E.1.2

- Why other planets do not sustain life
- Surface of planets
- Atmosphere of planets
- Gravitational force of other planets
- Distance from sun

6. E.1.3

- Space explorations contributions to our knowledge of solar system
- Probes
- International Space Station
- Hubble Telescope
- Modern conveniences (microwave, calculators) relation to space program
- Chandra X-ray Observatory

Unit 6- Waves

6. P.1.1

- What is a wave
- Types of waves
- Transverse wave properties (trough, crest, amplitude, and wavelength)
- Effect of medium on speed

6. P.1.2

- Visible light
- Electromagnetic spectrum
- Absorption, reflection, refraction
- Structure and functions of human eye
- Conditions that affect vision
- Optical illusions

6. P.1.3

- Sound wave characteristics (frequency and amplitude)
- Properties of sound (pitch and loudness)
- Structures and functions of human ear
- Conditions affecting hearing
- Vocal cord structure and function
- Conditions affecting sound of vocal cords