

## Science SOL Test Study Guide

### Scientific Method: (10 questions)

- Ideas of experimental design – independent variable, dependent variable, constants
- Tools of measurement
- Reading and interpreting graphs and data
- Using classification keys
- Observations, inferences, predictions, conclusions

### Physical Science – Electricity, Light, Sound (10 question)

- Electricity unit:
  - Closed and open circuits
  - Static electricity
  - Conductors and Insulators
  - Electricity transformed into energy
  - Magnetism and electromagnets
- Light unit:
  - Transverse waves and visible spectrum
  - Reflect, Refract, Transmit, Absorb
  - Transparent, Translucent, Opaque
  - Prisms, White Light, ROYGBIV wavelengths
  - Radiant energy transformed into other forms
- Sound unit:
  - Wavelengths – crest, trough, frequency of vibrations
  - Pitch and frequency
  - Radar and Sonar

### Physical Science – Matter and Energy: (10 questions)

- Matter unit:
  - Solids, Liquids, Gases; effect of energy on phases
  - Mixture of Substance
  - Atoms and Elements
- Energy unit:
  - Different forms of energy
  - Energy can be conserved and transformed
  - Kinetic and potential energy
  - Motion – force and speed, friction, collisions



## **Biological Science – Living Systems and Ecosystem Interactions:** (10 questions)

- Plant unit:
  - Parts and functions of a plant – roots, stem, leaves, pistil, stamen, sepals
  - Photosynthesis and pollination
- Ecosystems:
  - Effect of weather on ecosystems
  - Interaction of organisms in ocean
  - Niche and habitat throughout an organism's life cycle
  - Populations, communities, ecosystems
  - Food webs
  - Classification keys

## **Earth Science – Earth and Space Systems:** (10 questions)

- Geology unit:
  - Layers of the Earth
  - Igneous, Sedimentary, and Metamorphic rocks and characteristics
  - Fossils in rocks show changing Earth
  - Plate Tectonics
  - Weathering, Erosion, Deposition
- Oceanography unit:
  - Layers of the ocean floor
  - Salinity, Waves, Tides, Currents
- Conservation of Energy:
  - Renewable and nonrenewable resources
  - Conserving energy and matter
  - Advances in technology to transfer and transform energy
- Virginia Natural Resources:
  - Watersheds and water; plants and animals
  - Minerals, rocks, ores; forest, soil, land
- Weather unit:
  - Weather tools – anemometer, rain gauge, thermometer, wind vane, barometer
  - Climate of regions
- Solar System unit:
  - Planets and their order and their size
  - 4 main phases of the moon; identify from Earth and in order of cycle
  - Rotation vs Revolution
  - Motion, size, age, position, makeup of Earth, Moon, Sun
  - Causes of seasons