VA Standard Curriculum- Science

Grade 2-

Force, Motion, and Energy

2.2 The student will investigate and understand that natural and artificial magnets have certain characteristics and attract specific types of metals. Key concepts include
- a) magnetism, iron, magnetic/nonmagnetic, poles, attract/repel; and
- b) important applications of magnetism including the magnetic compass.

Matter

2.3 The student will investigate and understand basic properties of solids, liquids, and gases. Key concepts include
- a) mass and volume; and
- b) processes involved with changes in matter from one state to another (condensation, evaporation, melting, and freezing).

Grade 3-

Force, Motion, and Energy

3.2 The student will investigate and understand simple machines and their uses. Key concepts include
- a) types of simple machines (lever, screw, pulley, wheel and axle, inclined plane, and wedge);
- b) how simple machines function;
- c) compound machines (scissors, wheelbarrow, and bicycle); and
- d) examples of simple and compound machines found in the school, home, and work environment.

Matter

3.3 The student will investigate and understand that objects are made of materials that can be described by their physical properties. Key concepts include
- a) objects are made of one or more materials;
- b) materials are composed of parts that are too small to be seen without magnification; and
- c) physical properties remain the same as the material is reduced in size.

Grade 4-

Force, Motion, and Energy

4.2 The student will investigate and understand characteristics and interaction of moving objects. Key concepts include
- a) motion is described by an object's direction and speed;
- b) forces cause changes in motion;
- c) friction is a force that opposes motion; and
- d) moving objects have kinetic energy.

Grade 5-

Force, Motion, and Energy

5.2 The student will investigate and understand how sound is transmitted and is used as a means of communication. Key concepts include

a) frequency, waves, wavelength, vibration;
b) the ability of different media (solids, liquids, and gases) to transmit sound; and
c) uses and applications (voice, sonar, animal sounds, and musical instruments).

Matter

5.4 The student will investigate and understand that matter is anything that has mass, takes up space, and occurs as a solid, liquid, or gas. Key concepts include

a) atoms, elements, molecules, and compounds;
b) mixtures including solutions; and
c) the effect of heat on the states of matter.

Physical Science-

PS.8 The student will investigate and understand characteristics of sound and technological applications of sound waves. Key concepts include

a) wavelength, frequency, speed, and amplitude;
b) resonance;
c) the nature of mechanical waves; and
d) technological applications of sound.