

**Science/Health Curriculum Checklist**  
**Diocese of Little Rock**

**Grade 8**

**Tools of Science**

- Respects and values all forms and stages of life.
- Exhibits wonder at God's creation.
- Values natural resources.
- Organizes information through note taking and outlining.
- Reports data graphically.
- Uses common material appropriately for laboratory experiments or demonstrations.
- Uses ocular equipment properly and accurately.
- Uses dissecting tools properly and accurately.
- Writes lab reports.
- Forms hypotheses.
- Interprets data, graphs, tables, etc.
- Forms models.
- Proposes theories.

**Earth and Space Science**

- Defines astronomy as the study of solid and gaseous bodies in space and their interrelationships.
- Relates astronomical discoveries and concepts generated in various ancient civilizations.
- Knows the contributions of famous and current astronomers.
- ID various theories about the origins of the universe.
- Realizes that the study of astronomy is continuing and changing.
- Defines Galaxy.
- ID the types of galaxies.
- Knows that galactic systems are held together by gravity.
- Defines the phenomenon known as "black holes"
- Defines nebulae.
- Defines Light Year.
- Knows how to locate the north star (Polaris) by using the Big Dipper.
- Lists and locates significant stars.
- Lists causes of twinkling of stars.
- Knows that the sun is an average star in size, mass, and temperature.
- Knows the range of stellar temperatures.
- ID various theories concerning the origin of the solar system.
- Knows the relationship between the position of a shadow and the position of the sun.
- Demonstrates the relative positions of the earth, moon, and sun during a solar eclipse.
- Defines sunspots.
- Knows effects of solar flares on the earth.
- Lists various methods of capturing the sun's energy for use on earth.
- Knows that the earth revolves and rotates simultaneously.
- Knows Kepler's Three Laws regarding orbits of the planets around the sun.
- Lists the characteristics of the Van Allen Belts.
- Distinguishes between the geographic and magnetic poles of the earth.
- Defines how igneous, sedimentary, and metamorphic rocks are formed.
- Describes the physical properties common to soil.
- Distinguishes between topsoil, subsoil, and bedrock.
- Lists the characteristics of volcanic materials (i.e. magma, lava, cinders, ash, etc.)
- Defines earthquake.
- Defines faults.
- Defines water table.
- Describes the effect of pollution on marine life.

### **Life Science**

- \_\_\_\_\_ Defines cells as the basic units of living structures.
- \_\_\_\_\_ Distinguishes between unicellular and multicellular organisms.
- \_\_\_\_\_ Recognizes that most multicellular organisms are organized into tissues, organs, and systems.
- \_\_\_\_\_ ID the parts of a generalized plant or animal cell.
- \_\_\_\_\_ Understands the interdependence of living things and their environment.
- \_\_\_\_\_ Describes the materials needed for photosynthesis and lists its products.
- \_\_\_\_\_ Defines organism.
- \_\_\_\_\_ Lists the characteristic functions that distinguishes living from nonliving matter.
- \_\_\_\_\_ ID the external and internal structures of an organism which enable sit to live, move, and obtain food in its environment.
- \_\_\_\_\_ Uses ocular equipment to examine structures of organisms.
- \_\_\_\_\_ ID specific organisms through observation of their structures.
- \_\_\_\_\_ Knows that parts of organisms may have several functions.
- \_\_\_\_\_ Defines adaptation and lists ways in which various organisms can adapt for survival.
- \_\_\_\_\_ Understands the interdependence of living things and their environment.
- \_\_\_\_\_ Describes the materials needed for photosynthesis and lists its products.
- \_\_\_\_\_ Knows that “behavior” refers to the manner in which organisms respond to stimuli.
- \_\_\_\_\_ Defines micro-organism.
- \_\_\_\_\_ Defines pollination and knows the ways in which pollen is carried to the stigma for pollination (i.e. wind, insects, etc.)
- \_\_\_\_\_ ID the structure and function of the vascular systems in plants.
- \_\_\_\_\_ Distinguish between plant reproduction and animal reproduction.
- \_\_\_\_\_ Describes the main functions of the skeletal system.
- \_\_\_\_\_ Name the parts of a bone.
- \_\_\_\_\_ Names the major parts of the respiratory system and knows their functions.
- \_\_\_\_\_ Contrasts voluntary, involuntary, and cardiac muscles.
- \_\_\_\_\_ Names the major parts of the circulatory system including blood.
- \_\_\_\_\_ Names the major parts of the respiratory system and knows their functions.
- \_\_\_\_\_ Names the major parts of the nervous system and knows their functions.
- \_\_\_\_\_ Describes the structure and function of each of the five special sensory organs.
- \_\_\_\_\_ Knows that population refers to a group of organisms of the same species living and reproducing in the same area.
- \_\_\_\_\_ Knows that a living thing is a product of its heredity and environment.
- \_\_\_\_\_ Defines terms used conventionally in the study of natural environments (i.e. habitat, climate, location, region, biome, community, etc.)
- \_\_\_\_\_ Defines ecology.
- \_\_\_\_\_ Knows the implications of disruptions in food chains or food webs.
- \_\_\_\_\_ Defines decay as the breakdown of organic material due to digestive action of micro-organisms.
- \_\_\_\_\_ Recognizes decay in a model or natural ecosystem.
- \_\_\_\_\_ ID substances which humans consider “air pollutants”.
- \_\_\_\_\_ ID the causes, problems, and issues related to air pollution.
- \_\_\_\_\_ Describes techniques developed by farmers to prevent soil erosion, flooding, drought, etc.
- \_\_\_\_\_ ID ways in which human alterations of land affect the stability of the ecosystem (i.e. cutting and laying roads, logging mountainsides, etc.).

### **Physical Science**

- \_\_\_\_\_ Defines matter.
- \_\_\_\_\_ Defines physical change.
- \_\_\_\_\_ Defines chemical change.
- \_\_\_\_\_ Defines atom.
- \_\_\_\_\_ Knows that a chemical symbol is one or two letters used to represent a particular element.
- \_\_\_\_\_ Defines elements.
- \_\_\_\_\_ Defines molecules.
- \_\_\_\_\_ Distinguishes between an elements and a compound.
- \_\_\_\_\_ Defines equilibrium.
- \_\_\_\_\_ Knows that there can be many forces acting on an object.
- \_\_\_\_\_ Defines friction.

- \_\_\_\_\_ Lists the causes of friction.
- \_\_\_\_\_ Describes ways to increase or decrease the frictional forces.
- \_\_\_\_\_ ID the six classes of simple machines.
- \_\_\_\_\_ ID the different classes of levers.
- \_\_\_\_\_ Gives examples of each type of lever.
- \_\_\_\_\_ Knows the relationship between the masses of objects and their distance from the fulcrum when balancing an equal arm balance.

### **Science and Technology**

- \_\_\_\_\_ Research and report on various scientific topics, which have advanced due to technology.
- \_\_\_\_\_ Present the advances in scientific instruments and their advantages to the scientific community.
- \_\_\_\_\_ Use a database file that will store and retrieve scientific information.
- \_\_\_\_\_ Recognize the advances and limitations of technology in science.
- \_\_\_\_\_ Analyze scientific outcomes derived from the use of the scientific method on scientific investigations.
- \_\_\_\_\_ Distinguish between technology advances in different societies and its effects on different communities and groups within those societies.
- \_\_\_\_\_ Create and use spreadsheets to organize and report data.
- \_\_\_\_\_ Illustrate the history of the development of technological advancements used in scientific research.

### **Health (Personal and Social Perspectives)**

- \_\_\_\_\_ Investigate interaction among the populations in a biological community.
- \_\_\_\_\_ Investigate the relationships between ecosystem dynamics and human activity.
- \_\_\_\_\_ Use all equipment safely and properly.
- \_\_\_\_\_ Recognize the level of skill a person can reach depends on innate abilities and the appropriate use of learning tools and materials.