

SCIENCE

GRADE 3



Montgomery County Public Schools

Scientific Investigation, Reasoning, and Logic

- 3.1 The student will plan and conduct investigations in which
- predictions and observations are made;
 - objects with similar characteristics are classified into at least two sets and two subsets;
 - questions are developed to formulate hypotheses;
 - volume is measured to the nearest milliliter and liter;
 - length is measured to the nearest centimeter;
 - mass is measured to the nearest gram;
 - data are gathered, charted, and graphed (line plot, picture graph, and bar graph);
 - temperature is measured to the nearest degree Celsius;
 - time is measured to the nearest minute;
 - inferences are made and conclusions are drawn; and
 - natural events are sequenced chronologically.

Force, Motion, and Energy

- 3.2 The student will investigate and understand simple machines and their uses. Key concepts include
- types of simple machines (lever, screw, pulley, wheel and axle, inclined plane, and wedge);
 - how simple machines function;
 - compound machines, (scissors, wheelbarrow, and bicycle); and
 - 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
- objects are made of one or more materials;
 - materials are composed of parts that are too small to be seen without magnification; and
 - physical properties remain the same as the material is reduced in size.

Life Processes

- 3.4 The student will investigate and understand that behavioral and physical adaptations allow animals to respond to life needs. Key concepts include
- methods of gathering and storing food, finding shelter, defending themselves, and rearing young; and
 - hibernation, migration, camouflage, mimicry, instinct, and learned behavior.

Living Systems

- 3.5 The student will investigate and understand relationships among organisms in aquatic and terrestrial food chains. Key concepts include
- producer, consumer, decomposer;
 - herbivore, carnivore, omnivore; and
 - predator – prey.

- 3.6 The student will investigate and understand that environments support a diversity of plants and animals that share limited resources. Key concepts include
- water-related environments (pond, marchland, swamp, stream, river, and ocean environments);
 - dry-land environments (desert, grassland, rain forest, and forest environments); and
 - population and community.

Interrelationships in Earth/Space Systems

- 3.7 The student will investigate and understand the major components of soil, its origin, and importance to plants and animals including humans. Key concepts include
- soil provides the support and nutrients necessary for plant growth;
 - topsoil is a natural product of subsoil and bedrock;
 - rock, clay, silt, sand, and humus are components of soils; and
 - soil is a natural resource and should be conserved.

Earth Patterns, Cycles, and Change

- 3.8 The student will investigate and understand basic patterns and cycles occurring in nature. Key concepts include
- patterns of natural events (day and night, seasonal changes, phases of the moon, and tides); and
 - animal and plant life cycles.
- 3.9 The student will investigate and understand the water cycle and its relationship to life on Earth. Key concepts include
- the energy from the sun drives the water cycle;
 - processes involved in the water cycle (evaporation, condensation, precipitation);
 - water is essential for living things; and
 - water supply and water conservation.

Resources

- 3.10 The student will investigate and understand that natural events and human influences can affect the survival of species. Key concepts include
- the interdependency of plants and animals;
 - human effects on the quality of air, water, and habitat;
 - the effects of fire, flood, disease, and erosion on organisms; and
 - conservation and resource renewal.
- 3.11 The student will investigate and understand different sources of energy;
- the sun's ability to produce light and heat energy;
 - sources of energy (sunlight, water, wind);
 - fossil fuels (coal, oil, natural gas) and wood; and
 - renewable and nonrenewable energy resources.

Grade 3

The third-grade standards place increasing emphasis on conducting investigations. Students are expected to be able to develop questions, formulate simple hypotheses, make predictions, gather data, and use the metric system with greater precision. Using information to make inferences and draw conclusions becomes more important. In the area of physical science, the standards focus on simple and compound machines, energy, and a basic understanding of matter. Behavioral and physical adaptations are examined in relation to the life needs of animals. The notion of living systems is further explored in aquatic and terrestrial food chains and diversity in environments. Patterns in the natural world are demonstrated in terms of the phases of the moon, tides, seasonal changes, the water cycle, and animal life cycles. Geological concepts are introduced through the investigation of the components of soil.