

COMMUNITY UNIT SCHOOL DISTRICT 200
ESSENTIAL LEARNINGS
SCIENCE
GRADE - 1

1. Subject expectation (State Goal 11) The student will understand the processes of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.

Essential Learning 1 (Learning Standard A)	Explore and apply the concepts, principles and processes of scientific inquiry
---	--

- | | | | |
|-------------------------|----------------|-----------|--|
| Critical Content | | | |
| | 11.A.1a | a. | describe an observed event <ul style="list-style-type: none"> • use senses and measurements • use observations to make predictions |
| | 11.A.1b | b. | develop questions on scientific topics using observations, prior knowledge, and related inferences |
| | 11.A.1c | c. | collect data for investigations <ul style="list-style-type: none"> • select and use appropriate measuring and technological instruments <i>such as</i> rulers, thermometers, calculators, balances, and magnifiers • use standard and non-standard units of measurement • read data from collecting instrument |
| | 11.A.1d | d. | record and store data <ul style="list-style-type: none"> • use available technologies <i>such as</i> manipulatives, drawings, journals, charts, and computers |
| | 11.A.1e | e. | arrange data into logical patterns and describe the patterns <ul style="list-style-type: none"> • display data using various methods <i>such as</i> manipulatives, lists, charts and graphs • interpret data noting similarities and differences • use appropriate comparative terminology to describe patterns <i>such as</i> most, least, more than, less than, and the same as • use data to predict future events when appropriate |
| | 11.A.1f | f. | compare observations of individual and group results <ul style="list-style-type: none"> • analyze data from other groups, noting similarities and differences • suggest possible reasons for differences or discrepancies in data |
| | 11.A.1g | g. | evaluate data and draw conclusions <ul style="list-style-type: none"> • communicate results using appropriate methods <i>such as</i> discussions, drawings and journal |
| | 11.A.1h | h. | connect conclusions to other data, events, and experiences |

Essential Learning 2
(Learning Standard B)

Explore and apply the concepts, principles, and processes of technological design

Critical Content

- 11.B.1a** a. **brainstorm and explore possible solutions when given a design problem *such as* a magnetic toy device**
- 11.B.1b** b. **design a device that will be useful in solving the problem**
- 11.B.1c** c. **build the device following the design plan**
- 11.B.1d** d. **develop a strategy for testing the device**
 - **test the device and record results**
 - **make necessary modifications based on test results**
- 11.B.1e** e. **report the design of the device, the test process and the results in solving a given problem**

2. Subject expectation (State Goal 12) The student will understand the fundamental concepts, principles and interconnections of the life, physical, and earth/space sciences.

Essential Learning 1 (Learning Standard A)	Know and apply concepts that explain how living things function, adapt and change (Biology)
---	---

- | | | |
|------------------|---------|--|
| Critical Content | 12.A.1a | a. identify and describe the component parts of living things <ul style="list-style-type: none"> • match parts of living things with functions <i>such as</i> gills for breathing, fins for movement • represent the stages of an organism within its life cycle |
| | 12.A.1b | b. categorize living organisms using a variety of observable attributes <i>such as</i> size, color, shape, and body covering <ul style="list-style-type: none"> • communicate the rule for grouping |

Essential Learning 2 (Learning Standard B)	Know and apply concepts that describe how living things interact with each other and with their environment (Ecology)
---	---

- | | | |
|------------------|---------|--|
| Critical Content | 12.B.1a | a. describe and compare characteristics of living things in relationship to their habitats <i>such as</i> protection, camouflage and adaptations for climate |
| | 12.B.1b | b. describe how living things depend on one another for survival <i>such as</i> symbiotic relationships and food chains |

Essential Learning 3 (Learning Standard C)	Know and apply concepts that describe properties of matter and energy and the interaction between them (Matter and Energy)
---	--

- | | | |
|------------------|---------|--|
| Critical Content | 12.C.1b | a. identify and compare large scale physical properties of matter <i>such as</i> size, shape, weight, magnetic, non-magnetic <ul style="list-style-type: none"> • use a balance or scale to determine comparative weights of objects • manipulate beam, fulcrum and objects to create equivalent balance • group objects according to properties communicating rules for groups • arrange and sequence a group of objects according to weight and volume |
|------------------|---------|--|

Essential Learning 4 (Learning Standard D)	Know and apply the concepts that describe force and motion and the principles that explain them (Force and Motion)
---	--

Critical Content	12.D.1b	a. identify magnetic properties <ul style="list-style-type: none"> make observations and describe the effects of magnetic force on various objects record data and draw conclusion related to attraction and repelling
	12.D.1b	b. identify examples of magnetic force <ul style="list-style-type: none"> describe polarity describe areas of strength within a magnet identify various types of magnets including ring, bar, rod, U-shaped, horseshoe, and lodestone
	12.D.1b	c. make predictions about how magnetic force travels through matter
	11.B.1b, 11.B.1c, 11.B.1d	d. design, build, and test a magnetic toy device

Essential Learning 5 (Learning Standard E)	Know and apply concepts that describe the features and processes of the Earth and its resources (Earth Science)
---	---

Critical Content	12.E.1a	a. identify components and describe diverse features of the Earth's land and water <ul style="list-style-type: none"> observe and identify features of the soil identify land, water, North Pole, South Pole using maps and globes explore different land features of Earth <i>such as</i> mountains, forests, deserts, plains, coastal areas, wetlands explore differing water features of Earth <i>such as</i> streams, rivers, ponds, lakes, and oceans
	12.E.1b	b. identify and describe patterns of weather and seasonal changes observe, identify, and record weather patterns <i>such as</i> rain, snow, wind, sun, clouds <ul style="list-style-type: none"> compare and contrast seasonal weather patterns
	12.E.1c	c. identify renewable and nonrenewable natural resources <ul style="list-style-type: none"> identify ways to conserve resources identify and practice ways to recycle, reduce, or reuse resources

Essential Learning 6 (Learning Standard F)	Explore concepts that explain the composition and structure of the universe and Earth's place in it (Space Science)
---	---

3. Subject expectation (State Goal 13) The student will understand the relationships among science, technology and society in historical and contemporary contexts.

Essential Learning 1 (Learning Standard A)	Know and apply the accepted practices of science (Safety and Ethics)
---	--

- | | | |
|-------------------------|----------------|---|
| Critical Content | 13.A.1a | a. demonstrate responsible use of equipment and adherence to procedures |
| | 13.A.1a | b. identify and reduce potential hazards in science activities |
| | 13.A.1b | c. explain why similar results are expected when procedures are done the same way |
| | 13.A.1c | d. explain how knowledge can be gained by careful observations <ul style="list-style-type: none"> • compare observations made with and without scientific tools |

Essential Learning 2 (Learning Standard B)	Know and apply concepts that describe the interaction between science, technology and society (Science, Technology, and Society)
---	--

- | | | |
|-------------------------|----------------|---|
| Critical Content | 13.B.1a | a. explain the use of common scientific instruments <i>such as</i> ruler, thermometer, balance, scale, magnifier, calculator, and computer <ul style="list-style-type: none"> • select the appropriate instrument to measure length, temperature, volume, time and mass |
| | 13.B.1b | b. explain how using measuring tools improve the accuracy of estimates <ul style="list-style-type: none"> • compare estimates with actual measurements |
| | 13.B.1c | c. describe what makes a scientist |
| | 13.B.1d | d. identify and describe ways that science and technology affect people’s everyday lives |
| | 13.B.1e | e. demonstrate ways to reduce, reuse and recycle materials |

