

Urbana School District #116
FIFTH GRADE CORE EXPECTATIONS

SCIENCE

Illinois State Goal 11: Understand the processes of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.

State Standard	District Core Expectations
11A: Know and apply the concepts, principles, and processes of scientific inquiry.	<ul style="list-style-type: none"> • Use equipment and materials in science activities safely • Describe why accuracy and detail are important for scientific data • Identify and define a variable, a constant, and a control in each of the major science areas
11B: Know and apply the concepts, principles and processes of technological design.	<ul style="list-style-type: none"> • Identify a design problem and decide what I have to do to make a successful solution

Illinois State Goal 12: Understand the fundamental concepts, principles and interconnections of the life, physical and earth/space sciences.

State Standard	District Core Expectations
12A: Know and apply concepts that explain how living things function, adapt and change.	<ul style="list-style-type: none"> • Explain the function of these parts of the cell: cell wall, cell membrane, nucleus, and cytoplasm • Find similarities and differences among the functions of plant and animal cells • Classify living things based on their common characteristics at the cellular level
12B: Know and apply concepts that describe how living things interact with each other and with their environment.	NA
12C: Know and apply concepts that describe properties of matter and energy and the interactions between them.	<ul style="list-style-type: none"> • Explain the processes of freezing, melting, and boiling • Measure heat absorption or reflection in objects • Recognize the freezing/boiling points of water in the Fahrenheit and Celsius temperature scales • Compare and contrast conduction, convection and radiation of heat • Identify the speed of light • Explain the principles of absorption, reflection and refraction • Explain light using the properties of waves • Identify a lens as either convex or concave • Describe how materials that are transparent, translucent and opaque are different
12D: Know and apply concepts that describe force and motion and the principles that explain them.	<ul style="list-style-type: none"> • Provide examples of stored energy and energy of motion • Describe how vibrations that cause waves produce sound • Explain frequency, waves, wavelength, resonance and/or vibration

	<ul style="list-style-type: none"> • Compare and contrast how various sounds travel through different materials
12E: Know and apply concepts that describe the features and processes of the Earth and its resources.	<ul style="list-style-type: none"> • Identify the layers of the atmosphere • Explain the impact of heating and cooling of the atmosphere • Describe the parts of the water cycle • Explain the natural cycles of the earth: weathering, erosion, and the water cycle • Explain the causes for limited resources
12F: Know and apply concepts that explain the composition and structure of the universe and Earth's place in it.	<ul style="list-style-type: none"> • Describe benefits that society has gained from the technology developed by space exploration • Describe products that have been created because of space exploration • Describe factors that affect living conditions in space

Illinois State Goal 13: Understand the relationships among science, technology and society in historical and contemporary contexts.

State Standard	District Core Expectations
13A: Know and apply the accepted practices of science.	<ul style="list-style-type: none"> • Collect scientific data from experiments • Graph experimental data • Tell the difference between accurate data and inaccurate data
13B: Know and apply concepts that describe the interaction between science, technology and society.	<ul style="list-style-type: none"> • Describe how technology is used for various purposes in science • Describe the effects on society of scientific and technological discoveries

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