



Louisville Public Schools  
Course Description-- Updated 2013

<b>Name of Course:</b>	<b>Science 8 - Physical and Earth Science</b>
Suggested Grade Level:	8
Term (Quarter/Semester/Year)	Year
Suggested Prerequisites: (If any)	None

<b>Summary of the Course</b>
In this class students will study Physical Science during the 1 <sup>st</sup> Semester and Earth Science during the 2 <sup>nd</sup> Semester. Students will learn through discussion, hands-on activities, and technology. Physical Science topics students will include; Matter, Motion, Energy, and Forces. Science topics students will explore include; Oceanography, Geology, Astronomy, Meteorology, Astronomy, and Ecology.

<b>Learner Indicators</b>
<u>Inquiry:</u>
<b><i>The successful student...</i></b>
<ul style="list-style-type: none"><li>• Formulates a hypothesis appropriate for the testable question and scientific investigations.</li></ul>
<ul style="list-style-type: none"><li>• Uses both qualitative and quantitative observations.</li></ul>

Learner Indicators
<ul style="list-style-type: none"> <li>• Designs and conducts logical and sequential investigations including repeated trials.</li> </ul>
<ul style="list-style-type: none"> <li>• Determine controls and variables of the investigation</li> </ul>
<ul style="list-style-type: none"> <li>• Selects and use equipment correctly and uses it accurately.</li> </ul>
<ul style="list-style-type: none"> <li>• Makes accurate measurements (metric)</li> </ul>
<ul style="list-style-type: none"> <li>• Record and represents data appropriately and reviews for quality, accuracy and relevancy.</li> </ul>
<ul style="list-style-type: none"> <li>• Follows safety instructions</li> </ul>
<ul style="list-style-type: none"> <li>• Communicate findings of investigation through report form,</li> </ul>
<ul style="list-style-type: none"> <li>• Develops a reasonable explanation based on collected data.</li> </ul>
<u>Physical Science:</u>
<b><i>The successful student...</i></b>
<ul style="list-style-type: none"> <li>• Understands that matter is made of elements, groups of elements (atoms, compounds, and mixtures)</li> </ul>
<ul style="list-style-type: none"> <li>• Understands that matter has both physical and chemical properties, which may be used for identification (state, solubility, mixtures, reactivity, luster, boiling point, acids/bases and density.)</li> </ul>

**Learner Indicators**

- Explains that matter can be rearranged into new substances (compounds, chemical names and word equations).
- Knows that energy is conserved, but may be changed from one form to the other but not destroyed.
- Describes the motion of an object by its position and velocity.
- Understands Newton's Laws of Motion
- Understands that all energy is classified as either potential or kinetic and can be transferred between forms.
- Explain the use of simple and compound machines.
- Knows that gravity can cause or influence motion.

Earth Science:

***The successful student...***

- Understands the relationship between geological features and their influences on weather and climate.

**Learner Indicators**

- Understands the composition and structure of the earth's atmosphere (fronts, pressure systems, air masses, humidity, temperature) and its role in weather patterns.

- Understands heat transfer in and out of the atmosphere and its involvement in weather and climate (convection, conduction, and radiation)

- Understands processes that change the earth's surface (volcanoes, earthquakes, glaciers, floods)

- Describes the rock cycle and its related processes.

- Understands plate tectonics.

- Relates a light year to distance in space.

- Knows our solar system, and its characteristics.

- Understands the difference between renewable and nonrenewable resources gives examples of each and describes the impact of their use.

**Science & Technology:**

***The successful student...***

- Recognizes that science creates opportunities for inventions

**Learner Indicators**

- Distinguish between scientific inquiry and technological design.
- Describes how science and technology are reciprocal.
- Recognizes that technology both creates and solves problems.
- Recognize that scientific explanations are based on evidence and scientific knowledge.
- Understands that new discoveries are always being made which impact scientific knowledge.
- Can describe how scientist go about their work
- Recognize science is an ongoing process and the scientific community accepts and uses explanations until they encounter new experimental evidence not matching existing explanations.

**Additional Information & Resources Used**

Textbook:

Feather, R.M. et al. (2006). *Physical Science with Earth Science*. McGraw Hill Glencoe.