South Carolina Science Standards: Field Chemistry

Third Grade

1. Science and Engineering Practices
    a. 3.S.1A.4
        i. Analyze and interpret data from observations, measurements, or investigations to understand patterns and meanings.
    b. 3.S.1A.5
        i. Use mathematical and computational thinking to (1) express quantitative observations using appropriate English or metric units, (2) collect and analyze data, or (3) understand patterns, trends and relationships.
    c. 3.S.1A.6
        i. Construct explanations of phenomena using (1) scientific evidence and models, (2) conclusions from scientific investigations, (3) predictions based on observations and measurements, or (4) data communicated in graphs, tables, or diagrams.
    d. 3.S.1A.7
        i. Construct scientific arguments to support claims, explanations, or designs using evidence from observations, data, or informational texts.
    e. 3.S.1A.8

        i. Obtain and evaluate informational texts, observations, data collected, or discussions to (1) generate and answer questions, (2) understand phenomena, (3) develop models, or (4) support explanations, claims, or designs. Communicate observations and explanations using the conventions and expectations of oral and written language.

2. Physical Science: Properties and Changes in Mater
    a. 3.P.2A.1
        i. Analyze and interpret data from observations and measurements to describe and compare the physical properties of matter (including length, mass, temperature, and volume of liquids).
    b. 3.P.2A.2
        i. Construct explanations using observations and measurements to describe how matter can be classified as a solid, liquid or gas.
    c. 3.P.2A.3
        i. Plan and conduct scientific investigations to determine how changes in heat (increase or decrease) change matter from one state to another (including melting, freezing, condensing, boiling and evaporating).
    d. 3.P.2A.4
        i. Obtain and communicate information to compare how different processes (including burning, friction, and electricity) serve as sources of heat energy.
3. Earth Science: Earth's Materials and Processes
    a. 3.E.4A.1
        i. Analyze and interpret data from observations and measurements to describe and compare different Earth materials (including rocks, minerals, and sil) and classify each type of material based on its distinct physical properties.

Fourth Grade

1. Science and Engineering Practices
    a. 4.S.1A.4
        i. Analyze and interpret data from informational texts, observations, measurements, or investigations using a range of methods (such as tabulation or graphing) to (1) reveal patterns and construct meaning or (2) support explanations, claims, or designs.
    b. 4.S.1A.5
        i. Use mathematical and computational thinking to (1) express quantitative observations using appropriate English or metric units, (2) collect and analyze data, or (3) underhand patterns, trends and relationships between variables.
    c. 4.S.1A.6
        i. Construct explanations of phenomena using (1) scientific evidence and models, (2) conclusions from scientific investigations, (3) predictions base on observations and measurements, or (4) data communicated in graphs, tables, or diagrams.
    d. 4.S.1A.7
        i. Construct scientific arguments to support claims, explanations, or designs using evidence from observations, data, or informational texts.
    e. 4.S.1A.8
        i. Obtain and evaluate informational texts, observations, data collected, or discussions to (1) generate and answer questions, (2) understand phenomena, (3) develop models, or (4) support explanations, claims, or designs. Communicate observations and explanations using the conventions and expectations of oral and written language.
2. Earth Science: Weather and Climate
    a. 4.E.2A.1
        i. Obtain and communicate information about some of the gases in the atmosphere (including oxygen, nitrogen, and water vapor) to develop models that exemplify the composition of Earth's atmosphere where weather takes place.

b. 4.E.2A.2
    i. Develop and use models to explain how water changes as it moves between the atmosphere and Earth's surface during each phase of the water cycle (including evaporation, condensation, precipitation, and runoff).

3. Physical Science: Forms of Energy – Light and Sound
    a. 4.P.4A.1
        i. Construct scientific arguments to support the claim that white light is made up of different colors.
    b. 4.P.4A.2
        i. Analyze and interpret data from observations and measurements to describe how the apparent brightness of light can vary as a result of the distance and intensity of the light source.
    c. 4.P.4A.3
        i. Obtain and communicate information to explain how the visibility of an object is related to light.
    d. 4.P.4A.4
        i. Develop and use models to describe how light travels and interacts when it strikes an object (including reflection, refraction, and absorption) using evidence from observations.
    e. 4.P.4A.5
        i. Plan and conduct scientific investigations o explain how light behaves when it strikes transparent, translucent, and opaque materials.

Fifth Grade

1. Science and Engineering Practices
    a. 5.S.1A.4
        i. Analyze and interpret data from informational texts, observations, measurements, or investigations using a range of methods (such as

tabulation or graphing) to (1) reveal patterns and construct meaning or (2) support hypotheses, explanations, claims, or designs.

b. 5.S.1A.5
    i. Use mathematical and computational thinking to (1) express quantitative observations using appropriate metric units, (2) collect and analyze data, or (3) understand patterns, trends and relationships between variables.
c. 5.S.1A.6
    i. Construct explanations of phenomena using (1) scientific evidence and models, (2) conclusions from scientific investigations, (3) predictions based on observations and measurements, or (4) data communicated in graphs, tables, or diagrams.
d. 5.S.1A.7
    i. Construct scientific arguments to support claims, explanations, or designs using evidence from observations, data, or informational texts.
e. 5.S.1A.8
    i. Obtain and evaluate informational texts, observations, data collected, or discussions to (1) generate and answer questions, (2) understand phenomena, (3) develop models, or (4) support hypotheses, explanations, claims, or designs. Communicate observations and explanations using the conventions and expectations of oral and written language.

Sixth Grade

1. Science and Engineering Practices
    a. 6.S.1A.4
        i. Analyze and interpret data from informational texts, observations, measurements, or investigations using a range of methods (such as tabulations, graphing, or statistical analysis) to (1) reveal patterns and

construct meaning or (2) support hypotheses, explanations, claims, or designs.

b. 6.S.1A.5
    i. Use mathematical and computational thinking to (1) use and manipulate appropriate metric units, (2) collect and analyze data, (3) express relationships between variable for models and investigations, or (4) use grade-level appropriate statistics to analyze data.
c. 6.S.1A.6
    i. Construct explanations of phenomena using (1) primary or secondary scientific evidence and models, (2) conclusions from scientific investigations, (3) predictions based on observations and measurements, or (4) data communicated in graphs, tables, or diagrams.
d. 6.S.1A.7
    i. Construct and analyze scientific arguments to support claims, explanations, or designs using evidence from observations, data, or informational texts.
e. 6.S.1A.8
    i. Obtain and evaluate scientific information to (1) answer questions, (2) explain or describe phenomena, (3) develop models, (4) evaluate hypotheses, explanations, claims, or designs or (5) identify and/or fill gaps in knowledge. Communicate using the conventions and expectations of scientific writing or oral presentations by (1) evaluating grade-appropriate primary or secondary scientific literature, or (2) reporting the results of student experimental investigations.

Seventh Grade

1. Science and Engineering Practices
    a. 7.S.1A.4

i. Analyze and interpret data from informational texts, observations, measurements, or investigations using a range of methods (such as tabulations, graphing, or statistical analysis) to (1) reveal patterns and construct meaning or (2) support hypotheses, explanations, claims, or designs.

b. 7.S.1A.5
    i. Use mathematical and computational thinking to (1) use and manipulate appropriate metric units, (2) collect and analyze data, (3) express relationships between variable for models and investigations, or (4) use grade-level appropriate statistics to analyze data.

c. 7.S.1A.6
    i. Construct explanations of phenomena using (1) primary or secondary scientific evidence and models, (2) conclusions from scientific investigations, (3) predictions based on observations and measurements, or (4) data communicated in graphs, tables, or diagrams.

d. 7.S.1A.7
    i. Construct and analyze scientific arguments to support claims, explanations, or designs using evidence from observations, data, or informational texts.

e. 7.S.1A.8
    i. Obtain and evaluate scientific information to (1) answer questions, (2) explain or describe phenomena, (3) develop models, (4) evaluate hypotheses, explanations, claims, or designs or (5) identify and/or fill gaps in knowledge. Communicate using the conventions and expectations of scientific writing or oral presentations by (1) evaluating grade-appropriate primary or secondary scientific literature, or (2) reporting the results of student experimental investigations. Science and Engineering Practices