9th Grade Honors General Science

Curriculum Guide

Scranton School District

Scranton, PA



9th Grade Honors General Science

Prerequisite:

• Completion of 8th grade physical science with teacher recommendation for honors

9th Grade Honors General Science is designed to be a survey course of the main branches of science offered at the high school level. Students will be introduced to basic concepts in Chemistry, Physics, Earth and Space Science, Biology, and Environmental Science. The course meets five class periods per week. The curriculum was developed as a foundation that students will build upon as they progress through high school. The honors curriculum is designed to prepare students with a solid background for future Honors and AP Science courses.

Year-at-a-glance

| Subject: 9 th Grade Honors General Science | Grade Level: 9 th | Date Completed: 7/16/15 |
|---|------------------------------|-------------------------|
|---|------------------------------|-------------------------|

1st Quarter

| Topic | Resources | Academic Standards |
|---|---|--|
| Scientific Approach: Measurements Scientific Data | Approved textbook Physical Science Concepts in Action with Earth and Space: Chapter 1: 1.3,1.4 Lesson/Unit Plan Instructional Content Educational Resources Assessment Videos Web-Based Content | 3.3.10.A8 CC.3.5 CC.3.6 3.1.10.A9 Use for all Lessons Compare and contrast scientific theories. Know that both direct and indirect observations are used by scientists to study the natural world and universe. Identify questions and concepts that guide scientific investigations. Formulate and revise explanations and models using logic and evidence. Recognize and analyze alternative explanations and models. Explain the importance of accuracy and precision in making valid measurements. |

| Chemistry | Approved textbook | 3.2.C.A1 |
|--------------------------|---|---|
| Properties of Matter: | Physical Science Concepts in Action with | CC.3.5 |
| Classifying Matter | Earth and Space: Chapter 2: 2.1, 2.2 | CC.3.6 |
| Physical Properties | Lesson/Unit Plan | 3.1.C.C4: Use for all Chemistry Lessons |
| Chemical Properties | Instructional Content | Compare and contrast scientific theories. |
| • | Educational Resources | Know that both direct and indirect observations are used |
| | Assessment | by scientists to study the natural world and universe. |
| | Videos | Identify questions and concepts that guide scientific |
| | Web-Based Content | investigations. |
| | | Formulate and revise explanations and models using |
| | | logic and evidence. |
| | | Recognize and analyze alternative explanations and |
| | | models. |
| | | Explain the importance of accuracy and precision in |
| | | making valid measurements. |
| | | Examine the status of existing theories. |
| | | Evaluate experimental information for relevance and |
| | | adherence to science processes. |
| | | Judge that conclusions are consistent and logical with |
| | | experimental conditions. |
| | | Interpret results of experimental research to predict new |
| | | information, propose additional investigable questions, |
| | | or advance a solution. |
| States of Matter: | Approved textbook | 3.2.10.A3 |
| Solids, Liquids, & Gases | Physical Science Concepts in Action with | 3.2.C.A3 |
| Phase Changes | Earth and Space: Chapter 3: 3.1,3.3 | CC.3.5 |
| r nase changes | Lesson/Unit Plan | CC.3.6 |
| | Instructional Content | CC.3.0 |
| | Educational Resources | |
| | Assessment | |
| | Videos | |
| | Web-Based Content | |
| | THE BUSCU CONTENT | |

| Atomic Structure: History of Atoms Atomic Structure Atomic Theory | Approved textbook Physical Science Concepts in Action with Earth and Space: Chapter 4: 4.1, 4.2, 4.3 Lesson/Unit Plan Instructional Content Educational Resources Assessment Videos Web-Based Content | 3.2.C.A5 CC.3.5 CC.3.6 |
|--|---|---|
| Periodic Table: Organization Modern Periodic Table Groupings | Approved textbook Physical Science Concepts in Action with Earth and Space: Chapter 5: 5.1, 5.2, 5.3 Lesson/Unit Plan Instructional Content Educational Resources Assessment Videos Web-Based Content | 3.2.C.A1 3.2.10.A1 CC.3.5 CC.3.6 |
| Chemical Bonding: Ionic Bond Covalent | Approved textbook Physical Science Concepts in Action with Earth and Space: Chapter 6: 6.1, 6.2 Lesson/Unit Plan Instructional Content Educational Resources Assessment Videos Web-Based Content | 3.2.10.A2 CC.3.5 CC.3.6 |

| Chemical Reactions: | Approved textbook | 3.2.10.A4 |
|-------------------------------|--|-----------|
| Types of Reactions | Physical Science Concepts in Action with | 3.2.C.A4 |
| | Earth and Space: Chapter 7: 7.2 | CC.3.5 |
| | Lesson/Unit Plan | CC.3.6 |
| | Instructional Content | |
| | Educational Resources | |
| | Assessment | |
| | Videos | |
| | Web-Based Content | |
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| Solutions Acids and Bases : | Approved textbook | 3.2.12.A4 |
| Properties of acids and bases | Physical Science Concepts in Action with | CC.3.5 |
| Strength of acids and bases | Earth and Space: Chapter 8: 8.3, 8.4 | CC.3.6 |
| | Lesson/Unit Plan | |
| | Instructional Content | |
| | Educational Resources | |
| | Assessment | |
| | Videos | |
| | Web-Based Content | |
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2nd Quarter

| Topic | Resources | Academic Standards |
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| Carbon Chemistry: | Approved textbook | 3.1.B.A7 |
| Carbon Compounds | Physical Science Concepts in Action with Earth | CC.3.5 |
| Polymers | and Space: Chapter 9: 9.1, 9.3, 9.4 | CC.3.6 |
| Reactions in Cells | Lesson/Unit Plan | |
| | Instructional Content | |
| | Educational Resources | |
| | Assessment | |
| | Videos | |
| | Web-Based Content | |
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| <u>Physics</u> | Approved textbook | 3.2.P.B1 |
|---------------------------|---|---|
| Motion: | Physical Science Concepts in Action with Earth | CC.3.5 |
| Distance and Displacement | and Space: Chapter 11: 11.1, 11.2, 11.3 | CC.3.6 |
| Speed and Velocity | Lesson/Unit Plan | 3.1.P.A9: <u>Use for all Lessons in Physics</u> |
| Acceleration | Instructional Content Educational Resources Assessment Videos Web-Based Content | Compare and contrast scientific theories. Know that both direct and indirect observations are used by scientists to study the natural world and universe. Identify questions and concepts that guide scientific investigations. Formulate and revise explanations and models using logic and evidence. Recognize and analyze alternative explanations and |
| | | Explain the importance of accuracy and precision in making valid measurements. Examine the status of existing theories. Evaluate experimental information for relevance and adherence to science processes. Judge that conclusions are consistent and logical with experimental conditions. Interpret results of experimental research to predict new information, propose additional investigable questions, or advance a solution. Communicate and defend a scientific argument. |

| Force and Motion: | Approved textbook | 3.2.10.B1 |
|-------------------|---|-----------|
| Forces | Physical Science Concepts in Action with Earth | CC.3.5 |
| Newton's Laws | and Space: Chapter 12: 12.1-12.4 | CC.3.6 |
| Momentum | Lesson/Unit Plan | |
| Universal Forces | Instructional Content | |
| | Educational Resources | |
| | Assessment | |
| | Videos | |
| | Web-Based Content | |
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3rd Quarter

| Resources | Academic Standards |
|--|--|
| Approved textbook | 3.3.12.A2 |
| Physical Science Concepts in Action with Earth | 3.2.P.B2 |
| and Space: Chapter 15: 15.1-15.3 | CC.3.5 |
| Lesson/Unit Plan | CC.3.6 |
| Instructional Content | |
| Educational Resources | |
| Assessment | |
| Videos | |
| Web-Based Content | |
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| | Approved textbook Physical Science Concepts in Action with Earth and Space: Chapter 15: 15.1-15.3 Lesson/Unit Plan Instructional Content Educational Resources Assessment Videos |

| Earth Science | Approved textbook | 3.3.10.A3 |
|--------------------|---|--|
| Earth's Structure: | Physical Science Concepts in Action with Earth | 3.3.10.A1 |
| Plate Tectonics | and Space: Chapter 22: 22.1, 22.4-22.6 | CC.3.5 |
| Earthquakes | Lesson/Unit Plan | CC.3.6 |
| Volcanoes | Instructional Content | 3.3.10.A8: Use for all Earth Science |
| | Educational Resources | Compare and contrast scientific theories. |
| | Assessment | Know that both direct and indirect |
| | Videos | observations are used by scientists to study the |
| | Web-Based Content | natural world and universe. |
| | | Identify questions and concepts that guide |
| | | scientific investigations. |
| | | Formulate and revise explanations and models |
| | | using logic and evidence. |
| | | Recognize and analyze alternative explanations |
| | | and models. |
| | | Explain the importance of accuracy and |
| | | precision in making valid measurements. |
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| Earth's History: Weathering and Mass Movement Water Shapes the Land Glaciers and Wind Oceans | Approved textbook Physical Science Concepts in Action with Earth and Space: Chapter 23: 23.2-23.5 Lesson/Unit Plan Instructional Content Educational Resources Assessment Videos Web-Based Content | 3.3.10.A5 CC.3.5 CC.3.6 |
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4th Quarter

| The Solar System: | Approved textbook | 3.3.10.B1 |
|-----------------------------------|---|---|
| Exploring the solar system | Physical Science Concepts in Action with Earth and | 3.3.12.B3 |
| Earth Moon System | Space : Chapter 25: 25.1-25.5 | CC.3.5 |
| Planets | Lesson/Unit Plan | CC.3.6 |
| Origin | Instructional Content | 3.3.10.B3 <u>Use for Solar System Lessons</u> |
| | Educational Resources | |
| | Assessment Videos Web-Based Content | Compare and contrast scientific theories. Know that both direct and indirect observations are used by scientists to study the natural world and universe. Identify questions and concepts that guide scientific investigations. Formulate and revise explanations and models using logic and evidence. Recognize and analyze alternative explanations and models. Explain the importance of accuracy and precision in making valid measurements. |

| Exploring the Universe: | Approved textbook | 3.3.12.B1 |
|------------------------------|---|--|
| The Sun/Stars | Physical Science Concepts in Action with Earth and | 3.3.12.B3 |
| Life Cycle of Stars | Space : Chapter 26: 26.1-26.5 | CC.3.5 |
| Groups of Stars | Lesson/Unit Plan | CC.3.6 |
| Expanding Universe | Instructional Content | 3.3.12.B3 <u>Use for Universe Lessons</u> |
| | Educational Resources | Examine the status of existing theories. |
| | Assessment | Evaluate experimental information for |
| | Videos | relevance and adherence to science processes. |
| | Web-Based Content | Judge that conclusions are consistent and logical with experimental conditions. Interpret results of experimental research to predict new information, propose additional investigable questions, or advance a solution. Communicate and defend a scientific argument. |
| Review and Final Examination | | |
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*The suggested timeline and curriculum content should be adjusted and revised as needed in correlation with the PA State Standards.

| General Topic | Academic | Essential Knowledge, | Resources & | Assessments | Suggested |
|---|-------------|--|---------------------|---------------|-----------|
| | Standard(s) | Skills & Vocabulary | Activities | | Time |
| Using Science Skills: | 3.3.10.A8 | Compare and contrast scientific theories. | Approved | Teacher | 5 days |
| Scientific Approach | | | textbook | prepared | |
| Measurements | | Know that both direct and indirect | | tests, | |
| Scientific Data | | observations are used by scientists to study | Worksheets | quizzes, etc. | |
| | | the natural world and universe. | | | |
| | | | Activity | Series | |
| | | Identify questions and concepts that guide | Assessments | available | |
| | | scientific investigations. | | assessments | |
| | | | Smart Boards | online. | |
| | | Formulate and revise explanations and | | (Optional) | |
| | | models using logic and evidence. | Multimedia | | |
| | | | Presentations | | |
| | | Recognize and analyze alternative | | | |
| | | explanations and models. | Measurement | | |
| | | | Lab | | |
| | | Explain the importance of accuracy and | | | |
| | | precision in making valid measurements. | Webquest | | |
| | CC.3.5 | Reading Informational Text | | | |
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| | CC.3.6 | Writing | | | |
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| Chemistry | 3.2.C.A1 | Differentiate between physical properties | Approved | Teacher | 4 days |
|---|----------|---|---------------|-----------------|--------|
| Properties of Matter: | | and chemical properties. | textbook | prepared tests, | |
| Classifying Matter | | | | quizzes, etc. | |
| Physical Properties | | Differentiate between pure substances and | Worksheets | | |
| Chemical Properties | | mixtures; differentiate between | | Series | |
| | | heterogeneous and homogeneous mixtures. | Activity | available | |
| | | | Assessments | assessments | |
| | | _ ,, , , , , , , , , , , , , , , , , , | | online. | |
| | CC.3.5 | Reading Informational Text | Smart Boards | (Optional) | |
| | CC.3.6 | Writing | Multimedia | | |
| | | | Presentations | | |
| | | | Webquest | | |
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| States of Matter: | 3.2.10.A3 | Describe phases of matter according to the | Approved | Teacher | 4 days |
|--|-----------|---|---------------|---------------|--------|
| Solids, Liquids, & Gases | | kinetic molecular theory. | textbook | prepared | |
| Phase Changes | | | | tests, | |
| | | Describe the three normal states of matter in | Worksheets | quizzes, etc. | |
| | 3.2.C.A3 | terms of energy, particle motion, and phase | | | |
| | | transitions. | Activity | Series | |
| | | | Assessments | available | |
| | CC.3.5 | Reading Informational Text | | assessments | |
| | | | Smart Boards | online. | |
| | CC.3.6 | Writing | | (Optional) | |
| | | | Multimedia | | |
| | | | Presentations | | |
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| Atomic Structure | | Recognize discoveries from Dalton (atomic | Approved | Teacher | 5 days |
|--------------------------------------|----------|---|---------------|--------------------------|--------|
| History of Atoms | 3.2.C.A5 | theory), Thomson (the electron), Rutherford | textbook | prepared | |
| Atomic Structure | | (the nucleus), and Bohr (planetary model of | | tests, | |
| Atomic Theory | | atom), and understand how each discovery leads to modern theory. | Worksheets | quizzes, etc. | |
| | | , | Activity | Series | |
| | | Describe Rutherford's "gold foil" experiment that led to the discovery of the nuclear atom. | Assessments | available assessments | |
| | | Identify the major components (protons, | Smart Boards | online. | |
| | | neutrons, and electrons) of the nuclear atom and explain how they interact. | Multimedia | (Optional) | |
| | | and explain now they interact. | Presentations | | |
| | CC.3.5 | Reading Informational Text | | | |
| | | | Webquest | | |
| | CC.3.6 | Writing | | | |
| | | | Construction | | |
| | | | of Model: | | |
| | | | Atom | | |
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| Periodic Table: | 3.2.C.A1 | Explain the relationship of an element's | Approved | Teacher | 6 days |
|---|-----------|--|----------------|-----------------------|--------|
| Organization | | position on the periodic table to its atomic | textbook | prepared | |
| Modern Periodic Table | | number, ionization energy, electro-negativity, | | tests, | |
| Groupings | | atomic size, and classification of elements. | Worksheets | quizzes, etc. | |
| | | | Activity | Series | |
| | 3.2.10.A1 | Predict properties of elements using trends of the periodic table. | Assessments | available assessments | |
| | | the periodic table. | Smart Boards | online. | |
| | | | Siliait Boards | (Optional) | |
| | CC.3.5 | Reading Informational Text | Multimedia | | |
| | | | Presentations | | |
| | CC.3.6 | Writing | | | |
| | | | Webquest | | |
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| Chemical Bonding | 3.2.10.A2 | Compare and contrast different bond types | Approved | Teacher | 6 days |
|------------------|-----------|---|---------------|---------------|--------|
| • Ionic | | that result in the formation of molecules and | textbook | prepared | |
| • Covalent | | compounds. | | tests, | |
| | | · | Worksheets | quizzes, etc. | |
| | | Explain why compounds are composed of | | ' ' | |
| | | integer ratios of elements. | Activity | Series | |
| | | | Assessments | available | |
| | CC.3.5 | Reading Informational Text | | assessments | |
| | | | Smart Boards | online. | |
| | CC.3.6 | Writing | | (Optional) | |
| | | | Multimedia | (0) | |
| | | | Presentations | | |
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| Chemical Reactions | 3.2.10.A4 | Explain the difference between endothermic | Approved | Teacher | 5 days |
|--|-----------|---|---------------|---------------|--------|
| Types of Reactions | | and exothermic reactions. | textbook | prepared | |
| Energy Changes | | | | tests, | |
| Reaction Rates | | Identify the factors that affect the rates of | Activity | quizzes, etc. | |
| | | reactions. | Assessments | | |
| | | | | Series | |
| | 3.2.C.A4 | Classify chemical reactions as synthesis | Smart Boards | available | |
| | | (combination), decomposition, single | | assessments | |
| | | displacement (replacement), double | Multimedia | online. | |
| | | displacement, and combustion. | Presentations | (Optional) | |
| | CC.3.5 | Reading Informational Text | Webquest | | |
| | CC.3.6 | Writing | Measurement | | |
| | | | Lab | | |
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| Solutions | 3.2.12.A4 | Apply oxidation/reduction principles to | Approved | Teacher | 5 days |
|-------------------------|-----------|---|---------------------|---------------|--------|
| Acids | | electrochemical reactions. | textbook | prepared | |
| • Bases | | | | tests, | |
| | | Describe the interactions between acids and | Worksheets | quizzes, etc. | |
| | | bases. | | | |
| | | | Activity | Series | |
| | | | Assessments | available | |
| | | | | assessments | |
| | CC.3.5 | Reading Informational Text | Smart Boards | online. | |
| | | | | (Optional) | |
| | CC.3.6 | Writing | Multimedia | | |
| | | | Presentation | | |
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| Carbon Chemistry | 3.1.B.A7 | Analyze the importance of carbon to the | Approved | Teacher | 5 Days |
|--|----------|--|--------------|---------------|--------|
| Carbon Compounds | | structure of biological macromolecules. | textbook | prepared | |
| Polymers | | | | tests, | |
| Reactions In Cells | | Compare and contrast the functions and | Worksheets | quizzes, etc. | |
| | | structures of proteins, lipids, carbohydrates, | | | |
| | | and nucleic acids. | Activity | Series | |
| | | | Assessments | available | |
| | | Explain the consequences of extreme changes | | assessments | |
| | | in pH and temperature on cell proteins. | Smart Boards | online. | |
| | | | | (Optional) | |
| | CC.3.5 | Reading Informational Text | Multimedia | | |
| | | | Presentation | | |
| | CC.3.6 | Writing | | | |
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| <u>Physics</u> | 3.2.P.B1 | Differentiate among translational motion, | Approved | Teacher | 23 Days |
|--|----------|---|--------------|---------------|---------|
| Motion: | | simple harmonic motion, and rotational | textbook | prepared | |
| Distance and | | motion in terms of position, velocity, and | | tests, | |
| Displacement | | acceleration. | Worksheets | quizzes, etc. | |
| Speed and Velocity | | | | | |
| Acceleration | | Use force and mass to explain translational | Activity | Series | |
| | | motion or simple harmonic motion of | Assessments | available | |
| | | objects. | | assessments | |
| | | | Smart Boards | online. | |
| | CC.3.5 | Reading Informational Text | | (Optional) | |
| | | | Multimedia | | |
| | CC.3.6 | Writing | Presentation | | |
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| Force and Motion: Forces Newton's Laws Momentum Universal Forces | 3.2.10.B1 | Analyze the relationships among the net forces acting on a body, the mass of the body, and the resulting acceleration using Newton's Second Law of Motion. Apply Newton's Law of Universal Gravitation to the forces between two objects. Use Newton's Third Law to explain forces as interactions between bodies. Describe how interactions between objects conserve momentum. | Approved textbook Worksheets Activity Assessments Smart Boards Multimedia Presentation | Teacher prepared tests, quizzes, etc. Series available assessments online. (Optional) | 24 Days |
|---|------------------|--|--|--|---------|
| | CC.3.5 CC.3.6 | Reading Informational Text Writing | | | |
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| Forms of Energy | 3.2.P.B2 | Explain the translation and simple harmonic | Approved | Teacher | 10 Days |
|---|-----------|---|----------------|---------------|---------|
| Energy and it's forms | | motion of objects using conservation of | textbook | prepared | |
| Conversion and | | energy and conservation of momentum. | | tests, | |
| Conservation | | 67 | Worksheets | quizzes, etc. | |
| Energy Resources | | Explain how gravitational, electrical, and | | 4 | |
| Chergy Resources | | magnetic forces and torques give rise to | Activity | Series | |
| | | rotational motion. | Assessments | available | |
| | | Totational motion. | Assessments | assessments | |
| | 3.3.12.A2 | Analyze the availability, location, and | Smart Boards | online. | |
| | 3.3.12.AZ | extraction of Earth's resources. | Siliart boards | | |
| | | extraction of Earth's resources. | 0.4 | (Optional) | |
| | | | Multimedia | | |
| | | Evaluate the impact of using renewable and | Presentation | | |
| | | nonrenewable energy resources on the | | | |
| | | Earth's system. | | | |
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| | CC.3.5 | Reading Informational Text | | | |
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| | CC.3.6 | Writing | | | |
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| Earth Science | 3.3.10.A3 | Explain how the evolution of Earth has been | Approved | Teacher | 18 Days |
|---------------------------------------|--------------|--|--------------|---------------|---------|
| Earth's Interior: | | driven by interactions between the | textbook | prepared | |
| Earth's Structure | | lithosphere, hydrosphere, atmosphere, and | | tests, | |
| Plate Tectonics | | biosphere. | Worksheets | quizzes, etc. | |
| • Earthquakes | | and a second sec | | 44 | |
| Volcanoes | | Relate plate tectonics to both slow and rapid | Activity | Series | |
| Voicarioes | | changes in the earth's surface. | Assessments | available | |
| | | | | assessments | |
| | 3.3.10.A1 | Describe the rock cycle and the processes | Smart Boards | online. | |
| | 0.0.120.7.12 | that are responsible for the formation of | omart Boards | (Optional) | |
| | | igneous, sedimentary, and metamorphic | Multimedia | (Optional) | |
| | | rocks. | Presentation | | |
| | | TOCKS. | rescitation | | |
| | | Explain how the Earth is composed of a | | | |
| | | number of dynamic, interacting systems | | | |
| | | exchanging energy or matter. | | | |
| | | exchanging energy of matter. | | | |
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| | CC.3.5 | Reading Informational Text | | | |
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| | CC.3.6 | Writing | | | |
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| Earth's History | 3.3.10.A5 | Explain how there is only one ocean. | Approved | Teacher | 20 days |
|--------------------------|-----------|---|--------------|---------------|---------|
| Weathering and Mass | | , | textbook | prepared | |
| Movement | | Explain the processes of the hydrologic cycle. | | tests, | |
| Water Shapes the Land | | , | Worksheets | quizzes, etc. | |
| Glaciers and Wind | | Explain the dynamics of oceanic currents and | | 1 | |
| | | their relationship to global circulation within | Activity | Series | |
| Oceans | | the marine environment. | Assessments | available | |
| | | | | assessments | |
| | | | Smart Boards | online. | |
| | | | | (Optional) | |
| | | | Multimedia | , | |
| | | | Presentation | | |
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| Weather and Climate | 3.3.10.A6 | Interpret meteorological data to describe | Approved | Teacher | 15 days |
|-------------------------------------|-----------|--|---------------------|---------------|---------|
| The Atmosphere | | and/or predict weather. | textbook | prepared | |
| The Sun/Seasons | | | | tests, | |
| Solar Energy | | Explain the phenomena that cause global | Worksheets | quizzes, etc. | |
| Water Atmosphere | | atmospheric processes such as storms, | | | |
| Weather/Climate | | currents, and wind patterns. | Activity | Series | |
| | | | Assessments | available | |
| | | Explain how the unequal heating of the | | assessments | |
| | | Earth's surface leads to atmospheric global | Smart Boards | online. | |
| | | circulation changes, climate, local short term | | (Optional) | |
| | | changes, and weather. | Multimedia | | |
| | | | Presentation | | |
| | | Examine the status of existing theories. | | | |
| | | Evaluate experimental information for | | | |
| | | relevance and adherence to science | | | |
| | | processes. | | | |
| | 3.3.12.A6 | Judge that conclusions are consistent and | | | |
| | | logical with experimental conditions. | | | |
| | | Interpret results of experimental research to | | | |
| | | predict new information, propose additional | | | |
| | | investigable questions, or advance a solution. | | | |
| | | | | | |
| | | Communicate and defend a scientific | | | |
| | | argument. | | | |
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| 3.3.12.A8 | Relate the transfer of energy through radiation, conduction, and convection to global atmospheric processes. | | |
|-----------|--|--|--|
| | Relate geochemical cycles to conservation of matter. | | |
| 3.3.10.A4 | Explain how the Earth's systems and its various cycles are driven by energy. | | |
| CC.3.5 | Reading Informational Text | | |
| CC.3.6 | Writing | | |
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| Exploring the solar system | 3.3.10.B1 | Explain how gravity is responsible for | Approved | Teacher | 10 days |
|----------------------------|-----------|--|--------------|---------------|---------|
| Earth Moon System | | planetary orbits. | textbook | prepared | |
| Planets | | | | tests, | |
| Origin | | Explain what caused the sun, Earth, and most | Worksheets | quizzes, etc. | |
| | | of the other planets to form between 4 and 5 | | | |
| | | billion years ago. | Activity | Series | |
| | | | Assessments | available | |
| | | Provide evidence to suggest the Big Bang | | assessments | |
| | | Theory. | Smart Boards | online. | |
| | | | | (Optional) | |
| | | Describe the basic nuclear processes involved | Multimedia | | |
| | | in energy production in a star. | Presentation | | |
| | | Examine the status of existing theories. | | | |
| | | Evaluate experimental information for | | | |
| | | relevance and adherence to science | | | |
| | | processes. | | | |
| | 3.3.12.B3 | Judge that conclusions are consistent and | | | |
| | | logical with experimental conditions. | | | |
| | | Interpret results of experimental research to | | | |
| | | predict new information, propose additional | | | |
| | | investigable questions, or advance a solution. | | | |
| | | Communicate and defend a scientific | | | |
| | | argument. | | | |
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| | CC.3.5 | Reading Informational Text | | | |
| | CC.3.6 | Writing | | | |
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| Exploring the Universe: • Life Cycle of Stars • Groups of Stars • Expanding Universe | 3.3.12.B1 3.3.12.B3 | Describe the life cycle of stars based on their mass. Analyze the influence of gravity on the formation and life cycles of galaxies, including our own Milky Way galaxy; stars; planetary systems; and residual material left from the creation of the solar system. Relate the nuclear processes involved in energy production in stars and supernovas to their life cycles. Examine the status of existing theories. Evaluate experimental information for relevance and adherence to science processes. Judge that conclusions are consistent and logical with experimental conditions. Interpret results of experimental research to predict new information, propose additional investigable questions, or advance a solution. | Approved textbook Worksheets Activity Assessments Smart Boards Multimedia Presentation | Teacher prepared tests, quizzes, etc. Series available assessments online. (Optional) | 10 days |
|---|------------------------|---|--|--|---------|
| | | Interpret results of experimental research to predict new information, propose additional | | | |
| | CC.3.5 | Reading Informational Text | | | |
| | CC.3.6 | Writing | | | |

| Review and Final Examination | | | 10 days |
|------------------------------|--|--|---------|
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