

**Cocalico School District**  
**Year-at-a-Glance - Curriculum Overview**

**Department: Cocalico Connections**

**Course: Science 8**

**Grade Level: 8**

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**Outline for the course:**

Atoms and Elements

Atomic Theory [Guided Notes](#)

Warm-Up

*Get ready for the lesson.*

Instruction

*How did the atomic theory develop and change?*

Summary

*Review and connect what you learned.*

Assignment

*Identify evidence for atomic models.*

Assignment

*Read about atomic models.*

Quiz Answers

The History and Arrangement of the Periodic Table [Guided Notes](#)

Warm-Up

*Get ready for the lesson.*

Instruction

*How was the periodic table developed and how is it arranged?*

Summary

*Review and connect what you learned.*

Assignment

*Practice classifying elements and predicting element properties.*

Quiz Answers

Metals [Guided Notes](#)

Warm-Up

*Get ready for the lesson.*

Instruction

*How are metals identified?*

Summary

*Review and connect what you learned.*

Assignment

*Apply the properties of metals.*

Quiz Answers

Nonmetals [Guided Notes](#)

Warm-Up

*Get ready for the lesson.*

Instruction

*How are nonmetals identified?*

Summary

*Review and connect what you learned.*

Assignment

*Apply the properties of nonmetals.*

Quiz Answers

Metalloids [Guided Notes](#)

Warm-Up

*Get ready for the lesson.*

Instruction

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*How are metalloids identified?*

[Summary](#)

*Review and connect what you learned.*

[Assignment](#)

*Explore the properties of metalloids.*

[Quiz Answers](#)

[Unit Test](#)

[Unit Test Review Answers](#)

[Unit Test Answers](#)

[Bonding](#)

[Types of Chemical Bonds](#) [Guided Notes](#)

[Warm-Up](#)

*Get ready for the lesson.*

[Instruction](#)

*What are the three main ways that elements can come together to form bonds?*

[Summary](#)

*Review and connect what you learned.*

[Assignment](#)

*Write about types of bonds.*

[Quiz Answers](#)

[Ionic Bonds](#) [Guided Notes](#)

[Assignment](#)

*Describe ionic bonds and ionic compounds.*

[Quiz Answers](#)

[Instruction](#)

*How are ionic bonds formed?*

[Warm-Up](#)

*Get ready for the lesson.*

[Summary](#)

*Review and connect what you learned.*

[Naming Ionic Compounds](#) [Guided Notes](#)

[Instruction](#)

*How are names and formulas written for ionic compounds?*

[Quiz Answers](#)

[Warm-Up](#)

*Get ready for the lesson.*

[Summary](#)

*Review and connect what you learned.*

[Assignment](#)

*Apply rules for writing chemical formulas and names.*

[Covalent Bonds](#) [Guided Notes](#)

[Warm-Up](#)

*Get ready for the lesson.*

[Assignment](#)

*Describe covalent bonds and covalent compounds.*

[Instruction](#)

*How are covalent bonds formed?*

[Quiz Answers](#)

[Summary](#)

*Review and connect what you learned.*

[Naming Covalent Compounds](#) [Guided Notes](#)

[Assignment](#)

*Write chemical formulas and names.*

[Summary](#)

*Review and connect what you learned.*

[Quiz Answers](#)

[Warm-Up](#)

**Cocalico School District**  
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*Get ready for the lesson.*

**Instruction**

*How are names and formulas written for covalent compounds?*

**Properties and Changes of Matter**

Introduction to Matter [Guided Notes](#)

**Warm-Up**

*Get ready for the lesson.*

**Instruction**

*What is matter?*

**Summary**

*Review and connect what you learned.*

**Assignment**

*Describe and measure matter.*

**Quiz Answers**

Types of Chemical Reactions [Guided Notes](#)

**Warm-Up**

*Get ready for the lesson.*

**Instruction**

*How are chemical reactions classified?*

**Summary**

*Review and connect what you learned.*

**Assignment**

*Predict the outcome of different reaction types.*

**Quiz Answers**

Rate of Chemical Reactions [Guided Notes](#)

**Warm-Up**

*Get ready for the lesson.*

**Instruction**

*How can the rate of a chemical reaction be changed?*

**Summary**

*Review and connect what you learned.*

**Assignment**

*Identify changes to reaction rates.*

**Quiz Answers**

Lab: Rate of Chemical Reactions

**Warm-Up**

*Get ready for the lesson.*

**Instruction**

*How do the factors of temperature and surface area affect the rate of chemical reactions?*

**Virtual Lab**

*Explore factors that affect the rate of chemical reactions using a virtual experiment.*

**Wet Lab**

*Explore factors that affect the rate of chemical reactions using a controlled experiment.*

**Assignment: Reflect on the Lab**

*Answer questions based on the lab activity.*

**Assignment: Lab Report**

*Write your lab report.*

**Summary**

*Review and connect what you learned.*

**Unit Test**

Unit Test Review Answers

Unit Test Answers

**Energy: Transfers and Transformations**

Potential and Kinetic Energy [Guided Notes](#)

**Warm-Up**

*Get ready for the lesson.*

**Instruction**

## **Cocalico School District**

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*What is the relationship between potential energy and kinetic energy?*

[Summary](#)

*Review and connect what you learned.*

[Assignment](#)

*Apply potential and kinetic energy concepts.*

[Quiz Answers](#)

**Lab: Kinetic Energy**

[Warm-Up](#)

*Get ready for the lesson.*

[Instruction](#)

*How do mass and speed affect kinetic energy?*

[Virtual Lab](#)

*Explore the relationship between mass, speed, and kinetic energy using a virtual experiment.*

[Wet Lab](#)

*Explore the relationship between mass, speed, and kinetic energy using a laboratory procedure.*

[Assignment: Reflect on the Lab](#)

*Answer questions based on the lab activity.*

[Assignment: Lab Report](#)

*Write your lab report.*

[Summary](#)

*Review and connect what you learned.*

**Conduction** [Guided Notes](#)

[Warm-Up](#)

*Get ready for the lesson.*

[Instruction](#)

*What is the relationship between conduction and thermal energy?*

[Summary](#)

*Review and connect what you learned.*

[Assignment](#)

*Describe conduction.*

[Quiz Answers](#)

**Convection** [Guided Notes](#)

[Warm-Up](#)

*Get ready for the lesson.*

[Instruction](#)

*What is the relationship between convection and thermal energy?*

[Summary](#)

*Review and connect what you learned.*

[Assignment](#)

*Describe convection.*

[Quiz Answers](#)

**Radiation** [Guided Notes](#)

[Warm-Up](#)

*Get ready for the lesson.*

[Instruction](#)

*What is radiation?*

[Summary](#)

*Review and connect what you learned.*

[Assignment](#)

*Describe radiation.*

[Project: Solar Cooker](#)

*For this project you will draw a design for a solar cooker and then write a report about it. You will NOT need to*

[Quiz Answers](#)

**Unit Test**

[Unit Test Review Answers](#)

[Unit Test Answers](#)

**Newton's Laws of Motion**

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Newton's Laws of Motion [Guided Notes](#)

Warm-Up

*Get ready for the lesson.*

Instruction

*How do Newton's laws describe the motion of an object?*

Summary

*Review and connect what you learned.*

Assignment

*Read about Newton's laws.*

Assignment

*Apply Newton's laws.*

Quiz Answers

Lab: Newton's Laws of Motion

Warm-Up

*Get ready for the lesson.*

Instruction

*How can Newton's laws be experimentally verified?*

Virtual Lab

*Explore Newton's first two laws of motion using a virtual experiment.*

Wet Lab

*Explore Newton's first two laws of motion using a laboratory procedure.*

Plan an Investigation

*Demonstrate and verify Newton's first two laws of motion by planning an investigation.*

Assignment: Reflect on the Lab

*Answer questions based on the lab activity.*

Assignment: Lab Report

*Write your lab report.*

Summary

*Review and connect what you learned.*

Momentum [Guided Notes](#)

Warm-Up

*Get ready for the lesson.*

Instruction

*What is momentum?*

Summary

*Review and connect what you learned.*

Assignment

*Apply momentum concepts.*

Quiz Answers

Unit Test

Unit Test Review Answers

Unit Test Answers

Friction & Gravity

Friction [Guided Notes](#)

Assignment

*Describe the effect of friction on motion.*

Instruction

*How does friction affect the motion of an object?*

Warm-Up

*Get ready for the lesson.*

Quiz Answers

Summary

*Review and connect what you learned.*

Gravity [Guided Notes](#)

Warm-Up

*Get ready for the lesson.*

Project: Gravity Presentation

## **Cocalico School District**

### **Year-at-a-Glance - Curriculum Overview**

*Create a multimedia presentation about gravity.*

[Quiz Answers](#)

[Summary](#)

*Review and connect what you learned.*

[Assignment](#)

*Apply gravity concepts to different situations.*

[Instruction](#)

*What is gravity and how does it influence objects?*

[Assignment](#)

*Describe and apply what you know about gravity and its influence on objects.*

#### **The Universe**

##### **Star Systems and Galaxies** [Guided Notes](#)

[Warm-Up](#)

*Get ready for the lesson.*

[Instruction](#)

*How is the universe organized into systems and galaxies?*

[Summary](#)

*Review and connect what you learned.*

[Assignment](#)

*Differentiate types of star systems and galaxies.*

[Quiz Answers](#)

##### **Galaxies and the Universe**

[Warm-Up](#)

*Get ready for the lesson.*

[Instruction](#)

*What are galaxies and how do they fit into the structure of the universe?*

[Summary](#)

*Review and connect what you learned.*

[Assignment](#)

*Explore galaxies and the universe.*

[Quiz Answers](#)

##### **The Expanding Universe** [Guided Notes](#)

[Warm-Up](#)

*Get ready for the lesson.*

[Instruction](#)

*How do scientists theorize that the universe formed?*

[Summary](#)

*Review and connect what you learned.*

[Assignment](#)

*Describe the big bang and explain how the solar system formed.*

[Quiz Answers](#)

#### **Unit Test**

[Unit Test Review Answers](#)

[Unit Test Answers](#)

#### **Physics: Practical Applications**

##### **Introduction to Machines** [Guided Notes](#)

[Warm-Up](#)

*Get ready for the lesson.*

[Instruction](#)

*How do machines make work easier?*

[Summary](#)

*Review and connect what you learned.*

[Assignment](#)

*Describe machines.*

[Quiz Answers](#)

##### **Simple Machines** [Guided Notes](#)

[Warm-up](#)

**Cocalico School District**  
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*Get ready for the lesson.*

**Instruction**

*What are simple machines?*

**Summary**

*Review and connect what you learned.*

**Assignment**

*Describe simple machines.*

**Quiz Answers**

Using Sound [Guided Notes](#)

**Warm-Up**

*Get ready for the lesson.*

**Instruction**

*What are some applications of sound waves?*

**Summary**

*Review and connect what you learned.*

**Assignment**

*Read about analog and digital signals.*

**Assignment**

*Describe the applications of sound waves.*

**Quiz Answers**

Using Light [Guided Notes](#)

**Warm-Up**

*Get ready for the lesson.*

**Instruction**

*How is light used in technology?*

**Summary**

*Review and connect what you learned.*

**Assignment**

*Read about tools that use lenses.*

**Assignment**

*Apply knowledge of light-using technology.*

**Quiz Answers**

Electric Circuits [Guided Notes](#)

**Warm-Up**

*Get ready for the lesson.*

**Instruction**

*What are electric circuits?*

**Summary**

*Review and connect what you learned.*

**Assignment**

*Explain electric circuits.*

**Quiz Answers**

Unit Test

[Unit Test Review Answers](#)

[Unit Test Answers](#)

Dynamic Earth

Theory of Plate Tectonics [Guided Notes](#)

**Warm-Up**

*Get ready for the lesson.*

**Instruction**

*What are the causes and effects of plate tectonics?*

**Summary**

*Review and connect what you learned.*

**Assignment**

*Explore the theory of plate tectonics.*

**Assignment**

*Describe the theory of plate tectonics.*

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Quiz Answers

Characteristics of the Seafloor [Guided Notes](#)

Warm-Up

*Get ready for the lesson.*

Instruction

Summary

*Review and connect what you learned.*

Assignment

*Describe the process of seafloor spreading.*

Quiz Answers

Forces in Earth's Crust [Guided Notes](#)

Warm-Up

*Get ready for the lesson.*

Instruction

*How does stress in Earth's crust change Earth's surface?*

Summary

*Review and connect what you learned.*

Assignment

*Identify and analyze the effects of stress in Earth's crust.*

Quiz Answers

Earthquakes [Guided Notes](#)

Warm-Up

*Get ready for the lesson.*

Instruction

*What causes earthquakes?*

Summary

*Review and connect what you learned.*

Assignment

*Identify the causes of earthquakes and the ways in which they are measured.*

Quiz Answers

Volcanoes [Guided Notes](#)

Warm-Up

*Get ready for the lesson.*

Instruction

Summary

*Review and connect what you learned.*

Assignment

*Read about working with volcanoes.*

Quiz Answers

Unit Test

Unit Test Review Answers

Unit Test Answers

Earth Cycles and Structure

Models of Earth [Guided Notes](#)

Warm-Up

*Get ready for the lesson.*

Instruction

*How is Earth's surface mapped?*

Summary

*Review and connect what you learned.*

Assignment

*Apply your knowledge about models of Earth.*

Quiz Answers

Topographic Maps [Guided Notes](#)

Warm-Up

*Get ready for the lesson.*

Instruction



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*How are topographic maps interpreted and used?*

**Summary**

*Review and connect what you learned.*

**Assignment**

*Apply your knowledge of topographic maps.*

**Project: Topographic Maps**

*Analyze and interpret topographic maps and satellite images.*

**Quiz Answers**

**Erosion and Deposition** [Guided Notes](#)

**Warm-Up**

*Get ready for the lesson.*

**Instruction**

*How do erosion and deposition work together to shape Earth's landscape?*

**Summary**

*Review and connect what you learned.*

**Assignment**

*Describe erosion and deposition and differentiate among types of mass movement.*

**Quiz Answers**

**Water and Wind Erosion** [Guided Notes](#)

**Warm-Up**

*Get ready for the lesson.*

**Instruction**

*How have water and wind shaped Earth's surface?*

**Summary**

*Review and connect what you learned.*

**Assignment**

*Describe how surface water, groundwater, glaciers, waves, and wind shape the surface.*

**Quiz Answers**

**Lab: Modeling Water Erosion**

**Warm-Up**

*Get ready for the lesson.*

**Instruction**

*What factors affect the power of a river to cause erosion?*

**Virtual Lab**

*What factors affect the power of a river to cause erosion?*

**Wet Lab**

*What factors affect the power of a river to cause erosion?*

**Assignment: Reflect on the Lab**

*Answer questions based on the lab activity.*

**Lab Report**

*Write your lab report.*

**Summary**

*Review and connect what you learned.*

**Cycles of Matter** [Guided Notes](#)

**Warm-Up**

*Get ready for the lesson.*

**Instruction**

*How does matter cycle through an ecosystem?*

**Summary**

*Review and connect what you learned.*

**Assignment**

*Assess cycles of matter in an ecosystem.*

**Project: The Water Cycle**

*Create a model of the water cycle.*

**Quiz Answers**

**Unit Test**

**Unit Test Review Answers**

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Unit Test Answers

Rocks and Minerals

Minerals [Guided Notes](#)

Warm-Up

*Get ready for the lesson.*

Instruction

*How are minerals identified?*

Summary

*Review and connect what you learned.*

Assignment

*Identify the properties, characteristics, formation, and uses of minerals.*

Quiz Answers

Igneous Rocks [Guided Notes](#)

Warm-Up

*Get ready for the lesson.*

Instruction

*How are igneous rocks classified?*

Summary

*Review and connect what you learned.*

Assignment

*Apply your knowledge of igneous rock classification.*

Quiz Answers

Sedimentary Rocks [Guided Notes](#)

Warm-Up

*Get ready for the lesson.*

Instruction

*How are sedimentary rocks identified?*

Summary

*Review and connect what you learned.*

Assignment

*Classify sedimentary rocks.*

Quiz Answers

Metamorphic Rocks [Guided Notes](#)

Warm-Up

*Get ready for the lesson.*

Instruction

*How are metamorphic rocks identified?*

Summary

*Review and connect what you learned.*

Assignment

*Identify and classify metamorphic rocks.*

Quiz Answers

Lab: Mineral and Rock Classification

Warm-Up

*Get ready for the lesson.*

Instruction

*How are minerals and rocks classified?*

Virtual Lab

*How are minerals and rocks classified?*

Wet Lab

*How are minerals and rocks classified?*

Assignment: [Reflect on the Lab](#)

*Answer questions based on the lab activity.*

Lab Report

*Write your lab report.*

Summary

*Review and connect what you learned.*

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Unit Test

Unit Test Review Answers

Unit Test Answers

Weather and Climate

Ocean Circulation [Guided Notes](#)

Warm-Up

*Get ready for the lesson.*

Instruction

*What causes motion in the ocean?*

Summary

*Review and connect what you learned.*

Assignment

*Apply your knowledge to explain the motion of the oceans.*

Quiz Answers

Atmospheric Moisture and Precipitation [Guided Notes](#)

Warm-Up

*Get ready for the lesson.*

Instruction

*What is the role of atmospheric moisture in the formation of clouds and precipitation?*

Summary

*Review and connect what you learned.*

Assignment

*Describe the role of atmospheric moisture in the formation of clouds and precipitation.*

Quiz Answers

Climate Regions [Guided Notes](#)

Warm-Up

*Get ready for the lesson.*

Instruction

*How do Earth's climate regions differ?*

Summary

*Review and connect what you learned.*

Assignment

*Identify factors that affect climate and distinguish the main climate regions.*

Quiz Answers

Lab: Absorption and Radiation by Land and Water

Warm-Up

*Get ready for the lesson.*

Instruction

*What factors influence the absorption of sunlight at Earth's surface?*

Virtual Lab

*What factors influence the absorption of sunlight at Earth's surface?*

Wet Lab

*What factors influence the absorption of sunlight at Earth's surface?*

Assignment: [Reflect on the Lab](#)

*Answer questions based on the lab activity.*

Lab Report

*Write your lab report.*

Summary

*Review and connect what you learned.*

Unit Test

Unit Test Review Answers

Unit Test Answers

Earth's Resources

Earth's Energy Budget [Guided Notes](#)

Warm-Up

*Get ready for the lesson.*

Instruction

**Cocalico School District**  
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*What is the global energy budget?*

**Summary**

*Review and connect what you learned.*

**Assignment**

*Describe and analyze Earth's energy budget.*

**Quiz Answers**

**Energy on Earth** [Guided Notes](#)

**Warm-Up**

*Get ready for the lesson.*

**Instruction**

*How do renewable and nonrenewable resources differ?*

**Summary**

*Review and connect what you learned.*

**Assignment**

*Distinguish between renewable and nonrenewable resources.*

**Quiz Answers**

**Air Resources** [Guided Notes](#)

**Warm-Up**

*Get ready for the lesson.*

**Instruction**

*What is the importance of clean air as a natural resource?*

**Summary**

*Review and connect what you learned.*

**Assignment**

*Describe air as a natural resource.*

**Quiz Answers**

**Water Resources** [Guided Notes](#)

**Warm-Up**

*Get ready for the lesson.*

**Instruction**

*How are water resources used and managed?*

**Summary**

*Review and connect what you learned.*

**Assignment**

*Explain how water resources are used and managed.*

**Short Writing**

*Explain how natural resources are identified and why they are distributed unevenly.*

**Quiz Answers**

**Unit Test**

**Unit Test Review Answers**

**Unit Test Answers**

**Adaptations for Survival**

**Natural Selection** [Guided Notes](#)

**Warm-Up**

*Get ready for the lesson.*

**Instruction**

*How does natural selection affect the evolution of a species?*

**Summary**

*Review and connect what you learned.*

**Assignment**

*Describe natural selection.*

**Quiz Answers**

**Lab: Natural Selection**

**Warm-Up**

*Get ready for the lesson.*

**Instruction**

*How does natural selection change the phenotypes within a population over time?*

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#### **Virtual Lab**

*Use a virtual lab to explore how the phenotypes within a population change over time.*

#### **Wet Lab**

*Conduct an investigation to explore how the phenotypes within a population change over time.*

#### **Plan an Investigation**

*Plan an investigation to explore how the phenotypes within a population change over time.*

#### **Assignment: Reflect on the Lab**

*Answer questions based on the lab activity.*

#### **Lab Report**

*Write your lab report.*

#### **Summary**

*Review and connect what you learned.*

#### **Plant Responses [Guided Notes](#)**

##### **Warm-Up**

*Get ready for the lesson.*

##### **Instruction**

*How do plants respond to different stimuli?*

##### **Summary**

*Review and connect what you learned.*

##### **Assignment**

*Describe how plants respond to different stimuli.*

##### **Quiz Answers**

#### **Biomes [Guided Notes](#)**

##### **Warm-Up**

*Get ready for the lesson.*

##### **Instruction**

*How do the various terrestrial biomes differ?*

##### **Summary**

*Review and connect what you learned.*

##### **Assignment**

*Identify and describe Earth's terrestrial biomes.*

##### **Quiz Answers**

#### **Aquatic Ecosystems [Guided Notes](#)**

##### **Warm-Up**

*Get ready for the lesson.*

##### **Instruction**

*How do aquatic ecosystems differ?*

##### **Summary**

*Review and connect what you learned.*

##### **Assignment**

*Describe aquatic ecosystems.*

##### **Quiz Answers**

#### **Unit Test**

**[Unit Test Review Answers](#)**

**[Unit Test Answers](#)**

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**% of Course Time:** Self-paced, to cover all topics in the outline from above

**Textbooks & Supplemental Materials:** Edgenuity lessons, supplemented by Cocalico Teachers of Record

**Assessments:** Edgenuity quizzes and tests, performance tasks

**Standards Addressed:** Contact the Online Learning Facilitator for a supplemental document from Edgenuity outlining any applicable PA Standards address in the course topics. Note that for some courses, there are no PA Standards which may exist.



**Eagle P.A.C.T. Course Connections:**

Online Learning courses help to prepare students for the diverse ways in which they will learn outside of school. The self-paced, independent nature of virtual courses also helps to develop important skills such as self-advocacy, time management, organization, study skills, and self-discipline. Such skills are needed for a successful future.