

Science 8

Type: Online

Course Description:

Earth Science: The Prime Minister is calling, he needs to give a speech at an Environmental Conference on when and where earthquakes will occur and doesn't know a thing about earthquakes and the potential damage they can create! Your mission is to craft a speech for him, after researching where earthquakes are found within North America and how to prepare in the event of an earthquake. You'll read testimonies of experiences, investigate maps and craft his response to the nation.

Biology: The cell is the smallest building block of life. How does the cell relate to us as humans? And what types of cells do we come into contact with? After learning about the two most common types of cells, the prokaryotic and eukaryotic cell, students will get to create a scientific model that helps them represent the cell of their choosing. Then they will take what they've learned about cells and move into a study of viruses and bacteria while applying the basic knowledge of cells in an extremely real world application.

Chemistry: A new art gallery is going up in your town, and as a local artist you've been selected to present your artwork in an entire section of the gallery. The art you've chosen to display depicts a timeline of how the understanding of Chemistry has changed over time. Your art pieces are dynamic, consisting of different types of models, paints, digital pieces and hand drawn pieces, all created to show different theories (Kinetic Molecular Theory and the Atomic Theory) as well as models (Bohr) in Chemistry.

Physics: Have you ever wanted to become a photographer? Taking stunning images of scenery, babies or even weddings! Well now's your chance. In this module, you get to create your own Pinhole Camera after learning how different lenses and mirrors work and how in combination with light, images are created.

Major Units and Topics:

- Earthquakes
- Cells
- Scientific Models
- Environment
- Viruses & Bacteria
- Models of the Atom
- Optics



Assessment Requirements:

- Response questions
- Students must complete all lessons and assignments
- Various other lesson assignments
- Projects
- Quizzes
- Labs
- Journal Response
- Each lesson designed to take approximately 30 - 45 minutes, with the exception of major projects and assignments

Learning Standards Overview:

Content <i>Students are expected to know the following:</i>				
Questioning and Predicting	Earth Science	Biology	Physics	Chemistry
Demonstrate a sustained curiosity about a scientific topic or problem of personal interest	✓	✓	✓	✓
Make observations aimed at identifying their own questions about the natural world		✓		✓
Identify questions to answer or problems to solve through scientific inquiry	✓	✓	✓	✓
Formulate alternative “If...then...” hypotheses based on their questions	✓	✓	✓	✓
Make predictions about the findings of their inquiry	✓	✓	✓	✓
Planning and Conduction	Earth Science	Biology	Physics	Chemistry



Collaboratively plan a range of investigation types, including field work and experiments, to answer their questions or solve problems they have identified	✓		✓	✓
Measure and control variables (dependent and independent) through fair tests			✓	✓
Observe, measure, and record data (qualitative and quantitative), using equipment, including digital technologies, with accuracy and precision			✓	✓
Use appropriate SI units and perform simple unit conversions			✓	
Ensure that safety and ethical guidelines are followed in their investigations			✓	✓
Processing and Analyzing Data and Information	Earth Science	Biology	Physics	Chemistry
Experience and interpret the local environment	✓		✓	✓
Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information	✓	✓		✓
Construct and use a range of methods to represent patterns or relationships in data, including tables, graphs, keys, models, and digital technologies as appropriate	✓	✓	✓	✓
Seek patterns and connections in data from their own investigations and secondary sources	✓	✓	✓	✓
Use scientific understandings to identify relationships and draw conclusions	✓	✓	✓	



Evaluating	Earth Science	Biology	Physics	Chemistry
Reflect on their investigation methods, including the adequacy of controls on variables (dependent and independent) and the quality of the data collected	✓			✓
Identify possible sources of error and suggest improvements to their investigation methods	✓			✓
Demonstrate an awareness of assumptions and bias in their own work and secondary sources	✓			✓
Demonstrate an understanding and appreciation of evidence (qualitative and quantitative)		✓	✓	✓
Exercise a healthy, informed skepticism and use scientific knowledge and findings from their own investigations to evaluate claims in secondary sources	✓	✓	✓	✓
Consider social, ethical, and environmental implications of the findings from their own and others' investigations	✓		✓	✓
Applying and Innovating	Earth Science	Biology	Physics	Chemistry
Contribute to care for self, others, and community through personal or collaborative approaches	✓			✓
Cooperatively design projects			✓	✓
Transfer and apply learning to new situations			✓	
Generate and introduce new or refined ideas when problem solving			✓	
Communicating	Earth Science	Biology	Physics	Chemistry



Communicate ideas, findings, and solutions to problems, using scientific language, representations, and digital technologies as appropriate	✓	✓	✓	✓
Express and reflect on personal, shared, or others' experiences of place			✓	✓

