

Science 9

Type: Online

Course Description:

Earth Science: Are you curious about how you can use your voice to influence social change on Scientific issues? This is your chance to make your voice count and learn about the power of social media in impacting social change. Practise your social media skills by learning how to tweet, just to your teacher for now, and then how to change that into a Rick Mercer style “rant” and you’ll be ready to use your voice! In this module on the interconnectedness of the different spheres on Earth, you will be given the opportunity to share your opinions and learn through tweets and rants. Get ready to use your voice to bring light to topics you wish were better understood or topics you have a passion about!

Biology: Have you ever wondered what it’s like to be a genetic engineer, a genetic counsellor or a fertility doctor? Now is your chance! After you meet three couples who come to you for help, you’ll examine DNA, study genetics, read about Designer Babies, model cell division and explore biotechnology and bioethics before coming to a conclusion about what to do in each scenario.

Chemistry: What in the world is the world made of? Discover answers to important questions that have been asked for thousands of years, and uncover the mysteries of what matter is made of at the smallest scale! We’ll be exploring the Periodic Table of the Elements and understanding why it has the amazing order it does. Learn about how atoms can connect together to form minerals, metals, rocks, water, and more, and why it’s all about electrons!

Physics: Zap, crackle, pop! Hopefully you’ve not heard those noises in relation to electricity, but if you have, you can attest to the power behind it. What is electricity and how does it work? Students will dive into creating circuits and understanding how power works and then be given the opportunity to design a power map for a school that currently does not have access to power.

Major Units and Topics:

- Social Change
- Ecosystem
- Genetics
- Biotechnology
- Periodic Table of Elements
- Models of the Atom
- Electricity and Circuits



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 45-60 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		✓		✓
Formulate multiple hypotheses and predict multiple outcomes			✓	
Planning and Conduction	Earth Science	Biology	Physics	Chemistry
Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable data (qualitative and quantitative)			✓	



Assess risks and address ethical, cultural and/or environmental issues associated with their proposed methods and those of others		✓		
Select and use appropriate equipment, including digital technologies, to systematically and accurately collect and record data		✓	✓	
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			✓	✓
Seek and analyze patterns, trends, and connections in data, including describing relationships between variables (dependent and independent) and identifying inconsistencies	✓	✓		✓
Construct, analyze and interpret graphs (including interpolation and extrapolation), models and/or diagrams	✓	✓	✓	✓
Use knowledge of scientific concepts to draw conclusions that are consistent with evidence	✓		✓	✓
Analyze cause-and-effect relationships	✓		✓	
Evaluating	Earth Science	Biology	Physics	Chemistry
Evaluate their methods and experimental conditions,		✓		



including identifying sources of error or uncertainty, confounding variables, and possible alternative explanations and conclusions				
Describe specific ways to improve their investigation methods and the quality of the data		✓		
Evaluate the validity and limitations of a model or analogy in relation to the phenomenon modelled	✓	✓		✓
Demonstrate an awareness of assumptions, question information given, and identify bias in their own work and secondary sources	✓			✓
Consider the changes in knowledge over time as tools and technologies have developed		✓	✓	✓
Connect scientific explorations to careers in science	✓	✓		✓
Exercise a healthy, informed skepticism, and use scientific knowledge and findings to form their own investigations and to evaluate claims in secondary sources	✓	✓	✓	✓
Consider social, ethical, and environmental implications of the findings from their own and others' investigations	✓	✓	✓	✓
Critically analyze the validity of information in secondary sources and evaluate the approaches used to solve problems	✓	✓	✓	✓
Applying and Innovating	Earth Science	Biology	Physics	Chemistry
Contribute to care for self, others, and community through personal or collaborative approaches	✓		✓	✓



Transfer and apply learning to new situations	✓	✓	✓	
Generate and introduce new or refined ideas when problem solving			✓	
Contribute to finding solutions to problems at a local and/or global level through inquiry	✓		✓	✓
Consider the role of scientists in innovation		✓	✓	✓
Communicating	Earth Science	Biology	Physics	Chemistry
Formulate physical or mental theoretical models to describe a phenomenon		✓	✓	✓
Communicate scientific ideas, claims, information, and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations	✓	✓	✓	✓
Express and reflect on a variety of experiences, perspectives, and worldviews through place	✓	✓	✓	✓

