

Science 10 Course Outline

Teacher : Mrs. Boparai (Room C110)

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Welcome to Mrs. Boparai's Science 10 class. The purpose of this course is to introduce you to the world of 'High School Science' and help you gain scientific literacy and skills to better understand and appreciate the world in which we live. **Science 8 is split into 4 'Big Ideas' where we will develop Inquiry and critical thinking skills within these**

Content Areas:

Genes are the foundation for the diversity of living things.

Students are expected to know the following:

- DNA structure and function
- genes and chromosomes
- simple patterns of inheritance
- mechanisms for the diversity of life:
 - mutation and its impact on evolution
 - natural and artificial selection
- applications of genetics and ethical considerations



Chemical processes require energy change as atoms are rearranged.

Students are expected to know the following:

- rearrangement of atoms in chemical reactions
- acid-base chemistry
- law of conservation of mass
- energy change during chemical reactions
- practical applications and implications of chemical processes, including First Peoples perspectives



Energy is conserved and its transformation can affect living things and the environment.

Students are expected to know the following:

- law of conservation of energy
- transformation of potential and kinetic energy
- local and global impacts of energy transformations from technologies
- First Peoples perspectives on energy
- nuclear energy and radiation: — fission versus fusion — technologies and applications, and implications



The formation of the universe can be explained by the big bang theory.

Students are expected to know the following:

- formation of the universe:
 - big bang theory
 - components of the universe over time
 - astronomical data and collection methods



Through the year as we learn the content, we will be developing skills such as:

Questioning and Predicting

- Making observations about your environment
- Ask a question that you would like to find the answer to
- Make a hypothesis (a possible answer to your question) using an 'If...then' statement
- Make predictions about the answer to your question



Planning and Conducting

- Come up with a well designed, fair experiment to test your hypothesis
- Identify the different types of variables (dependent and independent)
- Observe, measure, and record data using equipment with accuracy and precision
- Use proper units and be able to convert them when necessary

Processing and analyzing data and information

- Be able to represent data in a variety of ways including graphs, tables, keys, models, and digital technologies
- Be able to draw and apply data from different sources including 'First Peoples' perspectives and knowledge.
- Identify patterns and connections in the data from information collected in experiments and from secondary sources
- Draw conclusions and identify relationships (what did your data tell you?)

Evaluating

- Reflect on investigation methods:
- Were there any problems with my experiment design?
- Was my data accurate?
- Where there any sources of error?
- What could be done better next time?
- Did I influence the outcome in any way unintentionally?
- Does the outcome of my experiment make sense, or is it totally unexpected?

Applying and Innovating

- Work with others to design projects and solve problems
- Apply what you learned to new situations and other problems
- Express new ideas to solve problems

Communicating

- Communicate your experiment results and findings using proper language and format (lab reports)



Supplies Needed:

- **A 2 inch, 3 – ring binder with paper and dividers**
*** **How** you organize your binder is up to you (i.e. by chapter, assignment type, etc), but it **MUST** be organized in order to facilitate your success!! ***
- **Pencils, pens (blue and red), eraser**
- **scientific calculator**
- **ruler**
- *******Please bring ALL these supplies to EVERY class. Students will NOT be allowed to return to their lockers to get supplies after the bell goes!*******
- **Note - there will be no assigned textbook for this course, study materials and notes will be provided throughout the course**

Evaluation:**FORMATIVE ASSESSMENT**

Students will receive descriptive feedback that has no letter grade or numerical value attached to it. The purpose of this type of assessment is to help students understand how they could improve their learning. In order to improve, it is expected that students will use the feedback they receive to address 3 questions:

- Where am I now with my learning?*
- Where am I going?*
- How am I going to get there?*

SUMMATIVE ASSESSMENT

Students will receive feedback that has a letter grade attached to it. The purpose of this type of assessment is to determine students' level of achievement in relation to the learning standards. These assessments will be used to determine marks for each formal reporting period

Each of the 4 units will be worth 25% of your total mark. Your percentages will be calculated based on quizzes, tests, and summative labs/projects. The labs and projects will work on developing skills as well as applying concepts learned in class.

A 86% +	Has deep understanding of the content, exceeds expectations of learning standards, sees possibilities and is able to innovate.
B 73% - 85%	Has deep understanding of the content, routinely meets acceptable learning standards, initiates, plans and can follow through to completion.
C+ 67% - 72%	Has a good working knowledge of the content, able to achieve most tasks using own judgment but requires assistance when problems occur.
C 60% - 66%	Has a working knowledge of key aspects of the content, completes straightforward tasks to an acceptable standard, assistance needed for complex tasks.
C- 50% - 59%	Minimal understanding of the content, adherence to taught rules or framework, requires assistance to complete most tasks.
I or F Below 50%	Not demonstrating minimal understanding of the content, cannot complete tasks even with assistance, possibly as a result of poor attendance.

Tips on doing well on this course:

Bring an inquisitive mind, stay on task, seek help immediately, do your assigned homework review regularly, read your text, study for quizzes and tests, Keep striving to improve never give up !

I have read and I understand the above information given to me. Please sign and return

Student name _____

Student signature _____

Parent/Guardian signature _____