**YEAR PLAN**

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| **Science** | **Socials** |
| The formation of the **universe** can be explained by the big bang theory. | The development of political institutions is influenced by economic, social, ideological, and geographic factors. |
| Energy change is required as atoms rearrange in **chemical processes**.**Energy** is conserved, and its transformation can affect living things and the environment. | Global and regional conflicts have been a powerful force in shaping our contemporary world and identities |
| **DNA** is the basis for the diversity of living things. | Worldviews lead to different perspectives and ideas about developments in Canadian society.Historical and contemporary injustices challenge the narrative and identity of Canada as an inclusive, multicultural society. |

**Theme 1 Diversity – Nature, nurture, or both?**

* DNA is the basis for the diversity of living things.
* Worldviews lead to different perspectives and ideas about developments in Canadian society.
* Historical and contemporary injustices challenge the narrative and identity of Canada as an inclusive, multicultural society.
* People understand text differently depending on their worldviews and perspectives
* Representing and analyzing **situations** allows us to notice and wonder about relationships.

\*\* Nature and Identity as reflected in DNA such as racial differences, led to historical wrongs centered around blood quantum and worldviews, and their impacts on Canadian history.

**Theme 2 – Everything changes, and everything lingers**

* Energy change is required as atoms rearrange in **chemical processes**.
* **Energy** is conserved, and its transformation can affect living things and the environment.
* Global and regional conflicts have been a powerful force in shaping our contemporary world and identities
* Language shapes ideas and influences others.
* Constant rate of change is an essential attribute of linear **relations** and has
meaning in different representations and contexts.

\*\*Energy changes, yet is conserved, just as conflicts change, yet continue to have influence into the future.

**Theme 3 – From Part to Whole, chaos to system**

* The formation of the **universe** can be explained by the big bang theory.
* The development of political institutions is influenced by economic, social, ideological, and geographic factors.
* Texts are socially, culturally, geographically, and historically constructed.
* Algebra allows us to **generalize** relationships through abstract thinking.
* Trigonometry involves using **proportional reasoning** to solve **indirect measurement** problems.

\*\*Systems, including the universe and government, are created by the coming together of fractured people/matter into an organized form.

**UNIT PLAN: Theme 1 Diversity – Nature, Nurture, or Both?**

Big Ideas

* DNA is the basis for the diversity of living things.
* Worldviews lead to different perspectives and ideas about developments in Canadian society.
* Historical and contemporary injustices challenge the narrative and identity of Canada as an inclusive, multicultural society.
* People understand text differently depending on their worldviews and perspectives
* Representing and analyzing **situations** allows us to notice and wonder about relationships.

\*\* Nature and Identity as reflected in DNA such as racial differences (genetic or social?), led to historical wrongs centered around blood quantum and worldviews, and their impacts on Canadian history.

Big Questions

* Why are humans so different, despite being the same species?
* Why do people interpret shared experiences differently?
* Is Canada “our native land”, “free”, and a country of equality and democracy?
* What role does mathematics play on our understanding of our world?
* How can scientific and social science relationships be represented mathematically?

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| Science | DNA is the basis for the diversity of living things | 1 | 2 | 3 | 4 |
| Recognizes that DNA underlies our physical characteristics | Describes basic structures of DNA | Examines how variation in the genetic code contained in the sequence of base pairs of DNA impacts diversity | Evaluates the ethics of manipulating genes in a variety of situations or for varying purposes |
| Defines natural selection as survival of the fittest | Explains differences and relationship between natural selection and mutation | Analyzes the interactions between natural selection, mutation, and artificial selection and their impacts on diversity | Justifies a POV related to artificial selection |
| Recognizes that genes are passed down from parent to offspring | Explains the process for genetic transmission | Differentiates when and how many traits of an organism are inherited from its biological parents.  | Proposes possible solutions to potential genetic impacts of disease, trauma, or other social construct |
| Integrated Understandings | Math / Science | Identifies uses of mathematics in science | Recognizes that solid understanding of functions is essential for the study of all the STEM disciplines | Reflects on the role mathematical relationship probability plays in nature and the expression of genetics | Reflects on the role mathematical relationship probabilities has played / should play in scientific efforts to Increase human well-being. |
| Integrated Understandings | Science / Social Studies | Recognizes that both nature and nurture influence diversity | Explains the interactions of nature and nurture | Analyzes the influence of nature and nurture on heritance, discrimination, and worldview | Infers interactions between nature and nurture on heritance, discrimination, and worldview |
| Social Studies |  | Recognizes that different people hold different beliefs or points of view | Describes events in Canadian history that are not interpreted in the same way by all people | Questions, investigates, and analyzes how and why Worldviews lead to different perspectives and ideas about developments in Canadian society. | Proposes ways in which reconciliation can be achieved, including both situations where common understandings can be developed through education, and times where diverse opinions can be accepted. |
| Identifies examples of discrimination in Canadian history | Infers how historical injustices challenge the narrative and identity of Canada as an inclusive, multicultural society. | Makes connections between Historical and contemporary injustices, formulates a POV related to Canada as an inclusive, multicultural society. | Evaluates the need for “truth” in order to achieve “reconciliation” |

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| MATH | Representing and analyzing **situations** allows us to notice and wonder about relationships. | 1 | 2 | 3 | 4 |
| Understands that variables can depend on each other | Describes or defines potential functional relationships (e.g. linear, curvilinear, etc.) | Discriminates between types of functional relationships in applying them to real world relationships | Predicts future directions of social or science issues based on functional relationships as mediated by potential factors |
| Recognizes that functions can be represented in a variety of ways | Demonstrates various representations of functional relationships accurately | Inquires, and then derives equations and representations to communicate important social and/or scientific issues | Designs powerful (persuasive) numerate communications to raise awareness of social or scientific issues and relationships |
| Integrated Understandings | Math / Science | Identifies uses of mathematics in science | A solid understanding of functions is essential for the study of all the STEM disciplines | Reflects on the role mathematical relationship probability plays in nature and the expression of genetics | Reflects on the role mathematical relationship probabilities has played / should play in scientific efforts to Increase human well-being. |
| Integrated Understandings | Math / ELA | Recognizes that numeracy and literacy are communication technologies | Selects appropriate formats for communicating effectively (e.g. graphs or tables, poetry, image, or story, etc.) | Creates and interprets multi-modal communications effectively | Innovative, creative – shows awareness of audience, purpose, content, and technologies for powerful communication |
| ELA |  | Gives examples of things they have learned from text | Interprets texts and stories with diverse ideas about identity, others, and the world | Infers how the exploration of **text** and **story** deepens our understanding of diverse, complex ideas about identity, others, and the world. | Respectfully exchanges ideas and viewpoints from diverse perspectives to build shared understanding and extend thinking |
| Recognizes that people have differing interpretations of text | Describes connections between peoples background knowledge / experience and their interpretation of text | Analyzes how and why people understand text differently depending on their worldviews and perspectives | Composes texts intentionally designed to shift worldviews or perspectives with power |

Instructional Planner

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| intrapersonal | Intro (Whole Class)* Stereotypes I hold: facing truth

Centres (Small Group)* Personal experiences of discrimination
* Family tree of traits
* Geography and diversity
 | BD06544_ | Intro (Whole Class)* The role of truth in healing

Centres (Small Group)* Creation vs evolution
* Worldviews and spirituality
* Adaptation and assimilation
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|  | Intro (Whole Class)* Role play – Event from Canadian history from multiple perspectives
* Build a model of DNA

Centres (Small Group)* Model of biotechnology
* Dance or mime to demonstrate natural selection, mutation, or artificial selection
* Narrated role play: Reconciliation
 | visualspatial | Intro (Whole Class)* Video: Residential school survivor

Centres (Small Group)* Visual representation of parent & offspring
* Indigenous art representing worldviews
* Diversity in Canada
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| musical rhythmic | Intro (Whole Class)Centres (Small Group)* Perform a rap about Reproduction
* Protest song about discrimination in Canadian history
* Heredity, hearing impairment, & Deaf culture
 | interpersonal | Intro (Whole Class)* Development of discrimination – nature or nurture?

Centres (Small Group)* Genetics and discrimination
* Tribalism – nature and/or nurture?
* Indigenous perspectives on stewardship
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| verbal linguistic | Intro (Whole Class)* Debate: GMO & Cloning
* Storytelling

Centres (Small Group)* Create infomercial about the Indian act
* Write a bill related to biotechnologies and human rights
* Poetry on exploitation and harmony
 | Naturalist | Intro (Whole Class)* Mendelian experiments

Centres (Small Group)* Mutations in nature
* GMO – progress?
* Resource economics
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| logicalmath | Intro (Whole Class)* Punnet Squares

Centres (Small Group)* Represent a hereditary pattern mathematically
* Timeline of Indigenous history
* Power relationships
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