**Area of Learning: MATHEMATICS — Foundations of Mathematics and Pre-calculus Grade 10**

**BIG IDEAS**

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| Algebra allows us to **generalize** relationships through abstract thinking. |  | The meanings of, and **connections** between, each operation extend to powers and polynomials. |  | Constant rate of change  is an essential attribute of  linear **relations** and has  meaning in different representations and contexts. |  | Trigonometry involves using **proportional reasoning** to solve **indirect measurement** problems. |  | Representing and analyzing **situations** allows us to notice and wonder about relationships. |

**Learning Standards**

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| **Curricular Competencies** | **Content** |
| *Students are expected to do the following:*  Reasoning and modelling   * Develop **thinking strategies** to solve puzzles and play games * Explore, **analyze**, and apply mathematical ideas using **reason**, **technology**, and **other tools** * **Estimate reasonably** and demonstrate **fluent, flexible, and strategic thinking** about number * **Model** with mathematics in **situational contexts** * **Think creatively** and with **curiosity and wonder** when exploring problems   Understanding and solving   * Develop, demonstrate, and apply mathematical understanding through play, story, **inquiry**, and problem solving * **Visualize** to explore and illustrate mathematical concepts and relationships * Apply **flexible and strategic approaches** to **solve problems** * Solve problems with **persistence and a positive disposition** * Engage in problem-solving experiences **connected** with place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures | *Students are expected to know the following:*   * operations on **powers** with integral exponents * **prime factorization** * **functions and relations:** connecting data, graphs, and situations * **linear functions:** slope and equations of lines * **arithmetic sequences** * **systems** of linear equations * **multiplication** of polynomial expressions * polynomial **factoring** * primary **trigonometric** ratios * **financial literacy:** gross and net pay |

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**Learning Standards (continued)**

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| **Curricular Competencies** | **Content** |
| Communicating and representing   * **Explain and justify** mathematical ideas and **decisions** in **many ways** * **Represent** mathematical ideas in concrete, pictorial, and symbolic forms * Use mathematical vocabulary and language to contribute to **discussions** in the classroom * Take risks when offering ideas in classroom **discourse**   Connecting and reflecting   * **Reflect** on mathematical thinking * **Connect mathematical concepts** with each other, other areas, and personal interests * Use **mistakes** as **opportunities to advance learning** * **Incorporate** First Peoples worldviews, perspectives, **knowledge**, and **practices** to makeconnections with mathematical concepts |  |