

Area of Learning: Mathematics		Workplace Mathematics 11	
Big Ideas		Elaborations	
<ul style="list-style-type: none"> Scale diagrams and rates of change are ways of showing a proportional relationship. 		<ul style="list-style-type: none"> proportional relationship: <ul style="list-style-type: none"> Geometry and Measurement: Proportional reasoning is used to make sense of multiplicative relationships. 	
<ul style="list-style-type: none"> Mathematics helps us to make informed financial decisions in many situations. 			
<ul style="list-style-type: none"> Spatial relationships can help us describe and represent our contextualized experience. 		<ul style="list-style-type: none"> Spatial relationships: <ul style="list-style-type: none"> Geometry and Measurement: Spatial relationships can be described, measured, and compared. contextualized: <ul style="list-style-type: none"> contextualized experiences refer to the situation relevant to the math 	
<ul style="list-style-type: none"> A statistical analysis allows us to notice trends and relationships. 		<ul style="list-style-type: none"> analysis: <ul style="list-style-type: none"> Data and Probability: Stories can be told using mathematical evidence and reasoning. 	
<ul style="list-style-type: none"> Numeracy can be developed through experiential learning. 			
Curricular Competencies	Elaborations	Content	Elaborations
<p><i>Students are expected to do the following:</i></p> <p>Reasoning and analyzing</p> <ul style="list-style-type: none"> Use reasoning and logic to analyze and apply mathematical ideas Estimate reasonably Demonstrate fluent and flexible thinking of number Use tools or technology to analyze relationships and test conjectures Model mathematics in contextualized experiences 	<ul style="list-style-type: none"> reasoning and logic: <ul style="list-style-type: none"> inductive and deductive reasoning predicting, generalizing, drawing conclusions through experiences including puzzles, games, and coding Estimate: <ul style="list-style-type: none"> being able to defend the reasonableness of an estimate across mathematical contexts 	<p><i>Students are expected to know the following:</i></p> <ul style="list-style-type: none"> how probability and statistics are used in a contextualized situation 3D objects (views and scale diagrams) linear relationships slope as a rate of change financial literacy: personal investments, loans and budgeting trigonometry interpreting graphs in society 	<ul style="list-style-type: none"> contextualized: <ul style="list-style-type: none"> exploring games of change and how insurance is calculated reading about and interpreting surveys and news reports, understanding statistical vocabulary 3D objects: <ul style="list-style-type: none"> exploded diagrams, perspective diagrams, drawing and constructing 3D objects

<p>Understanding and solving</p> <ul style="list-style-type: none"> • Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving • Visualize to explore and illustrate mathematical concepts and relationships • Apply flexible strategies to solve problems in both abstract and contextualized situations • Engage in problem-solving experiences that are connected to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures <p>Communicating and representing</p> <ul style="list-style-type: none"> • Communicate mathematical thinking in many ways • Use mathematical vocabulary and language to contribute to mathematical discussions • Represent mathematical ideas in a variety of ways • Explain and justify mathematical ideas <p>Connecting and reflecting</p> <ul style="list-style-type: none"> • Reflect on mathematical thinking • Use mathematics to support personal choices • Connect mathematical concepts to each other and to other areas and 	<ul style="list-style-type: none"> • fluent and flexible thinking: <ul style="list-style-type: none"> ○ includes using known facts and benchmarks; partitioning; applying whole number strategies to rational numbers and algebraic expressions • Model: <ul style="list-style-type: none"> ○ using concrete materials and dynamic interactive technology ○ representing a situation graphically and/or symbolically • Visualize: <ul style="list-style-type: none"> ○ includes dynamic visualizations such as graphical relationships, simulations • flexible strategies: <ul style="list-style-type: none"> ○ from a repertoire of strategies, choosing an appropriate strategy to solve problems (e.g., guess and check, model, solve a simpler problem, use a chart, use diagrams, role-play) • experiences: <ul style="list-style-type: none"> ○ includes context, strategies and approaches, language across cultures • many ways: <ul style="list-style-type: none"> ○ including oral, written, visual, use of technology • discussions: 		<ul style="list-style-type: none"> • linear relationships: <ul style="list-style-type: none"> ○ graphing, interpolating, extrapolating, writing equations • trigonometry: <ul style="list-style-type: none"> ○ problems involving multiple right angle triangles • interpreting graphs: <ul style="list-style-type: none"> ○ investigating graphs in the media, for example news articles, blogs, social media, websites, advertisements etc. ○ how data and media influence social justice issues and personal decisions • financial literacy: <ul style="list-style-type: none"> ○ personal investments, loans (lease versus buy), credit cards, mortgages, graphical representations of financial growth ○ to purchase, own, or lease and operate and maintain a vehicle ○ other significant purchases
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<p>personal interests</p> <ul style="list-style-type: none"> • Incorporate First Peoples worldviews and perspectives to make connections to mathematical concepts 	<ul style="list-style-type: none"> ○ developing a mathematical community in the classroom through discourse — partner talks, small-group discussions, teacher-student conferences <ul style="list-style-type: none"> • Represent: <ul style="list-style-type: none"> ○ concretely, pictorially, symbolically, including using models, tables, graphs, words, numbers, symbols <ul style="list-style-type: none"> • Reflect: <ul style="list-style-type: none"> ○ sharing the mathematical thinking of self and others, including evaluating strategies and solutions, extending, posing new problems and questions <ul style="list-style-type: none"> • other areas and personal interests: <ul style="list-style-type: none"> ○ to develop a sense of how mathematics helps us understand ourselves and the world around us (e.g., daily activities, local and traditional practices, the environment, popular media and news events, social justice, cross-curricular integration) <ul style="list-style-type: none"> • Incorporate: <ul style="list-style-type: none"> ○ Collaborate with local First Peoples Elders and knowledge 		
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	<p>keepers.</p> <ul style="list-style-type: none">• make connections:<ul style="list-style-type: none">○ Bishop's cultural practices: counting, measuring, locating, designing, playing, explaining (http://www.csus.edu/indiv/o/oreyd/ACP.htm_files/abishop.htm)○ www.aboriginaleducation.ca○ <i>Teaching Mathematics in a First Nations Context</i>, FNESC (http://www.fnesc.ca/resources/math-first-peoples/)		
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