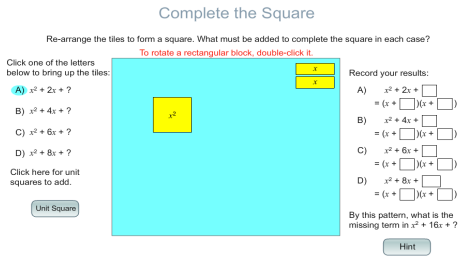
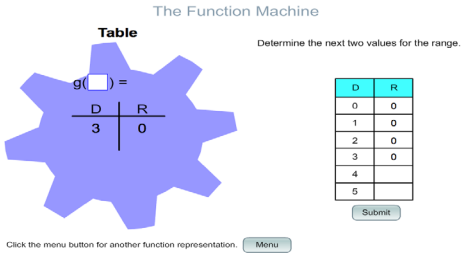
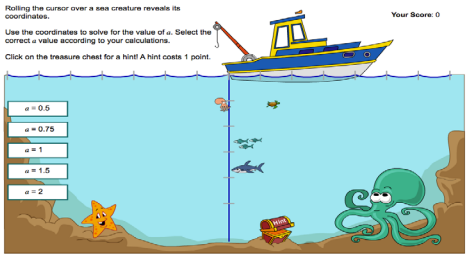
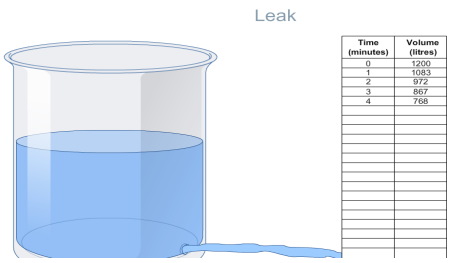
MCF3M
Ontario Educational Resources Bank (OERB) Activities

Quadratic Functions	
Activity	**Description**
Completing the Square  **Resource ID: ELO1084080**	Build understanding of perfect square trinomials and a foundation for the process of completing the square by determining the missing tiles needed to complete images of perfect squares using virtual algebra tiles.
The Function Machine  **Resource ID: ELO1079500**	Build understanding of how the range values depend on the domain values for a function by exploring tables of values, data sets, mapping diagrams and graphs, and predicting equations for each relation described.
Go Fish  **Resource ID: EL01195080**	Practise determining the stretch or compression factor given the vertex and one other point by finding the value of *a*, and ultimately the equation of a quadratic in vertex form, after viewing some model solutions.
Leak  **Resource ID: ELO1079520**	Build understanding of the properties of quadratic functions by exploring a water leaking simulation where data is collected and represented graphically. Practise applying this knowledge by completing a quiz.

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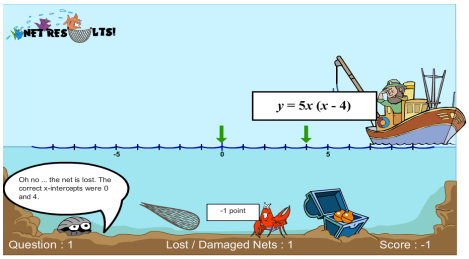
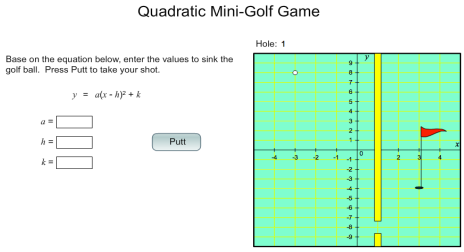
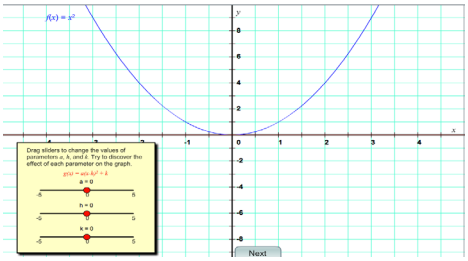
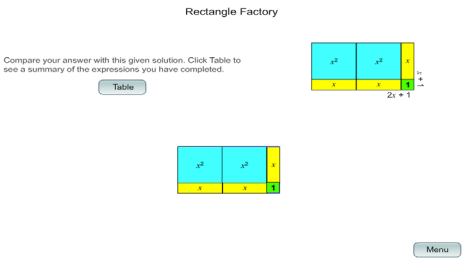
Quadratic Functions (continued)	
Activity	**Description**
Net Results  **Resource ID: ELO1196410**	Build understanding of how to determine the x-intercepts given a quadratic in factored form by viewing a scripted tutorial. Practise determining the x-intercepts of a quadratic in factored form by dragging buoys to the appropriate x-intercepts on a number line in a fishing activity.
Quadratic Mini-Golf  **Resource ID: ELO1099580**	Practise determining the equation of a quadratic in vertex form $y=a(x-h)^2+k$, by calculating a when given the vertex and another point in a golf simulation activity.
Quadratic Transformations  **Resource ID: ELO1079540**	Build understanding of transformations by exploring the effects of each parameter in the quadratic equation $y=a(x-h)^2+k$. Practise applying this knowledge by completing a quiz.
Rectangle Factory  **Resource ID: ELO1098970**	Build understanding of factoring by creating rectangles with a given area, using virtual algebra tiles.

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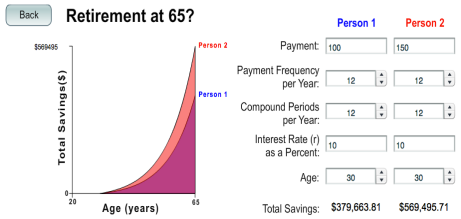
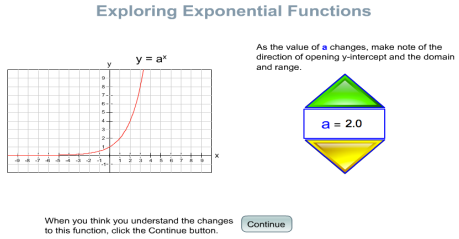
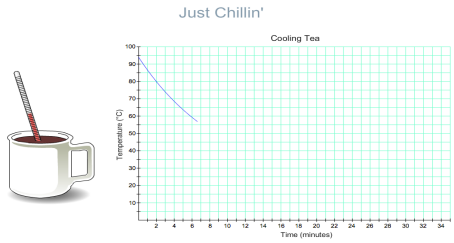
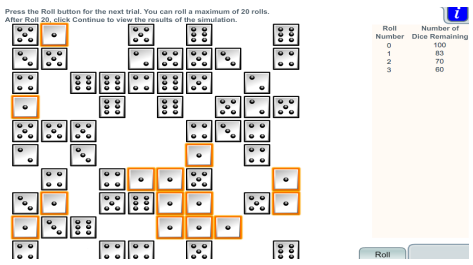
Exponential Functions	
Activity	**Description**
Annuities at Work  **Resource ID: ELO1088020**	Build understanding of factors affecting annuities and loans by exploring the impact of changes to interest rates, payments, payment periods, and compounding periods.
Exploring Exponential Functions  **Resource ID: ELO1079540**	Build understanding of the properties of the basic exponential function $y=a^x$ by exploring what happens to a graph as the value of the base a changes. Practise applying this knowledge by completing a quiz.
Just Chillin'  **Resource ID: ELO1194980**	Build understanding of exponential decay by investigating and interpreting the parts of a graph related to a simulation of hot liquid cooling.
Keep on Rollin  **Resource ID: ELO1087820**	Build understanding of exponential decay by investigating and interpreting the parts of a graph related to a dice rolling simulation.

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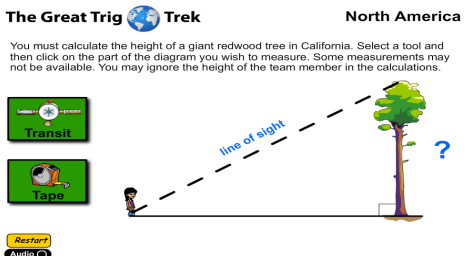
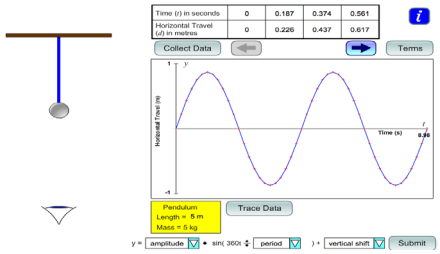
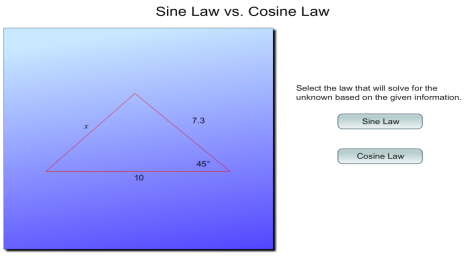
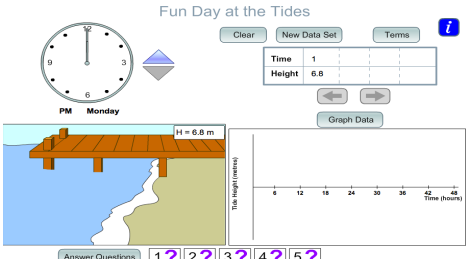
Trigonometric Functions	
Activity	**Description**
The Great Trig Trek  **Resource ID: ELO1194980**	Practise selecting an appropriate tool by deciding whether a trig ratio, the sine law or the cosine law should be used to solve for a missing measure in a triangle. Practise problem solving by calculating the measure of a missing side or angle in real-life examples involving triangles.
Pendulum Investigation  **Resource ID: ELO1081410**	Build understanding of the characteristics of the sine function by investigating the data collected and the graphs created from a simulation of the periodic behaviour of a pendulum swinging.
Sine Law vs. Cosine Law  **Resource ID: ELO1090620**	Practise the sine law and cosine law by selecting the appropriate law and solving for a missing measure in a triangle.
Sinusoidal Tides  **Resource ID: ELO1081390**	Build understanding of the characteristics of the sine function by investigating the data collected and the graphs created from a simulation of the periodic behaviour of tides.

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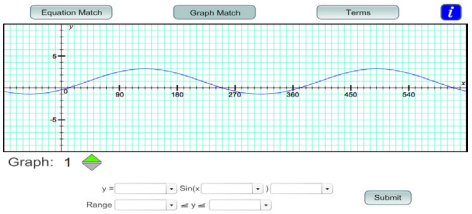
Trigonometric Functions (continued)	
Activity	**Description**
Transformations Exploration  **Resource ID: ELO1084100**	Build understanding of the sine function by investigating and interpreting the key features of graphs and equations of the form $y=a\sin(x-d)+c$.