Unit 4 Day 11: Summative Task, Rate of Change

MCV4U

Minds On: 5 Action: 50 Consolidate:20 Total=75 min	**Learning Goal**: • Students will show their knowledge of rate of change and optimization problems in various contexts using technology.	**Materials** • Graphing Calculators • BLM 4.11.1

			Assessment Opportunities
Minds On…	**Whole Class → Discussion** Inform students that they will be working individually on an activity that is similar to the ones they have worked on in the last few lessons. Discuss with students expectations and criteria for evaluating their work.		Consider showing samples of Level 3 and 4 responses on the performance task with student names removed.
Action!	**Individual → Assessment Activity** Students will complete BLM 4.11.1 using a graphing calculator.. **Curriculum Expectations/Written Work/Scoring Guide**: Assess students' demonstration of their learning, using a scoring guide.		
Consolidate Debrief	**Groups → Class Sharing** Collect student work and ask students in heterogeneous groups of three to think about their successes and difficulties on this task. Groups will share using the *Say Something Strategy*.		***Say Something Strategy*** The teacher chooses a student at a time to say something until all students have said something. The teacher should not comment or say anything including non-verbal reactions that could be considered as comments until all students have mentioned something.
Application	**Home Activity or Further Classroom Consolidation** Use the Internet to find an example of an real-world application of vectors.. Bring your research to class tomorrow.		

4.11.1 Rate of Change Assessment Task

Name: _____

Date: _____

1. Use a graph to show an example of a situation where the instantaneous rate of change of the function cannot be determined at a point.

2. Determine the graph of the derivative $f'(x)$, where $f(x) = \sin x$, by comparing the displacement and velocity of a pendulum, or by generating a table of values showing the instantaneous rate of change of the function for various values of *x* and graphing the ordered pairs.

3. The number of bus riders from the suburbs to downtown per day is represented by $1200(1.05)^{-x}$, where *x* is the fare in dollars. What fare will maximize total revenue?