

## 21<sup>st</sup> Century Lesson Cycle Template

**Grade:** 10

**Subject:** Math 10 PreIB

**Textbook:** Mathematics for the International Student Pre-Diploma SL and HL (second edition) by Haese & Harris

**Topic 3:** Gradient

### Driving Question:

What are some applications of gradient?

### Specific Curriculum Outcome:

**RF03** Students will be expected to demonstrate an understanding of slope with respect to rise and run, line segments and lines, rate of change, parallel lines, and perpendicular lines

### Prior Knowledge:

- Gradient formula

### Screencast Link(s):

1. Prior Knowledge - <https://youtu.be/g1yzEKJQjeI>
2. Applications of Gradient - <https://youtu.be/v9BQ0w-naY8>

### Link to tomorrow's quiz on Gradient

[http://msltam.weebly.com/uploads/5/5/7/3/55739509/quiz\\_gradient.pdf](http://msltam.weebly.com/uploads/5/5/7/3/55739509/quiz_gradient.pdf)

**Expected Time:** One Class (75 minutes)

**Resources:**  
(Tools & Tech)

**Lesson Procedure**

**Prior knowledge** screencast linked to teacher website. This is simply yesterday's video.

*I do:*

1. Do a brief review of gradient by referring to yesterday's lesson. If needed, students can re-watch yesterday's screencast.

<p>Students have the option of previewing this prior to the lesson, or they can watch it in class if they need it.</p> <p><b>Applications of gradient screencast</b> linked to teacher website. Students have the option of previewing this prior to the lesson, or they can watch it in class.</p> <p><b>BYOD:</b> To allow students the opportunity to work at a pace that best suits their learning, they will watch the video on their own devices (with headphones).</p>	<p>2. <b>Do example questions</b> on how to apply the gradient formula in different ways.</p> <p>3. Following the videos, a class discussion can be had in order to clarify anything that may still be ambiguous to students.</p>
	<p>find, validate remember, understand <b>collaborate, communicate</b></p> <p><b>critical thinking</b> analyze, synthesize</p>
<p>Students have a copy of the textbook.</p>	<p><i>You do:</i></p> <p>Following the examples, students will work on textbook questions: Ex 5C.1 #1-5 (pages 112-113) Ex 5C.2 #1-5 (page 115)</p>
	<p>find, validate remember, understand <b>collaborate, communicate</b></p> <p><b>critical thinking</b> analyze, synthesize</p>
	<p><i>We do:</i></p> <p>Once students have had some time to work on the problems on their own, they will be encouraged to get into small groups of 2-3 to compare their work. This will provide them with the opportunity to work with their peers and to provide each other with constructive criticism. This will also allow them the opportunity to practice using the correct mathematical language when talking about it.</p>
	<p>find, validate remember, understand <b>collaborate, communicate</b></p> <p><b>critical thinking</b> evaluate, leverage analyze, synthesize</p>

	<p><i>We share:</i></p> <p>At the end of class, students will be asked to share their solutions to select questions with the class (by writing them on the board). One member from each group will be asked to present the answer to a selected question. This will give the class an opportunity to provide constructive criticism and to verify their own answers as well.</p>	
	<p>find, validate remember, understand <b>collaborate, communicate</b></p>	<p><b>critical thinking</b> evaluate, leverage analyze, synthesize</p>
<p><b>WRAP UP/REMINDERS:</b></p> <p>Students will be asked to review the material covered in today’s class in preparation for tomorrow’s class, which will focus on further applications of gradient.</p>		
<p><b>Differentiation:</b></p>		
<p>Modification:</p> <p>Allowing students to watch the video on their own devices allows them to work at their own pace. If students need to re-watch a step they have the ability to do so. If needed, students can create and do worksheet questions together.</p>	<p>Enrichment:</p> <p>Students who have a strong grasp of how to work with gradient can assist their classmates who may be having difficulty.</p>	
<p><b>Evaluation:</b></p> <p>Students will be informally evaluated during the class. The teacher will make general observations while circulating throughout the class to make sure all students are on track. As well, when students are sharing their solutions, the teacher will be able to assess where students are in terms of their ability to work with gradient. Students will be given a short quiz at the beginning of tomorrow’s class.</p>		
<p><b>Teacher Reflection:</b></p>		
<p><b>On-Line Resources:</b></p>		