

## 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:

Can you apply what you know about gradient to possible real-life scenarios?

### 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

**RF01** Students will be expected to interpret and explain the relationships among data, graphs and situations

### Prior Knowledge:

- Gradient
- Applications of Gradient

### Screencast Link(s):

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

### Link to Story Graph Group Activity:

[http://msltam.weebly.com/uploads/5/5/7/3/55739509/story\\_graph\\_activity.pdf](http://msltam.weebly.com/uploads/5/5/7/3/55739509/story_graph_activity.pdf)

### Link to Rubrics for Story Graph Group Activity:

[http://msltam.weebly.com/uploads/5/5/7/3/55739509/rubric\\_for\\_story\\_graph\\_activity.pdf](http://msltam.weebly.com/uploads/5/5/7/3/55739509/rubric_for_story_graph_activity.pdf)

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

**Resources:**

**Lesson Procedure**

<b>(Tools &amp; Tech)</b>	
<p><b>Prior knowledge screencast</b> linked to teacher website. This is simply yesterday’s video. 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>Story Graph Assignment PowerPoint and Rubrics</b> linked to teacher website.</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><i>I do:</i></p> <ol style="list-style-type: none"> <li>1. Do a brief overview of gradient. If students need a reminder of gradient, they can watch the screencasts from yesterday’s lesson.</li> <li>2. <b>Assign the Story Graph Assignment</b>, which will be the focus of today’s class. This is explained in a PowerPoint, which the teacher will go through with the class.</li> <li>3. Following the video and explanation, students will be given the opportunity to ask for clarification before beginning.</li> </ol>
	<p> <input type="checkbox"/> find, validate         <span style="float: right;"><input type="checkbox"/> <b>critical thinking</b></span>  <input type="checkbox"/> remember, understand         <span style="float: right;"><input type="checkbox"/> analyze, synthesize</span>  <input type="checkbox"/> <b>collaborate, communicate</b> </p>
	<p><i>You do:</i></p> <p>After being given instructions for the group activity, students instructed to take 10-15 minutes to jot down thoughts and information they think may be useful on their own paper. This will give them chance to process the information and to come up with some of their own ideas before joining up with their group members.</p>
	<p> <input type="checkbox"/> find, validate         <span style="float: right;"><input type="checkbox"/> <b>critical thinking</b></span>  <input type="checkbox"/> remember, understand         <span style="float: right;"><input type="checkbox"/> analyze, synthesize</span>  <input type="checkbox"/> <b>collaborate, communicate</b> </p>
	<p><i>We do:</i></p> <p>In groups of 4, students will do Parts A, B and C of the Story Graph Activity.</p>

	<input type="checkbox"/> find, validate <input type="checkbox"/> remember, understand <input type="checkbox"/> <b>collaborate, communicate</b>	<input type="checkbox"/> <b>critical thinking</b> <input type="checkbox"/> evaluate, leverage <input type="checkbox"/> analyze, synthesize
<p><i>We share:</i></p> <p>Once groups have completed all parts of the Story Graph Assignment, their graphs and stories will be displayed in the classroom. Students will share their story and graphs with the class.</p>		
	<input type="checkbox"/> find, validate <input type="checkbox"/> remember, understand <input type="checkbox"/> <b>collaborate, communicate</b>	<input type="checkbox"/> <b>critical thinking</b> <input type="checkbox"/> evaluate, leverage <input type="checkbox"/> analyze, synthesize
<p><b>WRAP UP/REMINDERS:</b></p> <p>Students will be asked to review the material covered in today's class. Any students who did not have enough time to finish the activity will need to do it at home.</p>		
<p style="text-align: center;"><b>Differentiation:</b></p>		
<p><b>Modification:</b></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><b>Enrichment:</b></p> <p>Students who have a strong grasp of how to work with gradient can assist their classmates who may be having difficulty. Students can also be encouraged to include non-linear segments in their graph.</p>	
<p><b>Evaluation:</b></p> <p>Students will be evaluated throughout the entire activity. Students will be evaluating each other (rubrics provided) on the graph and story. The teacher will be making general observations in order to evaluate students on their contributions/collaboration on the activity.</p>		
<p><b>Teacher Reflection:</b></p>		
<p><b>On-Line Resources:</b></p>		

