21st 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:

How can we determine if points are collinear?

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. Collinear Points - https://youtu.be/U5RvPgmLKDw

Link to Quiz on Gradient

http://msltam.weebly.com/uploads/5/5/7/3/55739509/quiz_gradient.pdf

Link to Collinear Points Group Activity

http://msltam.weebly.com/uploads/5/5/7/3/55739509/collinear_group_activity.pdf

Expected Time: One Class (75 minutes)

Resources: (Tools & Tech)	**Lesson Procedure**
	I do:

Prior knowledge screencast linked to teacher website. Students have the option of previewing this prior to the lesson, or they can watch it in class if they need it. **Introduction to Collinear Points screencast** linked to teacher website. Students have the option of previewing this prior to the lesson, or they can watch it in class. **BYOD:** 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).	1. Administer the quiz on gradient. 2. Review **prior knowledge** that is directly applicable to this lesson: - Calculating the gradient of a line 3. **Introduce** the concept of **collinear points.** 4. Following the videos, a class discussion can be had in order to clarify anything that may still be ambiguous to students.
	find, validate **critical thinking** remember, understand analyze, synthesize **collaborate, communicate**
	You do: Students will work on textbook questions: Ex 5C.3 #1-2 (page 116)
	find, validate **critical thinking** remember, understand analyze, synthesize **collaborate, communicate**
Collinear Points Group Activity	***We do:*** As a class, we will address any concerns there may be regarding today's lesson. Then, to show their understanding of the topic, students will get into groups of 3-4 to complete the collinear points activity.
	find, validate **critical thinking** remember, understand evaluate, leverage **collaborate, communicate** analyze, synthesize

	We share: At the end of class, groups will go over their answers to the group activity. If groups decided to do the extension (this is considered enrichment for those who are ready for it), they can share what they found for that part of the activity as well.
	find, validate remember, understand **collaborate, communicate** **critical thinking** evaluate, leverage analyze, synthesize
WRAP UP/REMINDERS: 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, distance and midpoint.	
Differentiation:	
Modification: 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.	Enrichment: Students who have a strong grasp of how to work with gradient and collinear points can assist their classmates who may be having difficulty. Groups that have a good grasp of the concepts can also complete the "Extension" on coplanar points which is included at the end of the group activity.
Evaluation: 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 and collinear points.	
Teacher Reflection:	
On-Line Resources:	