

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 4: Distance, Midpoint and Gradient

Driving Question:

Can you be the teacher by coming up with your own questions that make use of distance, midpoint and 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
- Midpoint formula
- Distance formula

Screencast Link(s):

1. Prior Knowledge:

Distance - https://www.youtube.com/watch?v=Cf7GyA_N0aw&feature=youtu.be

Midpoint - <https://www.youtube.com/watch?v=YL4R0DRf1WM>

Gradient - <https://www.youtube.com/watch?v=g1yzEKJQjeI>

Link to Group Assignment

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

Expected Time: Two Classes (75 minutes each)

**Resources:
(Tools & Tech)**

Lesson Procedure

<p>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.</p> <p>Group assignment handout</p> <p>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).</p>	<p><i>I do:</i></p> <ol style="list-style-type: none"> Review prior knowledge that is directly applicable to this lesson: <ul style="list-style-type: none"> - Distance - Midpoint - Gradient Give students the details on their group assignment. All of the information (requirements and timeline) are provided on the handout that each student will receive. Address any questions or concerns prior to letting students begin their work.
	<input type="checkbox"/> find, validate <input type="checkbox"/> critical thinking <input type="checkbox"/> remember, understand <input type="checkbox"/> analyze, synthesize <input type="checkbox"/> collaborate, communicate
	<p><i>You do:</i></p> <p>Students will work independently for the first half of the first class. This corresponds to Part A of the activity. During this time, they will try to come up with possible questions they can use in their assignment.</p>
	<input type="checkbox"/> find, validate <input type="checkbox"/> critical thinking <input type="checkbox"/> remember, understand <input type="checkbox"/> analyze, synthesize <input type="checkbox"/> collaborate, communicate
	<p><i>We do:</i></p> <p>Students will gather in their groups to share their ideas. They will be given the rest of the class to collaborate on the assignment so that it is ready for tomorrow's class. This corresponds to Part B of the activity.</p>
	<input type="checkbox"/> find, validate <input type="checkbox"/> critical thinking <input type="checkbox"/> remember, understand <input type="checkbox"/> evaluate, leverage <input type="checkbox"/> collaborate, communicate <input type="checkbox"/> analyze, synthesize

We share:

At the end of class, each group will give a brief overview of what their assignment will look like. This will give the class the opportunity to ask questions and to offer constructive criticism. During the second class, students will do Part C of the activity, which involves posting, completing and sharing the questions they came up with.

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| <input type="checkbox"/> find, validate | <input type="checkbox"/> critical thinking |
| <input type="checkbox"/> remember, understand | <input type="checkbox"/> evaluate, leverage |
| <input type="checkbox"/> collaborate, communicate | <input type="checkbox"/> analyze, synthesize |

WRAP UP/REMINDERS:

Students will be asked to finish up the first part of the assignment in preparation for the second part of this assignment.

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 good understanding of distance, midpoint and gradient will be given the option to create questions that make use of two or more of those concepts (rather than questions that make use of each concept separately).

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 at the end of class, the teacher will be able to assess where students are in terms of their ability to work with distance, midpoint and gradient.

Teacher Reflection:

On-Line Resources: