# 21st Century Lesson Cycle Template

**Grade: 10**

**Subject:** Math 10 PreIB
**Textbook:** Foundations and Pre-Calculus Mathematics 10
By Pearson
**Topic 4: Linear Equations**

## Driving Question:

What do equations of lines look like and how can we use them to predict the appearance of the line?

## Specific Curriculum Outcome:

**RF04** Students will be expected to describe and represent linear relations using words, ordered pairs, table of values, graphs and equations.
**RF05** Students will be expected to determine the characteristics of the graphs of linear relations, including the intercepts, slope, domain, and range.
**RF6** Students will be expected to relate linear relations to their graphs expressed in slope-intercept form

## Prior Knowledge:

- Basic skills including order of operations and solving simple algebraic equations
- Plotting points on the Cartesian plane

## Screencast Link(s):

1. Prior knowledge - https://www.youtube.com/watch?v=jBymEbgDJXM

## Link to Investigating Graphs of Linear Functions Group Activity:

http://msltam.weebly.com/uploads/5/5/7/3/55739509/text_p_354_356.pdf

## Link to exit card:

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

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

| Resources: (Tools & Tech) | Lesson Procedure |
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| **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.<br><br>**Scanned Copy of Textbook pages 354-356** | *I do:*<br><br>1. Review **prior knowledge** that is directly applicable to this lesson:<br>    - Order of operations<br>    - Solving simple algebraic equations<br>    - Plotting points on a Cartesian plane<br><br>2. Assign the "Make Connections" questions for students to complete individually. This will serve as a quick reminder of what they've done with linear functions so far. Answers can be discussed briefly before moving into the group activity.<br>*Note: This corresponds to the "You Do" part of the lesson* |
| **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). | 3. Assign the "Construct Understanding" group activity. This activity will allow students to investigate the relationship between the graph and the equation of a linear function. The goal of this activity is for students to discover how changing the values of "m" and "b" (in $y = mx + b$) affect the appearance of the graph so that we can use those ideas in tomorrow's class.<br>*Note: This corresponds to the "We Do" part of the lesson* |
| | ☐ find, validate                      ☐ **critical thinking**<br>☐ remember, understand     ☐ analyze, synthesize<br>☐ **collaborate, communicate** |
| | *You do:*<br><br>Students will complete "Make Connections" questions found on page 354 of their textbook. |
| | ☐ find, validate                      ☐ **critical thinking**<br>☐ remember, understand     ☐ analyze, synthesize<br>☐ **collaborate, communicate** |
| | *We do:*<br><br>In pairs, students will complete the "Construct Understanding" activity found on page 355 of their textbook. |
| | ☐ find, validate                      ☐ **critical thinking**<br>☐ remember, understand     ☐ evaluate, leverage<br>☐ **collaborate, communicate**  ☐ analyze, synthesize |
| | |

*We share:*

Each pair will join up with another pair (to become a group of 4).  This will provide them with the opportunity to discuss/compare their findings and to make sure that everyone is on the same page with regards to understanding linear functions and their graphs.  Any discrepancies can be addressed within the group and the teacher will provide assistance as needed.  Groups will be asked to jot their ideas on the board so that everyone leaves the class having met the goal of the activity.

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|---|---|
| ☐ find, validate | ☐ **critical thinking** |
| ☐ remember, understand | ☐ evaluate, leverage |
| ☐ **collaborate, communicate** | ☐ **create**, publish |
| ☐ analyze, synthesize | |

**WRAP UP/REMINDERS:**

Students will be asked to review all of today's material for homework in preparation for tomorrow's class.  Students will complete the "Assess your Understanding" Questions on page 356 of the textbook.  These will be handed in tomorrow.

**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.

Enrichment:

Students who have a strong grasp of linear functions can be partnered up with students who may be struggling so that they can provide them with some assistance.

**Evaluation:**

The teacher will be informally evaluating students while they work together on the investigation.  When students are sharing their findings, the teacher will also be able to assess the students' level of understanding of today's lesson.  Students will be completing the "Assess your Understanding" Questions from their textbook to hand in to the teacher in tomorrow's class.

**Teacher Reflection:**

**On-Line Resources:**