Linear Functions: An Introduction

By:
School:

What Student Will Need:
Computer, phone, or any device with internet access An account in the LMS An account in the self-directed learning resource, connected to me as the teacher An account in a content resource, connected to me as the teacher An account in the communication resource, connected to me as the teacher PDF Handout (created from this lesson form)
Lesson Objective:
The objective of this lesson is to learn what a linear function is, and what you can tell in general from m and b in the slope-intercept form.
Details:
Students will receive a pdf that will instruct them to that they will need their Moodle account, Khan Academy accounts, and flipgrid account. The pdf will have links to video presentations that explain content and tell them what to do. They will follow the links sequentially, first watching an instructional video that tells them how to do the lesson. Then they will watch a video that explains the concepts. They will be asked to pause the video and go the the Desmos link to explore how m and b affect the slope and position of the graph of a line. They will then be instructed to go into their Flipgrid account and respond to a prompt. I'll give each student feedback on their response and select some to post for everyone in the class to view. Students will then do their self-directed learning activities in Khan Academy. The links to the activities are on the pdf. After they complete those, they will go into the Moodle and take the assessment that is linked in the PDF. The PDFs are customized, where students who are likely to need additional support have a link to an extra video. Students who are likely to breeze through this have a link to a more challenging deep dive on this topic.
Review:
Review Content This review will refresh you on some ideas that will help you understand this lesson.

Lesson Flow:
Lesson Content This is the presentation that teaches the new content. The students are instructed during the video to pause it and explore in Desmos, then make some predictions in Flipgrid. Youtube Version **Instructions for Student:** Watch this video for an introduction to linear functions. Follow instructions during the video.
Self-Directed Resource This link is set up to a slider in Desmos where students can explore what changing the slope and the y-intercept does to the graph of a line. They are instructed to pay particular attention to what happens to positive and negative slopes. This should set them up for learning later about the slopes of parallel lines. Desmos Link for When You Pause the Lesson to Explore **Instructions for Student:** Click on the Desmos link and explore using the slider.

Communication With Student

The students need to have accounts in FlipGrid so that their data is saved, and you can give them feedback. You will be able to select a few of the video responses of the students to share with the class. You can look at this using student ID "12345". My prompt is:

Click on the Desmos link below. Play with the sliders and answer the following questions:

What happens when the line is flat. What is m? How might you describe the difference between lines when m is negative vs. when m is positive? What happens when you play with the slider and change the value of b? Tip: Describe what happens when m and b change.

And I have the link there for them: https://www.desmos.com/calculator/p5tqihi9fq

Instructions for Student:
Answer the prompt.
Type "12345" to access.

Additional Support

Instructions for Student:
Watch this video to help you understand better.

Deep Dive/Challenge

Instructions for Student:
Watch this video to see a deep dive.

Collaborate with Teachers:

Collaboration with Teachers

We have a discussion forum in Moodle for our PLC.

Assessment Tool:

Assessment Tool

This assessment in Khan Academy has students figure the slope from the graph. This will determine if they understand the concept of slope.

Additional Links:

Slope in a Context