



Linear Functions

By: Jessica Shaffer

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Math
Grades 9–12



Introduction

Students will explore linear functions and then apply their knowledge to a real world problem involving Star Wars and Legos through an online activity on Desmos.

Learning Objectives

([CCSS.MATH.CONTENT.HSF.LE.A.2](#)) Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (including reading these from a table).

Materials Needed

- Chromebook/tablet/device

Procedure

1. Introduce or re-introduce linear functions. Have a class discussion about what linear functions are, what they represent, and how they are different from exponential functions. This can be done in class or through Google Meets, Zoom, etc.
2. Review linear functions. Here are some different videos you can share with the students to do so. You can either show to the class, or a better option if you have class devices is to have students watch on their chromebooks while they listen with headphones. Make sure to preview the videos before you watch.
 - [Khan Academy Linear Functions](#): There are many different videos relating to linear functions including how to recognize linear functions, interpreting a graph, and linear and nonlinear functions in a table. There are also practice problems included.
 - [Math Antics: Linear Functions](#)
 - [Linear Functions](#)
3. Students will work on the [website Desmos](#). You can create a free teacher account on here, and there are various online and interactive resources available. The activity linked here is one where students explore the prices of various Star Wars sets. Knowledge of linear functions must be applied to this activity. There are other options for linear functions on this website. This is a great activity to use for distance learning.

Continued on page 2



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Continued from page 1

4. For early finishers and/or to extend learning:

- [Linear Function Games](#)
- [Graphs of the Galaxy](#)
- [Line Graphs Game](#)

Evaluation

The Khan Academy practice problems can be used as a classwork grade. The Desmos Activity can be used as either a classwork grade or a project or quiz grade. This depends on where you are in the unit. It requires students to apply their knowledge of linear functions to a real world problem, so it is something that can be used as a summative assessment of a unit.

Use [this great visual from ThinkLink](#) to understand a linear function, and the difference between a linear function and a quadratic function or exponential function.