Topic 6: Linear versus Exponential Functions (F.LE 1a)

Purpose: The purpose of the first three examples is to get students to explore the effect of changing different parts of linear and exponential functions. The final three examples ask students to solve problems that can be modeled by linear or exponential funstions. Please use your professional judgment when following this guide, if students are struggling with the content and need more support, then provide that additional support.

Core Standards Focus:
F.LE 1a - Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.

Launch (Individual time): The first three examples are designed to be used during a facilitated class discussion. You may still pause to ask questions and have students consider them during individual think-time. After showing the example and moving the slider, give students time to attempt to answer the questions. Some students may not be able to start on this task. Identify those students and consider pairing them with another student who may be able to provide additional support. If most of the class is unable to start on the task then facilitate the example as a whole class think-aloud. Make sure all students understand the first example before moving on to the next example.

Explore (pairs): Using example 4, give students a few minutes to work together to decide which investment is linear and which is exponential. If students are stuck then you may want to redefine what linear and exponential mean. Repeat this process with example 5 and 6 to provide students additional practice and to solidify their thoughts.

Discuss (Whole Class): Call on some students to share their choices and talk about their reasoning. Be selective with the student work you use and sequence the work in a way that will connect a variety of ideas. Use the FluidMath program to check their work.