

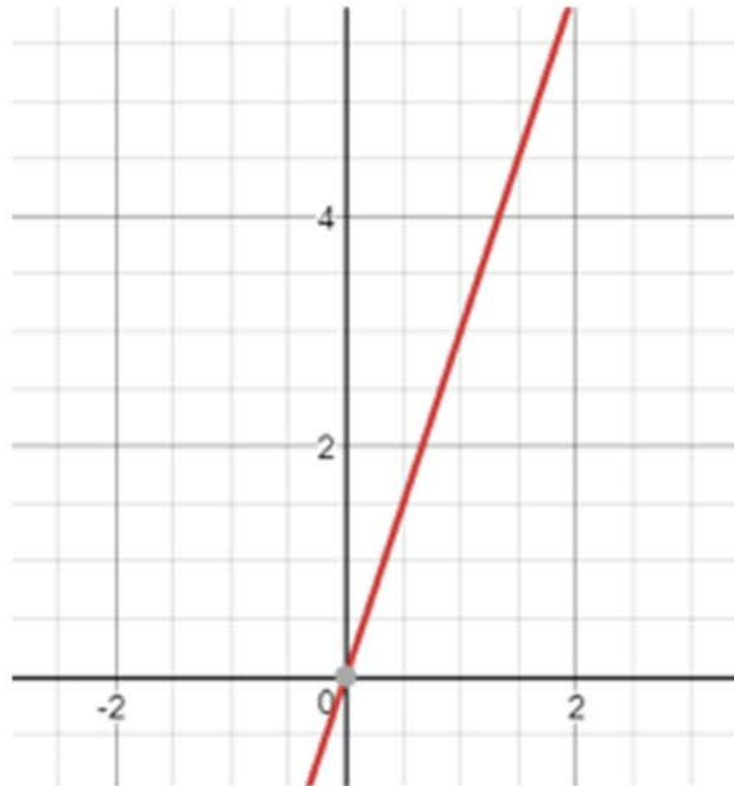
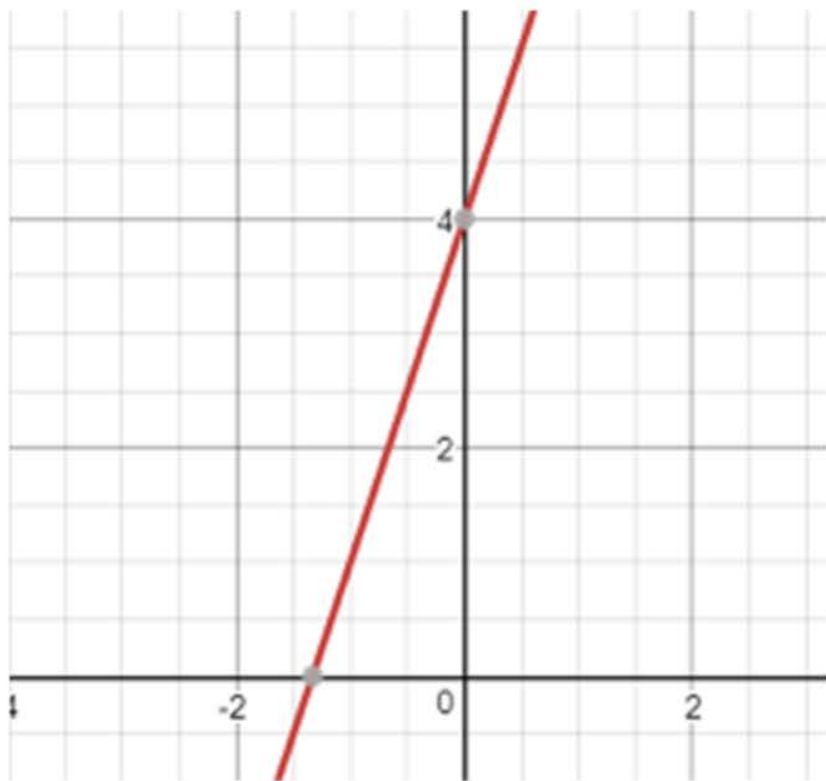
Highlighting Mathematical Practices

Tamisha Thompson

Math Coach/Specialist, Waltham, MA

tamishathompson@walthampublicschools.org

What is the same? What is different?



Standards for Mathematical Practice

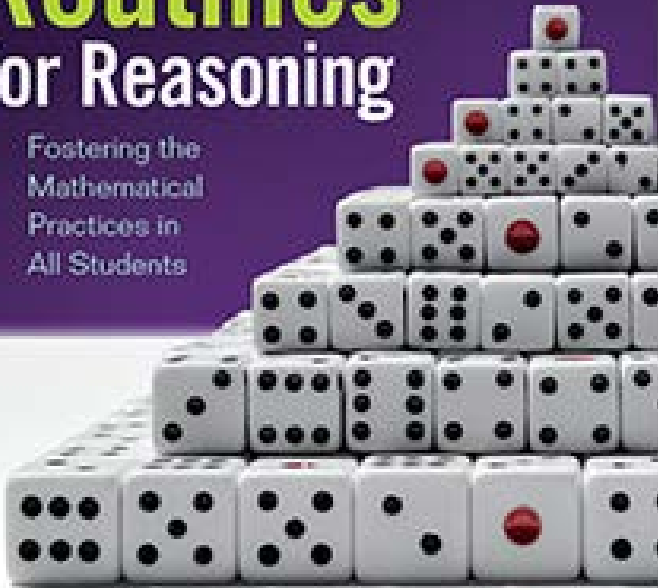
1. **Make sense of problems and persevere in solving them.**
2. **Reason abstractly and quantitatively.**
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. **Look for and make use of structure.**
8. **Look for regularity in repeated reasoning.**

Grace Kelemanik • Amy Lucenta • Susan Janssen Creighton

with an introduction by **Magdalena Lampert**

Routines for Reasoning

Fostering the
Mathematical
Practices in
All Students



Heinemann
Dedicated to Educators

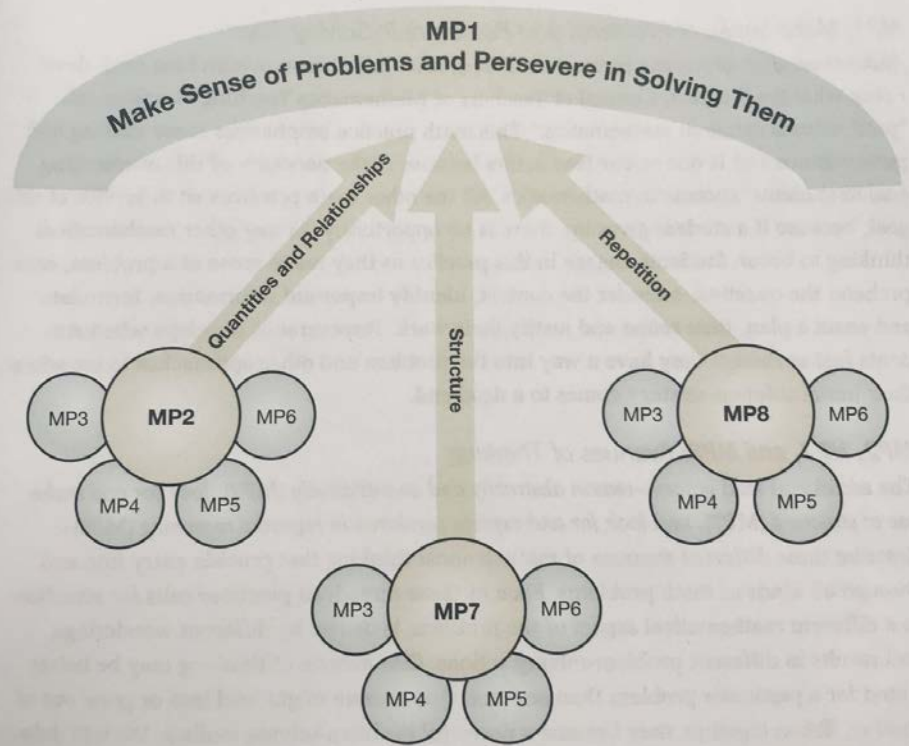


Figure 1.1 Diagram that shows the relationship of the practices to each other

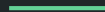
Teach content through the practices:

- What content standards need to be addressed?
- What do students already know?
- Introduce a situation...
- Have students develop a problem to solve based on the situation.
- Be intentional about which standards for math practice you want students to use.

A 3-Act Task

25 Billion Apps

3-Acts Math Task



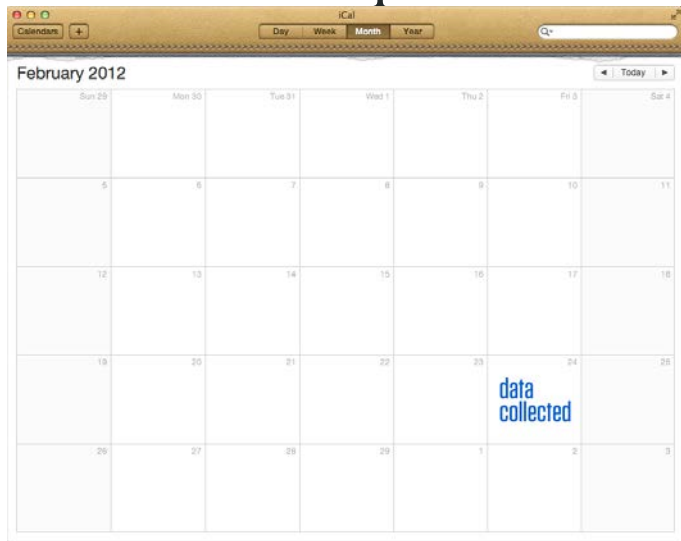
Act One: What questions do you have about the video?

Define boundaries

How long is too long to wait?

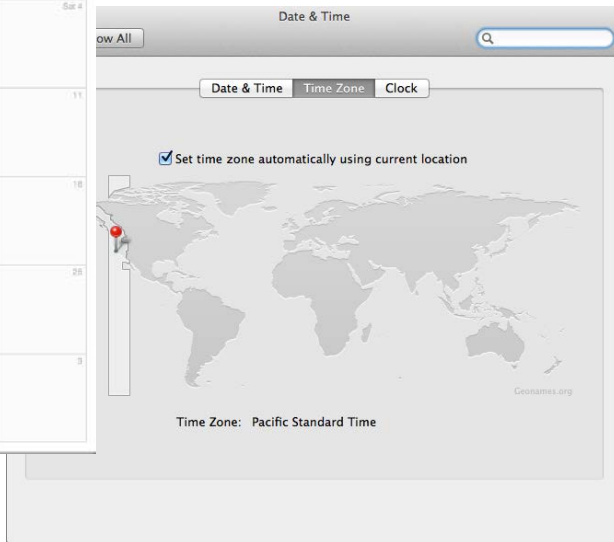
How short is too short?

Act Two: What information do we need to know in order to answer our question?



2012 Calendar

Time Zone



Timer



Work with a partner or group to solve the problem.

Act Three: The ANSWER



Re: 25 Billion Apps

1 message

Tue, Mar 6, 2012 at 10:00 AM

Thanks for reaching out. That sounds like a fun idea for the class!

We officially reached the milestone around 10:50pm PST Friday night 3/2/12. (About 7 days later...)

Best,
Ted

Ted Miller
Apple PR

Sent from my iPad

Debrief

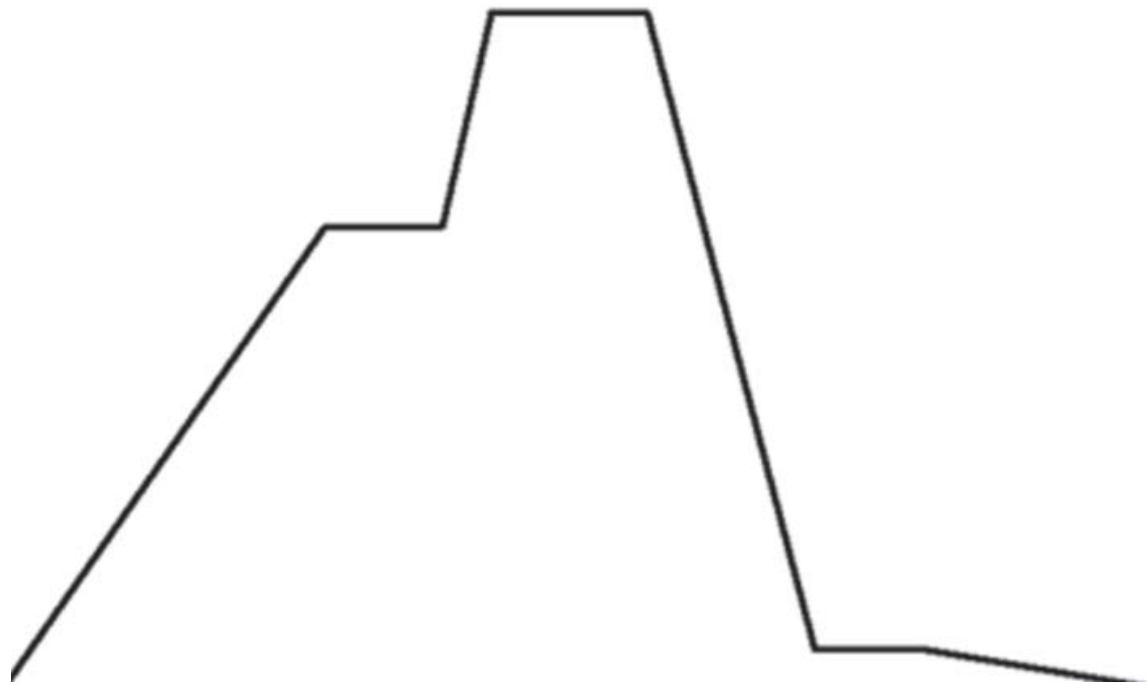
How does this connect to standard 8.F.B.4?

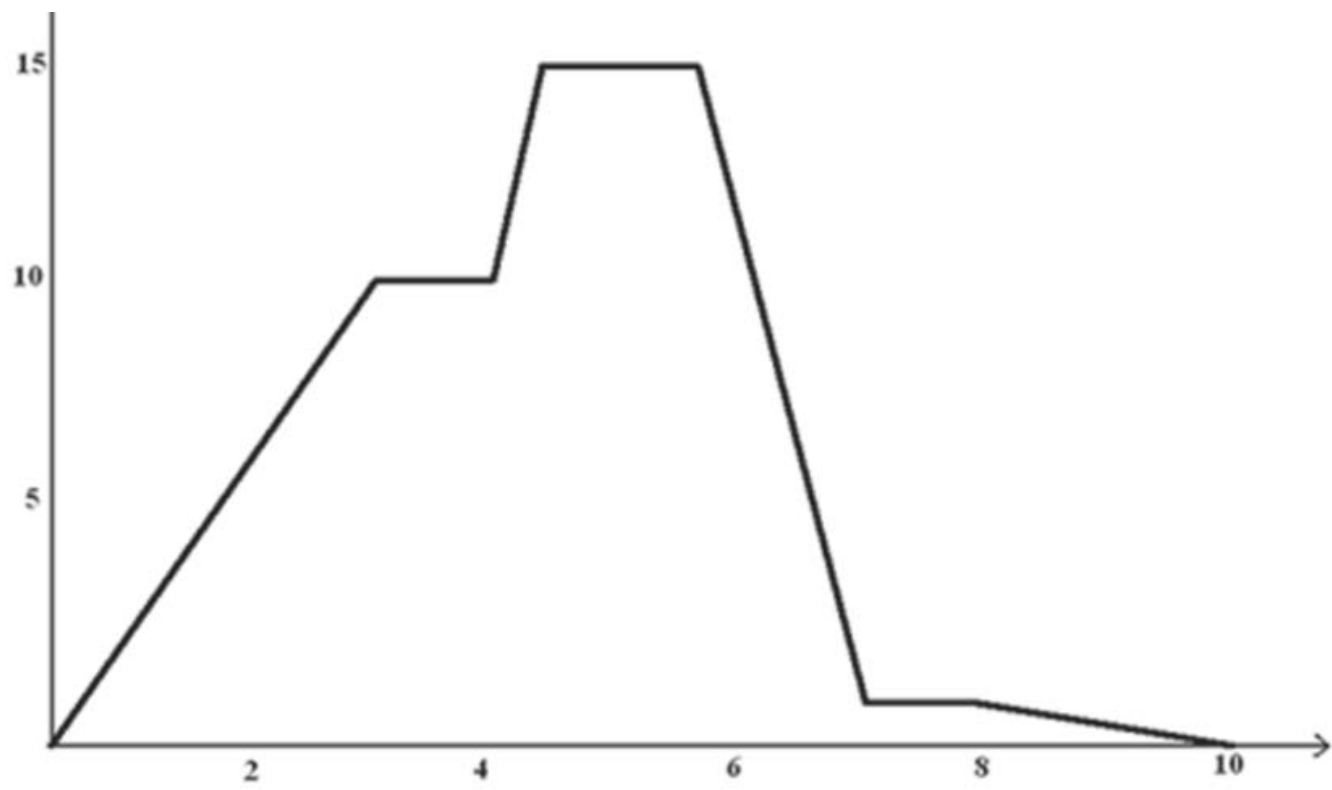
- Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.

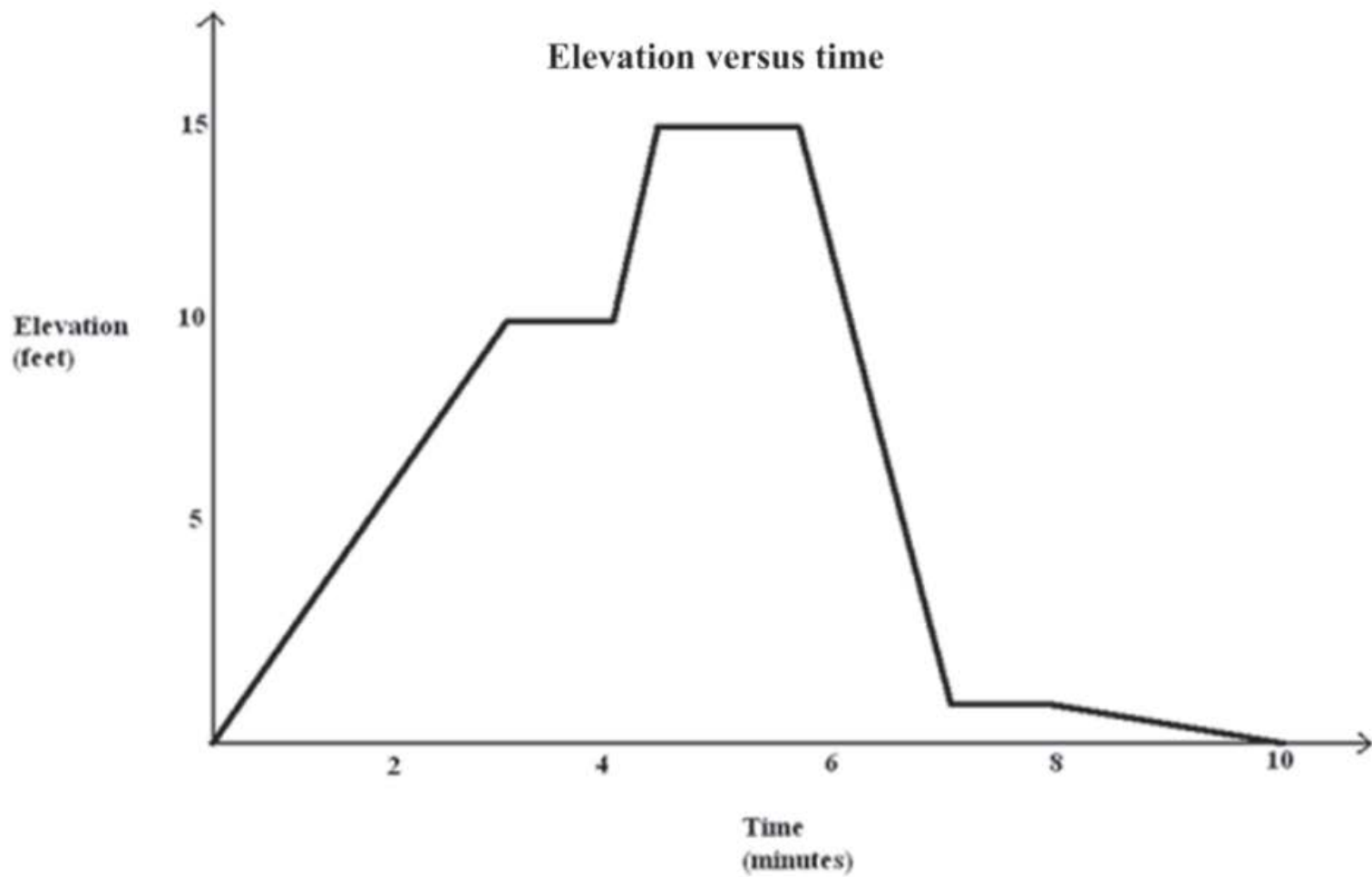
What math practices did we incorporate?

How could students extend this problem?

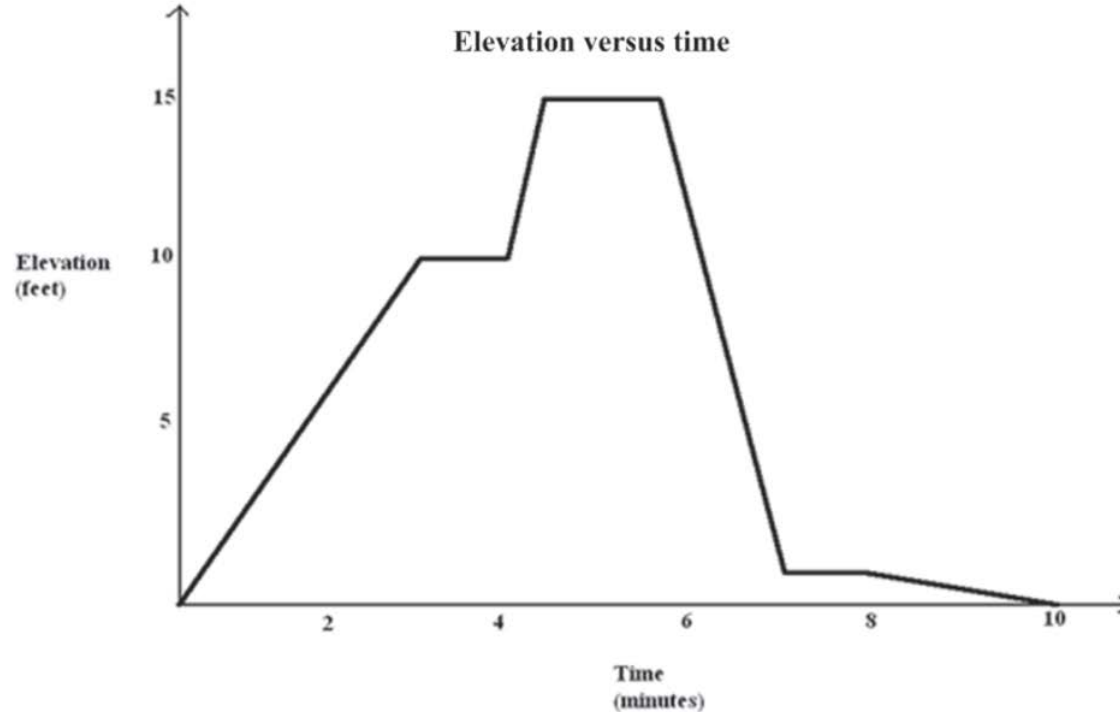
Numberless Problems







What are some questions you can ask about this graph?



Debrief

How does this connect to standards N-Q.A.1 and A-CED.A.2?

- N-Q.A.1 Use units as a way to understand problems and to guide the solution of multistep problems; choose and interpret units consistently in formulas; and choose and interpret the scale and the origin in graphs and data displays.★
- A-CED.A.2 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.★

What math practices did we incorporate?

How could students extend this problem?

Highlighting the practices in problems...

- Use problems you already have!
- Replace tasks with other more meaningful tasks!
 - [SameButDifferentMath.com](#)
 - [WhenMathHappens.com](#)
 - [Dan Meyer's 3-Acts Math Tasks](#)
 - [101 Questions](#)
- Intentionally incorporate standards for mathematical practice!

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