

# Lesson 1.1.1: Graphs of Piecewise Linear Functions

## Targets:

1. I can define appropriate quantities from a situation.
2. I can choose and interpret the scale and origin for a graph.
3. I can graph a piecewise linear function given a context.
4. I can explain the relationship between physical measurements and their representation on a graph.

## Story 1: Stairs

Watch the first video with the intent of answering the question it poses at the beginning. If you have no idea what the question is asking you to do, don't worry, I will help after you watch the video.

## Starting the Graph

Watch the video and take notes here:

## Label the Graph

Answer the following questions by labeling the graph above. After you have attempted to label your graph, watch the next video.

- How should you label the vertical axis (y-axis)?
- What unit of measurement should we use for the vertical axis?
- How should we label the horizontal axis (x-axis)?
- What unit of measurement should we use for the horizontal axis?
- Should we measure the man's elevation from his feet or from his head?

## Graph the story...

Try to represent the elevation of the man walking down the stairs on your graph. Watch the video again, multiple times. I recommend watching it on slow motion and pausing it as you graph each data point.

Then connect your dots to create a piecewise linear function.

Once you have attempted to graph the story, watch the next video.

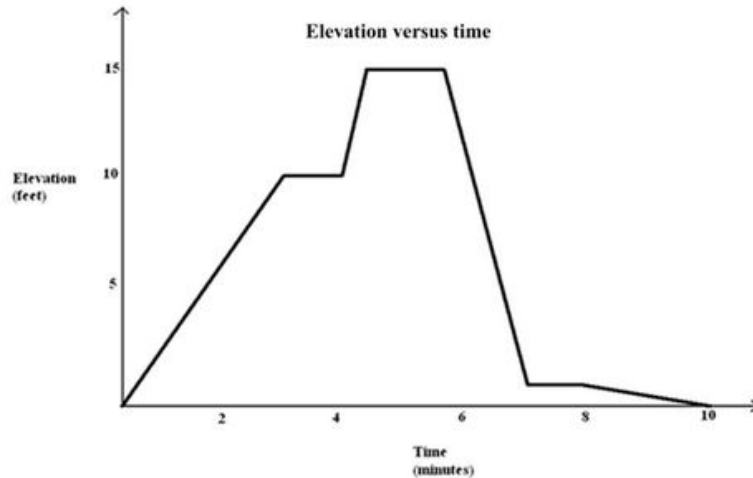
### Put this graph into context

Think of a scenario that this graph could represent. You'll have to use your imagination.

- Write down what the scenario might be.
- Then label each line of the graph explaining exactly what it represents.
- When you are done, watch the next video to see what I thought it might be.

#### Example 2

Here is an elevation-versus-time graph of a person's motion. Can we describe what the person might have been doing?



### Piecewise Linear Function

Watch the video and take notes here:

### Exit Ticket

Watch this video and create a graph that represents the story. Make sure to label the graph appropriately.

When you are finished, raise your hand and show me your graph. A high five is on its way :)