

Real-World Takeaways

- Everyone experiences a range of emotions with different intensities at different times. This is part of the human condition.
- It's possible that bad days make good days feel better.
- Even when people feel sad, they're still *feeling*. For some people, the intensity of feeling may be just as important as the direction.

Mathematical Objectives

- Interpret and analyze graphs
- Find differences between integers (both positive and negative)
- Describe the magnitude of positive and negative integers using absolute value

Lesson at a Glance
60 min.

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Launch		Watch a trailer from the movie <i>Inside Out</i> which introduces five human emotions: joy, sadness, anger, disgust, and fear. Discuss which emotions are “good” and which are “bad.”	5 min.
Part One	1	Interpret and analyze four graphs depicting how someone felt over a week period, from -5 (awful) to 5 (great). Find differences between positive and negative values to determine which days felt better than others.	20 min.
Part Two	2	Create new graphs showing the intensity (absolute value) of each day. Discuss which matters more: <i>how good</i> you feel or <i>how much</i> you feel.	15 min.
	3	Sketch an ideal week and explain it to others.	20 min.

- L Students watch the trailer from the 2015 Pixar Movie, *Inside Out*, which introduces five human emotions: joy, sadness, anger, disgust, and fear.

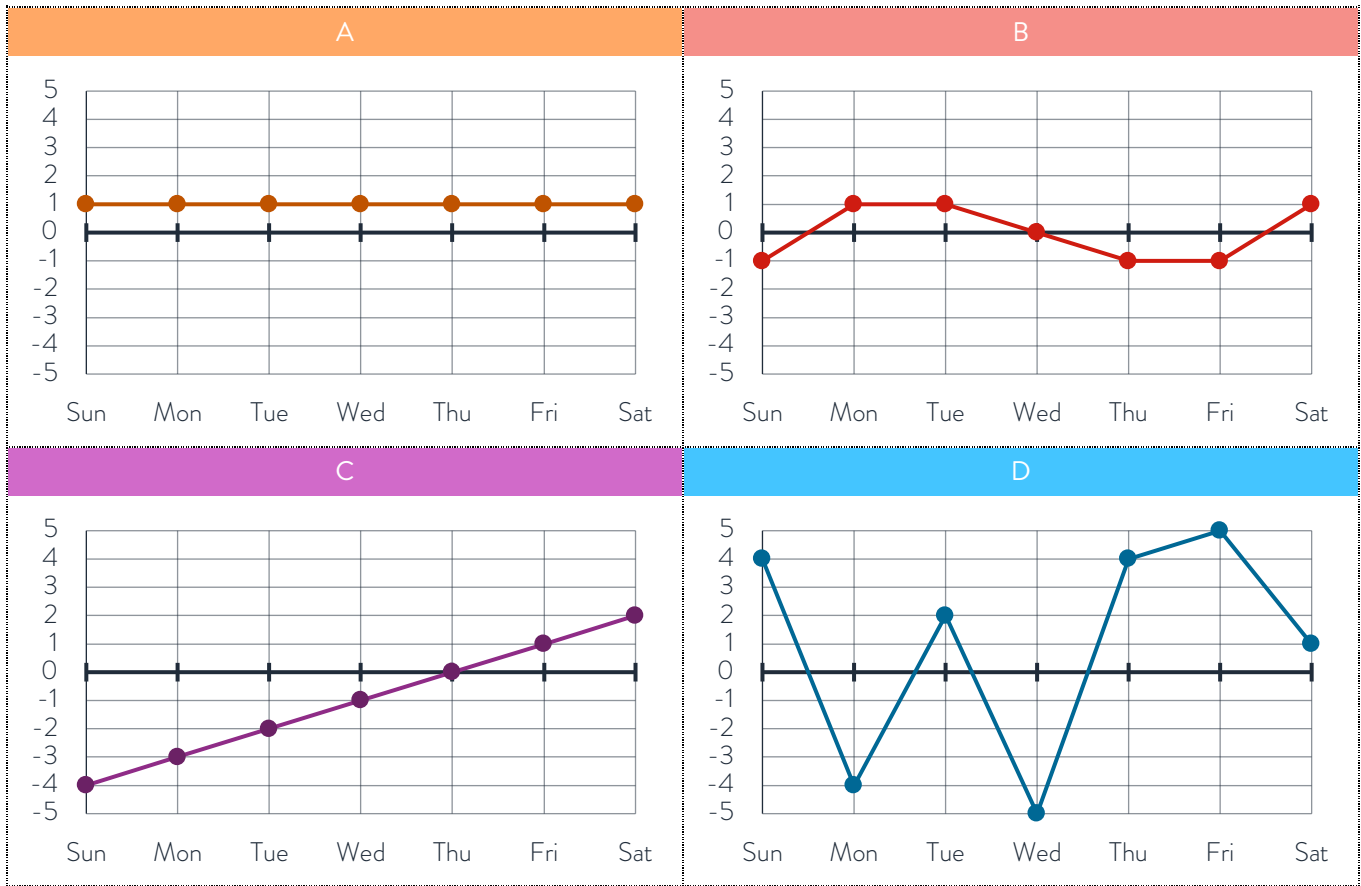
Discussion Questions

1. *According to the movie trailer, what are the five main human emotions?*
2. *What comes to mind when you think of each emotion?*
3. *Of the five emotions, which do you think are “good” and which do you think are “bad?” Why?*

Key Takeaways

- Emotions describe how we feel.
- There are many different human emotions. We often assume that some are better than others, but this may not be true.

1 Every day for a week, four people rated how they felt before they went to bed, from -5 (awful) to 5 (great).



a. Pick a person. For this person, which day of the week do you expect felt the best? The worst? Explain.

Answers will vary. Sample response (for Person D):

There are two ways to think about which day was the best: which day had the highest rating (absolute); and which day was the best compared to the day before (relative).

For Person D, Friday was the best day in terms of its actual rating; it received a rating score of 5. However, compared to the day before it, Thursday was the best day. Since Wednesday had a rating of -5, and since Thursday had a rating of 4, then Thursday was 9 points better. In other words, Friday may have received the highest rating, but Thursday may have felt the best.

b. If you could experience one person's week, whose would you choose and why?

Each week has pros and cons.

A, Pro: every day is positive

A, Con: no variety

B, Pro: has some variety between days

B, Con: the days only range between -1 and 1

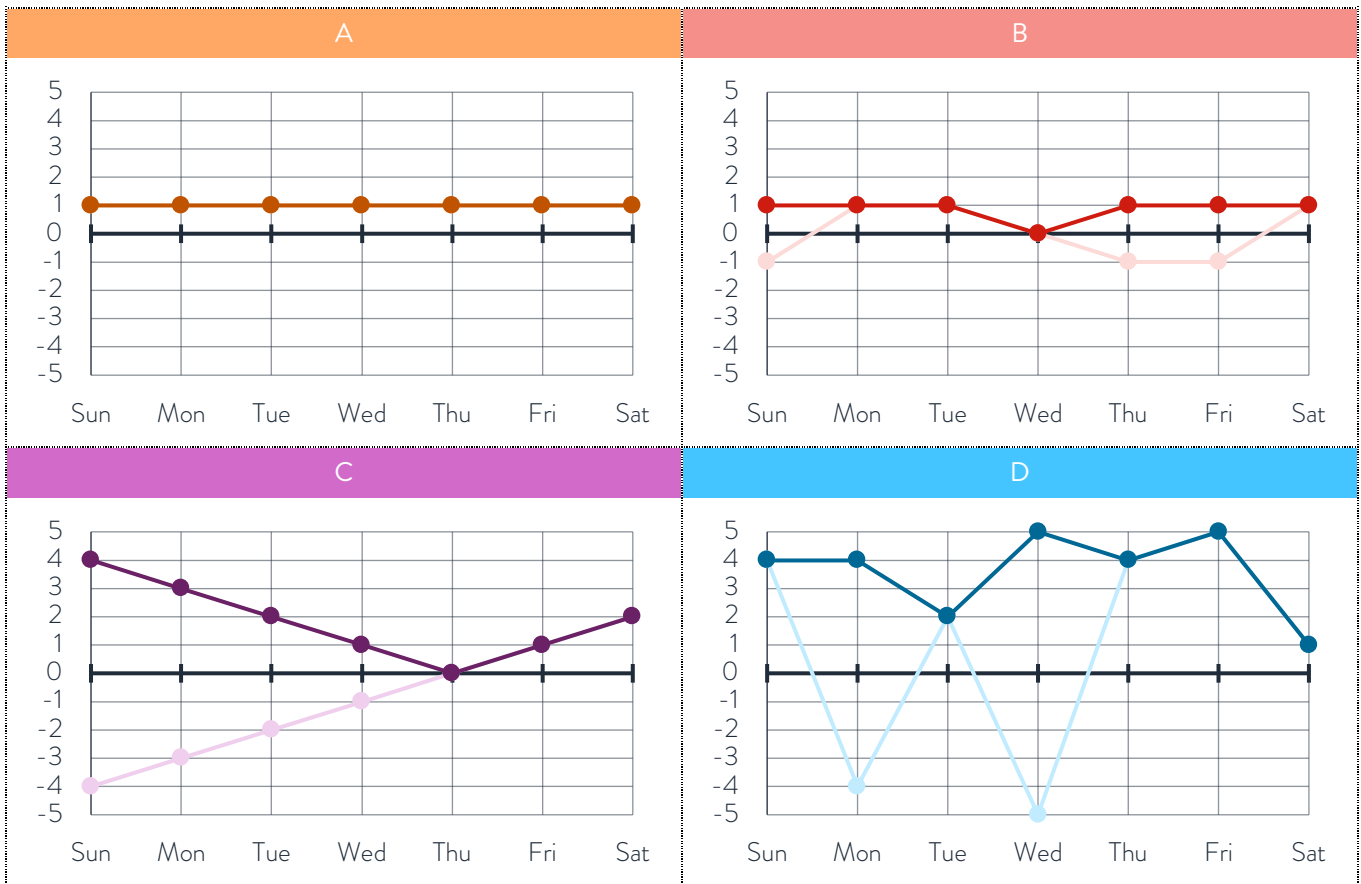
C, Pro: absolutely, each day feels better than the one before

C, Con: relatively, each day feels the same as the one before

D, Pro: lots of variety; person really "feels" their week

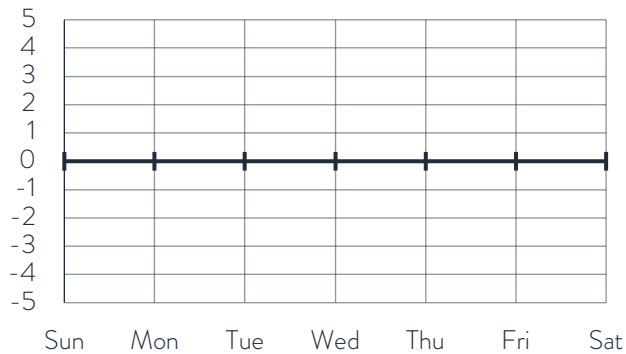
D, Con: emotions change wildly; could be exhausting

2 Instead of measuring how good or bad each day was, imagine the people measured how intense each day was. Graph the intensity of each person's week. Which do you think is more important: how good you feel or how much you feel?



Answers will vary about which is more important: feeling good vs. feeling a lot

- 3 Many people think they're "supposed to" be happy all the time. However, some psychologists think that feeling sad is an important part of life. Below, sketch what your ideal week would look like. Why is this graph right for you?



responses will vary

Teacher Tip

In our experience, this question can spark great conversations and really bring a class together. While Citizen Math questions are often best done in small groups, we recommend having each student create his/her own graph before sharing it with others. Once students are done, consider asking for volunteers to share their graphs. There are two types of students in particular you might encourage to share: students whom others look to as role models, and students who you know have had a hard time lately. Especially with the rise of social media, it's easy to assume that everyone's life looks better than your own, and having popular students share their graphs – especially if they include positive and negative days – might help erode the myth of perfection. (It might also help popular students realize that they don't have to put on a false front.) Meanwhile, asking students who have experienced something difficult lately to share could inspire a conversation about what we can learn from bad days and how they help us grow.

Finally, consider creating and sharing your own graph. After all, you're an important member of the class, too, and it might help students to know that they're not the only ones wrestling with how life is "supposed to" feel.