

The Biggest Loser

Percent Change

K20 Center, Kate Raymond
Published by *K20 Center*

This work is licensed under a Creative Commons CC BY-SA 4.0 License

Grade Level	6th – 7th Grade	**Time Frame**	2-3 class period(s)
Subject	Mathematics	**Duration**	135 minutes
Course	Middle School Mathematics		

Essential Question

How can we measure and compare changes?

Summary

Students use data about a weight loss competition to compare different ways of measuring change and analyze the benefits and shortcomings of each method.

Snapshot

Engage

Students consider three alternative methods for measuring change and are asked to evaluate which method of measuring change is the "best."

Explore

Students create formulas to use for the three methods of measuring change and identify the quantities that would be needed to compute each measurement.

Explain

Students explain different situations in which a change has occurred and which methods of measuring change are most appropriate for each situation

Extend

Students apply the three different methods of measuring change do a data set from a "Biggest Loser" type contest to determine who would win the contest.

Evaluate

Students create a situation in which the three models of measuring change would result in different determinations of most or least change and construct a 2-minute paper about which method of measurement they feel should be used and why.

Standards

Oklahoma Academic Standards for Mathematics (Grade 6)

6.N.3.3: Apply the relationship between ratios, equivalent fractions and percents to solve problems in various contexts, including those involving mixture and concentrations.

Oklahoma Academic Standards for Mathematics (Grade 6)

7.A.2.2: Solve multi-step problems involving proportional relationships involving distance-time, percent increase or decrease, discounts, tips, unit pricing, similar figures, and other real-world and mathematical situations.

Attachments

- Biggest Loser Four Corners.docx
- Biggest Loser Four Corners.pdf
- Biggest Loser Handout - Spanish.docx
- Biggest Loser Handout - Spanish.pdf
- Biggest Loser Handout.docx
- Biggest Loser Handout.pdf
- Lesson Slides—The Biggest Loser.pptx
- The Biggest Loser.pdf

Materials

- Biggest Loser Four Corner signs (attached)
- Lesson Slides (attached)
- Biggest Loser handout (attached)
- Scientific or graphing calculators

Engage

Before class, post the Four Corner signs in the corners of the room. Show the attached PowerPoint slide. Ask students to write down what they notice and wonder about this situation. Record their notices and wonders and display them in the classroom.

Explore

Divide the class into six groups. Assign two groups to each of the three people listed on **slide 1**: Andrew, Bao, and Ciara. The task of each group is to create a formula their person would use to measure their progress (and their friends' progress). Tell students to be careful to identify all of the quantities they will need in their formula.

Explain

After each group creates a formula, have the two groups working on Andrew's method present their solution. As a whole class, compare and contrast the results of the two groups until a consensus is reached about the proper formula. Repeat this process with the groups working on Bao and Ciara.

Teacher's Note

You can extend this activity to challenge advanced students by having them find reasonable initial and current times for Andrew, Bao, and Ciara that make all three of their statements true.

Explain to the class that you will be completing a variation of a Four Corners activity. Direct their attention to the four signs you have posted around the room. Tell students that you will be displaying a situation on the board. Their job is to decide which of the methods of measurements is appropriate for the given situation: Andrew's total change, Bao's percent change, or Ciara's percent of goal obtained. Students should move to the corner of the room that represents the measurement they find most appropriate for the situation.

Teacher's Note

Not that the fourth corner says "Two or More." Students should move to this corner if they feel that more than one measurement is appropriate.

Click to **slide 2**. Ask one student from each corner to explain their reasoning for choosing that measurement (or those measurements). For the corner marked "Two or More," after the first student chosen explains their reasoning, ask the other students in the group if they had picked different measurements. If so, have them explain their reasoning as well.

Teacher's Note

There is not necessarily a right answer for this activity. Much of how students respond will depend on what they feel is important about each situation. The point of this activity is to get them to think about the different ways that change can be measured.

Repeat this process for **slides 3–8**.

Extend

Tell students they are going to take a closer look at situation five. Pass out the attached **Biggest Loser** handout and let students work in pairs to complete the handout.

After students complete the handout, have a discussion with the students about what they found. Some questions you might ask students include:

- Did the same person always win?
- Did changing how often we measured their progress change the results?
- Were you surprised by any results?
- Which person do you think should win? Why?

Evaluate

Tell students that they will be given 5 minutes to respond to two prompts. They do not need to write in complete sentences; they may use symbols and pictures to help respond to the prompt, but they must make their meaning clear. Then, forward to the **slide 9** and give students 5 minutes to respond to this prompt.

Resources

- K20 Center. (n.d.). Four Corners. Strategies. https://learn.k20center.ou.edu/strategy/d9908066f654727934df7bf4f5064550
- Biggest Loser. Trademark 2001-2016, NBC Comcast Universal.