



Creating a Ratio Design Challenge

DESIGN CHALLENGE Notes:

This design challenge explores how to better understand ratios, fractions, and mixtures

Problem: We need to understand ratios, fractions, balance, and proportions.

Challenge: Work in teams to create ways to balance items to create common ratios.

Materials:

We need a fulcrum

We need a board

We need a marking tape

We need a weight scale

Brainstorm:

1. What is a ratio? Where does that word come from?
2. Are fractions ratios?
3. Is balance important or not?
4. Can we even have balance without ratios?

Design/Build:

1. Determine a method for determining balance
2. Identify three items you want to test
3. Develop a way of finding balance
4. How can you test this?
5. How will you test your measures?

Test:

- What happens when you try your design?
- Can you be sure you have an accurate balance measure?
- Can we tell it is working? How?
- How do you know what the ratio is?

Evaluate:

- How will you record your results?
- How will you know how much of each component you have is doing what?
- What would you modify to test your results?
- Can you determine ratios without physical balance?
- What would you do differently?

Share:

- Record your tests on a chart.
- Which combination or type of ratio worked best?
- How did you know?