

Body Ratios

This is an activity which allows students to experiment with proportionality in the form of body ratios. Students will be estimating, measuring, and comparing the lengths of string with respect to their heights and other body part sizes.

Grade: 4

Materials: String enough for each student and the teacher equal to each individual's height

Intro:

- Students will estimate how many times a piece of string equal to their height will wrap around their heads.
- After, have a student assist the teacher in measuring our height from floor to top of head and then wrap this around your head to show the intention. Write the ratio multiple ways on the board such as this:
 - Head:Height = 1:3
 - Head / Height = 1/3
- Ask students to then estimate what the ratio between the lengths of our feet and our heights. How could we find out?
 - Demonstrate for them and record:
 - Foot:Height = 1:6 or
 - Foot / Height = 1/6
 - You may also show that your foot and forearm are similar in length:
 - Foot : Forearm = 1:1
 - Foot / Forearm = 1/1
- *Pose the problem:* Tell the class to first cut a piece of string equal to their individual heights. They will need to help each other with this. Then, individually the students will explore ratios of their bodies. They should record five ratios each. Following this, they will all meet in groups to discuss and compare their findings. Try to find ratios that are true for everyone. Also prepare to report back to the class.
 - As an extension students may find more ratios.
- Discuss the results. Ask for questions. Reinforce the ratio notation, showing which number goes where.
 - You can also ask the class if the common ratios would hold true for both infants and many grown adults.