

Title of Book: Who Was Leonardo da Vinci?
Author: Roberta Edwards
Illustrator: True Kelley
Publisher and Date: Grosset & Dunlap /2005
ISBN: 978-0-448-44301-0

Grade Levels for Recommended Use: Sixth-Eighth

(6.3) Patterns, relationships, and algebraic thinking. The student solves problems involving direct proportional relationships. The student is expected to:

- (A) use ratios to describe proportional situations;
- (B) represent ratios and percents with concrete models, fractions, and decimals; and
- (C) use ratios to make predictions in proportional situations.

CCSS6.RP.3. Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.

Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.

<http://www.corestandards.org/the-standards/mathematics>

Brief Summary: The book is a short chapter book giving a summary of Leonardo da Vinci's life in Renaissance Italy. This illustrated biography describes him as a lonely child, a house guest of the King of France, an inventor, musician, engineer, scientist, and painter of the world-famous Mona Lisa. This activity has to do with his famous drawing "The Vitruvian Man" demonstrating ideal human proportions.

Materials needed:

Measuring tapes using the metric side and a meter stick. Have measuring tapes scotch taped to the walls of the classroom from the floor up and across at approximately the students' shoulder height.

Suggested Activity: Are You Ideal?

Show the pictures on http://en.wikipedia.org/wiki/Vitruvian_Man

1. Have students work in groups of three to measure their height and arm span in centimeters against the wall where you have taped measuring tapes.

Extensions:

Using the website, there is also a picture of the Vitruvian Man on the Euro coin used as currency in all of Europe and on the Skylab II patch used by astronauts.

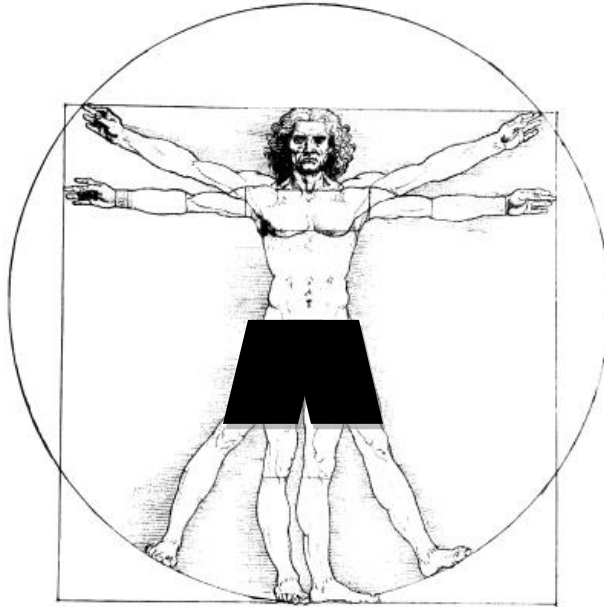
Students can paint on line the "Proportions of the Human Figure"
<http://www.enchantedlearning.com/artists/davinci/coloring/>

Adapted by Dr. Faye Bruun (2012)

Name: _____

Date: _____

Are You Ideal? *The Vitruvian Man Measurement Lab*



The **Vitruvian Man** is a world renowned drawing with accompanying notes created by Leonardo da Vinci around the year 1492 as recorded in one of his journals. It depicts a male figure in two superimposed positions with his arms and legs apart and simultaneously inscribed in a circle and square. The drawing and text are sometimes called the **Canon of Proportions** or, less often, **Proportions of Man**.

For centuries, artists such as Da Vinci have known that there are average proportions for certain parts of the human body that are useful in depicting human subjects accurately.

Do you think there is a relationship between arm span and height? Between the length of the forearm and the length of the foot?

According to Leonardo Da Vinci and Ancient Roman architect Vitruvius:

- the arm span length is equal to man's height
- the distance from the armpit to elbow "pit" is one-eighth of a man's height
- the distance from the tip of the hand to the elbow "pit" is one-fifth of a man's height
- the length of the hand is one-tenth of a man's height
- the length of the ear is one-third of the face

In this lab, you will be collecting data on yourself and your partners to see if you measure up to Da Vinci's Vitruvian Man.

ARE YOU IDEAL?

Instructions:

1. Estimate the measurements of your body parts listed below, USE CENTIMETERS. Place answers in the table below
 - a. Student's height
 - b. Student's arm span
 - c. Distance from the elbow "pit" to tip of hand
 - d. Distance from the elbow "pit" to the armpit
 - e. Length of the hand
 - f. Length of ear
 - g. Length of face
2. Use the measuring tapes secured to the wall, meter sticks and/or rulers find the actual measurements of same areas as in question #. Place answers in the table below.
3. Repeat instructions 1-2 for each person in the group.

	Student #1	Student #2	Student #3
Student's height			
Student's arm span			
Distance from the elbow "pit" to the tip of hand			
Distance from the elbow "pit" to the armpit			
Length of the hand			
Length of ear			
Length of face			

4. Compare your values to Da Vinci's and Vitruvius. Fill in the table below to see how "ideal" you were.

	Student 1: Did your measurement meet this ideal?	Student 2: Did your measurement meet this ideal?	Student 3: Did your measurement meet this ideal?
the arm span length is <u>equal</u> to man's height			
the distance from the armpit to elbow "pit" is <u>one-eighth</u> of a man's height			
the distance from the tip of the hand to the elbow "pit" is <u>one-fifth</u> of a man's height			
the length of the hand is <u>one-tenth</u> of a man's height			
the length of the ear is <u>one-third</u> of the face			
What portion of you was "ideal"?			

Adapted by Ibet Caro, (2011)