

# Vitruvian Man Meets the Scientific Method

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Leonardo da Vinci's drawing *Vitruvian Man* shows how the proportions of the human body fit perfectly into a circle or a square. The diagram by Leonardo da Vinci is an illustration of Vitruvius' theory.

Vitruvius wrote,

"...in the human body the central point is naturally the navel. For if a man be placed flat on his back, with his hands and feet extended, and a pair of compasses centered at his navel, the fingers and toes of his two hands and feet will touch the circumference of a circle described therefrom. And just as the human body yields a circular outline, so too a square figure may be found from it. For if we measure the distance from the soles of the feet to the top of the head, and then apply that measure to the outstretched arms, the breadth will be found to be the same as the height ..."

So what does that mean? According to Vitruvius' theory the distance from fingertip to fingertip (wingspan or arm span) should be equal to the distance from head to heel (height). In this activity you will explore the legitimacy of Vitruvius' theory by developing a hypothesis regarding *Vitruvian Man*.



Some other of Vitruvius' Theories includes:

1. The measurements from fingertip to fingertip is equal to a person's height
2. The measurements from top of head to bottom of chin is  $\frac{1}{8}$ <sup>th</sup> a person's height
3. The measurements from bottom of knee to bottom of foot is  $\frac{1}{4}$ <sup>th</sup> a person's height
4. The maximum width of the shoulders is  $\frac{1}{4}$ <sup>th</sup> of the height.

# ACADEMIC VOCABULARY

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**Scientific Method:** a method of research in which a problem is identified, relevant data are gathered, a hypothesis is formulated from these data, and the hypothesis is empirically tested.

**Hypothesis:** a proposition assumed as a premise in an argument. In Science it is in the form of an if/then statement.

**Information:** knowledge gained through study, communication, research, instruction, etc.; factual data:

**Conclusion:** summing up of the points and a statement of opinion or decisions reached.

**Variable:** A factor or condition that is subject to change, especially one that is allowed to change in a scientific experiment to test a hypothesis.

**Control Group:** A group used as a standard of comparison in a control experiment.

**Experimental Group:** A group of subjects that are exposed to the variable of a control experiment.