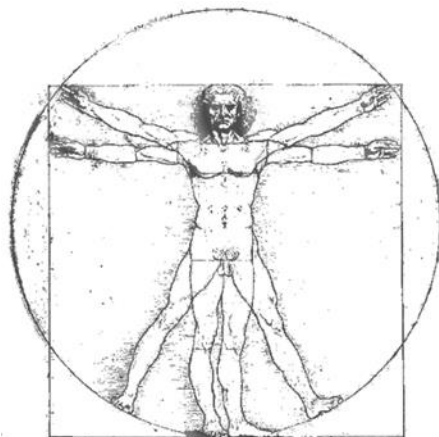




Leonardo da Vinci's Vitruvian Man

Leonardo da Vinci's Vitruvian Man shows how the proportions of the human body fit perfectly into a circle or a square.



The drawing shows a man standing in a square, which is inside a circle. The man has two pair of outstretched arms and two pair of outstretched legs. These are some of the proportions given for the Vitruvian Man:

- The span of the man's arms is equal to his height.
- The width of his shoulders is one-fourth of his height.
- The distance from the top of his head to the middle of his chest is one-fourth of his height.
- The distance from the middle of his chest to the top of his leg is one-fourth of his height.
- The distance from the top of his leg to the bottom of his knee is one-fourth of his height.
- The distance from the bottom of his knee to the bottom of his foot is one-fourth of his height.

Exercise Objective

You will learn and practice the scientific method by measuring human dimensions.

1. Working with a partner, measure your arm span by standing against a flat surface and spreading your arms out as far as possible. Have your partner measure the distance from the longest finger on one hand to the tip of the longest finger on the other hand.
2. Record the measurements in Data Table 1.
3. Repeat step two on your partner
4. Remove your shoes and have your partner measure your height as you stand against a flat surface. Measure the distance from the top of your head to the floor. Record your measurements in data Table 1.
5. Repeat step 4 on your partner.
6. Calculate the difference between your arm span and your height (arm span-height). If the difference is within +/-2 cm -- we will say that it is close enough.
7. Let your partner measure your body and do the same on him or her. Record the measurement in Data Table 2.



Vitruvian Man Student Data Sheet

I. Working with a partner measure your height and check how long your arm is.

Data Table 1:

Name	Arm span (cm)	Height (cm)

Difference: NAME 1= _____ cm

NAME 2 = _____ cm

Data 2

Fill in for your measurements only:

Data Table 2:

Measure	Your measurement	Fraction of your height	Difference btw your height and measure
Your height			-----
The length of your outspread arms		1	
The length of face		1/8=	
The width of the shoulders		1/4=	
From the elbow to the tip of the hand		1/5=	
From the elbow to the armpit		1/8=	
The whole hand		1/10=	
The foot to the longest toe		1/7=	
The length from the wrist to the elbow (your foot)		1/7=	
Measure	Your measurement	Fraction of your face	Difference
The distance from the bottom of the chin to the nose		1/3	
The length of the ear		1/3	
from the roots of the hair to the eyebrows		1/3	

Now check to find out if the following conjectures are true or false for your body.

- the length of a person's outspread arms is equal to his / her height
- the length of the hand is one-tenth of a person's height
- the length of the face is one-eighth of a person's height
- the width of the shoulders is one-quarter of a person's
- the distance from the elbow to the tip of the hand is one-fifth of a person's height
- the distance from the elbow to the armpit is one-eighth of a person's height
- the length of the ear is one-third of the length of the
- the distance from the nose to the bottom of the chin is one-third of the length of the face
- the distance from the hairline to the eyebrows is one-third of the length of the face