KS2 Measure

Body ratios

(activitiy inspired by BioEdOnline and the Vitruvian Man)

In this activity, your child will explore the simple proportional relationships found in measurement of various body parts. The task will reinforce their understanding of equivalence, give opportunity for them to practise measuring with standard and non-standard units and encourage mathematical discussion.

Here are definitions and examples for some of the mathematical language used in the activity. If your child is unfamiliar with some of these words (ratio is only taught in Year 6, for example, and 'correlation' is likely to be a new word for most primary aged children) adapt the task to avoid overloading them with new language and concepts.

Equivalence	values, numbers or quantities which are the same	The length of my foot *is equivalent* to the length of my forearm.
Approximately	used to show that something is almost, but not completely, accurate or exact	Head is approximately 4 to 5 eyes wide
Proportional	corresponding in size or amount to something else.	We are learning about proportional relationships found in measurement of our body parts.
Correlation	a relationship or connection between two things	There is correlation between the length of your face and the length of your hand.
Ratio	a ratio shows how much of one thing there is compared to another.	Waist to neck ratio is 1:2 (this means the measure of someone's waist circumference is equivalent to twice the circumference of their neck)

Activity (part 1) for your child:

Look at your foot. How long is it? Did you know there was a way to estimate the length of your foot without even looking at it? Does anyone know the secret?

Measure the length of your forearm (from the crease of your elbow to your wrist). Now compare this to the length (from heel to toe) of your foot. What do you notice? Are these measurements similar?

You may have a rule or tape measure to use so you can measure accurately in centimetres, but if you don't have either of these things at home, you could use a non-standard unit to measure eg. lego blocks, felt tip pen lids.

These are some of the correlations for an average adult. How many of these are true for you? Investigate. Think about how you could record your findings.

- Total height is equivalent to 7 to 7 ½ heads tall
- Nose length is equivalent to first two digits of index finger
- Head is approximately 4 to 5 eyes wide
- Length of face is equal to length of hand
- Eyes are separated by one eye's width

- Bottom of nose to outside corner of eye is equal to length of ear
- Length of foot is equal to length of forearm
- Arm span is equivalent to height

Only for Y6 (perhaps Y5) children who feel confident thinking about ratio and have adult supervision.

If you are not being supervised by an adult, you <u>must not</u> complete this activity. Anything placed around your neck should be done so loosely and should not be pulled.

'Once around the waist, twice around the neck'

'Once around the neck, twice around the wrist'

Have you ever heard these sayings? Are they true?

- Waist to neck ratio is 1:2 (waist is twice the circumference of the neck)
- Neck to wrist ratio is 1:2 (neck is twice the circumference of the wrist)

Can you remember what circumference means? You might have a 'soft' tape measure that you can use to measure your waist and neck circumference. Alternatively, you could use string/dressing gown cord and lay it out flat to measure with a ruler or a non-standard unit.

Activity (part 2)

Sultan Kösen, a 37 year old Turkish man, holds the Guinness World Record for being the **tallest living man**. He is **251 centimetres** tall.

Based upon the relationships of one body part to another, can you estimate his arm span and head size?