

Unusual Rulers

Activity

Mum wants to put new tiles on the kitchen floor. She needs to measure its length and width, but she can't find her tape measure.

Tim, Phoebe, and Roy each decide to measure the length of the room in a different way.

I'll use the length of my foot as a ruler.



This piece of bamboo is the length of my arm. I'll use that as my ruler!



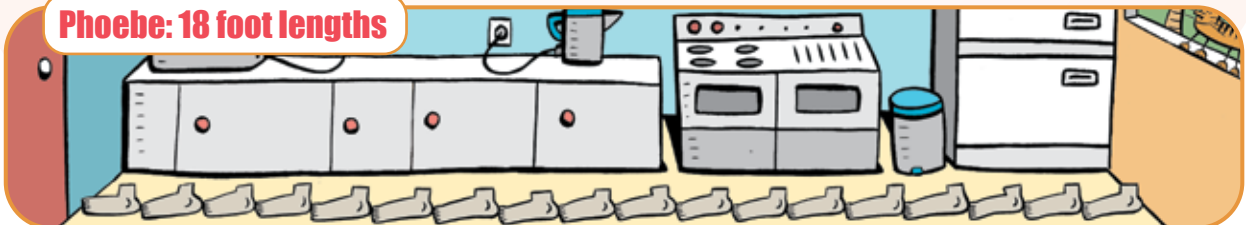
I'll try measuring with my hand span.

Here are their answers:

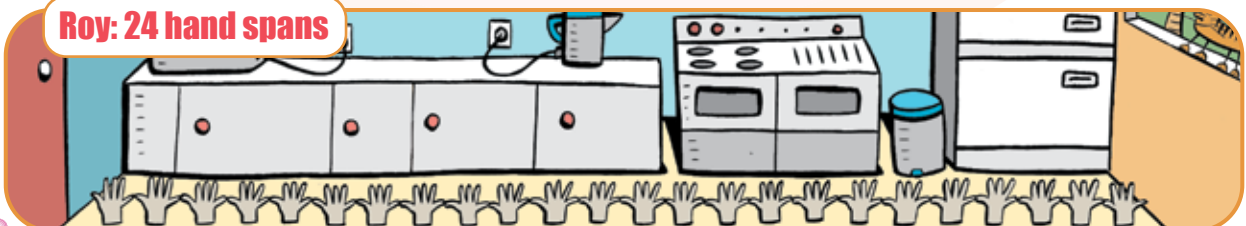
Tim: 6 arm lengths (using a bamboo stick)



Phoebe: 18 foot lengths



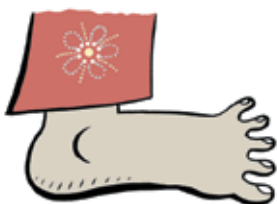
Roy: 24 hand spans



1. What fraction of Tim's arm length is:
 - a. Phoebe's foot?
 - b. Roy's hand span?
2. Tim's arm is 60 centimetres long. What is the length of:

a.

Phoebe's foot?

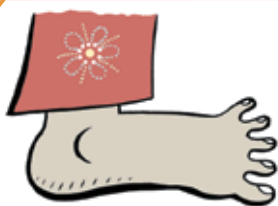


b.

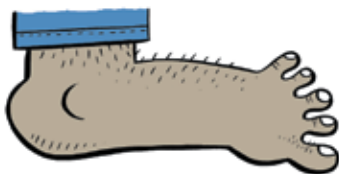
Roy's hand span?



3. How long is the kitchen?
4. Dad and Mum both check the answer by measuring the length of the room with their feet.

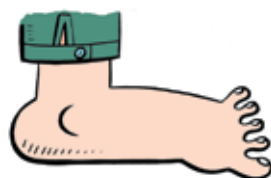


Phoebe's foot



Dad's foot

$1\frac{1}{2}$ times the length of Phoebe's foot



Mum's foot

$1\frac{1}{4}$ times the length of Phoebe's foot

- a. How many heel-to-toe steps will it take Dad to cross the room?
- b. How many heel-to-toe steps will it take Mum to cross the room?
5. If Roy takes more heel-to-toe steps than Phoebe to cross a field, his feet must be longer than hers. True or false? Explain your answer.

Investigation

1. Why aren't people's body parts used to measure lengths any more? What units are used instead?
2. Investigate how lengths were measured in traditional Māori culture.