

## Circle Measurement


Whether you are a parent, teacher or home school educator, we've compiled examples of activities, games and puzzles which can be used to support the learning of shape and space.

These examples are taken from the 'Circle Measurement' packs found in our SMILE resource collection. The mathematical demand increases as you work through the packs. There are lots more ideas in the complete packs, which can be downloaded at <https://www.stem.org.uk/rxzf5>


Answers to cards can be found at <https://www.stem.org.uk/rxxo5>

Smile 0392


# Circumference



Measure the diameter of some round objects.



Measure their circumferences.



**Look at your answers.**

What number can you multiply the diameters by to get answers **roughly equal to** the circumference?

Smile 2146

# It's not fair!

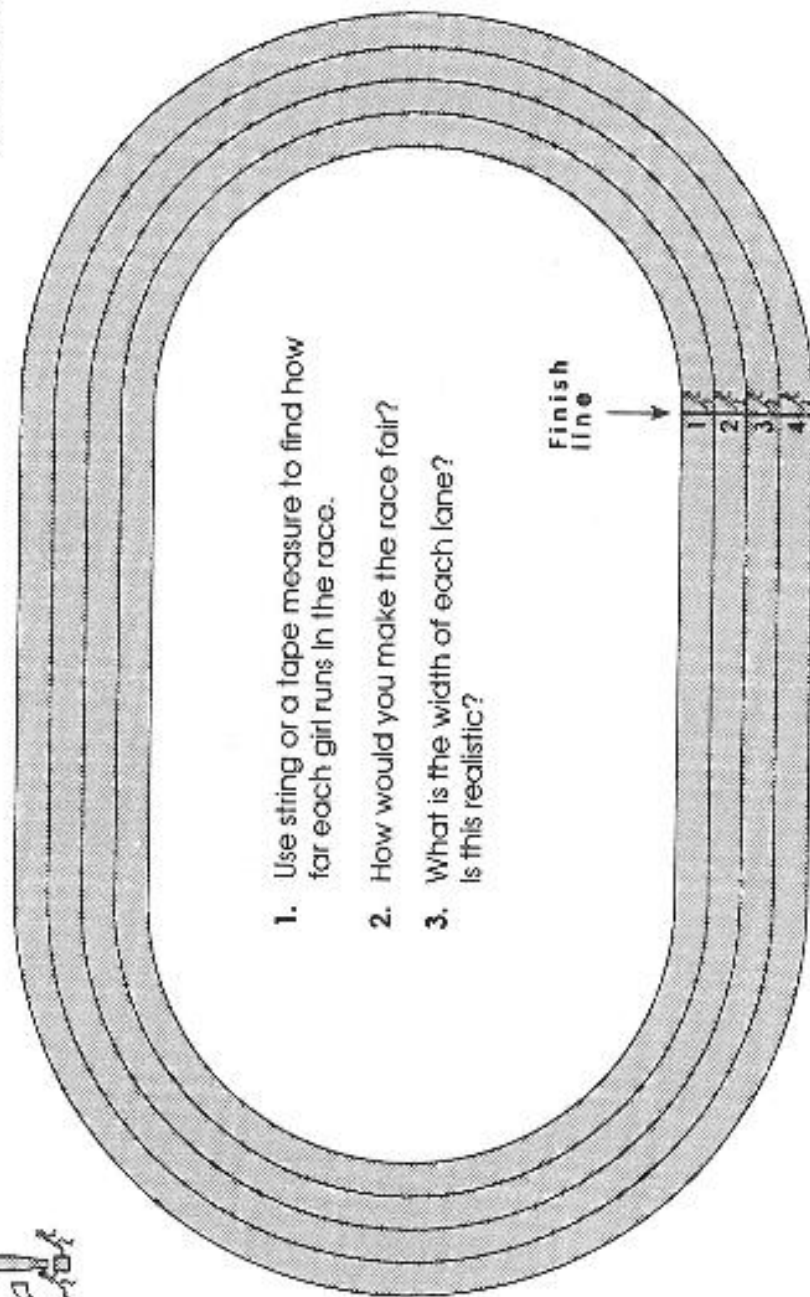
You will need string or a tape measure.

Four girls race around this track, one in each lane.

The winner is the one who gets back to the finish line first.

Scale:

1mm represents 1 metre of track.



1. Use string or a tape measure to find how far each girl runs in the race.
2. How would you make the race fair?
3. What is the width of each lane? Is this realistic?

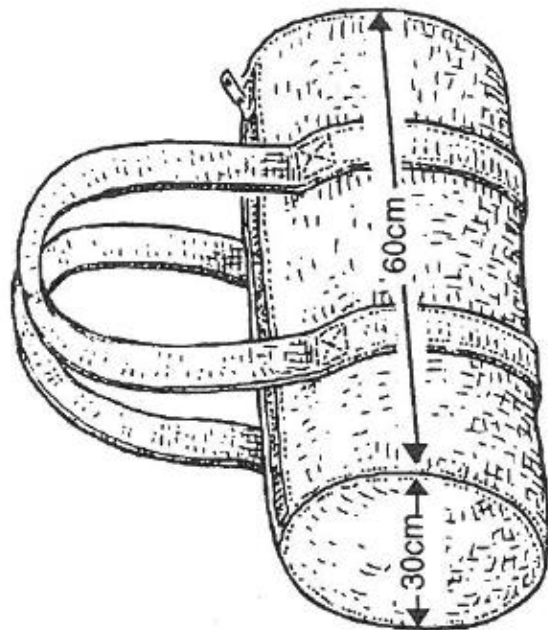
# Kitbag

Can you make a pattern for this kitbag?  
You should leave a seam allowance of 2cm.

The length of the strap is four times  
the circumference of the bag.  
What length of material will you need?

Your cloth is 140cm wide.

Lay out your pattern using as little material as possible.



Make a pattern for a pencil case similar in shape to the kitbag whose dimensions are  $\frac{1}{3}$  of those of the kitbag. Remember your seam allowance must still be 2cm.

# D.I.Y. Earrings

Khani and Farkid are making earrings to sell at the school fair. They are using copper and silver discs with diameters of 1cm, 1.5cm, 2cm, 4cm and 5 cm.



1cm<sup>2</sup> of copper costs 1p.



1cm<sup>2</sup> of silver costs 20p.



Hoops cost 10p a pair.

Area of circle =  $\pi r^2$

( $\pi \times \text{radius} \times \text{radius}$ )

Use the button marked

$\pi$  on your calculator.

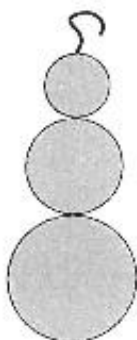
A reasonable

approximation to  $\pi$

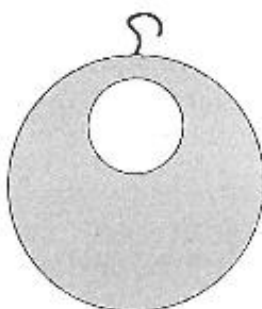
is 3.14.

How much would each pair of these earrings cost to make?  
Give your answers to the nearest penny. Only round off your answers at the end.

A.



B.



C.



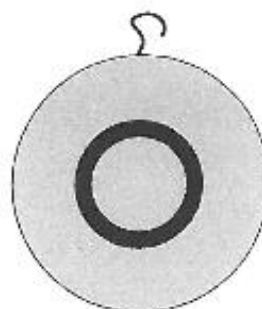
D.



E.



F.



Khani and Farkid want to make a profit of 120% on each pair of earrings.

How much do they need to charge for a pair of the earrings in C?

Design and cost your own earrings using the copper and silver discs.