



'TOKYO OLYMPICS'



Measurement & Geometry Strands

Name:

Class:

“How might we identify the relationship between the diameter of a circle and its circumference, so that we may determine whether it is a proportional relationship?”

Strand: Geometry & Measurement

Measurement

- Use appropriate scales, devices, and metric units for length, area, volume and capacity, weight (mass), angle, and time.
- Convert between metric units, using whole numbers and commonly used decimals.
- Use side or edge lengths to find the perimeters and areas of rectangles and triangles and the volumes of cuboids.

Position and orientation

- Communicate and interpret locations using grid references

Transformation

- Use the invariant properties of figures and objects under transformations (reflection, rotation, translation, or enlargement).



Assessment 2

Metric Units & DST Conversions	You have attempted distance, speed & time calculations + metric conversions	You have accurately completed several distance, speed & time calculations + metric conversions	You have completed many distance, speed & time calculations + metric conversions accurately	You have applied your understanding to accurately solve word problems involving distance, speed & time calculations + metric conversions
Triangles & Angles	You have a limited understanding of triangles & angle properties	You have a developing understanding of triangle types & angle properties	You have demonstrated a clear understanding of triangle types & angle properties	You have a comprehensive understanding of triangle types & angle properties
Perimeter, Area & Volume	You have a developing understanding of formula to perform perimeter, area & volume calculations	You have accurately applied formula to solve several perimeter, area & volume calculations	You have accurately applied formula to solve many perimeter, area & volume calculations	You have accurately applied formula to solve perimeter, area & volume calculations
Position, Orientation & Transformations	You have attempted to communicate & interpret position, orientation + transformation conversions	You have communicated & interpreted some position, orientation + transformation conversions accurately	You have communicated & interpreted most position, orientation + transformation conversions accurately	You have accurately communicated & interpreted position, orientation + transformation conversions
Circles - Area, Circumference & Labelling	You have a developing understanding of parts of a circle, circle formula & the relationship between the diameter + circumference of a circle	You have attempted to label & apply formula to solve some circumference & area calculations + explore the relationship between the diameter & circumference of a circle	You have accurately labelled & applied formula to solve most circumference & area calculations + investigated the relationship between the diameter & the circumference of a circle	You have accurately labelled & applied formula to solve circumference & area calculations + investigated the relationship between the diameter & the circumference of a circle
Time Management	You have not submitted your assessment	You have not submitted your assessment on time	You have submitted your assessment by the due date	You have submitted your assessment by the due date
Overall	WORKING TOWARDS curriculum expectation	Working AT curriculum expectation	Working ABOVE curriculum expectation	Working BEYOND curriculum expectation

INVESTIGATION

CIRCUMFERENCE V'S DIAMETER

GOOGLE CLASSROOM

Page 1

Investigation: *"Is the relationship between the diameter of a medal and its circumference a proportional relationship?"*

Materials Needed:

- Three different sized circular or cylindrical objects, such as a straight-sided coffee cup, roll of tape & plate.
- String (*ribbon, wool, thin wire or old shoe laces will also work well!*)
- Scissors

To Do & Notice:

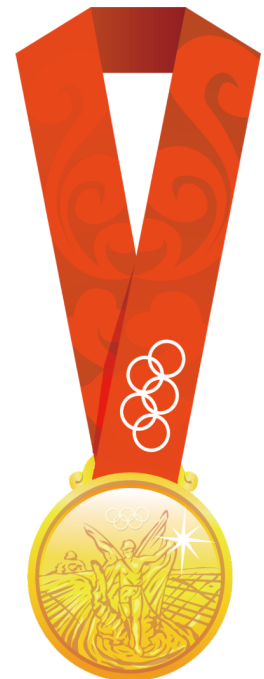
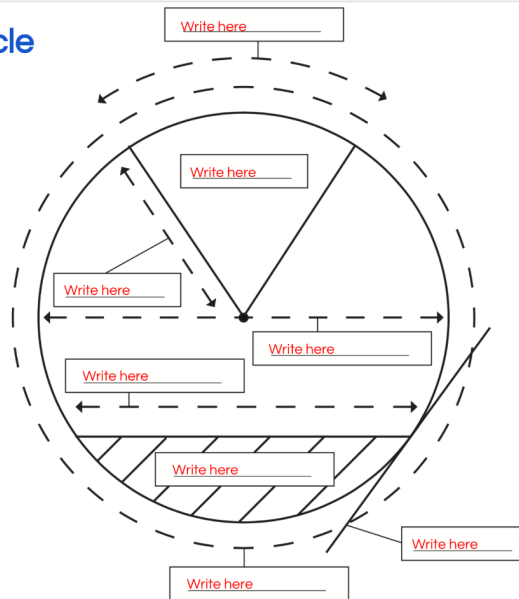
1. Carefully wrap the string around the circumference of your circular object.
2. Cut the string at exactly one circumference of your object.
3. Take your "string circumference" and stretch it across the diameter of your circular object.
4. Then cut as many "string diameters" from your "string circumference" as you can.
5. How many string diameters could you cut from the string circumference? Lay these next to each circular object, then take a photo. Insert your photos into the table below.
6. Record, what do you notice?



Photo 1	Photo 2	Photo 3
What do you notice? Answer here...		
Is the diameter and circumference of a circle a proportional relationship? Answer here...		

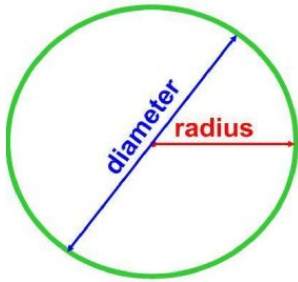
Page 2

Label the Parts of a Circle



circumference	radius	diameter	arc
sector	chord	segment	tangent

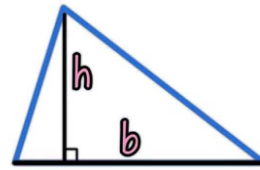
Some Useful Maths Formulas



Area of a circle
 $= \pi \times \text{radius}^2$

Circumference of a circle
 $= \pi \times \text{diameter}$

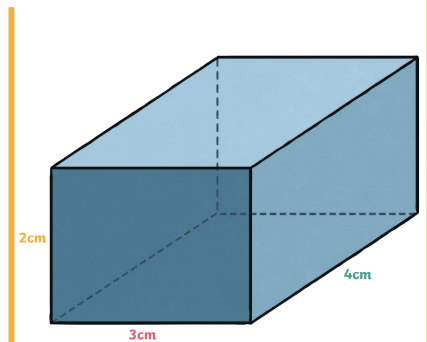
remember that the
diameter = 2 x radius



$$\text{Area} = \frac{1}{2} \times b \times h = \frac{bh}{2}$$

Volume

3D shapes have volume



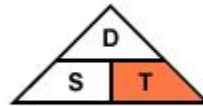
Length x width x height

$$4 \times 3 \times 2 = 24\text{cm}^3$$

Distance, Speed & Time Calculations



Distance = Speed x Time



Time = $\frac{\text{Distance}}{\text{Speed}}$



Speed = $\frac{\text{Distance}}{\text{Time}}$