BLOOMSM4TH

Makes Maths Fun

Level 7

2D SPACE

Bloomsmath is a comprehensive mathematics program which provides a fun way for every student to be learning to the best of their ability.

By Rachel McCann (B.Teach; B.Ed Hons; M.ED (Special Ed.)

BLOOMSM4TH Makes Maths Fun

Level 7

2D Space

Level 7 is designed for students in their seventh year at school often called Year 6. Students will measure, construct and classify angles.

Knowledge: Students will classify angles in equilateral, isosceles and scalene triangles.

Students who demonstrate proficiency in this activity move on to Comprehension.

STOP

Students stop here as they require additional teacher support to master this activity.

Comprehension: Students will name the parts of a circle.

Students who demonstrate proficiency in this activity move on to Application.

STOP

Students stop here if time has run out or they require additional support with this activity.

Application: Students will draw shapes inside circles.

Students who demonstrate proficiency in this activity move on to Analysis.

STOP

Students stop here if time has run out or they require additional support with this activity.

Analysis: Students will enlarge a given picture.

Students who demonstrate proficiency in this activity move on to Synthesis.

STOP

Students stop here if time has run out or they require additional support with this activity.

Synthesis: Students will create congruent shapes using grid paper.

Evaluation: Suggested questions provide a starting point for discussions related to 2D Space.

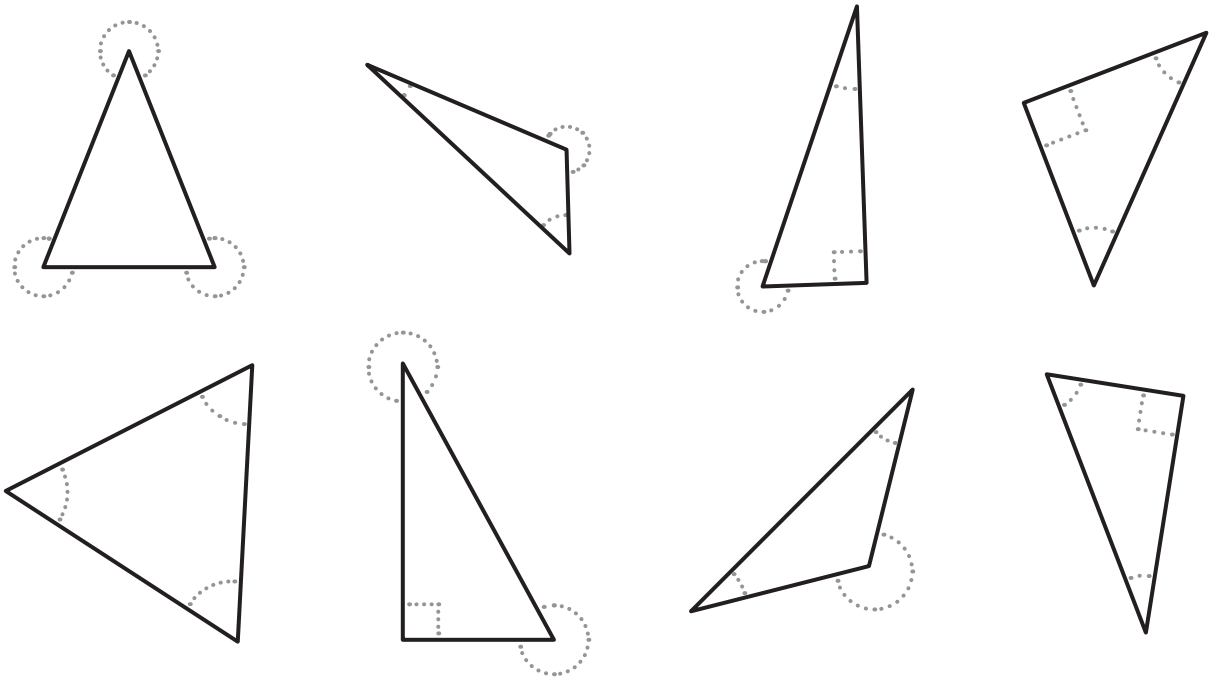
Students may complete more or fewer activities for each learning outcome depending on the time allocated and their strength in the area being covered.

All students should participate in the Evaluation discussion to encourage the use of mathematical language, logical reasoning and reflection on that which they have completed.

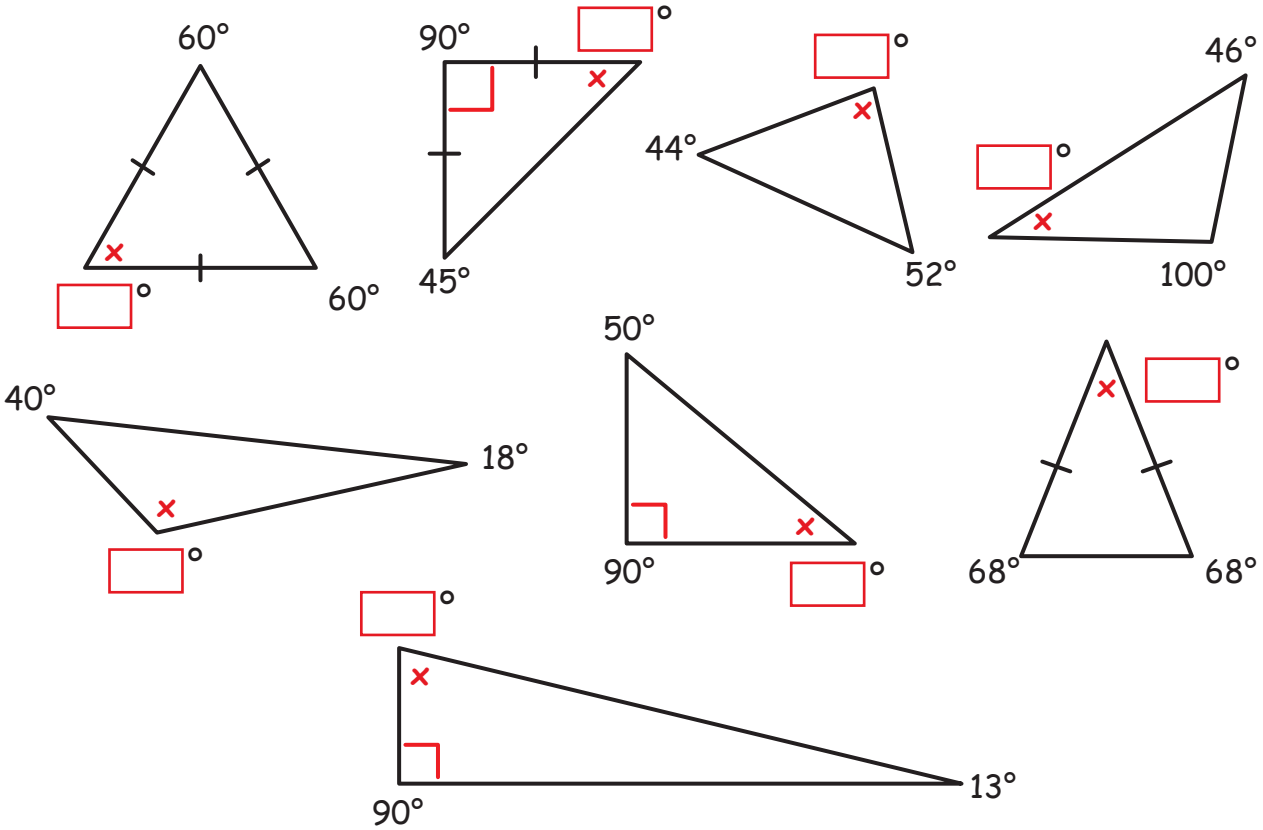
Name: _____

Knowledge

In the triangles below mark the acute angles RED, the obtuse angles BLUE and the right angle triangle GREEN.



See if you can find the missing angle for each triangle below. Remember that the angle sum of a triangle is 180°.



Let's Try This Again

Progress To Comprehension

Name: _____

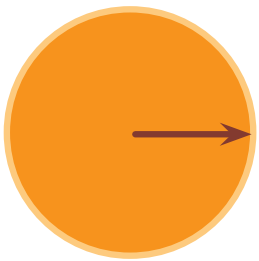
Comprehension

Identify the parts of a circle below to solve the joke.

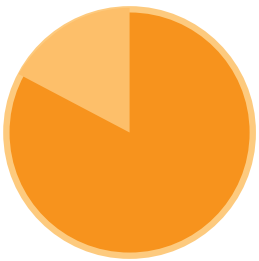
What did the triangle call the circle that insulted it?

☐	☐	☐	☐	☐	☐	☐	☐	☐
Chord	Tangent	Sector	Arc	Diameter	Segment	Radius	Circumference	Circumference

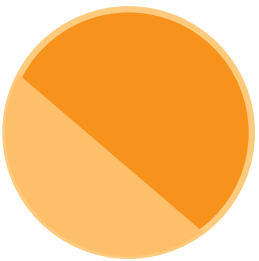
E



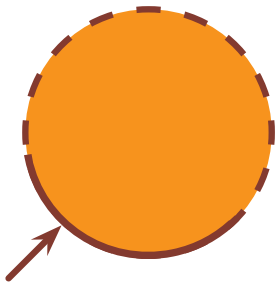
I



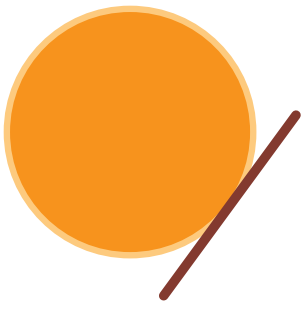
L



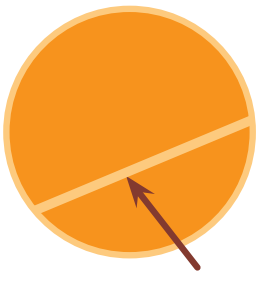
N



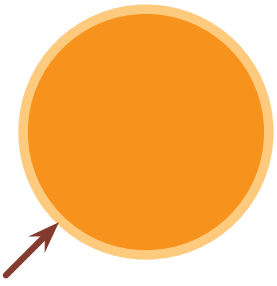
O



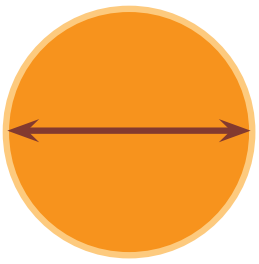
P



S



T



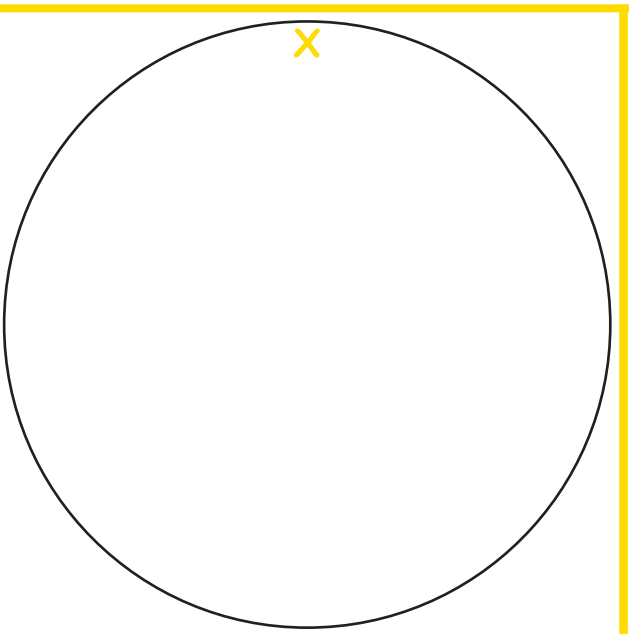
Let's Try This Again

Progress To Application

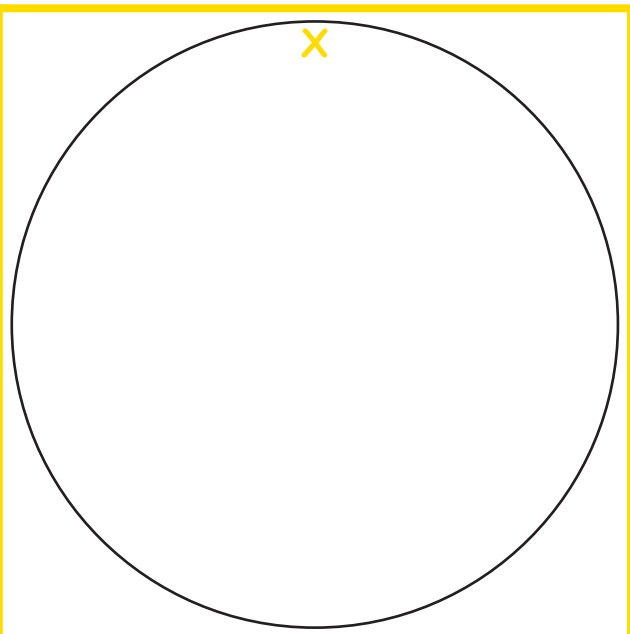
Name: _____

Application

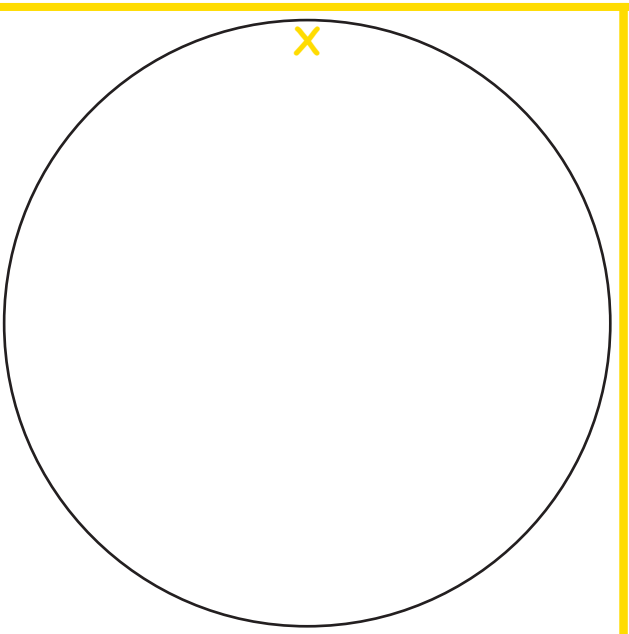
Starting at the X draw each requested shape within the circle using the angle sum of each shape to help you draw that shape. You will need a protractor and a ruler for this activity.



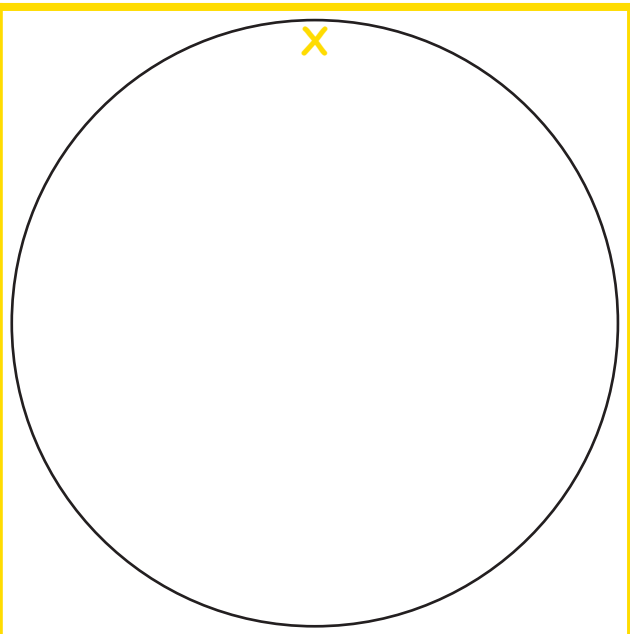
Square - 180°



Pentagon - 270°



Hexagon - 360°

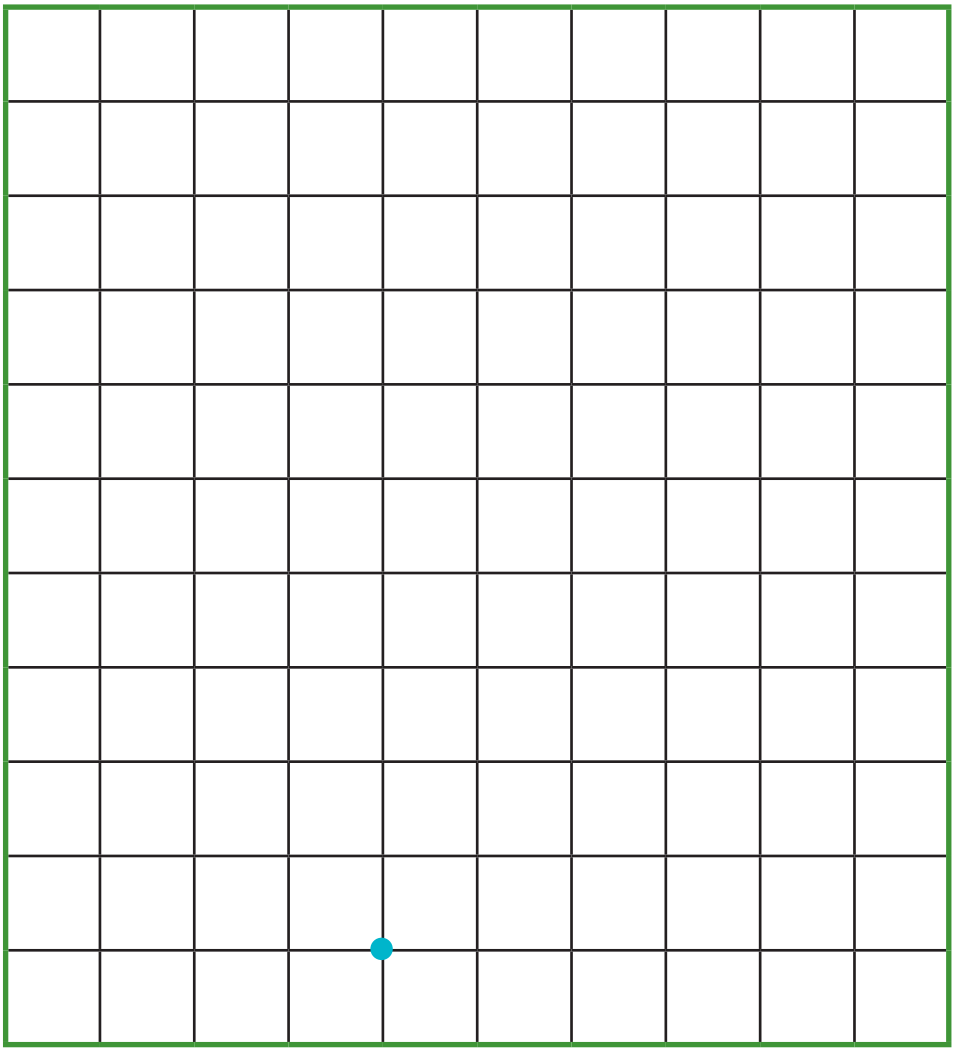


Octagon - 450°

Name: _____

Analysis

Using a **ruler**, a **protractor** and the **instructions** given draw the picture below.



Starting at the blue dot draw a line straight Up **2cms**.
Turn **90°** to the Left and draw a line **3cm** long.
Turn Right **145°** and draw a line **4cm** long.
Turn Left **145°** and draw a line **2cm** long.
Turn Right **145°** and draw a line **3cm** long.
Turn Left **145°** and draw a line **1cm** long.
Turn Right **145°** and draw a line **3cm** long.
Turn Right **70°** and draw a line **3cm** long.
Turn Right **145°** and draw a line **1cm** long.
Turn Left **145°** and draw a line **3cms** long.
Turn Right **145°** and draw a line **2cm** long.
Turn Left **145°** and draw a line **4cm** long.
Turn Right **145°** and draw a line **3cm** long.
Turn Left **90°** and draw a line **2cm** long.
Turn Right **90°** and draw a line **4cm** long to join the shape.

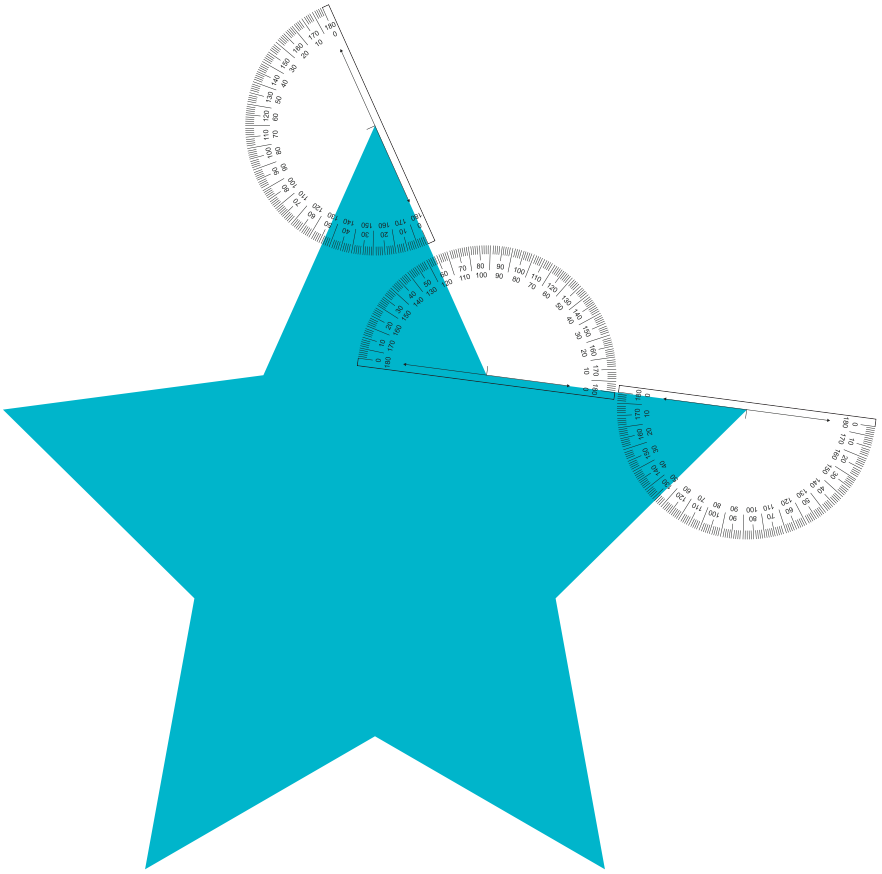
 Let's Try This Again

 Progress To Synthesis

Name: _____

Synthesis

See if you can write the directions to draw the star below. Some protractors have been added to assist you.



Instructions:

Evaluation

The following questions and activities are provide as a starting point for fun discussions related to 2D Space. During these conversations students will have an opportunity to use appropriate mathematical language in its correct context, to engage in reflection on the 2D Space activities they have completed and to use logical reasoning to tie their in-class mathematics to its everyday context.

Discuss how the angle sum of shapes increase as more triangles could be placed inside the shape ie. a square is 2 x triangles = 180°, a pentagon is 3 x triangles 270°.

Read Cindy Neuschwander's Sir Cumference and the Dragon of Pi.

What happens to the inside shape as the number of sides of a shape within a circle increases?

How would a decagon or dodecagon be drawn in a circle?

If students are struggling with drawing a Christmas tree in the Analysis section converting the directions to Logo Turtle script might help.

See what other shapes students can design for the Synthesis section and then swap their instructions with a partner or run them in Logo Turtle to see if they work.