Lesson 1: Monday 8.6.20

Let's Practise: The parallel lines are the opposite sides of the square and the rectangle.
Both shapes have 2 pairs of parallel lines.
Both the square and the rectangle have 4 right angles.
All sides of the square are equal.
The opposite sides of the rectangle are equal.

Challenge 1:
1. Only the right angle triangle has perpendicular lines. The hexagon and pentagon don't have any because they don't have any right angles.
2. The shape is a square. All sides of a square are equal in length, therefore the other three sides of the square also measure 4.5cm.

Challenge 2:
1. There are 4 grid squares in side *a*. We know side *a* measures 8cm. Therefore each grid square must be 2cm in length. Side *b* has 10 grid squares. Each grid square is 2cm long. 10 x 2cm = 20cm. So side *b* must measure 20cm in length.
2. (a) Each of the angles in a square measure 90 degrees. (b) Angle *a* is also 45 degrees because the right angle has been cut in half and half of 90 degrees is 45 degrees.
3. Side *b* is the same length as the side of the square, so side *b* is 6cm. There are 3 grid squares in side *b*, so each grid square (6/3) = 2 cm. Side *a* is 6 grid squares in length. 6 x 2 cm = 12 cm. So side *a* is 12cm long.

Challenge 3:
1. False. There are 5 grid squares on the side that measures 10cm, this means that 10 divided by 5 = 2, so each small grid square is 2cm long. Side a has 4 grid squares, 4 x 2 = 8cm NOT 6cm.
2. If there are 2 small grid squares in 14cm, then each grid square measures 7cm. Side B is the same size, it has 2 grid squares, so it must be 14cm also. Side A has 4 whole grid squares and one half grid square. 4.5 x 7 = 31.5, therefore Side A measures 31.5cm.
3. False. Each square is worth 3cm (12 divided by 4 = 3cm). Side *a* is 7 squares long, 7 x 3cm = 21cm. Therefore side *a* is 21cm in length, NOT 28cm.

Lesson 2: Tuesday 9.6.20

Let's Practise:
Angle c is half a right angle, so it will measure 45 degrees. Angles on a straight line add up to 180 degrees. B and C are on a straight line, so 180 - angle C = Angle B (180-45 = 135). Therefore Angle B = 135 degrees.
Challenge 1:
1. Angle *p* is (90-53 = 37) 37 degrees.

2. Angle B is 135 degrees. It is not a right angle (90 degrees), it is an obtuse angle.

Challenge 2:
1. (a) Length is 10cm x 3 = 30cm. Width is 6cm x 2 = 12 cm. (b) Perimeter is (length + width) x 2. (30 + 12 = 42cm) 42 x 2 = 84. The perimeter of the shape is 84cm
2. Side A is 12cm long. Angle B is a right angle and so measures 90 degrees. Angle C is half a right angle (90 /2 = 45). So angle C measures 45 degrees.

Challenge 3:
1. Angle A is 135 degrees (90 +45)   Angle B + Angle C = 180 degrees (angles on a straight line) So angles B and C are both right angles (90 degrees). Angle D is half a right angle, 45 degrees.
2. Ranjit is incorrect, the angle is less than half of a right angle and therefore is not 45 degrees.

Lesson 3: Wednesday 10.6.20

Challenge1:
1. A regular shape has equal sides and angles.
2. An irregular shape has unequal sides and angles.
3. Ranjit is incorrect. A rectangle is an irregular polygon because it only has 2 equal sides.

Challenge 2:
1. (a) middle shape is regular (equilateral triangle) (b) Polygon on the right is regular (square) (c) Pentagon on the left is regular (d) Hexagon on the right is regular.
   You know this because all the sides and angles of these shapes are equal, you can see this without measuring.
2. This is not a regular octagon. Although it has 8 sides, all of its angles and sides are NOT the same.
3. Tony HAS NOT sorted the shapes correctly. She should move E and C into irregular polygon that does not have 5 sides because their sides and angles are not equal.

Challenge 3:
1. An irregular octagon.
2. Darcey is correct, although its sides are equal, its angles are not.
3. Putting 2 regular shapes together has made an irregular polygon. Eva is incorrect.

Lesson 4: Thursday 11.6.20

Challenge 1:

1.(a) The net has 6 faces   (b) A cube
2. (a) Cylinder. 2 flat circular faces, 1 curved face, no vertices. (b) Cone. 1 flat circular face, no vertices, 1 edge, 1 curved surface.

Challenge 2:
1. The right hand triangle will be the face opposite the dot when constructed.
2. The sphere does not match any 2-D net.
3. The first net on the left will construct a cone.

Challenge 3:
1. Shape 1: Squares and rectangles, it will make a cuboid when constructed. Shape 2: Rectangles and triangles, it will make a triangular prism when constructed. Shape 3: Triangles, it will make a tetrahedron when constructed.
2. Jerry has created the net correctly. When constructed, it will become a cuboid. The squares will be opposite each other and the rectangles will fit together.
3. Caleb's net is the odd one out. Ranjit and Jane's nets can both be used to construct a cube. Caleb's net will not work because they will not fold correctly to give a shape with six faces.