Y8 Maths Knowledge Organiser Topic 8: Angles 2

What must I be able to do?

You may need to revise the following:

- Year 7 Topic 12: Angles 1

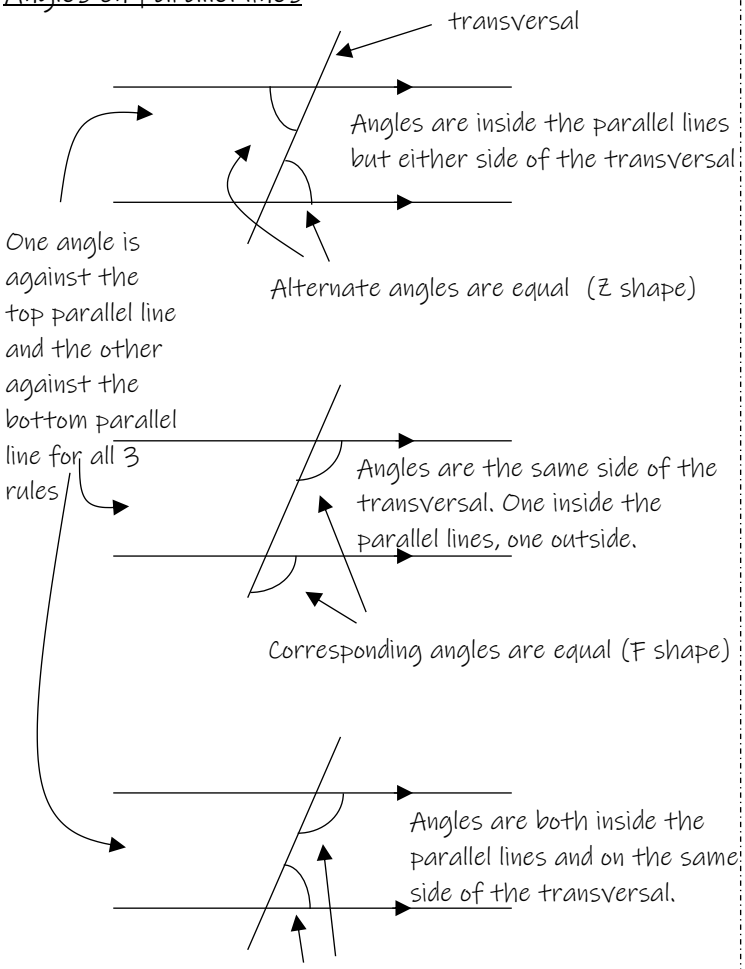
New content:

- ☐ Identify the different types of angles formed by parallel lines and a transversal such as corresponding angles, alternate angles and interior angles
  - ➢ Mathswatch G18
- ☐ Use the various properties of angles to find unknown angles
- ☐ Find unknown angles in geometrical figures involving square, rectangle, parallelogram, rhombus, trapezium and triangle

Key vocabulary

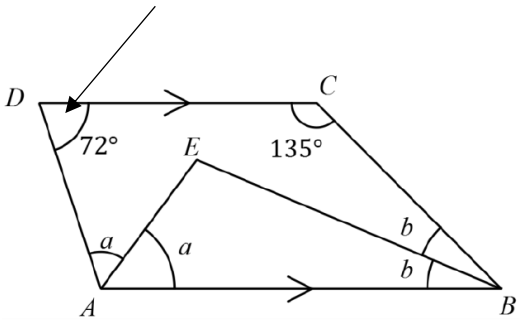
Parallel Lines	Straight lines which go in the same direction and never meet.
Transversal	A straight line which passes through a set of parallel lines.

Angles on parallel lines



Problem solving with angles

We call this angle $\hat{ADC}$ as it is the angle at D, when D is connected to A and C.



Angle $\hat{ADC}$ and angle $\hat{DAB}$ are allied so add to 180°

So $72 + a + a = 180°$

$2a = 108°$

$a = 54°$

The same applies to angles $\hat{DCB}$ and $\hat{ABC}$

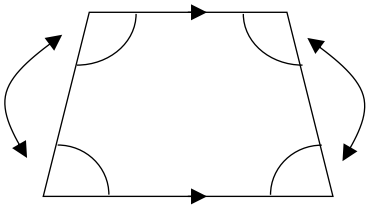
So $135 + b + b = 180°$

$2b = 45°$

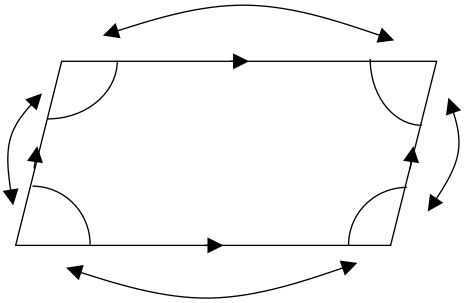
$b = 22.5°$

Note: As both angles are called b, they must be the same size. Similarly for the angles called a.

Angles in trapezia and parallelograms



As a trapezium and a parallelogram have a pair of parallel sides, the angles at each end form a pair of allied angles which sum to 180°



Trapezium – 2 pairs of allied angles

Parallelogram – 4 pairs of allied angles