**Angle Rules C**

**Motivation:**

Buildings: triangles help strength, designers need to be able to calculate forces using angles.

General skills: logical reasoning, structured arguments.

**Prior knowledge:**

Angle rules covered before

**Check:**

Angles around a point…

Angles on a straight line…

Angles in a triangle…

Opposite Angles…

‘Base’ angles in an isosceles triangle…

Angles in a quadrilateral…

A square has…

Any more?

**Write up in books if necessary:**

Angles around a point add up to

Angles on a straight line add up to

Angles in a triangle add up to

Opposite Angles are equal.

‘Base’ angles in an isosceles triangle are equal.

**Prior knowledge:**

To write out your solutions to angle problems logically and clearly

**Check:**

130o

30°

*x*

150o

a

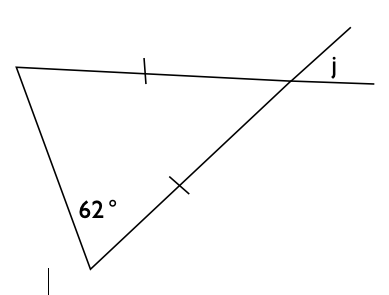
b

Calculate the value of x

List the angles you used along the way, and the reason for each angle.

Find the value of the angle j.

Show all the angles you worked out along the way, with reasons.



Either:

Angles A extension

Or

Example + Angles A practice

**Aims:**

To develop new angle rules involving parallel lines.

**Activities:**

Approach 1: measuring angles and spotting links

Approach 2: Introduction through Euclid’s Parallel Postulate

axiom/postulate: a starting point of reasoning: so evident as to be accepted as true without controversy.

Approach 3: Statement of the rules.

Approach 4: Use geogebra to help with 1 or 3.

**Approach 5: How can we tell if two lines are parallel?**

Draw out the idea of drawing a transversal and measuring to see if corresponding or alternate angles are equal.

These angles are useful, so we give them names, like opposite angles.

Use of Geogebra to demonstrate the rules.

Examples of how the pictures can look different by editing on Geogebra.

**Aims:**

To know the terminology and rules:

* Corresponding angles are equal
* Alternate angles are equal
* Co-Interior angles add to 180

**Activities:**

Class discussion and notes

Worksheet: angles C naming.

Or Quizlet <https://quizlet.com/_4r4l6g>

Or Desmos activity (fun, but good learning?) <https://teacher.desmos.com/polygraph/custom/560c53f831e47ee40c824ed0>

Use Geogebra to create a pair of:

Alternate Angles

Corresponding Angles

Interior Angles

Angles C Naming

**Aims:**

To use these rules to find missing angles, showing your method clearly.

x

110

**Activities:**

Example

Example by two different methods:

x

60

80

Worksheet: angles C practice

An equilateral triangle is inside a rhombus. Find the value of x.

x°