

Challenge in Maths – What It Looks Like at William Booth Primary School

Daily Arithmetic Fluency Starter

These must be based on mental maths non-negotiables, and could contain differentiated questions, with children starting where they feel appropriate.

This may have a CHALLENGE question to ensure learning is not capped – teacher may model methods/go through answers with class whilst quicker learners complete Challenge.

$12 - 7.1 =$	$6 - 2.65 =$
$8 - 2.4 =$	$10 - 4.51 =$
$15 - 9.8 =$	$12 - 6.23 =$
$20 - 11.5 =$	$18 - 10.44 =$

CHALLENGE!
 $c - d = 2.85$
 c is a whole number less than 20.

What are the possible values of c and d ?

Explore Task

This must contain one or more deeper thinking CHALLENGE questions. This question could be revealed as quickest learners complete task.

See MNP planning, attached question strands or separate mastery tasks on server for ideas.

Explore

Hannah measures her picture. Will it fit into her frame?
CHALLENGE!
 Prove it!
 What width could the frame's border be for the photo to still fit?
 What if the photo doubles in size? What size frame would be needed?

Guided Practice

This will be questions from MNP but may be different if you feel it is appropriate (e.g. White Rose Hub, CGP workbooks, create own set).

During this time, AfL strategies will be used to identify slower learners requiring support and quicker learners requiring challenge – this may vary across different areas of maths, such as number and shape, so be reactive.

Methods

One (and often two) methods will be shared and discussed by the children and teacher (one always chosen by teacher using preferred method) – this may not be appropriate in every maths lesson. The teacher will record this method on the 'Working Wall' and in Showbie for the children to access.

This will help to ensure that the children can be effective with their learning and access the method when needed.

Thinking Cap (variety of mastery resources on server)

A Thinking Cap task must always be planned for each MNP lesson – this is an opportunity for learners who have demonstrated sound fluency skills to illustrate their reasoning skills.

Varying numbers of children will reach this challenge each lesson, depending upon the content.

Plenaries are often a good chance to go through how to answer these questions – and ensure all children are exposed to these sorts of problems (as well as during the Explore task).

At the end of a unit, you may deliver a lesson where all children are answering these sorts of problems.

Workbook Questions

Use questions from MNP – feel free to use different questions if you feel it is appropriate (e.g. White Rose Hub, CGP workbooks, create own set).

Encourage children to choose their own starting points and/or points at which to move on with their learning. This could be explicitly modelled on the board (see right) with use of the © for CHALLENGE symbol.

Ensure children answer an appropriate number of questions before moving on – no more than six fluency questions is generally sufficient before attempting the Thinking Cap.

Worksheet 3
 Converting Units of Length: Kilometres and Metres

1 Convert the measurements and fill in the blanks.

(a) $1.254 \text{ km} = \square \text{ m}$ (b) $\square \text{ km} = 3660 \text{ m}$

(c) $0.465 \text{ km} = \square \text{ m}$ (d) $\square \text{ km} = 500 \text{ m}$

(e) $90.8 \text{ km} = \square \text{ m}$ (f) $\square \text{ km} = 9 \text{ m}$

(g) $10.07 \text{ km} = \square \text{ km } \square \text{ m}$

(h) $\square \text{ km } \square \text{ m} = 12020 \text{ m}$

2 Look at the diagram below.

Circle the correct answer.
 The distance between Amir's house and the library is greater / less / the same as the distance between her house and the park.

(a) Lulu ran 4.07 km during the first week of the summer holiday. She ran 4700 m in the second week of the summer holiday.



Useful question strands

Prove this...

How do you know?

Which one is wrong? Why?

Is there a different way?

Is there a quicker way/more efficient method?

Find the similarities between...

Find the differences between...

Can you spot a pattern?

Can you make a generalisation/rule?

Explain why this works...

True or false? Why?

Always true, sometimes true, never true?

What do you notice?

Represent this a different way...

Are there any more possibilities?

Can you explain it a different way?

Is your answer reasonable? Why?

What if you could only use _____?

What if you had started with _____ instead of _____?