Monday 14th March 2022

Which One Doesn't Belong?

The aim of the *Which One Doesn't Belong?* challenges is to promote children's interest and enthusiasm for English. Focusing on these tasks should allow children to develop their ability to articulate and justify answers, arguments and opinions.

Using language to speculate has also been shown to broaden children's logical thinking and reasoning skills. Allowing them to make connections and comparisons to their own experiences, their understanding of texts, as well as drawing on their knowledge of the wider world, will undoubtedly support the development of comprehension and their engagement with English.

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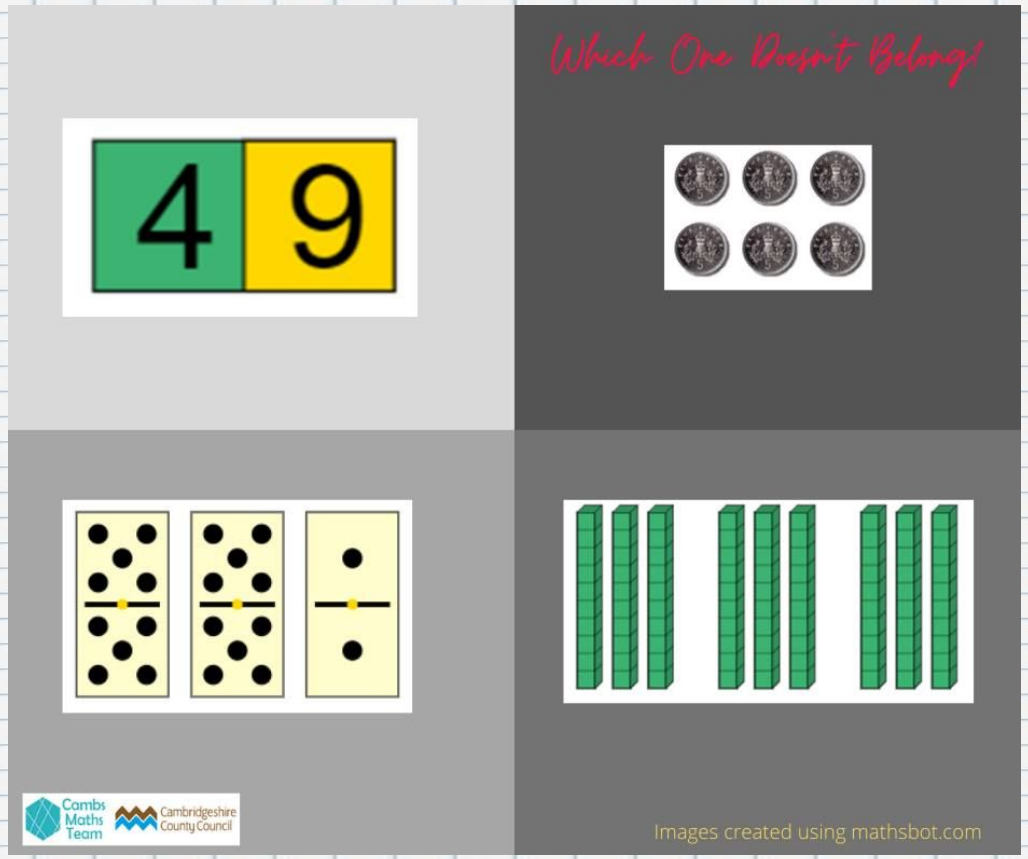
Cambs English Team

Monday - Which One Doesn't Belong?



Which One Doesn't Belong?

This week's WODB features representations of numbers. With younger children you might compare the digits. Whereas, with older children, you could compare the properties of each number of the way the numbers have been represented. Which one is the most different from the others?

Tuesday 15th March 2022

Maths Eyes

Tuesday - Maths Eyes

Maths Eyes

Cambs Maths Team

- Maths Eyes activities are designed to help make connections and 'see' where maths is in the world around us.
- Images and real-life experiences seen through 'Maths Eyes' promote engagement, enthusiasm and creativity, as well as building confidence, in maths.
- Using mathematical language to describe what can be seen, and speculate about what cannot, broadens reasoning skills and logical thinking.
- Cross curricular links can be made and progression in learning can be evident by comparing the responses of learners at different ages and stages.
- Prompts and suggestions can be provided or adapted, if required, depending on the intended topic focus or experience that the learner has.
- Sharing ideas and collaborative discussions can generate an even greater range of responses after individual reflections.

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Tuesday - Maths Eyes

Cambs Maths Team

How many biscuits can you see? How did you count them? How many biscuits do you think were baked on this tray altogether? How many do you think are missing? How do you know?

If each biscuit contains one teaspoon of jam and a full jar contains 454g of jam, approximately what faction of a jar of jam will be remaining?

What else do you wonder?

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Wednesday 16th March 2022

Maths Challenge!
(pick your level)

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Weekly Maths Challenges Years 1 & 2

Cambs Maths Team

Missing...

Weekly Maths Challenge

The numbers on this clock face are missing. So is one of the hands!

Which hand do you think is missing and why?

Which numbers do you think are missing and where should they be?

What could the time be?

YEAR OF PROBLEM SOLVING

Cambs Maths Team

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Prompts

Challenge Prompts

The challenge for this week is all about telling the time. What key information and vocabulary do you need to know?

- It might be useful for some children to explore using a real or resource clock first, before getting started with this challenge.
- Some children might benefit from only having one missing element (numbers or hand) to begin with.
- How might children record their responses?

Solution Prompts

- How did you get on with our time challenge?
- Here are some ways of recording solutions - did you record yours like this, or find another way?
- Did you manage to find all of the possibilities?

Solution

Weekly Maths Challenge

The hour hand is missing. The minute hand is longer than the hour hand on a clock. The hand shown nearly touches the marks where the numbers should go, so must be the minute hand.

The numbers could be placed as shown, with the minute handing pointing at 12.
If so, the time could be one, two, three, four, five, six, seven, eight, nine, ten, eleven or twelve o'clock.

If the clock was turned around, the minute hand could be pointing at 6.
If so, the time could be half past one, two, three, four, five, six, seven, eight, nine, ten, eleven or twelve.

YEAR OF PROBLEM SOLVING

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Weekly Maths Challenge

The hour hand could be pointing at any of the numbers from 1 to 12.
The time could then be 5 minutes past any hour from 1 to 12.
Or 10, 20 or 25 minutes past the hour. Or 15 minutes (quarter past).
Or 5, 10, 20 or 25 minutes to the hour. Or 15 minutes (quarter to).
Here are some examples - did you find them all?

A quarter past (1,2,3,4,5,6,7,8,9,10,11 or 12)

A quarter to (1,2,3,4,5,6,7,8,9,10,11 or 12)

Five minutes past (1,2,3,4,5,6,7,8,9,10,11 or 12)

Twenty five minutes past (1,2,3,4,5,6,7,8,9,10,11 or 12)

Ten minutes to (1,2,3,4,5,6,7,8,9,10,11 or 12)

YEAR OF PROBLEM SOLVING

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Weekly Maths Challenges Years 3 & 4

Cambs Maths Team

It's a Secret

Weekly Maths Challenge

I've chosen a secret number!
Can you follow the clues to identify it?

What is my number?

- It is even.
- The sum of its digits is 9.
- It is greater than 10.
- It is a multiple of 12.
- The tens digit is odd.
- It is less than 70.

- Did you need to use all of my clues?
- Can you make up a similar challenge?

YEAR OF PROBLEM SOLVING

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Prompts

Challenge Prompts

Some pupils might benefit from a recap of some of the vocabulary used in this challenge. They may like to use a hundred square to identify possibilities or cross off numbers which do not follow the clues. Discussions about how they approached the problem and how they would approach a similar challenge in the future would encourage them to reflect meaningfully.

- Having completed the challenge, what advice would they give a friend who hasn't done it yet?
- Would they approach a similar problem in exactly the same way?
- Did they need to use all the clues?
- Can they create their own challenge for a friend or the class to do?

Solution Prompts

- How did your pupils get on with this challenge?
- Did they use a hundred square or another strategy?
- Did they follow the clues in the order they were given or did they choose another starting point?

Solution

Weekly Maths Challenge

Solution:

36

What is my number?

- It is even.
- The sum of its digits is 9.
- It is greater than 10.
- It is a multiple of 12.
- The tens digit is odd.
- It is less than 70.

- Did you need to use all of my clues?
- Can you make up a similar challenge?

YEAR OF PROBLEM SOLVING

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Weekly Maths Challenges Years 5 & 6

Cambs Maths Team

Investigate It

Weekly Maths Challenge

Plan and carry out your own investigation.

Consider:

- What are you interested in investigating?
- How will you collect your data?
- How much data will you need to collect?
- What do you predict you will find?
- How will you record your findings?
- How will you present your data and explain your results?

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Prompts

Challenge Prompts

When you introduce the activity, it might be helpful to discuss ideas for investigations and the feasibility of collecting enough data. You might decide to give pupils free rein, or formulate an investigation idea as a class or in groups. They might decide to carry out an investigation related to last time's challenge, perhaps looking at the frequency of types of words in different text types, the frequency of different letters in texts written in another language or word length in stories aimed at children of different ages, for example. Alternatively, they might like to investigate something in the natural world, like the occurrence of different mini-beasts, plants or birds in their garden/the school grounds/the park, or the temperature throughout a series of days. Other ideas are to complete a traffic survey or an investigation into the number of steps they do on different days, if they have a way of measuring this. We're sure you will have lots of ideas of your own!

Solution Prompts

- Did you try planning and carrying out your own investigation?
- What did you find out?
- How did you present your data?
- How does it compare to other people's data?

I decided to investigate the number of steps I did over the last two weeks and have included my results for you to see.

Solution

Weekly Maths Challenge

Results:

I recorded the number of steps I took each day over the last two weeks and have presented them on a table and a bar chart (see below).

- What questions could you ask and answer using my data?
- Which method of presenting the data do you prefer and why?
- What could I investigate next?

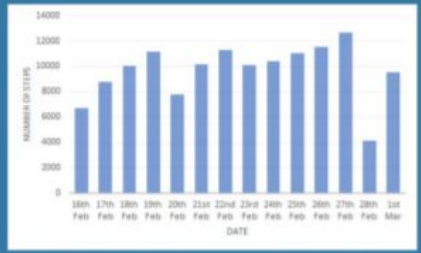
Weekly Maths Challenge

Table showing the number of steps I took each day during the last two weeks:

Date	Number of Steps
16.02.21	6688
17.02.21	8788
18.02.21	10007
19.02.21	11176
20.02.21	7763
21.02.21	10135
22.02.21	11276
23.02.21	10059
24.02.21	10405
25.02.21	11022
26.02.21	11511
27.02.21	12681
28.02.21	4098
1.02.21	9516

Weekly Maths Challenge

Bar chart showing the number of steps I took each day during the last two weeks:



Thursday 17th March 2022

Estimation and Benchmarking

Thursday - Estimation and benchmarking

Estimation and Benchmarking

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- Estimating is roughly calculating or judging a value or number – it doesn't need to be exact, but it should be reasonable or 'sensible' in the real world.
- A benchmark is a known standard or reference point against which something else can be measured or compared. We can use a benchmark that we do know to estimate a measurement or quantity that we don't.
- Using mathematical language to describe the benchmark in relation to the estimate broadens reasoning skills and logical thinking.
- Cross curricular links can be made and progression in learning can be evident by comparing the responses of learners at different ages and stages.
- Prompts and suggestions can be provided or adapted, if required, depending on the intended topic focus or experience that the learner has.
- Sharing ideas and collaborative discussions can generate an even greater range of responses after individual reflections.

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Thursday - reasoning prompts

Encouraging mathematical thinking and reasoning:

Describing
What do you notice?
How many can you see?
How do these pine cones compare with yesterday's beads?

Reasoning
How many do you think there are? Why do you think that?
Will it be more or less than 20? A lot more/less? Or a little more/less?
Will it be between 15 and 20? A little or a lot more than this? Or less than this?
How many can you see? How many do you think are hidden?
Was your guess more or less than the actual count?
Was your guess very close/way out? Why do you think that was?
Can you put the estimates in order on the board/washing line?
Were most people close or far out?

Thursday - Estimation and benchmarking

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Cambs Maths Team

ESTIMATION & BENCHMARKING

These ravioli pasta shapes have been created by artistic chef Linda Miller Nicholson. Estimate how many pieces of ravioli there are in total. Do you think there is more of one colour than any other? Estimate how many people you think this amount of pasta would feed for one meal. If the whole wooden surface was to be covered in the same way (with no gaps or overlaps), estimate how many more pieces of pasta would be needed and of what colour(s)? If the perimeter of one piece of pasta is 12cm, estimate the perimeter of the touching collection of pasta in the centre of the image.

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Friday 18th March 2022

Times Tables focus

- Which times tables award are you working towards?

Practise your skills on TTRockstars:

https://ttrockstars.com/

Some more games here:
http://www.maths-games.org/times-tables-games.html

Times table support here:
https://home.oxfordowl.co.uk/maths/primary-multiplication-division/help-with-times-tables/

Sutton School's Gem Certificates of Times Table Excellence

1	Sky Blue Topaz	doubling with equipment
2	Swiss Blue Topaz	doubling and halving with equipment
3	Pink Imperial Topaz	doubling without equipment
4	Reddish-pink Imperial Topaz	halving and 10 x
5	Mystic Topaz	doubling, halving and 10 x
6	Azotic Topaz	divide by 10
7	Onyx	2 x, 5 x, 10 x multiplication facts
8	Black Opal	2 x, 5 x, 10 x multiplication and division facts
9	Garnet	2 x, 3 x, 4 x, 5 x, 10 x multiplication
10	Emerald	2 x, 3 x, 4 x, 5 x, 10 x multiplication and division facts
11	Tanzanite	2 x, 5 x, 10 x, 3 x, 4 x, 6 x, multiplication and division facts.
12	Ruby	2 x, 5 x, 10 x, 3 x, 4 x, 6 x, 7 x, 8 x 9x multiplication and division facts.
13	Sapphire	all multiplication and division facts to 12 x 12
14	Diamond	1. all multiplication and division facts to 12 x 12 and complete the grid in under five minutes (100 questions) 2. all multiplication and division facts to 12 x 12 and complete the grid in under five minutes (144 questions) 3. Ultimate Times Tables Missing Numbers Challenge
15	Blue Diamond	elite level in all areas of multiplication and division Levels 1, 2 and 3 available

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