

Grade 5 Numeracy Learning at Home

ISSUE 2

Keep the learning going!

The following activities support learning at home and connect to the mathematics that you have been learning. Choose activities that are interesting and challenging. Have fun!

Patterns and Relations: Mathematics is about recognizing, describing, and working with numerical and non-numerical patterns.

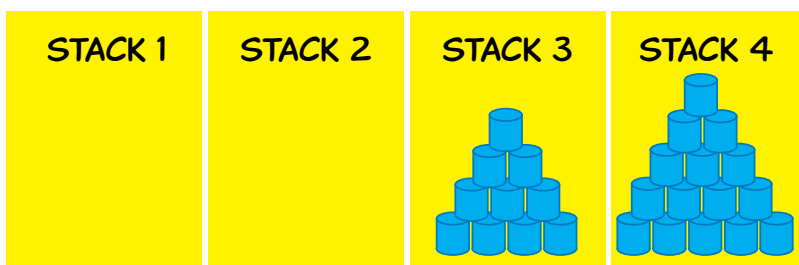
What do you notice about the can stacking pattern below?

What might stacks 1 and 2 look like?

How would you extend this pattern? Draw the next three stacks.

What is staying the same? What is changing? How is it changing?

Describe how each new stack in this pattern is constructed using words. This is your **pattern rule**.



Stack	1	2	3	4	5	6
Number of cans			10			

Estimate how many cans you think there will be in the 10th stack.

Use your pattern rule to determine how many there will be in the 10th stack. Does the table help?

Do you think this pattern can be used to stack exactly 100 cans? Explain your thinking using pictures, a table, or calculations.



Math Mindset

Mistakes are valuable.

Our brains learn through our mistakes and make adjustments through trial and error. Try another strategy or examine your work closely to exercise your brain!

Mathematics help us think logically and visualize connections.

Do you notice anything that looks familiar?

How is this similar to other math activities you have tried? How is it different?

How does this connect to other activities or events in the world around you?



LAUGH OF THE DAY

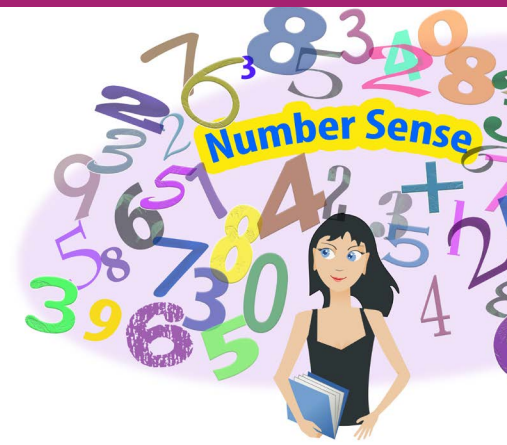
Q What do parallel lines and vegetarians have in common?

A They never meet.



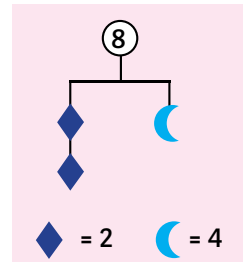
Building Number Sense

Number sense is an awareness and understanding of numbers. Number sense involves knowing different ways of representing numbers, understanding the relationships among numbers, and using numbers flexibly to reason, estimate, and compute.

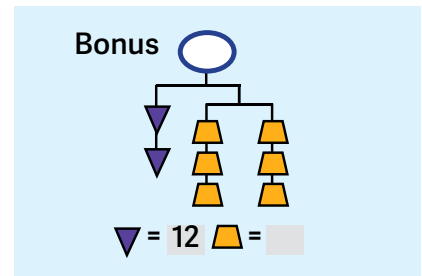
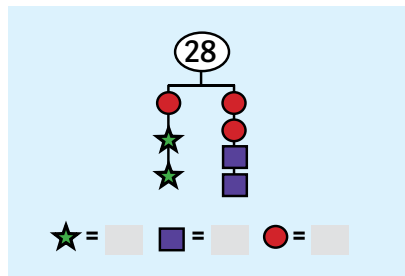
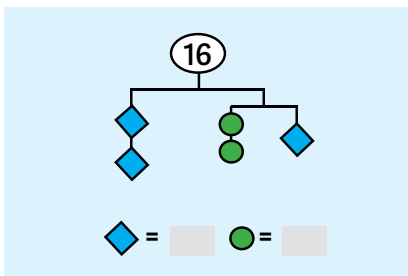


Balanced Mobile

Determine the value each shape could represent on the balanced mobile. Example:



These values are whole numbers.



Challenge Yourself

- What if the number at the top changed?
- Try each puzzle with a different number in the circle. (Start with the example.)
- What numbers can you choose that make each puzzle easier?
- What do you notice about the numbers that make this puzzle more difficult?

Mathematical Puzzles

In this example, 3x indicates a multiplication question answer of 3. If repetition of digits in a row or column is not allowed, the only digits that can appear in the corresponding two-box grid are 3 and 1. The other digit of that column has to be 2. Solve the following puzzles.

^{3x} 1	⁷⁺ 3	2
3	2	^{3x} 1
¹⁻ 2	1	3

1-		3x
3x	12x	

1-		3x
3x	5+	

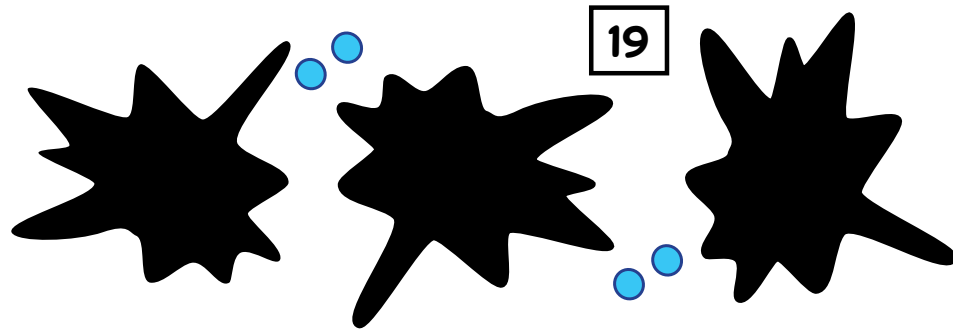
Challenge: Create your own puzzle to challenge your family or friends. Try a 4x4 or a 5x5 puzzle for a greater challenge.



Splat!

Splat is a thinking game. Some ink has spilled onto the picture. Look at the ink splats below and reason out how many dots are hidden beneath each one.

- The number in the box represents the number of dots in the entire picture.
- How many dots do you see?
- The splats are the same colour. When splats are the same colour, they are covering the same amount of dots.
- How many dots have been covered by the ink splats?
- Explain how you know. Is there more than one way?



CHALLENGE: Try changing the number in the box. What numbers work? What numbers will not work? Can you describe any patterns you notice?

WOULD YOU RATHER...

Use mathematics

to help explain why you would rather choose one option over another.

Would you rather share equal slices of cake...

FROM **CAKE A** WITH 8 FRIENDS

or

FROM **CAKE B** WITH 6 FRIENDS

CHALLENGE: Use mathematics to help explain why each option could be the best choice.



Mental Math Strategies

Mental math strategies foster flexible thinking about numbers and operations, and help you see how relationships exist

between numbers. Learning about mental math strategies helps build an awareness of the numbers and makes you question if an answer does not “look” or “sound” right. Developing good mental math strategies is important because mental math strategies are a valuable life skill.



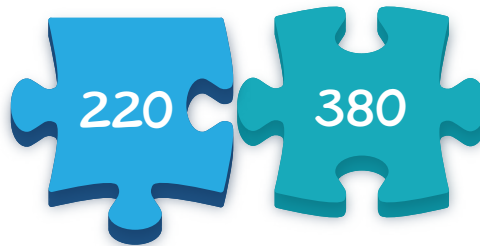
When thinking things through and communicating your thinking, using models and visuals can help.

Finding and Using Friendly Numbers (Compatible Numbers)

Compatible numbers are pairs of numbers that are easy to add in your head. The following are examples of compatible numbers:



The sum equals 100.



The sum equals 600.

Find the pairs of compatible numbers that add up to 300.

140 85 160

118 217 73

215 182 83

For example:

$$\begin{aligned} & 86 + 63 + 27 + 44 = \\ & = (80 + 6) + (60 + 3) + (20 + 7) + (40 + 4) \\ & = (80 + 20) + (60 + 40) + 6 + 3 + 7 + 4 \\ & = 100 + 100 + 10 + 10 \\ & = 220 \end{aligned}$$

or

$$\begin{aligned} & \text{(REORDERING AND BREAKING UP)} \\ & 86 + 44 + 63 + 27 = \\ & \downarrow \quad \downarrow \quad \downarrow \quad \downarrow \\ & = 86 + 4 + 40 + 63 + 27 \\ & = 90 + 40 + 90 \\ & = 180 + 40 \\ & = 220 \end{aligned}$$

Challenge: Try using comparable numbers to calculate the value for each of the following expressions.

$$38 + 62 + 1$$

$$43 \text{ cm} + 2 \text{ cm} + 37 \text{ cm}$$

$$136 + 893 + 7 + 64$$

$$\$4.23 + \$6.55 + \$3.45$$

$$61 + 76 + 239 + 824$$