Grade 6 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.
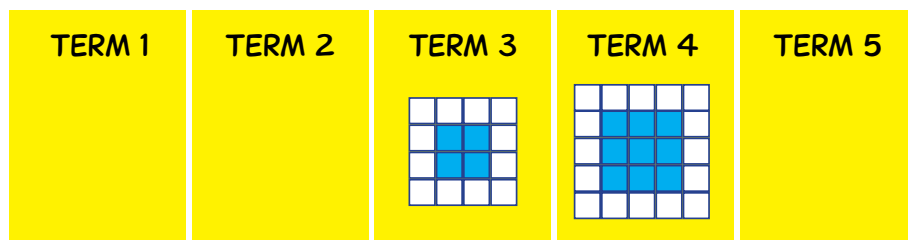
What do you notice about the pattern below?

What might pictures 1 and 2 look like?

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

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

How can you calculate the number of white tiles for each picture. This is your **pattern rule**.

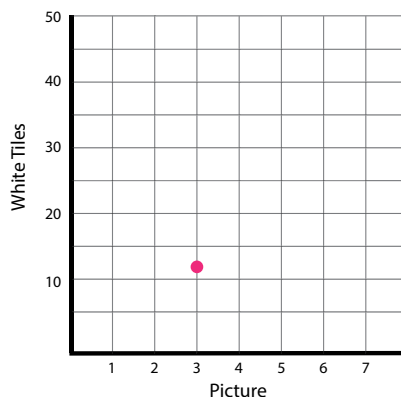| TERM 1	TERM 2	TERM 3	TERM 4	TERM 5

Estimate how many white tiles you think there will be in the 10th picture.

Use your pattern rule to determine how many there will be in the 10th picture.

Complete the table and graph below. How do these mathematical tools help you determine the answer? Which tool do you prefer? Why?

Picture	Number of White Tiles	Calculations
1		
2		
3	12	
4		
5		
6		

Do you think this pattern of white tiles will ever use exactly 100 tiles? 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. Why should I wear my glasses to the math test?

A. The doctor tells me it improves di-vision.

Manitoba

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.
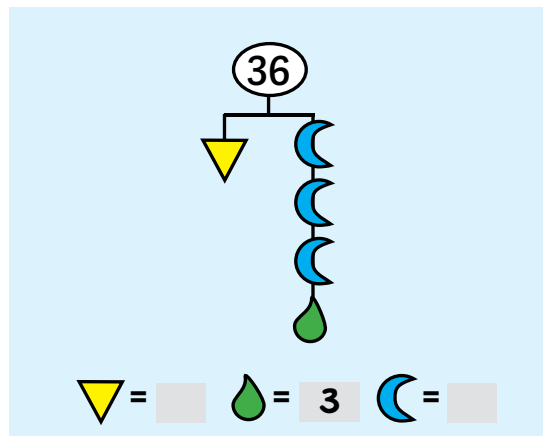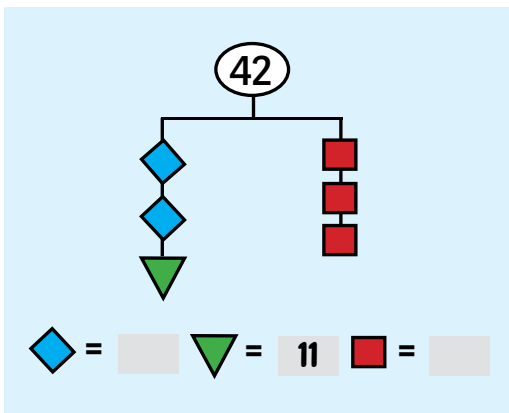
Number Sense

8

♦ = 2   ☾ = 4

Balanced Mobile   Determine the value each shape could represent on the balanced mobile. Example:
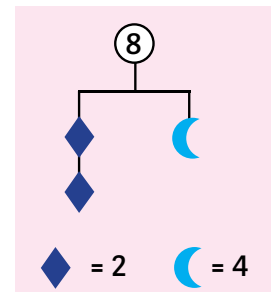
These values are whole numbers.

42

♦ = ▽ = 11 ■ =

36

▽ = 💧 = 3 ☾ =

Challenge Yourself

- What if the numbers changed?
- Try each puzzle with a different value for the given shape or a different value for the total at the top.
- What numbers can you choose that make each puzzle easier?

- What do you notice about the numbers that make this puzzle more difficult?
- What is the smallest number you can choose and get this to work? (Hint: You can use fractions.)
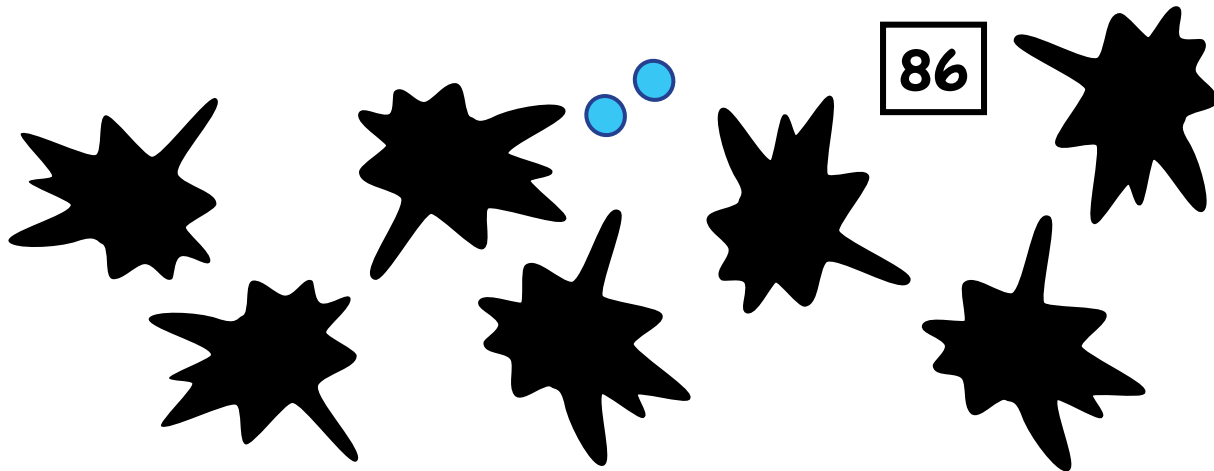
Splat!

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?

86

CHALLENGE: Try changing the number of visible dots.

- How does this change affect your answers?
- Why will this not work for every possible number of visible dots?

- Using a variable (a symbol or letter to represent the unknown dots behind a splat), write an equation that represents this situation?

WOULD YOU RATHER...

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

Would you rather have crackers to cover a rectangle with...

A LENGTH OF 9 AND A PERIMETER OF 22

or

A LENGTH OF 5 AND A PERIMETER OF 20

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.
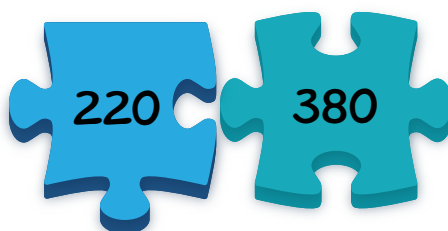
When thinking about strategies, using manipulatives and picture supports can help.

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:

86 **14**
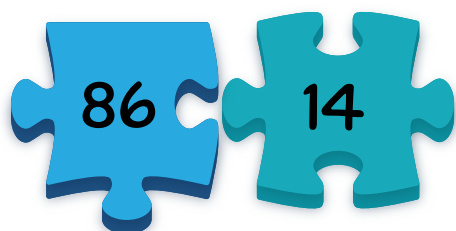
The sum equals 100.

220 **380**

The sum equals 600.

Round to compatible numbers that are easy to compute mentally. Approximate:

```
   27      27 and 81 is
   45       about 100.
   63      45 and 63 is
+ 81        about 100.
_____    So, about
              200.
```

GIVE IT A TRY!

16 + 71 + 44 + 45 + 89   220 ÷ 18

$4.69 + $3.10 + $4.69 + $3.10   79 × 4

Try this strategy next time you are shopping with a family member. Is the estimate in your head close to the total bill at the end? How do you think you could get closer next time?

Mathematical Games

Divide the grid into squares or rectangles with one number in each space that totals that number's area.

Example:

3	2			2
				9
	2			
4				3

Solution:

3	2			2
				9
	2			
4				3