



### Important Information



*"Oak National Academy is a new collection of high-quality lessons and online resources. Backed by the Government, it has been created in response to the coronavirus lockdown.*

*Their online classroom offers free access to great teachers, delivering video lessons, quizzes and worksheets. Available for both primary and secondary levels, it covers a range of subjects. All of the lessons are ordered so your child can learn along a clear plan. They'll provide new lessons and resources each week.*

*Oak National Academy will fit alongside other resources such as BBC Bitesize to offer a structure for the day for children until schools fully reopen.*

*Oak National Academy was built at speed; at present their resources are for pupils who usually access their schools' curriculum in mainstream education, from reception through to year 10, without significant support or adaptation. They're currently working on providing support for teachers working with pupils with additional needs, and teachers based in specialist settings. Next week they hope to launch materials for pupils not able to access all aspects of their current offer."* Information taken from the Oak National Academy website (<https://www.thenational.academy/information-for-parents-pupils/> )

The Oak National Academy lessons can be accessed here: <https://www.thenational.academy/online-classroom>

**As you are aware, at Victoria Dock Primary School we provide a home learning pack every week which is created by our class teachers. Although we have these plans already in place, we understand that some families may prefer to work from the materials made available through the Oak National Academy. This is absolutely fine, and we are thrilled to see so many children learning at home and taking the opportunity to also do all kinds of things at home which are not usually taught in the classroom.**

**Feel free to continue to use our home learning grids (like the one below) or the lessons provided by the Oak National Academy. Either way, we would love you to keep in touch and show us the wonderful things you are doing at home, using Seesaw, Classdojo or Twitter.**

**Stay safe and we look forward to returning to school to see everyone's smiling faces.**



## Home Learning Grid

Year 6

Week Commencing – 15.06.20

Work to be completed in home learning books

	Monday	Tuesday	Wednesday	Thursday	Friday
<b>Spelling/ Fast Maths</b>	<b>Fast Maths</b> <a href="https://forms.gle/hyDWWckmHg2ka2TP7">https://forms.gle/hyDWWckmHg2ka2TP7</a>	<b>Fast Maths</b> <a href="https://forms.gle/bU2Su1nLLZ84qPtd6">https://forms.gle/bU2Su1nLLZ84qPtd6</a>	<b>Fast Maths</b> <a href="https://forms.gle/AuXi3cTrFNUBq4N19">https://forms.gle/AuXi3cTrFNUBq4N19</a>	<b>Fast Maths</b> <a href="https://forms.gle/qS19ydhkZwbCaENX7">https://forms.gle/qS19ydhkZwbCaENX7</a>	<b>Times Tables Rock Stars</b> Can you set a new high score on Timetable Rockstars <a href="#">here</a> ?
<b>Reading</b>	<b>First News</b> See the First News article below and have a go at the questions.	<b>Crater Lake</b> Read chapter 20 and complete the Twitter summary task below.	<b>Crater Lake</b> Read the rest of the book (chapters 21-22) and write your own review. You <b>could</b> use the template below.	<b>The Sky Bots by Vashti Hardy</b> See below for a task all about a new extract from one of our favourite authors.	<b>First News</b> See the First News article below and have a go at the puzzle.
<b>Writing</b>	<b>The Book of Hopes - Poem</b> Take a look at the poem I have found in 'The Book of Hopes' compiled by Katherine Rundell (author of Rooftoppers and The Explorer). Read it <a href="#">here</a> as part of the free book full of gorgeous writing from famous authors or read it below, then try the task.				<b>100 Word Challenge</b> See below for the 100 Word Challenge for this week.
<b>Maths</b>	<b>Algebra</b> Complete the 'Solve two-step equations' task below. Click <a href="#">here</a> for video tutorials.	<b>Algebra</b> Complete the 'Find pairs of values' task below. Click <a href="#">here</a> for video tutorials.	<b>Algebra</b> Complete the 'Convert metric measures' task below. Click <a href="#">here</a> for video tutorials.	<b>Algebra</b> Complete the 'Miles and kilometres' task below. Click <a href="#">here</a> for video tutorials.	<b>Friday Challenge</b> Go <a href="#">here</a> and look for the Friday challenge to really test your understanding of this week's maths.
<b>Challenge</b>	<b>Writing</b> Take a look <a href="#">here</a> for some ace sentence stacking lessons for you to do some creative writing.	<b>Art</b> Join in Rob Biddulph's live art workshop and competition at 10AM <a href="#">here</a> .	<b>IMPORTANT – Leavers' Project</b> Please go <a href="#">here</a> and give some memories/details for a leavers' project.	<b>IMPORTANT -Music Video</b> If you haven't already, please send a video of last week's music video challenge. We need it!	<b>Mangahigh</b> Can you get some new gold medals on Mangahigh <a href="#">here</a> ?

## SCIENCE NEWS

# AT LAST BLAST OFF!

The SpaceX craft blasts into space to link up with the ISS

**THE SpaceX Crew Dragon spacecraft finally launched on Saturday, and has successfully docked with the International Space Station (ISS).**

Crowds had gathered in Florida for a second time, following a postponed launch earlier in the week due to bad weather. They were rewarded with a spectacular sight as the craft soared into the sky. The company that created SpaceX, owned by the billionaire businessman Elon Musk, has been sending rockets into space for a number of years, but this was a special and historic flight. The two NASA astronauts aboard, Doug Hurley and Bob Behnken, were the first to go into space from US soil in almost ten years. It was also the first time that a manned spacecraft has been launched by a private company rather than a country or group of countries, who have until now paid for all space travel. NASA, the US space organisation, bought the seats for the astronauts in the same way that we buy seats on aeroplanes – except the cost is thought to be around \$55 million (about £43m) per seat!

On Sunday, the spacecraft successfully docked with the ISS, which orbits the Earth 250 miles above us while travelling at 17,000mph. The astronauts will stay there with other scientists for about three months, carrying out experiments. They will then return in a Crew Dragon capsule that will enter the Earth's atmosphere and parachute into the Atlantic Ocean.



Doug Hurley (far right) and Bob Behnken (second right) with other crew on board the ISS

## A FLYING FUTURE

**THE world's largest electric plane has made its first flight.**

The all-electric eCaravan, which can carry nine people, took off from a Washington airport and managed to stay in the air for 28 minutes.

The plane is more environmentally-friendly and costs less to operate than normal planes. It's hoped it will be in commercial use in 2021.



## LICENCE TO DRILL

**PICTURES of the HS2 tunnel boring machines have been unveiled. They will help create the route for HS2, Britain's next high-speed railway. The giant machines will drill under areas of natural beauty, like the Chiltern Hills. They are as long as five football pitches and will run non-stop for three-and-a-half years.**



## SCIENCE MUSEUM GROUP

This report is from the Science Museum in London

**A LOT has changed since humans first travelled to the moon in an Apollo command module, but the new Crew Dragon spacecraft (right) looks surprisingly similar to those used more than 50 years ago.**

The Crew Dragon designed by SpaceX took off on NASA's Demo-2 mission on 30 May. Like the famous Apollo capsules, the new spacecraft has a cone-shaped design but is more elongated (stretched). It is also larger and can carry up to seven astronauts, while the Apollo 11 command module only had room for a cosy three. And unlike the Apollo 10 capsule that was brought to the Science Museum shortly after its mission, the Crew Dragon will be reused! Find out more at [blog.sciencemuseum.org.uk/crew-dragon](https://blog.sciencemuseum.org.uk/crew-dragon).



Crew Dragon craft and the Apollo command module (inset)

## GLOSSARY

**commercial** – Money-making  
**Chiltern Hills** – A range of chalk hills in southeast England running through Oxfordshire, Buckinghamshire, Hertfordshire and Bedfordshire  
**docked** – When a craft joins with another

**HS2** – High speed railway  
**NASA** – National Aeronautics and Space Administration  
**postponed** – Re-arranged  
**tunnel boring** – Digging out tunnels  
**unveiled** – Shown in public



## SCIENCE NEWS

1. Match the **headline** to the **type of transport** being reported in the news stories. Then identify the **headline technique** the journalist has used.

Rail travel

At last blast off!

Alliteration – where words start with the same sound

Space travel

Licence to drill

Rhyme

Air travel

A flying future

Pun – changing a word in a well-known phrase

● Look at the article 'Licence to drill'.

2a. Explain what a tunnel boring machine is.

2b. How does the journalist explain just how big these machines are?

3. If you were interviewing a member of HS2 about the tunnel boring machines, what questions would you like to ask? Write three questions.

● Look at the article 'A flying future'.

4. The plane called the eCaravan is powered by electricity. Identify **pros** and **cons** of this plane compared with normal planes.

● Look at the article 'At last blast off'.

5. The SpaceX Crew Dragon spacecraft launched on Saturday. Why was this a special and historic flight? Give two reasons.

6. Why did the journalist use the word 'finally' in the sentence below?  
'The SpaceX Crew Dragon spacecraft **finally** launched on Saturday'.

7a. Fill in the missing numbers about this mission.

\_\_\_\_\_ astronauts travelled in the spacecraft, they were the first to go into space from US soil in almost \_\_\_\_\_ years. NASA bought seats for the astronauts at \_\_\_\_\_ pounds each.  
The spacecraft docked at the International Space Station, which travels at \_\_\_\_\_ mph orbiting \_\_\_\_\_ miles above the Earth.  
The astronauts will be carrying out experiments at the International Space Station for approximately \_\_\_\_\_ months.

7b. Are you surprised at the price of a seat on the spacecraft? Explain your reasons.

8. Explain how the two NASA astronauts, Doug Hurley and Bob Behnken, will return to Earth.

● Look at the article 'Report from the Science Museum London'.

9. The article compares the New SpaceX Crew Dragon spacecraft with the Apollo capsules from the 1960s. Identify the **similarities** and **differences** between the new 'SpaceX Crew Dragon' and the Apollo capsules.

10a. Which new method of transport would you most like to travel on and why?

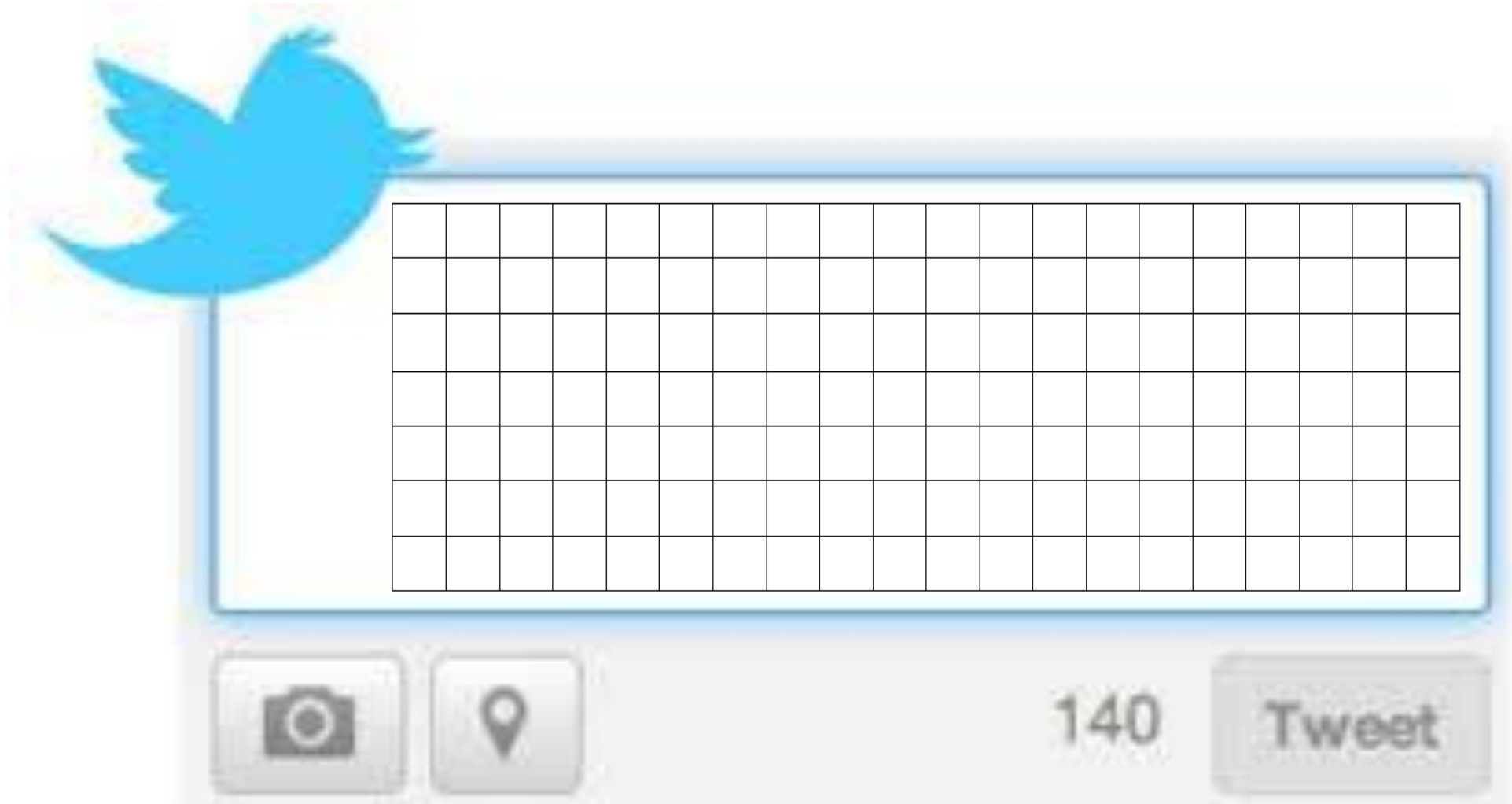
☐ HS2 railway (High speed railway) ☐ eCaravan (all-electric aeroplane) ☐ SpaceX Crew Dragon (Privately owned spacecraft)

10b. These articles are all about new approaches to transport. What do you think the transport of the future will be like?

## Reading (Tuesday)

### Crater Lake – Chapter 20

Enjoy reading quite a happy chapter (happy-ish anyway). Part of being a good reader is being able to pick the important information and summarise what you have just read concisely. Use the Twitter template below, or create your own, to summarise what you've just read in 140 characters. (Why Twitter? Because there is a 140 character limit so you will have to be good at summarising but feel free to do it in any other format too – Instagram? TikTok? How would that even work? Surprise me.) If you'd like me to tweet your thoughts from our school account, let me know too.



A stylized Twitter interface template. On the left is a large blue bird icon. To its right is a large rectangular text area with a light blue border. Inside this area is a grid of 140 small squares, arranged in 7 rows and 20 columns, for character counting. Below the text area are three icons: a camera, a location pin, and a character count '140'. To the right of the character count is a button labeled 'Tweet'.


140

Tweet



## Reading (Wednesday)

### Crater Lake – Chapters 21-22

That's it, the end! I hope you enjoyed this book. I'm glad we got to share at least one more class book. But what did **YOU** think? I want to know your honest thoughts and feelings about Crater Lake. Why not write it in the style of these Amazon reviews below?

★★★★★ **Well, that was fun!**

Reviewed in the United Kingdom on 22 April 2020

Verified Purchase

It's not easy to write scary stories and it's even harder to write genuinely funny ones, but Jennifer Killick does both brilliantly. The kids on the Y6 school trip to Crater Lake have to stay awake to stay safe and I stayed awake with them until I'd finished their story - so I'm typing this at almost 2am, which is way past my bedtime. Brilliant stuff. Made me laugh out loud in several places and there are some wonderful words of wisdom hidden in among the adventures too. I'll be reading more Jennifer Killick books in the future. I just need to start them earlier in the day!

★★★★★ **School residentials will never be the same again once you've been to Crater Lake.**

Reviewed in the United Kingdom on 23 April 2020

Verified Purchase

Little do Lance and his Y6 classmates know what lies in store at the newly opened Crater Lake outdoor adventure centre. When a blood dripping crazed guy bangs on their coach window, things turn creepy. More mystery awaits once they reach the centre. Can Lance and his friends save the day and their classmates? Whatever they do, they must never, ever, fall asleep...

This is a gripping adventure that is bound to hook even the most reluctant of readers. As always, Jennifer is totally in tune with her audience of young readers: humour, friendships and the perfect dose of chilling adventure.

★★★★★ **A terrific read!**

Reviewed in the United Kingdom on 15 April 2020

Verified Purchase

I really enjoyed this book and am already looking forward to being able to read this to my Y6 class (although I'll probably ensure it's after a residential!). Although it sounds very scary, it isn't too scary so can be enjoyed by most readers in the target age range. Don't get me wrong, there are plenty of thrills and spills and these wonderfully complement the right amount of tension and adventure for the target audience. I particularly love the extremely endearing characters, especially the way they challenge all those unconscious assumptions we are all guilty of making in our day-to-day lives. I definitely recommend that you read this book!

## Reading (Thursday)

### The Sky Bots by Vashti Hardy

Whilst flicking through the Book of Hopes, compiled by Katherine Rundell (by the way, if you haven't looked her up as an author, do. She wrote Rooftoppers which is definitely worth reading if you get chance.), I found a short extract from Vashti Hardy which I never noticed before. I don't know if it is from Wildspark as I haven't read that but it feels like it's something new, perhaps from an upcoming book or maybe just something she wrote specifically for this book. Either way, let's enjoy it.

**Task:** Let's imagine this is the first chapter of a new book from Vashti Hardy. (It might be.) I'd like you to design the front cover and blurb. You will need to imagine every other detail about what the plot of this book might be, who the villain could be and which one of these three characters will be the main one. I can't wait to see some beautiful artwork to show what you imagine when you read this. Have fun.

# The Sky-Bots

In a place where shafts of golden light sliced ice-topped mountains, two sky-bots flew like slim feathered clouds, their shadows flitting across the liquid gleam of the lakes below.

‘Where are we going?’ asked Ardra, the smaller of the two.

‘There’s a creature on the mountain,’ said Vreer.

‘A creature?’

‘Indeed. It’s rather small, skinny and ...’ Vreer shook her head and shivered.

Ardra glanced sideward. ‘And?’

‘Featherless.’

Ardra’s wings juddered. ‘But how does it keep its mechanisms from freezing?’

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Martha shook her head. ‘I’m not entirely sure.’

Vreer nudged Ardra and pointed a silver claw at the sky. A strange rectangular shape, which Vreer thought to be the size of a small charging cell, punctured the sky horizontally above.

Martha followed their gaze and peered upwards.

Beside her, Ardra gently prodded Martha with the tip of her tail. ‘Not completely featherless, Vreer. She appears to have been created with some flat feathers.’

Martha frowned. ‘They’re my pyjamas.’

A chill wind speckled with snowflakes washed through the mountains.

‘It’s very primitive weather protection,’ said Vreer.

‘I suppose I should climb back,’ said Martha.

Ardra extended a paw in the air to help.

‘Oh, thanks,’ said Martha, looking up into the dark, rectangular space. She shuffled her feet for a moment. Hope and possibility shot like fireworks inside her chest.

Vreer darted a glance in the direction of the distant crystal forest. She whispered in Ardra’s ear, then turned to Martha. ‘Unless you’d like to take a ride first?’

‘It might have to be retired, unless we can help.’

They landed on the mountain opposite and observed for a moment. The creature huddled, shivering in the snow.

Ardra flinched. ‘It’s not of this world, is it?’

‘I don’t think so,’ said Vreer curiously. She sniffed the air. ‘But we shouldn’t be afraid. Come on, let’s get closer.’

As silently as breath, they flew to land beside the creature, who hunched and drew back.

‘What are you?’ asked Vreer.

The creature stared, utterly perplexed, then stuttered, ‘I’m ... I’m ... Martha Salisbury ... from London.’

The sky-bots looked between each other.

‘London?’ asked Vreer, instinctively weaving her tail behind Martha to keep her from shivering.

‘It’s a large city, with lots of tall buildings and buses and roads and ... stuff.’ Martha shrugged.

Ardra wrinkled a nostril. ‘It sounds very strange.’

‘How did you get here?’ Vreer drew her tail closer to Martha’s back and turned up the warmth of her feathers.

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They flew along silver streams, into valleys where magic murmured in the shadows, across diamond beaches, past trees heavy with the chitter of insectoids and through showers of luminous raindrops.

As night fell, Martha climbed back through the dark space in the air.

The sky-bots watched as she looked back. The shape fluttered in the mountain breeze as though formed of many delicate layers.

‘Same time tomorrow?’ asked Vreer.

With a grin, Martha nodded, waved, then took the opposite edges of the rectangle and gently closed it.

*Can you guess what the portal might be?*

*The Sky-Bots Copyright © Vashti Hardy 2020*

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These stories are from pages 4 and 11 of *First News*. Read the stories and then try the puzzle. To help you we have underlined the answers in the stories, but you will need to match the correct word with each clue!



## MARINE DISCOVERIES

### LOUD LOBSTERS

A NEW study has found that European spiny lobsters are really loud. So loud in fact that their 'antennal rasps' can be heard almost two miles away! The sound is created by the lobsters rubbing their antennae against a rough spot beneath their eyes. The fascinating creatures are considered vulnerable due to overfishing.



National Geographic via YouTube

### DEEP DEEP DOWN

THE deepest ever sighting of an octopus has been recorded by cameras on the Indian Ocean floor. The octopus, from the Grimpteuthis family, was filmed 6,957m down in the Java Trench, almost 3km deeper than the previous reliable recording. It is also known as the Dumbo octopus because of its ear-like fins that make it look a bit like the famous Disney character.

## ELVIS LIVES!



DEEP at the bottom of the Gulf of California, scientists have discovered four new species of scale worms that are glittery!

The four new worms belong to a group nicknamed 'Elvis worms', after famous American singer Elvis Presley, as their shiny scales look like the sequins on some of the singer's suits.

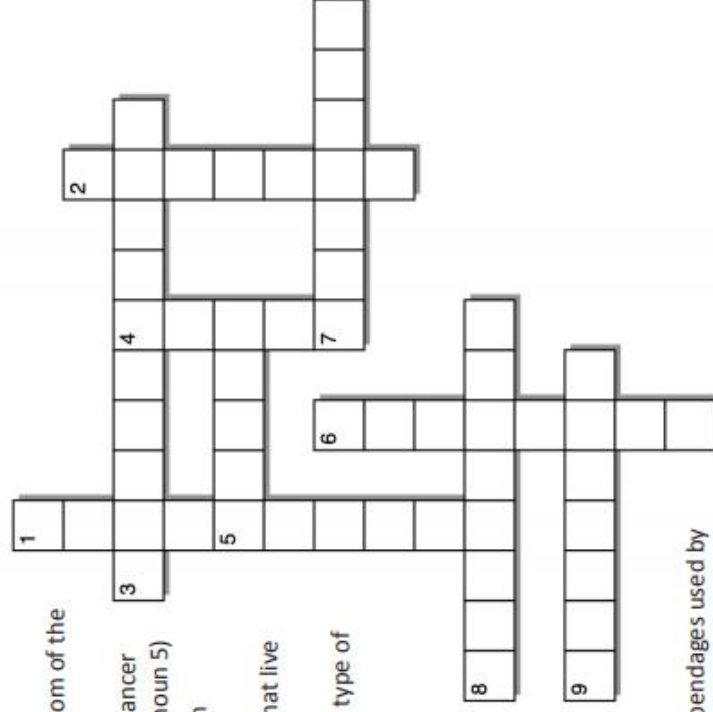
Marine biologist Greg Rouse spotted some of them "wiggling and then fighting and biting each other," adding that nothing like it had ever been seen before in similar worms. "It's hard to believe that the deep sea is still largely unexplored and teeming with mysterious animals," said study leader Avery Hatch.

### ACROSS

- 3) A long, narrow, deep submarine trench at the bottom of the Indian Ocean (proper noun 4,6)  
 5) The 'King of Rock and Roll' – an American singer, dancer and actor who became famous in the 1950s (proper noun 5)  
 7) Small, shiny discs sewn onto clothes for decoration (plural noun 7)  
 8) Nocturnal marine crustaceans with large pincers that live on the sea bed (plural noun 8)  
 9) Abundantly filled with living things – so lots of this type of creature live in this habitat (verb 7)

### DOWN

- 1) Legless, free-moving, segmented marine creatures (plural noun 5,5)  
 2) This marine animal, with eight sucker-bearing arms, is a cephalopod. This group of creatures also includes cuttlefish, squid and nautilus (noun 7)  
 4) Harsh, grating noises (plural noun 5)  
 6) Also called feelers, these are pairs of long, thin appendages used by insects and crustaceans for sensing (plural noun 8)





## Writing (Monday-Thursday)

Enjoy reading this poem taken from [the Book of Hopes](#). Jackie Morris (author, writer and also illustrator of 'The Lost Words') which celebrates the positive side of everything that is happening right now – yes, there is a positive side, however hard it is to see sometimes. Can you take this as a template and write your own poem to celebrate the small, nice things you may have found during this lockdown? Think about her use of phrases such as 'planes absent from the sky' and 'sweet notes rising with the sun'. It is a poem so feel free to make use of rhyme, alliteration, repetition etc or just write it in free verse like this author.

### Hope; or, Learning the Language of Birds

In years to come you would think of this time as the  
    'time of the great quiet'.  
It would seem to you, then, that the earth was holding  
    her breath.  
Waiting.  
Watching.  
Cars silent in the streets.  
Planes absent from the sky.

After a week the air would seem cleaner, colours  
    brighter.

But the nights seemed darker, perhaps because the  
    stars glowed brighter.  
Fear wandered the dreams of some. Anxiety stalked.

And you would wake in early morning, as the light  
    slipped into each day  
and listen.

You would hear sweet notes rising with the sun, to  
    greet the light.

You would hear, across the silence, a response.

You would listen, as other voices lifted to song.

You would begin to learn each different voice, begin to  
    see them.

And soon they were no longer just 'birds' but became  
    wren, robin, blackbird, thrush, greenfinch,  
    goldfinch, sparrow, jay.

And you would follow the textures of birdsong, call  
    and response, as it moved with the sun.

And you would feel for the first time how the sun was  
    lifted into the sky each day,  
on birdsong.

You would feel the turning of the earth beneath your  
    feet,

as the song travelled with the path of the light.

You would hear the turning of the world

as each day dawns,  
at the edge of the darkness,  
at the edge of the light.  
You would know that others were listening  
as the song moved with the light.

And you would learn that, if for a while it seemed the  
    earth stood still,  
holding her breath,  
if it seemed that the nights were darker,  
somewhere on the turning world the sun was rising,  
the birds were singing,  
a wave of song in an ocean of sky.  
And you would know  
that others too would hear those voices.

Out of the silence,  
just before dawn,  
you would find the threads of hope  
as the breath of birds became song.

### Writing (Friday)

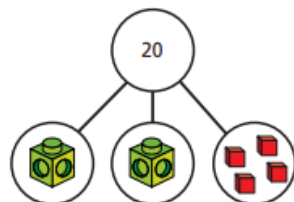
Welcome to another 100 Word Challenge from home. You can write whatever you want, inspired by the picture below. You must write no more than 100 words so treat every word like it is gold. Upload whatever writing you do, either a photo or submitted as a Seesaw note, and a winner will be chosen at the end of the school day on Friday. You could write a description, a story, a newspaper article (or part of) or anything you would like at all. Have fun.



*The World Through a Window* Copyright © Lauren Child 2020

## Solve two-step equations

- 1 Here is a part-whole model.



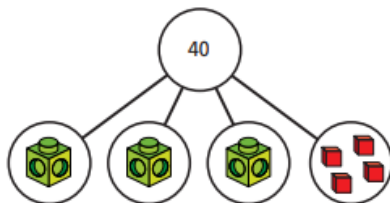
- a) Write an equation for the part-whole model.

\_\_\_\_\_

- b) Solve the equation to work out the value of

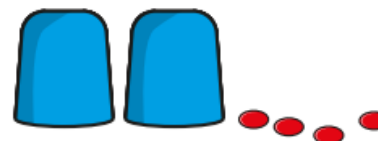
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- 2 If each multilink cube represents  $x$ , form and solve an equation to find the value  $x$ .



$x =$

- 3 There is the same number of counters under each cup.  
There are 16 counters in total.



- a) Use  $y$  to represent the number of counters under each cup.  
Write an equation in terms of  $y$ .

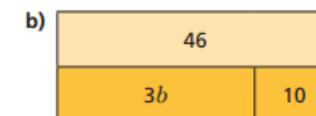
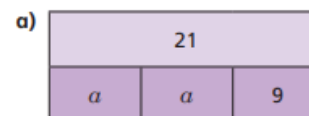
\_\_\_\_\_

- b) Solve the equation to find the value of  $y$ .

$y =$

- c) How many counters are under each cup?

- 4 Write an algebraic equation to represent each bar model.  
Find the values of  $a$  and  $b$ .



$a =$

$b =$



5 Solve the equations.

a)  $5x + 1 = 31$

$x =$

b)  $3x - 3 = 9$

$x =$

c)  $4p - 11 = 3$

$p =$

d)  $9 = 2y + 8$

$y =$

e)  $10g - 2 = 46$

$g =$

f)  $4 + 3y = 28$

$y =$

6 Dani thinks of a number.

She doubles it and adds 3

She gets the answer 15

a) Write an equation to represent Dani's problem.

\_\_\_\_\_

b) Solve the equation to find her number.



7 Alex is  $y$  years old.

Her friend Brett is 3 years older.

The total of their ages is 25

How old are Alex and Brett?

Alex is

Brett is

8



a) Work out the cost of one banana and one orange.

One banana costs

One orange costs

b) Compare methods with a partner.





# Find pairs of values (2)



- 1 Class 6 are trying to solve a number puzzle.

$$\triangle + \triangle + \bigcirc = 10$$

a)



Dexter

The triangle could be 3 and the circle could be 4

Do you agree with Dexter? \_\_\_\_\_

Explain why.

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b)

The triangle is worth 4



Dora

What is the value of the circle in Dora's number puzzle?

$$\bigcirc = \square$$

- c) Find other pairs of values that the triangle and circle could equal.

Find three pairs.

$$\triangle = \square \quad \bigcirc = \square$$

$$\triangle = \square \quad \bigcirc = \square$$

$$\triangle = \square \quad \bigcirc = \square$$

- 2  $a$  and  $b$  are whole numbers.

$$2a + b = 14$$

Complete the table to show different possible values for  $a$  and  $b$ .

$a$	0	1	2	3	4	5	6	7
$2a$	0	2						
$b$	14							
$2a + b$	14	14	14	14				

- 3  $c$  and  $d$  are both integers less than 15 but greater than zero.

$$3c - d = 2$$

Complete the table to show different possible values for  $c$  and  $d$ .

$c$	1	2	3	4	5
$3c$	3				
$d$	1				
$3c - d$	2	2	2		

- b) Explain why there are no other possible values for  $c$  and  $d$ .

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- 4  $x$  and  $y$  are both multiples of 5 less than 100  
If  $2x = y$ , circle the possible values of  $x$  and  $y$ .

$x = 20, y = 20$

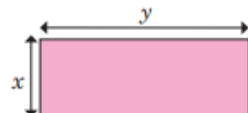
$x = 10, y = 20$

$x = 20, y = 10$

$x = 35, y = 70$

$y = 90, x = 45$

- 5 Here is a rectangle.  
 $x$  and  $y$  are both integers.



The rectangle has a perimeter of 28 cm.

- a) Write an equation to represent the perimeter of the rectangle.

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- b) List all the possible pairs of values for  $x$  and  $y$ .

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Compare answers with a partner. How do you know you have found all the possible values?



- 6 Aisha is buying some stationery for school.  
She spends exactly £1  
List the possible combinations of pencils and pens that Aisha could have bought.




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- 7 Ron has four digit cards.
- Two of the cards have the same value.
  - All of the cards are less than 10 but greater than zero.
  - All of the cards are odd.
  - The sum of the four cards is 24

Find two possible sets of cards.

Set 1

Set 2

8

$2ab = 48$

- a) Find a pair of possible values for  $a$  and  $b$ .

$a =$

$b =$

- b) Work with a partner to find as many pairs of values as you can.



## Convert metric measures



- 1 How many centimetre cubes can you fit along a metre stick?




What does this tell you?



- 2 Complete the sentences.

a) There are  grams in 1 kilogram.

There are  kilograms in one tonne.

b) There are  millilitres in 1 litre.

c) There are  millimetres in 1 centimetre

There are  centimetres in 1 metre.

There are  metres in 1 kilometre.

- 3 Complete the bar models.

a)

1 km	1 km	1 km	1 km
1,000 m	1,000 m		

There are  m in 4 km.

b)

1 kg	1 kg	1 kg	1 kg	1 kg	1 kg	$\frac{1}{2}$ kg
1,000 g	1,000 g	1,000 g				

There are  g in  $6\frac{1}{2}$  kg.

- 4 Complete the conversions.

a) 2 kg =  g

5 kg =  g

10 kg =  g

12 kg =  g

b) 1 l =  ml

5 l =  ml

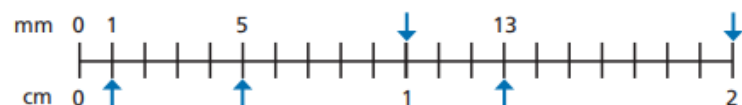
11 l =  ml

- 5 A bag of dog food weighs 2.5 kg.

Write this weight in grams.



- 6 What measurements are the arrows pointing to?  
Label them on the number line.



- 7 Complete the conversions.

a)  $10 \text{ mm} = \boxed{\phantom{00}} \text{ cm}$        $\boxed{\phantom{00}} \text{ mm} = 1.1 \text{ cm}$

$11 \text{ mm} = \boxed{\phantom{00}} \text{ cm}$        $\boxed{\phantom{00}} \text{ mm} = 10.1 \text{ cm}$

$\boxed{\phantom{00}} \text{ mm} = 11 \text{ cm}$

b)  $2.1 \text{ km} = \boxed{\phantom{00}} \text{ m}$        $2.01 \text{ km} = \boxed{\phantom{00}} \text{ m}$

$2.001 \text{ km} = \boxed{\phantom{00}} \text{ m}$        $2.011 \text{ km} = \boxed{\phantom{00}} \text{ m}$

- 8 Write  $>$ ,  $<$  or  $=$  to complete the statements.

a)  $100 \text{ m} \bigcirc 1 \text{ km}$       b)  $5.1 \text{ l} \bigcirc 5,100 \text{ ml}$

$10 \text{ m} \bigcirc 10 \text{ cm}$        $607 \text{ l} \bigcirc 0.607 \text{ ml}$

$10.1 \text{ mm} \bigcirc 101 \text{ cm}$        $0.05 \text{ l} \bigcirc 5 \text{ ml}$

- 9 Dora and Amir are trying to convert 1.05 metres into millimetres.



Dora

You can multiply 1.05 by 100 to convert it into centimetres, then multiply the product by 10 to convert it into millimetres.

Amir



You can just multiply 1.05 by 1,000!

Who do you agree with? \_\_\_\_\_

Explain your thinking.

- 10 What is the mass of one of the boxes?  
Give your answer in grams.




- 11 There are 1,000 kg in one tonne.

a) How many grams are there in one tonne?

b) A car weighs 1.3 tonnes.

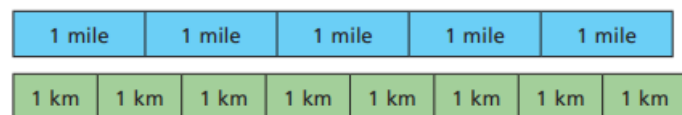
Write the weight of the car in grams.



## Miles and kilometres

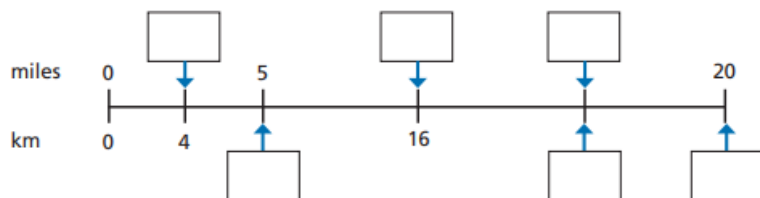
1 Tick the statements that are true.

Use the bar model to help you.



- a) 5 miles is approximately equal to 8 kilometres. ☐
- b) 1 mile is longer than 1 kilometre. ☐
- c) 2 kilometres is longer than 1 mile. ☐
- d) 2 kilometres is longer than 2 miles. ☐

2 Fill in the missing numbers on the number line.



3 Complete the conversions.

- a)** 5 miles  $\approx$   kilometres  
10 miles  $\approx$   kilometres  
15 miles  $\approx$   kilometres
- b)**  miles  $\approx$  16 kilometres  
 mile  $\approx$  1.6 kilometres  
 miles  $\approx$  0.8 kilometres

4 Complete the conversions.

- a)  miles  $\approx$  160 km
- b) 45 miles  $\approx$   km
- c)   $\approx$  640 km
- d) 95 miles  $\approx$   km
- e) 7.5 miles  $\approx$   km
- f) 2 miles  $\approx$   km

5



If 5 miles is approximately 8 kilometres, then 10 miles is approximately 13 kilometres.

Here is Whitney's working out.

$+5 \begin{cases} 5 \text{ miles} \approx 8 \text{ km} \\ 10 \text{ miles} \approx 13 \text{ km} \end{cases} +5$

Explain Whitney's mistake.

- 6 A marathon is approximately 26.2 miles.  
How far is this in kilometres?

- 7 The maximum speed limit on residential roads in the UK is 30 miles per hour.



In France, the maximum speed limit on residential roads is 50 kilometres per hour.



- a) Which country has the higher speed limit for these roads?

\_\_\_\_\_

- b) What is the difference between the speed limits in miles per hour?



- 8 Esther cycles 70 miles over 4 days.  
On day 1 she cycles 14 miles.  
On day 2 she cycles 32 km.  
On day 4 she cycles twice as far as she does on day 3  
How far does she cycle on day 4?  
Give units with your answer.

- 9 Use a map of your local area.  
Find something that is approximately:  
a) 1 mile away from your school

\_\_\_\_\_

- b) 1 km away from your school

\_\_\_\_\_

- c) 5 miles away from your school

\_\_\_\_\_

- d) 5 km away from your school

\_\_\_\_\_

Compare answers with a partner.

