

# Monday – Add Two 3-Digit Numbers

1. Add the numbers in the place value chart below. Circle the correct answer.

	H	T	O
	3		8
+		4	

A. 807

B. 816

C. 817

D. 718

2. Fill in the missing gaps in the place value chart with the correct digits below to complete the addition.

	H	T	O
+			
		8	

3. Sanjay and Lucie have both worked out the addition shown below. Whose calculation is incorrect? Explain why.



Sanjay

	3	9	5
+	2	6	4
<hr/>			
	6	6	9
<hr/>			
	1		

	3	9	5
+	2	6	4
<hr/>			
	6	5	9
<hr/>			
	1		



Lucie

# Monday – What is a Sentence?

1. Label the sentence below by drawing arrows from the word types.

The old door opened quietly.

noun

verb

adjective

adverb

2. Complete each sentence by writing the correct punctuation mark in the correct column of the table.

Sentence	Full Stop	Question Mark	Exclamation Mark
<b>Example: When will the postman arrive</b>		?	
Put your hand up if you need a pencil			
What time does the film start			
What a sunny day it is			
Harry is going to the seaside today			

3. Using only the words below, Millie says,

Martin

tree

to

the

and

Jack

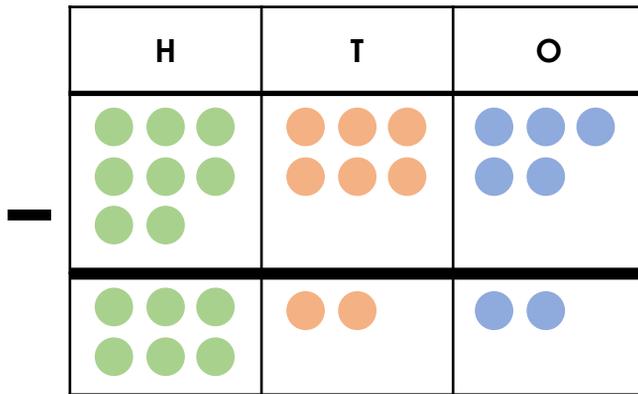
I can create a complete sentence.



Is she correct? Convince me.

# Tuesday – Subtract 3-Digits from 3-Digits

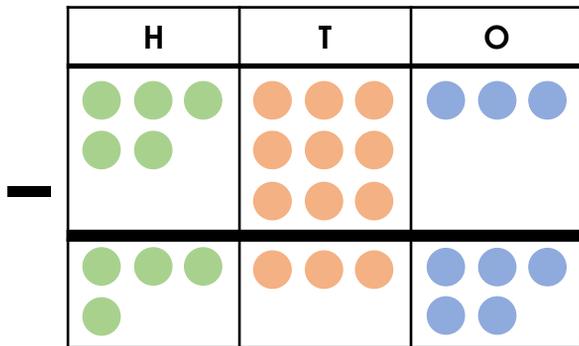
1. The following subtraction is incorrect. True or false?



Subtract  
247

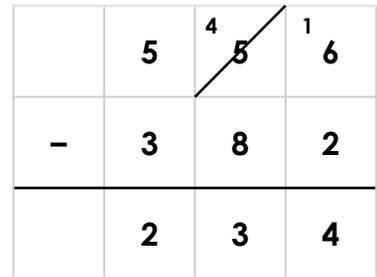
2. Find the mistake in one of the questions below.

A.



Subtract  
158

B.



3. Which description matches each of the calculations below? Prove it.



My calculation has been exchanged incorrectly.



My calculation exchanges from the hundreds column.



My calculation exchanges from the tens column.

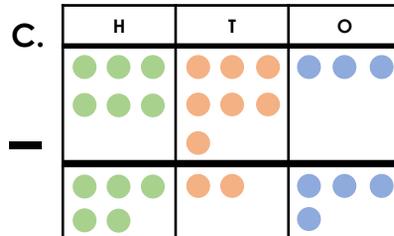
A.

	7	3	5
–	4	7	4
	2	6	1

B.

	8	8	1
–	5	2	9
	3	5	2

C.



Subtract  
467

## Tuesday – Apostrophes 1

1. Match the contractions below to the letters replaced by the apostrophes.

what's

wi

you'd

i

she'll

woul

2. Circle the contractions which could replace some words in the sentence below:

Mikaela was not happy with what they had done.

can't

wasn't

they'd

it'll

3. Alvin and Zoe are talking about apostrophes.



Alvin

I combined two words to make the contraction won't. I replaced only the letter o.



Zoe

I combined two words to make the contraction won't. I replaced the letters i, l, l and o.

Who is correct? Prove it.

# Wednesday – Efficient Subtraction

1. Use the different methods below to solve  $893 - 251$ . Circle the one that is the most efficient.

A.

Subtract using the column method.

-			
<hr/>			
<hr/>			

B.

Count on using a number line.



2. Match each subtraction to the most efficient method and calculate the answer.

count on

A.  $419 - 399 =$

add 1 to both numbers

B.  $242 - 212 =$

3. Below are two different methods used to calculate  $899 - 699$ . Complete both.

A.

	8	9	9
-	6	9	9
<hr/>			
<hr/>			

B.

	9	0	0
-	7	0	0
<hr/>			
<hr/>			

Explain why method B is more efficient than A.

## Wednesday – Apostrophes 2

1. Put an 'X' under the words that should have an apostrophe to show possession.

The wizards spell did not work as he planned, so now his enemys fireballs



are speeding toward his unprotected fortress.



2. Circle the sentence that has used possessive apostrophes correctly.

A. Mr Jone's dentist is very good but he can be a little rough.

B. My boss's car is fancier than my sister's but she doesn't mind.

C. My mixer's broken and I can't get another.

3. Daniel is writing sentences using possessive apostrophes.

A. Jame's dog has beautiful, white fur but he never manages to keep it clean.

B. Thomas's car sped along the open road and raced through the wide, empty street's.

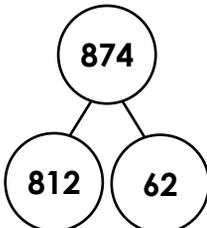
Explain the mistakes he has made.

# Thursday – Check Answers

1. Match the calculations to their inverse operations.

- |                      |                      |
|----------------------|----------------------|
| A. $684 - 253 = 431$ | 1. $51 + 38 = 89$    |
| B. $89 - 51 = 38$    | 2. $684 - 431 = 253$ |
| C. $431 + 253 = 684$ | 3. $89 - 38 = 51$    |
| D. $51 + 38 = 89$    | 4. $431 + 253 = 684$ |

5. Circle the odd one out. Explain your choice.

- |  |                        |       |      |   |
|--|------------------------|-------|------|---|
| A.<br>$812 + 62 = 874$   | B.<br>$812 - 874 = 62$ |       |      |   |
| C.<br><table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td style="text-align: center; padding: 5px;"><math>874</math></td></tr> <tr><td style="text-align: center; padding: 5px;"><math>812</math></td><td style="text-align: center; padding: 5px;"><math>62</math></td></tr> </table> | $874$                  | $812$ | $62$ | D.<br> |
| $874$  |                        |       |      |   |
| $812$  | $62$                   |       |      |   |

2. Complete the number sentence below.

$$859 - 431 = 428$$

$$431 + \boxed{\phantom{000}} = 859$$

3. Put an 'X' next to the number sentences which could be used to check the answer to:

$$\boxed{937 - 525 = 412}$$

$$525 + 937 = 412 \quad \boxed{\phantom{X}}$$

$$412 + 525 = 937 \quad \boxed{\phantom{X}}$$

$$525 + 412 = 937 \quad \boxed{\phantom{X}}$$

4. Write 2 addition calculations which could be used to check the number sentence below.

$$\boxed{786 - 31 = 755}$$

6. Ali is checking his answer to the calculation:  $582 - 71 = 511$

He tries the following calculation:

$$71 + 582$$

Explain the mistake that Ali has made.

What is the calculation he should use?

7. Solve the problem below.

I am thinking of a number.

If I subtract 46 from my number, I get the answer 541.

What number am I thinking of?

## Thursday – Writing Direct Speech

1. Circle the direct speech that will not follow the reporting clause below.

Dylan queried, \_\_\_\_\_

A. "How did the weather change so quickly?"

B. "Be careful on the slide."

C. "Have you seen my costume?"

2. Complete the sentences by choosing a reporting clause from the word bank below and continue the direct speech.

Add the correct punctuation to each sentence.

A. Elijah \_\_\_\_\_ the people at the park watch out \_\_\_\_\_

B. Malcolm \_\_\_\_\_ his friend where did \_\_\_\_\_

asked

thanked

shouted

warned

3. Surbhi has narrated what her teacher said to the class.



Miss Mercy has calmly explained that an adverb is a word that describes a verb.

Write this as direct speech with a reporting clause.

Punctuate your sentence correctly.

## Friday – What is a Paragraph? (Fiction)

Everybody fell silent. The sound of a pirate drum boomed through the caves. It got louder and louder with every beat. They were getting too close.

“Will...will they find us again?” Rosie squeaked. “How do they know where we are?”

All of a sudden, they heard a loud bark. It was Bonnie! The pirates had found her and had used her to find the group!

Rosie gasped and turned to run in the direction of the bark but Caleb grabbed her arm before it was too late.

“Everyone into the water!” whispered Caleb. “Bonnie will lose our smell if we swim deeper into the caves. We’ll find a way to save her later, but we have to leave right now!”

Rosie turned back and started to cry. Kwisera was staring back into the darkness. Caleb was scared, but he got the others to jump into the water.

“Swim!”

1. Write down the first word of each paragraph.

2. True or false? A new paragraph would still be needed if the sentence ‘Rosie turned back and started to cry’ was changed to Caleb saying, “It’s our only chance!”

3. Which paragraph introduces Bonnie?

4. Why did the fifth paragraph have to be started?

to introduce a new character

to introduce a new point in time

to introduce a new speaker

## Friday – What is a Paragraph? (Fiction)

“We’re nearly there guys! Now I need you to grab your pink paint and the round sponge I asked you to get.”

Carlo loved every minute of making his art videos. He was amazed that so many people watched them online. Nearly two thousand people had seen his last lesson! He was so happy that it was going so well.

Today’s lesson was looking like another big hit. He was teaching his viewers how to paint a tropical sunset and he had done a great job.

“Dip the sponge lightly into your paint, then do a few little dabs up here and... Oh no! No!”

His hand had slipped and he’d dropped the pot! Pink paint splashed everywhere.

“My picture!” cried Carlo. “It’s ruined!”

5. Jess has written the sentence:

Teaching art was all he had ever wanted to do.

She wants to put it at the end of the second paragraph. Is she correct? Explain how you know.

6. Here is a new sentence to add to the text:

“It’s perfect for adding the final touches to our work.”

Which paragraph would it fit into best? Convince me.

7. Write one more sentence that could be added to the final paragraph.

Then write a sentence that could start the next paragraph.

Reading Task –  
Moving to Marchton (Part 1)

Sandy watched the rain run down the car window and thought it was just typical that today of all days it had decided to pour it down. He buried his nose back in his book and tried to ignore the scenery outside.

His mom and dad were in the front of the car talking excitedly about the new house and the plans they had for redecorating it. But all Sandy could think about was how much he already missed his old house, especially his old room, with his treasured computer and familiar book shelf with the titles he'd read a hundred times.

He had lived in the centre of the city for as long as he could remember and over the years had grown up to love his three-storey town house with the rushing cars whizzing by. The view from his window was one of tall buildings and bright city street lights, never quite silent, never quite still. Nothing like Marchton.

Marchton was where they were heading now. It was a small village in the middle of nowhere, or it may as well have been. His dad had told him that only three-hundred people lived in the entire village. Sandy thought that the same amount of people probably lived on his street at home, but it wasn't his home anymore.

"Not long now, Sandy," his mom called back. "We're nearly there." Great!

Sandy could only see fields and trees for miles around. How could people live here? Where were the cinemas and the shopping centres? He was dreading life in this place. He would hate it; he just knew it.

It didn't take long to reach the tiny village, its church steeple being the only thing that stood out on the horizon.

His dad pulled over in front of an ancient-looking cottage complete with a wooden door and a thatched roof.

"We're home," his dad said proudly. Sandy just grunted in reply. It stank out here of filthy animals and much worse.

Sandy quickly grabbed his bag and headed straight upstairs to what he was told would now be his room. Inside it looked bare, with just a bed and an old pair of curtains. This was not home. He flopped on to the bed and reached for his book again. Hopefully the adventures hidden in the pages would take him far away from Marchton.

Later that night Sandy's mom came into his room. "It'll be ok you know. You've got school tomorrow and I'm sure you'll make lots of new friends."

**Reading Task –**  
**Moving to Marchton (Part 1)**

**1. How did Sandy describe the view from his old bedroom?**

**2. What do you think Sandy means by the phrase in the 'middle of nowhere'?**

**3. What sorts of building was Sandy looking out for when he drove into Marchton?**

**4. How do you think you would feel if you had to move house or school?**

**5. Would you like to live in a countryside location like Marchton? Explain your answer.**

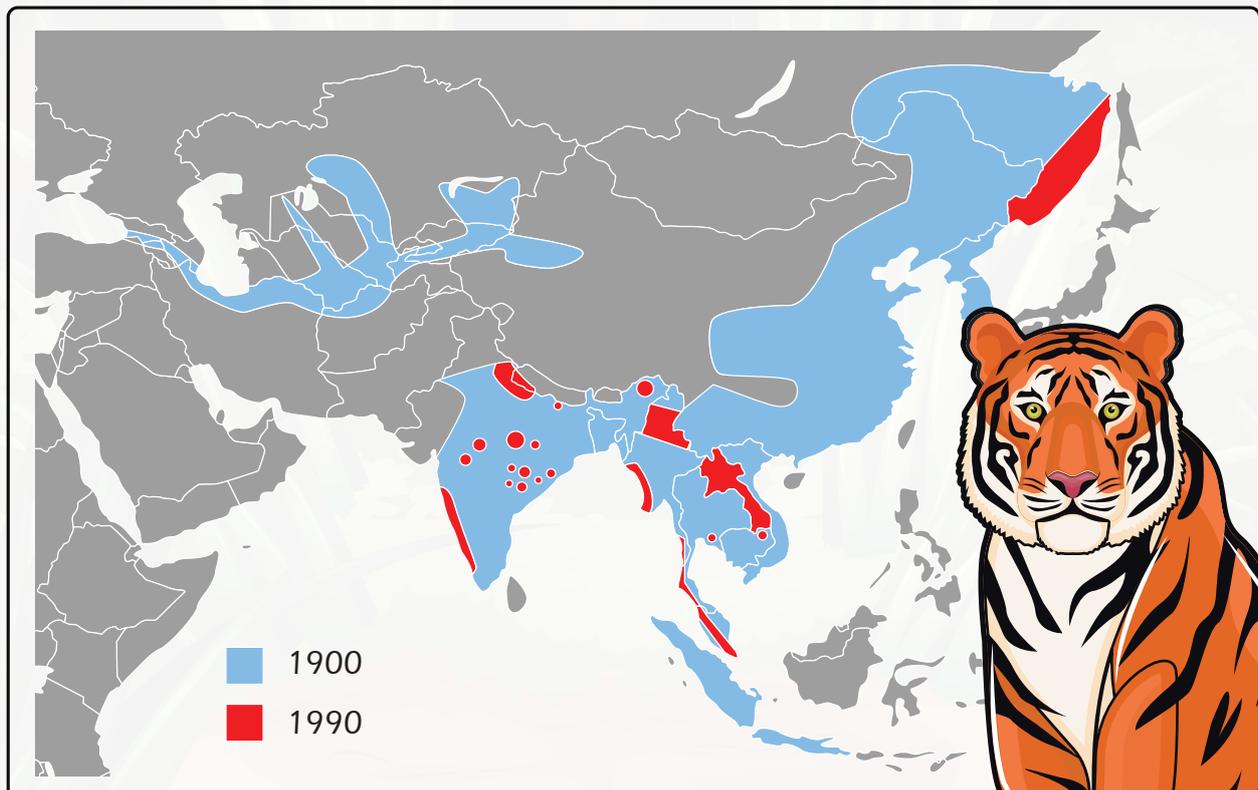
## Terrifying But Beautiful Big Cat In Focus

### What is a tiger?

Tigers are the largest wild cats in the world. The scientific name for the tiger is the *Panthera tigris*. They have distinctive orange, black and white fur and every tiger is unique – no two tigers have the same pattern of stripes. Adults can weigh up to 363kg and can measure over 3 metres long. Tigers live on the continent of Asia.

### An endangered species

Today, there are only 3,900 tigers left in the wild. There are five subspecies of tiger: Bengal, South China, Indochinese, Sumatran and Siberian. Sadly, three subspecies of tiger have already become extinct – Caspian, Bali and Javan. Less than 100 years ago, tigers could be found in most countries in Asia. Due to hunting and habitat caused by humans building on their land, their numbers have declined and now they are only in 7% of Asia.



### What do tigers prey on?

Tigers are solitary hunters, and generally search for food alone at night. They are stealthy hunters and move as fast as 65km per hour! They quietly stalk their prey until they're close, then pounce and land a fatal blow on the neck or back of the head. They have the ability to leap over 30 feet with a single step to lift them off. Tigers are carnivores, which means they only eat meat. They mainly feed on large mammals such as wild pigs, buffalo, boars and even weak or young elephants. If it's a large animal, it can feed the tiger for up to a week.

Learn more:

<https://www.wwf.org.uk/learn/wildlife/tigers>

Did you know?

Tigers, unlike most other cats, like water. They are good swimmers and use water to cool down!

The tiger is the national animal of India.



## QUESTIONS

1. In the sentence 'every tiger is unique – no two tigers have the same pattern of stripes' what does the word unique mean?

Tick which word you think is closest to unique.

same

Individual

ordinary

2. How many species of tiger currently exist?

---

3. Name the three species of tigers that are now extinct.

---

4. There are 3900 tigers left in the wild. True or false.

---

5. At what time of day do tigers search for their food?

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6. Name two things that a tiger might eat

1. \_\_\_\_\_

2. \_\_\_\_\_

7. Why do you think the website address <https://www.wwf.org.uk/learn/wildlife/tigers> is at the bottom of this article?

\_\_\_\_\_

8. What surprising fact does it tell us about tigers in the 'did you know?' section?

\_\_\_\_\_

# Little Book Of Experiments

Science investigations you can do at home!

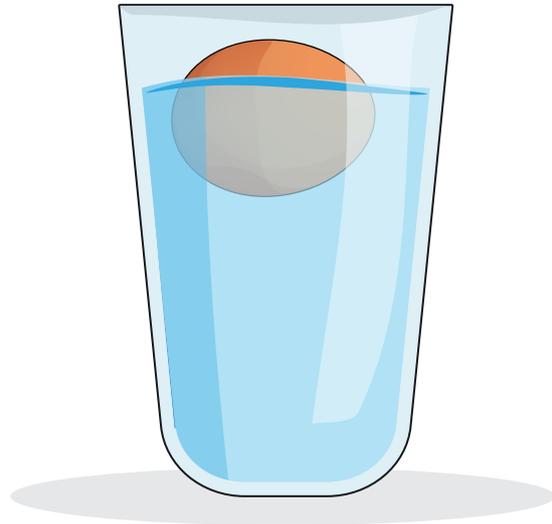


# Can eggs float in water?

*An egg sinks to the bottom if you drop it into a glass of ordinary drinking water but what happens if you add salt?*

## What you'll need:

- One egg
- Water
- Salt
- A tall drinking glass



## Instructions:

1. Pour water into the glass until it is about half full.
2. Stir in lots of salt (about 6 tablespoons).
3. Carefully pour in plain water until the glass is nearly full (be careful to not disturb or mix the salty water with the plain water).
4. Gently lower the egg into the water and watch what happens.

## What's happening?

Salt water is denser than tap water. Dense liquids allow objects to float. The denser the liquid the easier it is for an object to float in it. When you lower the egg into the liquid it drops through the normal tap water until it reaches the salty water, at this point the water is dense enough for the egg to float.

## Can chocolate be changed from a solid to a liquid?

*You will have seen chocolate melting on a hot day, so let's do some experiments to recreate these conditions. What temperature does chocolate go from a solid to a liquid? Is it different for white and dark chocolate? Give this fun science experiment a try and find out!*

### What you'll need:

- **Small chocolate pieces of the same size**
- **Plates (make sure you wash up afterwards!)**
- **Pen and paper to record your results**



### Instructions:

1. Put one piece of chocolate on a plate and put it outside.
2. Record how long it took for the chocolate to melt. It might not be hot enough to melt outside so check it after ten minutes to see if it has changed at all.
3. Repeat the process with a piece of chocolate on a plate that you put outside in the sun. Record your results in the same way.
4. Find more interesting locations to test how long it takes for the chocolate pieces to melt. You could try your school bag, hot water or even your own mouth.
5. Compare your results, what conditions were needed to make the chocolate melt? You might also like to record the temperatures of the locations you used using a thermometer (if you have one!) so you can think about what temperature chocolate melts at.

### What's happening?

Chocolate goes through a physical change at a certain temperature. It changes from a solid to a liquid. You can also reverse this change by putting the melted chocolate into a fridge or freezer where it will go from a liquid back to a solid.

# Can oil and water be mixed together?

*Some things just don't get along well with each other. Take oil and water as an example, you can mix them together and shake as hard as you like but they'll never become friends or mix together.....or will they?*

## What you'll need:

- **Small plastic bottle**
- **Water**
- **Food colouring**
- **2 tablespoons of cooking oil**
- **Washing up liquid**



## Instructions:

1. Add a few drops of food colouring to the water.
2. Pour about 2 tablespoons of the coloured water along with the 2 tablespoons of cooking oil into the small soft drink bottle.
3. Screw the lid on tight and shake the bottle as hard as you can.
4. Put the bottle back down and have a look, it may have seemed as though the liquids were mixing together but the oil will float back to the top.

## What's happening?

Usually, water mixes with other liquids to form solutions however oil and water do not mix. Water molecules are strongly attracted to each other, this is the same for oil, because they are more attracted to their own molecules they just don't mix together. They separate and the oil floats above the water because it has a lower density. To make this experiment more interesting try adding some washing up liquid to see what happens!



# Can you make a working parachute?

*Make an awesome parachute and learn about air resistance.*

*Can you design a parachute that can fall slowly to the ground?*

## What you'll need:

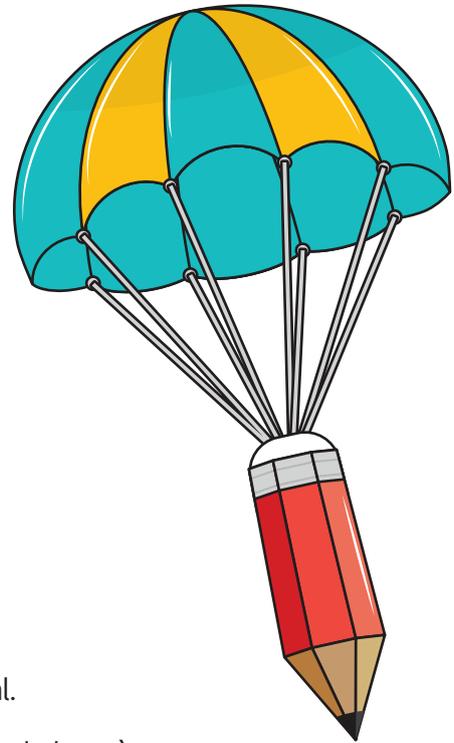
- **A plastic bag or light material**
- **Scissors**
- **String**
- **A small object to act as the weight, a little action figure would be perfect**

## Instructions:

1. Cut out a large square from your plastic bag or material.
2. Trim the edges so it looks like an octagon (an eight sided shape).
3. Cut a small hole near the edge of each side.
4. Attach 8 pieces of string of the same length to each of the holes.
5. Tie the pieces of string to the object you are using as a weight.
6. Use a chair or find a high spot to drop your parachute and test how well it works, remember that you want it to drop as slowly as possible.

## What's happening?

When you release the parachute the weight pulls down on the strings and opens up a large surface area of material that uses air resistance to slow it down. Air resistance is a force that slows down moving objects. The larger the surface area the more air resistance and the slower the parachute will drop.



## Can you make fizzy lemonade at home?

*Did you know you can make your own fizzy drink at home?*

*Have a go yourself by following the instructions below.*

### What you'll need:

- **Lemon**
- **Drinking glass**
- **Water**
- **1 teaspoon of baking soda**
- **Some sugar to make it sweet**



### Instructions:

1. Squeeze as much of the juice from the lemon as you can into the glass.
2. Pour in an equal amount of water as lemon juice.
3. Stir in the teaspoon of baking soda.
4. Give the mixture a taste and add in some sugar if you think it needs to be sweeter.

It might take a bit of adjusting on your first go!

### What's happening?

The mixture you made should go bubbly and taste like a lemonade soft drink. The bubbles that are created when you add the baking soda to the lemon mixture are carbon dioxide.

These are the same bubbles you'll find in real fizzy drinks. The carbon dioxide was produced when you mixed the lemon, which is an acid, to the baking soda.

## Can you make a volcano explode?

*Have you ever wanted to make a chemical reaction? Now you can! Follow the instructions below to make your own fizzy reaction. You could even make your own volcano out of craft materials first and then make it explode to look like a real volcano!*

### What you'll need:

- Baking Soda
- Washing up liquid
- Red food colouring
- Vinegar
- 2 cups
- A container to hold everything and avoid a big mess!
- Paper towels or a cloth (just in case)



### Instructions:

1. Place 2 teaspoons of baking soda into one of the cups. Place the cup into the container.
2. Add a few drops of red food colouring.
3. Add a squirt of washing up liquid.
4. Pour some vinegar (about 2 tablespoons) in another cup.
5. Pour the vinegar into the first cup.
6. Stand back and watch the reaction happen!

### What's happening?



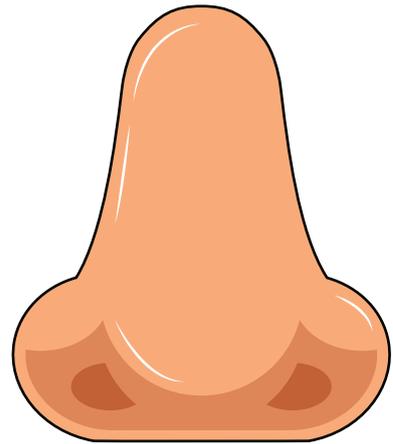
The baking soda reacts with the vinegar which is an acid. When they react together they break apart into water and carbon dioxide, which creates all the fizzing. The washing up liquid just adds more bubbles and the red food colouring makes it look more like lava!

## Can you taste without your nose?

*We all know that some foods taste better than others but what gives us the ability to experience all these unique flavours? This simple experiment shows that there's a lot more to taste than you might have first thought.*

### What you'll need:

- A small piece of peeled potato
- A small piece of peeled apple (same shape as the potato so you can't tell the difference)



### Instructions:

1. Close your eyes and mix up the piece of potato and the piece of apple so you don't know which is which.
2. Hold your nose and eat each piece, can you tell the difference?

### What's happening?

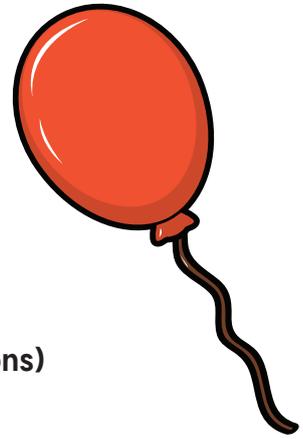
Holding your nose while tasting the potato and apple makes it hard to tell the difference between the two. Your nose and mouth are connected through the same airway which means that you taste and smell foods at the same time. Your sense of taste can recognize salty, sweet, bitter and sour but when you combine this with your sense of smell you can recognize many other individual 'tastes'. Take away your smell (and sight) and you limit your brains ability to tell the difference between certain foods.

# Can you blow up a balloon without using your mouth?

*You can use this chemical reaction to blow up a balloon without having to huff and puff yourself!*

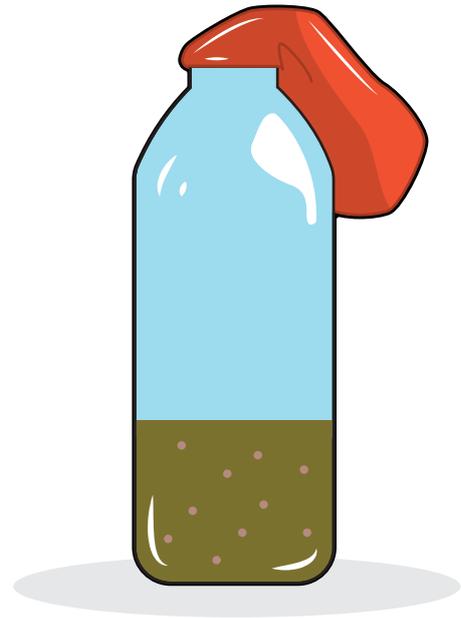
## What you'll need:

- **Balloon**
- **About 40 ml of water (about 3 tablespoons)**
- **Small plastic bottle**
- **Juice from a lemon (vinegar would also work if you have no lemons)**
- **1 teaspoon of baking soda**



## Instructions:

1. Before you begin, make sure that you stretch out the balloon to make it as easy as possible to inflate.
2. Pour the 40 ml of water into the soft drink bottle.
3. Add the teaspoon of baking soda and stir it around until it has dissolved.
4. Pour the lemon juice in and quickly put the stretched balloon over the mouth of the bottle.



## What's happening?

Mixing the lemon and baking soda together causes a chemical reaction. When the two mix they create carbon dioxide which is a gas. The gas bubbles rise. Usually they would go into the air around it, but because we have trapped it in the bottle with a balloon on top, they have nowhere to go other than into the balloon!

# Can you make quicksand?

*Quicksand is a fascinating substance, make some of your own and play around with it.*

*Amaze your parents by demonstrating how it works.*

## What you'll need:

- 1 cup of cornflour
- Half a cup of water
- A large plastic container
- A spoon



## Instructions:

1. All you have to do for this one is mix the cornflour and water thoroughly in the container.
2. When you have made it, stir it slowly and it will appear to be liquid. But, stir it fast will make it hard like a solid! Try to hit or poke it fast to see what happens!
3. If you put your finger into it slowly, it easily slides in. But if you quickly try and pull your finger out, it will feel like it is stuck!

## What's happening?

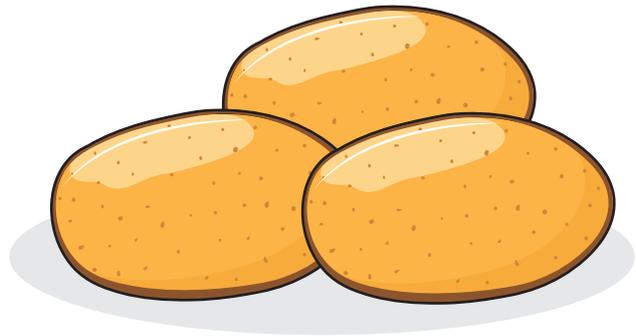
If you add just the right amount of water to cornflour it becomes very thick when you stir it quickly. This happens because the cornflour grains are mixed up and can't slide over each other due to the lack of water between them. Stirring slowly allows more water between the cornflour grains, letting them slide over each other much easier.

# Can you pierce a potato with a straw?

*Is it possible to stab a potato with a drinking straw? Find out with this fun science experiment for kids that shows how air pressure can be used in surprising ways.*

## What you'll need:

- Stiff plastic drinking straws
- A raw potato



## Instructions:

1. Hold a plastic drinking straw by its sides (without covering the hole at the top) and try quickly stabbing the potato, what happens?
2. Repeat the experiment with a new straw but this time place your thumb over the top, covering the hole.

## What's happening?

Placing your thumb over the hole at the top of the straw improves your ability to pierce the potato skin and push the straw deep into the potato. The first time you tried the experiment you may have only pierced the potato a small amount, so why are you more successful on the second attempt?

Covering the top of the straw with your thumb traps the air inside, forcing it to compress as you stab the straw through the potato skin. This makes the straw strong enough to pierce the potato, unlike the first attempt where the air is pushed out of the straw.

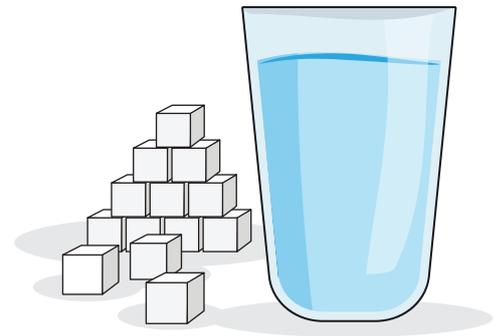


# Can you make sugar 'disappear'?

*What happens when your mum puts sugar in her tea? It dissolves into the water to make a solution! But does sugar only dissolve in hot water?*

## What you'll need:

- Sugar cubes (or teaspoons of sugar if you have no sugar cubes)
- Cold water in a clear glass
- Hot water in a clear glass (adult supervision required!)
- Spoon for stirring



## Instructions:

1. Make sure the glasses have an equal amount of water.
2. Put a sugar cube into the cold water and stir with the spoon until the sugar disappears. Repeat this process (remembering to count the amount of sugar cubes you put into the water) until the sugar stops dissolving, you are at this point when sugar starts to gather on the bottom of the glass rather than dissolving.
3. Write down how many sugar cubes you could dissolve in the cold water.
4. Repeat the same process for the hot water, compare the number of sugar cubes dissolved in each liquid, which dissolved more?

## What's happening?

Hot water dissolves the sugar quicker than cold water because it has faster moving molecules which are spread further apart. With bigger spaces between the molecules, more sugar molecules can fit between. Every solution has a limit to how much they can dissolve. When sugar starts to collect at the bottom of the cup instead of dissolving, it means the solution is 'full' or it becomes a 'saturated solution.'

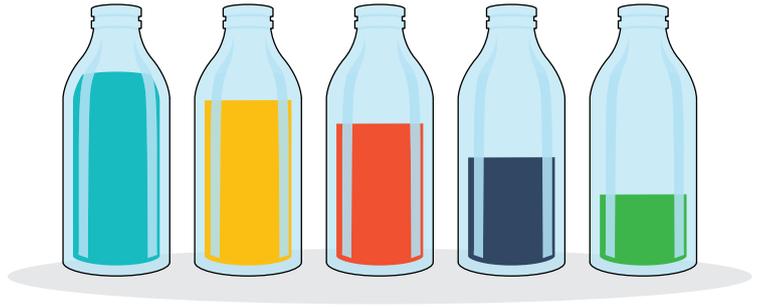


# Can you play a musical tune with water?

*Have you ever wanted to play a musical instrument? Well now you can! Experiment with your own special sounds by turning glasses of water into instruments!*

## What you'll need:

- **5 or more drinking glasses or glass bottles (be careful!)**
- **Water**
- **Wooden stick such as a pencil or wooden spoon**



## Instructions:

1. Line the glasses up next to each other and fill them with different amounts of water. The first should have just a little water while the last should almost full, the ones in between should have slightly more than the last.
2. Hit the glass with the least amount of water and observe the sound, then hit the glass with the most water, which makes the higher sound?
3. Hit the other glasses and see what noise they make, see if you can get a tune going by hitting the glasses in a certain order.

## What's happening?

Each of the glasses will have make a different sound when you hit it. The glass with the most water will sound the lowest whilst the glass with the least water will sound the highest. When you hit the glass, small vibrations happen. This makes sound waves which travel through the water. If the glass has more water, that means the vibrations travel through it slower creating the deeper sound.

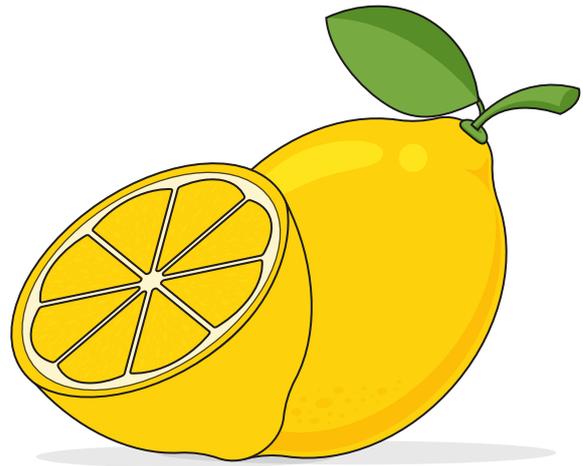
## Can you write an invisible letter?

*Now is your time to pretend to be a secret agent! We are going to make it so you can keep all your secret codes and messages hidden from others.*

*All you need is some basic household objects!*

### What you'll need:

- Half a lemon
- Water
- Spoon
- Bowl
- Cotton bud
- White paper
- Lamp or other light bulb



### Instructions:

1. Squeeze some lemon juice into the bowl and add a few drops of water.
2. Mix the water and lemon juice with the spoon.
3. Dip the cotton bud into the mixture and write a message onto the white paper.
4. Wait for the juice to dry so it becomes completely invisible.
5. When you are ready to read your secret message or show it to someone else, heat the paper by holding it close to a light bulb. Make sure you don't touch the light bulb!

### What's happening?

When you add water to the lemon juice, it dilutes it making it hard to see when you put it on paper. When you heat lemon juice, it oxidises which turns it brown. This means you can see it again! Some other liquids also work in a similar way such as orange juice, honey, milk, onion juice, vinegar and wine. Why don't you have a go with some other household items to see which ink is the best?

