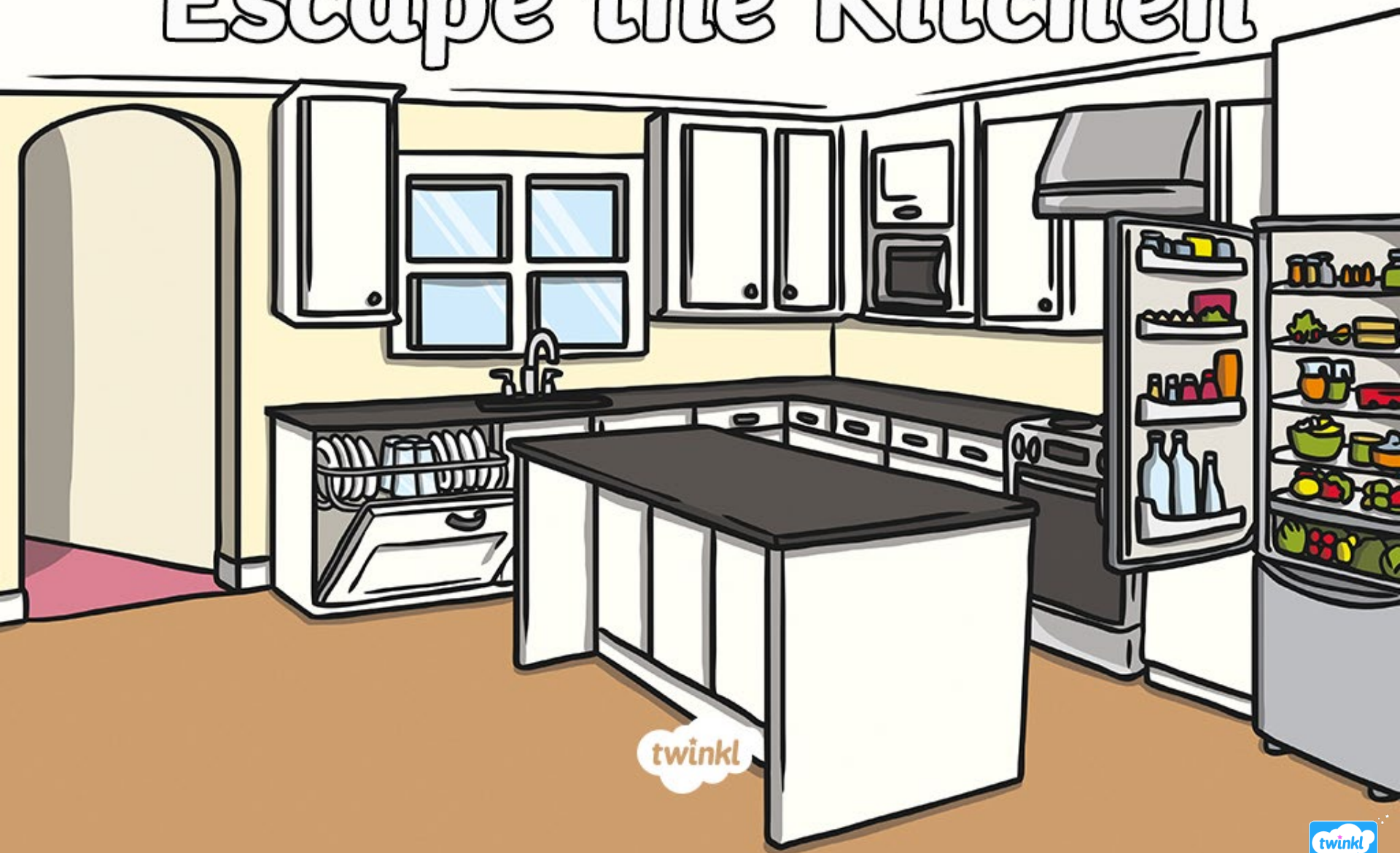


Escape the Kitchen



twinkl

Escape the Kitchen

It is the school holidays and you are visiting your aunt. You have a school science project to complete during the school break so you decide to do it at your aunt's house.

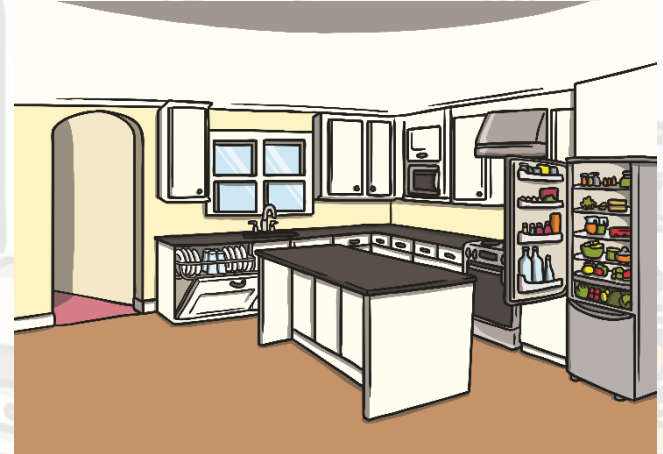
Your aunt works for a very famous technology company and her house is full of computerised gadgets. Her kitchen is no exception.

The experiment you are doing is about separating mixtures. "Okay, Daya," you command the computer in charge of the house. "Turn on the hob."

"Locking all kitchen windows," says the computerised voice.

"No Daya!" you exclaim. "Turn on the hob."

"Locking the kitchen door," answers the computer.



Escape the Kitchen

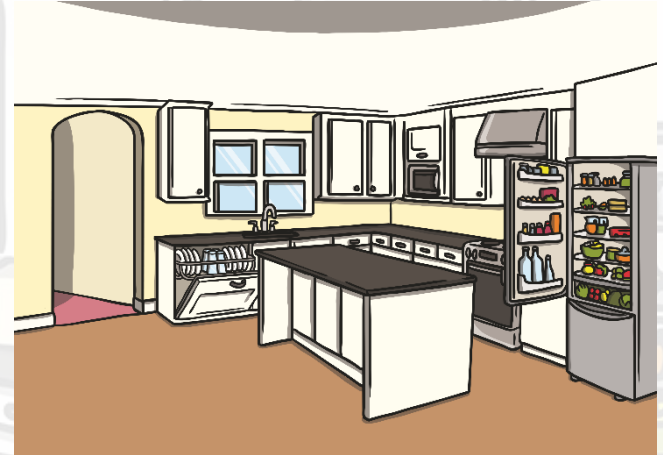
No matter what voice commands you give, nothing seems to work. You tell Daya to unlock the kitchen doors and windows but instead she announces that the entire house is now locked. There must be a glitch in the system!

You try to remain calm. "Okay Daya," you instruct. "Override house control."

"Access code required to override house control," the computer replies.

You need that access code!

Solve the clues and puzzles to discover the access code and escape the kitchen. The clues could be anywhere so you need to keep your eyes peeled and your mind sharp!



Escape the Kitchen

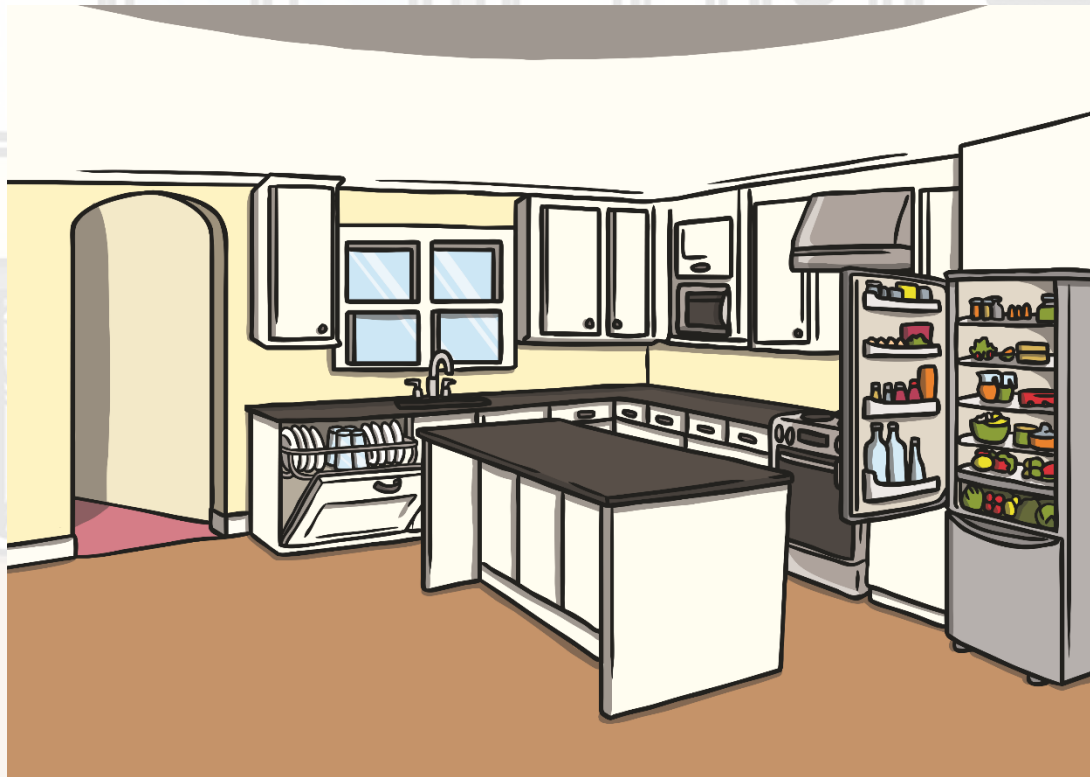
The Rules

- You can work in small groups.
- When you find a clue, work together to solve the puzzle.
- Write your answer down on your answer sheet.
- Once you have discovered the access code, check it with your teacher to discover if you can escape the kitchen!



Escape the Kitchen

Answers to the Clues



Escape the Kitchen – Clue 1

Here are the properties with their correct definitions.

absorbent	is able to soak up liquid easily
flexible	
flammable	will easily catch fire and burn quickly
translucent	will let some light pass through it
insulating	will stop energy, such as electricity or heat, from transferring through it
permeable	will allow liquids and gases to pass through it
hard	solid, firm and rigid; not easily broken, scratched or pierced
magnetic	is attracted to magnets

The word flexible is left over. There are eight letters in the word.

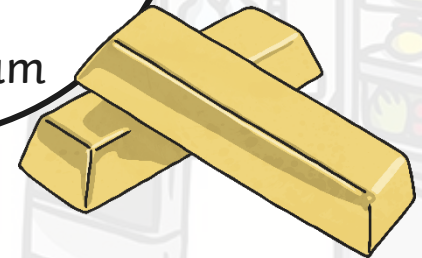
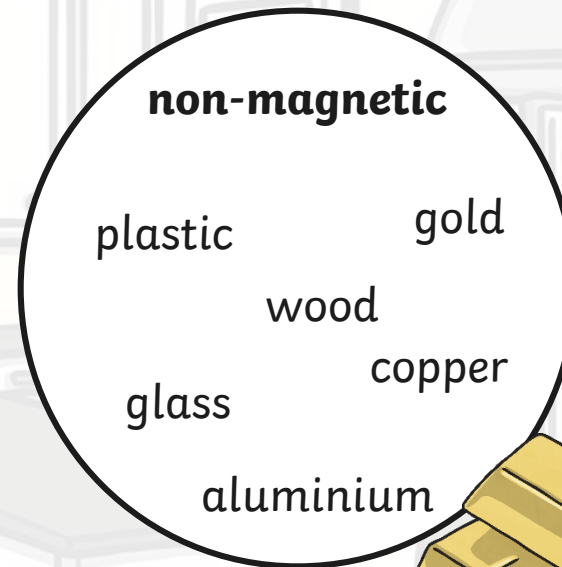
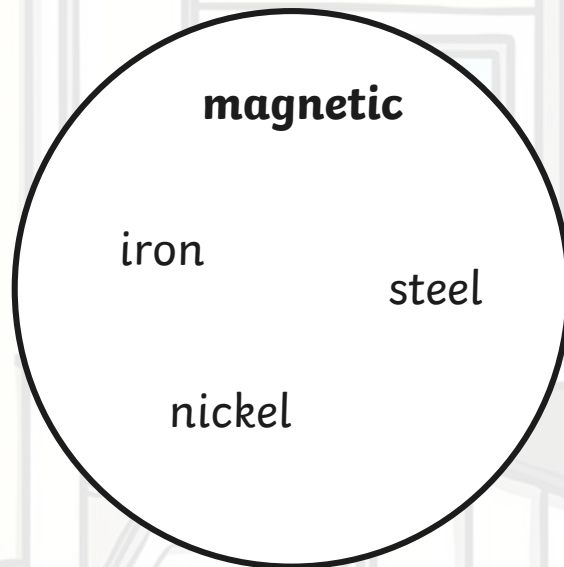
The first digit of the access code is eight.



8

Escape the Kitchen – Clue 2

Sort these materials into magnetic and non-magnetic.



There are six non-magnetic materials.

The second digit of the access code is six.



6

Escape the Kitchen – Clue 3

Read these statements about dissolving.

	true	false
Dissolved particles cannot be seen because they have mixed with the water.	✓	
Substances which dissolve are called soluble.	✓	
Only white powder dissolves.		✗
Solids can't dissolve.		✗
Dissolved substances disappear.		✗
It is possible to get dissolved substances back.	✓	
The hotter the water, the quicker solids dissolve.	✓	
The bigger the soluble particle, the faster it dissolves.		✗

There are four true statements.

The third digit of the access code is four.



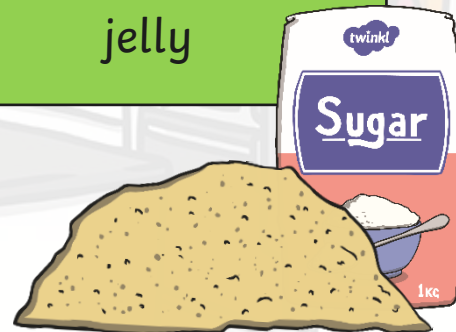
4

Escape the Kitchen – Clue 4

Which of these substances will dissolve in water?

flour	sugar	salt
sand	rice	coffee granules
gravy powder	pepper	jelly

There are five substances which dissolve in water.



The fourth digit of the access code is five.



5

Escape the Kitchen – Clue 5

Look at these changes. Which are reversible and which are irreversible?

	Reversible	Irreversible
Frying an egg		✓
Freezing water	✓	
Baking a mixture of flour, sugar, butter and eggs		✓
Melting chocolate	✓	
Making toast		✓
Burning wood		✓
Mixing vinegar and bicarbonate of soda		✓
Melting wax	✓	

There are five irreversible changes.

The fifth digit of the access code is five.



5

Escape the Kitchen – Clue 6

Read the clues about separating mixtures

Separating salt from a solution.

e	v	a	p	o	r	a	t	i	o	n
---	---	---	---	---	---	---	---	---	---	---

Separating iron and steel from plastic and paper.

m	a	g	n	e	t	i	s	m
---	---	---	---	---	---	---	---	---

Separating an insoluble solid and a liquid.

f	i	l	t	e	r	i	n	g
---	---	---	---	---	---	---	---	---

Separating a mixture of different-sized solids.

s	i	e	v	i	n	g
---	---	---	---	---	---	---

When the letters n,n,i,e are rearranged, they spell 'nine'.

The sixth digit of the access code is nine.



9

Escape the Kitchen – Clue 7

Which option shows all the variables they should keep the same?

1. The amount of salt, the amount of water, the number of times they stir the mixture, the time they leave the mixture for.
2. The amount of salt, the temperature of the water, the number of times they stir the mixture, the time they leave the mixture for.
3. The amount of salt, the amount of water, the number of times they stir the mixture.
4. The amount of salt, the number of times they stir the mixture, the time they leave the mixture for.



Option one is correct.

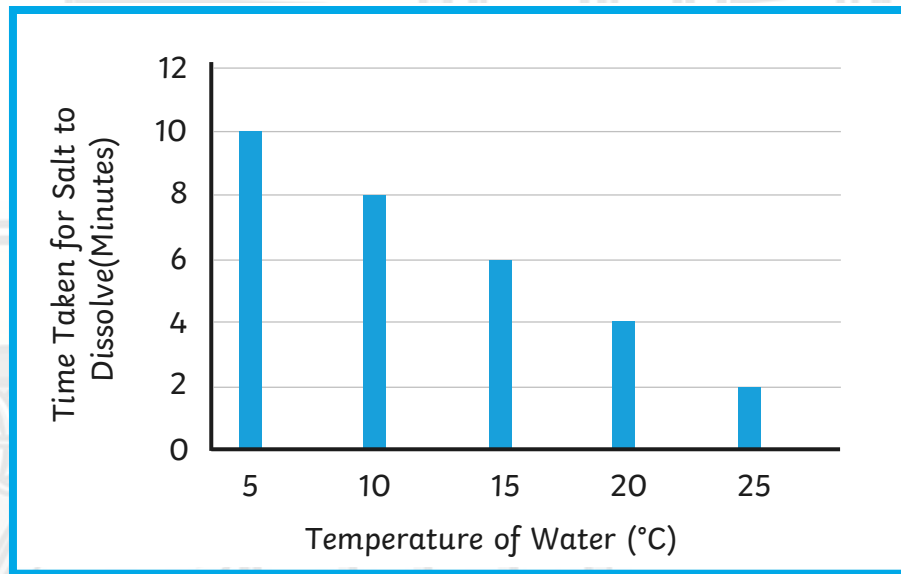
The seventh digit of the access code is one.



1

Escape the Kitchen – Clue 8

Class 5 did an experiment to find out whether the temperature of water affected how quickly salt would dissolve. They put their results in a table.



At 5°C, the salt took 10 minutes to dissolve, at 25°C it took 2 minutes to dissolve. The difference is 8.

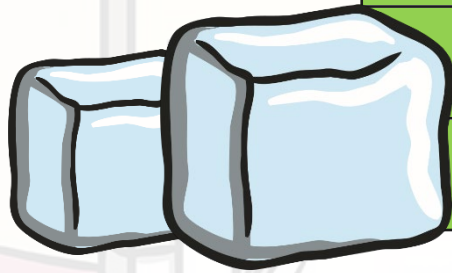
The eighth digit of the access code is eight.



8

Escape the Kitchen – Clue 9

Look at these changes in state. How many happen because of an increase of heat?



Water becoming a solid

Chocolate melting

Water becoming a gas

Ice becoming a liquid

Wax melting

There are four changes of state above that are due to heating.

The ninth digit of the access code is four.



4

Escape the Kitchen – Clue 10

Electricity can travel easily through electrical conductors, but some materials do not let electricity pass through them. These are known as electrical insulators.

pure water	drinks can	paper	2p coin
rubber gloves	glass	copper pipes	gold ring
wooden plank	steel post	sea water	a diamond

There are six electrical insulators.



The tenth digit of the access code is six.



6

Escape the Kitchen

Now you've solved all the clues, it's time to use the access code and escape the kitchen!

Digit 1	Digit 2	Digit 3	Digit 4	Digit 5	Digit 6	Digit 7	Digit 8	Digit 9	Digit 10
8	6	4	5	5	9	1	8	4	6

