Clue for Digit 1

Match these properties with their definitions.

flexible

magnetic

will easily catch fire and burn quickly

is able to soak up liquid easily

solid, firm and rigid; not easily broken, scratched or pierced

permeable

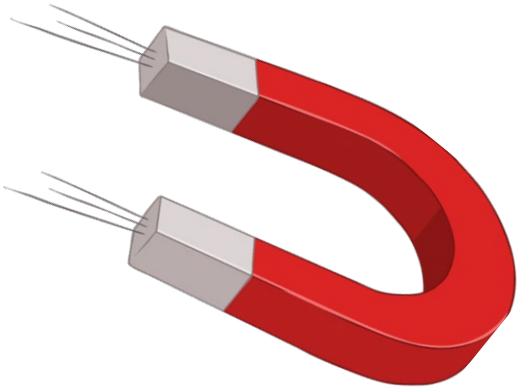
is attracted to magnets

flammable

will let some light pass through it

insulating

hard



absorbent

translucent

will stop energy, such as electricity or heat, from transferring through it

will allow liquids and gases to pass through it

There is one word left without a definition. The number of letters in this word is the first digit of the access code.

Clue for Digit 2

Sort these materials into magnetic and non-magnetic.

magnetic

non-magnetic

plastic

wood

glass

steel

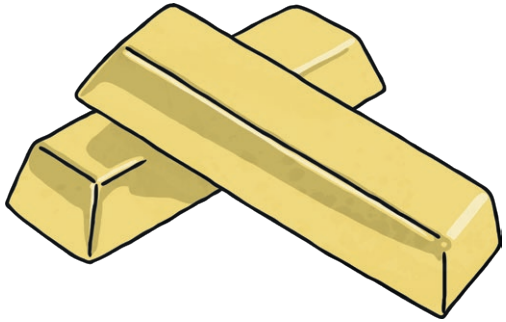
gold

iron

aluminium

copper

nickel

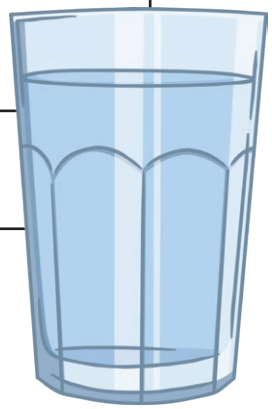


The number of non-magnetic materials is the second digit of the access code.

Clue for Digit 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 in it.		
The bigger the soluble particle, the faster it dissolves.		

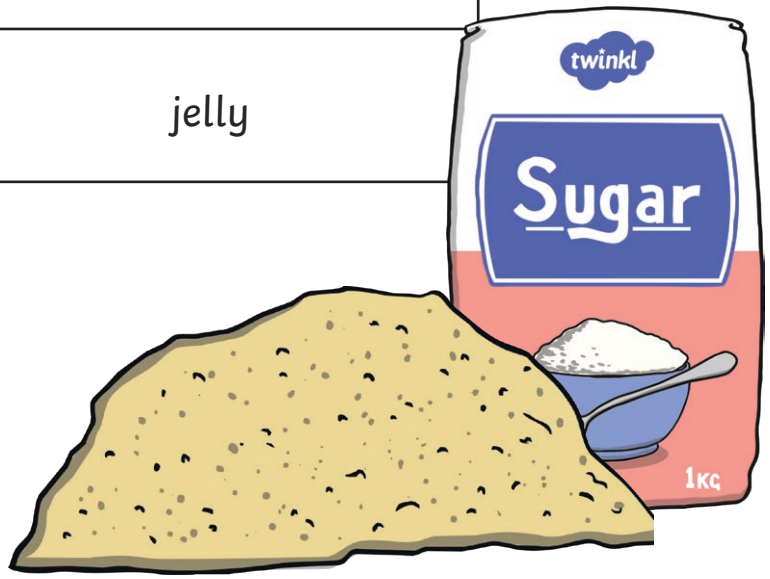


The number of true statements is the third digit of the access code.

Clue for Digit 4

Which of these substances will dissolve in water?

flour	sugar	salt
sand	rice	coffee granules
gravy powder	pepper	jelly

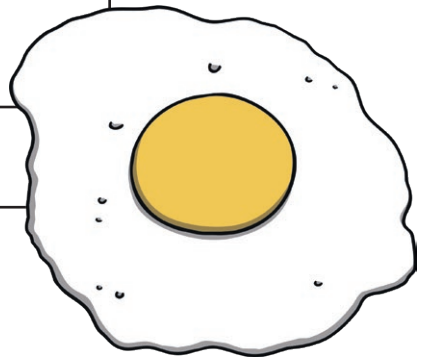


The number of substances that will dissolve in water is the fourth digit of the access code.

Clue for Digit 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		



The number of irreversible changes is the fifth digit of the access code.

Clue for Digit 6

Read the clues about separating mixtures.

Separating salt from a solution.

Separating iron and steel from paper and plastic materials.

Separating an insoluble solid and a liquid.

Separating a mixture of different-sized solids.

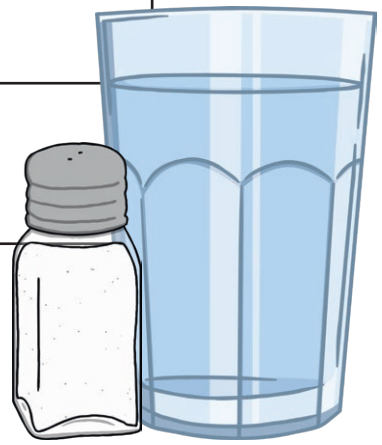
Rearrange the letters in the orange boxes to spell the sixth digit for the access code.

Clue for Digit 7

Class 5 are carrying out an experiment to find out whether the temperature of water affects how quickly salt will dissolve.

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

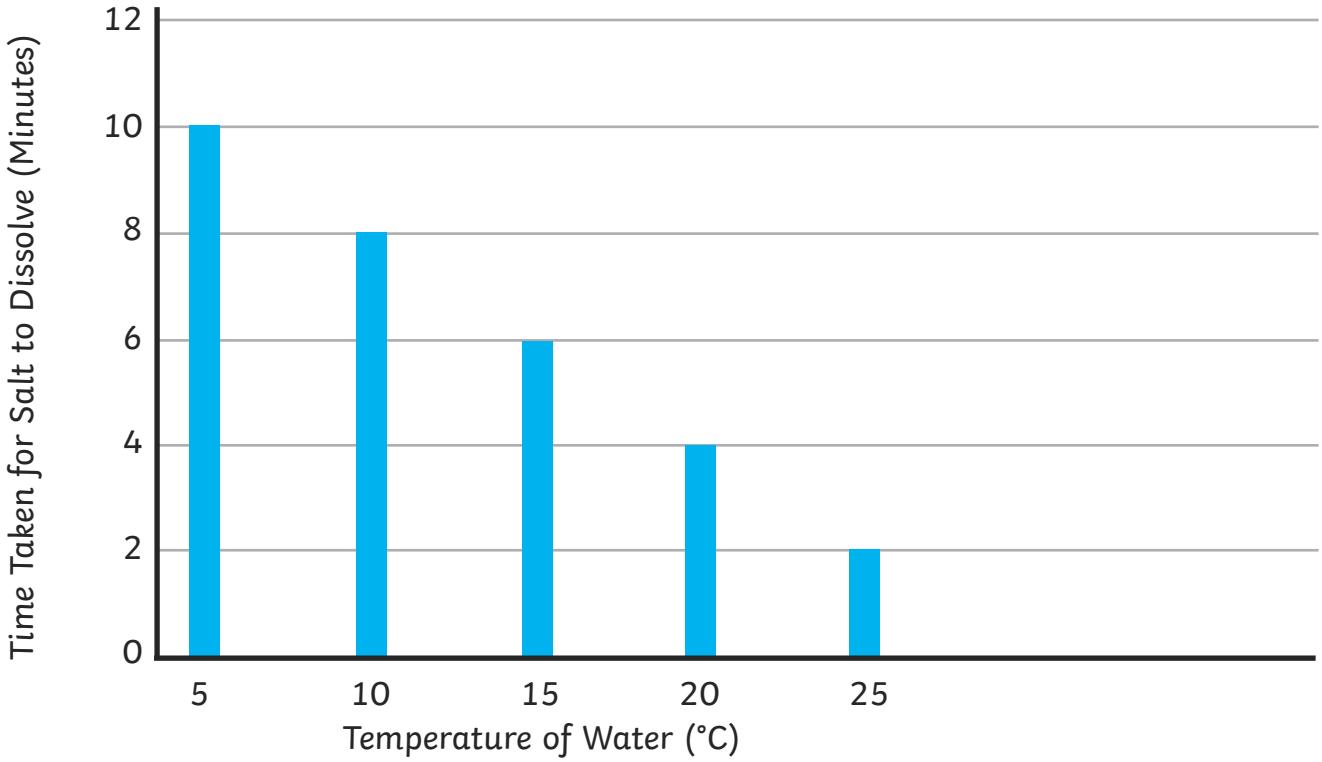
1. The amount of salt, the amount of water, the number of times they stir the mixture, the time they leave the mixture for.
2. The amount of salt, the temperature of the water, the number of times they stir the mixture, the time they leave the mixture for.
3. The amount of salt, the amount of water,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



The number of the correct option is the seventh digit for the access code.

Clue for Digit 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 graph.

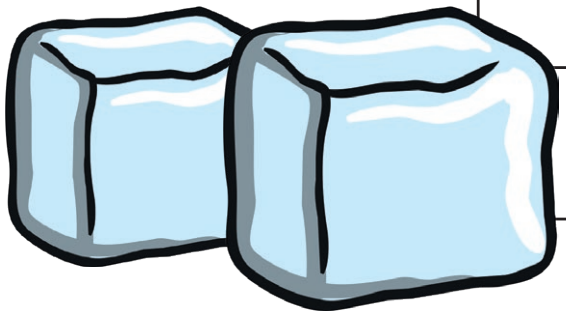


The difference in the time taken for the salt to dissolve at 5°C and 25°C is the eighth digit of the access code.

Clue for Digit 9

Look at these changes in state.

Water becoming a solid
Chocolate melting
Water becoming a gas
Ice becoming a liquid
Wax melting

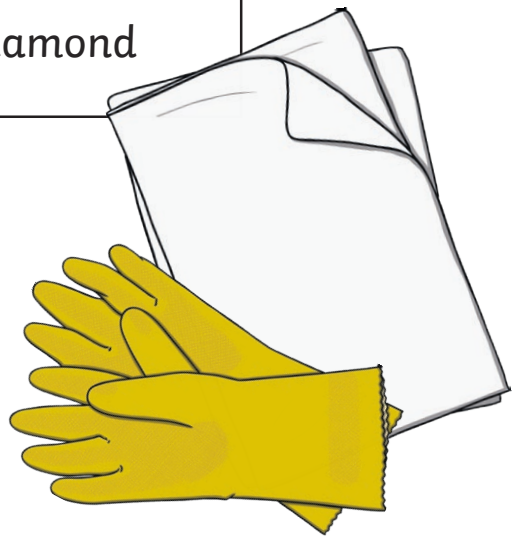


How many of these changes happen because of an increase of heat? This number is the ninth digit of the access code.

Clue for Digit 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



The number of electrical insulators is the tenth digit of the access code.