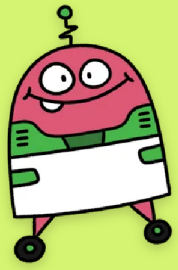
SCIENCE · MIXTURES AND CHANGES · GRADES 2–5

Will It Dissolve?

An experiment: predict and test whether seven things dissolve in water.

Name: _____ **Date:** _____



Do it: fill seven clear cups with warm water. Stir one spoonful of a different thing into each cup for one minute, then look. If you cannot see it any more, it **dissolved**.

What I stirred in	I predict it will dissolve: yes or no	Did it dissolve?
salt		
sugar		
sand		
pepper		
flour		
drink mix powder		
rice		

Where did the things that dissolved go?

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SCIENCE · MIXTURES AND CHANGES · GRADES 3–5

Mixture or Solution?

Sort ten examples into mixtures and solutions.

Name: _____ **Date:** _____



In a **mixture**, you can still see the different parts and pick them apart. A **solution** is a mixture where one thing dissolves into another so evenly you cannot see it any more.

Write each one in the right column.

lemonade | salt water | drink mix in water | a salad | sand and water | cereal and milk | beads and buttons | sugar stirred into tea | vinegar | trail mix

Mixture	Solution

How could you get the salt back out of salt water?

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SCIENCE · MIXTURES AND CHANGES · GRADES 3–5

Physical or Chemical Change?

Sort ten changes into physical changes and chemical changes, then explain one.



Name: _____ **Date:** _____

A **physical change** changes how something looks, but it is still the same stuff, like cutting paper. A **chemical change** makes a brand new substance, like a cake baking.

Write each change in the right column.

burning wood · baking a cake · frying an egg · melting ice · crushing a can · dissolving sugar in water · folding a shirt · a bike chain rusting · a banana turning brown · cutting paper

Physical change	Chemical change

Pick one chemical change. How do you know a new substance was made?

_____

_____

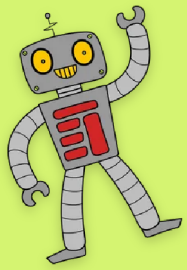
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SCIENCE · MIXTURES AND CHANGES · GRADES 3–5

Separate a Mixture

Match five tools to how they separate a mix of sand, salt, rice and paper clips, then put the steps in order.

Name: _____ **Date:** _____



Someone mixed **sand, salt, rice and steel paper clips** in one jar. Scientists separate mixtures by using what is different about each part.

1. Draw a line from each tool to its job.

magnet ●	● catches the rice and lets the sand and salt fall through
strainer ●	● pulls out the steel paper clips
water ●	● catches the sand and lets the salty water through
coffee filter ●	● dries up the water and leaves the salt behind
sunny window ●	● dissolves the salt

2. Number the steps in order.

☐ Stir the sand and salt into water.

☐ Use the magnet to pull out the paper clips.

☐ Set the salty water in the sun until the water is gone.

☐ Pour the rest through a strainer to catch the rice.

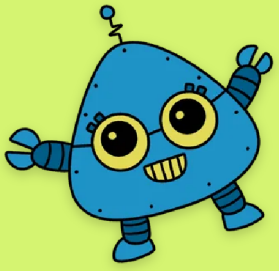
☐ Pour the water through a coffee filter to catch the sand.

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SCIENCE · MIXTURES AND CHANGES · GRADES 4–5

Chemistry Words

Match mixture, solution, dissolve, physical change, chemical change and evaporate to their meanings.



Name: _____ **Date:** _____

Draw a line from each word to its meaning.

mixture	to break up and spread out in a liquid
solution	two or more things put together that keep their own properties
dissolve	a change that makes a new substance
physical change	a mixture where one thing dissolves evenly in another
chemical change	to change from a liquid into a gas
evaporate	a change in size, shape or state, not a new substance

Use two of the words in a sentence about cooking.

_____

_____

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ANSWER KEY · MIXTURES AND CHANGES · GRADES 3–5

Answer Key: Mixture or Solution?

Answers for grown-ups. Some questions have more than one good answer.



In a **mixture**, you can still see the different parts and pick them apart. A **solution** is a mixture where one thing dissolves into another so evenly you cannot see it any more.

Write each one in the right column.

lemonade · salt water · drink mix in water · a salad · sand and water · cereal and milk · beads and buttons · sugar stirred into tea · vinegar · trail mix

Mixture	Solution
trail mix	salt water
a salad	lemonade
sand and water	sugar stirred into tea
cereal and milk	drink mix in water
beads and buttons	vinegar

How could you get the salt back out of salt water?

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ANSWER KEY · MIXTURES AND CHANGES · GRADES 3–5

Answer Key: Physical or Chemical Change?

Answers for grown-ups. Some questions have more than one good answer.



A **physical change** changes how something looks, but it is still the same stuff, like cutting paper. A **chemical change** makes a brand new substance, like a cake baking.

Write each change in the right column.

burning wood · baking a cake · frying an egg · melting ice · crushing a can · dissolving sugar in water · folding a shirt · a bike chain rusting · a banana turning brown · cutting paper

Physical change	Chemical change
cutting paper	baking a cake
melting ice	burning wood
crushing a can	a bike chain rusting
dissolving sugar in water	frying an egg
folding a shirt	a banana turning brown

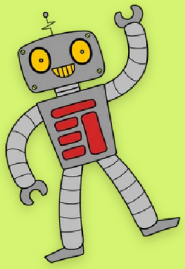
Pick one chemical change. How do you know a new substance was made?

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ANSWER KEY · MIXTURES AND CHANGES · GRADES 3–5

Answer Key: Separate a Mixture

Answers for grown-ups. Some questions have more than one good answer.



Someone mixed **sand, salt, rice and steel paper clips** in one jar. Scientists separate mixtures by using what is different about each part.

1. Draw a line from each tool to its job.

magnet	pulls out the steel paper clips
strainer	catches the rice and lets the sand and salt fall through
water	dissolves the salt
coffee filter	catches the sand and lets the salty water through
sunny window	dries up the water and leaves the salt behind

2. Number the steps in order.

3 Stir the sand and salt into water.

1 Use the magnet to pull out the paper clips.

5 Set the salty water in the sun until the water is gone.

2 Pour the rest through a strainer to catch the rice.

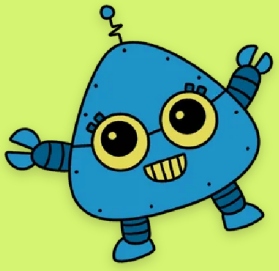
4 Pour the water through a coffee filter to catch the sand.

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ANSWER KEY · MIXTURES AND CHANGES · GRADES 4–5

Answer Key: Chemistry Words

Answers for grown-ups. Some questions have more than one good answer.



Draw a line from each word to its meaning.

mixture	two or more things put together that keep their own properties
solution	a mixture where one thing dissolves evenly in another
dissolve	to break up and spread out in a liquid
physical change	a change in size, shape or state, not a new substance
chemical change	a change that makes a new substance
evaporate	to change from a liquid into a gas

Use two of the words in a sentence about cooking.

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