























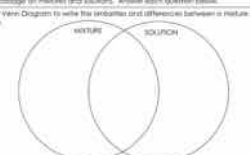














PAIRED TEXTS

Science Passages, Activities, and Lab

<h3>Mixtures and Solutions</h3> <h4>Informational Reading Passage</h4> <p>Scientists that study chemistry are called chemists. They put things together and study what happens. It's fun to question and wonder about things. That's what science is. Looking around the world with curiosity is a good thing. When it comes to chemistry, most of us have done experiments. Dropping rocks into a bucket of water to see what would happen, or adding ingredients together from the kitchen makes us scientific. Mixing things together is a part of chemistry, and this kind of science is everywhere. There are mixtures and there are solutions. Both involve being two or more substances and putting them together.</p> <p>A mixture forms when two or more substances are put together. The substances can be solids and liquids, or just solids. Mixtures keep their physical properties. When sand and water are combined, they stay the same. The sand gathers on the bottom of the water. It doesn't mix at all. The sand is still sand, and the water is still water. They aren't even completely mix together. There is no chemical reaction. Nothing burns and nothing dissolves. Mixtures can be reversed. The sand can be taken out of the water. Mixtures can be separated by hand, blowing, filtration, and evaporation. A full ball has an assortment of fruit all mixed together. If you're having something new, offer real food is a mixture and real food is a mixture. Mixtures are everywhere!</p> <p>A solution is a type of mixture. It's when one substance dissolves into another. When something dissolves, it becomes incorporated into a liquid. This one would be able to tell one substance from the other. It's a solution. Real life is a solution of water and sugar. The sugar dissolves into the water and is no longer visible, but the water is now sweet. Separation is a solution of salt and water. Some solutions can be separated, but only by evaporation. If you put a cup of salt water on a stove, the water would evaporate and leave behind the salt. Real solutions involve a lot of things, but there can be a lot of solutions. Baking is an example of a solid solution. It's a mixture of fat and copper. Or we breathe is a solution of different gases too.</p> <p>A solution is always a mixture, but a mixture is never a solution! It can be hard to tell them apart sometimes. If you have a look around outside you will see science in action. Nature is full of mixtures. The next time you make a salad or yourself if you are creating a mixture or a solution.</p>	<h3>Physical and Chemical Changes</h3> <h4>Vocabulary</h4> <p>Fill in the missing information in the chart below based on the vocabulary words in the passage.</p> <table border="1"> <tr> <th>chemist</th> <th>mixture</th> </tr> <tr> <td>Definition</td> <td>Definition</td> </tr> <tr> <td>Examples</td> <td>Examples</td> </tr> </table> <p>How this related to or can be used in your life.</p> <table border="1"> <tr> <th>solution</th> <th>dissolve</th> </tr> <tr> <td>Definition</td> <td>Definition</td> </tr> <tr> <td>Examples</td> <td>Examples</td> </tr> </table> <p>How this related to or can be used in your life.</p>	chemist	mixture	Definition	Definition	Examples	Examples	solution	dissolve	Definition	Definition	Examples	Examples	<h3>It's All About the Change</h3> <h4>Fictional Reading Passage</h4> <p>Felix looked at the recipe and then walked over to the refrigerator. She had been standing there with the door open for this last five minutes.</p> <p>"No snacks before supper. We will be eating soon enough," said Felix's mom. She found her car keys on the table along with the grocery bag and it came in.</p> <p>"I'm not hungry. I'm doing homework."</p> <p>"In the budget?"</p> <p>"Chemistry. Right now I can't do it. I have to create a solution and it makes. I just don't figure out what to do."</p> <p>Felix's mom sighed. "Can you please bring with the door shut?" She watched one and closed the refrigerator. "The milk will go warm if you're not careful."</p> <p>Felix didn't argue. She felt bad about the milk, but she was still out of ideas for her homework.</p> <p>"Mind's to do now?"</p> <p>"I need about, vegetable soup, and salt for dinner." She pulled items from the bag and started filling the pot. "Why don't you help by making some sauce?"</p> <p>Felix watched her mother chopping celery, tomatoes, cucumbers, and carrots. She added the entire pile into a bowl of lettuce. "Kevin, do you know what you're doing?"</p> <p>"Making a salad?"</p> <p>"You're a chemist. You're creating a mixture. And you know what?" Felix was getting excited. "The soup is a mixture too. All these ingredients are added together, but they keep the same properties."</p> <p>Felix's mom rolled her eyes. "Good money, can you make the juice now?"</p> <p>Felix jumped on and down, then she ran to the cupboard for the juice mix. She dumped a package of the sugar crystals into a jug then added water. "Watch this, mom."</p> <p>She both closed as the water turned bright red. Felix gave it a few sips until the crystals dissolved then she opened with excitement.</p> <p>"Get the glass," said her mother with a grin. "Science."</p> <p>"You got it. I just made it solution. The sugar and water mixed until it became something different. I can't separate the sugar from the water now. It's a chemical change!"</p> <p>"You know what else is amazing? An empty dishwasher!"</p> <p>"That's how I have to make the job. Remember, you wanted me to do my homework and I just realized I'm in a bit of a hurry."</p> <p>Felix's mom rolled her eyes. "You got me there!"</p>	<h3>Mixtures and Solutions</h3> <h4>Reading Comprehension – Making Connections</h4> <p>Read the passage. Use the graphic organizer to make connections to the text.</p> <table border="1"> <tr> <td>A connection I made (daddy reading)...</td> <td>Helped me understand the text because...</td> </tr> <tr> <td>A connection I made (daddy reading)...</td> <td>Helped me understand the text because...</td> </tr> </table>	A connection I made (daddy reading)...	Helped me understand the text because...	A connection I made (daddy reading)...	Helped me understand the text because...	<h3>Mixtures and Solutions</h3> <h4>KWL</h4> <p>Use this page before, during, and after you read about mixtures and solutions.</p> <table border="1"> <tr> <th>What I know about mixtures and solutions</th> <th>What I want to know about mixtures and solutions</th> <th>What I learned about mixtures and solutions</th> </tr> <tr> <td>K</td> <td>W</td> <td>L</td> </tr> </table>	What I know about mixtures and solutions	What I want to know about mixtures and solutions	What I learned about mixtures and solutions	K	W	L
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<h3>Mixtures and Solutions</h3> <p>Each box contains a picture, name of either a mixture or a solution. Cut out each box and place the image in the correct column.</p> <table border="1"> <tr> <th>MIXTURES</th> <th>SOLUTIONS</th> </tr> <tr> <td>  cereal  lemonade  soil water  ice and beans  salad  hot chocolate  trail mix  hand soap  soda  beef stew  laundry detergent  colored beads </td> <td></td> </tr> </table>	MIXTURES	SOLUTIONS	 cereal  lemonade  soil water  ice and beans  salad  hot chocolate  trail mix  hand soap  soda  beef stew  laundry detergent  colored beads		<h3>Mixtures and Solutions</h3> <h4>Short Answer</h4> <p>Read the passage on mixtures and solutions. Answer each question below.</p> <ol style="list-style-type: none"> Use the Venn Diagram to write the similarities and differences between a mixture and a solution.  <ol style="list-style-type: none"> Describe how you could separate a solution of salt water. Prefered you use mixing or real for your honey. List 3 items you would name that are mixtures and 3 items you would name that are solutions. Don't forget to list the ingredients for each item. 	<h3>Physical and Chemical Changes Lab</h3> <h4>Teacher Notes</h4> <h4>SUPPLY LIST</h4> <ul style="list-style-type: none"> 1 clear plastic cup 1 measuring spoon (tablespoon) 1 measuring cup 1 spoon 1 water 1 coffee grounds (not instant) 1 spoon 1 bowl 1 spoon 1 water 1 brown sugar 1 coffee filter <h4>TIPS</h4> <ul style="list-style-type: none"> This lab can be set up as stations that the students rotate through or you can put the students in small groups with all of the materials necessary to do the lab. This would work well with either real or blue paint (ask the students can see the change is color when salt is added that students make together to filter into a cup. Make sure they pour slowly so they don't spill. You may want to make sure that students make together to filter into a cup. Make sure they pour slowly so they don't spill. <h4>TEACHER DIRECTIONS</h4> <ul style="list-style-type: none"> Begin by setting up the stations. Station 1 - 2 cups, measuring spoon, measuring cup, spoon, water, coffee grounds, filter. Station 2 - 2 cups, measuring spoon, measuring cup, spoon, water, spoon, blue, filter. Station 3 - 2 cups, measuring spoon, measuring cup, spoon, water, spoon, blue, filter. Station 4 - 2 cups, measuring spoon, measuring cup, spoon, water, spoon, blue, filter. Station 5 - 2 cups, measuring spoon, measuring cup, spoon, water, spoon, blue, filter. Put students into small groups of 2 or 3 to make through the stations together. Ask the students to take the lab notes. Ask students to clean up after each station or the next group doesn't see the results. 	<h3>Mixtures and Solutions Labs</h3> <p>You will be moving through a series of science stations to see whether or not the material provided will create a mixture or solution.</p> <h4>STATION 1 – COFFEE GROUNDS</h4> <p>Supplies:</p> <p>2 plastic cups, tablespoon, water, measuring cup, coffee grounds, spoon, filter</p> <ol style="list-style-type: none"> Pour 1 cup of water into one plastic cup. Add 1 tablespoon of coffee grounds and put it in the cup. Stir. Draw what you see in the cup below. Have one group member hold a filter over an empty cup. Slowly pour the mixture or solution into the filter over the cup. Draw what you see in the filter and cup. <p>DEAR WHAT YOU SEE IN THE CUP</p> <p>DEAR WHAT YOU SEE IN THE FILTER AND CUP</p> <p>Is this a mixture or a solution? How do you know?</p>	<h3>Mixtures and Solutions Labs</h3> <h4>STATION 2 – CORN STARCH</h4> <p>Supplies:</p> <p>2 plastic cups, tablespoon, water, measuring cup, corn starch, spoon, filter</p> <ol style="list-style-type: none"> Pour 1 cup of water into one plastic cup. Add 1 tablespoon of corn starch and put it in the cup. Stir. Draw what you see in the cup below. Have one group member hold a filter over an empty cup. Slowly pour the mixture or solution into the filter over the cup. Draw what you see in the filter and cup. <p>DEAR WHAT YOU SEE IN THE CUP</p> <p>DEAR WHAT YOU SEE IN THE FILTER AND CUP</p> <p>Is this a mixture or a solution? How do you know?</p>																		
MIXTURES	SOLUTIONS																									
 cereal  lemonade  soil water  ice and beans  salad  hot chocolate  trail mix  hand soap  soda  beef stew  laundry detergent  colored beads																										

MIXTURES AND SOLUTIONS

Mixtures and Solutions Informational Reading Passage

Scientists that study chemistry are called **chemists**. They put things together and study what happens. It's fun to question and wonder about things. That's what science is. Looking around at the world with curiosity is a good thing. When it comes to chemistry, most of us have done experiments. Dropping rocks into a bucket of water to see what would happen, or adding ingredients together from the kitchen makes us scientists! Mixing things together is a form of chemistry, and this kind of science is everywhere. There are mixtures and there are solutions. Both involve taking two or more substances and putting them together. Each has a different result.

A **mixture** forms when two or more substances are put together. The substances can be solids and liquids, or just solids. Mixtures keep their physical properties. When sand and water are combined, they stay the same. The sand gathers at the bottom of the water. It doesn't mix all the way through. The sand is still sand. The water is still water. They won't ever completely mix together.



Fruit salad is an example of a mixture. Each piece of fruit can be easily separated.

There is no chemical reaction. Nothing burns and nothing dissolves. Mixtures can be reversed. The sand can be taken out of the water. Mixtures can be separated by hand, dissolving, filtration, and evaporation. A fruit salad has an assortment of fruit all mixed together. It doesn't turn into something new. Glitter nail polish is a mixture and beef stew is a mixture. Mixtures are everywhere!



Salt water is an example of a solution because the salt is completely dissolved in the water.

A **solution** is a type of mixture. It is when one substance **dissolves** into another. When something dissolves, it becomes incorporated into a liquid. No one would be able to tell one substance from the other in a solution. Kool-Aid is a solution of water and sugar. The sugar dissolves into the water and is no longer visible, but the water is now sweet. Seawater is a solution of salt and water. Some solutions can be separated, but only by evaporation. If set out a cup of salt water for several days, the water would evaporate and leave behind the salt. Most solutions involve a solid dissolving into a liquid, but there can be all kinds of solutions. Bronze is an example of a solid solution. It is a mixture of tin and copper. The air we breathe is a solution of different gasses too!

A solution is always a mixture, but a mixture is never a solution! It can be hard to tell them apart sometimes. If you take a look around outside you will see science in action. Nature is full of mixtures. The next time you make a salad ask yourself if you are creating a mixture or a solution.

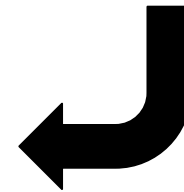
Physical and Chemical Changes Vocabulary

Fill in the missing information in the chart below based off the vocabulary words in the passage.

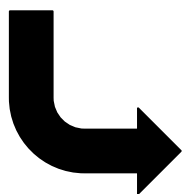
chemist		mixture	
Definition	Examples	Definition	Examples
How this related to or can be used in your life.		How this related to or can be used in your life.	

solution		dissolve	
Definition	Examples	Definition	Examples
How this related to or can be used in your life.		How this related to or can be used in your life.	

Informational
passage on
mixtures and
solutions with a
vocabulary
activity.



Fictional
passage on
mixtures and
solutions with a
reading
comprehension
activity.



It's All About the Change Fictional Reading Passage

Polly looked at her notes and then walked over to the refrigerator. She had been standing there with the door open for the last five minutes.

"No snacks before supper. We will be eating soon enough," said Polly's mom. She tossed her car keys on the table along with the grocery bag she'd carried in.

"I'm not hungry, I'm doing homework."

"In the fridge?"

"Chemistry. Right now I am a chemist. I have to create a solution and a mixture. I just can't figure out what to use."

Polly's mom sighed. "Can you please think with the door shut?" She reached over and closed the refrigerator. "The milk will go warm if you're not careful."

Polly didn't argue. She hated warm milk, but she was still out of ideas for her homework.

"What's for dinner?"

"Tossed salad, vegetable soup, and Jell-O for dessert." She pulled items from the bag and started fixing the salad. "Why don't you help by making some juice?"

Polly watched her mother chopping celery, tomatoes, cucumbers, and carrots. She added the entire pile into a bowl of lettuce. "Mom, do you know what you're doing?"

"Making a salad?"

"You're a chemist. You're creating a mixture. And you know what?" Polly was getting excited. "The soup is a mixture too! All these ingredients are added together, but they keep the same properties."

Polly's mom rolled her eyes. "Great honey, can you make the juice now?"

Polly jumped up and down, then she ran to the cupboard for the juice mix. She dumped a package of the sugar crystals into a jug then added water. "Watch this, Mom."

They both stared as the water turned bright red. Polly gave it a few stirs until all the crystals dissolved then she squealed with excitement.

"Let me guess," said her mother with a smile. "Science."

"You got it, I just made a solution. The sugar and water mixed until it became something different. I can't separate the sugar from the water now. Isn't science amazing?"

"You know what else is amazing? An empty dishwasher!"

"Not now, Mom! I have to make the Jell-O. Remember, you wanted me to finish my homework and I just realized Jello-O is a solution!"

Polly's mom rolled her eyes. "You got me there!"

Mixtures and Solutions

Reading Comprehension – Making Connections













Read the passage. Use the graphic organizer to make connections to the text.

A connection I made <u>during</u> reading...	Helped me understand the text because...
A connection I made <u>during</u> reading...	Helped me understand the text because...

Three mixtures and solutions pages to reinforce the reading passages.

Mixtures and Solutions

Each box contains a picture example of either a mixture or a solution. Cut out each box and place the image in the correct column.

MIXTURES		SOLUTIONS	
			
			
			

Mixtures and Solutions

KWL

Use this page before, during, and after you learn about mixtures and solutions.

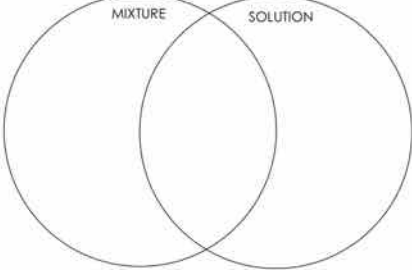
What I know about mixtures and solutions K	What I want to know about mixtures and solutions W	What I learned about mixtures and solutions L

Mixtures and Solutions

Short Answer

Read the passage on mixtures and solutions. Answer each question below.

- Use the Venn Diagram to write the similarities and differences between a mixture and solution.


- Describe how you could separate a solution of salt water.
- Pretend you are making a meal for your family. List 2 items you would serve that are mixtures and 2 items you would serve that are a solution. Don't forget to list the ingredients for each item.

Science Lab

Students rotate through 6 stations to determine whether each station demonstrates a mixture or a solution.

Physical and Chemical Changes Lab Teacher Notes

SUPPLY LIST

- clear plastic cups
- measuring spoon (tablespoon)
- measuring cup
- spoon
- water
- coffee grounds (not instant)
- corn starch
- flour
- sports drink
- oatmeal
- brown sugar
- coffee filter

TIPS

- The lab can be set up as stations that the students rotate through or you can put the students in small groups with all of the materials necessary to do the lab.
- This would work well with either red or blue sports drink so the students can see the change in color when added to the water.
- You may want to make sure that students work together to filter out each mixture or solution. One student can pour while another holds the filter above a cup. Make sure they pour slowly so there are no spills.

TEACHER DIRECTIONS

- Begin by setting up the stations.
 - Station 1 – 2 cups, measuring spoon, measuring cup, spoon, water, coffee grounds, filter
 - Station 2 – 2 cups, measuring spoon, measuring cup, spoon, water, corn starch, filter
 - Station 3 – 2 cups, measuring spoon, measuring cup, spoon, water, flour, filter
 - Station 4 – 2 cups, measuring spoon, measuring cup, spoon, water, sports drink, filter
 - Station 5 – 2 cups, measuring spoon, measuring cup, spoon, water, oatmeal, filter
 - Station 6 – 2 cups, measuring spoon, measuring cup, spoon, water, brown sugar, filter
- Put students into small groups of 3 or 4 to move through the stations together.
- Go over the instructions on the lab sheet.
- Ask students to clean up after each station so the next group doesn't see the results.

Mixtures and Solutions Labs

You will be moving through a series of six science stations to see whether or not the material provided will create a mixture or solution.

STATION 1 – COFFEE GROUNDS

Supplies:

2 plastic cups	tablespoon	water	measuring cup	coffee grounds	spoon	filter
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1. Pour $\frac{1}{2}$ cup of water into one plastic cup.
2. Measure 1 tablespoon of coffee grounds and put it in the cup.
3. Stir.
4. Draw what you see in the cup below.
5. Have one group member hold a filter over an empty cup.
6. Slowly pour the mixture or solution into the filter over the cup.
7. Draw what you see in the filter and cup.

DRAW WHAT YOU SEE IN THE CUP

DRAW WHAT YOU SEE IN THE FILTER AND CUP

Is this a mixture or a solution? How do you know?

Mixtures and Solutions Labs

STATION 2 – CORN STARCH

Supplies:

2 plastic cups	tablespoon	water	measuring cup	corn starch	spoon	filter
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1. Pour $\frac{1}{2}$ cup of water into one plastic cup.
2. Measure 1 tablespoon of corn starch and put it in the cup.
3. Stir.
4. Draw what you see in the cup below.
5. Have one group member hold a filter over an empty cup.
6. Slowly pour the mixture or solution into the filter over the cup.
7. Draw what you see in the filter and cup.

DRAW WHAT YOU SEE IN THE CUP

DRAW WHAT YOU SEE IN THE FILTER AND CUP

Is this a mixture or a solution? How do you know?

Mixtures and Solutions Labs

STATION 3 – FLOUR

Supplies:

2 plastic cups	tablespoon	water	measuring cup	flour	spoon	filter
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1. Pour $\frac{1}{2}$ cup of water into one plastic cup.
2. Measure 1 tablespoon of flour and put it in the cup.
3. Stir.
4. Draw what you see in the cup below.
5. Have one group member hold a filter over an empty cup.
6. Slowly pour the mixture or solution into the filter over the cup.
7. Draw what you see in the filter and cup.

DRAW WHAT YOU SEE IN THE CUP

DRAW WHAT YOU SEE IN THE FILTER AND CUP

Is this a mixture or a solution? How do you know?

Mixtures and Solutions Labs

STATION 4 – SPORTS DRINK

Supplies:

2 plastic cups	tablespoon	water	measuring cup	sports drink	spoon	filter
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1. Pour $\frac{1}{2}$ cup of water into one plastic cup.
2. Measure 1 tablespoon of sports drink and put it in the cup.
3. Stir.
4. Draw what you see in the cup below.
5. Have one group member hold a filter over an empty cup.
6. Slowly pour the mixture or solution into the filter over the cup.
7. Draw what you see in the filter and cup.

DRAW WHAT YOU SEE IN THE CUP

DRAW WHAT YOU SEE IN THE FILTER AND CUP

Is this a mixture or a solution? How do you know?

Mixtures and Solutions Labs

STATION 5 – OATMEAL

Supplies:

2 plastic cups	tablespoon	water	measuring cup	oatmeal	spoon	filter
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1. Pour $\frac{1}{2}$ cup of water into one plastic cup.
2. Measure 1 tablespoon of oatmeal and put it in the cup.
3. Stir.
4. Draw what you see in the cup below.
5. Have one group member hold a filter over an empty cup.
6. Slowly pour the mixture or solution into the filter over the cup.
7. Draw what you see in the filter and cup.

DRAW WHAT YOU SEE IN THE CUP

DRAW WHAT YOU SEE IN THE FILTER AND CUP

Is this a mixture or a solution? How do you know?

Mixtures and Solutions Labs

STATION 6 – BROWN SUGAR

Supplies:

2 plastic cups	tablespoon	water	measuring cup	brown sugar	spoon	filter
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1. Pour $\frac{1}{2}$ cup of water into one plastic cup.
2. Measure 1 tablespoon of brown sugar and put it in the cup.
3. Stir.
4. Draw what you see in the cup below.
5. Have one group member hold a filter over an empty cup.
6. Slowly pour the mixture or solution into the filter over the cup.
7. Draw what you see in the filter and cup.

DRAW WHAT YOU SEE IN THE CUP

DRAW WHAT YOU SEE IN THE FILTER AND CUP

Is this a mixture or a solution? How do you know?
