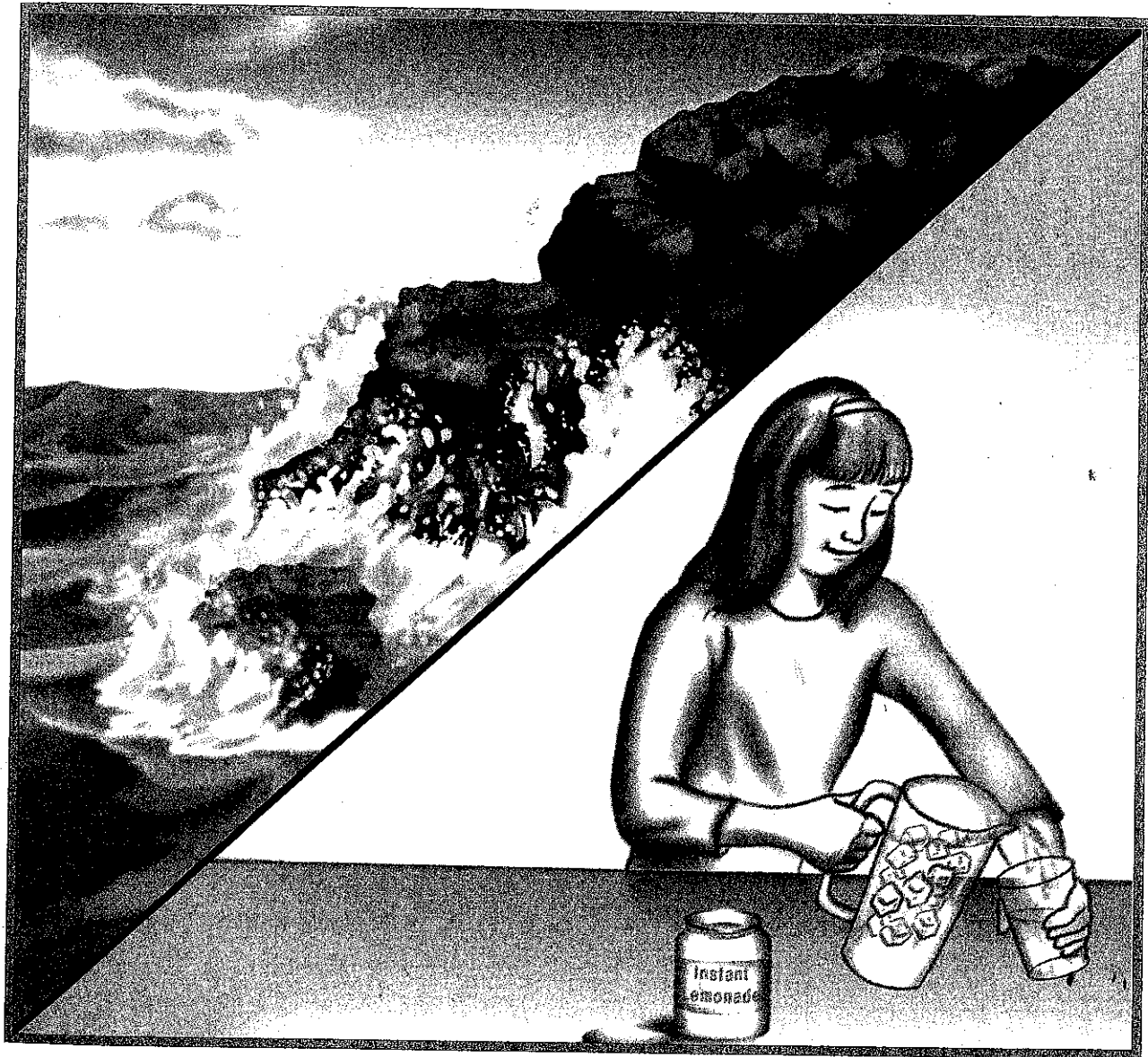


What is a solution?



KEY TERMS

solute: substance that is dissolved in a solvent

solvent: substance in which a solute dissolves

dissolve: to cause to go into solution; to become liquid

soluble: able to dissolve

solution: mixture in which one substance is evenly mixed with another substance

LESSON | What is a solution?

6

You can be a magician! Just add sugar to warm water and stir thoroughly. Abracadabra! The sugar disappears!

But is the sugar really gone? No. The sugar and water just mix together. They mix completely. The sugar just seems to disappear.

Sugar and water together form a mixture. There are several kinds of mixtures. Sugar and water form a special kind of mixture. They form a **solution**. There are many kinds of solutions.

A solution has two parts: a **solute** [SAHL-yoot] and a **solvent**. The solvent is usually a liquid. The solute is what "disappears" in the solvent. The solute may be a solid, a gas, or another liquid.

A solution is formed when the solute **dissolves**. The solute spreads out evenly throughout the solvent. The substance that dissolves is said to be **soluble** [SAHL-yoo-bul].

In the example of sugar and water, the water is the solvent. Water dissolves sugar. The sugar is the solute. We say that sugar is soluble in water.

There are many kinds of solvents. There are many kinds of solutes. There are many kinds of solutions.

Remember, a mixture is a solution only if the solute dissolves and spreads out evenly.

SOLUTIONS AND THE STATES OF MATTER

All the examples in Figures A, B, and C are solutions.

Remember, there are three states of matter—solid, liquid, and gas.

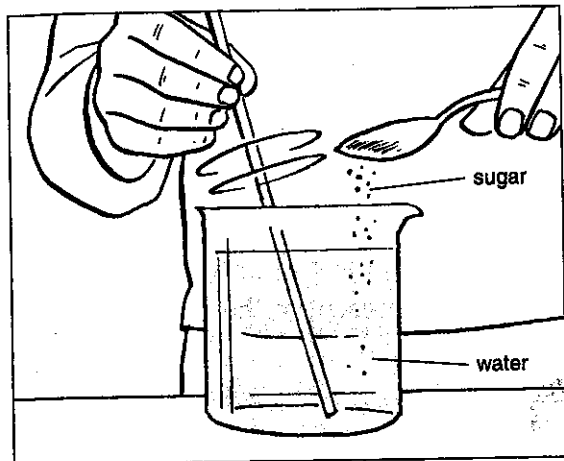


Figure A

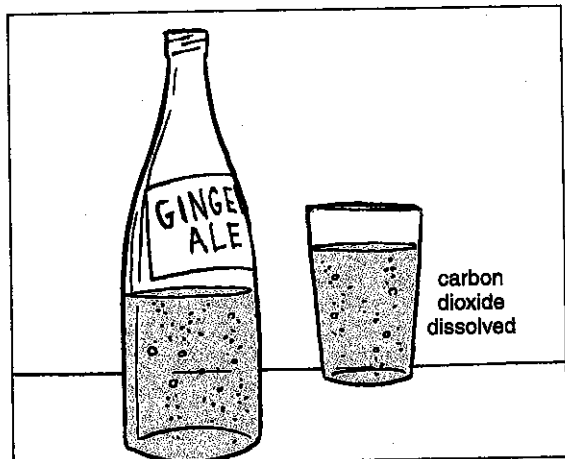


Figure B

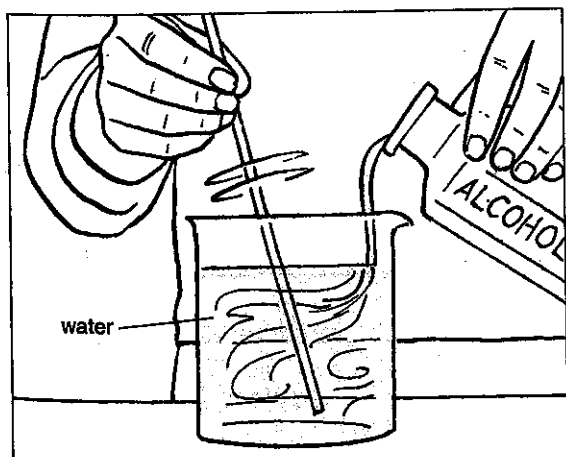


Figure C

1. Name the states of matter of the substances in this solution (Figure A).

_____ solid _____ and _____ liquid _____

2. The solute is the

_____ solid _____
solid, liquid

3. The solvent is the

_____ liquid _____
solid, liquid

4. Name the states of matter of the substances in this solution (Figure B).

_____ liquid _____ and _____ gas _____

5. The solute is the

_____ gas _____
gas, liquid

6. The solvent is the

_____ liquid _____
gas, liquid

7. Name the states of matter of the substances in this solution (Figure C).

_____ liquid _____ and _____ liquid _____

NOTE: In solutions where all the parts are liquid, we usually say the liquid present in the greater amount is the solvent and the other liquid is the solute.

COMPLETING SENTENCES

Choose the correct word or term for each statement. Write your choice in the spaces provided.

1. A liquid solution has at least one liquid
solid, liquid, gas
2. The solute in a solution can be any state of matter
must be a gas, must be a solid, can be any state of matter
3. In solutions of liquids and solids or of liquids and gases, the solvent is always the liquid
solid, liquid, gas
4. In solutions of all liquids, we usually name the liquid present in the greater
amount the solvent. greater, lesser

WHICH ARE SOLUTIONS?

Ten mixtures you know are listed below. Some are solutions, some are not. Think about each mixture, then fill in the boxes.

	Mixture	Do the substances dissolve? (Write YES or NO.)	If the substances dissolved, name the solute (or solutes).	name the solvent.
1.	sugar water	yes	sugar	water
2.	muddy water	no	—	—
3.	salty water	yes	salt	water
4.	pebbles in water	no	—	—
5.	instant coffee drink	yes	instant coffee crystals	water
6.	orange juice	no	—	—
7.	oil and water	no	—	—
8.	instant tea drink	yes	instant tea mix	water
9.	ocean water	yes	salts	water
10.	vegetable soup	no	—	—

FILL IN THE BLANK

Complete each statement using a term or terms from the list below. Write your answers in the spaces provided. Some words may be used more than once.

mixture
two
solid
soluble

solution
liquid
gas
water

sugar water
solvent
solute

1. Different things close together make up a mixture.
2. A solution is a special kind of mixture.
3. An example of a solution is sugar water.
4. A solution has two main parts.
5. One part of a solution is usually a liquid.
6. The liquid part of a solution is called the solvent.
7. The other part of a solution can be a solid, or a liquid, or a gas.
8. The part of a solution that mixes into the solvent is called the solute.
9. A solute that dissolves in a solvent is said to be soluble.
10. Sugar is soluble in water.

MATCHING

Match each term in Column A with its description in Column B. Write the correct letter in the space provided.

Column A

- | | |
|----------|-------------|
| <u>c</u> | 1. mixture |
| <u>e</u> | 2. solute |
| <u>b</u> | 3. solvent |
| <u>d</u> | 4. solution |
| <u>a</u> | 5. soluble |

Column B

- | | |
|----|--------------------------------------|
| a) | means "able to dissolve" |
| b) | liquid part of a solution |
| c) | different things close together |
| d) | a special kind of mixture |
| e) | part of a solution that is dissolved |

REACHING OUT

Be a detective! How can you tell if a mixture is a solution? We will learn more in following Lessons. Meanwhile, see if you can figure out the clues.

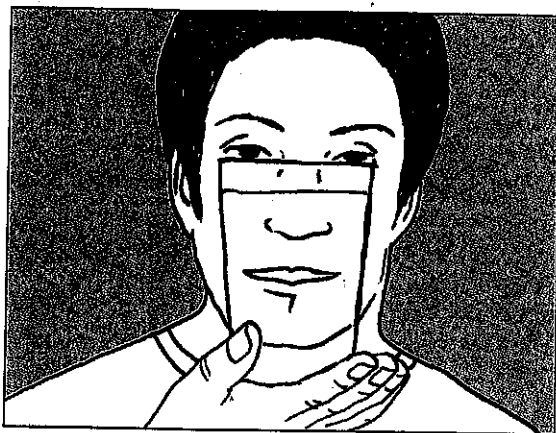


Figure D

- This is a mixture of sugar and water.
- Sugar and water is a solution.

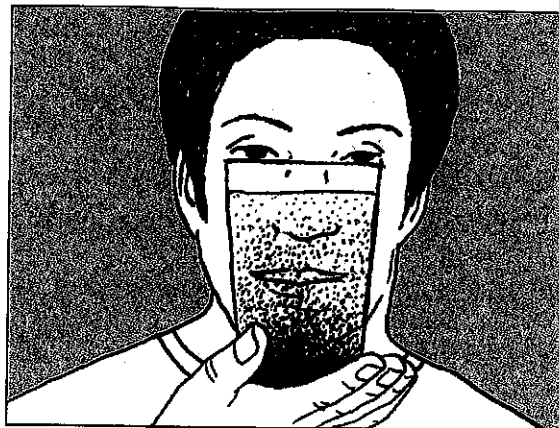


Figure E

- This is a mixture of muddy water.
- Muddy water is not a solution.

Answer YES or NO to these questions.

		Muddy Water	Sugar Water
1.	Are the parts evenly mixed?	no	yes
2.	Can you see the separate parts?	yes	no
3.	Do particles fall to the bottom?	yes	no
4.	Can you see clearly through this mixture?	no	yes

How can you tell if a mixture is a solution?

In your own words, list the clues.

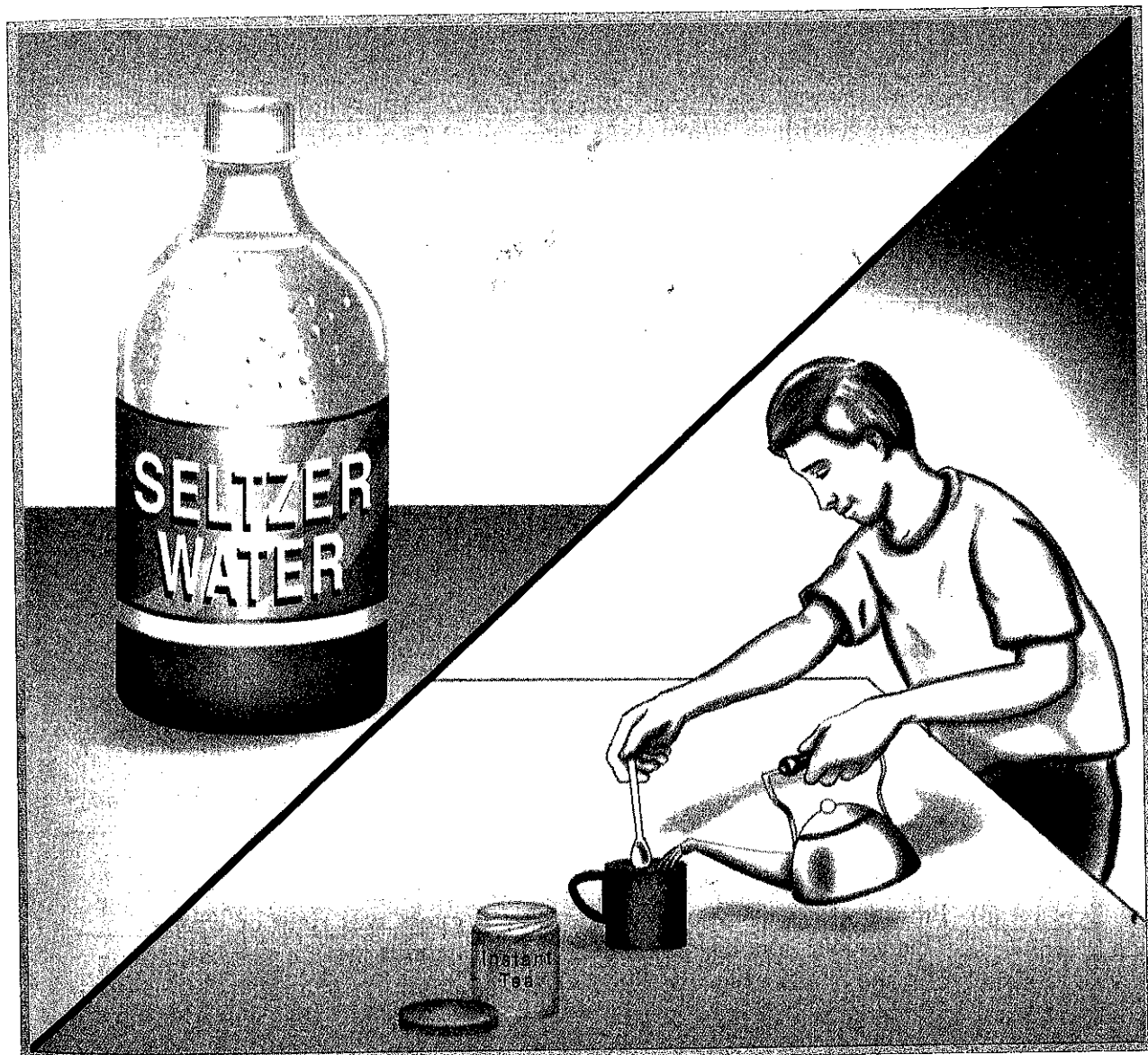
Student responses will vary. Likely responses include: In a solution, the

solute and solvent are evenly mixed; you cannot see the different parts of a

solution. The solute does not settle out in a solution, it stays evenly mixed.

A solution is clear so you can see through it.

What can we observe about solutions?



KEY TERMS

miscible: mixable

immiscible: not mixable

LESSON | What can we observe 7 about solutions?

Albert Einstein, Marie Curie, Louis Pasteur . . . These are the names of some great scientists. What made them great? They looked around and saw things in a new way. They made new and important observations and conclusions.

Making observations is something that you can do, too. In this Lesson you will do some experiments with liquid mixtures. You will observe what happens to them.

Experiments and observations are part of the scientific method. The scientific method is a way of finding the answer to a question in several steps.

Scientists use the scientific method to solve problems. You can use the scientific method, too. It is usually the most sensible way to solve any problem.

These are the steps to the scientific method:

- (1) Start with a question.
- (2) Get all the information about the question.
- (3) Take a guess at what the best answer is.
- (4) Plan an experiment to show if that is the answer.
- (5) Do the experiment. Make careful observations.
- (6) From your observations, decide if your guess was right or wrong. This is your conclusion. Sometimes you cannot make a conclusion. You have to do the experiment over and over!

The experiments in this Lesson have been planned for you. All you have to do is do them! Remember, do not just look—observe.

WHAT HAPPENS WHEN WE MIX A SOLID AND A LIQUID?

Part I Mixing Copper Sulfate and Water

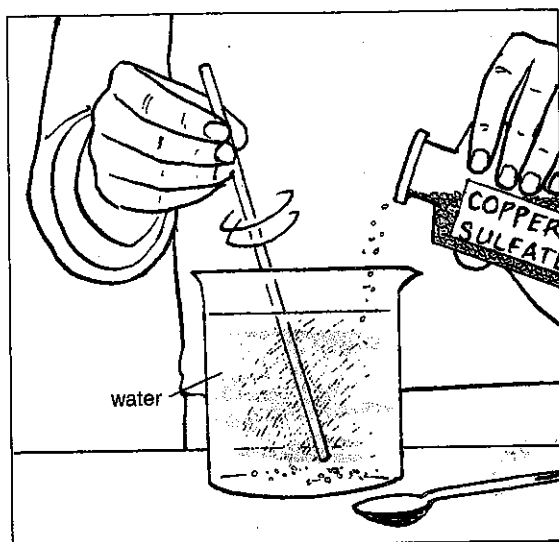


Figure A

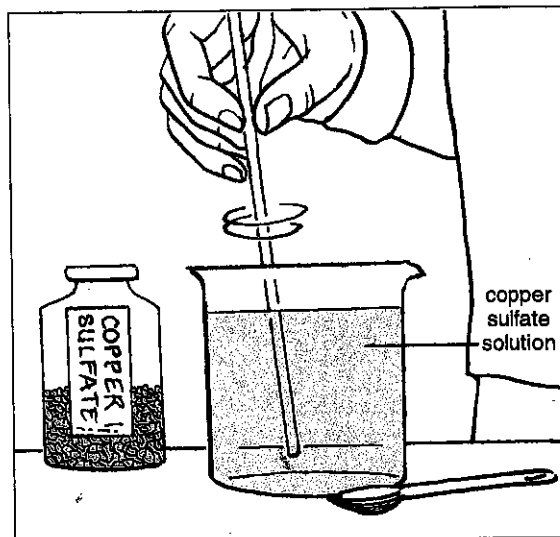


Figure B

What You Need (Materials)

beaker

water

powdered copper sulfate

scoop

stirrer



How To Do The Experiment (Procedure)

1. Pour some water into the beaker.
2. Add a small amount of powdered copper sulfate to the water.
3. Stir well.

What You Learned (Observations)

		YES	NO
1.	Does copper sulfate dissolve in water?	✓	
2.	Does the mixture have a color?	✓	
3.	Is the color the same all over?	✓	

4. The parts of this mixture _____ are _____ completely mixed.
are, are not

5. This mixture _____ is _____ a solution.
is, is not

6. The solvent is _____ water _____.
water, copper sulfate

7. The solute is _____ copper sulfate _____.
water, copper sulfate

PART II Mixing Salt and Water

What You Need (Materials)

beaker
water
salt crystals (NaCl)
scoop
stirrer

How To Do The Experiment (Procedure)

Add a small amount of salt to the water and stir well.

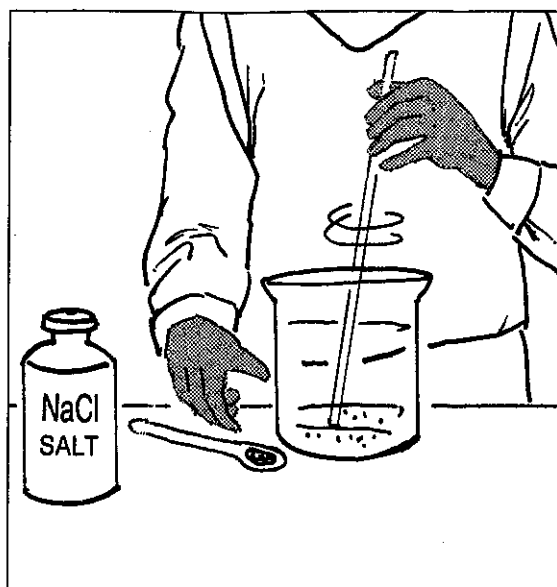


Figure C

What You Learned (Observations)

		YES	NO
1.	Does the salt dissolve in water?	✓	
2.	Does the mixture have a color?		✓
3.	Does the mixture look the same all over?	✓	

4. The parts of this mixture _____ are _____ completely mixed.
are, are not

5. All the salt _____ does _____ dissolve.
does, does not

6. This mixture _____ is _____ a solution.
is, is not

7. Salt is a _____ solid _____.
solid, gas

8. The salt is the _____ solute _____.
solute, solvent

9. The water is the _____ solvent _____.
solute, solvent

Something To Think About (Conclusions)

1. A solution _____ can _____ have a color.
can, cannot

2. In a solution that has color, the color _____ is _____ the same all over.
is, is not

3. The color of a liquid solution is the same all over because the parts

are
are, are not mixed completely.

4. Look at the solutions closely. You cannot
can, cannot see the separate parts of a liquid solution.

WHAT HAPPENS WHEN WE MIX LIQUIDS?

When two or more liquids mix completely, we say they are **miscible** [MIS-uh-bul]. Let us test three liquids and see if they are miscible in water.

What You Need (Materials)

3 beakers vinegar 3 stirring rods
alcohol oil



How To Do The Experiment (Procedure)

1. Fill 3 beakers half full with water.
2. Add a small amount of oil to one beaker.
3. Add a small amount of vinegar to another beaker. Stir, and let stand for two minutes.
4. Add a small amount of alcohol to the third beaker. Stir, and let stand for two minutes.

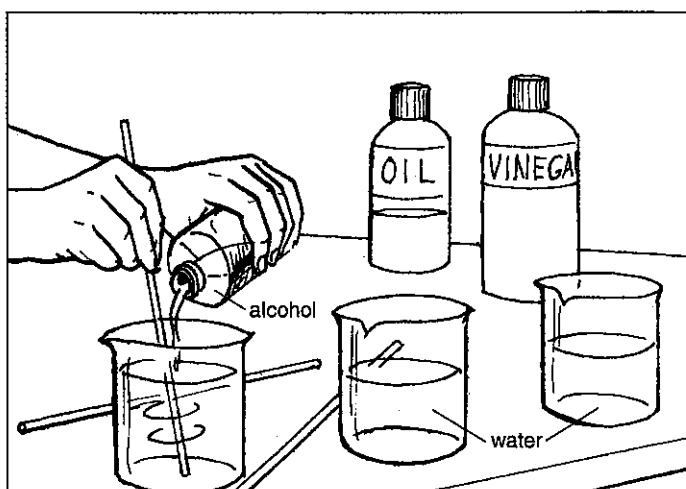


Figure D

What You Learned (Observations)

Write your observations in the chart below. Answer YES or NO.

		Alcohol and Water	Oil and Water	Vinegar and Water
1.	Do the liquids mix completely?	yes	no	yes
2.	Are the liquids miscible?	yes	no	yes
3.	Do they form a solution?	yes	no	yes

Something to Think About (Conclusions)

1. Only certain liquids are miscible in water.
2. Only certain liquids form a liquid solution with water.

WHAT HAPPENS WHEN WE MIX A GAS AND A LIQUID?

Let us see if a gas dissolves in a liquid. The gas we most often use is carbon dioxide. Carbon dioxide is one of the gases of the air. It also is a gas we exhale.

How can we tell when carbon dioxide is present? Easy! When it is in a solution of clear limewater, the solution turns milky.

What You Need (Materials)

2 beakers
drinking straw
limewater
plain tap water
teaspoon or
other stirrer

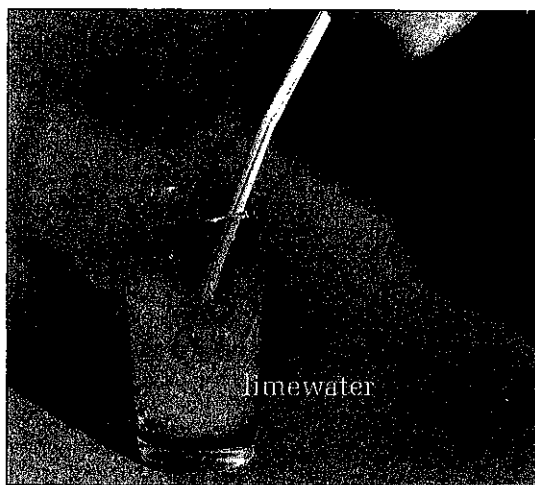


Figure E

How To Do the Experiment (Procedure)

1. Pour some plain tap water into one of the beakers.
2. Using a straw, blow into the beaker.
3. The water stayed clear
stayed clear, turned cloudy
4. Pour a small amount of limewater into the beaker and stir.
5. The water turned cloudy
stayed clear, turned cloudy
6. Pour some tap water into the second beaker.
7. Pour a small amount of limewater into the second beaker and stir.
8. The water stayed clear
stayed clear, turned cloudy
9. Using a straw, blow into the beaker.

What You Learned (Observations)

1. The solute is the carbon dioxide.
carbon dioxide, water
2. The solvent is the water.
carbon dioxide, water

Something To Think About (Conclusions)

1. This experiment shows that carbon dioxide did dissolve in water.
did, did not
2. Carbon dioxide is soluble in water.
is, is not

THE SCIENTIFIC METHOD

Use these words to describe the scientific method.

conclusion
observation

experiment
information

question
guess

1. Start with a question.
2. Get all the information about the question.
3. Take a guess at the answer.
4. Plan an experiment.
5. Make careful observations of what you see.
6. Finally, from your observations make your conclusion.

FILL IN THE BLANK

Complete each statement using a term or terms from the list below. Write your answers in the spaces provided. Some words may be used more than once.

colorless
solute
oil and water
states of matter

immiscible
liquid
miscible
mixture

salt water
solvent
water and alcohol

1. A liquid solution is a special kind of mixture.
2. The main parts of a liquid solution are the solute and solvent.
3. The solute of a liquid solution may be any of the three states of matter.
4. The solvent of a liquid solution is always a liquid.
5. Some liquid solutions have a color. Others are colorless.
6. Two examples of liquid solutions are salt water and water and alcohol.
7. Liquids that form a liquid solution are said to be miscible.
8. An example of miscible liquids are water and alcohol.
9. Take a guess! The word that means not miscible is immiscible.
10. An example of immiscible liquids is oil and water.

MATCHING

Match each term in Column A with its description in Column B. Write the correct letter in the space provided.

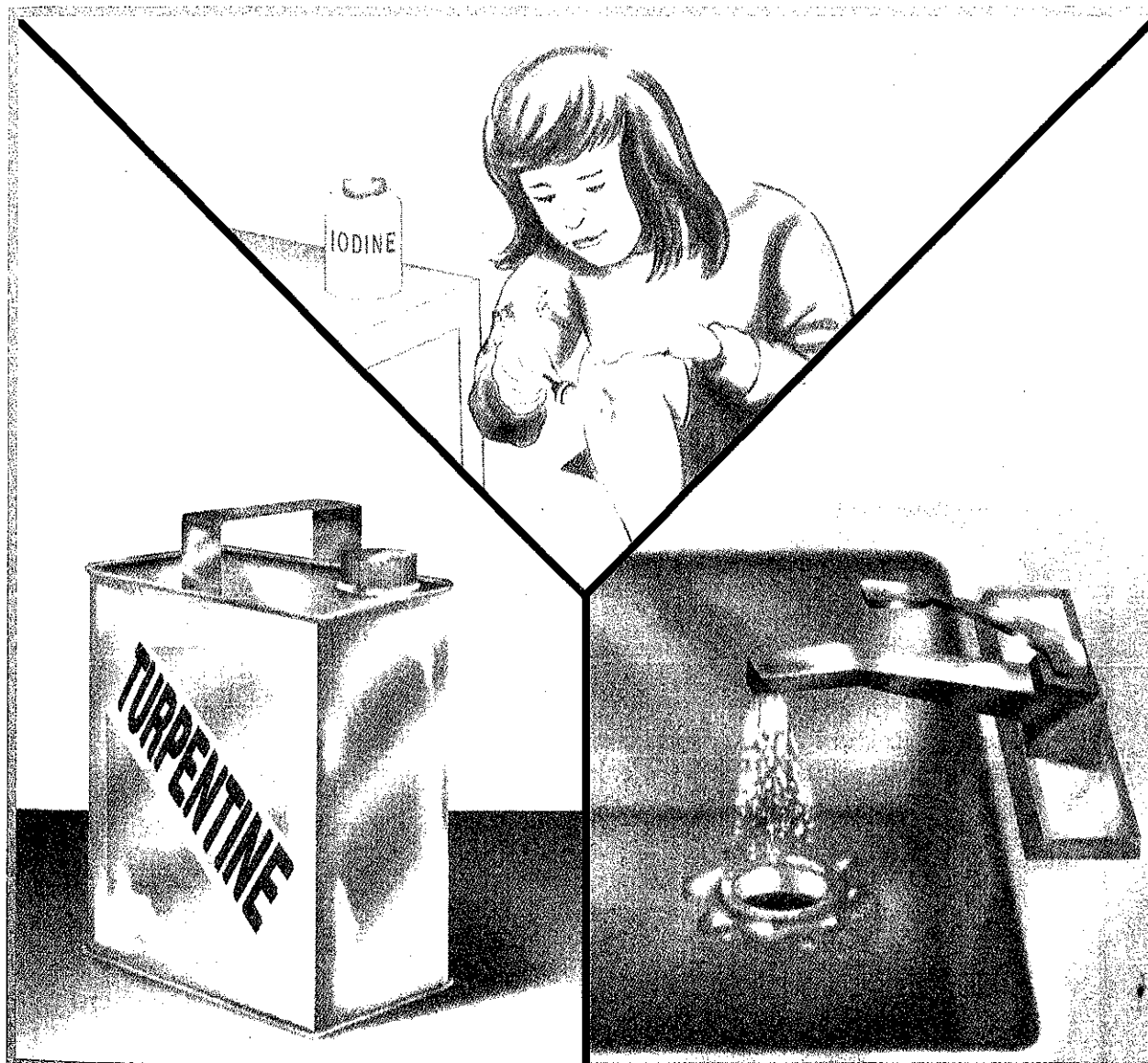
Column A

- | | |
|----------|--------------------|
| <u>b</u> | 1. miscible |
| <u>a</u> | 2. soluble |
| <u>e</u> | 3. solute |
| <u>d</u> | 4. solvent |
| <u>c</u> | 5. liquid solution |

Column B

- | |
|-------------------------------------|
| a) means "able to dissolve" |
| b) mixable |
| c) special kind of mixture |
| d) liquid part of a liquid solution |
| e) can be a solid, liquid, or gas |

Does water dissolve everything?

**KEY TERM**

tincture: solution of a substance in alcohol

LESSON | Does water dissolve everything?

8

You get a stain on your clothes. What do you reach for first? Probably water. You know from experience that water is a good solvent. It dissolves many things.

Water is the most used solvent. It is so popular, it is called the "universal" [yoo-nuh-VUR-suhl] solvent.

Water may be a good solvent, but it does not dissolve everything. No one solvent dissolves everything! Special solvents are needed to dissolve certain substances.

You have probably put iodine on a cut. Well, here is a surprise. Iodine is a solid, not a liquid. It has been dissolved in alcohol. The solution is called "tincture [TINK-chur] of iodine." The iodine would not dissolve in water. A solution that has alcohol for the solvent is called a **tincture**.

If you put salt in water, the salt dissolves. But if you put salt in alcohol, it does not dissolve.

So, alcohol dissolves iodine, but not salt. Water dissolves salt, but not iodine. Solvents are selective. This means they dissolve certain things but not others.

USES FOR SOLVENTS

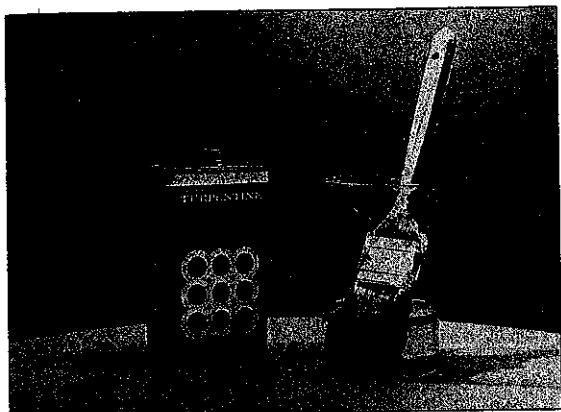


Figure A



Figure B



Figure C



Figure D

TRUE OR FALSE

In the space provided, write "true" if the sentence is true. Write "false" if the sentence is false.

True

1. Water is the most popular solvent.

False

2. Water dissolves everything.

False

3. Alcohol is called the universal solvent.

True

4. Water dissolves salt.

False

5. Iodine is a liquid.

False

6. All solutions are tinctures.

True

7. Only solutions with alcohol are tinctures.

FILL IN THE BLANK

Complete each statement using a term or terms from the list below. Write your answers in the spaces provided. Some words may be used more than once.

tincture
water
iodine

sugar
universal
salt

solid
alcohol

1. The most popular solvent is water.
2. Water is such a popular solvent that it is called the universal solvent.
3. Two solids that water can dissolve are sugar and salt.
4. A solid that water cannot dissolve is iodine.
5. Iodine is a solid.
6. Iodine does not dissolve in water.
7. Iodine does dissolve in alcohol.
8. A solution that uses alcohol as a solvent is called a tincture.

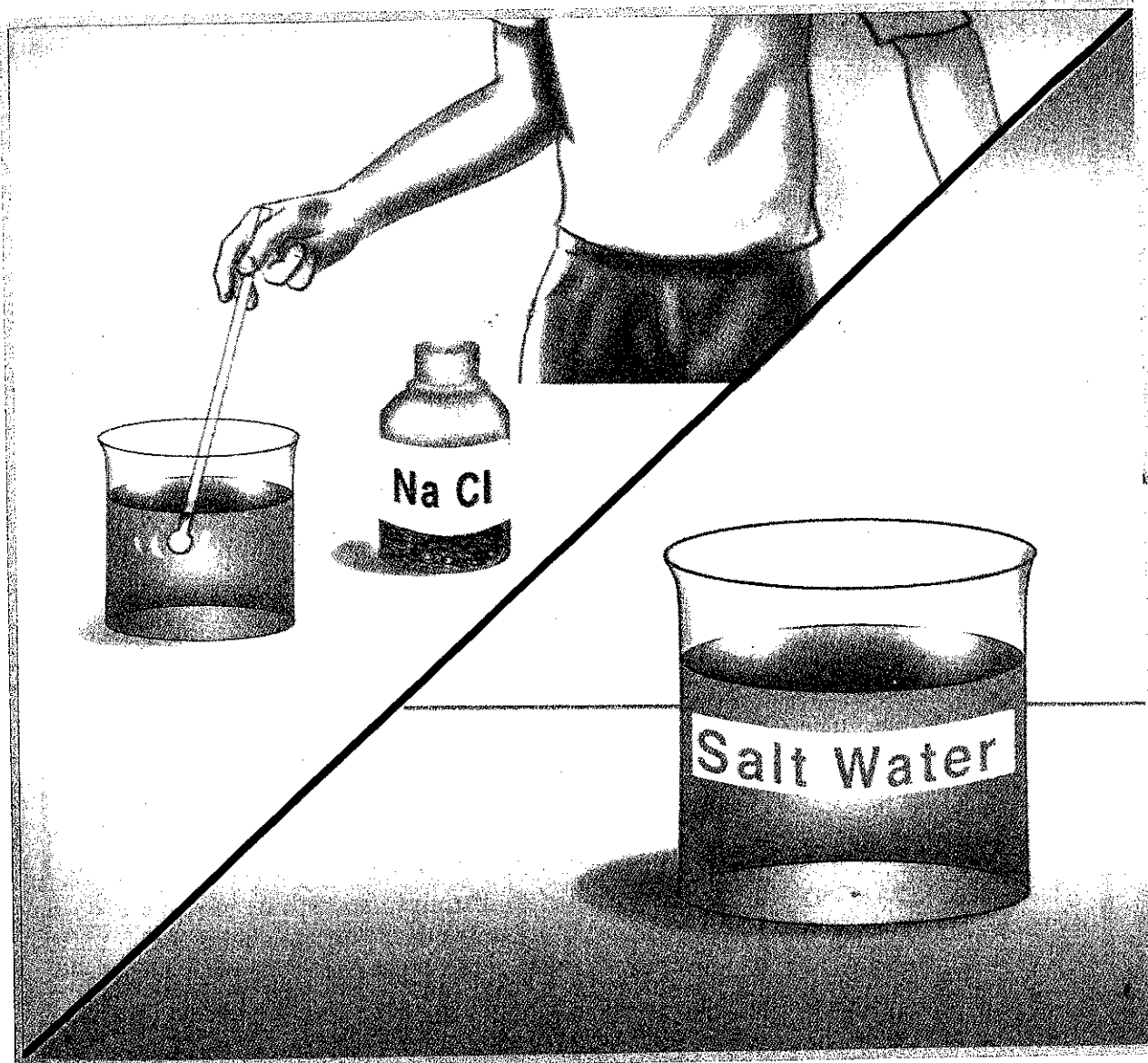
REACHING OUT

Turpentine or paint thinner often is used to clean paint brushes. When would turpentine or paint thinner not be used to clean paint brushes? Explain.

Student responses will vary. Likely responses include: Turpentine or paint thinner would not be used to clean water-base paint from paint brushes.

Water can be used to clean water-base paint from paint brushes.

What are the properties of solutions?



KEY TERMS

properties: characteristics used to describe a substance

homogeneous: uniform; the same all the way through

transparent: material that transmits light easily

LESSON 9 | What are the properties of solutions?

What happens when you add salt to a jar of water and stir? The salt disappears. You have made a solution. Does the same thing happen when you add sand to water? No. The sand settles to the bottom of the jar.

How can we tell if a mixture is a solution or not? We can tell by its **properties** [PROP-ur-tees]. Properties tell us how a kind of matter looks and acts.

These are the properties of solutions:

- (1) The parts dissolve and become the size of molecules.
- (2) Solutions are **homogenous** [hoh-muh-JEE-nee-us].
- (3) Solutions are **transparent** [trans-PER-unt].
- (4) Solutions do not settle out.

MOLECULE SIZE You know that matter is made up of tiny atoms. Most matter is made up of groups of atoms called molecules. In a solution, the particles of solute dissolve. They break up until they are the size of molecules.

HOMOGENOUS Homogeneous means evenly mixed—the same all through. Because the particles are the size of molecules they weigh very little. They move around and spread out evenly.

TRANSPARENT You can see clearly through something that is transparent. Glass is transparent. So are solutions. The molecules that make them up are tiny. They do not block out light. Light passes right through.

THE PARTS NEVER SETTLE OUT Something that settles out drops to the bottom of its container. The parts of a solution never separate. They never settle out no matter how long they sit. That is because the molecules are light. They keep bouncing around. This also keeps the solution homogenous.

MORE ABOUT SOLUTIONS

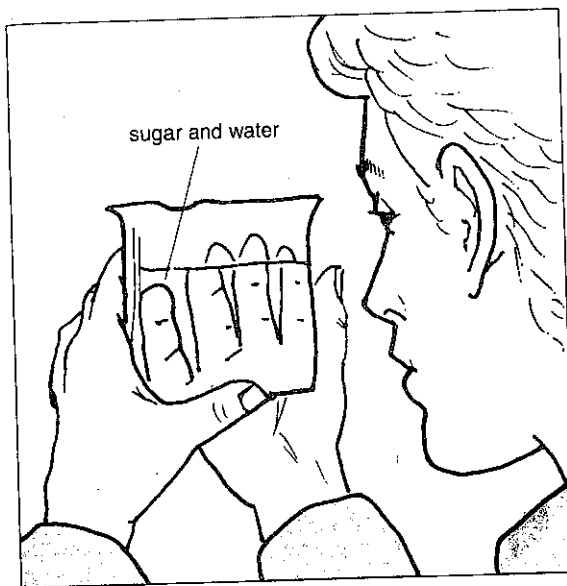


Figure A

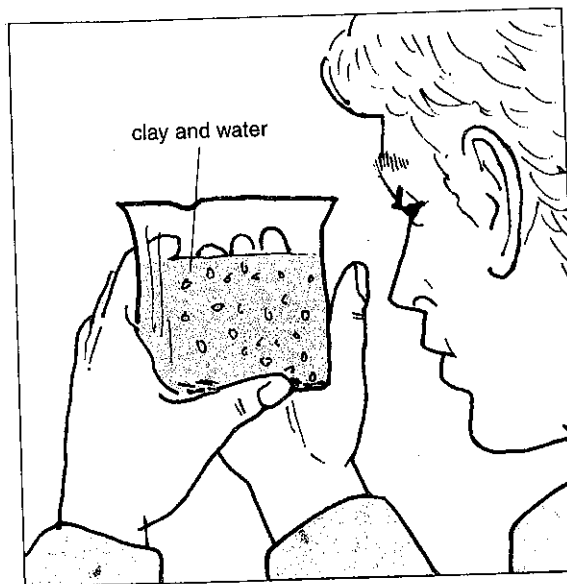


Figure B

Look at Figure A.

1. Can you see the sugar particles? no
yes, no
2. The sugar did dissolve.
did, did not
3. The sugar is now the size of molecules.
the size of molecules, much larger than the size of molecules
4. Can the boy see through the sugar water? yes
yes, no
5. The sugar water is transparent.
cloudy, transparent
6. The mixture is evenly mixed.
is, is not
7. It is homogenous.
is, is not
8. The sugar is not settling.
is, is not
9. Sugar water is a solution.
is, is not

Look at Figure B.

1. Can you see the clay particles? yes
yes, no
2. The clay did not dissolve.
did, did not
3. The clay particles are much larger than the size of molecules.
the size of molecules, much larger than the size of molecules

4. Can the boy see clearly through the mixture? no
yes, no
5. The clay water is cloudy.
cloudy, transparent
6. The mixture is not evenly mixed.
is, is not
7. It is not homogenous.
is, is not
8. The clay is settling out.
is, is not
9. Clay water is not a solution.
is, is not

FILL IN THE BLANK

Complete each statement using a term or terms from the list below. Write your answers in the spaces provided. Some words may be used more than once.

solutions
drop
molecules

moving around
is not
transparent

light
clay water
small in size

1. When we can see clearly through something we say it is transparent.
2. Solutions are transparent.
3. Clay water is not transparent.
4. Clay water is not a solution.
5. The parts of a solution are the size of molecules.
6. The molecules of a solution do not block light.
7. To "settle out" means to drop.
8. The parts of solutions do not settle out.
9. Solutions do not settle out because the parts are too small in size.
10. The molecules in solutions are always moving around.

WHICH IS HOMOGENOUS?

The dots stand for copper sulfate molecules. The liquid is water.

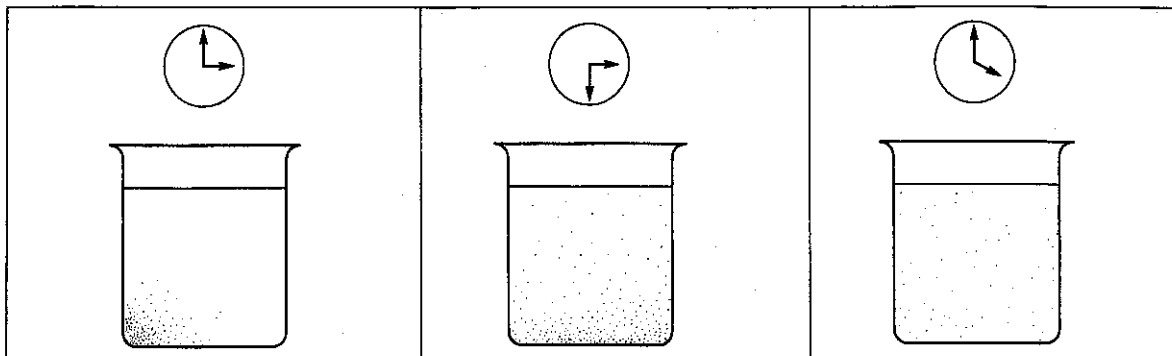


Figure C

Figure D

Figure E

- Which figure shows a homogenous mixture? Figure E
- The mixtures in Figures C and D are not solutions.
 - They are not solutions because they are not homogenous.
are, are not
- The mixtures that are not solutions could become solutions.
could, could not
 - They would be solutions if all the solute dissolved, and spread out evenly.
solute, solvent
- Think about this: What would you do to make the mixtures that are not homogenous, become homogenous fast?

Student responses will vary. Likely responses include: mix the mixtures, stir the mixtures, or shake the mixtures.

MATCHING

Match each term in Column A with its description in Column B. Write the correct letter in the space provided.

Column A		Column B	
<u>c</u>	1. molecule	a)	evenly mixed
<u>a</u>	2. homogenous	b)	drop
<u>b</u>	3. settle out	c)	tiny part of matter
<u>e</u>	4. properties	d)	clear
<u>d</u>	5. transparent	e)	things that help us identify matter

TRUE OR FALSE

In the space provided, write "true" if the sentence is true. Write "false" if the sentence is false.

- True 1. Anything we can see through clearly is transparent.
- False 2. Every mixture is homogenous.
- False 3. Sand becomes the size of molecules when it is in water.
- True 4. Solutions are transparent.
- False 5. Muddy water is transparent.
- True 6. Muddy water settles out.
- True 7. The parts of liquids are the size of molecules.
- True 8. Salt water is a solution.
- False 9. Solutions settle out.
- True 10. The molecules of solutions are always moving around.

REACHING OUT

Transparent, translucent, and opaque are three words that have to do with light. Give a definition of each word in the spaces below. (You may use a dictionary.) Next to each definition give an example of each.

Transparent _____

Translucent _____

Opaque _____

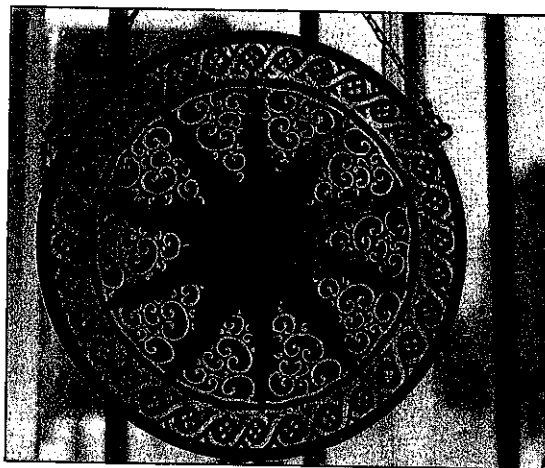
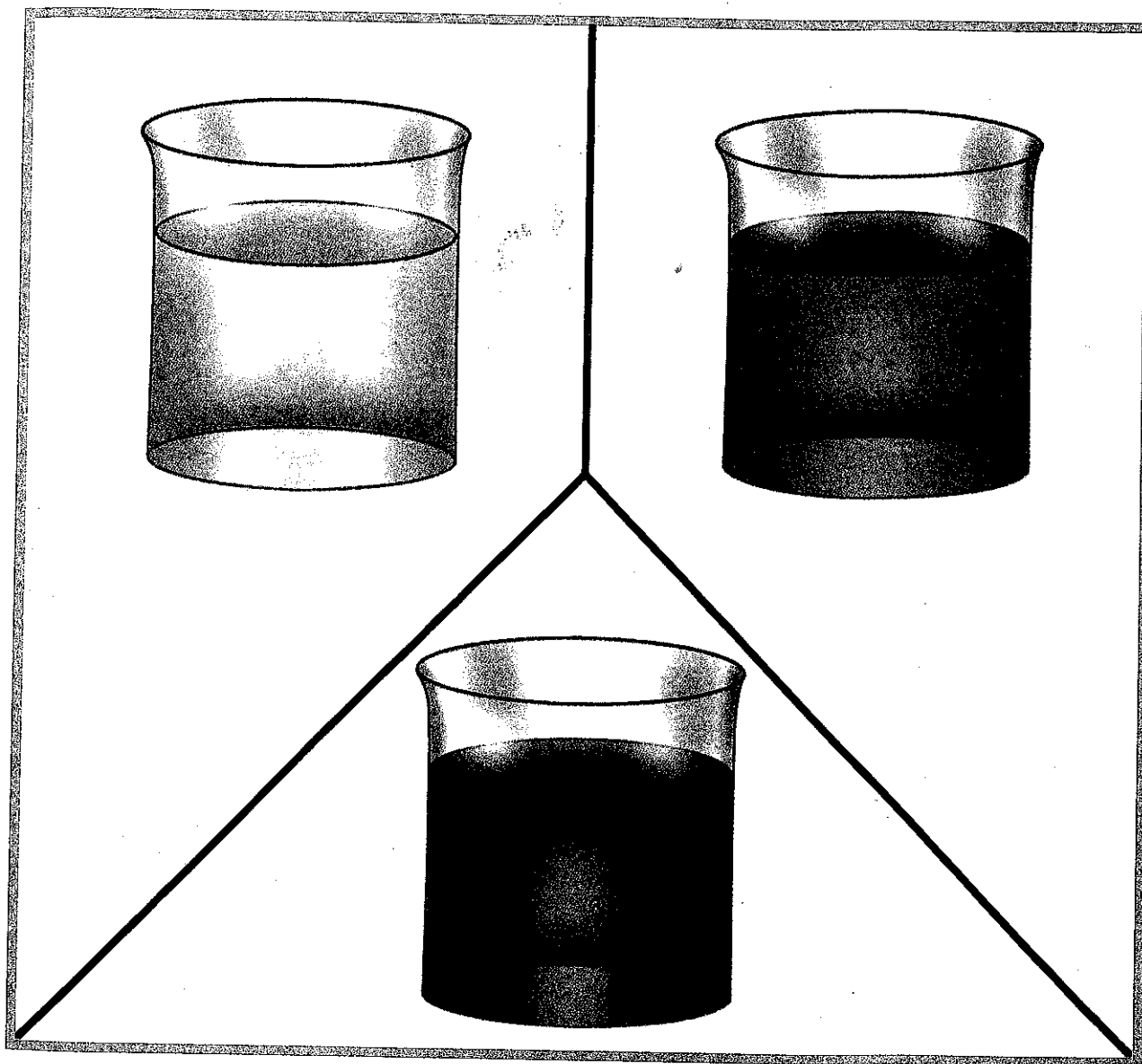


Figure F

How can the strength of a solution be changed?



KEY TERMS

dilute solution: weak solution

concentrated solution: strong solution

saturated solution: solution containing all the solute it can hold at a given temperature

LESSON

10

How can the strength of a solution be changed?

Some people like strong coffee. Others like it weak. What makes coffee strong or weak? You know that if you add more coffee it becomes stronger. If you add more water, it becomes weaker. A cup of coffee is like any solution. It comes in many strengths.

We use these terms to describe how strong a solution is:

- **dilute** [di-LEWT] **solution**
- **concentrated** [KAHN-sun-trayt-ed] **solution**
- **saturated** [SACH-uh-rayt-id] **solution**

DILUTE A dilute solution is a weak solution. It has very little solute dissolved in the solvent.

CONCENTRATED A concentrated solution is a strong solution. It has more solute dissolved in it than a dilute solution has.

SATURATED A saturated solution is an extra-strong solution. It has so much solute that no more can dissolve. If we tried to add more solute, it would just drop to the bottom. More solute would dissolve only if the mixture were heated.

We can change the strength of a solution. We do this by changing the amount of solute or solvent.

Terms like "dilute" and "concentrated" help us compare solutions.

HOW STRONG IS THE SOLUTION?

A cup of instant tea is a liquid solution.

Two different cups of tea are shown in Figures A and B. Study them. Then fill in the blanks.

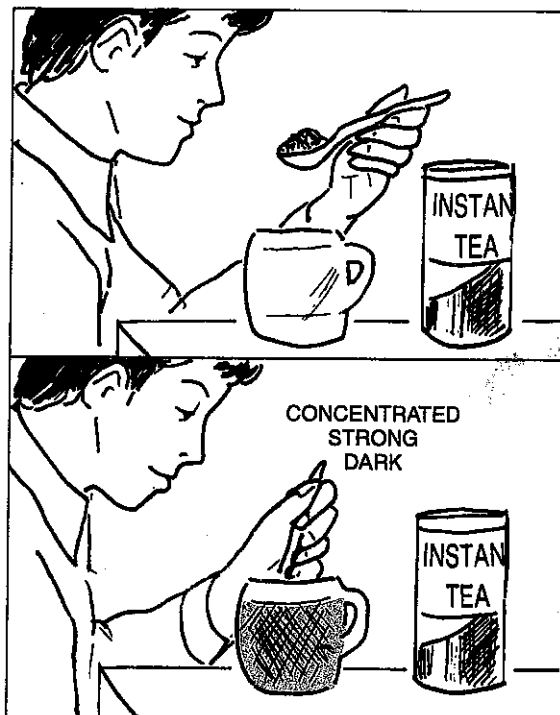


Figure A



Figure B

- The instant tea _____ does _____ dissolve.
does, does not
- A cup of tea _____ is _____ a solution.
is, is not
- In both solutions the solute is the _____ tea _____.
tea, water
- In both solutions the solvent is the _____ water _____.
tea, water
- The cup of tea in Figure A has a _____ lot _____ of solute compared to the solution in Figure B.
lot, little bit
- The solution in Figure A is _____ stronger _____ than the solution in Figure B.
stronger, weaker
- The solution in Figure A is more _____ concentrated _____ than the solution in Figure B.
concentrated, dilute
- The solution in Figure B _____ has _____ the same kind of solute and solvent as Figure A.
has, does not have

9. The amount of solvent is _____ in both solutions.
the same, different
10. The amount of solute is _____ in both solutions.
the same, different
11. There is _____ solute in Figure B.
more, less
12. This solution is _____ than the solution in Figure A.
stronger, weaker
13. This solution is _____ than the solution in Figure A.
more concentrated, more dilute

Sometimes, color tells us about the strength of a solution. The darker the color, the stronger the solution. The lighter the color, the weaker the solution. We can use color only when we compare similar solutions.

Of Figures A and B on Page 61:

1. Which figure shows a darker solution? _____
2. Which figure shows a lighter solution? _____
3. Which solution is stronger? _____
4. Which solution is weaker? _____
5. Why can color help us compare the strengths of these mixtures? _____

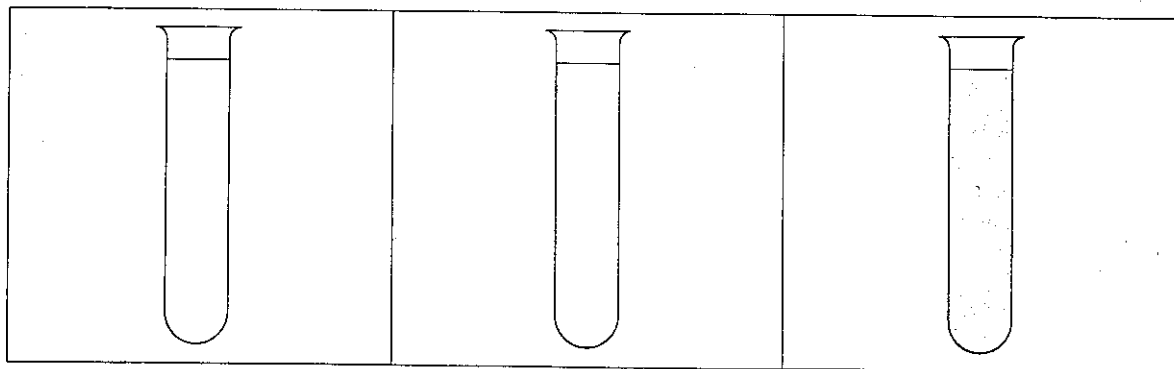


Figure C

Figure D

Figure E

Look at Figures C, D, and E. Each test tube contains a solution. The kind of solute and solvent is the same in each.

1. Which is the strongest? Figure E
2. Which is the weakest? Figure C
3. Which has the most solute? Figure E
4. Which has the least solute? Figure C
5. Which one is closest to being saturated? Figure E

A SATURATED SOLUTION

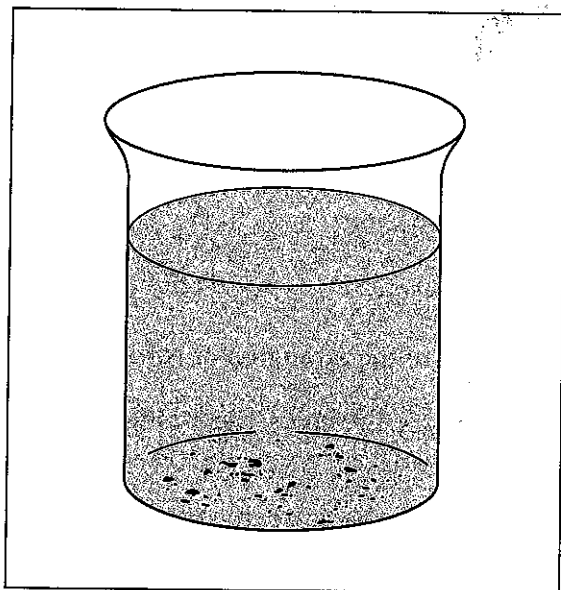


Figure F

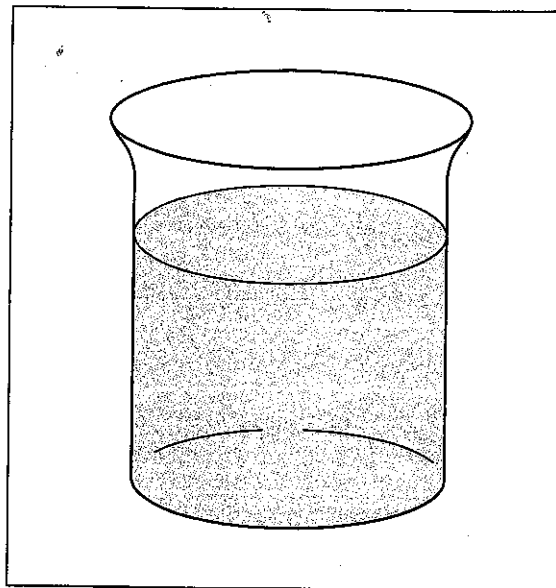


Figure G

The beakers in Figures F and G contain solutions. The kind of solute and solvent is the same in each. Some additional solute has been added to each. Both mixtures have been stirred well.

1. Which is not saturated? Figure G
2. Which one is saturated? Figure F
3. How do you know? There are particles in the bottom of the beaker.
4. Take a guess! How can we make the extra solute dissolve? _____
Student responses will vary. Likely responses include: if the solution is stirred
or heated; or if more solvent is added.

FILL IN THE BLANK

Complete each statement using a term or terms from the list below. Write your answers in the spaces provided.

lighter
very little
color
dilute

strengths
raising the temperature
concentrated

saturated
a lot
darker

1. Solutions come in different strengths.
2. A weak solution is called dilute.
3. A strong solution is called concentrated.
4. Dilute solutions have very little solute.
5. Concentrated solutions have a lot of solute.
6. A solution that can dissolve no more solute is called saturated.
7. We can make a saturated solution dissolve more solute by raising the temperature.
8. Sometimes we can use color to compare the strengths of solutions.
9. In comparing strength by color, the darker the color, the stronger the solution.
10. In comparing strength by color, the lighter the color, the weaker the solution.

MATCHING

Match each term in Column A with its description in Column B. Write the correct letter in the space provided.

Column A

- | | |
|--------------|----------------------------|
| <u> e </u> | 1. dilute solution |
| <u> c </u> | 2. concentrated solution |
| <u> a </u> | 3. saturated solution |
| <u> b </u> | 4. raising the temperature |
| <u> d </u> | 5. color |

Column B

- | | |
|----|--|
| a) | extra solute does not dissolve |
| b) | more solute dissolves |
| c) | strong solution |
| d) | sometimes used to compare solution strengths |
| e) | weak solution |

WORD SEARCH

The list on the left contains words that you have used in this Lesson. Find and circle each word where it appears in the box. The spellings may go in any direction: up, down, left, right, or diagonally.

MOLECULE

SOLUTE

SOLVENT

DILUTE

SOLUBLE

GAS

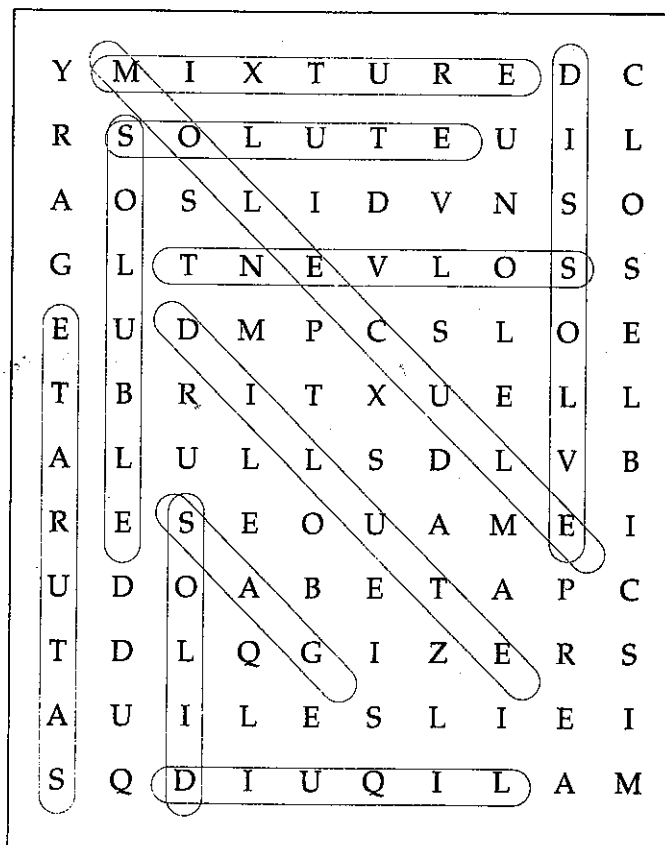
DISSOLVE

SOLID

MIXTURE

LIQUID

SATURATE



REACHING OUT

Why can color be used only for comparing similar solutions and not for comparing different solutions?

Student responses will vary. Likely responses include: color and strength of solute

may be different. Accept all logical responses.