

States of Matter

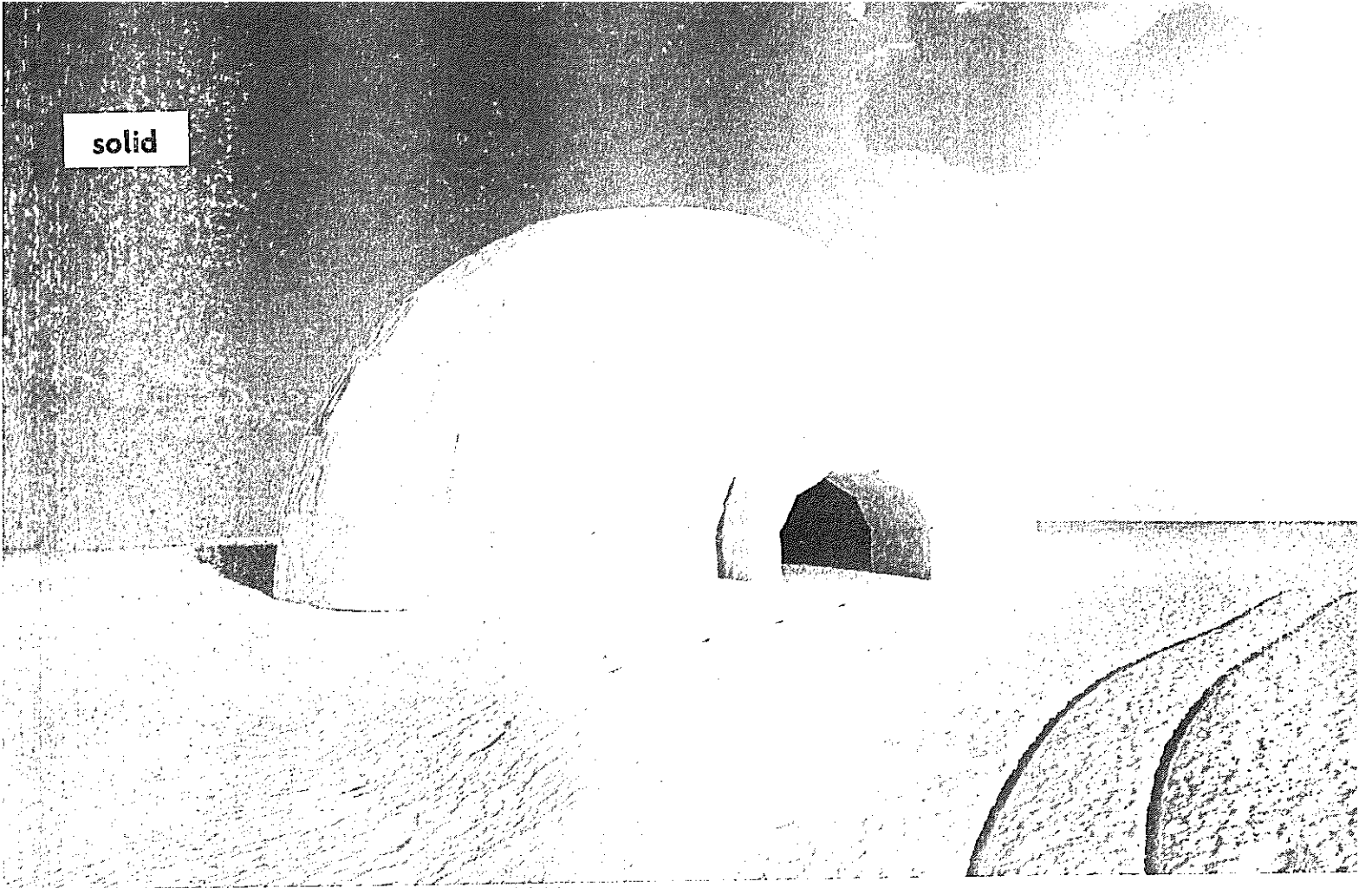
Essential Question

How can something old become new?

liquid



solid



gas



Remember
to annotate
as you read.

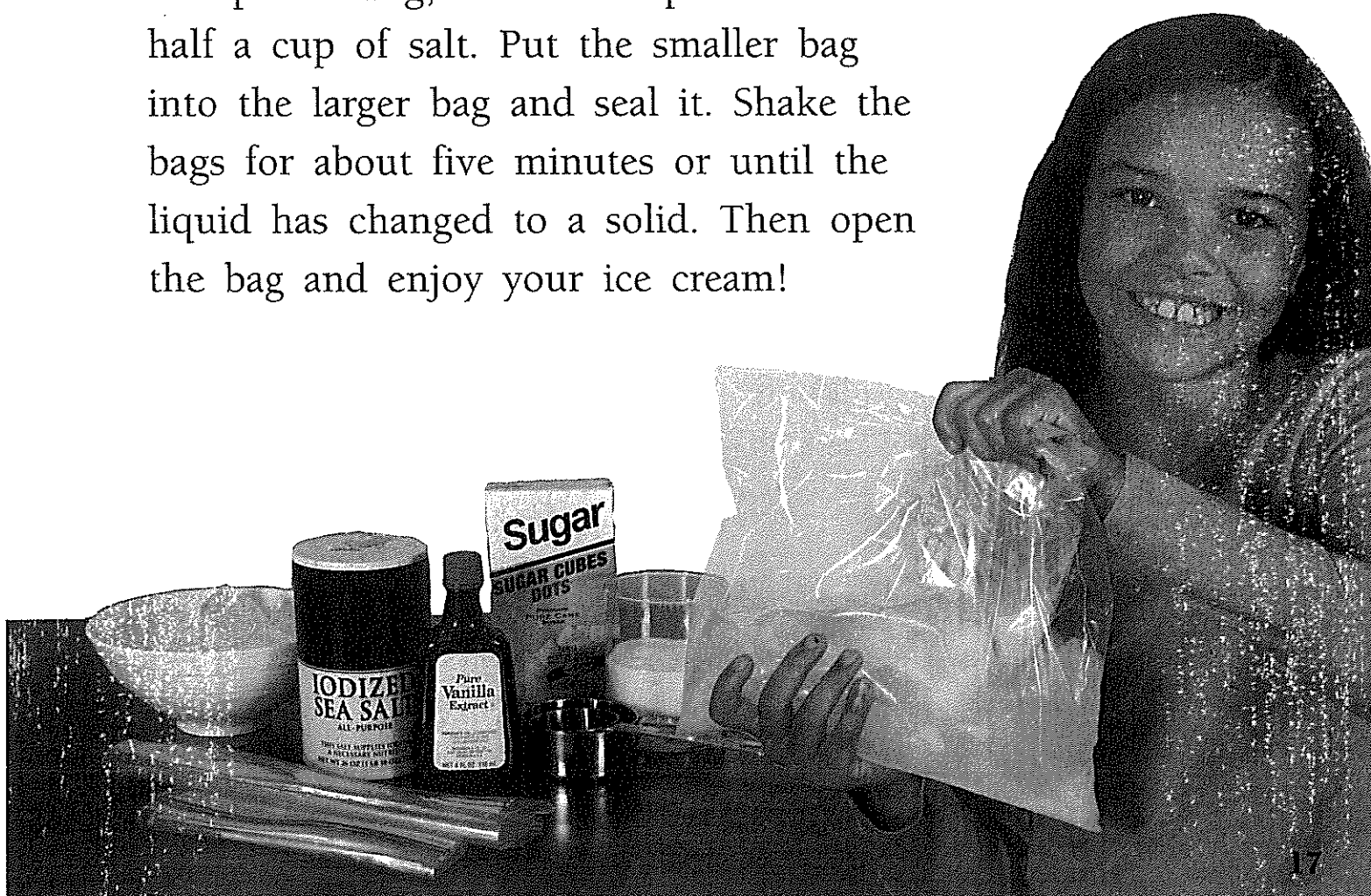
A Solar-Powered Solution

- 1 Snow can cover roads and make it dangerous to travel. When this happens, schools and businesses often have to close. Scott Brusaw, an electrical engineer, has been working on a solution. It would make snow on roads disappear by melting it!
- 2 Brusaw is making a solar-powered roadway with solar cells that get warm as the sun hits them. The stored heat melts any snow or ice that falls onto the road. This makes winter travel safer.
- 3 Brusaw's invention will help cities save money by not having to buy snow removal equipment, such as plows. Do you know one disadvantage of this technology? Students may no longer have snow days!



That's Cool!

- 1 You know what happens to water when the temperature gets cold enough. The water changes to a solid called *ice*. We can use that fact to make a cool treat!
- 2 Here's what you do. Add half a cup of milk to a plastic bag that has a good seal. Next, add a quarter cup of sugar and a few drops of vanilla extract, chocolate powder, or any other flavor you like. Now securely seal the bag. In a larger, gallon-size plastic bag, add two cups of ice and half a cup of salt. Put the smaller bag into the larger bag and seal it. Shake the bags for about five minutes or until the liquid has changed to a solid. Then open the bag and enjoy your ice cream!



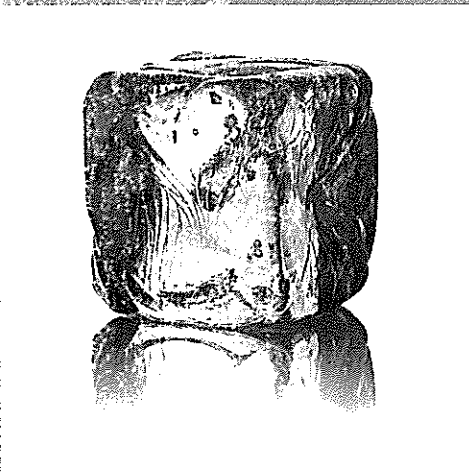
Remember
to annotate
as you read.

Changing Matter

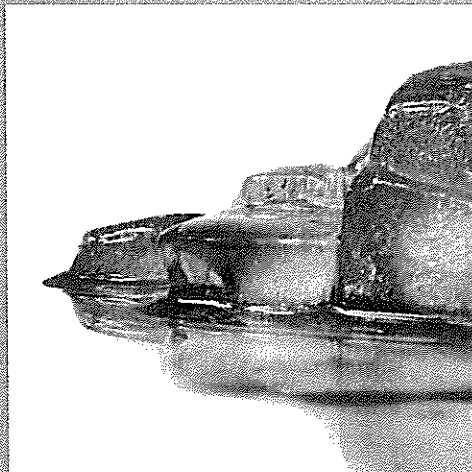
by Jay Brewster

Introduction

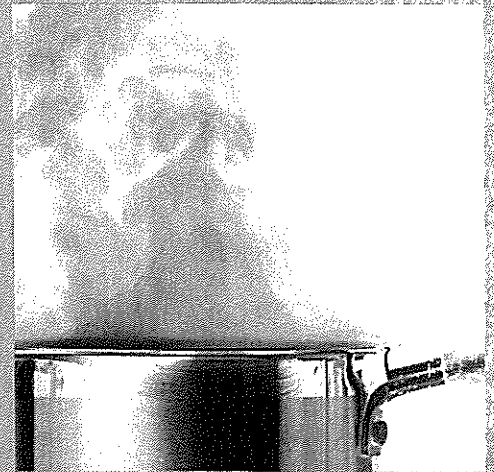
- 1 Matter is anything that takes up space. Everything in the world is made of matter. There are three kinds of matter: solid, liquid, and gas.
- 2 All matter has properties, such as a size and a shape. Some properties can change. In addition, one kind of matter can sometimes change into another kind of matter. A *kind* of matter is also called a *state* of matter.



solid

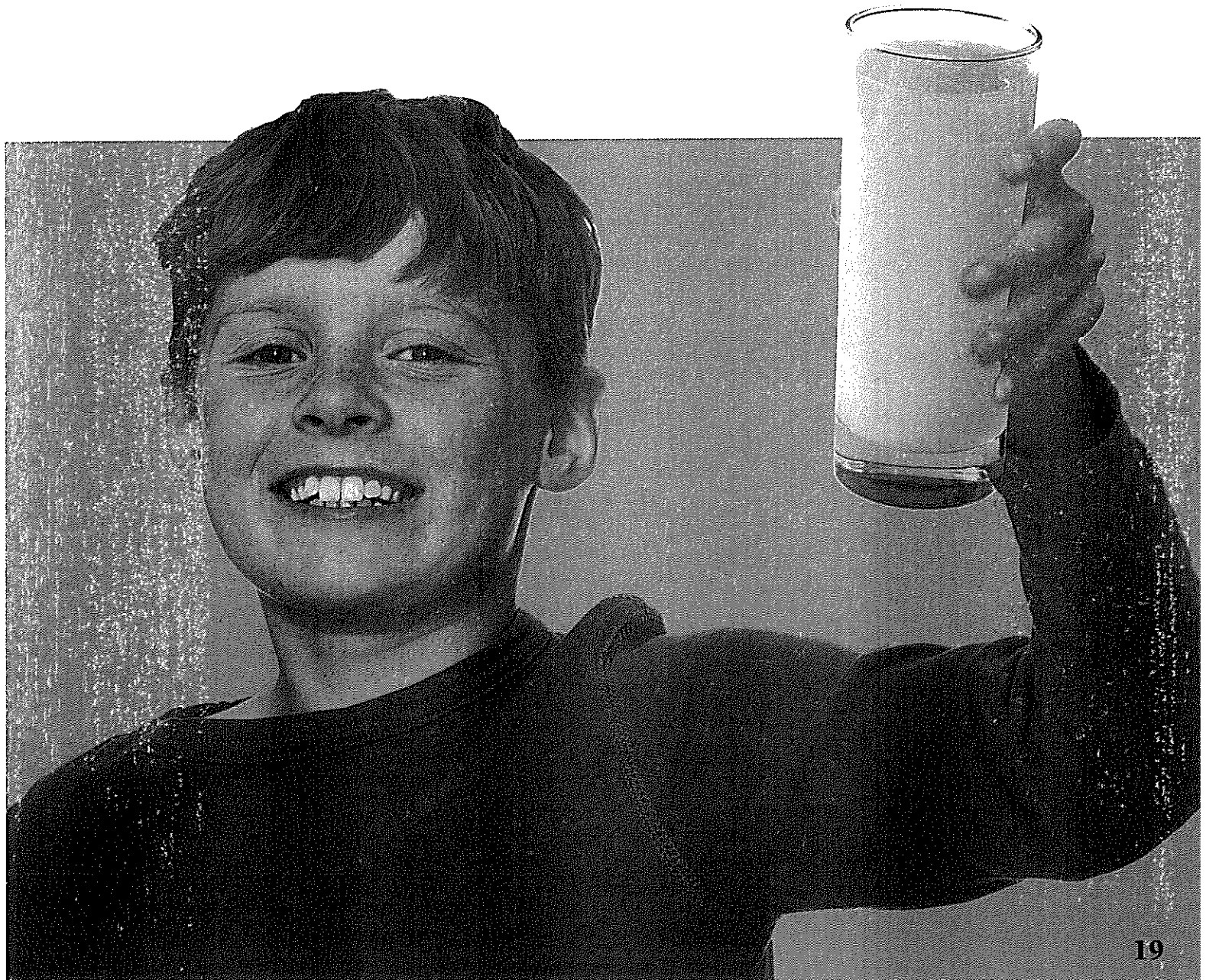


liquid



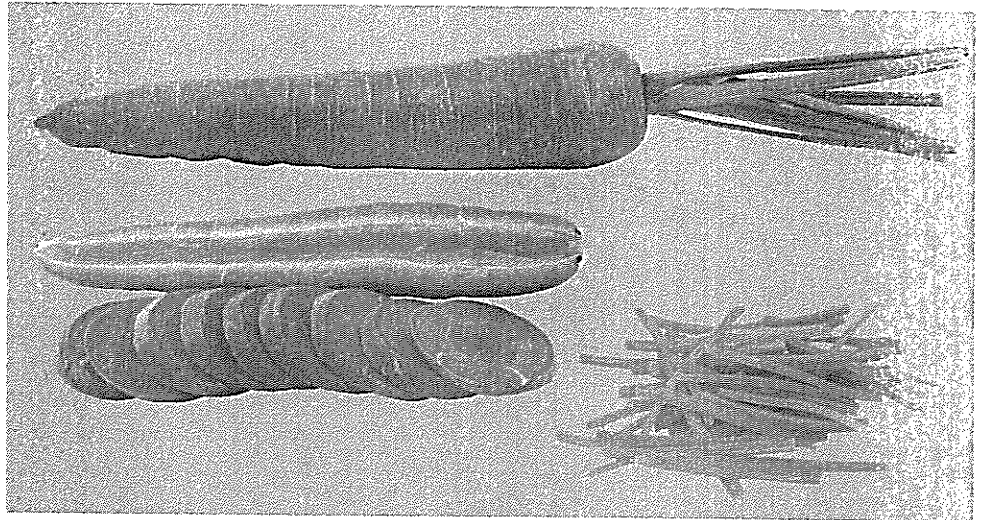
gas

- 3 Hold up a glass that has liquid in it. You are holding all three kinds of matter! The glass itself is an example of solid matter. The drink is an example of liquid matter. The space in the glass that is not filled with water is filled with air. Air is a mixture of gases and is therefore an example of gas matter.



How Can Matter Change Size?

- 4 Every solid, liquid, or gas has a certain size. You can change the size of matter. Here is one example. Suppose you have a carrot. A carrot is a solid piece of matter. You can change the size of the carrot by asking an adult to help you cut it into several small pieces or by shredding it.



- 5 You can change the size of a liquid, too. Take a glass with water and pour half into another glass. You have just as much water as you did before, but there is less of it in the first glass than there was before. You have changed the size of the liquid by dividing it.

How Can Matter Change Shape?

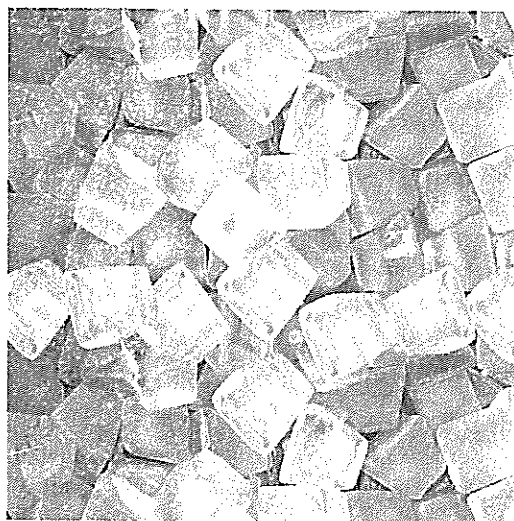
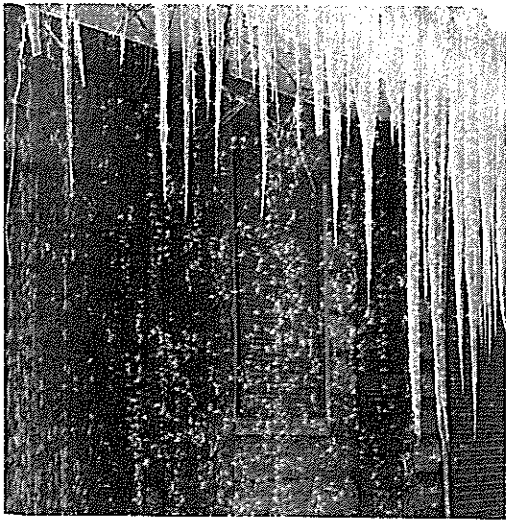
- 6 Shape is another property of matter that can be changed. Suppose you still have a glass with water in it. Get a bowl and pour the water into the bowl. By transferring the water from one container to another, you have changed its shape.



Notes:

- 7 Gas can change its shape, too. How can we tell if it can if we are not able to see gas? Put a straw into a glass of milk and blow air into the straw. You will see bubbles moving around in the milk. Those bubbles are filled with air. Remember, air is a mixture of gases. By blowing into the milk, you made the gases in the glass move and change shape.





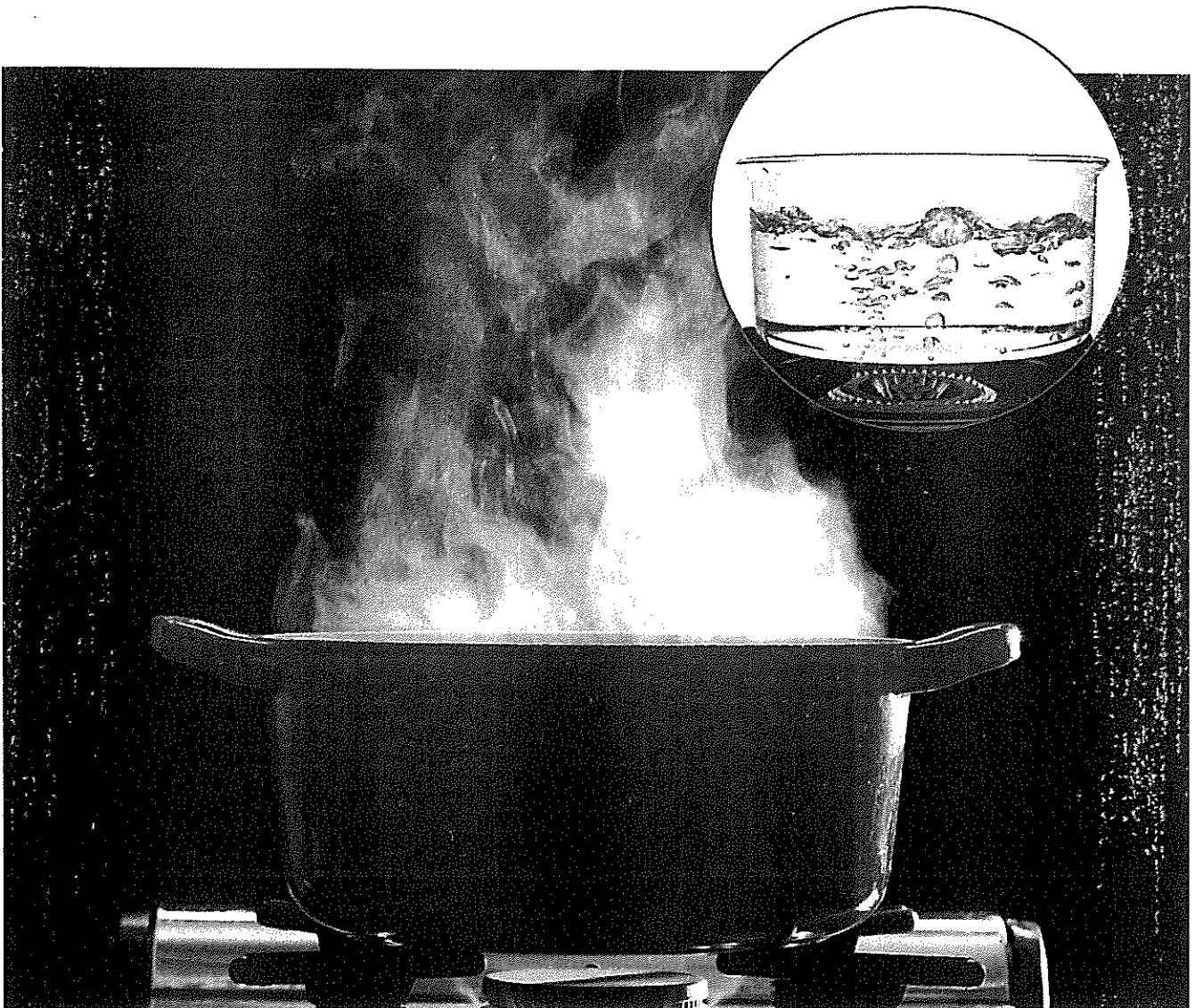
Changing States of Matter

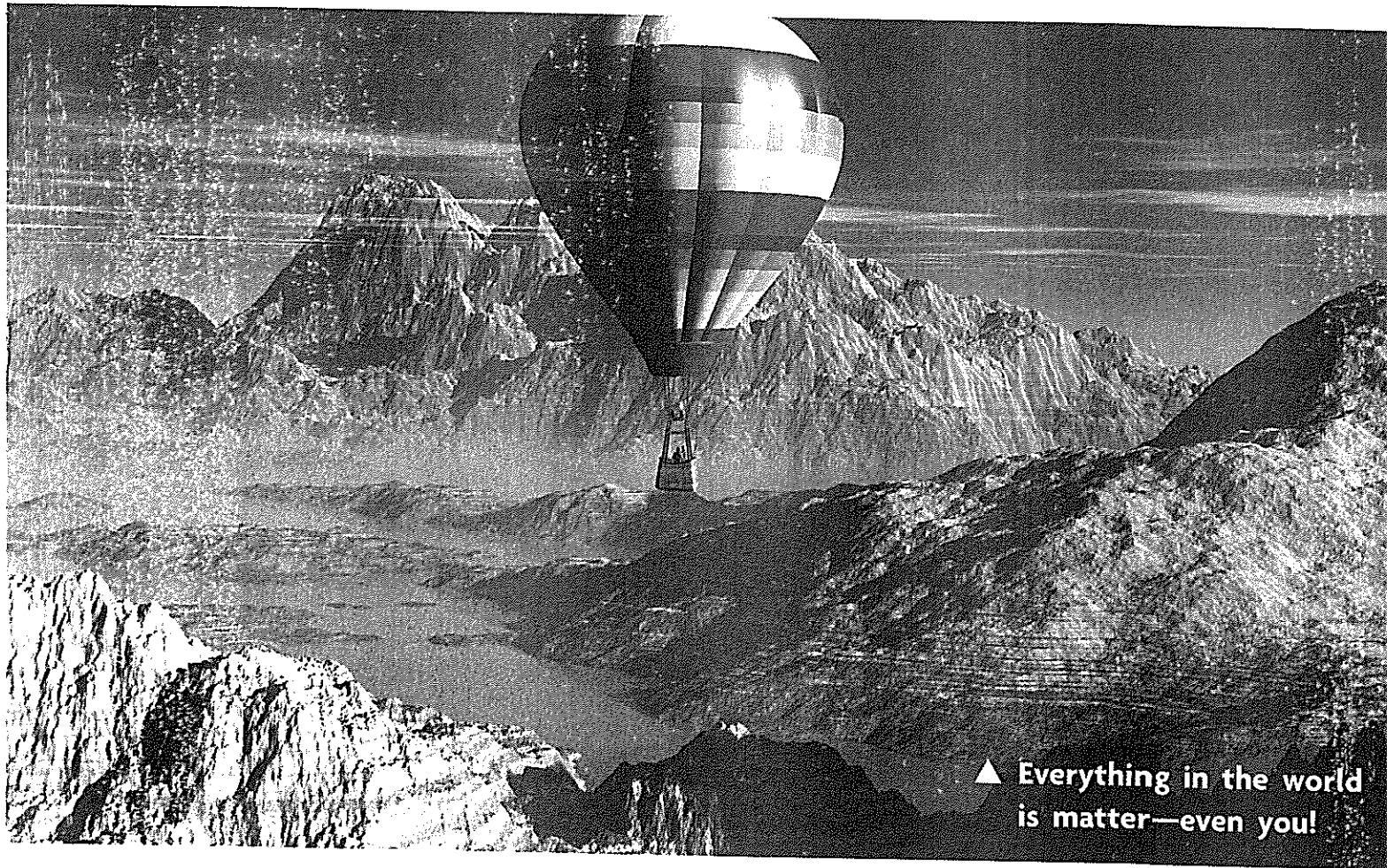
- 8 When matter undergoes a severe change in temperature, it can change from one state of matter into another.
- 9 Water can exist in all three states of matter. When water is very cold, it freezes and becomes ice. Frozen water or ice is solid matter that can have different shapes. For instance, it can be shaped like an icicle or an ice cube. Ice can change in size, too. You can chip away at a block of ice to turn it into smaller pieces of ice.

Notes

10 For ice to change from a solid back into a liquid, it needs to be heated up. The ice will melt and it will be flowing water again.

11 How can liquid water be transformed into a gas? It needs to be heated. For example, when water in a pot on the stove starts to boil, it starts to bubble. Steam starts to rise from the pot. Steam is liquid water that has turned into a gas.





▲ Everything in the world is matter—even you!

Conclusion

12 There are three different kinds of matter that make up our world. You can see solid and liquid matter everywhere. Even though you cannot see most kinds of gas matter, they are there, too. All matter has properties, including size and shape. You can change some properties of matter. Some matter can even change from one kind of matter into another.

BuildReflectWrite

Build Knowledge

Summarize what you learned from reading “Changing Matter.”

| How can you change the shape of matter? | How are liquids and solids alike? | What conclusions can you draw about the states of matter? |
|--|--|--|
| | | |

Reflect

How can something old become new?

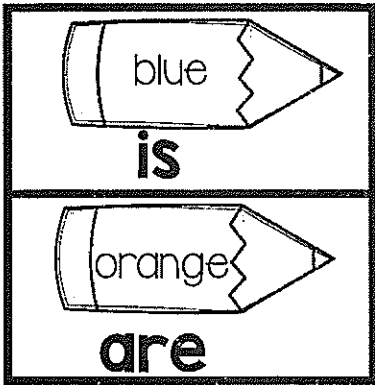
Based on this week’s texts, write new ideas and questions you have about the essential question.

Research and Write

In this unit, you learned about how people can change the size, shape, and states of matter to make things. Which property of matter do you think is most important? Why? In a short essay, state your opinion and provide one or more reasons to support it.

Conduct Research

Use your guiding questions to conduct research this week. Gather information from at least three sources, including both print and online sources. Use your sources to plan your short essay.



USING IS AND ARE

Name: _____

Directions: Use is for singular nouns.
Use are for plural nouns. Read the short sentences and decide if you would use is or are.

Created by Kadeen@ Mrs KadeenTeaches 2017

Who ___ he?
They ___ in the bag.

This ___ my ball.

There ___ four eggs.

These ___ nice.

There ___ five ducks.

The house ___ big.

It ___ a kite.

We ___ ready.

We ___ small.

Where ___ my socks?

Where ___ you?

Jack ___ here.

Who ___ they?

Who ___ you?

She ___ nice.

Where ___ Pam?

They ___ My plals.

It ___ a ball.

This orange ___ sweet.

She ___ nice.

It ___ my dog.

We ___ sad.

There ___ six apples.

Sam ___ sick.

Apes ___ strong.

Where ___ the men?

___ she late?

Kris ___ gone.

This crab ___ big.

Ken and Ben ___ here.

___ that my car?

The joke ___ funny.



did not



it is



let us



would not

CONTRACTIONS

Name: _____

Directions: Use the code to color the correct contractions.

Created by Kadeen@ Mrs KadeenTeaches 2017

A large grid of irregular shapes containing the following contractions for coloring:

- didn't
- wouldn't
- let's
- it's

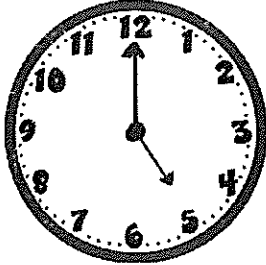
Name: _____

Time Hour & Half Hour

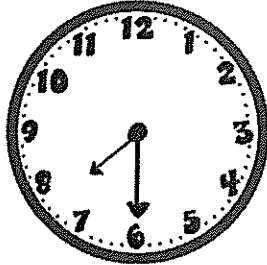
Directions: Write the time shown on these clocks. 2.MD.C.7



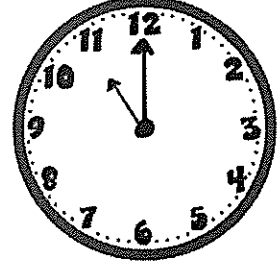
1.



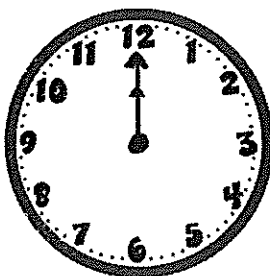
2.



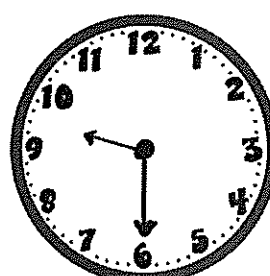
3.



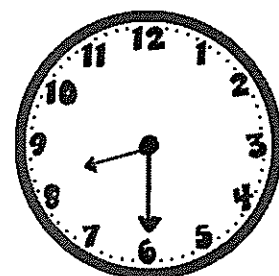
4.



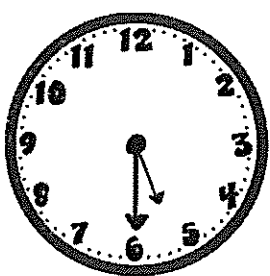
5.



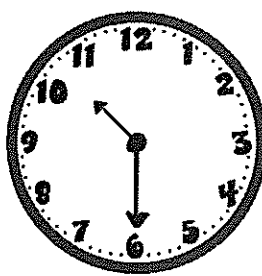
6.



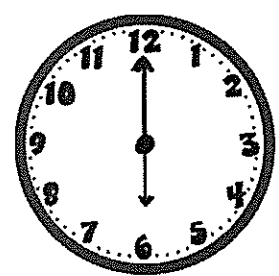
7.



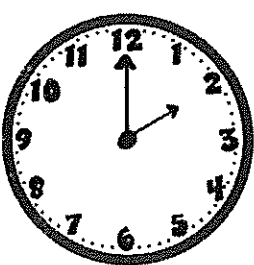
8.



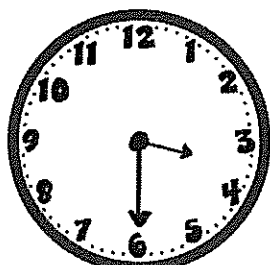
9.



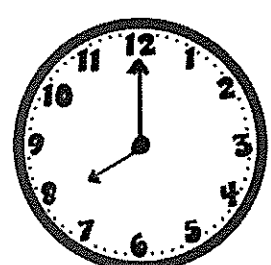
10.



11.



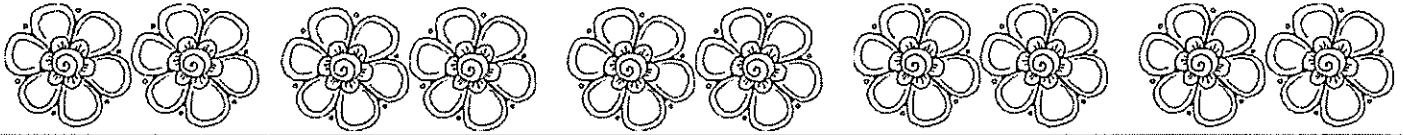
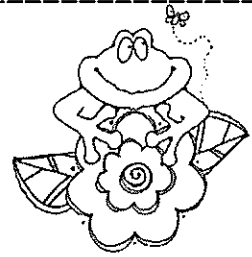
12.


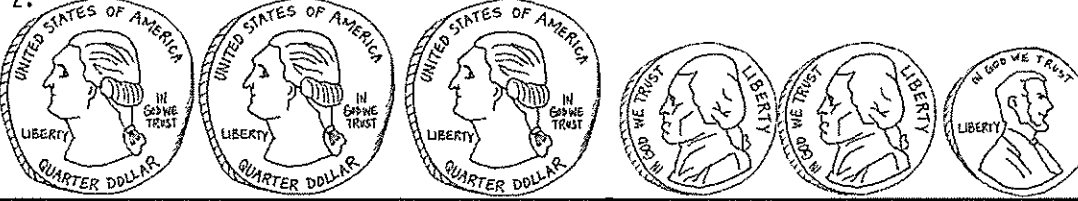
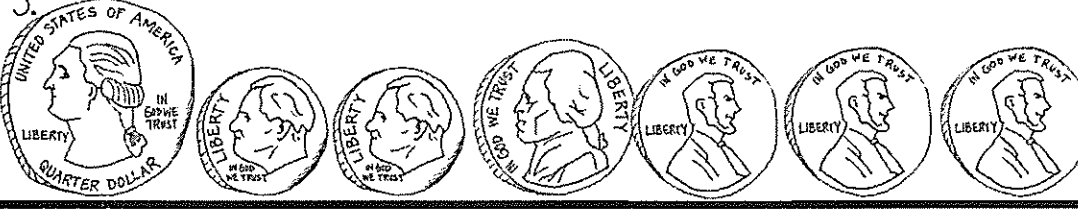





Adding Coins

Name: _____

Directions: Add the value of the coins and write the amount. 1.MD.C.7



| | |
|--|-----|
| 1.  | 52¢ |
| 2.  | |
| 3.  | |
| 4.  | |
| 5.  | |
| 6.  | |

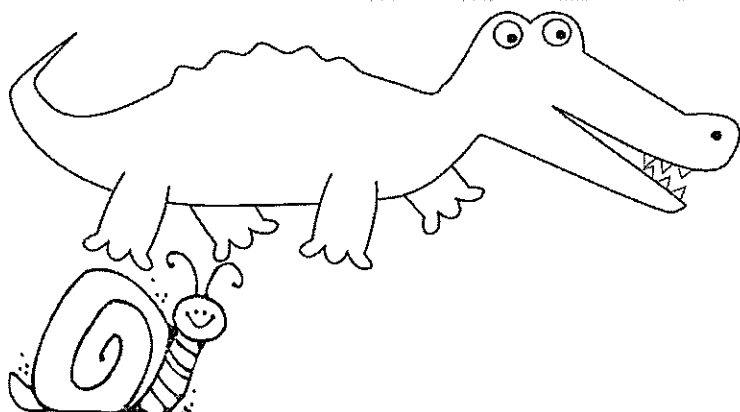
Name: _____

how much longer?

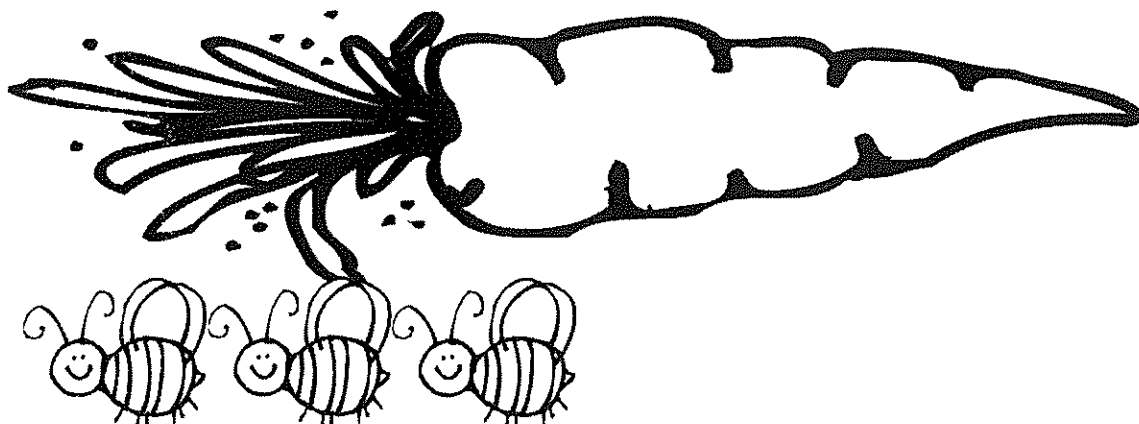
Directions: Use a ruler to measure to determine how much longer one object is from the other.
ZMDA.4



The log is _____ centimeters long. The trowels are _____ centimeters long. How much longer is the log than the trowels?
_____ centimeters



The alligator is _____ centimeters long. The snail is _____ centimeters long. How much longer is the alligator than the snail?
_____ centimeters

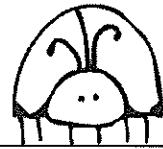


The carrot is _____ centimeters long. The bumblebees are _____ centimeters long. How much longer is the carrot than the bees?
_____ centimeters

One Step Word Problems

Name: _____

Directions: Read each story problem. Add or subtract to solve each problem. 2.OA.A.1



Josh and Jen were collecting rocks at recess. Josh collected 14 rocks and Jen collected 26 rocks. How many rocks did they collect altogether?

Kara's mom made 24 cupcakes for Kara's birthday party. 19 cupcakes were eaten. How many cupcakes were left?

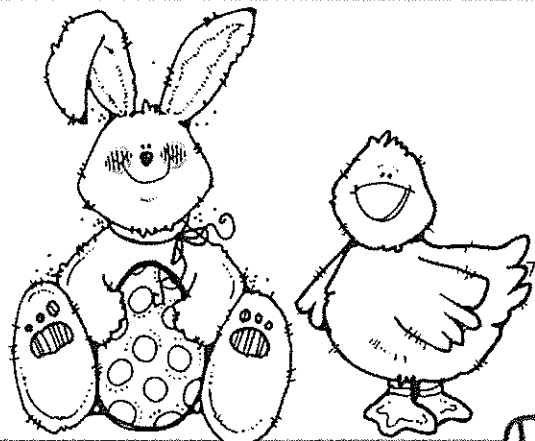
Charlie found 27 coins in his house. His mom gave him 14 more coins. How many coins does Charlie have now?

Pete is 43 inches tall. He is five inches taller than Chase. How tall is Chase?

Miss Starlight has a container with 76 crayons and another container with 53 markers. How many more crayons does she have than markers?

Britta read 38 pages in her book on Monday and 29 pages on Tuesday. How many pages did she read altogether?

Pablo collected 59 stickers. Sam collected 37 stickers. How many stickers did they collect altogether?



Mixed TRIPLE DIGIT

Name: _____

Addition & Subtraction {With Regrouping}

Directions: Add or subtract. 2.NBT.B.5

$$\begin{array}{r} 428 \\ + 293 \\ \hline \end{array}$$

$$\begin{array}{r} 502 \\ - 158 \\ \hline \end{array}$$

$$\begin{array}{r} 478 \\ + 456 \\ \hline \end{array}$$

$$\begin{array}{r} 920 \\ - 385 \\ \hline \end{array}$$

$$\begin{array}{r} 409 \\ + 264 \\ \hline \end{array}$$

$$\begin{array}{r} 606 \\ - 392 \\ \hline \end{array}$$

$$\begin{array}{r} 345 \\ + 594 \\ \hline \end{array}$$

$$\begin{array}{r} 900 \\ - 425 \\ \hline \end{array}$$

$$\begin{array}{r} 564 \\ + 249 \\ \hline \end{array}$$

$$\begin{array}{r} 702 \\ - 549 \\ \hline \end{array}$$

$$\begin{array}{r} 674 \\ + 238 \\ \hline \end{array}$$

$$\begin{array}{r} 537 \\ - 298 \\ \hline \end{array}$$

$$\begin{array}{r} 306 \\ + 459 \\ \hline \end{array}$$

$$\begin{array}{r} 405 \\ - 168 \\ \hline \end{array}$$

$$\begin{array}{r} 344 \\ + 239 \\ \hline \end{array}$$



$$\begin{array}{r} 430 \\ - 268 \\ \hline \end{array}$$

$$\begin{array}{r} 609 \\ - 234 \\ \hline \end{array}$$

$$\begin{array}{r} 628 \\ + 339 \\ \hline \end{array}$$

$$\begin{array}{r} 636 \\ + 229 \\ \hline \end{array}$$

$$\begin{array}{r} 502 \\ - 347 \\ \hline \end{array}$$

$$\begin{array}{r} 526 \\ + 278 \\ \hline \end{array}$$



Name: _____

Adding 3-digit numbers

{with regrouping}

Directions: Add the numbers using your place value strategies. 2.NBT.B.7, 3.NBT.A.3

$$\begin{array}{r} 379 \\ + 422 \\ \hline \end{array}$$

$$\begin{array}{r} 537 \\ + 433 \\ \hline \end{array}$$

$$\begin{array}{r} 298 \\ + 102 \\ \hline \end{array}$$

$$\begin{array}{r} 425 \\ + 245 \\ \hline \end{array}$$

$$\begin{array}{r} 268 \\ + 367 \\ \hline \end{array}$$

$$\begin{array}{r} 750 \\ + 334 \\ \hline \end{array}$$

$$\begin{array}{r} 832 \\ + 309 \\ \hline \end{array}$$

$$\begin{array}{r} 355 \\ + 326 \\ \hline \end{array}$$

$$\begin{array}{r} 486 \\ + 423 \\ \hline \end{array}$$

$$\begin{array}{r} 504 \\ + 289 \\ \hline \end{array}$$

$$\begin{array}{r} 677 \\ + 416 \\ \hline \end{array}$$

$$\begin{array}{r} 822 \\ + 298 \\ \hline \end{array}$$

$$\begin{array}{r} 942 \\ + 429 \\ \hline \end{array}$$

$$\begin{array}{r} 576 \\ + 187 \\ \hline \end{array}$$

$$\begin{array}{r} 286 \\ + 367 \\ \hline \end{array}$$

$$\begin{array}{r} 546 \\ + 392 \\ \hline \end{array}$$

$$\begin{array}{r} 328 \\ + 376 \\ \hline \end{array}$$

$$\begin{array}{r} 928 \\ + 431 \\ \hline \end{array}$$

$$\begin{array}{r} 785 \\ + 545 \\ \hline \end{array}$$

$$\begin{array}{r} 834 \\ + 196 \\ \hline \end{array}$$

$$\begin{array}{r} 699 \\ + 222 \\ \hline \end{array}$$

$$\begin{array}{r} 427 \\ + 112 \\ \hline \end{array}$$

$$\begin{array}{r} 509 \\ + 180 \\ \hline \end{array}$$

$$\begin{array}{r} 334 \\ + 562 \\ \hline \end{array}$$

$$\begin{array}{r} 521 \\ + 148 \\ \hline \end{array}$$

$$\begin{array}{r} 709 \\ + 280 \\ \hline \end{array}$$

$$\begin{array}{r} 404 \\ + 393 \\ \hline \end{array}$$

$$\begin{array}{r} 122 \\ + 605 \\ \hline \end{array}$$

$$\begin{array}{r} 201 \\ + 638 \\ \hline \end{array}$$

$$\begin{array}{r} 404 \\ + 264 \\ \hline \end{array}$$

$$\begin{array}{r} 310 \\ + 217 \\ \hline \end{array}$$

$$\begin{array}{r} 707 \\ + 213 \\ \hline \end{array}$$

$$\begin{array}{r} 633 \\ + 262 \\ \hline \end{array}$$

$$\begin{array}{r} 512 \\ + 386 \\ \hline \end{array}$$

$$\begin{array}{r} 434 \\ + 533 \\ \hline \end{array}$$

$$\begin{array}{r} 353 \\ + 204 \\ \hline \end{array}$$



Mixed **DOUBLE DIGIT**

Name: _____

Addition & Subtraction {With Regrouping}

Directions: Add or subtract. 2.NBT.B.5

$$\begin{array}{r} 54 \\ + 29 \\ \hline \end{array}$$

$$\begin{array}{r} 72 \\ - 15 \\ \hline \end{array}$$

$$\begin{array}{r} 47 \\ + 26 \\ \hline \end{array}$$

$$\begin{array}{r} 62 \\ - 49 \\ \hline \end{array}$$

$$\begin{array}{r} 29 \\ + 38 \\ \hline \end{array}$$

$$\begin{array}{r} 40 \\ - 29 \\ \hline \end{array}$$

$$\begin{array}{r} 24 \\ + 58 \\ \hline \end{array}$$

$$\begin{array}{r} 92 \\ - 26 \\ \hline \end{array}$$

$$\begin{array}{r} 44 \\ + 47 \\ \hline \end{array}$$

$$\begin{array}{r} 52 \\ - 34 \\ \hline \end{array}$$

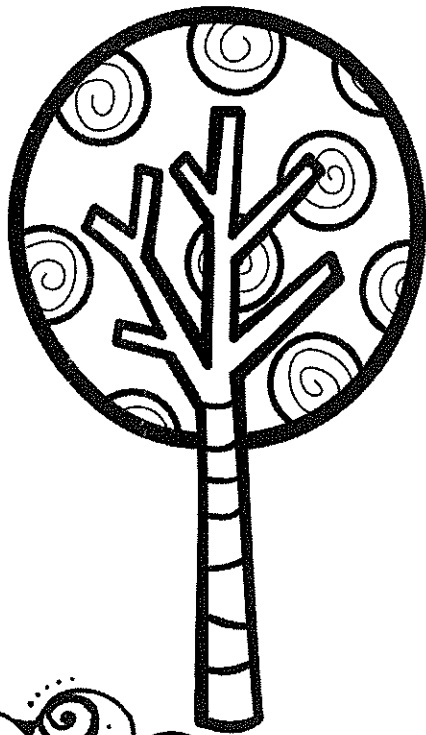
$$\begin{array}{r} 48 \\ + 23 \\ \hline \end{array}$$

$$\begin{array}{r} 73 \\ - 48 \\ \hline \end{array}$$

$$\begin{array}{r} 39 \\ + 49 \\ \hline \end{array}$$

$$\begin{array}{r} 42 \\ - 26 \\ \hline \end{array}$$

$$\begin{array}{r} 34 \\ + 56 \\ \hline \end{array}$$



$$\begin{array}{r} 43 \\ - 26 \\ \hline \end{array}$$

$$\begin{array}{r} 40 \\ - 29 \\ \hline \end{array}$$

$$\begin{array}{r} 38 \\ + 37 \\ \hline \end{array}$$

$$\begin{array}{r} 34 \\ + 59 \\ \hline \end{array}$$

$$\begin{array}{r} 52 \\ - 37 \\ \hline \end{array}$$

$$\begin{array}{r} 56 \\ + 45 \\ \hline \end{array}$$



FLUENCY Facts

Name: _____

Directions: Add. 2.OA.B.2

$7 + 9 = \underline{\quad}$

$4 + 0 = \underline{\quad}$

$2 + 6 = \underline{\quad}$

$6 + 9 = \underline{\quad}$

$9 + 8 = \underline{\quad}$

$5 + 2 = \underline{\quad}$

$7 + 6 = \underline{\quad}$

$7 + 7 = \underline{\quad}$

$5 + 4 = \underline{\quad}$

$9 + 8 = \underline{\quad}$

$4 + 2 = \underline{\quad}$

$1 + 8 = \underline{\quad}$

$9 + 6 = \underline{\quad}$

$3 + 6 = \underline{\quad}$

$3 + 0 = \underline{\quad}$

$5 + 3 = \underline{\quad}$

$8 + 7 = \underline{\quad}$

$8 + 2 = \underline{\quad}$

$1 + 3 = \underline{\quad}$

$9 + 5 = \underline{\quad}$

$2 + 8 = \underline{\quad}$

$2 + 8 = \underline{\quad}$

$6 + 6 = \underline{\quad}$

$4 + 2 = \underline{\quad}$

$3 + 8 = \underline{\quad}$

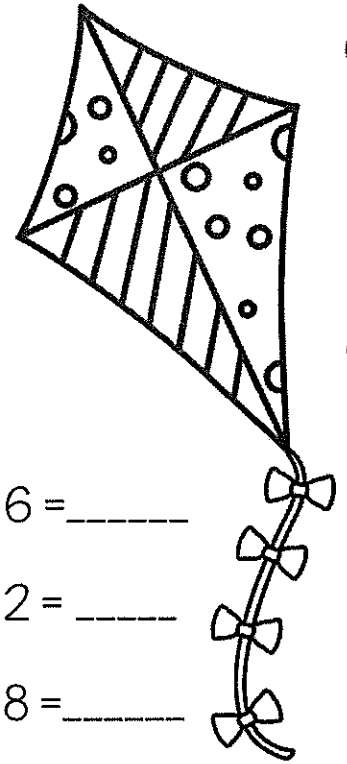
$5 + 5 = \underline{\quad}$

$9 + 7 = \underline{\quad}$

$4 + 7 = \underline{\quad}$

$2 + 4 = \underline{\quad}$

$5 + 7 = \underline{\quad}$



$$\begin{array}{r} 9 \\ +3 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ +3 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ +4 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ +2 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ +4 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ +5 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ +2 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ +8 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ +9 \\ \hline \end{array}$$

$$\begin{array}{r} 0 \\ +6 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ +4 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ +2 \\ \hline \end{array}$$

$$\begin{array}{r} 1 \\ +9 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ +2 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ +0 \\ \hline \end{array}$$

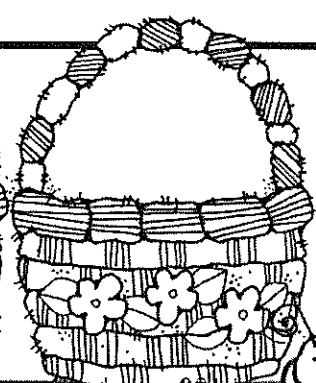
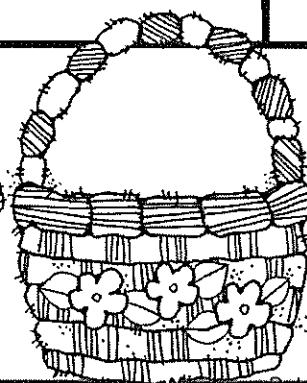
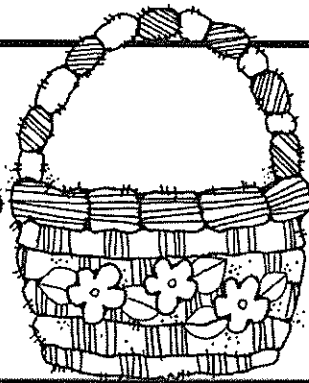
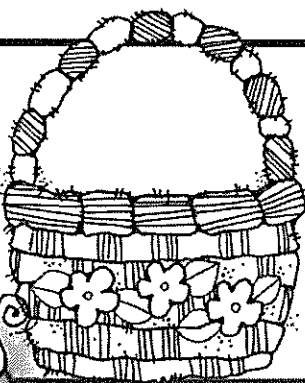
$$\begin{array}{r} 2 \\ +7 \\ \hline \end{array}$$

Standard Form

Name: _____

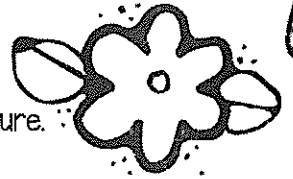
Directions: Read the number written in word form. Write the matching number in standard form.
2.NBT.A.3

| | |
|---------------------------|-----|
| Three hundred fifty-two | 352 |
| Six hundred eighteen | |
| Four hundred ninety-six | |
| Two hundred thirty-eight | |
| Eight hundred seventy | |
| Five hundred twenty-three | |
| One hundred fifteen | |
| Seven hundred sixty-four | |
| Nine hundred seventy-one | |
| Three hundred forty-nine | |

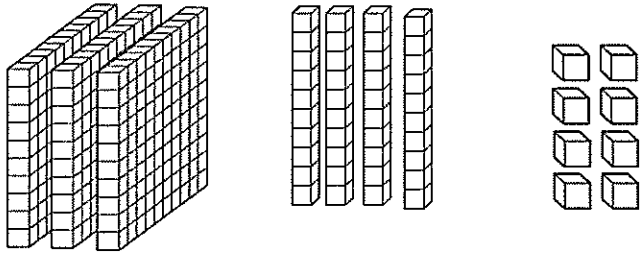


Name: _____

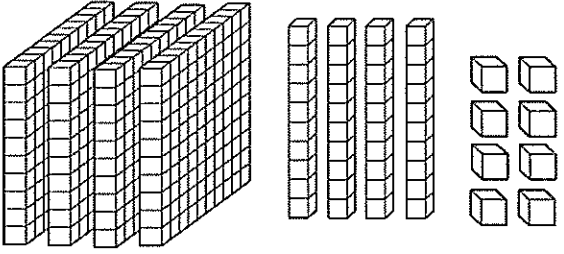
Base Ten Expanded Form



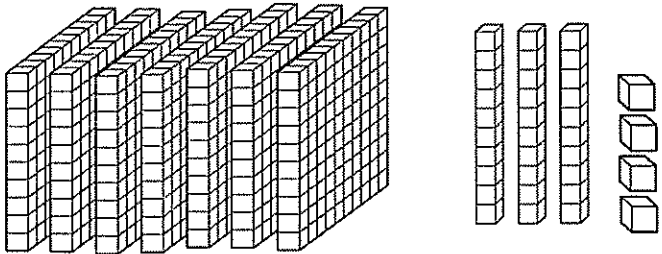
Directions: Write the expanded form, standard form and word form for each picture.
2.NBTA.1 & 2.NBTA.3



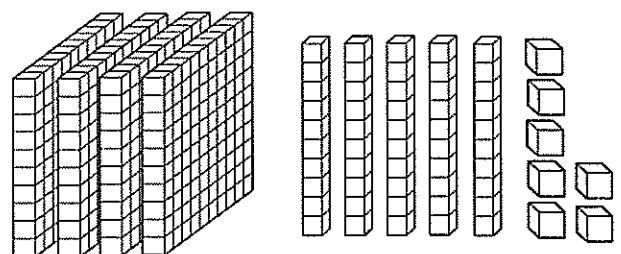
$300 + 40 + 8 = 348$
Three hundred
forty-eight



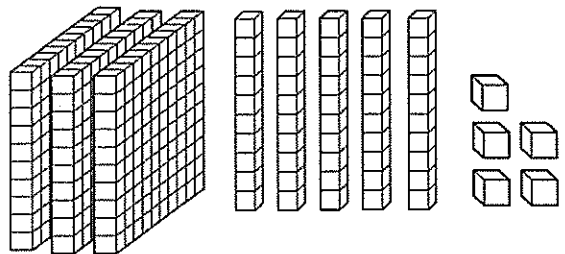
_____ + _____ + _____ = _____



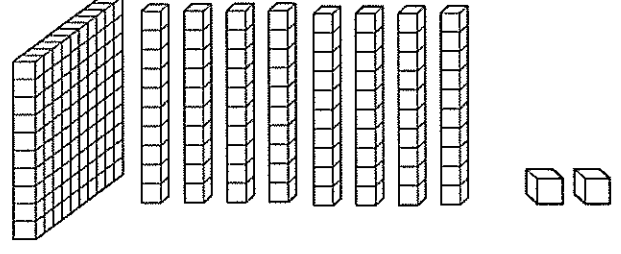
_____ + _____ + _____ = _____



_____ + _____ + _____ = _____



_____ + _____ + _____ = _____



_____ + _____ + _____ = _____

