

# Matter Unit Teacher Masters: Table of Contents

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Dear Families,

Although everything in our universe consists of matter or energy, we seldom think of matter on a daily basis. In the Science Companion® Matter Unit our class is starting, children's natural curiosity is kindled as they consider the question, "What is matter?" Through hands-on experimentation, children build an understanding of how matter changes between its solid, liquid, and gaseous states. They also investigate various mixtures to reveal interesting properties of matter. Along the way, children gain an appreciation of the experimental method employed by scientists everywhere.

During the Matter Unit, students will:

- Define matter and identify many of its common properties.
- Learn how to carefully measure weight and volume of materials.
- Become familiar with the common states of matter: solid, liquid, and gas.
- Observe condensation and evaporation of water to discover that variables like temperature affect the state of matter.
- Design and conduct a fair test—an experiment—to investigate their ideas about matter.
- Mix and separate solids and liquids to learn more about matter's properties.
- Discover how unusual mixtures have properties unlike other materials they explore in the unit.
- Observe examples of chemical changes.

In addition to the work your child does in class, you and your child can explore this rich topic together at home in the following ways:

- Read a **science book** that your child checks out from the class Science Center.
- Visit the **web site** at [www.ScienceCompanion.com/links](http://www.ScienceCompanion.com/links) to find a list and description of recommended web sites about matter, if you have a computer at home with access to the Internet.
- Complete **Family Links** the teacher sends home from time to time. These handouts include:
  - Homework—Assignments your child is expected to complete and return to class.
  - Home Activities—Things you and your child can do together if you have the time and interest (please note that this is not required homework).

Making sense of the physical world in which we live is a very satisfying and engaging process for children and adults. We hope you share your child's enthusiasm and learn with them while helping them explore matter.

Sincerely,

Name: \_\_\_\_\_ Date: \_\_\_\_\_

# Change and Weigh

## Materials:

- Beeswax, origami paper, fabric, or other materials
- Scale

1. Choose one of the materials and weigh it: \_\_\_\_\_ g
2. Now change the material. For example, you can fold it into a new shape or stretch it out long.
3. Weigh it again: \_\_\_\_\_ g
4. Compare the weights. What do you find?

## Think about it:

5. Has anything been added to the material?
6. Has anything in the material changed other than its shape or size?

Name: \_\_\_\_\_ Date: \_\_\_\_\_

# Make It Match

## Materials:

- Different kinds of clay
- Objects made of foam
- Scale

**Challenge 1:** Use the materials to make objects that all have the same size. Compare their weights. What do you find?

**Challenge 2:** Use the materials to make objects that all have the same weight. Compare their sizes. What do you find?

How do you explain your discoveries?

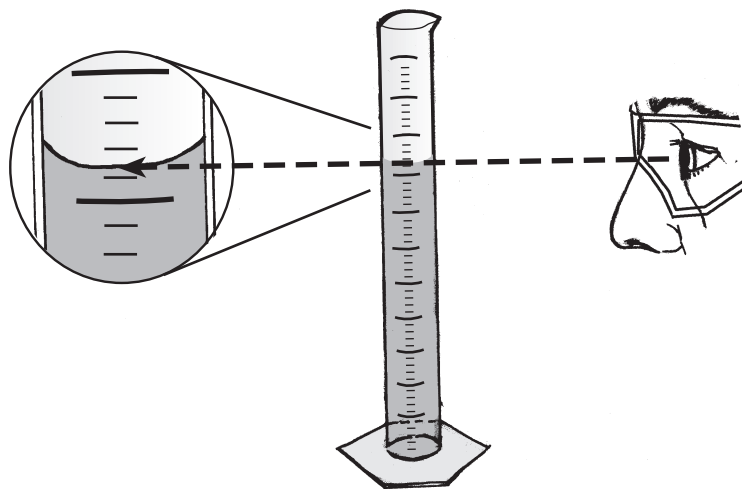
# Accurately Measuring Volume

## Materials:

- 100 ml graduated cylinder
- 100 ml beaker
- 230 cc calibrated cup
- Water

## Procedure:

1. In the beaker, measure 60 ml of water.
2. Carefully pour the water from the beaker into the graduated cylinder. Remember to tap the bottom of the beaker to get the final drops of water into the graduated cylinder.
3. Measure and record the volume of water in the graduated cylinder. Remember, if the meniscus is obvious, look at the lowest part of the curve.
4. Carefully pour the water from the graduated cylinder into the calibrated cup.
5. Measure and record the volume of water in the cup. Remember, 1 cc = 1 ml.
6. Pour out the water from the calibrated cup, and repeat steps 1–3 with 70 and 80 ml of water.



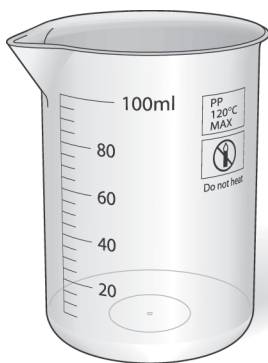
Look at the meniscus.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

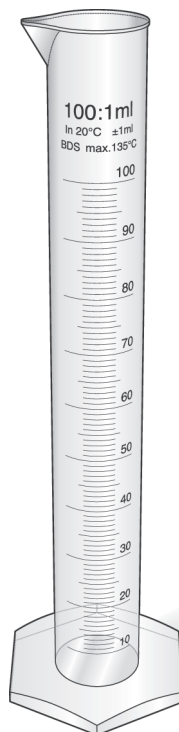
# Accurately Measuring Volume

Data:

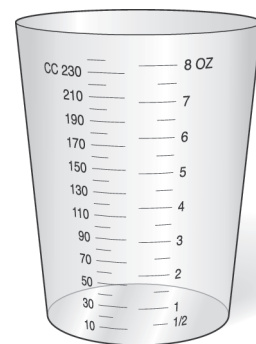
Volume of water in beaker	Volume of water in graduated cylinder	Volume of water in calibrated cup
60 ml	ml	cc
70 ml	ml	cc
80 ml	ml	cc



Beaker



Graduated cylinder



Calibrated cup

Name: \_\_\_\_\_ Date: \_\_\_\_\_

# Accurately Measuring Weight

## Materials:

- Scale
- 4 different objects to weigh

## Procedure:

1. Write the number of the scale you are using and name of the objects being weighed in the first two columns of the table below.
2. Place the scale on a level surface, turn on the scale, and set the mode to grams.
3. Weigh an object carefully and record the weight (in grams) in the third column of the table, "1st Weight."
4. Weigh the object two more times, and record the measurements as "2nd Weight" and "3rd Weight."
5. Repeat steps 3 and 4 for the remaining objects.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

# Accurately Measuring Weight

Data:

Scale #	Object	1st Weight	2nd Weight	3rd Weight
		g	g	g
		g	g	g
		g	g	g
		g	g	g



Name: \_\_\_\_\_ Date: \_\_\_\_\_

# Setting Up a Fair Test

## Investigative Question:

1. What are you trying to discover?

## Variables:

2. What is the one **variable** you will test?

3. How will you change that variable?

Name: \_\_\_\_\_ Date: \_\_\_\_\_

# Setting Up a Fair Test

Use the chart and questions on this page to help you organize the fair test.

What variable are you going to change? _____	
What variables will you keep the same?	How will you keep the variable the same?

4. What are you going to measure?

5. How will you measure this?

Name: \_\_\_\_\_ Date: \_\_\_\_\_

# Setting Up a Fair Test

## Materials:

6. What materials do you need?

## Procedure:

7. List the steps you will follow to do your experiment.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

# Setting Up a Fair Test

## Data:

8. Record observations and data in the space provided below.

## Conclusion:

9. What did you learn from your test?

Name: \_\_\_\_\_ Date: \_\_\_\_\_

# Guiding Questions for Forming Conclusions

A conclusion tells what you have discovered based on an observation or other data. It may be the answer to an investigative question. Use these two pages to make sure your conclusion is clear and supported by evidence. Then think about new questions that your conclusion may bring up.

Investigative question or study topic: \_\_\_\_\_

---

1. Write your conclusion here. Check whether it is easy to understand. If not, revise it.

2. Is your conclusion supported by your data? Explain how the data supports your conclusion.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Guiding Questions for Forming Conclusions

3. Does the conclusion make sense, based on other things that you know (or think you know)? Write down some of these other things.

4. What new questions do you now have about this topic?

5. What kind of data or evidence would you need to explore these questions?

# Data Set 1

## Chicago in November 2012 Daily Sunrise and Sunset Data

Latitude: 41° 51' North  
Longitude: 87° 41' West

Standard time zone: GMT -6 hours  
Daylight saving time? No  
(as of November 4)

Date	Time of Sunrise	Time of Sunset	Length of Daylight
11/1/12	7:24 AM	5:44 PM	10 hr, 20 min
11/2/12	7:25 AM	5:43 PM	10 hr, 18 min
11/3/12	7:26 AM	5:42 PM	10 hr, 16 min
11/4/12*	6:27 AM	4:41 PM	10 hr, 14 min
11/5/12	6:29 AM	4:40 PM	10 hr, 11 min
11/6/12	6:30 AM	4:38 PM	10 hr, 08 min
11/7/12	6:31 AM	4:37 PM	10 hr, 06 min
11/8/12	6:32 AM	4:36 PM	10 hr, 04 min
11/9/12	6:34 AM	4:35 PM	10 hr, 01 min
11/10/12	6:35 AM	4:34 PM	9 hr, 59 min
11/11/12	6:36 AM	4:33 PM	9 hr, 57 min
11/12/12	6:37 AM	4:32 PM	9 hr, 55 min
11/13/12	6:38 AM	4:31 PM	9 hr, 53 min
11/14/12	6:40 AM	4:30 PM	9 hr, 50 min
11/15/12	6:41 AM	4:30 PM	9 hr, 49 min
11/16/12	6:42 AM	4:29 PM	9 hr, 47 min
11/17/12	6:43 AM	4:28 PM	9 hr, 45 min
11/18/12	6:45 AM	4:27 PM	9 hr, 42 min
11/19/12	6:46 AM	4:26 PM	9 hr, 40 min
11/20/12	6:47 AM	4:26 PM	9 hr, 39 min
11/21/12	6:48 AM	4:25 PM	9 hr, 37 min
11/22/12	6:49 AM	4:24 PM	9 hr, 35 min
11/23/12	6:50 AM	4:24 PM	9 hr, 34 min
11/24/12	6:52 AM	4:23 PM	9 hr, 31 min
11/25/12	6:53 AM	4:23 PM	9 hr, 30 min
11/26/12	6:54 AM	4:22 PM	9 hr, 28 min
11/27/12	6:55 AM	4:22 PM	9 hr, 27 min
11/28/12	6:56 AM	4:21 PM	9 hr, 25 min
11/29/12	6:57 AM	4:21 PM	9 hr, 24 min
11/30/12	6:58 AM	4:21 PM	9 hr, 23 min

\*Daylight saving time ends on Sunday, November 4, 2012. On that day, clocks change backward 1 hour. Sunrise and sunset times are approximate, and assume a flat horizon. If there are hills or mountains or other obstructions, actual sunrise will be later and actual sunset will be earlier.

# Data Set 2

## Chicago in Summer and Winter Weekly Sunrise and Sunset Data

Latitude: 41° 51' North  
Longitude: 87° 41' West

Standard time zone: GMT -6 hours  
Daylight saving time: + 1 hour

### May, 2012

Daylight saving time? Yes

Date	Time of Sunrise	Time of Sunset	Length of Daylight
Thurs, 5/3/12	5:44 AM	7:52 PM	14 hr, 8 min
Thurs, 5/10/12	5:35 AM	7:59 PM	14 hr, 24 min
Thurs, 5/17/12	5:28 AM	8:07 PM	14 hr, 39 min
Thurs, 5/24/12	5:23 AM	8:13 PM	14 hr, 50 min
Thurs, 5/31/12	5:18 AM	8:19 PM	14 hr, 1 min

### June, 2012

Daylight saving time? Yes

Date	Time of Sunrise	Time of Sunset	Length of Daylight
Thurs, 6/7/12	5:16 AM	8:24 PM	15 hr, 8 min
Thurs, 6/14/12	5:15 AM	8:27 PM	15 hr, 12 min
Thurs, 6/21/12	5:16 AM	8:29 PM	15 hr, 13 min
Thurs, 6/28/12	5:18 AM	8:30 PM	15 hr, 12 min

### July, 2012

Daylight saving time? Yes

Date	Time of Sunrise	Time of Sunset	Length of Daylight
Thurs, 7/5/12	5:22 AM	8:28 PM	15 hr, 6 min
Thurs, 7/12/12	5:27 AM	8:25 PM	14 hr, 58 min
Thurs, 7/19/12	5:33 AM	8:21 PM	14 hr, 48 min
Thurs, 7/26/12	5:39 AM	8:15 PM	14 hr, 36 min

Sunrise and sunset times are approximate, and assume a flat horizon. If there are hills or mountains or other obstructions, actual sunrise will be later and actual sunset will be earlier.



# Data Set 2

## Chicago in Summer and Winter Weekly Sunrise and Sunset Data

Latitude: 41° 51' North  
Longitude: 87° 41' West

Standard time zone: GMT -6 hours  
Daylight saving time: + 1 hour

### November, 2012

Daylight saving time? No (as of November 4)

Date	Time of Sunrise	Time of Sunset	Length of Daylight
Thurs, 11/1/12	7:24 AM	5:44 PM	10 hr, 20 min
Thurs, 11/8/12*	6:32 AM	4:36 PM	10 hr, 4 min
Thurs, 11/15/12	6:41 AM	4:30 PM	9 hr, 49 min
Thurs, 11/22/12	6:49 AM	4:24 PM	9 hr, 35 min
Thurs, 11/29/12	6:57 AM	4:21 PM	9 hr, 24 min

### December, 2012

Daylight saving time? No

Date	Time of Sunrise	Time of Sunset	Length of Daylight
Thurs, 12/6/12	7:04 AM	4:20 PM	9 hr, 16 min
Thurs, 12/13/12	7:10 AM	4:20 PM	9 hr, 10 min
Thurs, 12/20/12	7:15 AM	4:23 PM	9 hr, 8 min
Thurs, 12/27/12	7:18 AM	4:27 PM	9 hr, 9 min

### January, 2013

Daylight saving time? No

Date	Time of Sunrise	Time of Sunset	Length of Daylight
Thurs, 1/3/13	7:18 AM	4:33 PM	9 hr, 15 min
Thurs, 1/10/13	7:18 AM	4:40 PM	9 hr, 22 min
Thurs, 1/17/13	7:15 AM	4:48 PM	9 hr, 33 min
Thurs, 1/24/13	7:10 AM	4:56 PM	9 hr, 46 min
Thurs, 1/31/13	7:04 AM	5:05 PM	10 hr, 1 min

\*Daylight saving time ends in Chicago on Sunday, November 4, 2012. On that day, clocks change backward 1 hour.

Sunrise and sunset times are approximate, and assume a flat horizon. If there are hills or mountains or other obstructions, actual sunrise will be later and actual sunset will be earlier.

# Data Set 3

## Chicago in November 2012, 2013, 2014 Weekly Sunrise and Sunset Data

Latitude: 41° 51' North  
Longitude: 87° 41' West

Standard time zone: GMT -6 hours  
Daylight saving time? No  
(as of first Sunday)

### November, 2012

Date	Time of Sunrise	Time of Sunset	Length of Daylight
11/1/12	7:24 AM	5:44 PM	10 hr, 20 min
11/8/12*	6:32 AM	4:36 PM	10 hr, 4 min
11/15/12	6:41 AM	4:30 PM	9 hr, 49 min
11/22/12	6:49 AM	4:24 PM	9 hr, 35 min
11/29/12	6:57 AM	4:21 PM	9 hr, 24 min

### November, 2013

Date	Time of Sunrise	Time of Sunset	Length of Daylight
11/1/13	7:23 AM	5:45 PM	10 hr, 22 min
11/8/2013*	6:32 AM	4:37 PM	10 hr, 5 min
11/15/13	6:41 AM	4:30 PM	9 hr, 49 min
11/22/13	6:49 AM	4:25 PM	9 hr, 36 min
11/29/13	6:57 AM	4:21 PM	9 hr, 24 min

### November, 2014

Date	Time of Sunrise	Time of Sunset	Length of Daylight
11/1/14	7:23 AM	5:45 PM	10 hr, 22 min
11/8/2014*	6:32 AM	4:37 PM	10 hr, 5 min
11/15/14	6:40 AM	4:30 PM	9 hr, 50 min
11/22/14	6:49 AM	4:25 PM	9 hr, 36 min
11/29/14	6:57 AM	4:21 PM	9 hr, 24 min

\*Daylight saving time ends on the first Sunday in November. On that day, clocks change backward 1 hour. Sunrise and sunset times are approximate, and assume a flat horizon. If there are hills or mountains or other obstructions, actual sunrise will be later and actual sunset will be earlier.

# Data Set 4

## Five Cities in November Weekly Sunrise and Sunset Data

### Reykjavik, Iceland in November 2012

Latitude: 64° 09' North  
Longitude: 21° 58' West

Standard time zone: GMT +0 hours  
Daylight saving time? No

Date	Time of Sunrise	Time of Sunset	Length of Daylight
11/1/12	9:12 AM	5:09 PM	7 hr, 57 min
11/8/12	9:35 AM	4:47 PM	7 hr, 12 min
11/15/12	9:58 AM	4:26 PM	6 hr, 28 min
11/22/12	10:20 AM	4:07 PM	5 hr, 47 min
11/29/12	10:41 AM	3:51 PM	5 hr, 10 min

### Moscow, Russia in November 2012

Latitude: 55° 45' North  
Longitude: 37° 37' East

Standard time zone: GMT +3 hours  
Daylight saving time? No

Date	Time of Sunrise	Time of Sunset	Length of Daylight
11/1/12	8:36 AM	5:49 PM	9 hr, 13 min
11/8/12	8:51 AM	5:35 PM	8 hr, 44 min
11/15/12	9:05 AM	5:22 PM	8 hr, 17 min
11/22/12	9:19 AM	5:12 PM	7 hr, 53 min
11/29/12	9:32 AM	5:04 PM	7 hr, 32 min

### Chicago, Illinois, U.S.A in November 2012

Latitude: 41° 51' North  
Longitude: 87° 41' West

Standard time zone: GMT -6 hours  
Daylight saving time? No

Date	Time of Sunrise	Time of Sunset	Length of Daylight
11/1/12	7:24 AM	5:44 PM	10 hr, 20 min
11/8/12*	6:32 AM	4:36 PM	10 hr, 4 min
11/15/12	6:41 AM	4:30 PM	9 hr, 49 min
11/22/12	6:49 AM	4:24 PM	9 hr, 35 min
11/29/12	6:57 AM	4:21 PM	9 hr, 24 min

\*Daylight saving time ends in Chicago on Sunday, November 4, 2012. On that day, clocks change backward 1 hour.

Sunrise and sunset times are approximate, and assume a flat horizon. If there are hills or mountains or other obstructions, actual sunrise will be later and actual sunset will be earlier.

# Data Set 4

## Five Cities in November Weekly Sunrise and Sunset Data

### Jakarta, Indonesia in November 2012

Latitude: 6° 08' South  
Longitude: 106° 45' East

Standard time zone: GMT +7 hours  
Daylight saving time? No

Date	Time of Sunrise	Time of Sunset	Length of Daylight
11/1/12	5:27 AM	5:46 PM	12 hr, 19 min
11/8/12	5:26 AM	5:48 PM	12 hr, 22 min
11/15/12	5:26 AM	5:50 PM	12 hr, 24 min
11/22/12	5:26 AM	5:52 PM	12 hr, 26 min
11/29/12	5:28 AM	5:55 PM	12 hr, 27 min

### Johannesburg, South Africa in November 2012

Latitude: 26° 08' South  
Longitude: 27° 54' East

Standard time zone: GMT +2 hours  
Daylight saving time? No

Date	Time of Sunrise	Time of Sunset	Length of Daylight
11/1/12	5:19 AM	6:25 PM	13 hr, 6 min
11/8/12	5:14 AM	6:30 PM	13 hr, 16 min
11/15/12	5:11 AM	6:35 PM	13 hr, 24 min
11/22/12	5:09 AM	6:41 PM	13 hr, 32 min
11/29/12	5:08 AM	6:46 PM	13 hr, 38 min

Sunrise and sunset times are approximate, and assume a flat horizon. If there are hills or mountains or other obstructions, actual sunrise will be later and actual sunset will be earlier.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Family Link with Science—Homework

# Matter in Our Refrigerator

Your child is studying matter in science class. Today we talked about how scientists classify the materials in the world into three common states: solids, liquids, and gases.

Open your refrigerator and identify ten items that take up space. Write the name of each item and a brief description of it. Then identify whether it is a solid, a liquid, a gas, or a combination (for example: solid and liquid, or liquid and gas).

Name the item.	Describe the item.	Is it a solid, liquid, or gas?
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

Please complete this assignment for science class.

# Request for Materials

Dear Families,

Next week in science class we will be performing an exploration that requires the following materials:

If you can donate or lend any of these items, please send them in with your child

by \_\_\_\_\_.

(requested date)

Thank you for your support,

---

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Family Link with Science—Homework

# Weigh Yourself in Different Shapes

*As part of the Matter Unit, your child has been measuring the weights of solids and liquids. They have observed that an object's weight remains the same even when formed into different shapes. If you have a bathroom scale at home, assist your child with reading and recording the weight measurements.*

Find a bathroom scale to weigh yourself on while standing in different positions. Record the weights in the table, and answer the questions.

1. Stand on a bathroom scale and weigh yourself. Record your weight in the table below. (Remember to note the units of measurement. Does your scale measure in pounds or grams?)
2. Curl your body into a ball on the scale. Make sure you don't touch the floor or a wall. Record your weight in the table.
3. Stretch your body up as tall as you can. Record your weight in the table.

Your Position	Your Weight
Standing	
Curled up	
Stretched tall	

### Questions:

1. Did your weight change when you held your body in different shapes?
2. Explain why or why not.

Please complete this assignment for science class.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Family Link with Science—Home Activity

# Packaged by Weight, Not Volume

*As part of the Matter Unit, your child has been measuring weight and volume. They have observed that collections of small solids can settle, so that the volume looks different while the weight remains the same.*

Look in your kitchen cupboard or on supermarket shelves for five packages of food labeled with their weight, not their volume. What kind of food are they?

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

### Think about it:

1. What state of matter are these foods?

2. Why were they packaged by weight, not by volume?

This activity is optional.



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Family Link with Science

# Request for Objects: Steel, Wood, and Foam

*Our science class will be comparing the densities of different materials. Please check the list below to see if you can lend or donate objects needed for this activity.*

Please bring solid objects of different sizes made from steel, wood, and Styrofoam® to class. For example:

**Steel:** socket wrenches and their sockets, crescent wrenches, steel marbles, nuts and bolts

**Wood:** sturdy figures of different sizes, blocks of different sizes, chunky sticks

**Foam:** large blocks from appliance packaging (these would be especially helpful!)

Please bring the objects to school by \_\_\_\_\_.  
(Day and date)

Thank you.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Family Link with Science—Homework

# Talk About Density

*As part of the Matter Unit, your child has been exploring the densities of different materials. Density describes how heavy an object is for its size. This activity helps your child talk about what they have learned about density.*

Show a family member two objects that are made of different materials. You can choose objects that are the same size, or objects that are different sizes. Talk about the questions below.

My two objects are: \_\_\_\_\_ and \_\_\_\_\_

### Questions:

- If the two objects were the same size, which one would be heavier?
- Which object has a larger density?
- If you could magically change the size of the objects until they had the same weight, which object would be larger?
- What do you think “density” is?

Please complete this assignment for science class.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Family Link with Science—Home Activity

# Freezing Liquids

*Your child is studying the properties of matter when it changes states between liquid and solid. Please give your child two empty, clear plastic cups or soda bottles and a permanent marker, and offer a small space in the freezer compartment for him or her to use.*

Today in class you learned that a given amount of oil and water **weigh** the same whether they are in a liquid state or frozen solid. Investigate what happens to their **volume** when they freeze.

1. Draw a line across the halfway mark on two clear, plastic containers.
2. Fill one of the containers to the halfway line with water, and fill the other container to the halfway line with olive oil.
3. Put both containers in the freezer until they are frozen solid.

### Questions:

1. Where is the top surface of the ice compared to the line you drew on the container?
2. Where is the surface level of the frozen oil compared to the line you drew on the container?
3. Let the frozen solids melt in the cups. Which becomes liquid first?

This activity is optional.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Family Link with Science—Home Activity

# Ice Cream Shell Topping

*Your child is studying the properties of matter when it changes states between liquid and solid. This activity is a fun one for dessert time. You can either make your own ice cream shell topping, or purchase a bottle at the grocery store.*

Watch a liquid harden into a solid!

### Recipe

6 oz (1 small package) chocolate or butterscotch chips

$\frac{1}{4}$  cup ( $\frac{1}{2}$  stick) butter or margarine

$\frac{1}{4}$  cup corn oil

Melt the chocolate or butterscotch chips together with the butter in a double boiler, or microwave on low. When melted, add oil and mix well.

Spoon the topping over ice cream, and it will harden.

This activity is optional.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Family Link with Science

# Container Request

*While studying matter in our science unit, students will need multiple containers for observing how liquids and gases change between states of matter.*

Please bring as many of these containers as possible to class:

- Glass jars or cups
- Metal cans

Make sure to wash the containers first, and remove any paper labels from them.

Please bring containers to school by \_\_\_\_\_.  
(Day and date)

Thank you.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Family Link with Science—Homework

# Evaporation in My Home

*As part of the Matter Unit, your child is studying evaporation. This activity helps your child observe evaporation in different areas of your home and think about what affects evaporation in those areas.*

1. With a family member, identify some locations around your home where you can leave a cup of water uncovered and undisturbed for at least one week. (Make sure it is in a location where a house pet cannot drink it.)
2. Gather clear plastic cups (all the same size and shape) for each location you identified and fill each one with 1 cup of water.
3. Mark the level of the water on each cup with a permanent marker or a piece of masking tape.
4. Place the cups in the different locations around your home.
5. Check the cups after a week and answer the questions below.

### Questions:

1. Where in your home did the most water evaporate? Why do you think more water evaporated in that spot?
  
  
  
  
  
  
  
  
  
  
2. Where in your home did the least amount of water evaporate? Why do you think less water evaporated in that spot?

Please complete this assignment for science class.







Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Family Link with Science—Homework

# Mixtures of Food

*Your child has begun the study of mixtures in our Matter Unit. Today they mixed and separated some solid materials. In the next lesson they will mix and separate mixtures of solids and liquids.*

Look at the ingredients list on the labels of some packaged foods. At dinner, think about how many of the things you eat are mixtures.

What is your favorite food that is a mixture? \_\_\_\_\_

List its ingredients:

Please complete this assignment for science class.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Family Link with Science—Home Activity

# Making “Whatzit?!”

*In a recent science class we looked at a mixture called “Whatzit?!” and discovered that it has some properties of a solid and some of a liquid. Some students are interested in doing more investigations of this material. Please help your child follow these directions to make their own.*

### Materials:

1 cup cornstarch

½ cup water (approximately)

Food coloring

Mixing bowl

Spoon

### Directions:

1. Empty 1 cup of cornstarch into a mixing bowl.
2. Slowly add water. As you add the water, mix it into the cornstarch with your hands. Add just enough water so that the cornstarch is wet. You don't need to use all of the water.
  - If the mixture feels too powdery, add a little more water.
  - If the mixture feels too wet, add more cornstarch.
3. Add a few drops of food coloring to the Whatzit mixture.
4. Test to see that the Whatzit exhibits the properties of both a solid and a liquid:
  - Quickly tap your finger or a spoon on the Whatzit. It should feel solid. (If it spatters, add more cornstarch.)
  - Slowly poke your finger into the Whatzit. It should feel like a liquid. (If it resists, add more water.)

This activity is optional.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Family Link with Science—Home Activity

# Pop the Bag!

Today in science class your child mixed baking soda and vinegar in a resealable plastic bag. They saw that it created a gas (carbon dioxide). It was so much fun, they might want to continue experimenting at home. Please give your child access to an empty kitchen sink or bathtub and provide the supplies.

### Supplies:

- 6 resealable, sandwich-sized “zipper” bags
- Baking soda
- Vinegar
- Measuring cup
- Measuring spoon
- Kitchen gloves
- Goggles or glasses

### Procedure:

1. Put on the kitchen gloves and goggles or glasses.
2. Use a measuring spoon to put some baking soda into a bag. Record how much baking soda in the chart below.
3. Pour some vinegar into the measuring cup. Record how much in the chart below.
4. Set the bag inside a sink or bathtub. Pour the vinegar in, and quickly close the bag.
5. Observe what happens, and record the result in the chart.
6. Repeat until you discover just the right amount of baking soda and vinegar to make the bag pop its seal!

	Baking soda	Vinegar	Result
1.			
2.			
3.			
4.			
5.			
6.			

This activity is optional.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Family Link with Science—Homework

# Writing Procedures

*In science class your child has been learning to follow written procedures. Today's assignment is to practice writing them.*

### **Materials:**

- Peanut butter in a jar
- Jelly in a jar
- Sliced bread in its packaging
- 2 plastic knives

### **Procedure:**

Write numbered steps that tell a robot how to make a peanut butter and jelly sandwich.

Please complete this assignment for science class.