Name: _____ Date: _____

Making Ice Pops

In the summer, it can get very hot. You play with your friends. You want a cold snack. Make some ice pops!

You will need:

- Juice
- Fruit
- Bowl
- Spoon
- Ice cube tray
- Toothpicks

Choose your favorite type of juice and fruit. Pour the juice into a bowl. Have an adult cut fruit into small pieces. Add the fruit to the juice. Mix it up!

Pour the fruit and juice into the ice cube tray. Put the tray in the freezer and wait.

Check the tray in one hour. Has the liquid started to freeze? Add toothpicks. Place one toothpick in the middle of each ice pop. Close the freezer. Play a game while you wait.

Check the tray two hours later. Is the juice pop solid? Can you see the fruit pieces? Your cool treat is ready to eat! Think of all the parts in your juice pop.

You started with liquid juice and solid fruit. What happened when you froze these ingredients?

Questions:

1. Can you see the particles of the ice pop?

2. How did the ice pop mixture change over time?

3. What would happen if you left an ice pop outside on a hot day?

Credit: Nataliia Pyzhova/Shutterstock.com

Nombre: _____ Fecha: _____

Hacer helados

En el verano puede hacer mucho calor. Juegas con tus amigos. Quieres un refrigerio frío. ¡Prepara algunos helados!

Necesitarás

- Jugo
- Fruta
- Bol
- Cuchara
- Cubitera
- Palillos

Elige tu tipo de jugo y fruta favoritos. Vierte el jugo en un bol. Pídele a un adulto que corte la fruta en pequeños trocitos. Añade la fruta al jugo. ¡Mézclalo!

Vierte el jugo y las frutas en la cubitera. Colócala en el congelador y espera.

Revisa la cubitera en una hora. ¿El líquido ya comenzó a congelarse? Añade los palillos. Coloca un palillo en el medio de cada helado. Cierra el congelador. Juega a algo mientras esperas.

Revisa la cubitera dentro de dos horas. ¿El helado de jugo ya está sólido? ¿Puedes ver los trozos de fruta? ¡Tu refrigerio está listo para comer! Piensa en todas las partes del helado de jugo.

Empezaste con jugo líquido y frutas sólidas. ¿Qué sucedió cuando congelaste los ingredientes?

Preguntas:

1. ¿Puedes ver las partículas del helado?

2. ¿Cómo cambió la mezcla del helado con el transcurso del tiempo?

3. ¿Qué sucedería si dejas un helado afuera durante un día caluroso?

Crédito: Nataliia Pyzhova/Shutterstock.com

Name: _____ Date: _____

Making Salad Dressing

You make a salad for dinner. Oh no! You're out of dressing. Time for a trip to the store. You look at the different types of salad dressing. Some parts of salad dressing don't want to mix. It has layers. The oil sits on top of the vinegar.

You can make your own salad dressing. Start by choosing vinegar. There are many kinds. Balsamic vinegar is black. There are also white and red vinegars. Check out the different types of vinegar in your grocery store.

Oil is the second thing you need. There are many kinds of oils. Some oils are made of olives. Other oils are made of corn. Coconut oil is a solid. It is not a good choice for salad dressing.

You need something to keep the oil and vinegar mixed. You can use mayonnaise, honey, or mustard. What's your favorite? Now you can make the dressing. Put the vinegar in a bowl with the mustard. Add salt and pepper if you like. Add the oil slowly. Use a whisk to mix everything together as you pour in the oil.

Your salad dressing is ready! Pour it over a salad full of your favorite vegetables. How does it taste?

Questions:

1. Is salad dressing a mixture? How do you know?

2. You let salad dressing sit for a long time. What does salad dressing separate into?

3. Which ingredient was added to help oil and vinegar mix?

Credit: Svetlana Foote/Shutterstock.com

Nombre: _____ Fecha: _____

Preparar el aderezo para una ensalada

Preparaste una ensalada para la cena. ¡Ay, no! Se te acabó el aderezo. Hora de ir a la tienda. Miras los diferentes tipos de aderezo para ensalada. Algunas partes del aderezo no se mezclan. Tiene capas. El aceite permanece por encima del vinagre.

Puedes preparar tu propio aderezo para ensaladas. Empieza eligiendo el vinagre. Existen muchas clases. El vinagre balsámico es negro. También existen el vinagre blanco y rojo. Mira los diferentes tipos de vinagre en tu tienda de comestibles.

El segundo ingrediente que necesitarás es el aceite. Existen muchas clases de aceite. Algunos aceites se hacen con aceitunas. Otros, con maíz. El aceite de coco es sólido. No es una buena elección para preparar el aderezo de una ensalada.

Necesitas algo que mantenga la unión entre el aceite y el vinagre. Puedes usar mayonesa, miel o mostaza. ¿Cuál es tu favorita? Ahora puedes preparar el aderezo. Coloca el vinagre en un bol con la mostaza. Añade sal y pimienta si así lo deseas. Añade el aceite lentamente.

Usa un batidor para mezclar todo a medida que viertes el aceite.

¡El aderezo para ensalada ya está listo! Viértelo sobre una ensalada que tenga tus verduras favoritas. ¿Qué sabor tiene?

Preguntas:

1. ¿El aderezo para ensaladas es una mezcla? ¿Cómo lo sabes?

2. Dejaste que el aderezo para ensaladas repose durante un largo tiempo. ¿Cómo se separa el aderezo para ensaladas?

3. ¿Cuál fue el ingrediente que añadiste para que el aceite y el vinagre se mezclen?

Créditos: Svetlana Foote/Shutterstock.com

Name: _____ Date: _____

Straw, Twigs, and Bricks

You probably know the story. One pig builds a house out of straw. Another pig builds a house out of twigs. The third pig builds a house out of bricks. Which one outsmarts the wolf? The pig who uses bricks, of course. Bricks are stronger than straw or twigs.

A builder has many choices for materials. Have you ever seen a house made of dried mud? This material is called adobe. It is used in dry climates, like the desert. The material is long-lasting. Some of the oldest buildings are made of adobe. When adobe is cold, heat can flow into it, and when adobe is hot, heat can flow out of it.

Tall buildings have supports made of steel. Steel is made from a mix of iron and other materials. Iron is a metal. Metal is a strong material. It is not possible to build very tall buildings with straw, adobe, or bricks.

Think about the materials that are used to build the structures and objects around you. Would you fly a kite using metal? Would you ride a bike made of foam? What if your school was made of jelly? It is important to choose materials carefully when building something.

Questions:

1. Birds make nests out of twigs and straw. Why don't we use twigs and straw to build houses?

2. Would adobe be a good choice of material if you wanted to build a house in the rain forest? Why or why not?

3. Explain why metal shouldn't be used to build a kite.

This house is made of adobe.

Credit: Hank Shiffman/Shutterstock.com

The frame of this building is made of steel.

Credit: Perseo8888/Shutterstock.com

Nombre: _____ Fecha: _____

Paja, ramas y ladrillos

Probablemente ya conoces la historia. Un cerdito construye una casa de paja. Otro cerdito construye una casa de ramas. El tercer cerdito construye una casa de ladrillos. ¿Cuál es más inteligente que el lobo? El cerdito que usa ladrillos, claro. Los ladrillos son más fuertes que la paja o las ramas.

Un constructor tiene muchas opciones de materiales. ¿Alguna vez viste una casa hecha con lodo seco? Este material se llama adobe. Se usa en climas secos, como el desierto. El material es duradero. Algunos de los edificios más antiguos están hechos de adobe. El adobe retiene el calor cuando afuera hace frío. Deja salir el calor cuando el clima es caluroso.

Los edificios altos tienen soportes hechos de acero. El acero es una mezcla de hierro y otros materiales. El hierro es un metal. El metal es un material muy resistente. No es posible construir edificios muy altos con paja, adobe o ladrillos.

Piensa en los materiales que se usan para construir las estructuras y los objetos que te rodean. ¿Volarías una cometa usando metal? ¿Podrías andar en una bicicleta hecha de espuma? ¿Qué sucedería si tu escuela estuviera hecha de gelatina? Es importante elegir cuidadosamente los materiales a la hora de construir algo.

Preguntas:

1. Las aves hacen sus nidos con ramitas y paja. ¿Por qué no usamos ramitas y paja para construir casas?

2. ¿El adobe sería una buena elección de material si quisieras construir una casa en la selva tropical? ¿Por qué o por qué no?

3. Explica por qué no se debe usar metal para construir una cometa.

Esta casa está hecha de adobe.

Crédito: Hank Shiffman/Shutterstock.com

La estructura de este edificio está hecha de acero.

Crédito: Perseo8888/Shutterstock.com

Take-Home Science

Chemical Changes in the Kitchen

Equipment

- Adult to turn on the oven, to help you in the kitchen, and to remove hot pans from the oven or microwave after baking
- Cooking utensils, measuring cups, bowls, pans, etc.
- Oven or microwave
- Recipe and ingredients for your favorite baked snack

Vocabulary

chemical change: When matter changes from one type to another, taking on a new identity.

mixture: A combination of two or more different types of matter.

Credit: bbernard/Shutterstock.com

Activity

1. Find the recipe for your student's favorite baked snack, and gather all the ingredients. Make sure to have all the utensils, bowls, pans, and measuring cups that you will need to prepare it.

2. Discuss the state of matter of each ingredient, and ask your student to list these in the "Before Baking" section of the chart on the next page. For example, your student might list "milk—a liquid," or "flour—a solid."

3. Discuss the oven temperature and time required to bake the ingredients thoroughly.

4. Following the recipe, measure and mix together all the ingredients. Place the snack in the oven or microwave. Set a timer.

5. After the snack has baked, an adult must remove it from the oven or microwave. With your student, observe and discuss the steam that can be seen rising. Be careful not to touch the hot pan.

6. While the food is cooling, have your student complete the section of the chart labeled "After Baking" by drawing the finished treat.

7. Discuss what happened to the ingredients when they were baked, and have your student answer the questions on the third page.

8. Enjoy your snack!

Take-Home Science

Name _____

Date _____

Before Baking

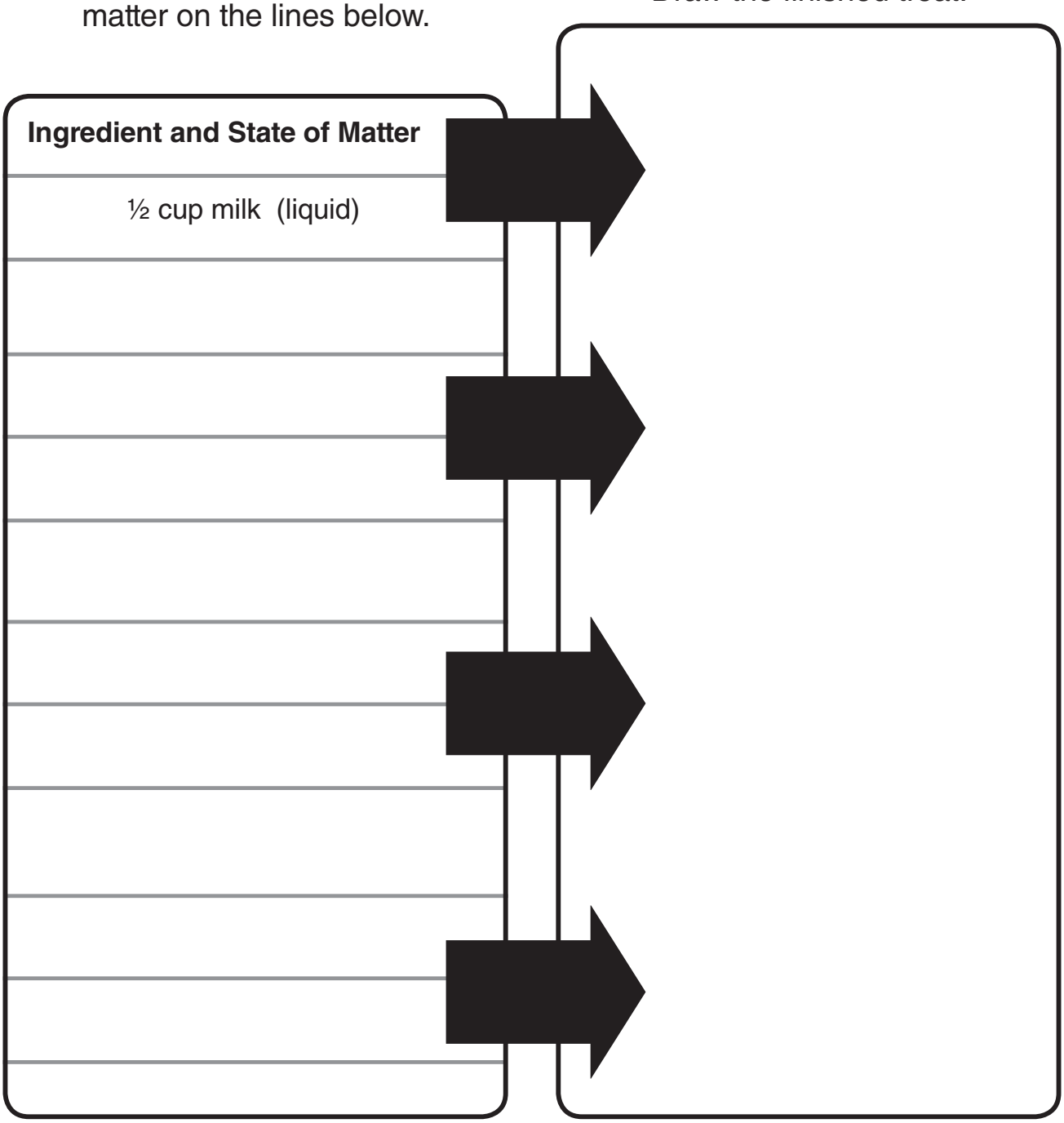
List each ingredient and its state of matter on the lines below.

Ingredient and State of Matter

½ cup milk (liquid)

After Baking

Draw the finished treat.



Ciencia para llevar a casa

CAMBIOS QUÍMICOS EN LA COCINA

Equipo

- Un adulto que encienda el horno para ayudarte en la cocina y para quitar las fuentes del horno o del microondas después de hornear
- Utensilios para cocinar, tazas medidoras, bols, fuentes, etc.
- Horno o microondas
- Receta e ingredientes para tu refrigerio horneado favorito

Crédito: bbernard/Shutterstock.com

Vocabulario

cambio químico: Cuando la materia cambia de un tipo al otro, adquiere una nueva identidad.

mezcla: Una combinación de dos o más tipos diferentes de materia.

Actividad

1. Encuentra la receta del refrigerio horneado favorito del alumno y reúne todos los ingredientes. Asegúrate de tener todos los utensilios, boles, fuentes y tazas medidoras que necesites para prepararlo.

2. Habla sobre el estado de la materia de cada ingrediente y pídele a tu alumno que los enumere en la sección "Antes de hornear" de la tabla que aparece en la siguiente página. Por ejemplo, tu estudiante podría escribir "leche, un líquido", o "harina, un sólido".

3. Habla sobre la temperatura del horno y el tiempo necesario para hornear los ingredientes por completo.

4. Sigue la receta y mide y mezcla todos los ingredientes. Coloca el refrigerio en el horno o el microondas. Pon un temporizador.

5. Después de hornear el refrigerio, un adulto debe sacarlo del horno o microondas. Con el alumno, observa y habla sobre el vapor que se puede ver. Tengan cuidado de no tocar la fuente caliente.

6. Mientras la comida se enfría, pídele al alumno que complete la sección de la tabla denominada "Después de hornear" haciendo un dibujo del refrigerio terminado.

7. Hablen sobre lo que sucedió a los ingredientes cuando fueron horneados, pídele al alumno que responda las preguntas en la tercera página.

8. ¡Disfruta del refrigerio!

Ciencia para llevar a casa

Nombre _____

Fecha _____

Antes de hornear

Enumera cada ingrediente y el estado de la materia en los renglones a continuación.

Ingrediente y estado de la materia
½ taza de leche (líquido)

Después de hornear

Dibuja el refrigerio terminado.

Teacher Sheet: Science in the News Article Report

To help students understand a concept, it is often helpful to associate it with an event or phenomenon. Depending on the topic, students may be able to draw connections to recent events in the news or to historical events in your area. Using a literacy tool like an article report is a helpful way to bring in literacy, reading comprehension, and science topics at any grade level.

Science in the News articles can be assigned at any point during a unit to assist students in seeing the "real-world connection" to a particular concept. These articles should be provided by the teacher in lower grades, but students in grades 3–5 may be ready for the challenge of selecting their own articles independently. The following guidelines will help you find appropriate articles. If you ask students to locate their own articles, you may wish to provide some of these guidelines along with the specific requirements for the assignment. Students at all grades are provided with an article report sheet to help them analyze their article and draw connections between it and the unit concepts. For students in grades 3–5, a rubric is provided in this appendix to help them to evaluate an article for bias and credibility.

1. Choose a topic that aligns with content

- Look for an article that will be engaging to students. It might be helpful to use local news sources or current events. Try to find a topic that students will be able to relate to and find interesting. For example, students will find greater interest in relating chemical reactions to cooking than in a laboratory setting.

2. Seek appropriate articles

- Typical news sites contain text that is likely too complex for elementary students. Use a search engine to find websites that provide kid-friendly news. Many of these websites align their content by grade level and cover a variety of topics.

- Though news is more frequently updated on websites, it is also possible to use text sources, such as kid-friendly newspapers or magazines.

3. Determine the credibility of the source

- It is very important to choose an article from a credible source to avoid bias and false news. Use the credibility rubric to assess sources before selecting articles.

4. Read the article

- Once you have chosen an article of interest, read it to determine its connection to the unit content. Take note of any new or unfamiliar terms so they can be reviewed later.

Differentiation Strategy If you are selecting the article, consider editing the text to differentiate instruction.

5. Ask students to read the article and complete an article report sheet. Remind them to:

- Provide information about where the article was found.
- Answer questions about the current event and draw connections to what they have learned during the unit.

Science in the News: Article Report

Name: _____ Date: _____

Draw a picture of what happened in the article.

Name: _____ Date: _____

Words I know: _____

Words I did not know: _____

I learned that _____.

Making Ice Pops

In the summer, it can get very hot. You play with your friends. You want a cold snack. Make some ice pops!

You will need:

- Juice
- Fruit
- Bowl
- Spoon
- Ice cube tray
- Toothpicks

Choose your favorite type of juice and fruit. Pour the juice into a bowl. Have an adult cut fruit into small pieces. Add the fruit to the juice. Mix it up!

Pour the fruit and juice into the ice cube tray. Put the tray in the freezer and wait.

Check the tray in one hour. Has the liquid started to freeze? Add toothpicks. Place one toothpick in the middle of each ice pop. Close the freezer. Play a game while you wait.

Check the tray two hours later. Is the juice pop solid? Can you see the fruit pieces? Your cool treat is ready to eat! Think of all the parts in your juice pop.

You started with liquid juice and solid fruit. What happened when you froze these ingredients?

Questions:

1. Can you see the particles of the ice pop? *(No, the particles are too small to see.)*

2. How did the ice pop mixture change over time? (*The ice pop changed from a liquid to a solid.)*

3. What would happen if you left an ice pop outside on a hot day? *(The ice pop would melt into a liquid.)*

Credit: Nataliia Pyzhova/Shutterstock.com

Making Salad Dressing

You make a salad for dinner. Oh, no! You're out of dressing. Time for a trip to the store. You look at the different types of salad dressing. Some parts of salad dressing don't want to mix. It has layers. The oil sits on top of the vinegar.

You can make your own salad dressing. Start by choosing vinegar. There are many kinds. Balsamic vinegar is black. There are also white and red vinegars. Check out the different types of vinegar in your grocery store.

Oil is the second thing you need. There are many kinds of oils. Some oils are made of olives. Other oils are made of corn. Coconut oil is a solid. It is not a good choice for salad dressing.

You need something to keep the oil and vinegar mixed. You can use mayonnaise, honey, or mustard. What's your favorite? Now you can make the dressing. Put the vinegar in a bowl with the mustard. Add salt and pepper if you like. Add the oil slowly. Use a whisk to mix everything together as you pour in the oil.

Your salad dressing is ready! Pour it over a salad full of your favorite vegetables. How does it taste?

Credit: Svetlana Foote/Shutterstock.com

Questions:

1. Is salad dressing a mixture? How do you know? *(Students should identify salad dressing as a mixture because it is a combination of several substances.)*

2. You let salad dressing sit for a long time. What does salad dressing separate into? *(Oil and vinegar.)*

3. Which ingredient was added to help oil and vinegar mix? *(Mayonnaise, mustard, or honey.)*

Straw, Twigs, and Bricks

You probably know the story. One pig builds a house out of straw. Another pig builds a house out of twigs. The third pig builds a house out of bricks. Which one outsmarts the wolf? The pig who uses bricks, of course. Bricks are stronger than straw or twigs.

A builder has many choices for materials. Have you ever seen a house made of dried mud? This material is called adobe. It is used in dry climates, like the desert. The material is long-lasting. Some of the oldest buildings are made of adobe. Adobe holds heat when it is cold outside. It releases heat when it is warm.

Tall buildings have supports made of steel. Steel is made from a mix of iron and other materials. Iron is a metal. Metal is a strong material. It is not possible to build very tall buildings with straw, adobe, or bricks.

Think about the materials that are used to build the structures and objects around you. Would you fly a kite using metal? Would you ride a bike made of foam? What if your school was made of jelly? It is important to choose materials carefully when building something.

Questions:

1. Birds make nests out of twigs and straw. Why don't we use twigs and straw to build houses? *(Twigs and straw are not strong enough to build a house. You would need many twigs and a lot of straw to build a house for a person.)*

2. Would adobe be a good choice of material if you wanted to build a house in the rain forest? Why or why not? *(Adobe would not be a good material for a house in the rain forest because the rain would wash away the mud.)*

3. Explain why metal shouldn't be used to build a kite. *(Metal is heavy and the kite could not fly.)*