

UNDERSTANDING MEDICINE MEASURING TOOLS, STORAGE, AND SAFE DISPOSAL

Students practice locating information on the *Drug Facts* label and learn about measuring tools, where to store medicine, and how to dispose of it safely.

TIME: 40 minutes

OBJECTIVES

Students will:

- Identify dosing information found in the “Directions” section of *Drug Facts* labels (when, how, and how often to take the medicine)
- Explain the importance of reading and understanding dosing information
- Learn why using proper dosing tools is important
- Describe what makes a location safe or unsafe for medicine storage
- Brainstorm ways to raise awareness about safe medicine storage and disposal

MATERIALS NEEDED

- Copies of the following reproducible activity sheets for each student in the class:
 - ♦ **Activity 4: Responsible Medicine Dosing**
 - ♦ **Activity 5: Safe Medicine Storage**
 - ♦ **Over-the-Counter Medicine Safety Mini Poster**
- FDA’s “Medicines in My Home” video
- **OTC Medicine Safety Answer Key**
- **OTC Medicine Safety for Families** (letter in English and Spanish)
- Empty OTC medicine bottles filled with colored water and their dosing devices:
 - ♦ Medicine that recommends a 2.5 mL, 5 mL, or 10mL dose
 - ♦ Pediatric medicine
 - ♦ Adult medicine
- Kitchen spoons of different sizes
- Paper, pens/pencils
- Computer with internet access
- Whiteboard/digital display screen
- Optional: **Up and Away website**

Note: All Unit resources and digital assets featured on page 2 can be accessed at www.ymiclassroom.com/lesson-plans/otcmedsafety-teachers_5-6/.

HOW TO USE THIS LESSON

PART 1

1. Begin with a class discussion about the importance of using the right tools when measuring different things. Ask students:
 - *Why do they think there are different measuring tools for liquid and dry ingredients when cooking/baking?*
 - *What are some different ways that people make mistakes when measuring things?*
2. Encourage students to think about why accurate measurements are important. Ask:
 - *When is it okay to get less-accurate measurements or even to estimate?*
 - *When is it important to get really accurate measurements? Why?*
3. Ask students to think back to the **Understanding the Drug Facts Label** activity. Ask: *Do you remember which section of the label talks about how much medicine to take?*
4. Discuss different information contained in the “Directions” section of the *Drug Facts* label (amount of medicine to take, how often to take the medicine, and how often to take it). As a reminder, display the **Over-the-Counter Medicine Safety Classroom Poster**.
5. Explain that students are going to learn why reading and understanding dosing instructions is important, and why medicines should always be measured using the proper dosing or measuring devices under adult supervision.
6. Emphasize the importance of following dosing directions and using the dosing device that comes with a medicine with a demonstration. Show students a sample of OTC medicine that comes with a dosing cup. Have students imagine that this medicine’s *Drug Facts* label recommends a dose of 2.5mL, 5mL, or 10mL. Explain that by conversion, 2.5mL = ½ standard teaspoon, 5mL = 1 standard teaspoon, and 10 mL = 2 standard teaspoons. However, kitchen teaspoons are not universal in size. Use colored water and a kitchen teaspoon to measure out the teaspoon conversions of liquid, then pour the measured liquid into the dosing cup that came with your sample bottle. Discuss how the dosing cup’s accurate measurement compares to the non-standardized kitchen spoon measurements. Follow the same steps with a plastic teaspoon and a teaspoon with a different design. Point to the message on the bottom of the poster for a reference. Explain that we should only use the dosing device that comes with a medicine because spoon measurements are not exact — household spoons come in various shapes and sizes, which means they hold different amounts of liquid.

(Continued on the next page.)



UNDERSTANDING MEDICINE MEASURING TOOLS, STORAGE, AND SAFE DISPOSAL (CONTINUED)

- Next, show students the pediatric and adult sample medicine bottles (filled with colored water) and their different measuring devices.
- Read the dosing information for the pediatric medicine. Have students measure out the correct dose using the non-standardized kitchen spoons — dosing devices that are **not** meant for the pediatric medicine. Discuss the results. Then measure out the dose using the correct dosing device. Discuss why using the correct device is important.
- Repeat the activity with the adult medicine. This time have students try measuring with kitchen spoons that are too small for the correct dose. Reiterate the potential dangers of using the wrong device and why using the correct one is important.
- Talk about how measuring doses incorrectly and using spoons instead of the dosing device that comes with the medicine can cause an overdose or underdose. **Reinforce the importance of always communicating with a trusted adult before taking any medicine, and only taking medicine with the approval and supervision of a parent or trusted adult.**
- Distribute the [Responsible Medicine Dosing](#) activity sheet. Have students complete the sheet individually or lead the class through it, discussing each example. Review the students' responses as a class. See the [Answer Key](#) for suggested responses.
- Next, remind students about the expiration dates they found on the OTC medicine samples they examined in Unit 2. Ask how their families get rid of unused or expired medicine. Common answers may include putting the medicine in the trash or flushing the medicine.
- Explain that safe disposal is just as important as safe storage for keeping medicines away from people who shouldn't have them. Before throwing away OTC medicines, families should mix them with an unappealing substance (such as kitty litter) and place them in a closed container (such as a sealed plastic bag).
- The FDA has additional [disposal guidelines](#) for certain prescription medicines (like disposal by flushing or using the National Take-Back Initiative). In addition, the Poison Help Line (1-800-222-1222) can answer any questions families may have about how to dispose of medicines safely. Ask students:
 - Why do you think that the FDA has these guidelines for safe disposal of medicines?
 - What could happen if a medicine is not disposed of properly?
- After reviewing storage and disposal information, ask students:
 - What did you learn about safe storage?
 - Is there anything from today's discussion that might be important to mention at home?

PART 2

- Introduce the importance of safe medicine storage, which, when ignored, may lead to accidental ingestion and medicine poisoning.
- Ask students to name the locations where medicines are stored in their households. Write answers on the board for students to refer to later. Common answers may include kitchen cabinet, bathroom cabinets, or parents' or trusted adult's bedroom. As students answer, ask for specifics:
 - Are the medicines in drawers or cabinets or on the countertop?
 - Why do you think medicines are often kept in medicine chests above sinks or high kitchen cabinets?
- Get students thinking about how easy it is for children to find medicine in a home. Explain that medicines need to be kept out of reach and sight of their naturally curious younger brothers and sisters, or young visitors to their home.
- If using a whiteboard, visit the [Up and Away website](#) to learn more about storing medicine safely.
- Distribute the [Safe Medicine Storage](#) activity sheet. Explain to students that they are looking at the inside of a home and it is their job to identify the medicine storage errors that could lead to accidental medicine poisoning. Review the answers as a class.

- Family/Home Connection:** If you have not already done so, distribute the [OTC Medicine Safety for Families](#) letter for students to take home, or include the PDF in email correspondence to parents and caregivers. Encourage students to share what they have learned about the *Drug Facts* label and why it is important. Suggest that students post the Poison Help Line phone number in a visible place in their home and get family members to save the number in their mobile phones. **Reinforce the importance of always communicating with a trusted adult before taking any medicine, and only taking medicine with the approval and supervision of a parent or trusted adult.**

EXTENSION ACTIVITY

Ask students to come up with some ways to help people remember how to store and dispose of medicine safely. Some possibilities include:

- A jingle that describes the Poison Help Line's purpose and phone number
- A mnemonic device to remember the directions for safe medicine storage and disposal
- A survey to distribute to families to determine how medicine-safe their home is

Work with your students to check that their OTC medicine safety awareness materials are accurate before they share them with others.





Unit 1, Activity 1:

OVER-THE-COUNTER VS. PRESCRIPTION MEDICINES

1. Both
2. Prescription
3. Prescription
4. OTC [remind students that prescription labels and directions must be read carefully as well.]
5. OTC
6. Both
7. Both

Unit 2, Activity 2:

UNDERSTANDING THE DRUG FACTS LABEL

1. Answers might include warnings that the medicine might cause an allergic reaction, that it should not be used when taking certain other medicines, and other reasons why a person should not take the medicine. It's important that a person read this information before taking medicine because it can help avoid preventable side effects.
2. Side effects may include drowsiness and/or excitability, particularly for children.
3. Answers may include: A doctor should be consulted before taking this medicine if you have liver or kidney disease, and before giving the medicine to children under 6 years of age. A doctor should also be consulted if allergic reaction or overdose occurs.
4. The "Directions" section.
5. 1-800-222-1222

Unit 2, Activity 3:

FIND A DRUG FACTS LABEL SCAVENGER HUNT

Answers will vary.

Unit 3, Activity 4:

RESPONSIBLE MEDICINE DOSING

1. At 8 a.m. the next day. After that, no more doses should be given until 8 p.m.
2. a. 2.5 mL
b. 2.5 mL
3. Using anything other than the dosing device that is packaged with the medicine can result in an inaccurate dose.
4. A *Drug Facts* label might suggest that people contact a doctor before use for a variety of reasons. These reasons may include factors such as age, health conditions, or other medicines they are taking that may require special instruction or may make the medicine inappropriate for certain people.
5. Answers could include talking with family members about the information provided on the *Drug Facts* label; use of proper dosing devices; the consequences of not using proper dosing devices; the importance of understanding dosing information.

Unit 3, Activity 5:

SAFE MEDICINE STORAGE

Any response that identifies medication stored in a location that is not up, away, and out of sight would be acceptable. The medication storage errors shown in the picture are as follows:

1. Open purse with pain relief bottle sticking out of the top
2. Medicine left out on the nightstand with dosage cup
3. Toiletry bag hanging low from doorknob inside closet with vitamin bottle showing
4. Medicine bottles visible and accessible inside cabinet below kitchen sink
5. Bottle of cough medicine on the counter and a teaspoon with a trace of medicine visible on spoon (should be using the dosing device and stored up and away)
6. Allergy medicine on the table next to vase

Unit 4, Activity 6:

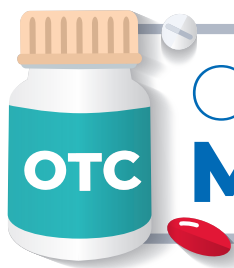
OTC MEDICINE SAFETY FOR THE COMMUNITY

Answers will vary.

Unit 5, Activity 8:

EDITING AN OTC MEDICINE SAFETY ARTICLE

Answers will vary.



OVER-THE-COUNTER MEDICINE SAFETY



GRADES 5-6
UNIT 3, ACTIVITY 4

SKILLS:
Critical thinking,
reading informational text

Responsible Medicine Dosing

Directions: Below is a sample dosing table for an over-the-counter (OTC) medicine, similar to the information you can find on a *Drug Facts* label. Use the table as well as your knowledge about medicine safety to answer the questions below.

Children under 6 years of age	Ask a doctor.
Children 6 to under 12 years of age	<ul style="list-style-type: none">• 2.5 mL two times per day.• Dosage may be repeated every 12 hours while symptoms last.• Do not give more than 5 mL in 24 hours.
Adults and children 12 years of age and over	<ul style="list-style-type: none">• 5 mL two times per day.• Dosage may be repeated every 12 hours while symptoms last.• Do not take more than 10 mL in 24 hours.
Adults 65 years of age and over	<ul style="list-style-type: none">• 5 mL two times per day.• Dosage may be repeated every 12 hours while symptoms last.• Do not take more than 10 mL in 24 hours.

Did you know...

If you think that you or someone else has taken the wrong dose or wrong medicine, or if you just have questions about a medicine, call the Poison Help Line, 1-800-222-1222. Experts answer the phone 24/7.

Think It Through

1. Olivia is 12 years old and took her first dose of medicine at 8 a.m. She took a second dose at 8 p.m. the same day. By bedtime at 9:30 p.m., she is still not feeling better. Based on the label above, when can Olivia's parents give her another dose of this medicine? Why?

2. Miguel is 11 years old. He and his parents are reading the directions in the dosing table above.

a. How many milliliters (mL) of medicine should Miguel take for his first dose? _____

b. If Miguel needs a second dose 12 hours later, how many milliliters (mL) should he take? _____

3. This medicine came with a dosing or measuring device. What might happen if someone taking this medicine used a regular household kitchen spoon to dose instead of the measuring device that came with the medicine?

4. What are some reasons a *Drug Facts* label might include instructions for certain people to ask a doctor before using the medicine?

5. How can you use what you've learned today about dosing to help your family use OTC medicines more safely?



OVER-THE-COUNTER MEDICINE SAFETY

GRADES 5-6
UNIT 3, ACTIVITY 5

SKILLS:
Critical thinking,
reading informational text

Safe Medicine Storage

Directions: Circle the six medicine storage errors in this picture. On the back of this sheet, describe safe storage solutions for the medicines pictured below to help make this home safer.



**Test your
knowledge...**

of medicine safety:

[www.ymiclassroom.com/
video/jj-safestorage](http://www.ymiclassroom.com/video/jj-safestorage)

ANSWERS: 1. open purse with pain relief bottle sticking out of the top; 2. medicine left out on the nightstand with dosage cup; 3. toiletry bag hanging low from doorknob inside closet with vitamin bottle showing; 4. medicine bottles visible and accessible inside cabinet below kitchen sink; 5. bottle of cough medicine on the counter and a teaspoon with a trace of medicine visible on spoon (should be using the dosing device and stored up and away); 6. allergy medicine on the table next to vase.



The *Drug Facts* label helps you understand how medicines can help you and how to take them safely.

Active Ingredients

Lists the ingredients in the medicine that make it work.

Uses

Describes the symptoms that the medicine treats.

Warnings

Provides important safety information, including side effects, questions you should ask a doctor before taking the medicine, and medicines to avoid using at the same time.

UNDERSTANDING THE DRUG FACTS LABEL

Drug Facts	
Active ingredients	Purpose
Ingredient A 100 mg	cough suppressant
Ingredient B 150 mg	nasal decongestant
Uses Temporarily relieves:	
<ul style="list-style-type: none"> coughing due to minor throat and bronchial irritation nasal congestion 	
Warnings	
Do not use if you have ever had an allergic reaction to this product or any of its ingredients.	
Ask a doctor before use if you have liver or kidney disease. Your doctor should determine if you need a different dose.	
When using this product	
<ul style="list-style-type: none"> you may get drowsy be careful when driving a motor vehicle or operating machinery excitability may occur, especially in children 	
Stop use and seek medical help right away if allergic reaction occurs.	
Keep out of reach of children. In case of overdose, get medical help or contact a Poison Control Center right away (1-800-222-1222).	
Directions	
<ul style="list-style-type: none"> Tablet melts in mouth. Can be taken with or without water. 	
Age	Dose
adults and children 12 years and older	2 tablets every 12 hours; do not use more than 4 tablets in a 24-hour period
children 6 years to under 12 years	1 tablet every 12 hours; do not use more than 2 tablets in a 24-hour period
children under 6 years of age	ask a doctor
Other information	
<ul style="list-style-type: none"> store at 20°–25°C (68°–77°F) ■ keep dry 	
Inactive ingredients	
anhydrous citric acid, aspartame, magnesium stearate, maltodextrin, modified food starch, sodium bicarbonate, D&C yellow no.10	
Questions or comments?	
Call weekdays from 9 a.m. to 5 p.m. EST at 1-800-555-5555.	

This is not an actual *Drug Facts* label.

Check out the new **OTC Medicine Safety** videos and trivia game at ymiclassroom.com/otcmedsafety-multimedia.

Directions

Tells the amount or "dose" of medicine to take, how often to take it, and how much you can take in one day.

Other Information

Tells how to store the medicine.

Inactive Ingredients

Lists ingredients not intended to treat your symptoms, like preservatives and flavorings.

Questions or Comments?

Tells how to call the manufacturer if you have questions about the medicine.

MEASURE IT CORRECTLY

To get an exact measurement, it is important to only use the dosing device that is provided with the medicine. The *Drug Facts* label tells you how much medicine you should take based on your weight and/or age. Never take medicines with the same active ingredient at the same time.

Fact: Household spoons come in various shapes and sizes, which means they hold different amounts of liquid.



VS.



measuring spoon



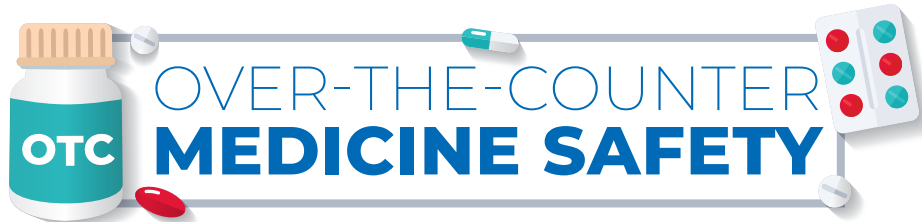
flatware spoon



plastic spoon

SAFETY TIPS

- Only take medicine with adult supervision and approval.
- Always** read the entire *Drug Facts* label before using an OTC medicine.
- Call the **Poison Control Center** number (also called Poison Help Line) at **1-800-222-1222** if you have **any** medicine questions or concerns.



Dear Parents and Caregivers,

Did you know that more than 85,000 children, ages 19 and under, require medical attention each year due to medicine mistakes or misuse?¹

As kids get older, they start to take on more responsibility — at home, at school, and even with their health. That is why it's so important for families to help kids learn how to make safe choices before they take on a more active role in their self-care, including medicine use.

Since over-the-counter (OTC) medicines can be bought from a store without a doctor's prescription, young people often falsely assume that they don't need to be careful with them. However, OTC medicines can cause harm if they are not used correctly. To prevent medicine mistakes or misuse, make sure all members of your household know to read and follow the Drug Facts label.

Your child has already started to learn about the importance of medicine safety at school. Now is the perfect time to build on that knowledge to make sure everyone in your home feels ready to handle medicines responsibly. When families work together to create a medicine action plan, they help to keep everyone safe and healthy.

Use the checklist below to ensure that you keep your family "OTC Ready."



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Developed with support of the National Association of School Nurses.

Medicine Safety Practices

- ☐ Make sure all OTC medicines are properly labeled and stored in their original packaging.
- ☐ Never mix medicines — keep them in separate labeled containers.
- ☐ Teach your children that they should never take any medicine without adult approval and supervision — children
- ☐ should always ask a parent, caregiver, or other trusted adult for help before taking medicines.
- ☐ Read and follow the *Drug Facts* label every time you or your children use a medicine.
- ☐ Carefully follow the dosage directions on the *Drug Facts* label to avoid an overdose.
- ☐ Never use household spoons to measure medicine — only use the dosing device packaged with an OTC medicine.
- ☐ Never take medicines with the same active ingredient at the same time to avoid an overdose of that ingredient.
- ☐ Communicate with other caregivers in your home to prevent double-dosing errors.
- ☐ Call the **Poison Control Center** (also called the **Poison Help Line**) at **1-800-222-1222** if you have any questions or if a medicine mistake occurs.

Safe Medicine Storage and Disposal

- ☐ Store all medicines up, away, and out of sight of young children.
- ☐ Make sure that child safety caps are locked on all medicines after use.
- ☐ Keep the medicine and the dosing device it came with together.
- ☐ Remind visitors to keep luggage, purses, or anything else that might have medicines in it, out of children's reach and sight.
- ☐ Check the use-by and expiration dates on OTC medicines and safely dispose of any that are outdated.
- ☐ Mix leftover or expired OTC medicines with coffee grounds or kitty litter for safe disposal.

Here's to keeping families safe!



Please visit
www.ymiclassroom.com/otcmedsafety-families
for more *OTC Medicine Safety* resources, including two new animated videos: *A Social Media Challenge* and *Sidelined at Practice*.



SEGURIDAD DE LOS OTC MEDICAMENTOS DE VENTA LIBRE



CARTA REPRODUCIBLE

PARA LAS FAMILIAS

Estimados padres y cuidadores:

¿Sabían que más de 85,000 niños, de 19 años o menos, requieren atención médica cada año debido a errores o al mal uso de los medicamentos?¹

A medida que los niños crecen, comienzan a asumir más responsabilidades: en casa, en la escuela e incluso con su salud. Por eso es tan importante que las familias ayuden a los niños a aprender cómo tomar decisiones seguras antes de asumir un papel más activo en su cuidado personal, incluido el uso de medicamentos.

Dado que los medicamentos de venta libre (OTC) pueden comprarse en una tienda sin receta médica, los jóvenes suelen suponer erróneamente que no necesitan tener cuidado con ellos. Sin embargo, los medicamentos OTC pueden causar daños si no se utilizan de forma correcta. Para evitar errores o usos indebidos de medicamentos, asegúrense de que todos los miembros de su hogar sepan leer y seguir la etiqueta Drug Facts (Información sobre el medicamento).

Sus hijos ya han comenzado a aprender sobre la importancia de la seguridad de los medicamentos en la escuela. Este es el momento perfecto para aprovechar ese conocimiento y asegurarse de que todos en su hogar se sientan listos para manejar los medicamentos de manera responsable. Cuando las familias trabajan juntas para crear un plan de acción de medicamentos, ayudan a mantener a todos seguros y saludables.

Utilicen la lista de verificación a continuación para asegurarse de que su familia esté "lista para los medicamentos OTC".



Organizado por



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Desarrollado con el apoyo de la Asociación Nacional de Enfermeras de las Escuelas (National Association of School Nurses).

Medidas de seguridad para medicamentos

- ☐ Asegúrense de que todos los medicamentos OTC estén debidamente etiquetados y almacenados en su envase original.
- ☐ Nunca mezclen medicamentos: consérvenlos en recipientes separados y etiquetados.
- ☐ Enséñenles a sus hijos que nunca deben tomar ningún medicamento sin la aprobación y supervisión de un adulto; los niños siempre deben pedir ayuda a un padre, cuidador u otro adulto de confianza antes de tomar medicamentos.
- ☐ Lean y sigan la etiqueta *Drug Facts* cada vez que ustedes o sus hijos utilicen un medicamento.
- ☐ Sigán con atención las instrucciones de dosificación en la etiqueta *Drug Facts* para evitar una sobredosis.
- ☐ Nunca utilicen cucharas domésticas para medir el medicamento, solo utilicen el dosificador que viene con un medicamento OTC.
- ☐ Nunca tomen medicamentos con los mismos ingredientes activos al mismo tiempo para evitar una sobredosis de ese ingrediente.
- ☐ Comuníquense con otros cuidadores en su hogar para evitar errores de dosis doble.
- ☐ Llamen al **Centro de control de envenenamiento** (también llamado **Línea de ayuda por envenenamiento**) al **1-800-222-1222** si tienen alguna pregunta o si se produce un error con un medicamento.

Almacenamiento y eliminación seguros de medicamentos

- ☐ Guarden todos los medicamentos en un lugar alto, lejos y fuera de la vista de los niños pequeños.
- ☐ Asegúrense de que los tapones de seguridad para niños estén bloqueados en todos los medicamentos después de usarlos.
- ☐ Conserven juntos el medicamento y el dosificador con el que vino.
- ☐ Recuérdenles a los visitantes que guarden el equipaje, las carteras o cualquier otro elemento que pueda contener medicamentos fuera del alcance y la vista de los niños.
- ☐ Comprueben las fechas de caducidad de los medicamentos OTC y desechen de forma segura los que estén caducados.
- ☐ Mezclen los medicamentos OTC sobrantes o caducados con granos de café o arena para gatos para desecharlos de manera segura.

¡Por la seguridad de las familias!



Visite

**[www.ymiclassroom.com/
otcmedsafety-families](http://www.ymiclassroom.com/otcmedsafety-families)**

para obtener más recursos sobre la *Seguridad de los medicamentos OTC*, incluidos dos videos animados nuevos: *A Social Media Challenge* (Un desafío de las redes sociales) y *Sideline at Practice* (A un costado durante la práctica).

1. Sistema Nacional de Datos Toxicológicos de la Asociación Americana de Centros de Control de Envenenamientos. Los datos cubren el promedio anual entre 2011 y 2021, edades de 0 a 19.