

ELEMENTARY
SCHOOL

DIGITAL LESSON EDUCATOR GUIDE



Discovery
EDUCATION™

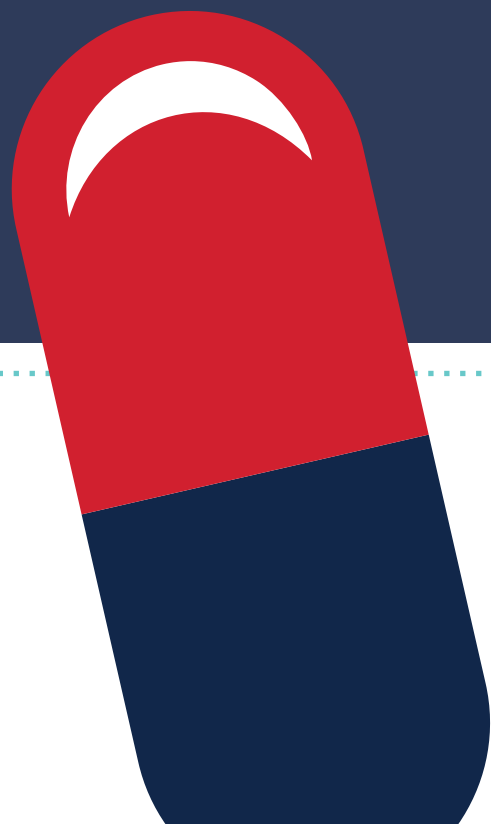


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INTRODUCTION TO OPERATION PREVENTION

Why is Opioid Prevention Important?

Medications are chemicals or compounds used to help cure diseases and save lives. When used responsibly, medications can help manage and prevent disease, ease symptoms, and in some cases, diagnose illnesses. Today's medications are produced using a variety of sources. Some medications are produced in labs by mixing chemicals or through biological engineering. Others are manufactured by utilizing byproducts or substances from nature. One example is penicillin which is extracted from Penicillium mold. Another example is from 1962 when Arthur Barclay, a United States Department of Agriculture (USDA) botanist, collected a sample of bark from the Pacific yew tree. Today, the anti-cancer agents from the Pacific yew are used in some of the most effective cancer medications ever developed.

The overuse and misuse of prescription and over-the-counter medications is a serious public health threat. After marijuana and alcohol, the most commonly abused substances by Americans 14 and older are prescription and over-the-counter medications. Opioids, a type of prescription medication, are prescribed to treat pain. Despite the fact that there has not been an increase in pain reported, prescription opioid sales in the U.S. nearly quadrupled from 1999 to 2014. Prescription opioids and heroin, an illegal type of opioid, are the main causes of overdose deaths. However, there are over-the-counter medications that can be just as addictive and dangerous as prescription medications. Cough and cold remedies containing dextromethorphan are the most commonly misused over-the-counter medications. When misused, dextromethorphan can cause hallucinations and a potent high. Dextromethorphan can also cause impaired motor function, numbness, nausea, vomiting, increased heart rate or blood pressure, and, on rare occasions, hypoxic brain damage.

How Will My Students Learn About Opioid Prevention?

In the three elementary Operation Prevention sessions, students will investigate what medicine is and when, how, and why people take it. Through a series of activities, students will discover how medication enters the body to control illnesses that won't go away, helps prevent people from getting sick, and makes people feel better when they are sick. They will use this information to help explain the importance of responsibly using medications that are sold over-the-counter (OTC) and those prescribed by a doctor. Two additional sessions are available to provide opportunities to practice and use the information students learn in the first three sessions. Sarah's Sister and Malachi's Medication should be considered as supplemental activities to be completed after the initial three sessions are completed.

This series of elementary sessions is designed to help elementary students in grades 3-5 understand the importance of appropriate prescription and over-the-counter medication use. Additional Operation Prevention sessions are provided for middle and high school to continue educating students on the dangers of opioid use and addiction, specifically the use and misuse of opioids such as heroin, morphine, and prescription painkillers. This series provides a foundation for the secondary Operation Prevention sessions. While success with one series is not dependent upon completion of another, sessions within a series should be completed in order to foster understanding of the content.

How Do the Sessions Work?

Instructional Sequence: The Operation Prevention Elementary School Educator Guide provides details to help educators facilitate a series of three 45-minute sessions designed to be taught in sequence and used with third, fourth, or fifth grade students. This guide was created to give educators ideas and strategies for presenting the content in the digital lesson. It provides slide-by-slide details for educators to be prepared to engage with students as they explain, discuss, and effectively facilitate the content in each of the sessions.

INTRODUCTION TO OPERATION PREVENTION

In addition to the Educator Guide, an accompanying presentation was created with PowerPoint so that it can be used in a variety of classroom settings. If you are using a laptop with an LCD projector, simply progress through the PowerPoint by clicking to advance. All of the interactive aspects of the presentation are set to occur on click. The corresponding videos link to the slides. Click on the images to play the videos. If you are using an interactive whiteboard, tap on each slide with your finger or stylus to activate the interactive aspects of the presentation. It does not matter where you tap, but you can make it appear as if you are making certain things happen by tapping them. Teacher notes are included for each slide with information on how to proceed.

Session Structure:

Each Operation Prevention elementary session provides the following information to guide the teacher through its implementation and teach the necessary skills and content.

- **Objectives:** Each session includes its overall goals as well as specific behavioral and cognitive objectives for students.
- **Required Materials:** Any materials necessary for the session are clearly outlined and included when possible to facilitate easy implementation of the session.
- **Definitions:** Any words that can be used as vocabulary words will be defined for the teachers.
- **Key Points to Make:** To help the teacher guide discussion and reinforce key concepts, key points are listed next to corresponding slides.
- **Student Responses:** Guidance for the teacher is provided for suggested student responses for activities and questions next to corresponding slides.
- **Summary/Wrap-Up:** A summary or wrap up is provided at the end of each session for the teacher to provide reinforcement of the key concepts and objectives of each session.

SESSION 1 OVERVIEW

SLIDES
1-9

ENGAGE

Engage, Explore, and Explain

Overview:

Students will be guided through a series of brief activities to explore the role of the immune system, generate a working definition for medication, and explain how medication is used.

Slides 2–9 contain activities to engage students in understanding what the immune system is and how medication is used to assist the immune system in managing/preventing disease (e.g. cancer, heart disease), and easing symptoms (e.g. seasonal allergies, cold).

Content Areas:

Life Sciences and Health Education

Grade Level:

Grades 3–5

Objectives:

- Define medication
- Explain what the immune system is
- Examine the different ways medication is used
- Explain how to prevent illnesses with medication

Materials:

- Video (linked to slide 5)
- Student [“Session 1 Capture Sheet”](#)

Definitions:

- **Medication** – A drug or other form of medicine that is used to treat or prevent disease. Some medications require a prescription to purchase and some medications can be purchased over the counter by an adult
- **Immune System** – A network of cells, tissues, and organs that work together to keep us healthy and fight infections
- **Virus** – causes diseases like chickenpox and the flu
- **Fungi** – cause itchy rashes like athlete’s foot
- **Parasite** – causes diarrhea and other problems
- **Bacteria** – cause strep throat and pneumonia

SESSION 1

WHAT IS **IMPORTANT?**

- Patient Name
- Name of medication and strength
- Instructions on how and when to take this medication
- Physical description of the medication
- Expiration date
- Number of pills in bottle

SLIDE 1

Invite students to review the information on the prescription medication label using the slide. Ask students to consider why each piece of information is important to know.

Key Talking Points:

- Learning how to read medication labels is an important life skill.
- Medication labels provide us with valuable information.
- Knowing how to read a medication label can help us make good and healthy decisions.

MEDICATION: WHAT IS IT?

Work with your partner to define the term medication using the clue questions.

- Where is it?
- What does it do?
- What's another word for it?
- What does it look like?

SLIDE 2

- Organize students into partners and distribute one index card to each partner group.
- Direct students to work with a partner to generate a definition using the guiding questions. This will help assess what students already know about medication.
- Allow partner groups to share their definitions.

MEDICATION: WHAT IS IT?

Medications are made in laboratories, some of which are even created from substances found in nature. They keep people healthy when used as directed or prescribed.

Some can be purchased at the store by an adult and some require a prescription from the doctor.

SLIDE 3

Present the definition on this slide and allow students to revise their original definitions as needed.

Work as a class to finalize and record a working definition that resembles: A drug or other form of medicine that is used to treat or prevent illness.

Key Talking Points:

- Medications can keep us healthy.
- It is important to take a medication as directed or prescribed by your doctor, under the supervision of a responsible adult.
- Some medications require a prescription and some medications can be purchased without a prescription (“over the counter”).

SESSION 1



SLIDE 4

Describe the role of the immune system in the body. It is a system made up of special cells, proteins, tissues, and organs that work to protect the human body.

Explain that medication may be considered when the immune system is unable to protect the body on its own.

Key Talking Points:

- The immune system is the body's defense; it keeps us healthy and prevents infections.
- Sometimes we need medication to help our immune systems protect us from infections or help us feel better when our immune systems aren't able to keep us healthy.
- It is important to make good decisions to help keep our bodies healthy; sometimes that means using medication.



SLIDE 5

Ask students to write down three things on their capture sheet they can, or already do, to prevent illness.

Possible responses might include:

- Going to the doctor regularly
- Vaccines or shots
- Washing hands regularly
- Eating healthy food
- Exercising
- Getting enough sleep

Use the video "The Immune System" to reinforce that preventive measures (e.g. immunizations, proper rest, good nutrition, regular exercise, routine check-ups) are the best ways to fight illness. Note that when preventive measures are not enough, medication can be used to assist the immune system. Explain that children and pre-teens should always consult a doctor or responsible adult regarding the possible need for medication.

Video is on this page: <http://kidshealth.org/en/kids/ismovie.html>

After they have viewed the video, invite students to add to their list. Provide clarification when needed.

SESSION 1



SLIDE 6

Using the process below, the collection of images will be used to discuss how the objects shown are related to how medications are used to assist the immune system.

Tell the students that you will be working together to determine the theme of a collection of images, or what they all have in common. Present the images one at a time and ask students what they think it represents. Accept and record all ideas about the collection's theme on the board or chart paper, allowing students to modify their ideas after each successive item.

After the entire collection is revealed, explain that medications are used to manage and prevent disease (e.g. cancer, heart disease), ease symptoms (e.g. seasonal allergies, cold), and can be used to help in the diagnosis of some illnesses. Have class modify its theme accordingly.

Work as a group to classify the collection of objects into two categories (manage and prevent disease, ease symptoms). Some objects (e.g. ambulance) might be a good fit for both groups depending on the class discussion.

Answer guide:

- Manage and Prevent Disease: breast cancer ribbon, American Heart Association logo, ambulance
- Ease Symptoms: tissues (cold, seasonal allergies), grass (seasonal allergies), thermometer, ambulance

Key Talking Points:

There are three ways that medication is used:

1. Manage and prevent disease
2. Ease symptoms
3. Help in the diagnosis of an illness

SESSION 1

MEDICATION:
HOW IS IT USED?

Medications are used to make a person feel better when they are sick to:

- help fight disease and infection
- replace or block chemicals in the body
- control an illness
- relieve pain
- relieve symptoms

(A circular inset image shows a young child holding their head, appearing to be in pain.)

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SLIDE 7

Summarize the role of medications with students using the information on the slide.

Key Talking Points:

- Medications can help a person feel better when they are sick.
- Medications can help fight disease and infection.
- Medications can replace or block chemicals in the body.
- Medications can help control an illness.
- Medications can help relieve pain or other symptoms.

REFLECTION

Describe two ways that humans use medications.

Why did Chloe, from the video, need an antibiotic?

Discovery Education PREVENTION

SLIDE 8

Guide students to respond to the two prompts on their capture sheets:

1. Describe two ways that humans use medications.
2. Why did Chloe from the video need an antibiotic?

If needed, share the video again from slide 6: The Immune System: <http://kidshealth.org/en/kids/ismovie.html>

Exit Slip: Present students with questions to which they can respond on their capture sheets to show their learning. The questions below are suggestions. It is recommended that you differentiate for grade and learning levels.

- Why is it important to know how to read a medication label?
- What are two ways that medications are used?
- What does the immune system do?
- What are the four different kinds of germs?
- What is a vaccine and what does it do?

SESSION 1



SLIDE 9

Summary/Wrap of Session:

- It is important to pay attention to what is on a prescription medication label.
- Understanding what medication is will help me make better decisions.
- Our immune systems help us fight infection and illness.
- Medications are necessary and help keep people healthy.
- We use medications to both manage and prevent illness as well as ease symptoms of illness.

SESSION 2 OVERVIEW

SLIDES
10-17

EXPLAIN

Overview:

Students will demonstrate their understanding of how medications consumed orally travel through the digestive system and move on to the bloodstream.

Content Areas:

Life Sciences and Health Education

Grade Level:

Grades 3-5

Objectives:

- Understand how pills work in the body
- Understand how medication enters the body and works its way through the digestive system

Materials:

- Video (linked to slide 10)
- Student [“Session 2 Capture Sheet”](#)
- Student [“Digestive System” handout](#) and [answer key](#)
- Scratch paper
- Markers or crayons

Definitions:

- **Digestion** – The process of breaking down food or medication into substances that can be used by the body

SESSION 2



SLIDE 10

Show the video clip and ask students to describe what they see on their capture sheets.

Possible Responses:

- A pill dissolving in water
- Bubbles in water
- Medication in water

Video is on this page: <https://vimeo.com/264466162>

Key Talking Point:

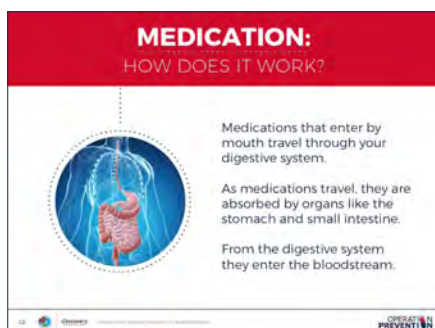
- Pills dissolve and are absorbed into the body.



SLIDE 11

Pose the question, “How does medication enter the body?” Have students work individually to brainstorm and record ideas about how medications enter the human body on their capture sheets.

Allow some students to share their ideas with the class. Discuss the list of ways that medications can enter the body. Allow students to revise their original lists.



SLIDE 12

Distribute and use the provided [digestive system diagram](#) to explain how medications that enter the body through the mouth travel through the digestive system. Use the [answer sheet](#) as a guide.

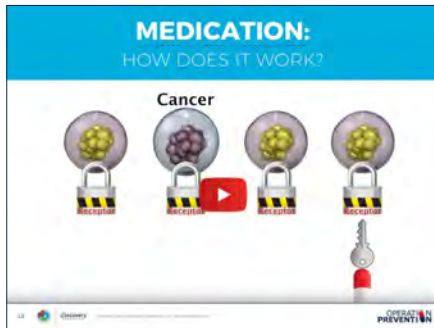
Explain that from the digestive system, medications are absorbed into the bloodstream.

Use the video on next slide to help build student understanding of an oral medication’s journey.

Key Talking Point:

- Oral medications work by traveling through the digestive system and being absorbed into the bloodstream.

SESSION 2



SLIDE 13

Use the first part of the “How Does Medicine Work?” [video](#) (0:00-1:13) to help your students understand what happens to a pill when it is swallowed.

Video: <https://www.youtube.com/watch?v=3Ebj24ubPOY&t=1s&spfreload=10>

Key Talking Points:

- Medications that enter the body through the mouth travel through the digestive system and are absorbed into the bloodstream.
- Specific medications are used for specific conditions. So, it is really important to seek adult guidance (e.g. parent/guardian/doctor) when you think you might need medication.
- If you are not taking medication correctly it is not going to do its job, and it might even make you sick.



SLIDE 14

Provide paper and markers and allow students to work in groups to create skits that show how medication travels through the digestive system. Allow students to present their skits to their peers. Ensure they include the different parts of the body in their skit.

Alternatively, conduct a demonstration. Refer to the diagram and video on slide 13, as needed, to direct students. Have students stand with signs to represent the organs.

- **Mouth:** How the pill enters the body.
- **Esophagus:** Allows the pill to travel from the mouth to the stomach
- **Stomach:** Stomach acid dissolves the pill
- **Small Intestines:** Medication is absorbed into the blood vessels
- **Blood Stream:** Circulates the medication to all organs in the body to help with the healing process

Have another student stand with a cup of beans, blocks, or pennies to represent the pill. Have the pill travel through the digestive system. Prompt the organs to breakdown/absorb the medication (take beans, blocks or pennies) as it passes. Explain that from the digestive system medication is released into the bloodstream. Conduct the demonstration at least two more times using different students.

SESSION 2

MEDICATION:
HOW DOES IT WORK? SUMMARIZER

On Your Own
Add on to the provided diagram to show how the medication or pill traveled through the digestive system.

Extension
Explain where the medication goes when it exits the digestive system.

SLIDE 15

Distribute a [digestive system diagram](#) to each student. Have students work individually to use numbers, symbols, and words to label the diagram to show how medication travels through the bloodstream.

As an extension activity, you can have students hypothesize where medication goes after it exits the digestive system. Discuss as a class.

Optional: Use the provided [link](#) to help deepen your students understanding of the functions of the digestive system.

<https://www.youtube.com/watch?v=VwrsL-ICZYo>

MEDICATION:
HOW DOES IT WORK?

HOW DOES YOUR BODY PROCESS MEDICINE?

SLIDE 16

Use this [video](#) for students to check their work and summarize what happens to a pill when it is swallowed.

Video: <https://ed.ted.com/lessons/how-does-your-body-process-medicine-celine-valery>

Exit Ticket: On their capture sheets, have students record the role that the digestive system plays in taking medication.

Possible responses:

- The digestive system breaks down food into energy. (As discussed in the video on slide 13).
- The digestive system dissolves a pill into the bloodstream to help the healing process.

SESSION SUMMARY

- It helps us to understand how pills work in the body.
- Medication works in the body by being broken down in the digestive system.
- It is important to understand how medication works in the body so you can make healthy decisions.

SLIDE 17

Summary/Wrap of Session:

- It helps us to understand how pills work in the body
- Medication works in the body by being broken down in the digestive system.
- It is important to understand how medication works in the body so you can make healthy decisions.

SESSION 3 OVERVIEW

SLIDES
18-22

EVALUATE

Explain, Engage, and Evaluate

Overview:

In this section, students will learn about two classifications of medication (over-the-counter and prescription). They will also explore how to use medications responsibly.

Slides 18-21 contain activities to engage students in understanding responsible uses of prescription and over-the-counter medications.

Content Areas:

Life Sciences and Health Education

Grade Level:

Grades 3-5

Objectives:

- Understand the differences between prescription and over-the-counter medication
- Learn how to use medication responsibly

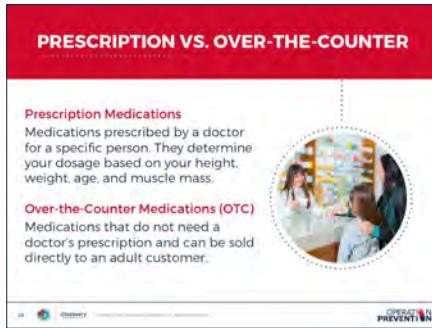
Materials:

- Video (linked to slide 21)
- Student [“Session 3 Capture Sheet”](#)
- [“Session 3 Exit Ticket”](#) and [answer sheet](#)

Definitions:

- **Prescription Medication** – Medication prescribed by a doctor for a specific person. The dosage is determined by several factors including height, weight, age, and muscle mass
- **Over-the-counter medication** – Medications that can be sold directly to an adult without a prescription from a doctor

SESSION 3



SLIDE 18

Introduce the two categories of medications by displaying the terms Prescription Medications and Over-The-Counter (OTC) Medications.

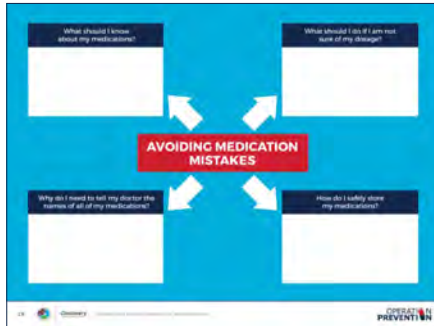
Ask students what they think prescription medications means. Click to reveal and review the description for prescription medications. Emphasize that prescriptions are specific to the individual based on their condition, height, weight, age, and muscle mass. Therefore, they cannot be safely shared or stored in a shared space.

Ask students how they think OTC medications differ from prescription medications. Click to reveal and review the description of OTC medications. Allow time for students to ask clarifying questions.

Key Talking Points:

- Prescription medications are prescribed by a doctor.
- Prescription medications are only to be used by the person to whom the doctor prescribed them.
- Over-the-counter medications can be bought without a prescription.

SESSION 3



SLIDE 19

Distribute a [capture sheet](#) to each student and read the questions aloud. Explain that students should use the information presented in the next three slides and the upcoming video to answer the questions.

Answer guide:

What should I know about my medications?

- You should know the name, purpose, and dosage of your medications.

What should I do if I am not sure of my dosage?

- You should ask your doctor for prescription medications and pharmacist/responsible adult for OTC medications. Be sure to use the correct measuring tool when taking your medication.

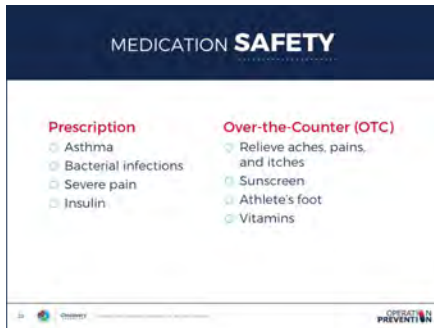
Why do I need to tell my doctor the names of all of my medications?

- My doctor needs to know the names of all of my medications to avoid negative medication interactions and side effects.

How do I safely store my medications?

- To safely store my medications, I should put them in a cool and dry place out of the reach of children and pets.

SESSION 3



SLIDE 20

Review some of the symptoms/conditions that may be treated by each category of medications.

Ask students if they notice a difference.

Make sure they understand that prescription medications are typically used to treat more severe health issues (e.g. prescriptions treat conditions that may not have OTC treatment available, symptoms/conditions that require doctor supervision).

Explain that sometimes it is necessary to see the doctor when OTC medications are not working.

Be sensitive to students who may take medication. For example, you may have students on prescription medications for asthma. At different points, students may be tempted to share personal information regarding medication use by themselves or others. As always, be sure to follow school or district policies about the sharing of personal information about minors.

Key Talking Points:

- Over-the-counter medications and prescription medications are used for different conditions/illnesses.
- Prescription medications are used for more severe health issues.
- Prescription medications require a doctor's supervision, and children should not take them without adult supervision.
- Conditions that require prescription medications typically do not have over-the-counter treatments available.
- Over-the-counter medications may not work for some conditions, necessitating prescription medication.



SLIDE 21

Show video, pausing to allow students to answer the questions/complete the questions on capture sheet.

Use the answer sheet as a guide.

Video is on this page:

<https://www.youtube.com/watch?v=gHv7KWB9RuI&spfreload=10>

SESSION 3

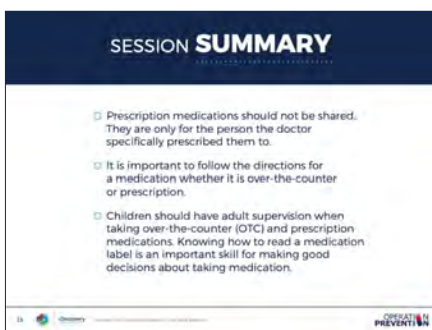


SLIDE 22

Invite students to review the information on the prescription medication label again. Ask students to apply what they have learned to explain why understanding each piece of information is important to ensure safety.

Distribute the [“Session 3 Exit Ticket”](#) to each student. Have them independently demonstrate their learning by explaining each part of a prescription bottle.

Reference the [Answer Sheet](#) for possible responses.



SLIDE 23

Summary/Wrap of Session:

- Prescription medications should not be shared. They are only for the person the doctor specifically prescribed them to.
- It is important to follow the directions for a medication whether it is over-the-counter or prescription.
- Children should have adult supervision when taking over-the-counter (OTC) and prescription medications. Knowing how to read a medication label is an important skill for making good decisions about taking medication.

REFERENCES & NATIONAL STANDARDS

Antibiotic Prescribing and Use in Doctor's Offices

<https://www.cdc.gov/getsmart/community/materials-references/graphics.html>

Combating Antibiotic Resistance

<https://www.fda.gov/ForConsumers/ConsumerUpdates/ucm092810.htm>

Over-the-Counter Medicines

<https://www.drugabuse.gov/publications/drugfacts/prescription-over-counter-medications>

Over-the-Counter (OTC) Drug Addiction, Abuse and Treatment

<https://www.addictioncenter.com/painkillers/over-the-counter-drugs/>

Opioid Overdose

<https://www.cdc.gov/drugoverdose/data/statedeaths.html>

Understanding Medicines and What They Do

<http://kidshealth.org/en/teens/meds.html>

Use Medicines Safely

<https://healthfinder.gov/HealthTopics/Category/everyday-healthy-living/safety/use-medicines-safely>

Pacific Yew: A Potent Cancer Fighting Agent

<http://www.foxnews.com/health/2013/08/21/pacific-yew-potent-cancer-fighting-agent.html>

How Did They Make Penicillin

<https://www.nlm.nih.gov/exhibition/fromdnatobeer/exhibition-interactive/illustrations/penicillin-alternative.html>

Next Generation Science Standards

LS1.C: Organization for Matter and Energy Flow in Organisms

Food provides animals with the materials they need for body repair and growth and the energy they need to maintain body warmth and for motion. (secondary to 5-PS3-1)

National Health Standards Grades 3-5

Students will comprehend concepts related to health promotion and disease prevention to enhance health.

1.5.5 Describe when it is important to seek health care.

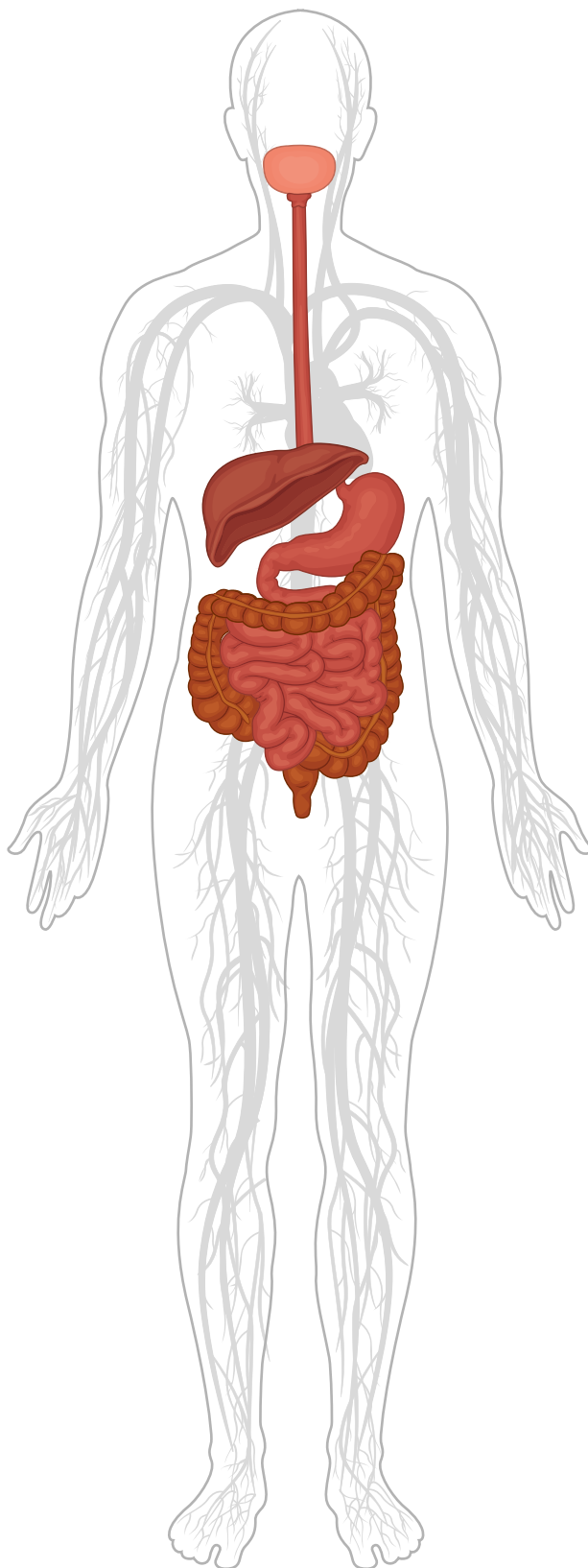
Students will demonstrate the ability to use decision-making skills to enhance health.

5.5.2 Analyze when assistance is needed in making a health-related decision.

DIAGRAM OF DIGESTIVE SYSTEM

NAME:

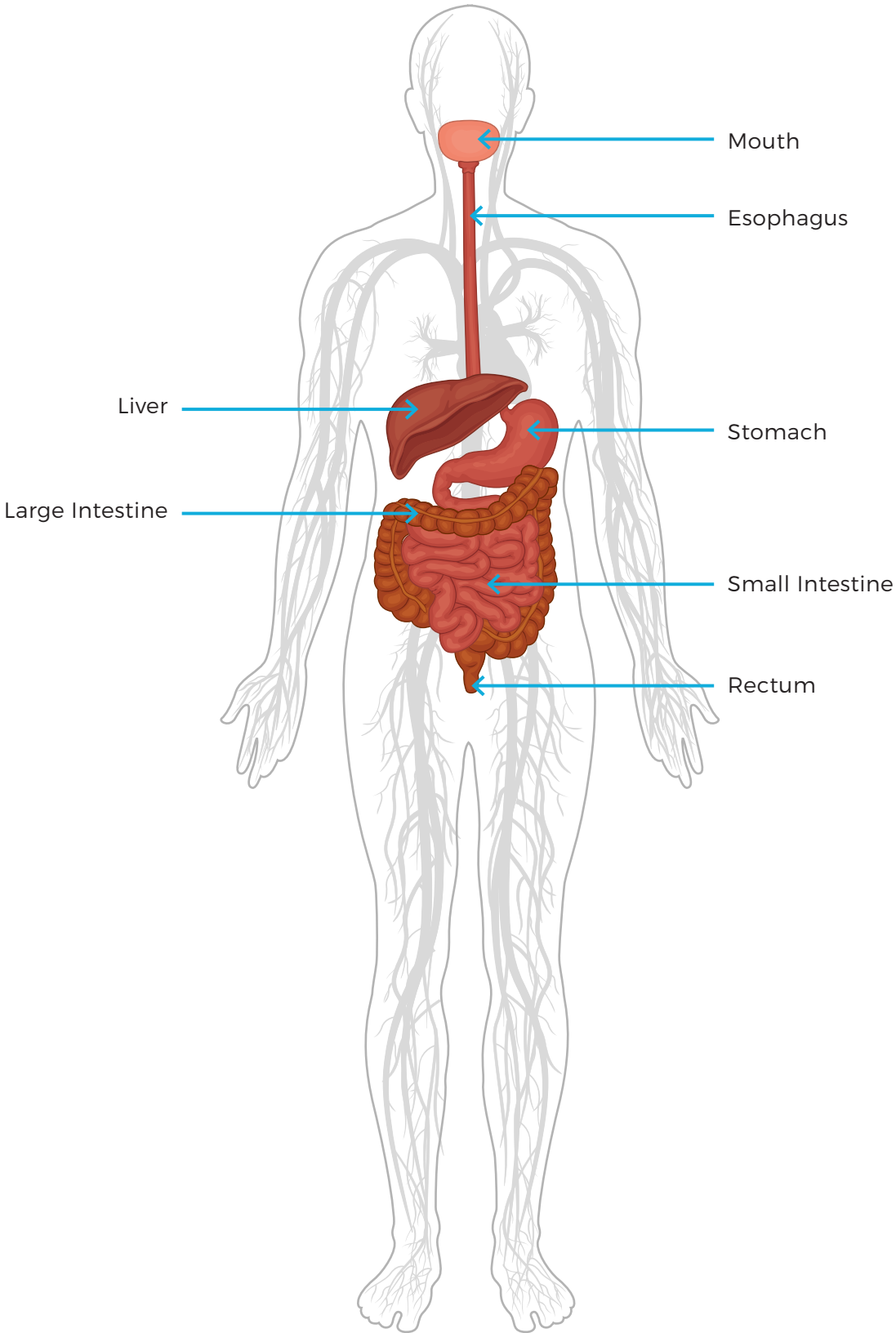
DATE:



DIGESTIVE SYSTEM ANSWER KEY

NAME:

DATE:



SESSION 1 CAPTURE SHEET

Work with your partner to write a definition for the word **MEDICATION**

List three things you can or already do to stay healthy.

- 1.
- 2.
- 3.

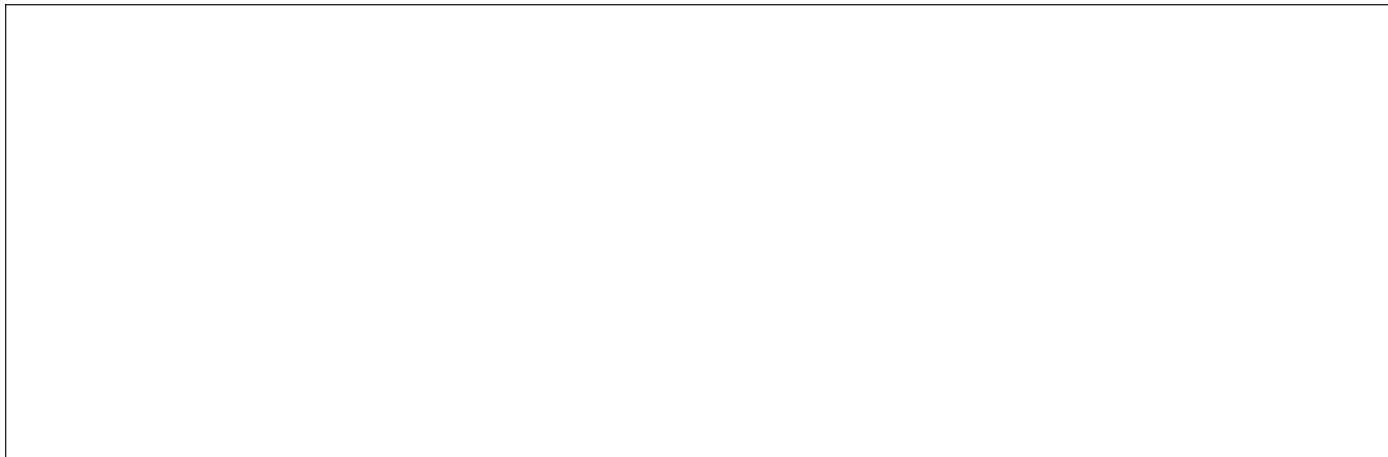
REFLECTION: Reflect on the two questions on the slide. Write your thoughts below.

- 1.
- 2.

EXIT SLIP: Use this space to respond to your teacher's questions and show what you have learned.

SESSION 2 CAPTURE SHEET

Watch the video. Then describe what you see in the box below.



Make a list of how medication can enter the body.

EXIT SLIP: What role does the digestive system play in taking medication?

SESSION 3 CAPTURE SHEET

Who should I talk to when I think I might need medication?

What should I do if I am not sure of my dosage?



AVOIDING MEDICATION MISTAKES

Why do I need to tell my doctor the names of all of my medications?

How do I safely store my medications?

SESSION 3 EXIT TICKET



SESSION 3 EXIT TICKET ANSWER SHEET



Patient Name: Tells you exactly who the medication is for. This is the only person who should take it.

Name/Strength of Medication: What the medication is called and the amount formulated for the person to which it is prescribed.

Instructions: Explains how to take the medication. It should be taken only as directed on the label.

Number of Pills in Bottle: The number of pills prescribed is unique to each person and situation.

Expiration Date: Properly dispose of any medication that is past its expiration date, because it might not work or it might back you sick.

Physical Description of Medication: Helps to identify the medication to make sure it is correct.