



Afterschool Heals Tennessee Positive Choices Lesson Unit

Lessons compiled and edited by:
Leigh Hillis. BA, MA in ELA candidate
21st Century Director, Warren County Schools

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Introduction

Tennessee Afterschool Network established the Afterschool Heals Tennessee Taskforce in 2019 with the goal of developing resources for programs to address opioid and other substance abuse disorders in their communities.



A majority of Tennessee’s youth experience one or more Adverse Childhood Experiences. These are stressful or traumatic experiences that interfere with a child’s ability to learn and maintain positive physical and mental health.

Afterschool programs have a unique opportunity to support prevention efforts by working with local anti-drug coalitions, prevention education with youth and caregivers, and building protective factors that encourage good decision making and resiliency.

Research shows that students participating in high-quality afterschool programs are less likely to abuse drugs or alcohol. Pair a high-quality program that is intentional about building resiliency and offering prevention curriculum, then we have a winning formula for prevention!

This lesson unit was developed as part of the Afterschool Heals Tennessee toolkit found on www.tnafterschool.org.

Unit Contents

This unit explores making positive choices for better health. Lessons are divided into four sections, ELA Day, Math Day, STEM Day, and Enrichment Day. A variety of activities are presented in each section to be used or modified for grades K – 8. All lessons are tied to Tennessee Foundational Standards.

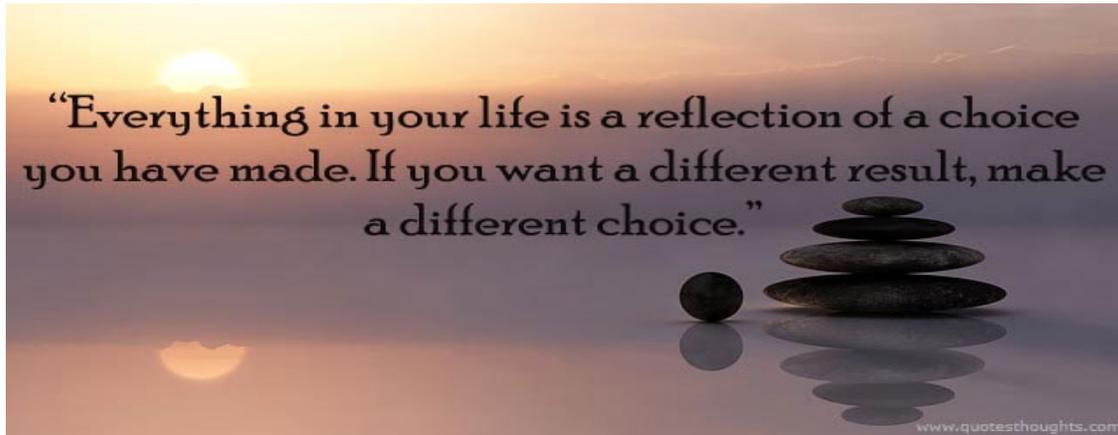
- English Language Arts (ELA) Day (Pages 1—13)
- Math Day (Pages 14—21)
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**Lessons are not original content; lessons are public domain. We’ve compiled these resources into one lesson unit and connected to Tennessee standards to facilitate learning on this topic.*



Positive Choices Unit

English and Language Arts (ELA) Day



Introduction: Character and Positive Choices

What is character?

Teachers and caregivers talk about the importance of good character and character building – but what does that really mean? Most agree that character is shown by how someone acts, thinks, and reacts to the world. Character includes many things; it is the pattern a person demonstrates by how they interact with the world and how they display self-respect.

“Good character” traits are things like honesty, respect, responsibility, caring, and fair.

“Poor character” is often displayed in actions like lying, deceitfulness, bullying, stealing, and other actions that cause harm. Someone with good character makes choices that are “right” and avoids doing things society considers “wrong”.

Examples of good character

Character is more about patterns of behavior than one-time actions. A person with good character does his or her best to be honest, respectful, fair, caring, and responsible. Making a mistake does not mean someone has bad character. Everyone makes mistakes sometimes. A person of good character usually recognizes a mistake, takes responsibility for it, and commits to do better in the future. A person with good character will make an effort to make positive choices, even when it is uncomfortable or difficult.

Source: <https://talkingtreebooks.com/definition/what-is-character-definition.html>

Activity

Warm up: Play a game of “Would You Rather” to get students to think about choices in low-pressure environments.

How to Play: Questions range from silly trivia to content that is more serious. Be prepared find out some interesting things about your young people! Place a line of tape down the center of the room. Ask the group to straddle the tape. When asked 'would you rather?' they should to jump to the left or right as indicated by the leader. Do not forget to encourage your adult helpers to join in too! Below are some starter questions: Feel free to create your own! Now, Ask “Would you rather...?”

- Visit the doctor or the dentist?
- Eat broccoli or carrots?
- Watch TV or listen to music?
- Own a lizard or a snake?
- Have a beach vacation or a mountain vacation?
- Be an apple or a banana?
- Be invisible or be able to read minds?
- Be hairy all over or completely bald?
- Be the most popular or the smartest person you know?
- Make headlines for saving somebody's life or winning a Nobel Prize?
- Go without television or fast food for the rest of your life?
- Always be cold or always be hot?
- Not hear or not see?
- Eliminate hunger and disease or be able to bring lasting world peace?
- Be stranded on a deserted island alone or with someone you don't like?
- See the future or change the past?
- Be three inches taller or three inches shorter?
- Wrestle a lion or fight a shark?

Focus Word: Choice

According to www.dictionary.com “Choice” (noun) means:

1. an act or instance of choosing; selection: *Her choice of a computer was made after months of research. His parents were not happy with his choice of friends.*
2. the right, power, or opportunity to choose; option: *The child had no choice about going to school.*
3. the person or thing chosen or eligible to be chosen: *This book is my choice. He is one of many choices for the award.*
4. an alternative: *There is another choice.*

Watch the following video

“Making Healthy Choices” <https://www.youtube.com/watch?v=l5akBR7k4p0>

Discussion

- List some of the healthy choices that were made in the video. Discuss some of the bad choices that were made.
- In almost every situation, you have a choice to make. All choices have either a positive or a negative consequence.
- We even have a choice about our attitudes.



- Analyze the quote. Discuss with your partner what it means.

Watch the following video

Ask students to pay attention to the boy’s attitude about the puppy? Why do you think he is treating and acting that way towards the puppy? How does your opinion about the boy’s attitude change at the end of the video? We need to realize that we may not have all the information about a situation. We should choose not to judge others so quickly. Why do you think the boy finally chose to change his attitude towards the puppy?

“The Present - Official” <https://www.youtube.com/watch?v=WjqIU5FgsYc>



Discussion

- How did the puppy feel about missing one of his legs? Cite evidence from the video.
- Do you think the puppy helped the boy have a better attitude about missing a leg?
- We can all agree that the boy in the video had to deal with a bad situation. It would be hard to have only one leg. It may even seem unfair. In life, unfair things can happen. Having a bad attitude did not help. Do you agree that when he changed his attitude he seemed to be happier? How could you tell he was happier?

Reading Activity

- In the fable we are about to read, listen for the choices that led to the boy getting a reward at the end of the story.
- Read with the class or have students read alone the following article “The Wise Choice.”
- Ask students to answer the questions following the article.
- Read with the class or have students read alone, article two “Smart About Medicine.”
- Ask students to answer the questions following the article.

The Wise Choice



"You have rescued my horse," Queen Olivia told the young boy standing before her. "Now you shall have a reward." Peter nervously ran his fingers through his brown hair. The frightened horse had run past him as he worked in the field that morning. He would have helped it whether it belonged to the queen or not. But he had to admit that getting a reward was nice.

Two of the queen's pages appeared. One carried a small pillow with a mirror sitting on top. Red jewels sparkled on top of the mirror's silver frame. The other page carried a wood cage with a clucking chicken inside it.

"Only one reward can be yours," the queen said. "Choose wisely." "That's easy," Peter said. "I'll take the chicken." Some of the people in the court laughed. It was clear they thought he had made a foolish choice.

"And why did you choose the chicken?" the queen asked. "Well, I don't know much about jewels and things," Peter answered. "But I do know about chickens. The chicken will provide eggs for my family for a long while."

Queen Olivia smiled. "Then you did make a wise choice," she said. "That mirror may look fancy. But the jewels you see are only colored glass, and the frame is painted silver. The chicken is much more valuable." Peter took the chicken from the page. Then he bowed. "Thank you, your majesty."

"You are a smart child," the queen said. "I could use a smart boy to help take care of my horses. Would you like a job?" Peter grinned. "Thank you!" he said. A job at the castle paid well. Now his family would eat well for the rest of their lives—all because he had chosen a chicken!

Name: _____ Date: _____

1. The theme of this story is about

- A. returning things to their owners.
- B. paying attention to other people's opinions.
- C. knowing the value of things.
- D. the importance of earning money

2. Which of the following best describes Peter?

- A. He is greedy.
- B. He cares a lot about his family.
- C. He does not respect the queen.
- D. He does not like jewelry.

3. What is the moral of the story?

- A. A horse has the same value as a chicken.
- B. It is important to make the right decision even though other people may disagree with your decision.
- C. Queens can be kind
- D. Understanding the true value of things can lead you to wise decisions

4. Peter chooses the chicken as his reward. Why do some of the people in the court most likely think this is a foolish decision?

- A. They most likely think the mirror with the jewels is fancier and worth more than the chicken.
- B. They most likely think the chicken is fancier and worth more than the mirror with the jewels.
- C. They most likely think Queen Olivia would become angry at Peter if he chose the chicken.
- D. They most likely think Peter would end up losing the chicken.

5. Identify a detail in the story and explain how it supports the theme.

Knowledge guides positive choices. Read the article below about being smart with medicine.

Smart About Medicine

by Jennifer Magid

Check out these dos and don'ts for taking medicine safely.

Did you know that almost one out of three teens think there is nothing wrong with using prescription drugs without a doctor's prescription, according to the Partnership for a Drug-Free America?

Medicines can help people fight illnesses and get better faster, and can keep people from getting sick in the first place. But if they aren't taken correctly, medicines may cause more harm than good. Read on to learn more about responsible medicine use.

DO take all your antibiotics.

Here's a scenario: After three days of taking the medicine your doctor prescribed for strep throat, you feel great. You still have seven days' worth of pills left. Is it OK to stop taking them and shove them to the back of the medicine cabinet until the next time you get sick?

Nope! Always finish taking all the *antibiotics* (bacteria-fighting drugs) prescribed by your doctor, even if you start to feel healthy again. "When bacteria are undertreated, they have a chance to multiply," says Dr. Tanya Arora, a pediatrician at Children's Hospital Los Angeles. "You get bacteria that no longer respond to the antibiotic." Some antibiotics don't just get rid of bacteria, Arora adds. Some also help prevent other problems. For instance, strep throat that is not fully treated can lead to rheumatic fever, an illness that can damage the heart.

Don't take someone else's medicine.

The most common way teens get medications they aren't supposed to be taking is from a friend or a relative, according to the 2008 Monitoring the Future survey. But sharing your medicine, or taking another person's medication, can be dangerous. It's also illegal.

"If the drug was not prescribed for you, you don't ... have your own doctor's knowledge of how the prescription medicine will interact with your own body [or] with other medicines you may be taking," says Steve Pasierb, president of the Partnership for a Drug-Free America. That means you could get very sick.

Plus, if you take someone else's medicine, that person won't have enough of it. Pharmacists cannot refill a prescription if a medication has been used up before it should have been. That could put the other person's health in danger.

DO make sure you are taking the correct dose.

Every week, approximately one in 10 kids use some kind of cough and cold medicine, according to experts at Boston University. Cough and cold medicines can be a big help when you're sniffling and sneezing. But because you can buy them without a prescription, many people don't realize just how

dangerous those drugs can be if they are misused.

While cough medications may have different names, they often have the same or similar ingredients. For example, the ingredient *diphenhydramine*, which treats coughs, can make you stop breathing if you take too much.

"These medications are not meant to take away all your symptoms and make you feel back to normal -they only help a little bit," Arora says. Taking more than you should won't help your symptoms.

DO find out whether your medicine shouldn't be mixed.

Sometimes, drugs can interact with other drugs, foods, or vitamins. For example, iron supplements can keep *tetracycline*, a common antibiotic, from working. Grapefruit juice affects a number of medicines, such as ones for heart disease and allergies, as well as some that fight infections.

Certain vitamins and supplements for athletes can have damaging effects on the kidneys and liver. "It is important that your doctor know [what you are taking] so that they avoid prescribing medications that may worsen that damage," says Virginia Cox of the Consumer Healthcare Products Association.

Don't take expired meds.

Some medicines don't work as well as time passes or if they are kept in high temperatures. Expired medicine may not work as intended. That is why it is better to always go to the doctor rather than try to figure out on your own what you ought to do.

"Your self-diagnosis may be wrong, and the prescription medicine you take may have a negative impact on what is truly wrong with you," says Pasierb.

Rx Quick Check

Put your medicine smarts to the test.

1. You have a fever but otherwise feel OK. Should you take a medicine that treats fever, sore throat, sneezing, and coughing?

- (A) **yes**
- (B) **no**

2. Your family has a bottle of medicine with an expiration date of 08/09. That means it was safe to use until

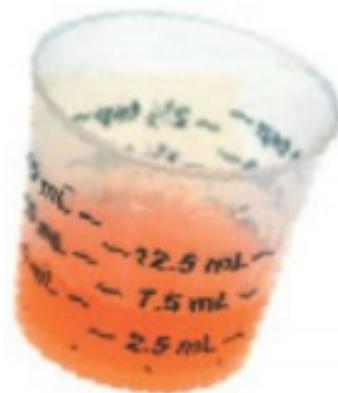
- (A) **September 2008.**
- (B) **August 2009.**
- (C) **2008 or 2009.**

3. **True or False:** Abusing over-the-counter or prescription medications can be just as dangerous as abusing illegal street drugs.

ReadWorks®

Answers:

1. B (Avoid taking unnecessary medicines.);
2. B;
3. True



Arvind Balaraman/Shutterstock

Measuring Up

You may have heard the expression "Don't judge a book by its cover." Don't judge a spoonful by the spoon, either.

Kitchen teaspoons-the kind you eat with-shouldn't be used to take liquid medicines. That's because not all spoons are alike. Spoons can hold anywhere from 4 milliliters of liquid to 10 milliliters, according to a study by doctors in Minnesota. However, the correct amount of liquid in a teaspoon serving is 5 milliliters. Use a medicine measuring cup instead. Then you can be sure it is the right dose.

Name: _____ Date: _____

1. According to the passage, how many teenagers think there is nothing wrong with taking prescription drugs without a doctor's prescription?

- A. one out of ten teenagers
- B. one out of four teenagers
- C. one out of three teenagers
- D. about half of teenagers

2. The passage gives readers a list of things they should and should not do with medicines. Which of the following does the writer include in the passage?

- A. you do not always need to finish taking all the antibiotics prescribed
- B. you can take someone else's medicine
- C. you can mix medicine with any other foods, drugs or vitamins
- D. you should not take expired medicine

3. Based on the passage, it is likely that

- A. all medicines are safe to mix with other drugs, foods or vitamins
- B. people always take all of their antibiotics
- C. many people do not use medicines correctly
- D. no one ever shares their medication with other people

4. Read the following sentences:

"Some medicines don't work as well as time passes or if they are kept in high temperatures. Expired medicine may not work as intended."

As used in the passage, **expired** means

- A. too pass on
- B. prescribed
- C. past a certain date
- D. before a certain date

5. What is the central idea of this passage?

- A. how to take medicine responsibly
- B. how to get a prescription for an illness
- C. different kinds of medicine
- D. how to take medicine for a cold

6. According to the passage, what are the two reasons people should not take someone else's

medicine?

7. Based on the passage, are medicines that you can get without a prescription safer than those with a prescription? Why or why not?

8. The question below is an incomplete sentence. Choose the word that best completes the sentence.

Grapefruit juice can affect a number of medicines, _____ you should ask your doctor if it is safe to drink it with your medication.

- A. before
- B. so
- C. because
- D. after

9. Which image best demonstrates the meaning of the word interacting?



10. According to the passage, which of the following can interact with medicine: water or grapefruit juice? Why?

Activity

SUPPLIES

- Blindfold
- A Hammer (a giant inflatable hammer works best)
- Tape
- Sheets of Paper and a Marker
- The song "*Hammer Time*"
- 10 Second Audible Countdown
- Large Space to play the game

HOW TO PLAY THE GAME

Count the number of students who will be playing the game.

Next, on each sheet of paper, write a number, beginning with "1."

On the next sheet of paper, write "2."

Continue, writing numbers on sheets of paper, until the numbers add up to at least the number of students that are playing the game.

For example, if you have 10 students, then you will have sheets of paper that say, "1," "2," "3," and "4" = 10.

Use tape to attach the sheets of paper and mark various areas around the room as "safe zones."

Remember: The numbers on each safe zone show how many students can be in that area at a time.

Make sure there is enough space available for each student to have a spot.

These zones can be as big, small, and numerous as you would like.

Choose one player to be the *Hammer*.

Blindfold the student and place them in the center of the room with a hammer in hand.

On GO, the remaining students will move around the room trying to decide which "safe zone" they want to choose.

They can only choose an area that is not full.

Play “*Hammer Time*” as they are moving around.

Give students a 10-second countdown when time is almost up.

At the end of the countdown, the Hammer will point the giant hammer toward any direction they want.

The area closest to where they are pointing is then “hammered” out of the game and must sit down outside the playing area.

Leaders will decide which area is the closest.

Also, anyone that didn’t choose a corner before the hammer was dropped is automatically out of the game.

Play until only one person is left in the playing area and that person then becomes the Hammer for the next round.

Play as many rounds as you want.

TEACH

It was fun to watch how each of you chose differently and at different times throughout that game.

All of you were faced with the same situation, but made different choices because of different reasons.

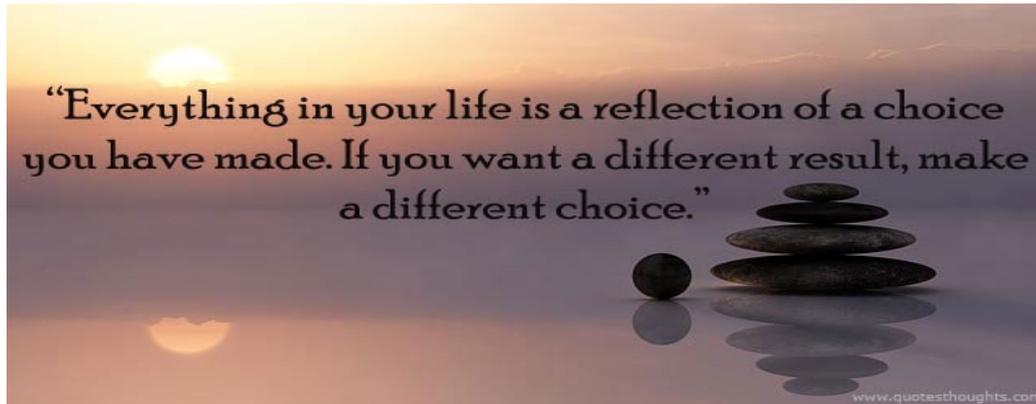
Let me ask a few questions:

Allow a few responses for each question.

- How many were out of the game because you didn’t choose an area in time?
- How many felt you should not have gotten out because the hammer was closer to another area?
- How many chose areas because friends were in that area?
- Who decided to go to smaller less populated areas?
- Did anyone get left out of an area because it was filled up?
- How did that make you feel?
- How do you decide what choices to make in life?
- Who makes decisions based on what others are doing? WHY?

In this world, it can feel overwhelming when every choice we make has tremendous outcomes and huge consequences.

Math Day



“Kindness in words creates confidence. Kindness in thinking creates profoundness. Kindness in giving creates love.” ~ Lao Tzu

Focus Word: Kindness

Kindness is a choice we make. Think about the quote above. What does it mean to you? Discuss your thoughts with one another.

Watch the following video.

Video from “TheCorpfa”
<https://www.youtube.com/watch?v=PT-HB12TVtI&t=188s>

In this four-minute video, bystanders witness a stranger performing a simple act of kindness and are then inspired to turn around and do a good deed themselves.



Activity

List all the different acts of kindness demonstrated in this video.

Activity

This billboard about Inspiration features Alexandra Scott (1996-2004); Founder of Alex's Lemonade Stand Foundation.

Alexandra Scott was born on Jan. 18, 1996, to her parents, Jay and Liz. At first, the family faced the usual ups and downs of infancy. Their world changed forever when, two days before Alex's first birthday, she was diagnosed with neuroblastoma, an aggressive childhood cancer.

The next few years became a whirlwind of doctor and hospital visits. When Alex was four, she was inspired to have a lemonade stand with the goal of raising money to help "her hospital." In July 2000, Alex donated more than \$2,000 in lemonade-stand sales to Connecticut Children's Medical Center.



Alex and her family moved to Philadelphia in early 2001 to pursue new treatment options. She continued her lemonade stand, and during her third year she raised \$20,000 for Children's Hospital of Philadelphia in honor of her friend Toireasa, who had recently lost her battle with neuroblastoma.

In 2004, Alex set a goal of raising \$1 million for her lemonade fund. With the help of friends, family and strangers who hosted lemonade stands in all 50 states and a few other countries, Alex's goal was met.

Sadly, on Aug. 1, 2004, Alex passed away, but not before she had set another goal: to raise \$5 million for pediatric cancer research in 2005.

While Alex's personal fight is over, her mission lives on. Today, with the support of her parents and her brothers Patrick, Eddie and Joey, the Alex's Lemonade Stand Foundation (ALSF) is a registered nonprofit foundation. To date, ALSF has raised more than \$60 million toward fulfilling Alex's dream of finding a cure, funding more than 300 research projects nationally—and continuing as a living testament to the inspiration one young girl provided.

Inspiration. Pass It On!

Discussion

1. What disease did Alex have?

2. How did being diagnosed with this disease change her life?

1. What was Alex inspired to do at the age of four?

4. What was the result of her choosing to start a lemonade stand?

5. How did her choice to open a lemonade stand help others?

6. What was her ultimate goal?

7. Did she accomplish it?

8. What can we learn from Alex?

Activity

Do you think you could open a lemonade stand?

Students will take the role as entrepreneurs in a lemonade stand business venture. They will work together in groups of three to four to analyze the basic economic components that take place in business. Each group will be given a business scenario that will list the following:

List the following:

- Cost of supplies
- Price
- Number of employees
 - Hourly wage
- Number of customers per day

Instructions:

- Each group must read the scenario and be able to recognize which information is necessary for their calculations. They must calculate their total profit for each of the ten days.
- In the end, each group will work cooperatively to write a short description of their lemonade stands success or failures.
- Younger students will need to be grouped with older students or with an adult.

Day One:

- It's sunny. You are selling it for \$.10 a cup. There is enough lemonade for 100 cups to be sold. The ingredients necessary cost you \$5.00. 87 people stop by, but only 73 buy a glass of lemonade. You have two people at the stand working, each expecting 25% of your total profit for the day.
 - What is your profit?
 - How much do the employees receive?
 - What is your total cost?

Day Two:

- It's partly cloudy. You have decided to sell your lemonade for \$.15 a cup. There is enough lemonade to sell 85 cups. The ingredients necessary cost you \$.75 because you had to buy more ice. 79 people stop by, but only 62 people purchase lemonade. You have 1 person at the stand working and expects to receive 25% of the total profit for the day.
 - What is your profit?
 - How much do the employees receive?
 - What is your total cost?

Day Three:

- It's raining today. You have decided to sell you lemonade for \$.10 a cup again. There is enough lemonade to sell 95 cups. The ingredients cost you \$1.25 because your lemons went bad. Only 34 people stop by, but only 25 people purchase lemonade. You have 2 people at the stand working because no one likes to sit in the rain alone. Each expects 25% of the total profits for the day.
 - What is your profit?
 - How much do the employees receive?
 - What is your total cost?

Day Four:

- It's breezy and mostly sunny. You have decided to sell your lemonade for \$.20 because the rain has passed and everyone's happy. There is enough lemonade to sell 100 cups. The ingredients cost you \$1.00 because you needed more sugar. You have only 1 person working the stand and they expect 25% of the day's total profit. Out of 50 potential customers, 45 purchase a cup of lemonade.
 - What is your profit?
 - How much do the employees receive?
 - What is your total cost?

Day Five:

- Today is a scorcher! It's 95 degrees and humid. You have decided to sell your lemonade for \$.25 a cup. There is enough lemonade to sell 100 cups. The ingredients cost you \$1.00 because you had buy more cups. You have 3 people working the stand because you expect it to be very busy. Each employee expects 25% of the day's final profit. 142 customers stop, but only 100 customers purchase because you sold out!
 - What is your profit?
 - How much do the employees receive?
 - What is your total cost?

Day Six:

- Today is cooler than the day before. It is cloudy, and a little windy. You have decided to sell you lemonade for \$.15 a cup. There is enough lemonade to sell 65 cups. The ingredients cost you \$2.00 because you had to buy more ice and cups after yesterday's sellout! You have 1 person working the stand and they expect 25% of the day's total profit. Out of 56 potential customers 43 stop and purchase lemonade.
 - What is your profit?
 - How much do the employees receive?
 - What is your total cost?

Day Seven:

- Today is storming! You have decided to not open your stand today.
 - What is your profit?
 - How much do the employees receive?
 - What is your total cost?

Day Eight:

- Today is nice- a nice breeze and the sun is shining! You have decided to sell your lemonade for \$.15 a cup. There is enough lemonade to sell 80 cups. The ingredients cost you \$.50 because you had to purchase more lemons. You have 1 person working the stand and they expect 25% of the day's total profits. Out of 78 potential customers, 64 stop to purchase lemonade.
 - What is your profit?
 - How much do the employees receive?
 - What is your total cost?

Day Nine:

- Today is nice again. It's hot and sunny. You have decided to sell your lemonade for \$.20 a cup. There is enough lemonade to sell 95 cups. The ingredients cost you \$1.00 because you had to purchase more ice. You have 2 people working the stand and they both expect 25% of the day's total profit. Out of 90 potential customers, 89 stop by to purchase a cup of lemonade.
 - What is your profit?
 - How much do the employees receive?
 - What is your total cost?

Day Ten:

- Today is HOT! You have decided to sell you lemonade for \$.25 a cup because it's your last day! There is enough lemonade to sell 125 cups. The ingredients cost you \$1.50 because you had to get more sugar and ice. You have 2 people working the stand because you expect to be very busy. Each employee expects 25% of the day's total profit. Out of 150 potential customers, 125 purchase lemonade because you sell out!
 - What is your profit?
 - How much do the employees receive?
 - What is your total cost?
 -

_____’s Lemonade Stand

You have opened a lemonade stand and are trying to make a profit. Complete the following chart for your first seven days of business.

DAY	WEATHER	FORECAST	# OF PITCHERS MADE	PROFIT
1				
2				
3				
4				
5				
6				
7				

Discussion

- What was your total profit after seven days?
- Did you make money or lose money?
- Why do you think this happened?

Activity

Lemonade Recipe



FRESH-SQUEEZED LEMONADE BY THE GLASS

PREP: 5 MINUTES

TOTAL: 5 MINUTES

Refreshing homemade lemonade couldn't be easier – one glass at a time! Whip some up and you'll be sipping before you know it. Make a choice to share with someone.

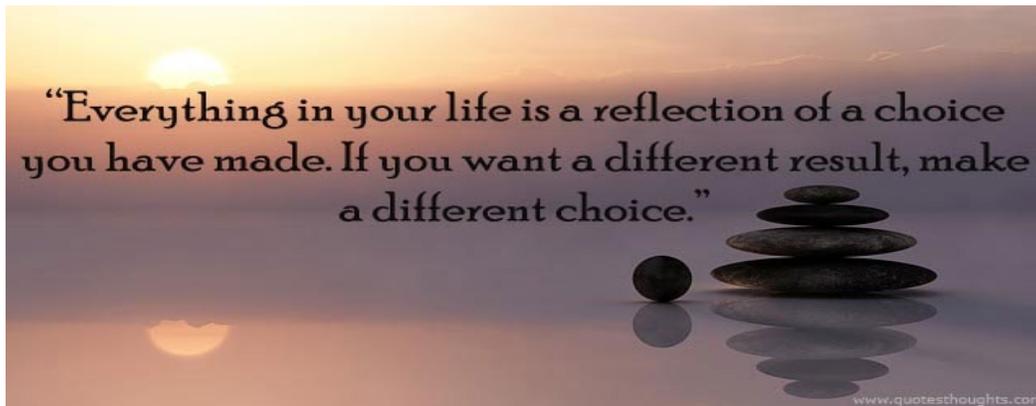
INGREDIENTS:

- 2 tablespoons white sugar
- 1/4 cup hot water
- 3 tablespoons fresh-squeezed lemon juice
- 3/4 cup cold water
- Ice

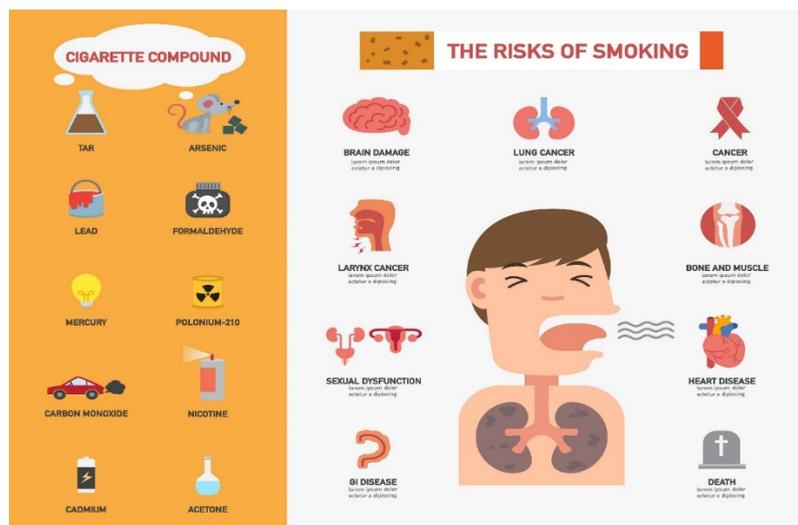
DIRECTIONS:

- In a 16-ounce or larger cup, stir together the sugar and hot water until the sugar is dissolved.
- Stir in the lemon juice and the cold water.
- Fill to the top with ice and serve.

STEM Day



Thinking about the consequences of decisions is a characteristic of responsible decision makers. While adult guidance from a trusted adult is always helpful, children build good habits by learning to make responsible decisions on their own. This lesson will explore the effects that smoking and vaping have on health and lungs to help them make the right choices.



Tobacco products in any form are unsafe, regardless of whether it is smoked, smokeless, or electronic. If cigarette smoking continues at the current rate among youth in this country, 5.6 million of today’s Americans younger than 18 will die early from a smoking-related illness. That is about 1 of every 13 Americans aged 17 years or younger alive today.

Students will build a pair of lungs in order to understand how they work.

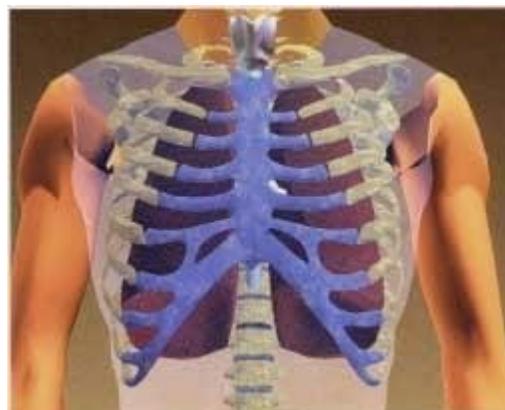
Activity

Students will build a pair of lungs in order to understand how they work.

Watch the following video.

“Creating Model Looking Lungs:”

<https://www.youtube.com/watch?v=SwOIYkEt0To>



Engineering Connection

By studying the respiratory system, engineers have created technologies such as the heart-lung machine, which keeps patients alive during heart transplants. Engineers are currently working on creating an implantable, artificial lung to aid people with serious lung diseases. One way that engineers study complicated systems is by creating models, similar to how students create their own model lungs in this activity.

Materials List

Each group needs:

- 2-liter empty plastic bottle with cap
- 2 plastic drinking straws; available inexpensively at restaurant supply stores or donated by fast-food chains; do not use the flexible drinking straws
- 2 9-inch balloons
- 1 larger balloon; for example, for a punch ball
- 2 rubber bands
- Lung Worksheet, one per student

Introduction/Motivation

- Imagine being on a bus? You probably want to get out quickly to move freely. This is similar to the process that causes air to flow in and out of your lungs. The air molecules are either crowded outside (in the environment) and want to get into the lungs where there are less air molecules (inhalation), or they want to get outside because they are too crowded inside the lungs (exhalation).
- When you inhale, your diaphragm muscle contracts downward and rib muscles pull upward causing air to fill the lungs. Can you think of why? Well, when your diaphragm moves down and ribs move up, they make more space in your chest (in the thoracic cavity) for air. This also decreases the pressure on your lungs so the air will flow in from the outside. The opposite happens when you breathe out. Your diaphragm relaxes and the ribs and lungs push in which causes air to be pushed out.
- Engineers need to understand the respiratory process in order to design machines and medicines to help people whose respiratory systems function incorrectly or with difficulty. Have you ever known someone who suffers from asthma or pneumonia? Well, chemical

engineers design devices and medicines, such as inhalers filled with an adrenergic bronchodilator to help people breathe better. Engineers have also developed artificial lungs that help people breathe while fighting off infections. In addition, engineers design the systems that help astronauts breathe easily during space flight, when they are far away from the Earth's atmosphere.

- Engineers use models to study complicated processes and better understand them. In this activity, you will act like engineers by building models of the lungs in order to study the breathing process and what happens when you breathe in and out.

Before the Activity

- Gather materials and make copies of the [Lung Worksheet](#).
- In each of the 2-liter bottle caps, drill 2 holes that are just big enough for a drinking straw to fit through. Tip: Make sure to drill the holes far enough apart that the holes do not become one big hole!
- Using a pair of scissors, cut off the bottom of each 2-liter bottle.

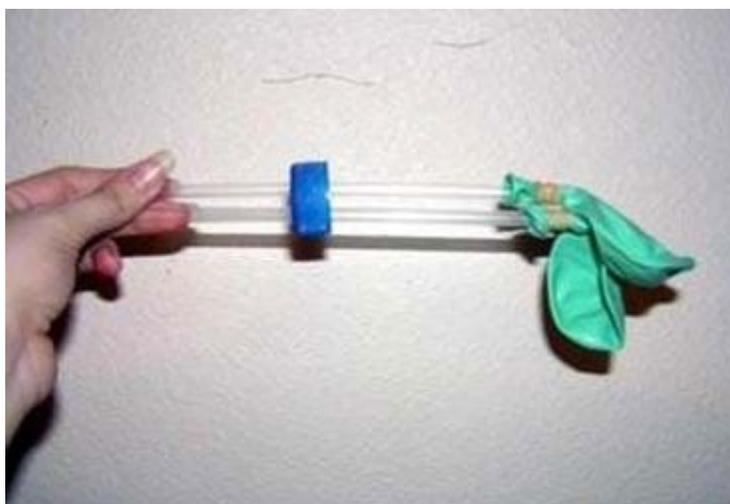
Pre-Activity Assessment

Discussion Questions: Solicit, integrate and summarize student responses.

- How do the lungs work? How do you inhale and exhale?
- Does your breathing change when you exercise? How?

With the Students

1. Review the pre-activity assessment
2. Peel off the labels, if any, on the 2-liter bottles.
3. Tell students that the 2-liter bottle represents the human chest cavity.
4. Stick two drinking straws through the two holes in the bottle cap.
5. Place one 9-inch balloon on the end of each straw and secure them with rubber bands, as shown in Figure 2.



5. Tell students that the straws represent the bronchi and the balloons represent the lungs.
6. Stick the balloon ends of the straws through the bottle opening and tightly screw on the lid.
7. Stretch out the larger balloon and place it over the open bottom of the bottle.
8. Tell students that this larger balloon represents the diaphragm. Now they have a finished model of the lungs! (See Figure 3,) Next, it is time to make the lungs work!



9. Pull the diaphragm (balloon) down (that is, away from the lungs) in order to inflate the lungs. (Note: This makes the chest cavity larger and decreases the pressure.)

10. Push the diaphragm (balloon) in (towards the lungs) in order to deflate the lungs. (Note: This makes the chest cavity smaller and increases the pressure.)

11. Have students complete the worksheet.

12. To conclude, have teams make presentations of their model lungs, as described in the Assessment section.



Vocabulary/Definitions

bronchi: Two large tubes connected to the trachea that carry air to and from the lungs.

diaphragm: A shelf of muscle extending across the bottom of the rib cage.

lungs: Spongy, saclike respiratory organs that occupy the chest cavity, along with the heart. They provide oxygen to the blood and remove carbon dioxide from it.

Activity Embedded Assessment

Worksheet: Have students record their observations and complete the Lung Worksheet. Review their answers to gauge their mastery of the subject.

Post-Activity Assessment

Presentation and Informal Discussion: Have one or more groups use their projects to demonstrate how the lungs work. Next, hypothesize with the class: What would happen to the respiratory system if we punctured it? Have one group puncture the cavity (bottle) or diaphragm (rubber bottom) and demonstrate what happens to the lungs if this body part is damaged. (Answer: The lungs are unable to inflate and/or deflate if the chest cavity has a leak. The lungs cannot maintain the pressure difference.) Discuss with the class: What could engineers do to help fix a puncture in a person's lungs?

Troubleshooting Tips

When cutting off the plastic bottle bottom, make sure that the edges are as smooth as possible so it does not rip the balloon on the bottom. If edges are rough, bind them with masking or duct tape.

Seal any potential leaks with poster tack.

Activity Extensions

Have students research respiratory diseases and how they affect the function of the respiratory system. Can they alter their model to show what happens to the lungs with these diseases? **Lung diseases caused by smoking** include COPD, which includes emphysema and chronic bronchitis. Cigarette **smoking** causes most cases of **lung** cancer.

Can they demonstrate on their models what has been done to help people with respiratory problems?

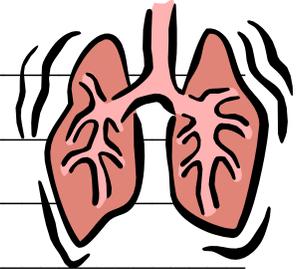
Engineers have developed an artificial lung to help people fight infection. The artificial lung is approximately 18-inches long and consists of membranes that pass oxygen to the blood and remove carbon dioxide. It is inserted through a vein in the leg and lodged in the main vein (the vena cava) passing blood to the heart. The blood is re-oxygenated through a catheter attached to an oxygen supply. Have students create a drawing of a machine that could help their model lungs "breathe" without having them pull down or push up on the lower balloon. Explain that this is how engineers might begin to develop life-saving machines.

Activity Scaling

For lower grades, have students make one lung rather than two. Use a smaller water bottle rather than a 2-liter bottle and one balloon lung rather than two.

Just Breathe Activity – Lung Worksheet

1. Describe what happens when you inhale (when you pull down on the bottom balloon in your model).



2. Describe what happens when you exhale (when you push up on the bottom balloon in your model).

3. Why do you think some people can inhale more air at one time than others can?

4. What might happen if you punctured your chest cavity?

5. How does smoking or vaping effect your lungs?

6. Why should you choose not to smoke?



Non-Smoker



Smoker

Activity - Understanding Addiction

Some students may wonder why people continue to smoke if they know it can cause damage to your lungs. The answer to that question can vary but one reason is they are addicted.

Instructions:

- Hand out one piece of strong-flavored gum to each child
- Tell the children to hold the gum close to their nose and mouth but not to put it in their mouth.
- After a minute, let them put it on their tongue, but not to chew it.
- After a minute, let them chew it once or twice, but no more.
- Ask the group: Who is pretending not to chew? Who finds it easy not to chew? Who finds it hard not to chew? Who has not chewed the gum? How did you resist chewing it? What did you say to yourself? What was it like? How did it feel to want the gum?
- Explain that when a person is “stuck” or addicted to a drug like the one nicotine found in cigarettes, they crave it and badly want to have it.

Discussion:

Teacher: *The same way your mind told you that, you really wanted the gum; the minds of people who are addicted to drugs tell them they really want the drug.*

Just like your body told you that you really wanted the gum, the bodies of people with addictions tell them that they really want the drug. With drugs, the feeling is much, much stronger than it is with gum. Explain that everyone’s mind and body is different, the addiction feeling is stronger for some people than others.

It is important to learn to make the right choices, so you do not find yourself facing the negative consequences of bad choices.

Activity: Refusal Skills Puppet Show Target

Part 1: Choices & Consequences

Purpose: To help children realize that they are responsible for making choices based on thinking about the consequences of their actions. **Instructions:**

- Explain to the group that everyone is responsible for his or her own behavior; that we can make our own choices and are responsible for what happens as a result of what we do.
- Begin a discussion about the kinds of trouble, or problem situations, the children can get into, by asking “What are some things that can get you into trouble?”
- Provide some examples if needed: picking on another child, taking something that wasn’t yours, fighting, talking back to your teacher, going somewhere you weren’t supposed to go, smoking, lying

Explain choices and consequences, using the following points:

- With every choice we make, good or bad things can happen.
- Often our choices are based on what we think will happen to us, how we feel about ourselves or how our behavior will affect others.
- What could happen if: You did not do your homework? You used drugs? You stole some candy? You swore at your mom?

Note to Group Leaders:

- Remind the group of the importance of confidentiality – that nothing they say in this group will leave the room. Emphasize that their parents will not be told what they say in the group and that the other children in the group must respect this rule.
- Be prepared for the possibility that disclosures of abuse may come up during this discussion.

Part 2: Refusal Skills Purpose:

Purpose: Introduce the topic of refusal skills and have children learn strategies to say no to peer pressure.

- Introduce the topic of refusal skills by saying something like: Often saying no, even to ourselves, can be hard to do. Saying no to other people, especially our friends, older kids, adults or strangers can be very hard to do. There are different ways of saying no. can you show me some ways of saying no using your voice and your body? Show us ways that you really mean it and ways that do not
- Tell the children that there are many ways to say no other than just using the word no. Today we are going to learn some different ways to say no: Say, “No, thanks.”

Discussion

Discuss how these strategies work for many situations.

- Broken record (e.g., repeating “no” or “no, thank you” over and over again, including using different words)
- Making excuses (e.g., “ I have to be home for dinner soon.”)
- Turning the tables (e.g., “you do it!) Changing the subject (e.g., “look at my new comic book.”)
- Telling the truth that you don’t want to do it (e.g., “ I don’t want to do that!)
- Suggest doing something else (e.g., “let’s go to the store.”)
- Give a reason “I’m not allowed to do that,” or “That’s bad for you.” It could state the consequences, such as, “I don’t want to do that; it will make me sick,”
- Walk away or ignore the offer.
- Assert yourself. This is the most important tactic. If you can stick up for yourself, you are learning an important life skill.

Part 3: Practice Saying No

Purpose: To have children demonstrate how they would use each of the refusal skills to keep from getting into trouble.

Activity

Instructions: Split children into pairs or small groups and read aloud the situations for them to act out using puppets. Note to Group Leaders: Assign age-appropriate scenarios.

- Have children make puppets out of paper bags. Provide crayons or markers. They may also want to construct a simple puppet theatre from cardboard boxes. Allow time for them to practice their puppet shows.
- Invite groups to perform their puppet shows. Have each group act out their scenario in front of the larger group demonstrating an effective way to say no.
- For each situation discuss the possible choices and what might happen with each choice. End with a discussion about the skits.

What worked well? What didn't? Was it realistic? What would it be like to say no in real life?

Sample Scenarios:

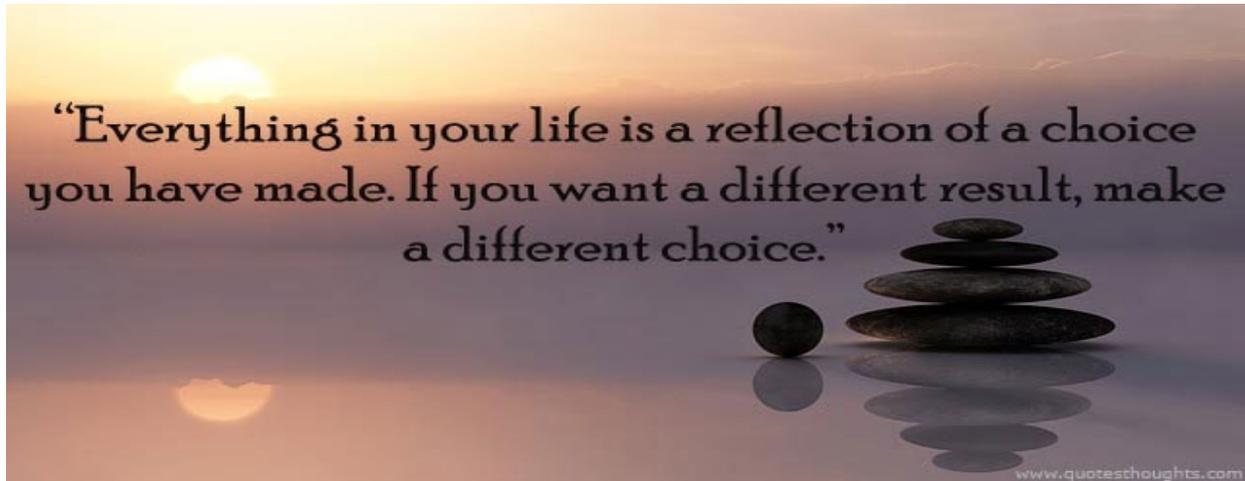
- You are in a store with your friend. You see him hide a bag of chips in his/her coat. He/she calls you over and hands you a bag and tells you to steal it.
- You are at school and your next class is math. You don't like it at all. You and your friend are out in the hall and teacher closes the door and starts the class. Your friend says he/she is going to skip math class and asks you to come along.
- Someone you think is really cool invites you to hang out with their friends after school. Everyone is sitting around talking and your friend pulls out a cigarette and lights it. He/she smokes it a couple of times and hands it to you. Everyone is watching.
- You and your friend are playing basketball at the park. Your grandmother is coming to dinner and your parents want you home by 5:00p.m. You go to leave but your friends want you to stay and keep playing.



- There is a boy in your class that is always dressed badly. He talks out of turn and makes jokes that aren't funny. You and your friend see him walking down your street after school. There is no one around and your friend wants to beat him up.
- Some kids in your class are hiding books and other things from the teacher. They want you to join in.
- Your friends took some candy from the corner store yesterday and didn't get caught. They shared the candy with you. Now they want you to help them take some more candy from the store.
- Some kids try to get you to throw rocks at the schools windows.
- You have agreed to babysit your younger brother. Now your friends suggest you go with them to a movie.
- Some kids want you to smoke a cigarette with them. They call you a chicken when you say no.
- A cousin offers you some cough medicine to cure your cough.

Adapted from Middle Years F&ST Club Handbook, Strengthening Families for the Future, Child

Enrichment Day



Kids experience stress in many ways. Some are overscheduled, worried or afraid, while others have butterflies before a test, event or performance. These activities will help your students identify, reduce, and avoid stress, as well as understand the difference between good and bad stress. Students will learn how to make appropriate choices when they are under stress.

So what is stress?

Watch this video:

“What is Stress?:

<https://www.youtube.com/watch?v=s93ywgFa6CM>



Discussion

1. What is stress?
2. Name some of the things that might make people feel “stressed out.”
3. How does your body react to stress?
4. If you are feeling stressed out, how can you feel better?
5. How can you avoid being stressed out in the first place?

Activity - Techniques to Manage Stress

1. Get Kids Breathing Deep

When people slow down their breathing, they slow down their brain. When I notice that one of my kids is struggling with anxiety or stress, I will often lead the whole class in a breathing exercise. It helps the child who is overwhelmed, and usually a few other kids too. Sometimes, I will do it just because the whole class is squirrely and we need to focus. Slow, deep breaths are the key. This [article about belly breathing](#) describes the process I like to use with my kids. It works every single time.



Practice Technique:

1. It's best to start practicing belly breathing when you and your child are already relaxed. This way, your child can build awareness of what being calm feels like. Once your child has the feeling of belly breathing mastered (have her practice it daily), she can apply it to stressful moments.

2. Start by having your child breathe normally. Ask if your child notices anything about it. What parts of the body move as she breathes? What does it feel like?

3. Now have your child lie on her back, relax her muscles and place her hands on her belly.

4. With her mouth closed, have her breathe in for four seconds or until she feels her whole chest fill with air, all the way down to her belly.

5. Have your child hold in the air for four seconds.

6. Have your child slowly blow the air out until it is all gone. If your child is having difficulty breathing slowly, have her exhale through a straw. You can tell your child to pretend she is snorkeling.

7. Repeat until the body feels relaxed. Ask your child if they notice anything different from before. What does it feel like?

8. Include belly breathing as a regular part of your child's routine, such as bedtime. With practice, it can become a familiar strategy that your child can use at any age.



2. Exercising

One of the healthiest ways to blow off steam is to get a regular exercise program going. Students can work exercise easily into their schedules by doing yoga in the morning, walking or biking to campus, or reviewing for tests with a friend while walking on a treadmill at the gym.

Starting now and keeping a regular exercise practice throughout your lifetime can help you live longer and enjoy your life more.

Yoga helps kids to:

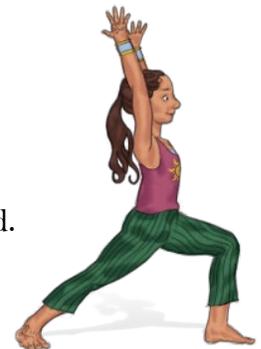
- Develop body awareness.
- Learn how to use their bodies in a healthy way.
- Manage stress through breathing, awareness, meditation and healthy movement.
- Build concentration.
- Increase their confidence and positive self-image.



Have students try some of the fun poses below:

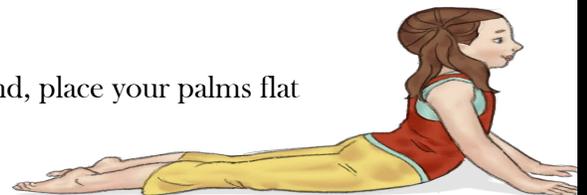
- **Moose – Warrior 1 Pose Variation**

Come to standing in Mountain Pose. Step one foot back, slightly angling it outward. Bend your front knee and bring your spread-out hands above your head like the antlers of a moose.



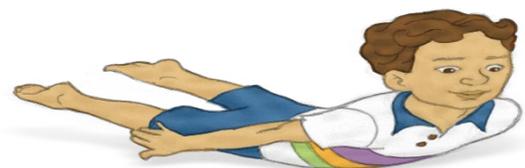
- **Walrus – Cobra Pose (or Upward-Facing Dog Pose)**

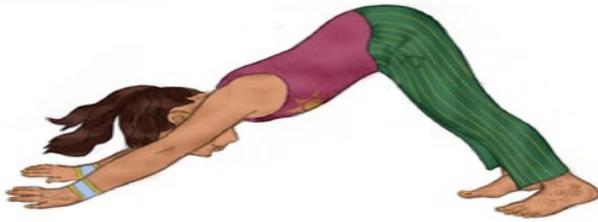
Lie on your tummy, lift your head and shoulders off the ground, place your palms flat next to your shoulders, and arch up like a walrus.



- **Arctic Char or Whale – Locust Pose**

Lie on your tummy, lift your chest and shoulders, look up, clasp your hands back behind you, and glide through the water like a whale.





- **Polar Bear or Husky - Bear Walk**

Step back to hands and feet in an upside-down V shape then walk like a bear.

- **Snow Goose - Pigeon Pose**

From the Bear Walk, bring your right foot to rest behind your right hand, placing your foot slightly inwards. Then perch like a snow goose. Switch sides and repeat.



- **Musk Ox - Cat Pose**

On all fours, tuck your chin into your chest and round your back. Walk like an ox.



- **Wolf or Arctic Fox - Kneeling**

Come to kneeling, open your chest, look up, and reach up to the moon like a fox.

- **Arctic Hare - Hero's Pose with Bunny Breath**

Come back to rest upright on your heels and place your hands on your thighs. Take a few short, quick breaths in through your nose, and then take a long exhale.



- **Snowy Owl - Seated Twist**

From Hero's Pose, twist your upper body like an owl. Turn one way and then the other.



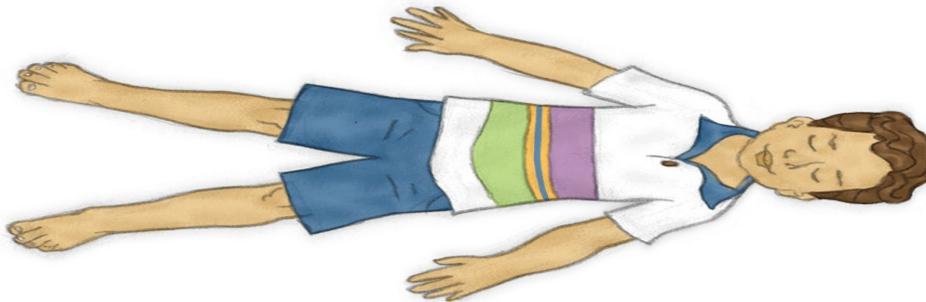
- **Lemming - Child's Pose**

Come to sitting back on your heels, slowly bring your forehead down to rest in front of your knees, rest your arms down alongside your body, and take a few deep breaths.



- **Seal - Resting Pose**

Lie on your back with your arms alongside your body and your legs tight together. Pretend that you are a seal resting on a rock. Then breathe out, stretch out your arms and legs, and rest.



3. Think Positive: Gratitude Journals

The brain is incapable of producing anxious thoughts while it is producing positive thoughts stemming from gratitude. If you can trigger a positive train of thought, you can sometimes derail the anxiety. A fifth grade teacher in my building asks kids to keep gratitude journals. They are responsible for recording at least one thing they are thankful for every day. When his students seem overwhelmed by negativity or mired in anxiety, he encourages them to re-read their journals.



Activity: Easy Handmade Journals for Kids

Materials:

- Brown Paper Bag (or card stock, scrapbook paper, or even foam board that will be used as the cover.)
- Magazines you can cut out of to make an optional collage on the inside cover of your journal
- Blank paper
- Hole Punch
- Stick (or dowel that will be used as the book binding)
- Rubber bands or ribbon
- Other cover decor items (Fall Maple leaf, ribbon, scrapbook paper, etc)
- Clear Packing Tape



Select paper size then take the brown paper bag and make a cover from it that will fold around that paper and is just a bit bigger than the inner paper.

The binding is very easy to make! Start by punching out holes in your brown paper that will line up with the hole punched white paper. Then take your inner paper and punch 2 holes per page. You may need to use scissors to make the holes in the brown cover, because the single hole punch may not fit where you need the holes to be (that is what happened to me). Then take a rubber band, and thread it through the hole in the outer paper bag cover, and then through all of the inner white paper as well.

Find a stick or dowel you want to use as the book binding. You simply tie the rubber band around the stick and wrap it a few times to make it secure.

You can substitute the rubber band with ribbon, as I did in the sample above. I also inserted foam board in the brown paper cover in that one to make it sturdier.



Students may now make entries in Gratitude Journals.

4. Stress Balls

Stress balls are small balls or objects filled with a malleable gel or clay that are held in the palm of your hand. The act of repeatedly squeezing the ball may help to release tension and relieve stress.

Did you know that you can make your own stress balls? Here are three ways to make stress balls. Each feels different. To provide students choice, allow them to try different types before making.



PLAY DOUGH STRESS BALL

Materials: Two balloons and Play Dough

- Cut the tip off of the balloons
- Roll the play dough into a snake, and push it into one balloon
- Place second balloon around the first one

FLOUR STRESS BALL

Materials: Two Balloons, Plastic sandwich baggie, Flour

- Cut the tips off the balloons
- Put the flour in the sandwich bag and twist the top
- Put the sandwich bag of flour into one balloon
- Then place a second balloon around the first one

RICE STRESS BALL

Materials: Two Balloons, Plastic sandwich baggie, Rice

- Cut the tips off the balloons
- Put the rice in the sandwich bag and twist the top
- Put the sandwich bag of rice into one balloon
- Then place a second balloon around the first one



Your stress balls are now ready to use!

Remember in order for any of these strategies to work, you have to choose to use them! The Choice is yours!!!!

TN Foundational Standards:

Cornerstone: Read closely to determine what a text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

GRADE SPAN	LITERATURE	INFORMATIONAL TEXT
11-12	11-12.RL.KID.1 Analyze what a text says explicitly and draw inferences; support an interpretation of a text by citing and synthesizing relevant textual evidence from multiple sources.	11-12.RI.KID.1 Analyze what a text says explicitly and draw inferences; support an interpretation of a text by citing and synthesizing relevant textual evidence from multiple sources.
9-10	9-10.RL.KID.1 Analyze what a text says explicitly and draw inferences; cite the strongest, most compelling textual evidence to support conclusions.	9-10.RI.KID.1 Analyze what a text says explicitly and draw inferences; cite the strongest, most compelling textual evidence to support conclusions.
8	8.RL.KID.1 Analyze what a text says explicitly and draw logical inferences; support an interpretation of a text by citing relevant textual evidence.	8.RI.KID.1 Analyze what a text says explicitly and draw logical inferences; support an interpretation of a text by citing relevant textual evidence.
7	7.RL.KID.1 Analyze what a text says explicitly and draw logical inferences; cite several pieces of textual evidence to support conclusions.	7.RI.KID.1 Analyze what a text says explicitly and draw logical inferences; cite several pieces of textual evidence to support conclusions.
6	6.RL.KID.1 Analyze what a text says explicitly and draw logical inferences; cite textual evidence to support conclusions.	6.RI.KID.1 Analyze what a text says explicitly and draw logical inferences; cite textual evidence to support conclusions.
5	5.RL.KID.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.	5.RI.KID.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
4	4.RL.KID.1 Refer to details and examples in a text when explaining what the text says explicitly; refer to details and examples in a text when drawing inferences from the text.	4.RI.KID.1 Refer to details and examples in a text when explaining what the text says explicitly; refer to details and examples in the text when drawing inferences from the text.
3	3.RL.KID.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as a basis for the answers.	3.RI.KID.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as a basis for the answers.
2	2.RL.KID.1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.	2.RI.KID.1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.
1	1.RL.KID.1 Ask and answer questions about key details in a text.	1.RI.KID.1 Ask and answer questions about key details in a text.
K	K.RL.KID.1 With prompting and support, ask and answer questions about key details in a text.	K.RI.KID.1 With prompting and support, ask and answer questions about key details in a text.

Cornerstone: Prepare for and participate effectively in a range of conversations and collaborations with varied partners, building on others' ideas and expressing one's own ideas clearly and persuasively.

GRADE SPAN	STANDARDS	LINKING STANDARDS
11-12	11-12.SL.CC.1 Initiate and participate effectively with varied partners in a range of collaborative discussions on appropriate 11 th - 12 th grade topics, texts, and issues, building on others' ideas and expressing one's own ideas clearly and persuasively.	RL.1-7, 9, 10 RI.1-10 W.6
9-10	9-10.SL.CC.1 Initiate and participate effectively with varied partners in a range of collaborative discussions on appropriate 9 th - 10 th grade topics, texts, and issues, building on others' ideas and expressing one's own ideas clearly and persuasively.	RL.1-7, 9, 10 RI.1-10, W.6
8	8.SL.CC.1 Prepare for collaborative discussions on 8 th grade level topics and texts; engage effectively with varied partners, building on others' ideas and expressing one's own ideas clearly.	RL.1-7, 9, 10 RI.1-10 W.5-6
7	7.SL.CC.1 Prepare for collaborative discussions on 7 th grade level topics and texts; engage effectively with varied partners, building on others' ideas and expressing one's own ideas clearly.	RL.1-7, 9, 10 RI.1-10 W.5-6
6	6.SL.CC.1 Prepare for collaborative discussions on 6 th grade level topics and texts; engage effectively with varied partners, building on others' ideas and expressing one's own ideas clearly.	RL.1-7, 9, 10 RI.1-10 W.5-6
5	5.SL.CC.1 Prepare for collaborative discussions on 5 th grade level topics and texts; engage effectively with varied partners, building on others' ideas and expressing one's own ideas clearly.	FL.F.5 RL.1-7, 9, 10 RI.1-10 W.5-6
4	4.SL.CC.1 Prepare for collaborative discussions on 4 th grade level topics and texts; engage effectively with varied partners, building on others' ideas and expressing one's own ideas clearly.	FL.F.5 RL.1-7, 9, 10 RI.1-10 W.5-6
3	3.SL.CC.1 Prepare for collaborative discussions on 3 rd grade level topics and texts; engage effectively with varied partners, building on others' ideas and expressing one's own ideas clearly.	FL.F.5 RL.1-7, 9, 10 RI.1-10 W.4-6
2	2.SL.CC.1 Participate with varied peers and adults in collaborative conversations in small or large groups about appropriate 2 nd grade topics and texts.	FL.F.5 RL.1-7, 9, 10 RI.1-10 W.5-8
1	1.SL.CC.1 Participate with varied peers and adults in collaborative conversations in small or large groups about appropriate 1 st grade topics and texts.	FL.F.5 RL.1-7, 9, 10 RI.1-10 W.1-3, 5-8

Math Standards:

K.OA.A.2 Add and subtract within 10 to solve contextual problems using objects or drawings to represent the problem.

1.OA.A.1 Add and subtract within 20 to solve contextual problems, with unknowns in all positions, involving situations of add to, take from, put together/take apart, and compare. Use objects, drawings, and equations with a symbol for the unknown number to represent the problem. (See Table 1 - Addition and Subtraction Situations)

2.OA.A.1 Add and subtract within 100 to solve one- and two-step contextual problems, with unknowns in all positions, involving situations of add to, take from, put together/take apart, and compare. Use objects, drawings, and equations with a symbol for the unknown number to represent the problem.

3.OA.D.8 Solve two-step contextual problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding (See Table 1 - Addition and Subtraction Situations and Table 2 - Multiplication and Division Situations).

4.OA.A.2 Multiply or divide to solve contextual problems involving multiplicative comparison, and distinguish multiplicative comparison from additive comparison. For example, school A has 300 students and school B has 600 students: to say that school B has two times as many students is an example of multiplicative comparison; to say that school B has 300 more students is an example of additive comparison.

5.OA.A.2 Write simple expressions that record calculations with numbers and interpret numerical expressions without evaluating them. For example, express the calculation "add 8 and 7, then multiply by 2" as $2 \times (8 + 7)$. Recognize that $3 \times (18,932 + 921)$ is three times as large as $18,932 + 921$, without having to calculate the indicated sum or product.

6.SP.A.1 Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. For example, "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages.

7.EE.B.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.

Sources:

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Supplies:

- | | | |
|---|--|---|
| • Blindfold | • 2 plastic drinking straws; | • Blank paper |
| • Hammer (giant inflatable hammer works best) | available inexpensively at restaurant supply stores or | • Hole Punch |
| • Clear tape | donated by fast-food chains; do not use the | • Stick (or dowel that will be used as the book binding) |
| • Sheets of paper and markers | flexible drinking straws | • Rubber bands or ribbon |
| • Large space to play game | • 2 9-inch balloons | • Other cover decor items (Fall Maple leaf, ribbon, scrapbook paper, etc) |
| • 2 tablespoons white sugar | • 1 larger balloon; for example, for a punch ball | • Six balloons |
| • 1/4 cup hot water | • 2 rubber bands | • <u>Play dough</u> |
| • 3 tablespoons fresh-squeezed lemon juice | • Brown Paper Bag (or card stock, scrapbook paper, or even foam board that will be used as the cover.) | • Plastic sandwich baggie |
| • 3/4 cup cold water | | • Flour |
| • Ice | | • Rice |
| • 2-liter empty plastic bottle with cap | • Magazines to cut pictures | |