

WORLD HEALTH NETWORK

KIDS' ZONE

COVID-CONSCIOUS MAGAZINE

BACK
TO
SCHOOL



BACK TO SCHOOL CLEAN AIR EDITION

CLEAN AIR IN SCHOOLS

BUTTERFLIES AND BUNNIES

SHORT STORIES

CELEBRATING SAFELY

EXTRATERRESTRIAL ENVIRONMENTS

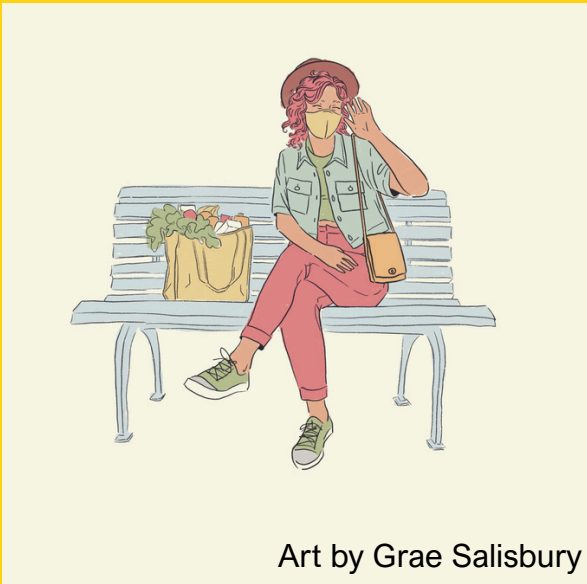
... AND MORE INSIDE!

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EXPLORE | SHARE | CONNECT



COVID-conscious: Keeping COVID risks in mind when exploring, sharing and connecting with others.

Synonyms: COVID-cautious, COVID-aware, COVID-informed, Still COVIDing, COVID-safe, COVIDing-inclusive

WHAT'S IT ALL ABOUT?

ABOUT US

KIDS' ZONE COVID-CONSCIOUS MAGAZINE IS A FREE PUBLICATION CREATED BY THE WORLD HEALTH NETWORK'S PSYCHOSOCIAL CHILDREN'S GROUP.

OUR MISSION IS TO FEATURE MATERIALS FOR KIDS THAT HIGHLIGHT STORIES, ART, SCIENCE, AND LIFESTYLE OF COVID-CONSCIOUS FAMILIES.



FEATURING WORKS FOR AND BY KIDS OF ALL AGES. ADULTS CAN SUBMIT THEIR OR THEIR CHILD'S WORKS AT WHN.GLOBAL/KIDSZONE



= ARTICLES WRITTEN IN US-ENGLISH



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Contents

SCHOOL FAVORITES

PAGE 6

Explore the best parts about school!

BENEFITS OF CLEAN AIR

PAGE 7

Learn why clean air is important!

CLEAN AIR WORDS

PAGE 8

Explore the clean air glossary!



ADAPTING TO PANDEMIC FLU

PAGES 9-11

Adaptations to another pandemic!

HISTORY OF SANITATION

PAGES 12-15

Read about public health revolutions!



LOOK AT THE LITERATURE

PAGE 16

COVID and the immune system!



AUTUMN HOLIDAYS

PAGES 17-20

Get ready for the High Holidays!

SPACE AND SCIENCE NEWS

PAGES 21-26

Butterflies & autoimmunity!

SCIENTIFIC METHOD

PAGE 27

How to gain new knowledge!

FACTORIES AND AIR

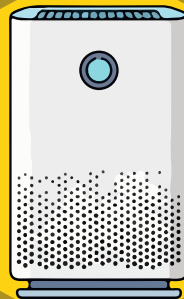
PAGES 28-29

Industry affects air quality!

SCHOOL SAFETY

PAGE 30

Do some learning activities!



SCHOOL AIR QUALITY

PAGES 31-33

How to keep your air safe!



BUNNY SAFETY

PAGES 34-35

Meet Knoll the rabbit!

FIRES AND PETS

PAGES 36-37

Keep your furry friends safe!



SHORT STORIES

PAGES 38-39

Enjoy some awesome tales!

The Month Ahead

Here's our pick of September's main events!

ALL MONTH:

LIBRARY CARD SIGN-UP MONTH [US]

CHILDHOOD CANCER AWARENESS MONTH

**NATIONAL SICKLE CELL AWARENESS MONTH
[US]**

WORLD ALZHEIMER'S AWARENESS MONTH



07 SEPTEMBER - LABO(U)R DAY [US AND CANADA]

08 SEPTEMBER - WORLDWIDE CYSTIC FIBROSIS DAY

10 SEPTEMBER - NATIONAL SCHOOL PICTURE DAY [US]

11 SEPTEMBER - ROSH HASHANAH STARTS

13 SEPTEMBER - NATIONAL CELIAC DISEASE AWARENESS DAY [US]

15 SEPTEMBER - NATIONAL ONLINE LEARNING DAY [US]

15 SEPTEMBER - NATIONAL HISPANIC HERITAGE MONTH STARTS [US]

16 SEPTEMBER - INDEPENDENCE DAY [MEXICO]

19 SEPTEMBER - OKTOBERFEST STARTS [GERMANY]

20 SEPTEMBER - YOM KIPPUR STARTS

21 SEPTEMBER - INTERNATIONAL DAY OF PEACE

23 SEPTEMBER - BI VISIBILITY DAY

25 SEPTEMBER - SUKKOT STARTS

Editor's Note: CLEAN AIR IN SCHOOLS

by Leela 



Children learn in many different ways and places. Some learn at home, some attend school remotely, some go to outdoor schools, some learn in classrooms, and some combine different ways of learning. When children learn together indoors, they share the same air, increasing the risk of spreading airborne diseases.

When children are learning in classrooms with other kids and teachers, clean, fresh air is especially important for helping prevent the spread of COVID-19 and other diseases that can spread through the air!

In this issue, you'll learn about why classroom air matters, how to tell when a room might need more fresh air, and what children and adults can do to help keep the air around you healthier. You'll also find some fun activities and games to help you learn along the way!

For children who attend school, it can be an important place to learn, grow, and spend time together. Everyone should be able to feel comfortable and cared for at school, and clean air is one part of making that possible.

Remember to always prioritize your safety and well-being, especially when it comes to COVID and other illnesses. Your health is so important, and we hope you enjoy this issue!

Don't Make (COVID) Waves this School Year!

Things adults can do:

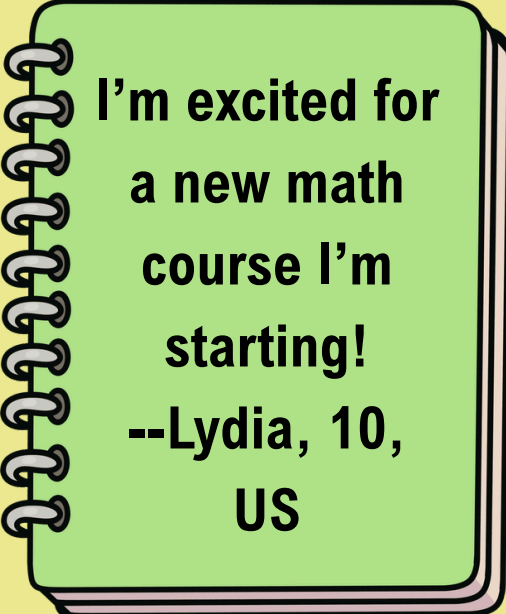
- Use HVAC filters with a rating of MERV-13 or MERV-14. Always check that your HVAC can handle the increased resistance first!
- Open two windows. Put a fan in one, pointing outside.

Things adults can do with children:

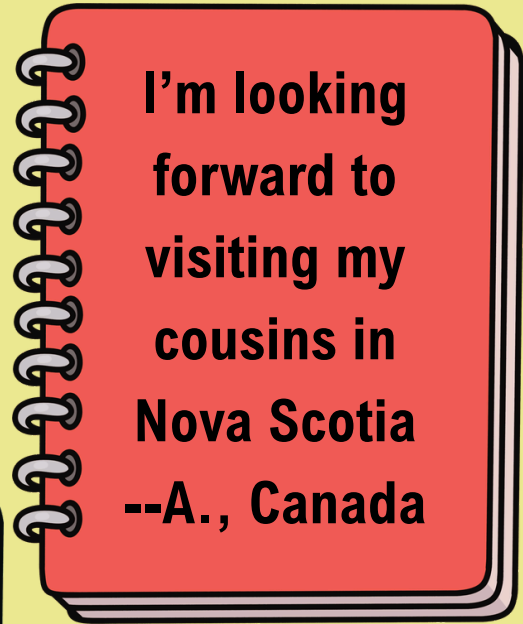
- Build a Corsi-Rosenthal box. It's heavy-duty, cheap, and delightful to decorate!

What are you looking forward to this school year?

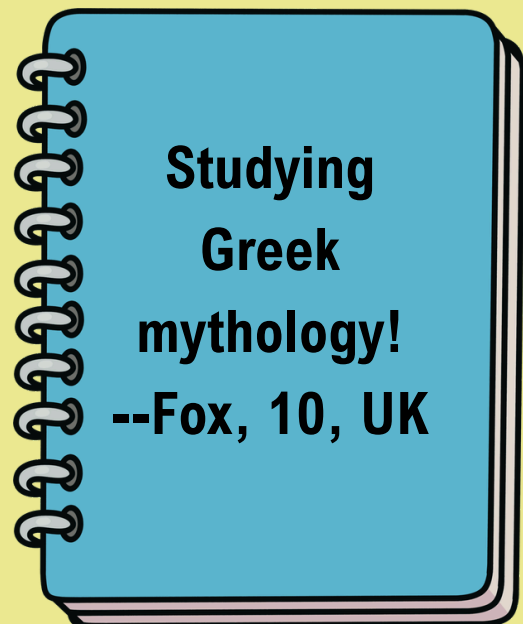
This might be a project, a class, or a person you can't wait to see!



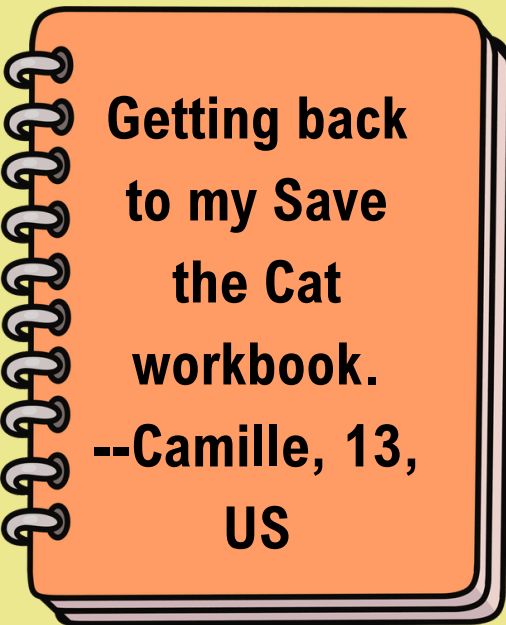
I'm excited for
a new math
course I'm
starting!
--Lydia, 10,
US



I'm looking
forward to
visiting my
cousins in
Nova Scotia
--A., Canada



Studying
Greek
mythology!
--Fox, 10, UK



Getting back
to my Save
the Cat
workbook.
--Camille, 13,
US



Seeing
Heather!
--Ryan, 3, US



FIVE BENEFITS OF

Clean Indoor Air

1

Increase brain power so you can think more clearly



2

Breathe easier



3

Help prevent the spread of viruses



4

Clear allergens from the environment



5

Sleep better



Clean Air Words

by Claire 

Sometimes we use big words and abbreviations when talking about clean air. Let's learn some of these terms!

ACH: air changes per hour, how many times in an hour enough air to fill the room can be removed and replaced

Aerosol: a sort of mist, like tiny particles hanging in the air

Airborne: spreading or moving through the air

ASHRAE Standard 241: a standard produced by the American Society of Heating, Refrigerating, and Air-Conditioning Engineers describing how much clean air is needed in different places when germs are spreading

CADR: clean air delivery rate, how quickly an air cleaner provides air with certain particles removed

Corsi-Rosenthal Box: a do-it-yourself air filter made with a box fan and HVAC filters

CO2: carbon dioxide, a gas released when you breathe or when things are burnt

DOAS: dedicated outdoor air system, a superhero air conditioner

HEPA: high-efficiency particulate air, a kind of really effective air filter

HVAC: heating, ventilation, and air conditioning

MERV: minimum efficiency reporting value, a way to classify how good an air filter is

PM2.5: particulate matter 2.5 micrometers across or smaller

Upper-Room UV: ultraviolet lamps that disinfect air in the upper part of a room

ADAPTING EDUCATION DURING THE SPANISH FLU

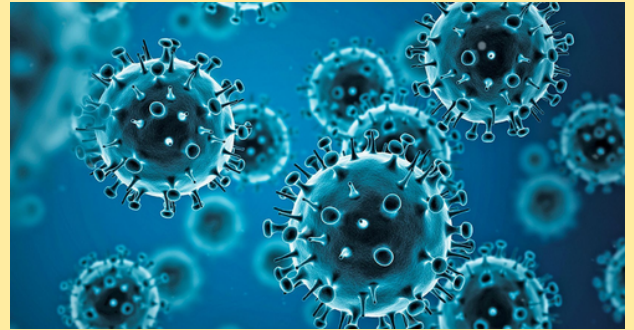
By Tiffany B.

WHAT WAS THE SPANISH FLU?

The Spanish Flu was a deadly influenza pandemic that swept across the world in the early 1900s. It started in 1918, the year that World War I ended. It is estimated that more people died from the Spanish Flu than from World War I. It affected many children and young adults, which was unusual for influenza. Viruses can change over time as they mutate, and some versions can cause more severe disease than others, even for particular ages.

PEOPLE WERE DESPERATE

People were very worried about the Spanish Flu. They didn't know how to make it stop. People couldn't even see the virus under a microscope because it was so small and the microscopes they used at the time were not powerful enough. There were a lot of different remedies that people tried in the hopes of curing the flu. They tried drinking things like raw eggs, beef gravy, alcohol, or mercury. Many of the remedies that they tried did not actually help and could cause other problems or even kill a person. Unfortunately, they had no influenza vaccine and no antibiotics to treat secondary bacterial infections.



Early in that pandemic, much like our very familiar COVID-19 pandemic, many schools and other buildings where people gathered in crowds were closed in order to prevent the spread of the virus. How were students going to learn? They didn't have computers or the internet to help. Homeschooling was an option for some.

Another option already existed and became more widely used. About 10 years earlier, people had started creating open-air schools to help protect against tuberculosis. Tuberculosis is a contagious disease that primarily affects the lungs. In open-air schools, classes took place outside. People had to get creative in order to come up with a different way of doing things. They had to adapt.

ADAPTING EDUCATION

People knew even back in the early 1900s that some diseases spread through the air, and that by not trapping the air indoors, they could reduce the chance of getting sick. They understood about the importance of ventilation. They opened windows to let outdoor air circulate, and even had heating systems installed to keep classrooms warm while windows were open in winter.

The idea of teaching students outside in order to reduce sickness from contaminated indoor air spread to a number of countries. There were even schools that took place on a ferry, on a roof, or in parks. This helped reduce the infections from both the Spanish Flu and tuberculosis.

Outdoor schooling works easily in areas where the climate doesn't get too cold. But what about students who lived somewhere that gets really cold? In some places, schools still switched to outdoor learning, even in the winter. Students and teachers bundled up in jackets and hats and all of their winter gear.

Another cold weather option was to have class taught in the classroom, but with the windows open all day. To deal with the cold, schools used extra heating so that the windows could stay open for air circulation. Heaters were often placed directly below windows, helping warm the cold air coming into the room. Keeping windows open during colder weather increased heating costs, but helped protect everyone's health.

Safer schools could also help protect families, because children who did not get infected at school would not bring the infection home. Likewise, safer homes could help prevent children from bringing infections to school. People also wore masks, although their masks were not as protective as those we have today. Schools in some areas hired extra nurses to keep an eye on students.

HOW ARE YOU ADAPTING?

Education can take place in different ways and in different places. Children may attend in-person or remote public or private schools, homeschool, take some or all of their classes online, or attend an open-air school. Today, computers and the internet provide options that children did not have during the Spanish Flu. During a pandemic, more children can take advantage of safer options to keep learning while protecting their health. What does your education look like? What choices can help make learning safer?



Why was it called the Spanish Flu?

It is often called the Spanish Flu, but we don't know exactly where it started. It happened during World War I. Many countries involved in the war limited news about the influenza, while Spain, which was neutral, reported more freely about it. As a result, much of the news about the pandemic came from Spain. The flu became associated with Spain and became known as the Spanish Flu.

A Short History of Sanitation

by Claire 

You are living through a revolution—a revolution in public health! As you know if you like to read this magazine, COVID-19 spreads through the air, sometimes in big spit droplets, but often through small particles you let out during speaking and breathing. This means that COVID-19, like influenza, RSV, measles, and lots of other germs, is **airborne**. Recognizing that illnesses can spread through tiny particles that hang in the air and travel around the room wasn't easy, and, even though we have lots of proof, not everyone has been convinced.



But this isn't the first public health revolution; they actually happen *all the time*. It takes a lot of work to discover the true way a disease spreads, and everyone seems to have their own guess. Let's learn about some scientists who led public health revolutions to change the way we clean up germs.

In Europe before the 1800s, people were sick all the time. European cities were crowded, unsanitary places, so diseases like the Black Death could spread like wildfire. Without the benefit of the **variolation** practiced in places like India, China, Turkey, and parts of Africa, Europeans were at especially high risk of smallpox, too.

So, it's no surprise that Europeans tried to understand why people got sick, and they came up with an awfully familiar answer: bad air. However, this "miasma theory" wasn't a scientific understanding of airborne disease. Instead, it was a general excuse for everything from malaria (which is actually spread by mosquitoes) to cholera (which is spread through dirty water). People had no idea that microbes caused disease!

In 1847, Hungarian doctor Ignaz Semmelweis was just beginning his medical career, and he was concerned by the number of women who died of sepsis after having babies in the Vienna Hospital where he worked.

Women tended by midwives got sick much less often than those tended by doctors, who also performed autopsies in the mornings. Semmelweis realized that doctors were spreading disease through touch and advocated for doctors to wash their hands in a chemical called chlorinated lime. Even though his efforts saved many women, other doctors ignored or even argued with him.

Variolation: Deliberately exposing a person's skin to smallpox, which generally causes a much less severe infection than getting smallpox by breathing it in.

In fact, Dr. Semmelweis was not the first person to tell doctors to wash their hands. Poets and physicians including Oliver Wendell Holmes, Sr. (father of the Supreme Court justice by the same name), Alexander Gordon, and Zsoldos János had been calling for handwashing for years.

In 1849, a young English doctor named John Snow published a paper where he argued that people got cholera by swallowing contaminated water, not by breathing in bad smells. In 1854, a terrible cholera outbreak began in Soho, and Dr. Snow began tracking infections. He realized that patients were getting water from a particular water pump. After Snow had the pump disabled, the cholera outbreak quickly ended.

However, because most people already assumed cholera was in the air, it took another decade before other doctors agreed that cholera germs were spread in the water!



Around the same time, the visionary nurse Florence Nightingale was combatting deadly diseases among Crimean War soldiers. Her recommendations included handwashing, fresh air, and sunlight. Handwashing became much more common after the 1860s, but it took until the 1970s before countries actually created hand hygiene recommendations for their healthcare workers!

Germs can also spread through food, and French chemist Louis Pasteur was the hero of that story. While studying the production of alcohol, Pasteur realized that fermentation is caused by living organisms. In the 1860s, Pasteur discovered that germs in beverages like wine and milk could cause them to spoil, so he created a new way to keep drinks fresh—heating them for a short period. This trick is called pasteurization. Pasteur also demonstrated that keeping foods in airtight containers can keep them from spoiling. Louis Pasteur was luckier than Semmelweis and Snow; he lived to see many of his discoveries put into action. However, it would be the early 1900s before pasteurization of milk became a legal requirement.



In 1861, English surgeon Dr. Joseph Lister was put in charge of several surgical wards at the Glasgow Royal Infirmary in Scotland. His amputation patients were dying of **sepsis**, much like the mothers in Semmelweis's maternity ward. Lister realized that miasma theory didn't really explain why so many surgical patients died; instead, a kind of dust, which he believed was spread through the air, seemed to be getting into their wounds. By studying the work of Pasteur, Lister realized his infectious dust was actually microbes. Beginning in 1865, Dr. Lister dressed his patients' wounds with carbolic acid, and surgical deaths decreased dramatically. His process was quickly accepted in Germany and eventually became common in England and the United States.

Throughout the 1800s, European and North American cities built the first modern sewer systems (although people all around the world had developed early versions of sewers and toilets centuries earlier). Sewage treatment plants were created during the late 1800s and early 1900s to use chemicals or microbes to clean up dirty water before releasing it into rivers and bodies of water.

Pollution laws for air and water became common in the 1900s. In the US, the 1948 Federal Water Pollution Control Act and 1972 Clean Water Act were passed to prevent people and businesses from putting toxins into waterways and bodies of water. Similarly, the Safe Drinking Water Act, first passed in 1974, works to ensure the water supply is clean. The Clean Air Act of 1970 regulates pollutants that can be emitted into the air.



Even when scientists agree that sanitation rules are important, they can be hard to put into place. Many areas in the world don't have clean water, doctors often fail to wash their hands, and some people drink raw milk. It's important to remember how many lives have been saved by handwashing, clean water, and pasteurization so we don't forget their importance today.

Today, we're living through another revolution in public health. Clean indoor air and respirator-quality masks are important tools to prevent the transmission of those germs that really are spread through the air, including those that cause COVID-19, influenza, and measles. Many people spend 90% of their time indoors, and we must ensure those indoor environments are safe.

We know that accepting new public health tools can take time, but it will also save many lives. Let's keep campaigning for indoor air quality, respirator masks, and reminding doctors and policymakers that we need to use every tool available to stop disease in its tracks!

Sepsis: A dangerous reaction of the body to an infection that can damage its own organs.



A Look at the Literature

Accessible Research for Younger Readers

Association of IL-1 β , IL-6, IL-8, IL-12, TNF- α , and IFN- α With Severe Pediatric COVID-19 and Multisystem Inflammatory Syndrome

Published online on the 26th of July

GOAL

TO DETERMINE WHICH IMMUNE SYSTEM SIGNAL CHEMICALS ARE ASSOCIATED WITH SEVERE ACUTE COVID-19 AND A DANGEROUS INFLAMMATION CALLED MIS-C



PARTICIPANTS



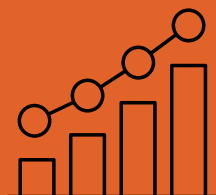
200 CHILDREN WITH COVID-19, 40 CHILDREN WITH MIS-C, AND 45 CHILDREN WITHOUT COVID-19

METHOD



SCIENTISTS DID BLOOD TESTS FOR DIFFERENT IMMUNE SIGNAL CHEMICALS CALLED CYTOKINES. THEY ALSO CLASSIFIED THE CHILDREN'S ACUTE SYMPTOMS AS MILD, MODERATE, OR SEVERE. THEY LOOKED TO SEE WHETHER CHILDREN WITH WORSE ACUTE INFECTIONS HAD MORE CYTOKINES.

RESULTS



CHILDREN WHO WERE SICKER HAD HIGHER LEVELS OF THE SIGNALING CHEMICALS INTERLEUKIN-1 β , INTERLEUKIN-6, INTERLEUKIN-12, AND TUMOR NECROSIS FACTOR- α , AND LOWER LEVELS OF INTERFERON- α . ALL THE SIGNALING CHEMICALS EXCEPT INTERFERON- α WERE HIGHER IN CHILDREN WITH MIS-C, A DANGEROUS ILLNESS THAT DEVELOPS TWO TO SIX WEEKS AFTER A SARS-CoV-2 INFECTION. MEASURING THESE CYTOKINES MAY HELP ASSESS HOW SEVERE A CHILD'S ACUTE COVID-19 INFECTION IS.

Have you seen any research recently that you want to make accessible to a younger audience? Submit a summary to <https://whn.global/kidszone/>



CELEBRATING THE JEWISH AUTUMN HOLIDAYS

ROSH HASHANAH, YOM KIPPUR, AND SUKKOT – BY NB



Every fall, Jewish people around the world celebrate a special set of holidays that bring together family, friends, and community. These holidays—Rosh Hashanah, Yom Kippur, and Sukkot—each have their own meaning, traditions, and flavors. Let's take a tour through the season!



ROSH HASHANAH – THE JEWISH NEW YEAR

Rosh Hashanah means “head of the year” in Hebrew. It's the start of the Jewish year and usually happens in September or early October.

- It's a time to think about the past year and make good choices for the new one.
- Families often eat apples dipped in honey not just because it's yummy; it's a way of saying we hope the new year is sweet and good. Some families also eat pomegranates, because they're full of seeds, for a successful, fruitful year!
- A ram's horn called a shofar is blown in synagogue to mark the holiday—its blast is meant to wake people up—not from sleeping, but to pay attention to what's important in our lives and in the world.



YOM KIPPUR – THE DAY OF ATONEMENT

Ten days after Rosh Hashanah comes Yom Kippur, the holiest day in the Jewish year.

- It's a day to say “I'm sorry” for our mistakes, ask forgiveness, and make plans to do better.
- Many adults fast—don't eat or drink—for 25 hours, but children usually do not fast.
- The day is filled with prayer and quiet reflection.





SUKKOT – THE HARVEST FESTIVAL

Five days after Yom Kippur begins Sukkot, a joyful, week-long holiday.

- Families build a sukkah, a hut with a roof made of branches, where they eat meals (and sometimes even sleep, if it's warm and dry where they are).
- The sukkah reminds people of the temporary shelters used by the Israelites during their journey in the desert long ago. It also reminds us of the beauty and the power of nature.
- Special plants called the lulav (palm, myrtle, and willow branches) and etrog (a lemon-like fruit called a citron) are waved in all directions—north, south, east, west, up, and down—to show that the whole world matters and that we are all connected.



A SEASON OF REFLECTION, JOY, AND COMMUNITY

Together, these three holidays move from reflection (Rosh Hashanah), to asking for forgiveness (Yom Kippur), to celebrating nature and community (Sukkot). They're a time to look inward, connect with others, and be thankful for the good things and the people in our lives.



ACTIVITY:

Draw one picture, or make a collage, that includes all three holidays—maybe a shofar, a bowl of apples and honey, and a sukkah under the autumn sky. Send your art to Kids' Zone and we might share it in a future issue!

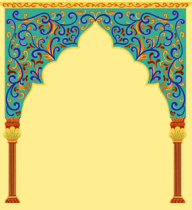


CELEBRATING SAFELY

The fall holidays are a time for being together—but they can also be a time when germs spread more easily, especially in synagogue and at dinners with family and friends. That's why it's important to remember COVID safety and keep everyone healthy.

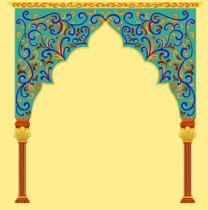
Here are some ways families can celebrate while being mindful:

- Mask up with respirators indoors—especially if you go to crowded places like synagogue services or community events.
- Keep windows open when there are a lot of people gathering. Ask grownups to help with this.
- Celebrate outdoors whenever possible—like eating and hanging out in the sukkah.
- Stay home, especially if you're sick—you can still join by video or phone so you don't miss the celebration.
- Celebrating safely helps make sure everyone—from babies to grandparents—can enjoy the holidays together.



Honey Cake Whoopie Pie Cookies

By Karen 



For Rosh Hashanah, the Jewish New Year, honey cake is eaten to symbolize the desire for a sweet new year.

Honey cake comes in a variety of shapes and sizes. The recipe below is for honey cake whoopie pie cookies. It is an adaptation of Sheri Silver's honey cake whoopie pies recipe.

Ask an adult for help or permission to use the oven or stove.

Cookie Ingredients

8 tablespoons unsalted, melted butter
¼ cup brewed decaf coffee (or orange and spice herbal tea)
½ cup white sugar
¾ cup honey
Pinch of kosher salt
1 medium-sized egg
¾ teaspoon baking soda mixed into ½ teaspoon kosher apple cider vinegar
¾ teaspoon baking powder
3 cups flour

Filling Ingredients

5 tablespoons unsalted, at room temperature
4 ounces room temperature cream cheese
3 cups powdered sugar
Pinch of kosher salt
1 tablespoon honey



Using a large mixing bowl, whisk together the coffee, melted butter, white sugar and salt until smooth. Add the egg, baking soda apple cider vinegar mixture and baking powder to the mixing bowl. Whisk again. Add the flour and mix with a spatula. Cool to room temperature, cover bowl with foil and place in the refrigerator for 2 hours.

Honey Cake Whoopie Pie Cookies Recipe



With an adult, preheat the oven to 325 degrees.

Line three cookie sheets with parchment paper.

Using clean hands, make round balls with about a two-inch diameter.

Slightly push down the tops of the cookies so they are domed. Place cookie balls two inches apart on the cookie sheets.

With an adult, put the cookies in the oven.

Bake cookies for 18 minutes. Don't touch the stove.

With an adult, take the cookies out of the oven.

Allow cookies to cool completely.



Whisk five tablespoons of butter and cream cheese vigorously until fluffy. Fold in a tablespoon of honey and a pinch of salt, stirring gently. Add powdered sugar one-half cup at a time while beating the mixture vigorously. Continue beating the mixture until it is smooth.

Turn half of the cooled cookies upside-down so the flat side is facing up.

Using a spoon, add a large spoon of filling to each cookie. Create a whoopie pie sandwich by placing a cookie on top of the upside-down cookie that has filling on it.

Chill the whoopie pie cookies for 30 minutes.

Enjoy this special Rosh Hashanah treat!
Shanah tovah umetukah!

שָׁנָה טוֹבָה וּמְתוּקָה

Have a happy and sweet new year!





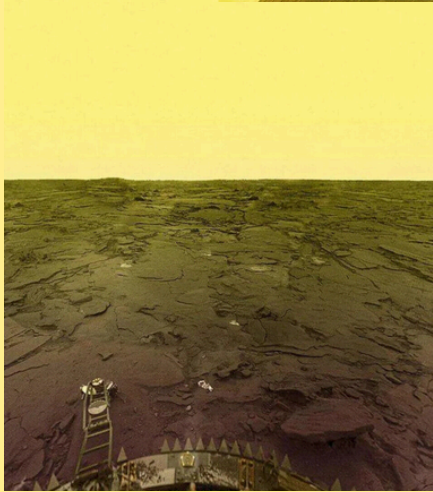
ENVIRONMENTS BEYOND EARTH: WHAT IS IT LIKE ON OTHER PLANETS?



PHOTO OF VENUS' SURFACE TAKEN
BY A SPACECRAFT

VENUS

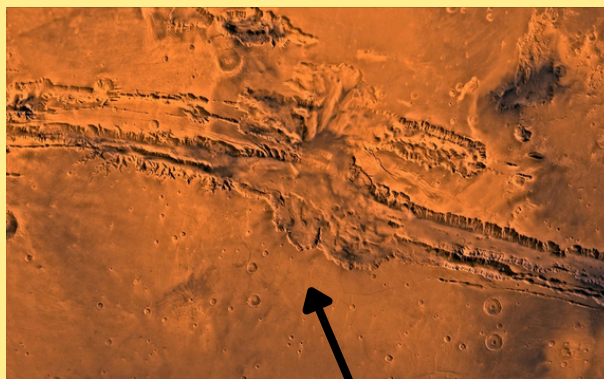
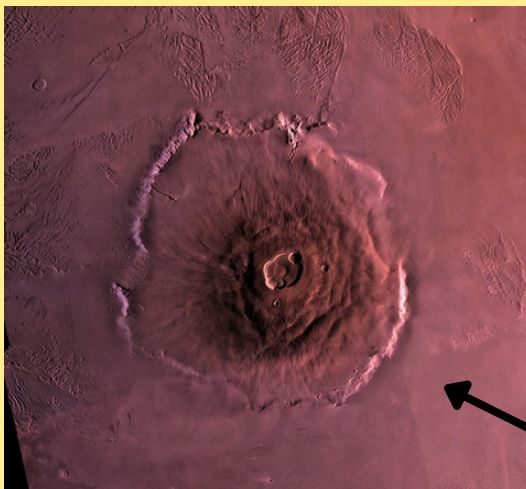
BY LEELA



The surface of Venus is super deadly! There is extreme heat and an intense atmosphere (93 times thicker than Earth's atmosphere), which creates an incredible amount of pressure. On Earth, the average person feels approximately 41,000 pounds of pressure from the atmosphere around them; on Venus, the pressure reaches nearly 4 million pounds on that same person! Not only is the atmosphere really thick, but it also causes Venus to become incredibly hot. The atmosphere is composed of mostly carbon

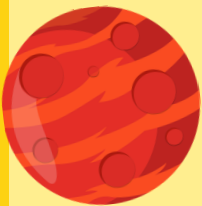
dioxide, which traps heat from the Sun. The Sun's light reaches and warms Venus's surface. The surface releases heat as infrared radiation, which carbon dioxide absorbs and traps in the atmosphere. Even though Mercury is closer to the Sun, Venus has the hottest surface of all the planets in our solar system, reaching around 460 degrees Celsius, 860 degrees Fahrenheit!

Not only would humans not be able to survive this, many robotic spacecraft are destroyed quickly by the harsh conditions, which is why there are so few photos of Venus' surface.

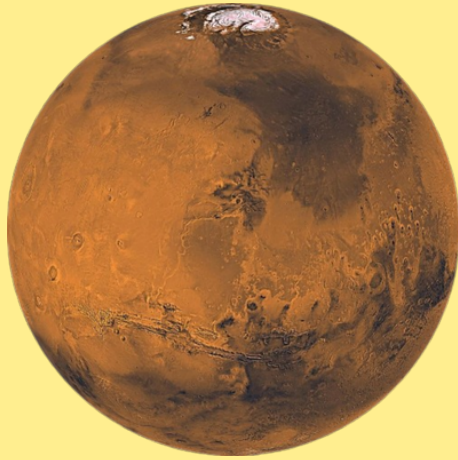


VALLES MARINERIS (CANYON)
OLYMPUS MONS VOLCANO ON MARS

MARS



ENVIRONMENTS BEYOND EARTH



Mars has some humongous monuments on its surface! One example is Olympus Mons, which is a huge volcano that is around 13.6 miles tall! That is about 2.5 times as tall as Mount Everest. Not only is this volcano super tall, it also covers an area as wide as the state of Arizona! **How did Olympus Mons form?** This volcano formed from the accumulation of lava over billions of years. The crust on Mars does not have tectonic plate movement like Earth, so it stays fixed over the same magma spot, causing the lava to pile up over time.

Also, the runny lava that is produced is able to travel much further, causing the volcano to spread outwards. Lastly, Mars has less gravity than Earth, allowing more lava to flow upwards and erupt. Not only does Mars have a large volcano, it also has a supersized Grand Canyon! This canyon, called Valles Marineris, is so long that it would stretch across the length of the entire United States. This canyon was affected by the pressure and weight of a nearby volcanic plateau, which pushed up on the surface of Mars, causing it to tear open around 4 billion years ago. As magma chambers below emptied, parts of the surface sank, causing connected trenches to form. Later, water, wind, and avalanches widened and shaped the canyon.

JUPITER



This planet is the largest in our solar system, and more than 1000 Earths could fit in it! It is a gas giant, and it is made of mostly hydrogen and helium, yet it has more than 300 times Earth's mass. Deep inside the planet, pressure turns the hydrogen gas into a liquid metal. Also, Jupiter has a giant storm, called the Great Red Spot.

While scientists don't know how this raging storm formed, they have some theories. Some believe that it was caused by multiple smaller storms forming one huge vortex, others believe that the steady airflow broke down into a smaller, circular storm, and still others think that heat and moisture deep in the atmosphere forced clouds



ENVIRONMENTS BEYOND EARTH



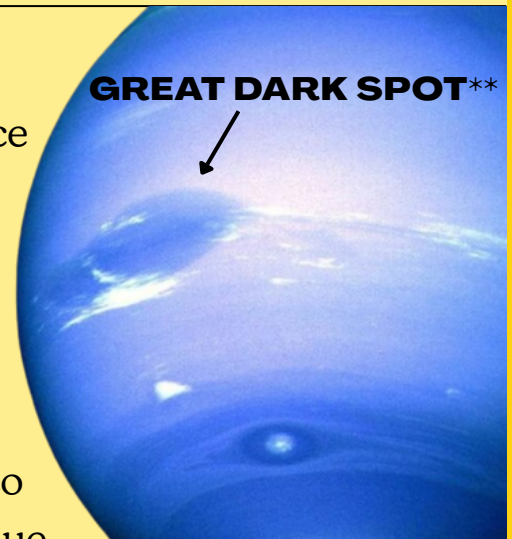
upwards, forming the storm.

While hurricanes on Earth can slow down from friction against the ground, Jupiter doesn't have solid ground to create this kind of friction, which helps the storm keep going. In the storm, winds can reach about 400 miles per hour, and temperatures near the cloud tops are around -160 degrees Fahrenheit.



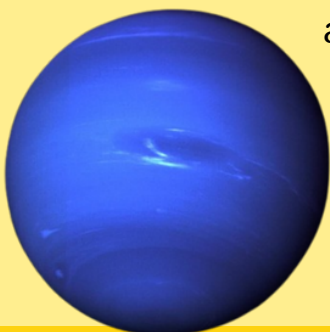
NEPTUNE

Neptune is the furthest planet from the Sun, and it is an ice giant. In our entire solar system, the fastest winds are on Neptune, reaching speeds up to 1500 miles per hour! For comparison, Hurricane Melissa produced a 252 mph gust above the ground in 2025, and the storm tore roofs from more than 120,000 structures in Jamaica. Just like Jupiter, there is no solid ground to slow down the wind, so the lack of ground friction helps its powerful winds continue.



These winds are also related to giant clouds made of frozen methane (a compound made of hydrogen and carbon), leading to giant storms that can be the size of Earth!

Did you know that scientists think immense pressure may turn carbon into diamonds inside Neptune? Well this happens on Neptune! Deep inside Neptune, temperatures reach thousands of degrees and pressures are millions of times greater than on Earth. This extreme environment breaks methane molecules into hydrogen and carbon, and forces the lonely carbon atoms to lock so tightly together, that they form diamonds that slowly sink to the planet's center.

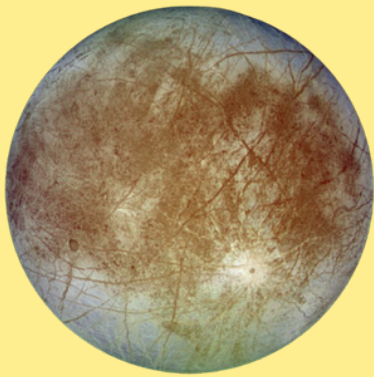


****THE ORIGINAL GREAT DARK SPOT WAS A STORM SPOTTED IN 1989, BUT IT DISAPPEARED LATER, AS STORMS ON NEPTUNE COME AND GO. MORE DARK SPOTS (STORMS) HAVE SINCE POPPED UP, AND LEFT AGAIN**

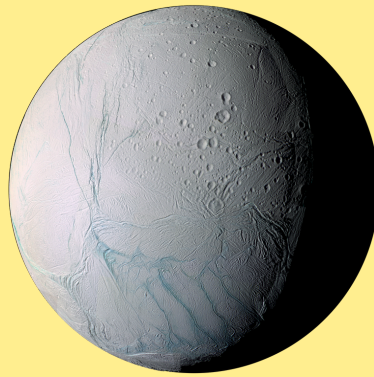
ENVIRONMENTS BEYOND EARTH:

FUN FACTS

Fun Fact: Earth is the only planet that we know has life, but other planets and moons show signs that life could have existed previously, or that microscopic life could be there currently! For example, there is clear evidence that Mars once had rivers and lakes of liquid water billions of years ago, while Jupiter's moon Europa has a saltwater ocean beneath its icy shell. Saturn's moon Enceladus has huge water geysers shooting out of the moon, and spacecraft have found organic molecules (the basic building blocks of life).



EUROPA



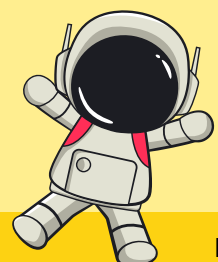
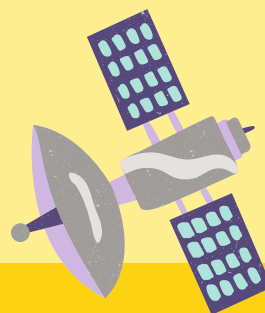
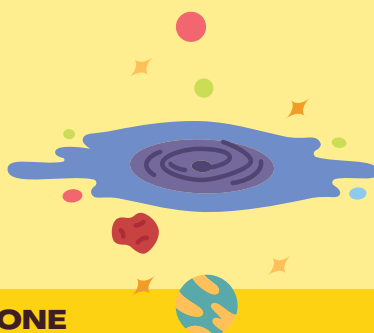
ENCELADUS



PLANET X

Bonus Fun Fact: Scientists think that there may be another, undiscovered planet in our solar system, called Planet X (or Planet Nine)! They noticed that the movement of icy rocks into a tilted path at the edge of our solar system might be caused by the gravity of a large planet. However, this planet is so far away from us, in the dark, that scientists haven't confirmed its existence, and there are no photos!

NOTE: PLANET X HAS NOT BEEN PHOTOGRAPHED AND THE IMAGE SHOWN ABOVE IS JUST A GUESS AT WHAT IT MAY LOOK LIKE



ALL ABOUT... BUTTERFLIES

September is Butterfly Month!

By Rachel L.



Butterflies taste with their feet, not their mouths! Since butterflies don't have mouths, they have special sensors called chemoreceptors on the bottom of their legs to find food.

Butterflies have a second set of secret eyes. Besides their compound eyes, butterflies also have tiny simple eyes called ocelli. These extra eyes help them notice movement, light, and shadows.

Please don't touch a butterfly's wings! The bright colors on their wings come from tiny scales that bend light, which is why some wings look shiny or rainbow-colored. But those scales can rub off if you touch them.

Butterflies can see colors humans can't. Their compound eyes let them see ultraviolet light, which is invisible to us.

Butterflies sometimes gather at mud puddles for a reason. This is called "puddling," and butterflies do it to get salts and minerals they need from the mud.

A caterpillar's chewing mouth becomes a butterfly's drinking straw.

A butterfly's sipping mouthparts, called a proboscis, actually form from the caterpillar's old chewing mouthparts.



COVID and Autoimmune Conditions



IT'S National Celiac Disease Awareness Day on September 13 in the United States, so it's a good time to discuss autoimmune conditions and how COVID-19 can affect them.

What is an autoimmune condition? Autoimmune conditions are disorders in which your immune system attacks healthy parts of your own body. This can lead to painful irritation on your skin, in your tummy, or in your joints and to loss of function in organs like the pancreas. Many people have common autoimmune conditions like psoriasis, type 1 diabetes mellitus, and systemic lupus erythematosus.

Celiac disease is another autoimmune condition. When a person with celiac disease eats a food containing the bread protein gluten, it leads to painful inflammation in their small intestine that makes it harder to digest their food. People with celiac disease have to avoid eating foods with gluten, like wheat and barley, and often eat specially made breads and treats.



Many autoimmune diseases are associated with germs, including rheumatic fever, type 1 diabetes, and likely even multiple sclerosis. Genetics also put some people at higher risk for certain autoimmune conditions.

COVID-19 is no exception! In fact, COVID is quite good at triggering autoimmune conditions. A 2023 study in *The Lancet* by Renin Chang et al. found that, among the unvaccinated adults studied, those with COVID-19 had a higher risk of several autoimmune disorders. These include rheumatoid arthritis, lupus, Sjögren's syndrome, psoriasis, vasculitis, inflammatory bowel disease, type 1 diabetes, and, yes, celiac disease.

Autoimmune conditions are chronic, meaning that patients manage them their whole lives. It's fantastic how many tools people with autoimmune conditions have, but prevention remains the best medicine. And preventing COVID can help reduce the risk of autoimmune conditions!



The Scientific Method

by Claire 

How do researchers discover new things? How can you test whether what you think is true? You can use the **scientific method**!

The scientific method uses observations, hypotheses, tests, and evidence to investigate questions. What scientists understand is summarized in theories.

The first step of the scientific method is something you're probably really good at-- **asking a question**. The best researchers always keep the curiosity they had as kids! Maybe you'll ask what helps plants grow taller.

Your next step is to develop a **hypothesis**, a guess answer to your question. Before you decide on your hypothesis, you might look at other research for clues. You might hypothesize that sugar helps plants grow taller.

Your hypothesis is just the first step to answer your question. Next, you need to build a way to test it. If it's possible, an **experiment** is the best way to test your hypothesis. In an experiment, you change just one thing and measure how the change impacts something else. For example, you might give one set of plants water and another set of plants water with sugar. Which plants grow taller in a week? Make sure both sets get the same air quality, light, and fertilizer!

Next, you have to analyze those measurements. Did the plants just happen to grow differently, or was it because of the sugar? You'll be more certain of your results if you see the same pattern in lots and lots of plants.

Now you need to tell other people what you found! Does sugar really help plants grow taller? Other people might find similar results, or they might find something different!

You've finished the scientific method, but you're not done! It's time to start again with new questions and hypotheses. Maybe someone else will study which kinds of sugar work best or study a different kind of plant. That's how we keep building new knowledge!



EFFECTS OF FACTORY POLLUTION ON COMMUNITIES

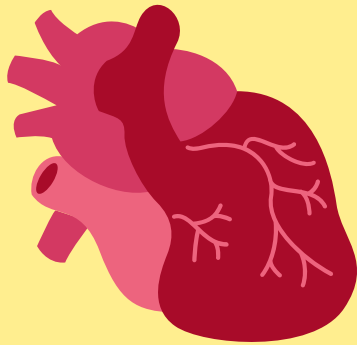
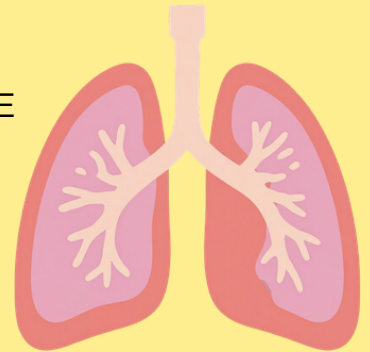


BY LEELA

When companies build factories in communities, sometimes because they want lower costs or better access to labor, the resulting pollution damages the surrounding community.

RESPIRATORY ILLNESSES → AFFECT HOW YOU BREATHE

Airborne emissions from factories (including fine particles) trigger conditions such as asthma, bronchitis, and decreased lung function, which can make it significantly harder for people to breathe.

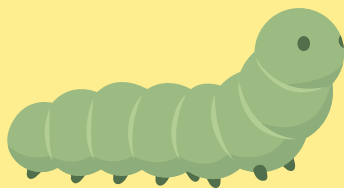


CHRONIC DISEASES → LONG LASTING DISEASES

Long-term exposure to pollution from these factories can be devastating, leading to increased risks for heart disease, stroke, and cancer.

VULNERABLE POPULATIONS → WHO IS MOST AT RISK?

Children and older adults face greater health risks from air pollution. Children's bodies are still developing, while older adults are more likely to have health conditions that pollution can worsen. Still, everyone is affected by air pollution.



SOIL EFFECTS

Heavy metals and other toxic chemicals from factories can settle into nearby soil, contaminating crops.



WATER CONTAMINATION

Chemicals and fine particles contaminate groundwater and streams, which affects drinking water and marine life.



EFFECTS OF FACTORY POLLUTION ON COMMUNITIES



EFFECTS ON WELLBEING

Factory fumes and noise can be very unpleasant, creating day-to-day difficulties for nearby residents.

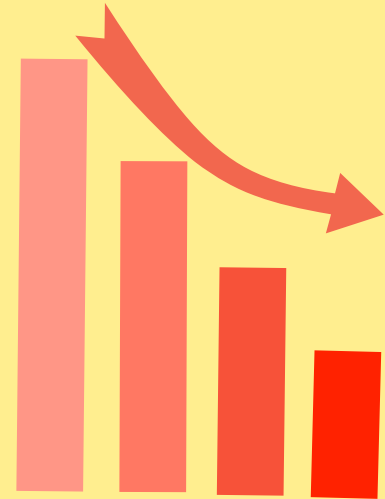
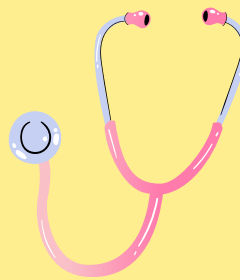
FINANCIAL VALUE

When factories are built in an area and pollute that area, this often makes properties there worth less money



FAMILY EFFECTS

Families in the area face higher costs for healthcare and lose valuable work hours due to sickness caused by pollution



LACK OF RESOURCES

Factories are often placed close to marginalized populations, who have fewer resources to fight against the pollution around their homes and neighborhoods

One of the best ways to fight for your community if a factory is being proposed is to involve the people in your community. You can make art and signs to raise awareness, organize protests, and even work with a parent or teacher to fight through the legal system! Another awesome resource from the Environmental Protection Agency is the Cleanups in My Community site, where you can find hazardous-waste cleanup locations in your community. It helps you check if the soil and water in your community are safe!

ALL THESE EFFECTS SHOW HOW CLEAN AIR IS INCREDIBLY IMPORTANT, AND HOW POLLUTION CAN HAVE LONG-LASTING EFFECTS BEYOND LUNG IRRITATION, AND MANY PEOPLE MAY NOT RECOGNIZE THOSE EFFECTS. IT IS IMPORTANT TO KNOW WHEN YOU, OR SOMEONE YOU KNOW, IS BEING AFFECTED BY THE ENVIRONMENT AROUND THEM NEGATIVELY.

GAME ZONE



How many strategies can you identify in this room to help prevent the spread of airborne pathogens?

Make Your Own Back-to-School Health Kit!

By: Liana, 17

5 items for a healthier & cleaner school environment

1.

Hand Sanitizer: an easy way to clean your hands when soap and water are not available



2.

Portable Air Purifier: cleaning the air helps remove airborne pathogens



3.

Reusable Water Bottle: staying hydrated is important to keep a healthy body



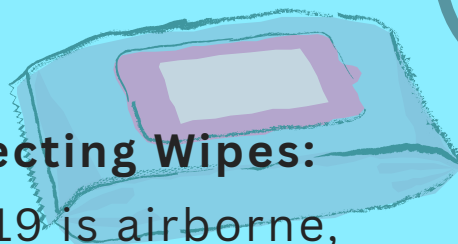
4.

High-Quality Mask: an N95 or better respirator for protection from germs in the classroom



5.

Disinfecting Wipes: COVID-19 is airborne, but you might still need to clean surfaces



How We All Help Keep the Air Clean

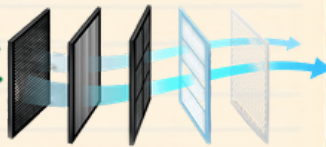
1 Clean air is everyone's job

Clean air is not just one person's job. Teachers, students, and staff all help look after the air in shared spaces like classrooms, libraries, hallways, and bathrooms. When everyone does a little, the whole school feels more fresh and more comfortable.

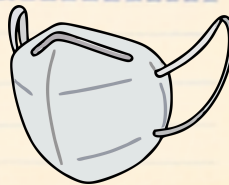


2 Extra ways some schools help

Some schools also use air filters to help clean shared air. These filters catch tiny particles and help keep classroom air fresh.



Students may also wear a well-fitting respirator-quality mask. Respirator masks reduce the spread of germs in the air.



3 Together, we help

Our school is a community, and every one of us plays a part. By caring for our classrooms, following good habits, and looking out for each other, we make our school a healthier, happier place to learn and grow.



Stuffy Classroom?

Time to be an Air Helper!



Have you ever sat in a classroom that felt warm, heavy or stuffy? Maybe your head felt tired, or the room felt too crowded. Those are signs that the room needs more fresh, clean air.

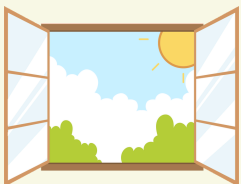
Air Helper Clues

What does "stuffy" mean?

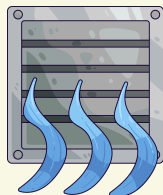
A stuffy room lacks fresh air and may feel warm, crowded, or hard to focus in. This can happen when many people share a room without enough air coming in from windows and vents.

- ☐ The room feels hot or heavy.
- ☐ Many people are coughing or sneezing.
- ☐ The window has been closed for a long time.
- ☐ A vent is blocked by objects or furniture.
- ☐ The air filter is turned off.
- ☐ A CO₂ monitor shows a high number.

How to help?



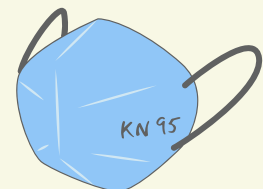
Open the window



Check vents



Turn on air filters



Wear your respirator

BUNNY BASICS

by Karen 



Meet Knoll!

Knoll, the house rabbit wearing a pink bow tie, is honored to be in the September issue!

Knoll loves to binky, eat cilantro and cuddle his stuffed toy dinosaur.

Did you know:

House rabbits can be pets like cats, dogs, hamsters, fish, birds, and rats?

House rabbits are different from wild rabbits.

Wild rabbits call the outdoors home. But domestic rabbits depend on people for food, shelter, and protection. They live inside with the whole human family!

Domestic rabbits are social!

They often love companionship and social interaction.

They need an area to play, eat, drink water and use the litter where the family spends most time together.

This is usually the living room.

Some bunnies stretch out and watch TV with the family!



Binky: A happy hop and twist.

House Rabbit Society is a great website to learn all about bunnies!



BUNNY BASICS

Twenty interesting things about bunnies:

- Bunnies lick the things they love.
- When a bunny licks your hand, face, toes or feet, they are saying, "I love you!"
- Bunnies are not starter pets.
- When kids handle it, an adult must supervise the bunny at all times.
- Bunnies can sleep with their eyes open!
- When a bunny is happy, they run around in circles, shake their ears and jump in the air! The jump is called a binky!
- Bunnies sleep during the day and are active at dawn and dusk. This is called crepuscular. Can you say crepuscular?
- Bunnies are very intelligent! They respond to their name!
- House rabbits need bunny-safe toys such as cat tunnels and hideout huts.
- Cages can make bunnies unhappy. Wire cage floors hurt their paws.
- Bunnies make some of their own food! It's called a cecotrope. It's a tiny ball of nutrient and vitamin rich droppings bunnies snack on.
- Bunnies are delicate. Don't pick bunnies up because their spine and bones can break easily.
- Bunnies eat mainly timothy hay, orchard grass, meadow hay and small amounts of specific leafy greens such as cilantro, arugula, red leaf lettuce and green leaf lettuce. Only give bunnies a handful of bunny-safe vegetables to prevent the bunny from getting sick.
- It's a myth that bunnies only eat carrots!
- Carrots have a lot of sugar. Bunnies should have only a tablespoon of carrots occasionally.
- To keep house rabbits safe from viruses, exotics veterinarians give domestic bunnies an RHDV vaccine.
- Putting a bunny on a leash or harness can harm their neck and back.
- Bunnies live 12-15 years.
- Some bunnies snore!
- Bunnies love to thump by slamming their paws on the floor! Bunnies thump when they're mad, scared or happy and to get your attention.



House Rabbit Society is a great website to learn all about bunnies!



WILDFIRE SMOKE: HOW TO KEEP OUR FAMILY, INCLUDING PETS, SAFE

BY KAREN 

How many seasons are there?

Did you guess three? Four or more? Seven? Five? Which answer is correct?

The answer may be different depending on where you live! Winter, fall (or autumn), spring and summer aren't the only seasons in the world!

Did you know there is a monsoon season and a wildfire season?



What is a monsoon?

A monsoon is a seasonal shift in winds that often creates distinct wet (with long periods of heavy rain) and dry seasons.

Can you guess where monsoons happen around the world? Monsoons are in Mexico, Western Africa, South Asia, Australia and South America!

Can you say the word: monsoon?

"Mon" rhymes with "Han" as in Han Solo from Star Wars. The word "soon" sounds just like the word "soon" used to describe when something is about to happen. Put "mon" and "soon" together and you have the word monsoon!

Another season that happens around the globe is fire or wildfire season.

What does fire season mean? Can you guess?

Fire Season

Fire season happens for various reasons. One reason is that the weather is dry and trees, grass, brush, and other vegetation can easily catch fire and burn rapidly. Wildfires can start from lightning, or from human activities, such as campfires. When trees, grass, and brush are dry, a small fire can quickly grow into a wildfire. Climate change is changing the amount of rain and snow, making fire seasons longer and more intense in many regions.

Where is Fire Season Happening Globally?

Can you think of a place in the world where fire season is happening now? Did you guess Europe? North America? Africa? Australia? All of the above?

If you guessed any one of these, you are correct! It is fire season now in parts of each of these regions.

Climate Change

Across the world, climate change has caused large areas to have low amounts of rainfall and snow, including dry and drought conditions, as well as higher temperatures and more extreme weather, including high winds. Dry trees, shrubs, undergrowth and grasses, together with high winds, make wildfires spread much more rapidly, expanding their size and making them very hard to stop.

If you live near a place with a fire season, have you noticed changes to the air? How did it change?

Did smoke travel to where you are from fires located hundreds or thousands of miles away?

Fire Season

Wildfire smoke is a mixture of gases and small particles in the air. It is created when trees, grasses, buildings, and other materials burn. The air then becomes difficult and unsafe to breathe.

What can we do to stay safe?

Can you think of ways to protect yourself from unsafe air?

- Learning about air quality is one way to stay safe. There are apps and websites that will tell you how safe the air is to breathe.
- Staying indoors and using air filters is another way to stay safe.
- Limiting time outside, playing indoors, and wearing a properly fitting N95 or FFP2 mask each time you must go outside will help protect you from unsafe air.



Pet Safety

Did you know you can also keep your pets safe from wildfire smoke? Can you guess how?

- Keep pets indoors.
- Create indoor litters for pets that are used to going outside to pee and poop.
- Tell your parents or an adult if pets are coughing or have watery, red eyes.
- Tell your parents, guardian or an adult if pets are having difficulty breathing, if their mouth is much more often open when they breathe, if they seem unusually sleepy, or if they have stopped eating and drinking.
- Tell a parent or guardian if a pet is unwell so they can contact a vet immediately.

Look at how much we've learned about staying safe during fire season!
Great job everyone!

Stories from our Readers

The Story of Artemis

A Retelling of a Greek Myth
By Camille Alexander, age 13



Leto, daughter of Titan Koios and Titaness Phoebe, was Artemis and Apollo's mother. Their father was Zeus. Before the twins were even born, Hera, angry, decreed that no dry land could be a haven for them.

Leaving her home, Leto transformed to hide herself and started to run. But Hera's assistants followed Leto everywhere.

Then Leto saw Delos, a floating marsh island that was not attached to the sea floor. Leto was able to stay on it. Python, one of Hera's servants, hissed and then slithered away. Leto gave birth to Artemis easily. The young goddess assisted her mother in the birth of her brother.

Artemis, Apollo, and Leto lived on Delos for a few years, until a summons arrived from Zeus. It said that they were invited to live on Mount Olympus.

The three went to Mount Olympus for an audience with Zeus. Zeus asked his children what they wanted. Artemis knew exactly what she wanted. She went up to her father and told him.

"I want a silver bow and quiver, and I want it to be fashioned by the cyclopes. I want an entourage of sixty daughters of Oceanus to be my hunting party. I want twenty dryads to be my handmaidens and to look after my twelve hunting dogs. I want a silver chariot pulled by four golden-horned stags. I want all the wild places. And I want to never marry, to never have children."

Zeus swore all of this to her on the River Styx.

Soon, Artemis was racing through the forests, through the wild places, hunting all the largest animals with her handmaidens and hunting party racing along behind her. She defeated the most terrifying animals and chased them away from villages. Artemis, goddess of the hunt, was right at home.

Stories from our Readers

The Story of Hephaestus

**A Retelling of a Greek Myth
By Camille Alexander, age 13**



When Hephaestus was a baby, his mother, Hera, threw him from the top of Mount Olympus. The nymph Thetis and the Oceanid Eurynome caught him. They raised him on Lemnos.

One day, much, much, much later, Hephaestus was on Mount Olympus when his mother, Hera, and his father, Zeus, were fighting. Hephaestus tried to calm his father, but Zeus was too angry. Again, Hephaestus was cast from Mount Olympus. This time, he landed without Thetis and Eurynome to catch him.

After Hephaestus landed, he created twelve winged thrones and sent them to Olympus. The gods sat down and relaxed on the beautifully crafted thrones.

Hera sat down on the grandest throne, but she quickly was trapped by metal. It clamped around her arms and feet. The throne rose into the air and turned itself upside-down.

Hera tried to teleport away, but it didn't work. Poseidon tried to break the metal. Ares tried to cut the throne with his sword. Zeus shot the throne with lightning. Nothing worked. Zeus sent Ares to fetch Hephaestus.

When Ares arrived at the stronghold Hephaestus had built on Lemnos, he tried to take Hephaestus back by force.

Ares returned to Mount Olympus alone and charred. Zeus said that he didn't care who did it; someone had to bring Hephaestus back. So Dionysos went.

After a talk with Hephaestus, Dionysos and he went back to Mount Olympus. Hephaestus let his mother out and helped her up. Then he went to his rightful place on Mount Olympus.



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TO FEEL INTRIGUED ENERGIZED AND ENGAGED



WHN.global/KidsZone

Welcome to the World Health Network Kids' Zone Magazine! Although COVID-19 is a serious topic, living a COVID-conscious lifestyle can be fun and rewarding. In this magazine we highlight the many ways kids explore, share, and connect!

LET'S JUMP INTO THE KIDS' ZONE!