SUMMER!

FUN ACTIVITY BOOK

Michigan LEARNING CHANNEL
A PUBLIC MEDIA PARTNERSHIP

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MICHIGAN LEARNING CHANNEL 
CONTENT PARTNERS:

Career Girls       PBS Kids
Cartoon Academy    SchoolKit
Corporation for Public Broadcasting SIS4Teachers
The Jim Henson Company The State of Michigan
LearningScienceIsFun Story Pirates
MAISA Traverse City Area Public Schools
Math Park Traverse City Opera House
Michigan Architectural Foundation University of Michigan
PBS Wimee’s Words

Thank You Sponsors!

The Donald and Mary Kosch Foundation

WATCH on the Michigan Learning Channel 
or stream the channel at MichiganLearning.org

Visit MichiganLearning.org and follow @MichLearning on social media to find out more.
How to Use This Book

We've curated activities that inspire learning all summer long. Fight the summer slide with math and writing refreshers, then explore your world with scavenger hunts and science experiments the whole family can try. Use the guides below to make the most of this summer!

1. Use Grade Levels

This book spans multiple grade levels. Choose a few lessons each week and try new ones as needed. Try tougher lessons later in the summer or next year.

2. Follow Weekly Themes

This book is designed to use for 8 weeks of summer. We suggest spreading it out over a few days each week and finding a time that works for your family.

3. Extend the Learning

Scan the QR codes in this book to watch videos with extra instructions and examples. Find all of our summer videos at MichiganLearning.org/summer

And Don't Forget!

Scan this QR code to take a short survey about our Summer of Fun program to let us know what you like about our books and what you'd like to see in the future.

Or VISIT

MichiganLearning.org/SummerSurvey
Teamwork makes the dream work.

It takes teamwork to help your student make progress in school—especially when it involves special education. Michigan Alliance for Families and Special Education Mediation Services are here to help.

ALL SERVICES ARE FREE.
For help strengthening communication, call Special Education Mediation Services at 833-KIDS-1ST or visit mikids1st.org.

For free resources and support, call 800-552-4821 or visit michiganallianceforfamilies.org.
Dates and Themes

The summer program runs from June 19 to August 13, 2023

Each week has a set of lessons, additional programs, activities, and field trips based on the weekly theme.

Animals (June 19-25)
Explore the animal kingdom for ferocious fun!

Across America (June 26 - July 2)
From coast to coast, explore what it means to be American

Sports and Games (July 3-9)
Get serious about fun pastimes, from soccer to Sodoku.

Engineering (July 10-16)
Tinker, design, build, rebuild, and find engineering everywhere.

Our Stories (July 17-23)
From legends to our everyday lives, stories shape who we are.

Great Lakes (July 24-30)
Dive in and explore the lakes that make Michigan special.

Around the World (July 31 - August 6)
Experience food, art, music, and cultures from around the globe.

Space (August 7-13)
Meet astronauts and virtually visit the planets and stars.

Learn more about the Michigan Learning Channel at Facebook Live at fb.me/michlearning
www.michiganlearning.org/summer

On TV. Online. Statewide.

Follow @MichLearning on social media to find out more.
Local Events

The Michigan Learning Channel has Engagement Coordinators across the state that serve as your local connection to everything happening at our channel and at your local PBS station. Scan the QR code or visit MichiganLearning.org/Coordinators to learn more about our Engagement Coordinators and see their local event schedules by region, or contact them directly using their information below.

Learn more about the Michigan Learning Channel at Facebook Live at fb.me/michlearning www.michiganlearning.org/summer

WCMU
Alpena
Channel 6.4
Renee Mahon
mahon2rm@cmich.edu

WMU
WNMU-TV
Channel 13.4
Emily Roussin
eroussin@nmu.edu

WGVU
Grand Rapids
Channel 35.6
Rachel Cain
cainra@gvsu.edu

WDCQ
Delta College Public Media
Channel 19.5
Lauren Saj
laurensaj@delta.edu

WKAR
WKAR Public Media
Channel 23.5
Robin Pizzo
robin@wkar.org

WTVS
Detroit Public TV
Channel 56.5
Shernita Rodgers
srogers@dptv.org
Where to Find the Michigan Learning Channel
Find your favorite shows anywhere you go!

From the QR Codes:
Scan any of the QR codes in this book to see the accompanying video right on your device.

On Demand:
Video lessons and activities at MichiganLearning.org
Click your grade level for this week's selected lessons
Or, use “Find a Lesson” to search by grade, subject, and educational standard

On the App:
Find shows on the free PBS app
The PBS App is available for mobile devices, Roku, Apple TV, and on many Smart TVs.
Search for Read Write Roar, Math Mights, Extra Credit, DIY Science Time, Wimee’s Words, InPACT at Home, Simple Gift Series, and more great programs.

On the Livestream:
Watch the 24/7 livestream at MichiganLearning.org/live-tv

On TV:
Find us on broadcast television with an antenna

Learn more about the Michigan Learning Channel at
Facebook Live at fb.me/michlearning
www.michiganlearning.org/summer

Follow @MichLearning on social media to find out more.
Learn Anywhere!
On Air. Online. On Demand.

Serving students statewide through your local PBS station, the Michigan Learning Channel has everything kids need to build their brains and engage in learning key concepts to succeed in school!

**Preschool**
Read, sing, and play with your little one.
- **Wimee’s Words**
  Join Wimee, the fun, lovable robot that inspires kids to learn through creativity.
- **Simple Gift Series**
  Make music, find something new, and read with Betty the Bookworm.
- **POP Check**
  Mindful practice tools to Pause, Own what we are feeling, and Practice relaxing.

**Kindergarten to 3rd Grade**
Keep kids learning with fun lessons taught by Michigan teachers.
- **Read, Write, Roar**
  Kids build literacy skills with engaging ELA lessons.
- **Math Mights**
  Build number sense and learn strategies for solving math problems.
- **InPACT**
  Get moving with this home-based physical activity program.

**4th to 6th Grade**
Short, engaging videos and hands-on lessons keep tweens engaged.
- **Extra Credit**
  Creative writing, math, fitness, career exploration, and more!
- **Curious Crew**
  Dr. Rob Stephensen and inquisitive kids take a hands-on approach to scientific exploration.
- **Story Pirates**
  Bite-sized literary lessons with comedians, authors, and teachers.

VISIT us online to view all shows, learn about events, and download activities!
[www.michiganlearning.org](http://www.michiganlearning.org)
Follow @michlearning to find out more.
<table>
<thead>
<tr>
<th>TIME</th>
<th>GRADE</th>
<th>WHAT’S ON</th>
</tr>
</thead>
<tbody>
<tr>
<td>6AM</td>
<td>Pre-K</td>
<td>Wimpee’s Words, Simple Gifts Series, Signing Time, PBS Kids Shows</td>
</tr>
<tr>
<td>7AM</td>
<td></td>
<td>Let’s Learn</td>
</tr>
<tr>
<td>8AM</td>
<td>Kindergarten</td>
<td></td>
</tr>
<tr>
<td>9AM</td>
<td>1st Grade</td>
<td>Read, Write, ROAR!, Math Mights and more</td>
</tr>
<tr>
<td>10AM</td>
<td>2nd Grade</td>
<td></td>
</tr>
<tr>
<td>11AM</td>
<td>3rd Grade</td>
<td></td>
</tr>
<tr>
<td>12:30PM - 1:30PM</td>
<td>4th - 5th Grade</td>
<td>Lunch Time Block: Live From the Opera House, Camp TV, Story Pirates TV, Math &amp; Movement</td>
</tr>
<tr>
<td>1:30PM - 3PM</td>
<td>Pre-K</td>
<td>Wimpee’s Words, Simple Gifts Series, Signing Time, PBS Kids Shows</td>
</tr>
<tr>
<td>3PM - 6PM</td>
<td>4th - 8th Grade</td>
<td>Afternoon Block: Make48, Make it Artsy, Extra Credit, Into the Outdoors DIY Science Time, Curious Crew, Story Pirates TV, SciGirls</td>
</tr>
<tr>
<td>6PM - 7PM</td>
<td>Kindergarten - 3rd Grade</td>
<td>Read, Write, ROAR!, Math Mights and more</td>
</tr>
<tr>
<td>7PM - 8PM</td>
<td></td>
<td>Local Shows and Quiet Time Block: Live From the Opera House, Camp TV, AADL Storytime</td>
</tr>
<tr>
<td>8PM - 9PM</td>
<td>7th - 12th Grade</td>
<td>Road Trip Nation, Great Lakes Now, Destination Michigan, Startup, Native Report, National and Local PBS Specials</td>
</tr>
<tr>
<td>9PM - 6AM</td>
<td></td>
<td>PBS programs related to educational standards</td>
</tr>
</tbody>
</table>

Details at MichiganLearning.org/schedule

WATCH on the Michigan Learning Channel.
Episodes are available on-demand or stream the channel at MichiganLearning.org/summer

Visit MichiganLearning.org and follow @MichLearning on social media to find out more.
### Learn at Home with PBS KIDS

Explore reading, math, science, life lessons, and more on the PBS KIDS 24/7 channel and live stream! The TV schedule below offers you and your child a chance to learn anytime alongside your friends from PBS KIDS.

<table>
<thead>
<tr>
<th>TIME (M-F)</th>
<th>SHOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/5c am</td>
<td>Clifford the Big Red Dog</td>
</tr>
<tr>
<td>6:30/5:30c am</td>
<td>Elinor Wonders Why</td>
</tr>
<tr>
<td>7/6c am</td>
<td>Dinosaur Train</td>
</tr>
<tr>
<td>7:30/6:30c am</td>
<td>Pinkalicious &amp; Peterrific</td>
</tr>
<tr>
<td>8/7c am</td>
<td>Pinkalicious &amp; Peterrific</td>
</tr>
<tr>
<td>8:30/7:30c am</td>
<td>Sesame Street</td>
</tr>
<tr>
<td>9/8c am</td>
<td>Sesame Street</td>
</tr>
<tr>
<td>9:30/8:30c am</td>
<td>Work It Out Wombats!</td>
</tr>
<tr>
<td>10/9c am</td>
<td>Rosie’s Rules</td>
</tr>
<tr>
<td>10:30/9:30c am</td>
<td>Daniel Tiger’s Neighborhood</td>
</tr>
<tr>
<td>11/10c am</td>
<td>Daniel Tiger’s Neighborhood</td>
</tr>
<tr>
<td>11:30/10:30c am</td>
<td>Curious George</td>
</tr>
<tr>
<td>12 pm/11c am</td>
<td>Curious George</td>
</tr>
<tr>
<td>12:30 pm/11:30c am</td>
<td>Donkey Hodie</td>
</tr>
<tr>
<td>1/12c pm</td>
<td>Donkey Hodie</td>
</tr>
<tr>
<td>1:30/12:30c pm</td>
<td>Work It Out Wombats!</td>
</tr>
<tr>
<td>2/1c pm</td>
<td>Rosie’s Rules</td>
</tr>
<tr>
<td>2:30/1:30c pm</td>
<td>Alma’s Way</td>
</tr>
<tr>
<td>3/2c pm</td>
<td>Alma’s Way</td>
</tr>
<tr>
<td>3:30/2:30c pm</td>
<td>Nature Cat</td>
</tr>
<tr>
<td>4/3c pm</td>
<td>Nature Cat</td>
</tr>
<tr>
<td>4:30/3:30c pm</td>
<td>Arthur</td>
</tr>
<tr>
<td>5/4c pm</td>
<td>Arthur</td>
</tr>
<tr>
<td>5:30/4:30c pm</td>
<td>Odd Squad</td>
</tr>
<tr>
<td>6/5c pm</td>
<td>Wild Kratts</td>
</tr>
<tr>
<td>6:30/5:30c pm</td>
<td>Wild Kratts</td>
</tr>
</tbody>
</table>

Access FREE, at-home learning activities, tips, and more on pbskidsforparents.org

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rev 4/23
<table>
<thead>
<tr>
<th>App</th>
<th>Grade</th>
<th>Learning Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daniel Tiger for Parents (for parents &amp; caregivers)</td>
<td>PK-K</td>
<td>Emotions, Self-Awareness &amp; Relationships</td>
</tr>
<tr>
<td>Jet's Bot Builder</td>
<td>K-2</td>
<td>Science &amp; Engineering</td>
</tr>
<tr>
<td>Molly of Denali</td>
<td>K-2</td>
<td>Literacy</td>
</tr>
<tr>
<td>Nature Cat's Great Outdoors</td>
<td>K-2</td>
<td>Science</td>
</tr>
<tr>
<td>PBS KIDS ScratchJr</td>
<td>K-2</td>
<td>Critical Thinking &amp; Coding</td>
</tr>
<tr>
<td>PBS Parents Play &amp; Learn</td>
<td>PK-K</td>
<td>Literacy &amp; Math</td>
</tr>
<tr>
<td>Photo Stuff with Ruff</td>
<td>K-2</td>
<td>Science</td>
</tr>
<tr>
<td>Play and Learn Engineering (for parents &amp; caregivers)</td>
<td>PK-K</td>
<td>Science &amp; Engineering</td>
</tr>
<tr>
<td>Play and Learn Science (for parents &amp; caregivers)</td>
<td>PK-K</td>
<td>Science</td>
</tr>
<tr>
<td>Ready Jet Go! Space Explorer</td>
<td>K-2</td>
<td>Science &amp; Engineering</td>
</tr>
<tr>
<td>Ready Jet Go! Space Scouts</td>
<td>K-2</td>
<td>Science &amp; Engineering</td>
</tr>
<tr>
<td>The Cat in the Hat Builds That!</td>
<td>PK-K</td>
<td>Science &amp; Engineering</td>
</tr>
<tr>
<td>The Cat in the Hat Invents</td>
<td>PK-K</td>
<td>Science &amp; Engineering</td>
</tr>
</tbody>
</table>

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Week 1: Animals  

Explore the animal kingdom for ferocious fun! Our featured careers this week are biologist, zookeeper, and veterinarian. Scan the QR code or visit MichiganLearning.org/Summer/Animals to explore all of our videos this week.

Use the sheet below to mark off this week’s activities as you complete them. See if you can get a BINGO! Some of them are in this book, and some ask you to use your imagination or go outside.

<table>
<thead>
<tr>
<th>Watch Curious About Careers</th>
<th>Read for 20 minutes</th>
<th>Make a bird feeder</th>
<th>Watch DIY Science Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 mins. of activity</td>
<td>Story Pirates</td>
<td>Try “Environmental Science Issues”</td>
<td></td>
</tr>
<tr>
<td>60 mins. of activity</td>
<td>Math Park</td>
<td>Go for a walk or hike</td>
<td></td>
</tr>
<tr>
<td>60 mins. of activity</td>
<td>Cartoon Academy</td>
<td>Watch InPACT at Home</td>
<td></td>
</tr>
<tr>
<td>60 mins. of activity</td>
<td>InPACT at Home</td>
<td>Research a featured career</td>
<td></td>
</tr>
</tbody>
</table>

 sixty minutes of activity

HAVE FUN! (Free Space)

Go for a walk or hike

Read for 20 minutes

Watch Live From the Opera House

60 mins. of activity

Write a story about an animal
What to Do:

1. **Select a bird feeder base:** Pinecones are a popular foundation for a bird feeder, but you may also use an empty paper towel roll or a stale piece of bread.

2. **String it up:** Run a wire, dental floss or cotton string through your bird feeder. Secure the two ends together to make a loop.

3. **Make it sticky:** Coat the base with peanut butter. If you know someone who has peanut allergies, use honey instead.

4. **Add some goodies:** Roll the feeder in raisins, cranberries, unsalted and unbuttered popcorn, sunflower seeds, shelled plain peanuts or mixed birdseed.

5. **Hang it up:** Place your bird feeder on a hook or on a tree branch outside your window. Discover which birds are popular in your neighborhood, research what they like to eat, and make a bird feeder for them.

6. **Keep a wildlife journal:** Record what kind of birds and other animals come to visit your feeder!

Find more games and activities at pbskids.org/naturecat
Environmental Science Issues

The video “Environmental Science Issues” discusses the importance of our environment and the steps that we can take to help protect it. Taking care of the environment is everyone’s responsibility.

Try This!
Use the space below to draw your favorite environment. It might be a beautiful beach, a tranquil park, a wild forest, or anywhere that you would love to be. Then answer the questions that follow.

My Favorite Environment

What makes this your favorite environment?
___________________________________________________________________________________
___________________________________________________________________________________

What threats does your favorite environment face? For example, what might happen if someone came and cut down the trees or dumped trash on the beach?
___________________________________________________________________________________
___________________________________________________________________________________

What could you do to help protect your favorite environment?
___________________________________________________________________________________
___________________________________________________________________________________
Multiplying by 10

Directions: Scan the QR code to watch the video, and then solve the multiplication problems.

\[
\begin{align*}
10 \times 1 &= 10 \\
3 \times 10 &= \\
10 \times 11 &= \\
10 \times 8 &= \\
10 \times 2 &= \\
5 \times 10 &= \\
10 \times 3 &= \\
0 \times 10 &= \\
9 \times 10 &= \\
8 \times 10 &= \\
10 \times 10 &= \\
7 \times 10 &= \\
10 \times 9 &= \\
11 \times 10 &= \\
10 \times 6 &= \\
10 \times 5 &= \\
4 \times 10 &= \\
12 \times 10 &= \\
\end{align*}
\]
## Character Traits

### Who is your character?

<table>
<thead>
<tr>
<th>Choose a character trait to describe them. There are some suggestions below!</th>
</tr>
</thead>
</table>

SHOW the character trait to the reader! Write about what the character is DOING because of that trait.

<table>
<thead>
<tr>
<th>Other words for &quot;kind&quot;</th>
<th>Other words for &quot;energetic&quot;</th>
<th>Other words for &quot;friendly&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>considerate</td>
<td>exuberant</td>
<td>affable</td>
</tr>
<tr>
<td>generous</td>
<td>lively</td>
<td>amiable</td>
</tr>
<tr>
<td>helpful</td>
<td>spirited</td>
<td>gregarious</td>
</tr>
<tr>
<td>thoughtful</td>
<td>vivacious</td>
<td>welcoming</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other words for &quot;funny&quot;</th>
<th>Other words for &quot;wise&quot;</th>
<th>Other words for &quot;unfriendly&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>amusing</td>
<td>knowledgable</td>
<td>antisocial</td>
</tr>
<tr>
<td>comical</td>
<td>perceptive</td>
<td>disagreeable</td>
</tr>
<tr>
<td>hilarious</td>
<td>prudent</td>
<td>hostile</td>
</tr>
<tr>
<td>silly</td>
<td>shrewd</td>
<td>rude</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other words for &quot;lazy&quot;</th>
<th>Other words for &quot;hard-working&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>lackadaisical</td>
<td>diligent</td>
</tr>
<tr>
<td>lethargic</td>
<td>industrious</td>
</tr>
<tr>
<td>passive</td>
<td>persevering</td>
</tr>
<tr>
<td>weary</td>
<td></td>
</tr>
</tbody>
</table>
DIY Air Cannon

FUN FACT
Dolphins can create vortex rings to play with in the ocean by blowing air through their blowholes. The quick burst of air combined with the round shape of the blowhole creates a vortex ring of bubbles.

AIR PRESSURE
Air pressure, also known as atmospheric pressure, is the force exerted on a surface by the weight of air. Even though it is invisible to our eyes, the air surrounding us puts about 14.7 pounds per square inch of pressure on everything on the surface of Earth. That’s a lot of pressure!

MATERIALS
- Plastic or styrofoam cups
- Scissors
- Balloon
- Various items to knock over

DIFFICULTY

Why do scientists love renewable energy so much?
*Answer on the next page

VISIT
DIYSCIENCETIME.ORG
FOR MORE SCIENCE FUN!

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DIY Air Cannon

EXPERIMENT

Step 1: Gather your materials.

Step 2: Cut the neck off of the balloon and keep the large part.

Step 3: Carefully cut a hole in the bottom of the cup about the size of a dime with your scissors.

Step 4: Attach the cut balloon to the mouth of the cup. Be sure to stretch it tightly and reinforce by wrapping a rubber band around the lip of the cup.

Step 5: Tap or gently pull back the balloon and let it go to force the air out of your cannon.

Step 6: Set up a target, such as hanging toilet paper, to test to see how far your air rings can reach.

WHY IT WORKS

Although you can’t see it, your cup is filled with air. When you apply a force to the air molecules by pulling back the balloon and letting it snapback, the air molecules are pushed towards the opening. This movement sets off a quick chain reaction of collisions with other air molecules and the sides of the cup. The only way for the air molecules to escape is through the opening at the bottom of the cup. The quick escape of these air molecules forms a stream of air that flows straight out of the cannon.

EXTEND YOUR LEARNING

- What might happen if you used a different sized cup? Could you cut a 2 liter bottle to make a larger cannon?
- Could you try another stretchy material to take the place of the balloon?
- Does it change the experiment if you make the hole a different shape? What if you place it in a different spot?
- Experiment with your air cannon to see what changes allow you to shoot air the furthest.

WORKFORCE CONNECTION

A meteorologist studies interactions between temperature, humidity, air pressure, precipitation and vortices in the atmosphere. They develop an understanding of how vortices such as tornadoes, waterspouts and hurricanes form so they can predict the weather to keep people informed and safe. They also study and learn about the polar vortex and how it affects the weather during winter.
Create a better way to combine and carry multiple drinks (rather than a plastic 6-pack ring).

What is the problem?

ASK ▶▶▶ What is the problem?

IMAGINE ▶▶▶ Brainstorm possible solutions.

PLAN ▶▶▶ Pick an idea and plan out how you are going to do it.

CREATE ▶▶▶ Build it!

What worked? What didn’t?

IMPROVE ▶▶▶ How can you make it better?

SHARE ▶▶▶ Share your idea!

What other materials could you find and use?

• Cardboard
• Paint Stirrers
• Popsicle Sticks
• Rubber Bands
• Tape/String/Glue
• Ruler
• Wax Paper/Aluminum Foil

Try these materials to create your drink holder!
# Week 2: Across America  
**June 26 – July 2**

From coast to coast, explore what it means to be American. Our featured careers this week are reporter, architect, and paramedic. Scan the QR code or visit [MichiganLearning.org/Summer/America](http://MichiganLearning.org/Summer/America) to explore all of our videos this week.

Use the sheet below to mark off this week’s activities as you complete them. See if you can get a BINGO! Some of them are in this book, and some ask you to use your imagination or go outside.

<table>
<thead>
<tr>
<th>Watch Story Pirates</th>
<th>Read for 20 minutes</th>
<th>Research a featured career</th>
<th>Guess the age of a building</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>60 mins. of activity</strong></td>
<td><strong>Read for 20 minutes</strong></td>
<td><strong>Research the Native Americans of Michigan</strong></td>
<td><strong>Watch DIY Science Time</strong></td>
</tr>
<tr>
<td><strong>Research the Native Americans of Michigan</strong></td>
<td><strong>Learn about a family member’s job</strong></td>
<td><strong>Watch DIY Science Time</strong></td>
<td><strong>60 mins. of activity</strong></td>
</tr>
<tr>
<td><strong>60 mins. of activity</strong></td>
<td><strong>Draw a local landmark</strong></td>
<td><strong>HAVE FUN! (Free Space)</strong></td>
<td><strong>Go swimming</strong></td>
</tr>
<tr>
<td><strong>Draw a local landmark</strong></td>
<td><strong>Find all the states that border Michigan</strong></td>
<td><strong>Go for a walk or hike</strong></td>
<td><strong>Read for 20 minutes</strong></td>
</tr>
<tr>
<td><strong>Find all the states that border Michigan</strong></td>
<td><strong>Watch InPACT at Home</strong></td>
<td><strong>Name 3 states that start with the letter M</strong></td>
<td><strong>Spot a fire truck</strong></td>
</tr>
<tr>
<td><strong>Watch Curious About Careers</strong></td>
<td><strong>Do a good deed</strong></td>
<td><strong>Watch InPACT at Home</strong></td>
<td><strong>Name 3 states that start with the letter M</strong></td>
</tr>
<tr>
<td><strong>Watch InPACT at Home</strong></td>
<td><strong>Read for 20 minutes</strong></td>
<td><strong>Go for a walk or hike</strong></td>
<td><strong>Spot a fire truck</strong></td>
</tr>
</tbody>
</table>
The buildings in your neighborhood may all be the same age, or they might have been built at different times. Take a walk and guess whether the buildings are old or new. What clues do you look for to help you guess the age of a building?

- **Traditional old mill building**
  - Built in early 1900s
  - Masonry construction, using brick made from local clay quarries
  - Structure is sound and sturdy
  - Large interior spaces
  - Mill is no longer in operation and building is vacant

- **Modern office building**
  - Built in the 1950s
  - Steel frame sound
  - Exterior building cladding is in disrepair and has degraded as a result of moisture damage
  - Many roof leaks
  - Exterior glazing and cladding has poor insulation, contributing to high energy usage

- **Traditional style single family house**
  - Built in late 1800s
  - Wood frame structure with wood siding in poor and deteriorated condition
  - Shingle roof with many leaks
  - Interior is severely damaged
  - Broken windows allow in the weather
  - Large overgrown yard at rear
  - Dwelling is uninhabited/abandoned

- **Historic style house**
  - Built in mid 1800s
  - Wood frame structure with brick exterior in good condition except for isolated patches of deterioration due to age
  - Interior finishes are worn
  - One of a few remaining examples of this architectural style in the town
  - Site of the inaugural speech of the first elected mayor

- **Traditional style community church building**
  - Built in late 1800s
  - Wooden structure and siding is in sound condition
  - Paint and finishes are peeling and flaking, and need maintenance
  - Church is currently used by a local congregation
  - Attached to the rear of the church is a large garden with mature trees
These are examples of landmarks. What landmarks are in your neighborhood? Draw a picture of a local landmark!
Maps help us learn about the world around us.

1. Find the title of the map and the compass.
2. Draw a circle around the state you live in. How many states border it? Name them.
3. Draw a square around a state you would like to visit. Why do you want to visit this state?

Tell someone.
What **emotion** would you like to "Show, Not Tell"? Pick one from the examples below, or just choose your own! If you’re not sure what some of the words mean, look at the picture of the face for a clue.

<table>
<thead>
<tr>
<th>Emotion</th>
<th>Emotion</th>
<th>Emotion</th>
<th>Emotion</th>
<th>Emotion</th>
<th>Emotion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elated</td>
<td>Jubilant</td>
<td>Thankful</td>
<td>Gloomy</td>
<td>Sorrowful</td>
<td></td>
</tr>
<tr>
<td>Lonely</td>
<td>Anxious</td>
<td>Petrified</td>
<td>Startled</td>
<td>Frustrated</td>
<td>Furious</td>
</tr>
<tr>
<td>Irate</td>
<td>Amazed</td>
<td>Bewildered</td>
<td>Shocked</td>
<td>Inquisitive</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Who is your character?</th>
<th>SHOW the emotion to the reader. What does the character SAY because they feel that way?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What <strong>emotion</strong> are they feeling?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
MAGNETISM

Magnetic activities like this can be very attractive! Magnets can be found in nature and can also be created by using electricity. Electromagnets are devices that create a magnetic field through the application of electricity.

DIY SCIENCE TIME ORG
FOR MORE SCIENCE FUN!

 alloy

DIFFICULTY

- Battery
- Wire
- Nail
- Paper clips
- Electrical tape

What is a magnet’s favorite sport?

*Answer on the next page
DIY Electromagnets

**EXPERIMENT**

**Step 1:** Gather your materials.

**Step 2:** Coil your wire around the nail, leaving some extra wire on both ends.

**Step 3:** Attach the wire to the battery on both ends using electrical tape.

**Step 4:** Bring the nail close to the paperclips to test your electromagnet!

**WHY IT WORKS**

During this activity you are creating an electromagnet. An electromagnet uses electricity to create a magnetic field. The magnetic field is created by the electric current running through the wire, and is concentrated around the inner coil of wire where the nail is located. The nail is now a temporary magnet that can pick up small pieces of metal.

**EXTEND YOUR LEARNING**

- How could you make your electromagnet pick up more paper clips? Or bigger paper clips?
- Could you stack two batteries together?
- What would happen if you changed the type or size of nail you are using?
- Do different types of nails work?

**WORKFORCE CONNECTION**

A radiologist is a doctor who performs and reads medical imaging such as ultrasounds, X-rays and MRIs to check for problems and diseases. MRIs (Magnetic Resonance imaging) are devices that take pictures of the inside of the body using electromagnets.

*Joke Answer - Pole Vaulting!
The Grand Traverse Band of Ottawa and Chippewa Indians is one of the 12 federally recognized tribes in Michigan.

- According to Cindy Winslow, the TCAPS Indigenous Education Cultural Program Director:
  - We are made up of the three fires - Odawa, Ojibway, and Potawatomi.
  - We are woodland Natives.
  - We speak Anishinaabemowin.
  - We have powwows, which are a gathering of families for celebration.
  - Regalia is what a dancer wears during traditional dances, like at a powwow. Regalia is not a costume. Regalia pieces have meaning.
  - We are guided by the grandfather teachings of honesty, bravery, wisdom, humility, respect, love, and truth.
  - We are hunters and gatherers.

**Did You Know?**

- Small Paper Lunch Sack
- Large Paper Grocery Bag
- Markers/Crayons
- Glue
- Beads (Optional)

**Where do you live?**

**Hint:**

https://native-land.ca is a great resource

“I live on the land of the [tribal nation].”
# Week 3: Sports and Games

**July 3-9**

Get serious about fun pastimes from soccer to Sudoku. Our featured careers this week are dancer, athletic trainer, and musician. Scan the QR code or visit MichiganLearning.org/Summer/Sports to explore all of our videos this week.

Use the sheet below to mark off this week’s activities as you complete them. See if you can get a BINGO! Some of them are in this book, and some ask you to use your imagination or go outside.

<table>
<thead>
<tr>
<th>Try an InPACT Activity Card</th>
<th>Read for 20 minutes</th>
<th>Watch Math Park</th>
<th>Watch Curious About Careers</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 mins. of activity</td>
<td>Read for 20 minutes</td>
<td>Watch DIY Science Time</td>
<td>Research a featured career</td>
</tr>
<tr>
<td>Practice portioning with Cyberchase</td>
<td>Watch Story Pirates</td>
<td>Try an InPACT Activity Card</td>
<td>Learn about a famous athlete</td>
</tr>
<tr>
<td>Help an adult make a healthy dinner</td>
<td>HAVE FUN! (Free Space)</td>
<td>Make up a new sport or game</td>
<td>Watch Live From the Opera House</td>
</tr>
<tr>
<td>60 mins. of activity</td>
<td>Read for 20 minutes</td>
<td>Make an obstacle course</td>
<td>60 mins. of activity</td>
</tr>
<tr>
<td>Watch InPACT at Home</td>
<td>Read for 20 minutes</td>
<td>Try a new food</td>
<td></td>
</tr>
</tbody>
</table>
Jackie loves to be active. To help maintain good health and give her enough energy, she needs the following amounts from each food group each day:

<table>
<thead>
<tr>
<th>Fruits</th>
<th>Grains</th>
<th>Protein</th>
<th>Dairy</th>
<th>Vegetables</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 1/2 Cups</td>
<td>5 ounces</td>
<td>5 ounces</td>
<td>3 cups</td>
<td>2 Cups</td>
</tr>
</tbody>
</table>

On the chart below, circle foods and drinks that will give Jackie the total amounts from each food group that she needs for one day. Add your choices up and total carefully to be sure. Note: “oz.” is the abbreviation for ounce.

<table>
<thead>
<tr>
<th>Vegetables</th>
<th>Fruits</th>
<th>Grains</th>
<th>Protein</th>
<th>Dairy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small bowl of romaine lettuce (1/2 cup)</td>
<td>Small orange (1/2 cup)</td>
<td>2 slices whole-wheat bread (2 oz whole grains)</td>
<td>Slice of turkey (1 oz)</td>
<td>Glass fat-free milk (1 cup)</td>
</tr>
<tr>
<td>Small bowl spinach (1/2 cup)</td>
<td>Small apple (1/2 cup)</td>
<td>5 whole-wheat crackers (1 oz whole grains)</td>
<td>1 hard-boiled egg (1 oz)</td>
<td>2 slices low-fat Swiss cheese (1 cup)</td>
</tr>
<tr>
<td>Medium baked potato (1 up)</td>
<td>Large banana (1 cup)</td>
<td>1/2 cup cooked brown rice (1 oz whole grains)</td>
<td>1/2 cup cooked black beans (2 oz)</td>
<td>1.5 oz low-fat shredded cheddar cheese (1 cup)</td>
</tr>
<tr>
<td>12 baby carrots (1 cup)</td>
<td>16 grapes (1/2 cup)</td>
<td>Packet of instant oatmeal (1 oz whole grains)</td>
<td>Small hamburger patty (3 oz)</td>
<td>Snack-size container low-fat yogurt (1/2 cup)</td>
</tr>
<tr>
<td>Large sweet potato (1 cup)</td>
<td>Mango (1 cup)</td>
<td>3 cups popped popcorn (1 oz whole grains)</td>
<td>Small chicken breast half (3 oz)</td>
<td>1 fat-free milk chug (1 cup)</td>
</tr>
<tr>
<td>6-8 cherry tomatoes (1 cup)</td>
<td>large peach (1 cup)</td>
<td>Medium piece of cornbread (2 oz refined grains)</td>
<td>12 almonds (1 oz)</td>
<td>Slice low-fat American cheese (1/2 cup)</td>
</tr>
<tr>
<td>Large ear of corn (1 cup)</td>
<td>large plum (1/2 cup)</td>
<td>Small whole-wheat tortilla (1 oz whole grains)</td>
<td>Small salmon patty (3 oz)</td>
<td>Small low-fat milk carton (1 cup)</td>
</tr>
</tbody>
</table>

For more games and activities, visit pbskidsforparents.org
CREATE YOUR HERO

Draw and label your hero!

Hero’s name
Activity Cards

Cut out the cards. When you're feeling antsy, try following the directions for one of the exercises!

Blast-Off Lunges

INSTRUCTIONS
1. Get into a lunge position with left leg forward, hips underneath you, and right leg behind your right hip.
2. Slowly sink into a lunge, trying to get your knee to touch the ground.
3. Immediately "blot off" by hopping upwards and into next lunge position with right leg forward and left leg behind.
4. If needed, instead of jumping into the next lunge position, jump with feet together and then bounce into lunge position.
5. Repeat as many rounds as possible.

Side Leg Lifts

INSTRUCTIONS
1. Start by laying on your side with your legs stacked on top of each other.
2. Slowly raise your top leg up towards the sky and then back down.
3. Complete 10 repetitions and then switch legs.
4. Complete 3 sets per leg.
5. For added challenge, tape a bag of water to the top leg for some added weight!

Tap Backs

INSTRUCTIONS
1. Stand up tall and proud with your feet together and hands on your hips.
2. Take your right foot and tap it right behind you, then place back to starting position.
3. Take your left foot and tap it right behind you, then place back to starting position.
4. Repeat as fast as can to get 100 tapbacks (50 on each leg).

Ski Jumps

INSTRUCTIONS
1. Start by standing tall with your feet shoulder-width apart.
2. Using only your right foot, jump to the left about 2-3 feet and land on your left foot.
3. Gather yourself and then using only your left foot, jump to the right 2-3 feet and land on your right foot.
4. Repeat this as many times as you can for 30 seconds.
5. Bonus: After each time you jump, touch the ground with the same hand as the side you landed on.

Cereal Bowl

INSTRUCTIONS
1. Lay flat on your back with feet together.
2. Bring your knees together and raise both legs up so that your feet are lifting the ceiling.
3. In slow motion, ski the imaginary bowl of cereal with feet and lean hands under your bottom.
4. Repeat 30 times.

Lay Down Hip Stretch

INSTRUCTIONS
1. Start by sitting at the edge of a bed in a relaxed position with your feet hanging soft.
2. Lay back, and pull your right knee towards your chest while keeping your left leg hanging off the bed.
3. Pull your knee until you feel a stretch in your left hip and hold for 10-15 seconds.
4. Relax, switch legs, and then repeat 2-3 times per leg.

Aligator Breath

INSTRUCTIONS
1. Stand with legs hip-width apart.
2. Spread arms out wide and inhale as you reach outward.
3. When you exhale, clap your hands together as many times as possible like baby alligator paws.

Cloud Watching

INSTRUCTIONS
1. Find a day where there are a lot of clouds in the sky.
2. Lay down on your back on the ground or in the grass and look up into the sky.
3. Watch and admire all the different clouds. Look at the different shapes they make, how fast they go, where they're moving to!
This page was left blank to cut out the activity on the other side.
Fractions of a Set

Directions: Scan the QR code to watch the video, and then write the fraction you see in the picture.

- Star: $\frac{4}{5}$
- Pentagon: $\frac{}{}$
- Circle: $\frac{}{}$
- Hexagon: $\frac{}{}$
- Triangle: $\frac{}{}$
- Octagon: $\frac{}{}$

Michigan Learning Channel Math Park Episode 304
DIY Snake Bubbles

FUN FACT
Some fish use bubbles as a nest for their baby fish eggs. These fish blow lots of tiny bubbles that float to the top of the water, creating a “hidden” spot for the baby fish eggs to hide from predators until they can hatch.

SURFACE TENSION
Surface tension allows liquids to be strong. The strength is from cohesion, where a liquid’s molecules are attracted to each other. Water is made of many tiny H2O molecules that are attracted to each other especially at the surface. Soaps and detergents decrease surface tension, breaking down dirt and grime. This decrease in surface tension allows bubbles to be made.

MATERIALS
- Bowl
- Craft stick
- Water
- Sock
- Dish soap
- Scissors
- Plastic water bottle

DIFFICULTY

What is a bubble’s favorite sport?
*Answer on the next page

VISIT DIYSCIENCETIME.ORG FOR MORE SCIENCE FUN!
DIY Snake Bubbles

EXPERIMENT

Step 1: Gather your materials.
Step 2: Pour 2 cups of water into the bowl.
Step 3: Add 1/4 cup dish soap to 2 cups of water, and stir with a craft stick.
Step 4: Use scissors to carefully cut off the bottom of the water bottle.
Step 5: Put a sock over the bigger end of the bottle.
Step 6: Dip the sock into the soapy solution.
Step 7: Blow air into the smaller end of the bottle.

WHY IT WORKS

Water mixed with soap decreases the water's surface tension and allows the water to become “flexible”. A soap bubble filled with air is made of three very thin layers: soap, water, and another layer of soap. This sandwiches the water, allowing a bubble to form. As you blow the soapy water mixture through the holes in the sock material, tiny bubbles are formed very close together making the shape of a snake.

EXTEND YOUR LEARNING

- Do the bubbles look different if you use socks made of different materials? Try a dress sock or tights?
- What other bubble makers or bubble wands can you design?
- What happens if you change the amount of soap or water in your bubble solution?
- What might happen to the strength of your bubble if you were to add glycerin or corn syrup?

WORKFORCE CONNECTION

Chemists work with soaps and detergents to make the best cleaner. They need to understand the chemistry of the soap molecules and how they reduce the surface tension of water as well as grabbing onto the oils and dirt.

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Create a better sneaker.

What other materials could you find and use?

- Cardboard
- Paint Stirrers
- Drinking Straws
- Tree Bark
- Tennis Balls
- Styrofoam
- Balloons
- Plastic Shopping Bags
- Popsicle Sticks
- Rubber Bands
- Tape/String/Glue
- Ruler
- Wax Paper
- Aluminum Foil
- Tennis Balls
- Rubber Bands
- Balloons
- Tape/String/Glue
- Ruler
- Wax Paper
- Aluminum Foil
- Tennis Balls
- Rubber Bands
- Balloons
- Tape/String/Glue
- Ruler
- Wax Paper
- Aluminum Foil
- Tennis Balls
- Rubber Bands
- Balloons
- Tape/String/Glue
- Ruler
- Wax Paper

ASK >>> What is the problem?

IMAGINE >>> Brainstorm possible solutions.

PLAN >>>> Pick an idea and plan out how you are going to do it.

CREATE >>> Build it!

IMPROVE >>>> What worked? What didn’t? How can you make it better?

SHARE >>> Share your idea!
Week 4: Engineering

Tinker, design, build, rebuild, and find engineering everywhere. Our featured careers this week are engineers from all kinds of specializations, auto design director, and software developer. Scan the QR code or visit MichiganLearning.org/Summer/Engineering to explore all of our videos this week.

Use the sheet below to mark off this week’s activities as you complete them. See if you can get a BINGO! Some of them are in this book, and some ask you to use your imagination or go outside.

<table>
<thead>
<tr>
<th>Watch DIY Science Time</th>
<th>60 mins. of activity</th>
<th>Read for 20 minutes</th>
<th>Watch ArchiTREKS</th>
<th>Try the Daring Design Challenge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read for 20 minutes</td>
<td>Find a green building outside</td>
<td>Watch Career Girls</td>
<td>Ask a family member about their job</td>
<td>60 mins. of activity</td>
</tr>
<tr>
<td>60 mins. of activity</td>
<td>Watch Story Pirates</td>
<td>HAVE FUN! (Free Space)</td>
<td>Design a robot</td>
<td>Read for 20 minutes</td>
</tr>
<tr>
<td>Research a featured career</td>
<td>Redesign something in your house</td>
<td>List things that use electricity</td>
<td>Watch InPACT at Home</td>
<td>Design an invention</td>
</tr>
<tr>
<td>Watch InPACT at Home</td>
<td>Read for 20 minutes</td>
<td>Watch Math Park</td>
<td>60 mins. of activity</td>
<td>Find a tall building in your neighborhood</td>
</tr>
</tbody>
</table>
Equivalent Fractions

Directions: Scan the QR code to watch the video, and then circle the symbol that goes between them.

\[
\begin{align*}
\frac{3}{10} &< \frac{5}{5} < 1 \\
\frac{1}{4} &< \frac{1}{8} \\
\frac{5}{5} &< \frac{5}{15} \\
\frac{1}{2} &< \frac{1}{4}
\end{align*}
\]
DESCRIBE YOUR HERO

What are some words to describe your hero?

What is your hero really GOOD at, or what is your hero’s TALENT?

What is your hero’s WEAKNESS, or what is your hero AFRAID of?

What does your hero like to do on a NORMAL DAY, when they don’t have a big problem to solve?
Daring Design Challenge

Work together to build something new.

Sally and Nick build a bridge that’s long and strong, a boat that floats, and a vase with a cool base. What can YOU create? Work together with a friend and challenge your building brains by designing some amazing creations in this collaborative game.

**Materials**

- Daring Design Challenge cards (print two-sided)
- The Engineering Design Process wheel
- Paper
- Pencil
- Tape
- Various household items
  (Examples: wooden craft sticks, paper, straws, building blocks, fabric scraps, cans, aluminum foil, paper plates and cups, string, etc.)

**Play the Game**

1. Print and cut out the Daring Design Challenge cards and the Engineering Design Process wheel.
2. Together, select a game card from the pile.
3. Follow the challenge and make something amazing as you move step by step—along with THE CAT IN THE HAT—through the Design Process wheel.

**Tip**

The shape and weight of a design can affect how it works. You may need a wider base or different material for your designs to balance, float, or move.

**Remember**

Accidents happen — if you’re lucky! It’s okay if things don’t always happen how we planned. Sometimes we discover something unexpected that makes our designs even better.

**More Ways to Play**

1. Think of a problem that needs to be solved. Using the four blank Daring Design Challenge cards (included in this printout), create four more design challenges. Try them with a friend.
2. Choose a design you already created and make it again using a different material.
3. Time how long it takes you to build a design. Then try it again. Can you beat your time?
1. With an adult’s help, cut out THE CAT IN THE HAT figure, the stabilizer, and the wheel. Then cut along the vertical lines at the base of THE CAT IN THE HAT and the top of the stabilizer.
2. Push the stabilizer into the base of THE CAT IN THE HAT to create a “+”. THE CAT IN THE HAT should now stand.
3. Use THE CAT IN THE HAT to guide you around the wheel.
This page was left blank to cut out the activity on the other side.
<table>
<thead>
<tr>
<th>Imagine &amp; Plan</th>
<th>Improve!</th>
<th>Imagine &amp; Plan!</th>
<th>Test!</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What can you do to make paper stronger and taller?</strong></td>
<td><strong>Can you make it last longer?</strong></td>
<td><strong>Can you make something that helps you make something that helps you feel your creation?</strong></td>
<td><strong>How do you know if it is balanced?</strong></td>
</tr>
<tr>
<td><strong>Using only paper, build a tall as your table.</strong></td>
<td><strong>Build a tower.</strong></td>
<td><strong>Ask a friend.</strong></td>
<td><strong>Launch that can.</strong></td>
</tr>
<tr>
<td><strong>Three?</strong></td>
<td><strong>Just because!</strong></td>
<td><strong>Create something that can launch.</strong></td>
<td><strong>A coin or the air.</strong></td>
</tr>
<tr>
<td><strong>Can it balance two pencils?</strong></td>
<td><strong>Make it even better.</strong></td>
<td><strong>Hope it floats!</strong></td>
<td><strong>What object can help?</strong></td>
</tr>
<tr>
<td><strong>A pencil that will balance taller than you.</strong></td>
<td><strong>Have fun building together.</strong></td>
<td><strong>Or test your boat.</strong></td>
<td><strong>Observe how things break.</strong></td>
</tr>
<tr>
<td><strong>Create!</strong></td>
<td><strong>Create!</strong></td>
<td><strong>Fill the bathtub.</strong></td>
<td><strong>Sounds can come from hitting.</strong></td>
</tr>
<tr>
<td><strong>Music!</strong></td>
<td><strong>Create!</strong></td>
<td><strong>Test!</strong></td>
<td><strong>Improve!</strong></td>
</tr>
<tr>
<td><strong>Create!</strong></td>
<td><strong>Create!</strong></td>
<td><strong>Test!</strong></td>
<td><strong>Create!</strong></td>
</tr>
<tr>
<td><strong>Music!</strong></td>
<td><strong>Create!</strong></td>
<td><strong>Test!</strong></td>
<td><strong>Create!</strong></td>
</tr>
</tbody>
</table>
This page was left blank to cut out the activity on the other side.
DIY Elephant Toothpaste

FUN FACT
Seaweed is in our toothpaste! Seaweed acts as a thickening agent that allows toothpaste to be squeezed from its tube!

CHEMICAL REACTIONS
Chemical reactions take place when the molecular or ionic structure of a substance is rearranged. When a chemical reaction occurs, a new substance is created and the process is irreversible. Today we will be making elephant toothpaste!

MATERIALS
- Yeast
- Dish soap
- Measuring spoons
- Empty plastic bottle
- Cup with warm water
- 3% Hydrogen peroxide

DIFFICULTY

Why are chemists great at solving problems?
*Answer on the next page

VISIT DIYSCIENCETIME.ORG FOR MORE SCIENCE FUN!

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DIY Science Time

“Science is wherever YOU are!”

DIY Elephant Toothpaste

EXPERIMENT

Step 1: Gather materials.
Step 2: Place 2 tablespoons of yeast into 3 oz of warm water.
Step 3: Mix yeast and warm water, let stand until it gets frothy (about 3 minutes).
Step 4: Pour 4 ounces of hydrogen peroxide into an empty bottle.
Step 5: Squirt 1 tablespoon of dish soap into the hydrogen peroxide.
Step 6: Pour your yeast mixture into the bottle.
Step 7: Observe what happens!

WHY IT WORKS

“Elephant toothpaste” is created when a chemical reaction takes place and releases one oxygen atom from the hydrogen peroxide ($H_2O_2$). Hydrogen peroxide decomposes, or breaks down, into water ($H_2O$) and oxygen ($O_2$) naturally over time, but the yeast causes this to occur faster. The yeast has an enzyme in it called catalase. Catalase is a catalyst, something that increases the speed of the reaction. The catalyst is what causes the oxygen to be released quickly to create our “elephant toothpaste.” So why did we add soap? We wanted to capture all of the released oxygen (gas) from the chemical reaction!

EXTEND YOUR LEARNING

- Would the experiment still work if you added more yeast?
- What happens if you don’t add the soap?
- Does the shape or the size of the bottle change how the elephant toothpaste flows?

WORKFORCE CONNECTION

Cosmetologists, people who study the application of beauty treatments, work carefully with chemical reactions on a daily basis to help color people’s hair. When someone’s hair is bleached, a chemical reaction takes place to change the melanin from brown to a colorless (pale yellow) color. This irreversible process (chemical change) then allows the cosmetologist to apply a new color to the hair.
Week 5: Our Stories

From legends to our everyday lives, stories shape who we are. Our featured careers this week are writer, archaeologist, and teacher. Scan the QR code or visit MichiganLearning.org/Summer/Stories to explore all of our videos this week.

Use the sheet below to mark off this week's activities as you complete them. See if you can get a BINGO! Some of them are in this book, and some ask you to use your imagination or go outside.

<table>
<thead>
<tr>
<th>Learn about a family member’s job</th>
<th>Read for 20 minutes</th>
<th>Research a featured career</th>
<th>Watch Cartoon Academy</th>
<th>Draw a family portrait</th>
<th>Try “Going on a Book-nic”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read for 20 minutes</td>
<td>60 mins. of activity</td>
<td>Read for 20 minutes</td>
<td>Read a story from a different country</td>
<td>60 mins. of activity</td>
<td></td>
</tr>
<tr>
<td>Fill out the Career Girls Comic</td>
<td>Watch Story Pirates</td>
<td>Watch Story Pirates</td>
<td>Watch InPACT at Home</td>
<td>Watch Math Park</td>
<td></td>
</tr>
<tr>
<td>60 mins. of activity</td>
<td>HAVE FUN! (Free Space)</td>
<td>Watch Story Pirates</td>
<td>Make a family recipe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Watch Live From the Opera House</td>
<td>Write an original story</td>
<td>Watch DIY Science Time</td>
<td>Watch InPACT at Home</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Watch InPACT at Home</td>
<td>Read for 20 minutes</td>
<td>Draw a comic strip</td>
<td>60 mins. of activity</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

HAVE FUN!
### Book Character Hunt: A-Z

**Instructions:**
1. Assign one person to be the recorder for your book character hunt. Choose an adult or child who can write down the names.
2. Work together to name the book characters that start with the letters A-Z, and record them in the list below. Be creative and ask for help when you need it.

<table>
<thead>
<tr>
<th>Letter</th>
<th>Book Character</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td></td>
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<td>E</td>
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<td>F</td>
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<td>M</td>
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<td>N</td>
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<td>W</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Z</td>
<td></td>
</tr>
</tbody>
</table>

*Find more games and activities at pbskidsforparents.org*
Career Comics 1  

Career Video:  

Scan the QR code to visit the Career Girls website and find a career video that interests you. Then ask yourself: What is this job like? Create a comic starring you in this career. At the top, fill in the career and sign your name. Use words and pictures to tell what happens on the job!

I Want to Be ____________________________ By ____________________________

If you like __________ and __________, you might like to be __________.

(career)

How do you get ready for this career?

You can start by ____________________________ and ____________________________

You’ll need some skills, too.

Like these:
1. ____________________________
2. ____________________________
3. ____________________________

What else can you do to prepare?
Adding & Subtracting Fractions

Directions: Scan the QR code to watch the video, and then add and subtract the fractions.

\[
\frac{4}{8} + \frac{1}{8} = \quad \frac{5}{8}
\]

\[
\frac{2}{4} + \frac{1}{4} = \quad \frac{3}{4}
\]
Every story involves some sort of problem, but in a hero story that problem is SO HUGE that a whole community is in danger, and a hero needs to save the day! For more ideas on how to create a Hero Sized Problem, check out our Hero Stories videos at storypirates.com/storypiratesuniversity.

What is the **COMMUNITY** where your story takes place? A city? A town? An underground snow fortress? Use your imagination, then draw and label a picture or map!

What is the **HERO SIZED PROBLEM** in the community?
CREATIVE SOLUTIONS

The Hero Sized Problems of today can’t be solved just by punching, kicking, and blowing things up. Heroes need to be able to use their imaginations, and come up with creative ways to solve problems that nobody has ever thought of before. For more ideas on how to invent some CREATIVE SOLUTIONS, and then have your hero TRY, FAIL, AND TRY AGAIN, check out our Hero Stories videos at storypirates.com/storypiratesuniversity.

The **FIRST** solution the hero tried:

Unfortunately (what went wrong?):

The **NEXT** thing the hero tried:

Unfortunately (what went wrong?):

The solution that **FINALLY** worked:

It worked because:
DIY Heatless Lava Lamp

FUN FACT
Lava lamps were invented in 1948 and were originally called “Astro Lamps.” The lava lamp made its television debut in the US in the 1960s on a show called “Doctor Who.” Sales skyrocketed after this TV appearance!

DENSITY
Density is a measurement of the matter an object has within a given volume. Objects with more matter in a given volume have a higher density. Objects with less matter in the same amount of volume have a lower density. Density is found by dividing the mass of an object by its volume.

MATERIALS
- 2-liter bottle
- Vegetable oil
- Water
- Effervescent tablets
- Food coloring
- Funnel

DIFFICULTY

What runs but never walks?
*Answer on the next page

VISIT DIYSCIENCEATIME.ORG FOR MORE SCIENCE FUN!

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**DIY Heatless Lava Lamp**

**EXPERIMENT**

- **Step 1:** Gather your materials.
- **Step 2:** Clean and rinse your empty 2-liter bottle.
- **Step 3:** Pour 3 cups of water into your bottle.
- **Step 4:** Add food coloring to the water.
- **Step 5:** Gently pour vegetable oil into the bottle and observe how the water and oil interact.
- **Step 6:** After allowing the water and oil to settle, drop pieces of the effervescent tablets into the bottle.
- **Step 7:** Observe what happens!

**WHY IT WORKS**

The oil and water stay separate because they have different densities. The oil floats on the water because it's less dense than water. When the effervescent tablet sinks to the bottom, it mixes with the water and starts a chemical reaction that produces carbon dioxide, a gas that rises through the oil. When these bubbles rise, they pull some of the colored water up and through the oil. The gas eventually escapes at the top, but the water falls back down through the oil because it is more dense!

**EXTEND YOUR LEARNING**

- What happens if you add more pieces of effervescent tablet, or change the amount of water in the bottle?
- Try shining a light, like a flashlight, through the bottle. What can you see differently?
- Is there a limit to the number of times you can repeat the experiment?

**WORKFORCE CONNECTION**

Paint chemists are scientists who study the properties and use of paint. Most paints are made of the same basic ingredients: pigments, binders, liquids, and additives. How these ingredients interact due to their densities plays an important part in determining the way that paint performs. Paint chemists study things like how well a paint can cover a surface or how long a paint may be able to last outside in the weather.
Poetry brings people together. It is a great way for you to share your thoughts and feelings about big ideas. Poetry helps us see the beauty in ourselves and others as we work with the beauty of words.

I am _______________________
I wonder _____________________
I hear _________________________
I see __________________________
I want _________________________
I feel __________________________
I worry _________________________
I dream _________________________
I try _____________________________
I hope ___________________________
I am _____________________________ (repeat the first line)

What other materials could you find and use?
Week 6: Great Lakes
July 24-30

Dive in and explore the lakes that make Michigan special. Our featured careers this week are meteorologist, oceanographer, and water chemist. Scan the QR code or visit MichiganLearning.org/Summer/Lakes to explore all of our videos this week.

Use the sheet below to mark off this week’s activities as you complete them. See if you can get a BINGO! Some of them are in this book, and some ask you to use your imagination or go outside.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Go fishing</td>
<td>60 mins. of activity</td>
</tr>
<tr>
<td>Read for 20 minutes</td>
<td>Watch Story Pirates</td>
</tr>
<tr>
<td>Design a boat or ship</td>
<td>Go swimming</td>
</tr>
<tr>
<td>Draw an underwater world</td>
<td>List careers that work in or near water</td>
</tr>
<tr>
<td>Read for 20 minutes</td>
<td>Watch the sunrise</td>
</tr>
<tr>
<td>Make a pond viewer</td>
<td>60 mins. of activity</td>
</tr>
<tr>
<td>Read for 20 minutes</td>
<td>Watch the sunset</td>
</tr>
<tr>
<td>Read for 20 minutes</td>
<td>Make a pond viewer</td>
</tr>
<tr>
<td>Watch InPACT at Home</td>
<td>Watch Live From the Opera House</td>
</tr>
<tr>
<td>Watch Curious About Careers</td>
<td>Watch BeLEAF It or Not</td>
</tr>
<tr>
<td>Watch Curious About Careers</td>
<td>Play in the rain</td>
</tr>
<tr>
<td>Watch InPACT at Home</td>
<td>Read for 20 minutes</td>
</tr>
<tr>
<td>Watch InPACT at Home</td>
<td>Watch the sunrise</td>
</tr>
<tr>
<td>Name all 5 Great Lakes</td>
<td>60 mins. of activity</td>
</tr>
<tr>
<td>Design a boat or ship</td>
<td>Read for 20 minutes</td>
</tr>
<tr>
<td>Design a boat or ship</td>
<td>Watch Live From the Opera House</td>
</tr>
</tbody>
</table>

HAVE FUN!
A POND WITH A VIEW

DIFFICULTY: EASY

While there is action all around a pond, what do you think is happening in the water? Ponds are filled with animal and plant life that have special qualities that help them spend all or most of their lives underwater. Make this pond viewer to bring on your next pond exploration!

MATERIALS

- One-half gallon milk carton
- Scissors
- Waterproof, strong tape (e.g. duct tape) or a sturdy rubber band
- Heavy, clear plastic wrap

LET’S MAKE A POND VIEWER!

1. Have an adult cut off the very top of the milk carton and the very bottom to create a rectangular tube.

2. Tear off a sheet of plastic wrap and place it over one of the open ends. Fold down the plastic wrap... make sure wrap is smooth and tight for clear viewing.

3. Using the tape or the rubber band, secure the plastic wrap in place. Keep the plastic wrap as tight as possible so you have a flat viewing surface.

pbskids.org/naturecat

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POND VIEWING TIPS

1. Splashing and stirring up mud will make it difficult to see into the pond. Be as still as possible when using your viewer.

2. Despite what NatureCat says, it is noble and fun to get wet! If the shoreline is murky, slowly wade out to your knees before using your viewer where it may be less murky.

3. Other ways to view: on a dock, over the side of a canoe, or in a stream, lake or tide pool!

LET’S TAKE A CLOSER LOOK

Describe a plant or animal that you see. Draw a picture of it, and ask an adult to help you identify and label your picture.
Draw an underwater world.

What creatures live here?
A hero story needs lots of interesting dialogue. You want the reader to be able to hear it when your hero gives an inspiring speech, or whispers a secret plan, or makes a cool snappy comment. Practice writing some dialogue for your hero that you might put into a story later! For more ideas and information, watch our Hero Stories videos at storypirates.com/storypiratesuniversity.

Write some dialogue here. Use quotation marks, and check out the next page for some words you could use instead of “said”.

---

You can also draw your hero in an exciting scene, and add a speech bubble for what they're saying.
DIY Bouncy Ball Recipe

FUN FACT
Bini the Bunny holds the world record for the most basketball slam dunks in one minute by a rabbit. Bini made 7 dunks in just 60 seconds! Now that's one bouncy bunny!

POLYMERS
Polymers are large molecules made from bonded (chemically linked) groups of similar atoms. The word polymer is Greek for “many parts.” Polymers are made of many monomers (Greek for “one part”). A polymer is a chain of linked monomers. Polymers can be found all around us: bicycle tires, plastic plates, strands of our hair, and even super duper bouncy balls!

MATERIALS
- Ball mixture
- Glue
- Cornstarch
- Food coloring
- Mixing bowl
- Measuring spoons
- Borax Bath
- Borax
- Warm water
- Mixing bowl

DIFFICULTY

Why did the bucket bounce?
*Answer on the next page

VISIT DIYSCISCNCETIME.ORG FOR MORE SCIENCE FUN!

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DIY Bouncy Ball Recipe

EXPERIMENT

**Step 1:** Create a Borax bath by mixing together 2 Tbsp Borax into 1 cup of warm water in a mixing bowl.

**Step 2:** Create your ball mixture by mixing together 1 Tbsp cornstarch with 2 Tbsp of glue. If you want your ball to be colored, add food coloring and mix together in another bowl.

**Step 3:** Carefully drizzle your ball mixture into your Borax bath. Allow it to sit in the bath for 15-20 seconds. Stir and make sure that all parts of the mixture have been activated by the Borax bath (should feel firm).

**Step 4:** Remove your ball mixture from the Borax bath and form into a ball shape. A measuring spoon can be used as a guide to help shape your ball. Place your ball back into the Borax bath for 60 seconds.

**Step 5:** Be sure to wash your hands after handling the Borax bath.

**Step 6:** Try bouncing and testing your ball!

WHY IT WORKS

You are seeing a chemical reaction right before your eyes during this experiment. The glue is a polymer and the Borax links together the molecule chains of the glue. The cornstarch helps to thicken the mixture, allowing it to be formed and hold a ball-like shape. Although you can't see the molecules linking in the chemical reaction, we know a chemical reaction has taken place because our ingredients have combined to create a new item!

EXTEND YOUR LEARNING

- What happens if you changed the amount of cornstarch or glue used in the recipe? Could you make a larger ball?
- Does your bouncy ball behave differently if chilled in the freezer?
- Could you separate your recipe and use different food coloring to make a multi-colored ball?

WORKFORCE CONNECTION

A geneticist is a biologist who studies genetics, the science of genes, heredity, and variation of organisms. The genes they study are made of polymers called DNA. Two long strands of these polymers form the familiar double helix shape of DNA. The monomers that make up DNA strands are called nucleotides. Geneticists study the genes of organisms like human beings, animals, crops and bacteria.
The Storytime Challenge:

Build a boat that can float for 3 minutes.

**REUSE Toolbox**

- Cardboard
- Paint Stirrers
- Paper/Newspapers
- Drinking Straws
- Tree Bark
- Tennis Balls
- Styrofoam
- Balloons
- Plastic Shopping Bags
- Popsicle Sticks
- Rubber Bands
- Tape/String/Glue
- Ruler
- Wax Paper/Aluminum Foil

**What other materials could you find and use?**

**ASK**

• What is the problem?

**IMAGINE**

• Brainstorm possible solutions.

**PLAN**

• Pick an idea and plan out how you are going to do it.

**CREATE**

• Build it!

**IMPROVE**

• What worked? What didn’t?

**SHARE**

• How can you make it better?

• Share your idea!
Week 7: Around the World
July 31 – August 6

Experience food, art, music, and cultures from around the globe. Our featured careers this week are chef, airplane pilot, and cybersecurity expert. Scan the QR code or visit MichiganLearning.org/Summer/World to explore all of our videos this week.

Use the sheet below to mark off this week’s activities as you complete them. See if you can get a BINGO! Some of them are in this book, and some ask you to use your imagination or go outside.

<table>
<thead>
<tr>
<th>Make paper airplanes with Ready Jet Go</th>
<th>60 mins. of activity</th>
<th>Read for 20 minutes</th>
<th>Write a story about traveling</th>
<th>Learn to say hello in another language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read for 20 minutes</td>
<td>60 mins. of activity</td>
<td>Design your own flag</td>
<td>Learn about a family member’s job</td>
<td>60 mins. of activity</td>
</tr>
<tr>
<td>Watch Math Park</td>
<td>HAVE FUN! (Free Space)</td>
<td>Watch DIY Science Time</td>
<td>Watch Cartoon Academy</td>
<td>Watch Virtual Vitamin Z</td>
</tr>
<tr>
<td>Watch Live From the Opera House</td>
<td>Learn about a place you’d like to visit</td>
<td>Watch InPACT at Home</td>
<td>Watch InPACT at Home</td>
<td></td>
</tr>
<tr>
<td>Watch InPACT at Home</td>
<td>Read for 20 minutes</td>
<td>Make Density Art</td>
<td>60 mins. of activity</td>
<td>Create a musical instrument</td>
</tr>
</tbody>
</table>
Paper Airplane

1. Fold paper in half the long way and reopen.

2. Fold the top two corners into the center spine of the paper.

3. Refold lengthwise and rotate the paper to lay on the table like this:

4. Fold the top left corner down to lay parallel to the bottom spine. Repeat this step on the other side.

5. Turn the paper over and repeat the last two steps. Your airplane should look like this!

6. Now, try to fly it to the moon! How far can you make the airplane fly?

For more games and activities, visit pbskidsforparents.org

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Density Art

1. Scan the QR code on this sheet to watch the video and follow along with Mister C.

2. You’ll need:
   a. This printout
   b. Plain printer paper or canvas paper
   c. Food coloring
   d. Vegetable Oil
   e. Pipette or straw
   f. Pan

Discussion Questions:
Does the type of paper impact the art?

How can you manipulate the colors to make more colors than you originally had in the food coloring box?

What if you added something like glitter to the oil and water mixture?

Fun Fact:
Symmetry is used in photography to create beautiful images. Butterflies have a line of symmetry down the center of their bodies.
Introducing Decimals: Tenths

Directions: Scan the QR code to watch the video, and then write each fraction as a decimal.

\[
\frac{1}{10} = 0.1 \quad \frac{3}{10} = \\
\frac{8}{10} = \quad \frac{2}{10} = \\
\frac{5}{10} = \quad \frac{9}{10} = \\
\frac{10}{10} = \quad \frac{7}{10} = \\
\frac{6}{10} = \quad \frac{4}{10} = 
\]
WRITE YOUR STORY!

Write a title in the box below, then use the characters, emotions, and dialogue from earlier in this book to create a story!
**DIY Science Time**

“Science is wherever YOU are!”

**DIY Thermometer**

**EXPERIMENT**

**Step 1:** Gather materials.

**Step 2:** Fill your bottle about half way up with water and add a few drops of food coloring.

**Step 3:** Shape the modeling clay into a sphere larger than the opening of the bottle. Carefully poke your straw through the clay (make sure the straw doesn’t get blocked).

**Step 4:** Place the clay sphere and straw on top of the bottle, allowing the straw to reach near the bottom of the bottle (don’t allow the straw to touch the bottom of the container). Seal the bottle with the clay, making sure there are no gaps to allow air to enter.

**Step 5:** Note the level of the water, this is room temperature.

**Step 6:** Try placing your thermometer in ice water and observe what happens to the liquid in the straw.

**WHY IT WORKS**

When the temperature of the liquid in the bottle increases, it has gained energy, causing its molecules to expand and rise into the narrow straw. When the liquid cools, its molecules lose energy causing them to contract, allowing the liquid in the tube to fall to a lower level. Therefore, high levels of liquid in the tube indicate a higher temperature and low levels indicate a lower temperature.

**EXTEND YOUR LEARNING**

- What happens if you put your thermometer into warm water?
- Would using a liquid other than water change the way your thermometer behaves?
- Could you add lines to your thermometer to get a better, more accurate reading?

**WORKFORCE CONNECTION**

Solar photovoltaic (PV) installers, also known as PV installers, assemble, set up, and maintain rooftops or other systems that convert sunlight into energy. Solar photovoltaic installers usually work as part of a team. They must understand how solar energy is converted into electric energy by the solar panels they install. They must also set up systems to safely store this collected solar energy for use in homes and businesses.
What else can you make with origami?
It can be a design that you know, or you can create your own design.

- Paper/Newspaper
- Ruler
- Scissors

What other materials could you find and use?

What is the problem?

Brainstorm possible solutions.

Pick an idea and plan out how you are going to do it.

Build it!

What worked? What didn’t?

How can you make it better?

Share your idea!
Week 8: Space  
August 7-13

Meet astronauts and virtually visit the planets and stars. Our featured careers this week are astronaut, astronomer, and computer scientist. Scan the QR code or visit MichiganLearning.org/Summer/Space to explore all of our videos this week.

Use the sheet below to mark off this week’s activities as you complete them. See if you can get a BINGO! Some of them are in this book, and some ask you to use your imagination or go outside.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stargaze</td>
<td>60 mins. of activity</td>
</tr>
<tr>
<td>Read for 20 minutes</td>
<td>Try the Odd Squad Robot Coder</td>
</tr>
<tr>
<td>Read for 20 minutes</td>
<td>Create your own constellation</td>
</tr>
<tr>
<td>60 mins. of activity</td>
<td>Draw your hero story with Story Pirates</td>
</tr>
<tr>
<td>60 mins. of activity</td>
<td>Watch NASA at Home</td>
</tr>
<tr>
<td>Name all the planets in the solar system</td>
<td>Watch Live From the Opera House</td>
</tr>
<tr>
<td>Watch InPACT at Home</td>
<td>Watch InPACT at Home</td>
</tr>
<tr>
<td>Read for 20 minutes</td>
<td>Read for 20 minutes</td>
</tr>
<tr>
<td>Design a rocket ship</td>
<td>Stargaze</td>
</tr>
</tbody>
</table>
Robot Coder

Follow the code! Agent Oswald needs YOUR help to move the ODD—some robot through the warehouse to retrieve his gadgets. Use the key on the side of the page and follow the codes to guide the robot.

Key:
- \[ \uparrow \] Forward
- \[ \leftarrow \] Left
- \[ \rightarrow \] Right
- \[ 3 \] Number of Spaces

Start:

Code 1:

```
\[ \uparrow \ 2 \ \rightarrow \ 2 \]
```

Where did you end?

Code 2:

```
\[ \leftarrow \ 1 \ \uparrow \ 3 \]
```

Where did you end?

Find more games and activities at pbskidsforparents.org
Robot Coder

Write your own code! Mark a box on the grid as the start. Select a shape ( ● ▲ ● ) as the ending point. On a separate piece of paper write the name of this shape. This is the answer to Code 1.

Fill in the blank spaces below for Code 1. You don't have to fill in all the boxes, but you can. Use arrows (e.g., ↑ ↓ ← →) and numbers to create your code. Remember, the robot must move around objects.

To create Code 2, do the same thing only choose a different shape for the ending point. Write the name of this shape on a separate piece of paper. Fill in the blank spaces below for Code 2.

Challenge a family member or friend to follow your codes and tell you where they ended. You can then reveal your answers!

Find more games and activities at pbskidsforparents.org
Introducing Decimals: Hundredths

Directions: Scan the QR code to watch the video, and then write each fraction as a decimal.

\[
\frac{1}{100} = 0.01 \quad \frac{3}{100} =
\]

\[
\frac{8}{100} = \quad \frac{2}{100} =
\]

\[
\frac{5}{100} = \quad \frac{9}{100} =
\]

\[
\frac{10}{100} = \quad \frac{7}{100} =
\]

\[
\frac{6}{100} = \quad \frac{4}{100} =
\]
Draw Your Story!

Use the story you wrote earlier in this book to draw a comic!
Design a lever contraption to launch a ping-pong ball high enough in the air to catch it!

**REUSE Toolbox**

What other materials could you find and use?

- Duct Tape
- Paint Stirrers
- 1 Ping-Pong Ball

- 1 Wooden Block or Spool
- 3-oz Paper Cups

What else can you launch?
*(hint: stuffed animals are fun to launch!)*

---

**ASK**

What is the problem?

**IMAGINE**

Brainstorm possible solutions.

**PLAN**

Pick an idea and plan out how you are going to do it.

**CREATE**

Build it!

**IMPROVE**

What worked? What didn’t?

**SHARE**

How can you make it better?

**SHARE**

Share your idea!
DIY Thermometer

FUN FACT
Before there were thermometers there was an instrument called a thermoscope. Thermoscopes are devices that show changes in temperatures. Unlike a modern thermometer, thermoscopes don’t have standard scales for measuring temperature.

THERMAL ENERGY
Thermal energy is the energy contained within a system that is responsible for its temperature. Heat is the flow of thermal energy. The total kinetic energy of moving particles of matter is called thermal energy. All matter has thermal energy, even matter that feels cold. That’s because the particles that make up matter are always in motion and have kinetic energy.

MATERIALS
- Ice
- Water
- Small bowl
- Food coloring
- Modeling clay
- Bottle with small neck
- Clear plastic drinking straw

DIFFICULTY

Why are thermometers so smart?
*Answer on the next page

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Call: 211
Text: Food to 304-304
Mande por texto “Comida” al 304-304
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