

Aren't we all being challenged and inspired to innovate this year? As we have navigated and pivoted at the Mississippi Children's Museum in response to the current pandemic, new ideas, new operating models, and embracing change have become part of our new normal.

Our own MCM innovations piqued our interest and made us question what other sort of 21st century advances and inventions were being sparked around our state by the pandemic. We were fascinated to learn what inventions had emerged after the last severe pandemic in 1918 – things that we take for granted today like band-aids and paper tissues! These historical references encourage and remind us and our children to think "outside of the box" and not to miss the opportunities that challenges can bring. We can also be motivated by and recognize those in our state who are thinking creatively and innovating in their industries and organizations.

For this issue of the Playbook, we asked Mississippi children what they would invent during this time and their answers inspired us. Some of their answers, particularly the child who dreamed about a robot to prank his parents, reminded us, as adults, that a childlike sense of fun and wonder is important, particularly during a pandemic when the daily challenges may seem overwhelming.

However, with all the change, one thing at MCM has remained constant: our commitment to the children of our state to take fun seriously and provide experiences designed to spark their creativity.



Gratefully,

Susan Garrard,

Mississippi Children's Museum President/CEO

# INNOVATIVE, MISSISSIPPI

Big ideas are the result of innovation and creativity. Mississippi is home to a number of innovators, and 2020 has allowed these innovators to become creative superheroes! Check out how these superheroes have contributed to pandemic relief efforts through science, technology, and creative thinking.

#### C SPIRE | CARLA LEWIS

Imagine how easy it would be to click a magic button and solve all of our problems! We have all been facing new challenges that have not disappeared with the click of a button, but they are easier to face because of the hard work of inspired people. Since March, the world's technological needs have grown tremendously! Carla Lewis says that C Spire has innovated in new ways to meet these needs.

C Spire thinks outside of the box to enhance the digital experience by asking questions and constantly adapting. They turned their store parking lots into curbside WiFi locations and used coding to track when their customers use Internet the most. Though it was not with the click of a magic button, C Spire has been able to solve problems with innovation.



#### UMMC | DR. CHARLES ROBERTSON



It is possible to create extraordinary inventions from ordinary objects. When the pandemic hit, Dr. Robertson and his team realized that there might not be enough supplies at the hospital. His main concern was the lack of ventilators, which are machines that help patients breathe. He asked himself, "How can I solve this problem while we wait for factories to produce more ventilators?"

As a child, Dr. Robertson loved to tinker, like so many children, and was always building some new Lego creation. This childhood passion helped prepare him to tackle this challenge of how to build a ventilator. Even though it might seem like a complex machine, a ventilator works like a balloon! Dr. Robertson was able to tinker with simple objects from the local hardware stores to create a homemade ventilator. He never gave up and worked until his invention was ready in the event there were shortages of ventilators.



#### BLUE DELTA JEANS CO.

When passionate, hard-working companies see a need for something, they brainstorm new ways to make it happen! That can definitely be said of Blue Delta Jeans Co. To meet the growing need across our state and to keep their employees at work during the pandemic, they got creative and transitioned from producing blue jeans to manufacturing face masks! Now, Blue Delta has made over one million masks!

Blue Delta partnered with Mississippi State and other local companies to accomplish this huge goal, and they continue to provide thousands of masks a day. The creators of Blue Delta say the best thing you can do is not give up on your ideas. You never know where your innovation can take you!

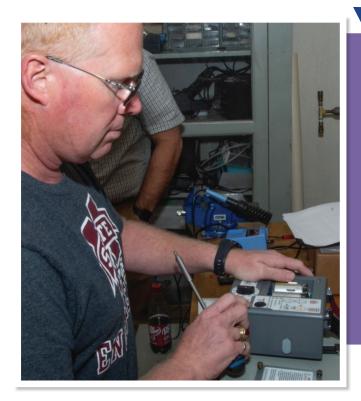
#### MUSICIAN | VASTI JACKSON

Has someone inspired you during this pandemic? Inspiration can open the doors to so much creativity! Vasti Jackson wrote his song "Healing Angel" after being inspired by nurses who devote their lives to caring for others. Music can celebrate hard work and unite people all over the world.

Jackson did not always know he wanted to be a musician, but he was passionate about creative discovery! This passion has led him to not only write new songs but write a new children's book titled <u>Blues In My Shoes!</u> Once you find something you enjoy, keep learning about it!



# SUPERHEROES!



#### MISSISSIPPI STATE UNIVERSITY | DR. JORDAN AND DAVID WALLACE

Engineers at Mississippi State University have been doing some "electrifying" and "cool" things during this pandemic. With a love for power and energy, David Wallace who heads up the MSU High Voltage Lab worked with his students to convert over 500 ventilators so that they could stay powered longer and operate more efficiently.

But that is not all the students have been working on at MSU. Would you have ever thought your printer could save a life? Students have used the school's 3D printers to create face shields for first responders as well as, you guessed it, robots! Dr. Jordan, interim vice president of research and economic development, says that these small robots can do many different things, including detect danger for first responders or serve as a therapy pet during these challenging times!

### FACES OF THE FUTURE

It's no question that our children have creativity and ingenuity, especially in the midst of the pandemic. We asked what your children's BIG ideas were, and you answered! With their inventive spirit and inspiration from the superheroes around us, our future is bright, and innovation is sure to prevail.

#### Brian - 2nd Grade

Brian is a funny guy and likes playing tricks; if he had a clone machine he could play even more! With the help of his sneaky clone, he would be able to pull some hilarious pranks on his parents!

#### Raelyn - Preschool

Raelyn shared her fabulous creations with us! She has been busy creating her artwork titled "family camping" and making sand unicorns with minimal assistance at home.

#### Halle - 4th Grade

If Halle could invent anything, it would be colorful hazmat suits that can be customized with your own design! Because who said healthcare workers can't save lives in style?

#### Mariana - 3rd Grade

Mariana wants to invent a flying skateboard! It would be powered on electronics, like what is used in smartphones, and powerful, "strong air" to help you hover above the ground. It would even have adjustable foot-straps for safety. Awesome!

#### Eli - Kindergarten

Have you ever needed to cool something quickly? Eli has a solution! He is going to invent the "coolerwave," like the microwave but the exact opposite. Eli could make ice cream all the time...so cool!



Discover more! Watch the full interviews here to learn more about our Mississippi Innovators and Faces of the Future!







# JUST ASK MOM

### with Elee and Maddie Reeves



Mississippi First Lady, Elee Reeves, invited us to join her for an exclusive interview led by her daughter Maddie (age eight) in which Maddie asked her mother about how she has to innovate as a mom right now, and how science, technology, and creative thinking are important, especially during a pandemic.

**MADDIE:** As a parent how have you had to innovate lately?

**ELEE:** We all have had to adapt to this new situation! I started homeschooling you. I also had to be a nicer mommy and let you do things like make the many slimes you've made here.

**MADDIE:** Did you know that during the last major pandemic people were still inventing things? **ELEE:** I did! I just read that radio and TV were invented after the last pandemic. Can you imagine right now if we didn't have those things?

**MADDIE:** As children we have a lot of creativity and ideas. What can we do with those? **ELEE:** You can do anything! By you using your creativity, you might invent something new like the next TV or radio.

**MADDIE:** What is the best thing that Emma, Tyler, and I have created lately while at home? **ELEE:** You have all learned how to adapt to new technology for school like Zoom and Google docs. Also, you have done things to give back to the community, like Tyler's book drive. I think learning to do new things and giving back is important. I've been proud of y'all for doing that!

**MADDIE:** What's been your favorite thing to see us do as a family lately while it's been different? **ELEE:** We've spent more family time together. Also, we've been doing a Bible study with daddy and cooking brunch together.

**MADDIE:** There are a lot of superheroes around us. Who are your superheroes? **ELEE:** Your dad and you girls! Everyone on the frontlines are also my superheroes!

**MADDIE:** If you could invent anything what would it be?

**ELEE:** I would love to invent something like in Star Trek where, instead of Zoom, you could beam someone into the room. Your teacher could just suddenly be right here in the room.

**Did you know** that the last severe pandemic was in 1918? Over 100 years ago! During that time, they also had to take extra measures to help stop the spread of a virus called H1N1 (Flus like Spanish and Swine) including canceling large gatherings, creating makeshift hospitals, and wearing masks. Without social media and the web, communication about the virus (including how to stop it and what was going on in world) was mainly circulated through... you guessed it... newspapers... just like this analysis.

Despite the major damage caused by the Spanish flu, big ideas continued to bring innovation to a world that desperately needed it.

Notable inventions during this time include:

1918: Superheterodyne Radio Receiver

1919: Pop-up toaster

1919: Short-wave radio

1919: Short-wave radio

1919: Arc welder1920: Band-Aid

1921: The first version of a robot

1924: Kleenex

The creative, the imaginative, and the brave innovated to create entertainment, technology, and advancement in world health just like we are doing now—even right here in Mississippi!

### 

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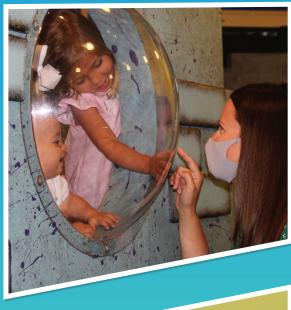
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The Mississippi Science Fest showcases the Magnolia State's innovative science, technology, engineering, and mathematic industries and organizations each year in partnership with all four of the LeFleur Museum District museums. The following activities are sure to quench your thirst for discovery!

Scan this QR code for more information on the 2020 virtual Mississippi Science Fest including more activities you can do at home. Long Live Wonder!



SYNERGIZED BY THE



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### **SCIENCE @ HOME**

How is science related to the global pandemic? Well, great question! Science is how we are understanding and fighting the virus. We are all depending on science and innovation to successfully beat COVID-19! Science is incredibly important for our world, but how can you get involved with science at home? Keep on reading to find out!

First things first, what exactly is a scientist? And who can be a scientist? The answers might surprise you. A scientist is simply someone who tries to find out how things work. And anyone can be a scientist, even you! Are you ready to start your scientific journey? Put on your goggles and gloves because it's time to become an at-home scientist.

Be sure you get an adult to help you with all these awesome experiments!

### CODING @ HOME

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What comes to mind when you hear the word, code? A secret code? A set of numbers to open a lock? On the way of the future?

All of these may have come to mind, and that's fantastic! But we're going to focus our activities on computer science coding. Computer science is the study of how to use computers. One important element of computer science is coding!

**Did you know:** You can practice the basics of coding in your own home. You don't need a computer to start thinking like a computer scientist. Check out these activities to start your journey into the ever-important world of coding.





Critical Coding Vocabulary:

- Coding: Goding is writing instructions in a special language telling
  a computer what to do. 1 0 0 1 1 1 1 0 0 0 0 0 1 1 1 1 1 0 0
- Binary: A number system that uses only two digits, O and I. Computers O O use binary.
- Computational Thinking: Planning, problem solving, and analyzing information the way a computer does.
- Algorithm: A set of steps that a computer follows to complete a task.

#### Coding Trivia: 0 0 0 1 0 0 0 1 1 0 0 0 1 0 0 0 1

You might be surprised to learn how new computers are to our world. O Try and guess the year these major computer breakthroughs occurred.

- 1. When was the first iPhone released?
- 2. When was the World Wide Web invented?
- 3. Who was the first computer programmer?

#### EXPERIMENTS FOR KINDERGARTEN - 2ND GRAD

#### Code the Human Robot

#### What you need:

- Paper
- Coloring utensils
- An adult

#### What to do:

- You will be "coding" your adult robot.
   The adult's job is to be a robot, and the child's job is to give instructions.
- Each piece of paper represents one instruction. This instruction can be written or can be drawn. For example: it could be a picture of a person hopping on one foot.
- 3. Create at least 5 instructions but feel free to do as many as you like! Then place the pieces of paper in whatever order you desire.
- 4. Turn your robot on, make this action fun and creative, and guide your robot through your series of instructions.
- 5. Keep it going by putting your instructions in a new order or by adding new instructions! Maybe you can get your robot to make you a snack or play a game.
- 6. Take turns being the robot.

#### How is this coding?

The fundamentals of coding require a shift in thinking. How can I ask a computer to do something? What steps does a computer take to complete a task? This simple exercise helps to break up instructions into small, digestible pieces.

#### **Binary Necklace**

#### What you need:

- Paper
- Writing utensil
- Beads in two different colors or shapes
- Pipe cleaners, elastic, or yarn
- Binary code chart
- An adult

#### What to do:

- Use this binary code chart to write your name. If you need help, ask your adult.
- One of your beads will represent the number 0 and the other bead will represent the number 1.
- 3. Take your pipe cleaner, elastic, or yarn and spell your name with the beads.
- 4. Now you have a binary necklace that spells your name!

#### How is this coding?

Computers use binary to store information and conduct calculations. It's a necessary way to store a lot of information in a small amount of space. Playing with binary helps introduce the concept of ones and zeros as representative figures.

ASCII Binary Alphabet			
A	1000001	N	1001110
В	1000010	0	1001111
С	1000011	P	1010000
D	1000100	Q	1010001
Ε	1000101	R	1010010
F	1000110	S	1010011
G	1000111	Т	1010100
н	1001000	U	1010101
1	1001001	V	1010110
J	1001010	W	1010111
K	1001011	X	1011000
L	1001100	Υ	1011001
М	1001101	Z	1011010

Trivia Answers: 1. 2007; 2. 1990; 3. Ada Lovelace 1845 Word Scramble Answers: Science, Technology, Engineering, Art, Math

#### Peanut Butter & Jelly Challenge

#### What you need:

- Paper
- Writing utensil
- Peanut butter
- Jelly
- Kitchen utensils
- Plate
- Napkins
- An adult
- Bread

#### What to do:

- 1. Gather your paper and writing utensils. Think about how you would instruct a robot to make you a peanut butter and jelly sandwich.
- 2. Write down the steps a robot should take one
- 3. When you're finished, hand your piece of paper to your adult.
- 4. Adult, follow the instructions EXACTLY. Don't give any leeway when following the instructions. Do exactly as you're instructed.
- 5. Rewrite the instructions, if necessary, so the perfect peanut butter and jelly sandwich is made.
- 6. Take turns being the sandwich making robot.
- 7. Reflect on your experience.

#### How is this coding?

Computational thinking is planning, problem solving, and analyzing information the way a computer does. This is especially important when writing instructions for a computer because it will follow them exactly the way they are written. This activity helps demonstrate the importance of thinking through all the little details and steps it takes to complete a simple task.

#### Secret Code

What you need:

- Paper
- Writing utensil

#### What to do:

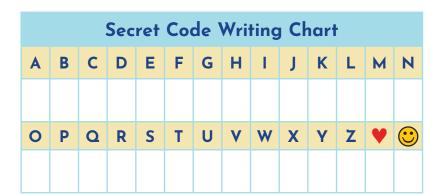
- 1. Choose a special code, number, or different letter to fill in the secret code chart. Make sure each code, number, or letter is different.
- 2. Now use your special code to write a secret message. Give this secret message to someone. Can they figure out what it says? Share your secret code chart to let them decode your message.

#### How is this coding?

Computers use code to operate. Creating your own secret code sets the stage for understanding and experimenting with how coding works.

#### Have a device?

Check out Scratch or Scratch Jr. to play with the basic principles of coding. This interactive app is a simple and fun way to introduce young learners to computer programming.



### EXPERIMENT Matchbox Car Race

How can you make the Matchbox car go the fastest from point A to point B?

What you need:

- Small matchbox sized car
- Writing and coloring utensils
- All sorts of building materials
- Timer

#### What to do:

- 1. Choose two spots in your house. One will be point A, and the other will be point B. Make sure they're close enough together so you can build a track between them.
- 2. Gather your building materials.
- 3. Draw at least 2 different tracks that go between point A and B.
- 4. Build your first track. Time how long it takes your car to get from point A to point B. Record your results.
- 5. Build your second track. Time how long it takes your car to get from point A to point B. Record your results.
- 6. Which track makes your car go the fastest? Test out different cars. How does this change the results? Design another track. How does your new track compare?

#### Race Record

Track	Time	
1		
2		
3		
4		

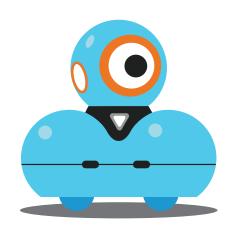
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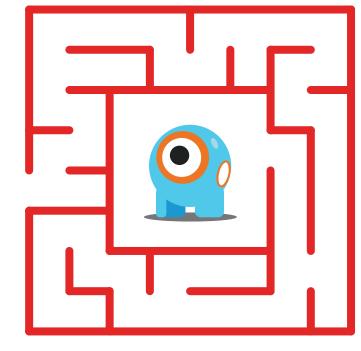
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Which track was the fastest?

Why do you think so?

#### CAN VOU HELP DASH FIND DOT?





**WORD SCRAMBLE!** Can you unscramble the following words?

**EINCSCE TCHEOLNGYO NGENIREIEGN** 

TRA

**HTAM** 

### What's That Sound?

What you need: • Opaque containers (containers you can't see through)

• Different materials from around your house

#### What to do:

- 1. This is a fun game that requires at least 2 people. The first person will gather different household items. These items must fit inside the opaque
- containers: Keep these items secret from the other person.
- 2. Each container should have a single type of item. For example, if you have 6 crayons, put them all in the same container.
- 3. After all the containers are ready, the second person will shake each container and guess what is making the sound.
- 4. Take turns creating the containers and guessing what is in them.

#### What is sound?

Sound is vibrations that hit your ear. These vibrations are waves that can travel through solids, liquids, and gases. As you observed with this experiment, different materials create different sounds. Check out these activities and sound facts!

#### Experiment with sound

- Knock on a table. What does it sound like? Now, place your ear on the table and knock again. What does that sound like? Why is it different when your ear is on the table?
  - Your ear is touching the table. The vibrations don't have to go through the table and the air to reach your ear. Instead, the vibrations only travel through the table, which is why the sound is louder.
- Sound Fact: Sound travels fastest through solids, slower through liquids, and slowest through gases. How could you see this in action? Come up with some fun sound activities that demonstrate this fact! Discuss it with an adult.
- How do noise canceling headphones work?
   Noise canceling headphones have microphones that can detect sound.
   When a sound is detected, the headphones generate an oppositional sound wave.
   Opposite sound waves will cancel each other out when they collide.

Pretty cool! Do you have noise canceling headphones? Test out how well they work with different volumes!

### Rocket Launch

#### What you need:

- 2-liter bottle
- 3 pencils or sticks
- Strong tape duct tape
- A cork that fits the bottle
- Paper towels
- Baking soda
- Vinegar

#### What to do:

- The bottle is going to be your rocket. You have to prepare the bottle so it stands by itself. Tape the pencils or sticks near the top of the bottle. The bottle opening should be off the ground and able to stand alone.
- 2. Next, prepare your fuel. Make a paper towel packet with 2 tbsp of baking soda. Your packet should be able to fit in the bottle.
- 3. Add about 1 cup of vinegar to the bottle.
- 4. Now you're ready to go! You must do this outside. The rocket can launch over 2 stories when done correctly!
- 5. Place the baking soda packet inside the bottle. Keep your bottle horizontal so it doesn't touch the vinegar.
- 6. Insert the cork while holding the bottle horizontally. Be sure not to put the cork in too tightly, or it won't launch.
- 7. Once your cork is set, turn it upside down and back up! It may take up to 30 seconds to launch, so be patient. But when it launches, it will shoot up quickly!

For safety, you must have an adult help with this experiment!



THIS EXPERIMENT SPONSORED BY



### Protect Your Egg

The challenge is to protect your egg from breaking when it's dropped from different heights. You can determine the heights, but start small and work your way up! Before you get started, think about how you would protect something if it were falling from a great height. Get ready to brainstorm, design, test, and redesign!

**What you need:** • Eggs

- Building materials: string, paper, boxes, cotton balls, etc.
- Pape
- Writing or drawing utensils

#### What to do:

- 1. **Brainstorm!** Gather your building materials. Look over what you have and start thinking.
- 2. **Design!** Draw different pictures of what you think will work best to protect your egg. Discuss your drawings with an adult.
- 3. **Test it out!** Start building and testing different options for protecting your egg.
- 4. After finding the best option, try dropping your egg from different heights. How high can you drop your egg before it breaks?
- 5. Redesign! What changes can you make to your design to better protect your egg?

# MATH

### Tangram Shapes

Place a piece of paper over the square below. Trace all the lines. Now you have the beginnings of your own tangram set! Color the different shapes then cut them out. See what you can make with your tangrams. Can you make the animals seen below?

- What shapes do you see in the square?
- See if you can name them all!
- Bonus: What kind of triangles are in the square? (Answers below)

### Create Secret Artwork

Give it a try with this watercolor trick!

#### What you need:

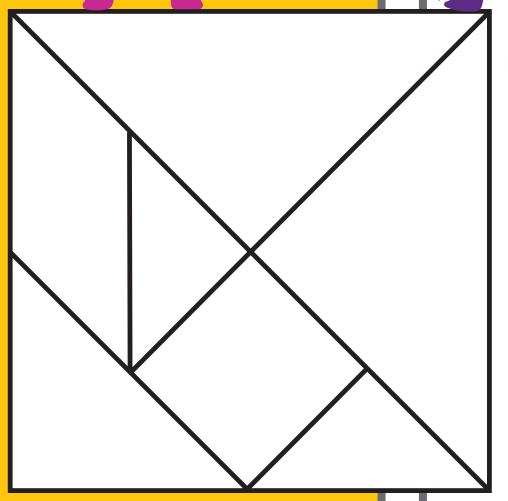
- White paper preferably thick paper or cardstock
- White crayons
- Watercolors and paintbrushes

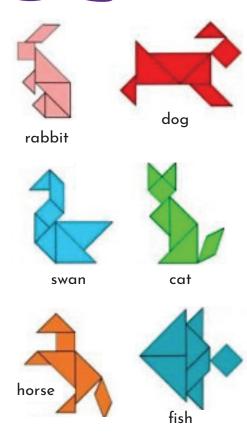
#### What to do:

- Draw a picture on your white paper with your white crayon.
- 2. Use the watercolors to paint over your drawing.
- 3. What do you see?
- 4. What else can you draw with your white crayon? Have your adult paint over the drawing to reveal your hidden artwork.

#### How does this work?

Crayons are made from paraffin wax. The wax repels the water in the watercolors. The drawing is revealed when the space surrounding the crayon is filled.





Answer: triangle, square, parallelogram; Bonus: equilateral (all three sides are the same length)

### EXPERIMENT 2 Microwaves

Be sure to have an adult help with these microwave experiments. What happens when you put a marshmallow in the microwave? What about ivory soap? Let's do this experiment to find out.

What you need:

- Marshmallows
- Bar of Ivory soap
- Microwave
- 2 plates

What to do: This experiment offers some great, simple fun! Follow the directions in the research record to complete the microwave experiment!

#### SCIENTIFIC METHOD

- 1. Ask a question.
- 2. Gather information and observe, do some research.
- 3. Make a hypothesis, a guess.
- 4. Experiment and test your hypothesis.
- 5. Analyze your results.
- 6. Present a conclusion.

#### Microwave Research Record

	Marshmallow	Ivory Soap	Object #3
Questions	What happens when you put a marshmallow in the microwave?	What happens when you put a bar of Ivory soap in the microwave?	
Hypothesis	Write or draw what you think will happen to the marshmallow.	Write or draw what you think will happen to the bar of ivory soap.	
Experiment Time!	With an adult, place the marshmallow on a plate. Put it in the microwave for 20-30 seconds. Observe. Draw or write what you observed in the space below.	on a plate. Put it in the microwave for 60-90 seconds. Observe. Draw or write	
Observations			
Conclusion	Does everything behave the same in the microwave?		

**Explore More!** What else could you microwave? Search with your parent to continue the experimental fun! Use the last column in the research record above to test a different object. Warning: Don't put anything metal in the microwave!

### **EXPERIMENT** 3 Keep Your Hands Clean!

During these times, it's more important than ever to keep our hands clean. Try this long-term experiment to see how keeping your hands clean is incredibly important.

What you need:

- 5 slices of bread
- Tongs
- 5 zip-top baggies
- Hand soap
- Hand sanitizer (if available)

#### SEEK AND FIND

Can you find the items pictured below? Search the Playbook and write the page numbers in the blanks.

#### What to do:

- 1. Use your tongs to get 5 slices of bread. Place the bread on a clean surface or plate.
- 2. The first piece of bread will be for dirty hands. Touch the bread all over with dirty hands. Then place it in a bag, seal it, and label it, "dirty hands."
- 3. The second piece of bread will be for clean hands. Thoroughly wash your hands for 20 seconds with soap and water. To dry your hands, use a clean towel or let them air dry.
- 4. Use your freshly cleaned hands to touch the second piece of bread. Place the bread in the baggie, seal it, and label it, "soap hands."
- 5. For the 3rd piece of bread, use hand sanitizer to clean your hands. Then touch the bread, place it in the baggie, seal it, and label it, "hand sanitizer."
- 6. The 4th piece of bread can be anything you want. Maybe you want to rub it on your computer or phone. Anything you're curious about around your house, feel free to rub the bread on it! Don't forget to label it!
- 7. Lastly, you need a control. Place your control slice in a baggie without touching it. Seal it and label it, "control."
- 8. Wait 3-4 weeks for full results.
- 9. Record your observations using the research record on the next page.

#### Sliced Bread Research Record

	Week 1	Week 2	Week 3	Week 4
Dirty Hands				
Soap Hands				
Sanitizer				
4th Piece of Bread				
Control				

### **EXPERIMENT** Playing with Atoms

Remember when you used your microwave? Why were you able to turn it on? It was plugged in, right? But how does plugging in your microwave allow it to turn on?

Electricity! Electricity is flowing into your house from a super connected electrical grid that brings power to homes.

Could you imagine what life would be like if you couldn't just flip a switch to turn on a light? What if you couldn't turn on your TV? Or power your phone? Electricity is incredibly important and in Mississippi 17% of all our electricity comes from nuclear energy.





Energy that is stored inside of an atom.

#### What is an atom?

An atom is the basic building block of all matter.

Atoms have one electron and one proton. Electrons carry a negative charge. Protons carry a positive charge. So, atoms are usually neutral—they have no charge, but can we change this? Yes, we can!

Negatively charge the atoms of a balloon by doing this experiment

What you need: • Balloons

• Small pieces of paper - hole punch

#### What to do:

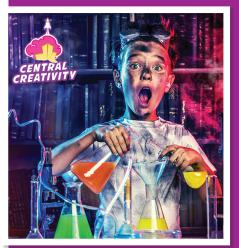
- 1. Use scissors or a hole punch to create small pieces of paper. They should be smaller than ½ inch.
- 2. Blow up your balloon.
- 3. Rub the balloon back and forth quickly over your head. Do this until your hair stands up.
- 4. Now see if you can pick up the pieces of paper.

**What is happening?** You're creating a negative charge along the surface of the balloon! When you rub the balloon on your head, the electrons from your hair move to the balloon. See what else sticks to your balloon!

THIS EXPERIMENT SPONSORED BY ENTERGY NUCLEAR



#### **VIRTUAL EXHIBITOR SPOTLIGHT**



Central Creativity always brings the (explosive & messy) fun to science fest. It got its start in 2015, when it was founded by Rhye and Jenny McLeod on the belief that communities are only as vibrant as the learning opportunities that take place within them. This philosophy of reaching every learner got its start over 35 years ago when the center's executive director and cofounder, Dr. Marjann Ball, first began to explore the brain's ability

to influence learning. Central Creativity is the culmination of a lifetime of exploring how to connect learning with achievement, fun with function, and education with engagement.

Imagine walking down a hall and glancing into a room filled with young people who are gleefully adding concoctions to bubbling beakers. You stroll a little farther and find students racing handbuilt robots around the floor or wander by a sound booth where teenagers are directing and acting in their own daily Internet news show. That's an average afternoon at Central Creativity!

The pandemic has given Central Creativity the opportunity for growth in how they interact with children. They recently launched their Learning TO GO program, reaching over 1,000 campers and their families in 17 states and Canada in July with their Summer Camp TO GO boxes. Central Creativity's advice to Mississippi's children during this time is, "We know that times are challenging, but keep a positive outlook. Whether you're learning from home or wearing a mask and going to school, you've got this!"

According to Central Creativity, innovation requires both education and inspiration, and this is why they love to support organizations like MCM that work to connect future leaders with the skills and experiences that lead them to pursue such lofty goals. It is Central Creativity's hope that during the pandemic, children keep finding new ways to challenge themselves. Now is the perfect time to learn a new skill, pick up a hobby, and make new friends!

### EXPERIMENT 5 Melting Ice

What makes ice melt? Can you speed up the process?

What you need:

- 5 Ice cubes
- Salt
- Plates or bowls
- Sugar
- Warm water
- Timer

What to do: Use the research record to document your findings!

- 1. Place each ice cube on a separate plate or in a bowl.
- 2. One ice cube will be the control, which means you won't do anything to it. You can time how long it takes this ice cube to melt on its own.
- 3. Run warm water over the 2nd ice cube. Use your timer to see how long it takes to completely melt.
- 4. With the 3rd ice cube, add salt until the ice cube has melted. Be sure to time this!
- Add sugar to the 4th ice cube until it melts. Record your timed results!
- 6. Is there another way you would like to melt the ice cube? Work with your adult to find something else to test for this experiment.
- 7. Which is the fastest way to melt an ice cube? Write your answer in the research record.

#### Melting Ice Research Record

Ice Cube	Method of Melting	Time to Melt the Cube	Additional Observations
Ice Cube 1	Control		
Ice Cube 2	Warm Water		
Ice Cube 3	Salt		
Ice Cube 4	Sugar		
Ice Cube 5			

Which is the fastest way to melt an ice cube?

### EXPERIMENT 6 Design your Own At-Home Experiment

What questions do you have? What can you find answers to? Come up with your own experiment using what you have at home as inspiration. If you do something awesome, don't forget to share it on social media and tag MCM!

Research Record		
Questions	What questions do you have? Draw or write them.	
Hypothesis	Draw or write what you can do to find the answers to your questions.	
Experiment Time!	Conduct your experiment! Don't forget to include a control— where you don't do anything— to have a robust experiment.	
Observations	Draw or write your observations.	
Conclusion	What do you think? What does your experiment tell you?	

#### Discover more here! MSSCIENCEFEST.ORG

# MCMINNOVATES





Launch into Learning with us!

Scan the QR code to learn more and sign up! Or email afterschool@mcm.ms The pandemic has called for MCM to innovate too! We are pivoting to serve you, our community, better. In addition to our ongoing #MCMatHome initiative in which we provide activities you can do at home through social media, our website, and participating school districts, we have created our Launch Into Learning initiative!

Launch Into Learning is our response to the need for safe and educational learning spaces for Fall 2020. MCM will now offer day camp, an afterschool program, tutoring, and an all-day program to children in grades PreK4-5th! All programs and camps will include educational programming, outdoor play, museum exploration, and storytelling.



#### Important info about fall at MCM

Museum hours- Regular museum hours for the fall are Saturday 9-5 and Sunday 1-6.

Memberships- Members get a discount on all Launch into Learning programs and can visit the museum an unlimited amount of times during hours of operation! For every regularly scheduled day during the fall semester, Tuesday through Friday, that the museum is closed, a day will be added to your current membership.

Facility Rentals- For facility rental questions, email Cynthia Till at cynthia@mcm.ms.

Birthday Parties- Email Cynthia Till at cynthia@mcm.ms to reserve a date. Missed a birthday party? Consider a "half year" birthday party at the museum!

**Camp-** Register for camp on our website or email Patti Reiss at patti@mcm.ms. Winter camps coming soon!

**Events Coming up-** Discovery Night: Remix October 18th. Check out our website for all events and more info!

Field Trips- To schedule a field trip email Phillip Weisenberger at fieldtrips@mcm.ms.





### INNOVATION TAKES FLIGHT IN EAST MISSISSIPPI

We are grateful that the pandemic has not halted progress on our new satellite campus in Meridian which is under construction! Be sure to scan the QR code on the back of this issue to see a sneak peek of the progress.

One exhibit we are super excited about is our Wings of Wonder; doesn't it look wonderful! Did you know that the in-flight refueling technology that the U.S. Military uses was developed in Meridian?! The famed Key Brothers with the help of their friend A.D. Hunter pioneered this technology when they faced a different sort of "pandemic"—an economic one—The Great Depression! To prevent the Meridian airport from shutting down, they drew national attention by breaking the world record for flight endurance with 27 DAYS OF NON-STOP FLIGHT FOR A TOTAL OF 52,320-MILES EQUIVALENT TO NEARLY 3 TIMES AROUND THE EARTH! To do this they had to refuel in flight, so A.D. Hunter invented a spill-free fuel nozzle which is still used today! What a game changer!



Your children will get to try their hand at being a pilot in MCM-Meridian's Airplane exhibit!

# PARTNERSHIP



Nice to meet you, Pepper! I'm so glad
that you can understand my bark!
I have started doing school at home.
Can you give me tips?

Hi Rocky! I can help
you with anything!
Let's see what is on
the agenda today!

Have you met our mascot Rocky the Reader? He keeps some of his favorite books in his backpack! Pepper is C Spire's four-foot-tall humanoid robot who has a tablet on her chest and can speak by command.

## History of the Kellogg Foundation: Emerging During a World Crisis—

In 1930, seven months after the beginning of the Great Depression, W.K. Kellogg founded the Kellogg Foundation in Battle Creek, Michigan. If this name sounds familiar to you, it's probably because he is the founder of Kellogg's, a household cereal and snack brand. Mr. Kellogg became a millionaire almost overnight and dedicated his fortune to ensure children would thrive.

Mr. Kellogg saw that children were impacted by the Great Depression just as the adults were. In fact, it could be argued that children had a harder situation, as their lives were dependent on their parents and caregivers. Something that was emphasized in his founding vision is that children would be served "without discrimination as to race, creed or geographical distribution." Mr. Kellogg wanted to serve all children, especially the most vulnerable.

The Kellogg Foundation made three decisions to drive their investments. The first was to make research more accessible to children and families. The second was to focus on the most vulnerable children, who at the time lived in more rural areas. The third was to work with communities to forge solutions, rather than entering with preconceived ideas on what was needed.

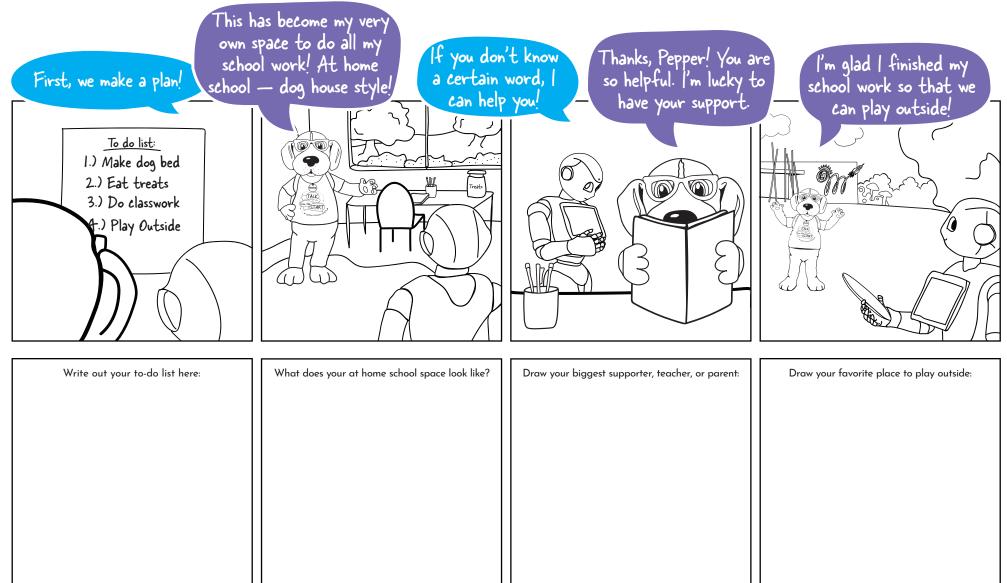
In the words of Mr. Kellogg himself, "It has given me a great deal of satisfaction to feel that the contributions of the Foundation will help children everywhere to face the future more confidently, healthier in mind and body, and more secure in their trust of this country and its institutions."

Here at the Mississippi Children's Museum, we are thrilled to call the Kellogg Foundation a partner in helping children all over the state of Mississippi through campaigns like TALK from the START! It's crazy to think that such an inspiring foundation emerged during a crisis. We applaud their 90 years of serving children and are in awe of their ability to innovate through the years to keep meeting their mission.

The TALK from the START!

Campaign and this special edition of the MCM Playbook have been made possible by generous funding from the W.K. Kellogg Foundation.





### Rocky's Tips for School at Home!

Many families are learning a "new normal" with school being online. Here are a few tips on how to successfully learn at home this semester.

- 1. Establish routines and expectations.
- 2. Choose a good place to learn.
- 3. Help students 'own' their learning and go easy on yourself!
- 4. Begin and end the day by checking-in.
- 5. Allow students time to move around and get away from their "classroom".
- b. Ask for help!



Establishing a routine and setting expectations play a key role in at home school success. A set schedule with consistent bedtimes makes for a stable environment for children. Just as important is the physical space. Pick out a dedicated workspace at home that is big enough, organized, and free of distractions.

No one expects caregivers to be full-time educators, including your children! It is okay for children to have to problem solve on their own. Communication about how they must do their part to make this a success is vital. Beginning and ending the day with this type of communication and a check in will help organize and prioritize assignments. Ask questions like: what classes/subjects do you have today? Do you have any assessments? What resources do you need? What can I do to help? How far did you get in your learning tasks today? What did you discover? What could we do to make tomorrow better?

It is also important to get away from the "classroom" during the day. Shake out the sillies and enjoy breaks and playtime.

Most of all, this "new normal" is a team effort! Don't be afraid to ask for help from other parents, family members, and friends. While you may not be an expert on all the subject areas they are currently learning, you are an expert at being a great example and supporting your child in this journey.

### Parenting Tip:

Provide opportunities for children to talk. As parents, our superpower is knowing exactly what our child wants, when they want it and how they want it just by a cry or look they give us. We can be in such a hurry that rather than having them communicate what they need, we just give them what they want to save time. But our superpower might be our child's kryptonite in regards to their language development! When your child wants juice, make them "work" for it! Have them use a word, phrase or sign to get juice. Require that they communicate. I hear from parents all the time who say, "I know what she wants so I just give it to her." You are not alone, but for children who aren't yet using words or are struggling to use or put words together, we as parents/ caregivers need the child to understand that there is a give and take. Try putting the juice out of their reach so that they can see it but need your help to get it, open it or pour it. By doing this, you are providing opportunities for them to use their words.



For more information on what your child should be able to communicate at different ages, scan this QR code. You can also download the CDC's "Learn the Signs. Act Early" app which offers tips on helping children learn and grow and what to do if you suspect a delay in development.

### The Science of Language

Most people are familiar with a Speech Language Pathologist as the person who helps children articulate their sounds correctly so that others can understand them. While that may be true, the bulk of what I do is Language therapy. What is Language? Language is a complex set of rules that we use to communicate meaningfully and can be broken down into two main parts: 1) Receptive Language: Do children understand the words they hear? If you ask your child to give you the whisk, do they look at you with a puzzled look on their face? They may not know what a whisk is. This is an opportunity to teach them a new vocabulary word. Let them hold the whisk, show them how to use it and talk to them about it. 2) Expressive Language: Can children express what they know? Children must understand words before they begin to communicate them. Has your child ever said, "I want that thing." Thing? Hmm, they might know what they want but aren't sure of the appropriate word to use. Treat this as another opportunity to teach. Give them a choice, "Oh, do you want the whisk or the spoon?" in hopes that they might say the new word. Then, depending on their level, have them practice using the new word in a phrase or sentence.

Birth to five is crucial in terms of language development because it is the foundation upon which all learning and development is built. Children who have difficulty answering basic "what" and "where" questions, following directions, limited vocabulary, trouble socializing with other children or communicating their wants/needs effectively, unfortunately are more likely to struggle with reading and academic success.

#### **CORINNE HEGWOOD**

Corinne Hegwood is a Speech Language Pathologist in Cleveland, MS. Her goal is to equip parents, teachers, and caregivers with the necessary tools to recognize and address gaps in language development



so that all children have a solid language foundation, granting them more opportunity to be successful in the classroom and in life.

### talkfromthestart.org

#### FOUNDING PARTNERS





# SUPERHEROES!



#### **OUR INSPIRING HOPE & BUILDING TOMORROW TOGETHER CHAMPIONS!**

#### **OUR COMMUNITY!**

We applaud our community superheroes! The educators, parents, healthcare workers, essential workers, custodial staff, and all those who are working hard and innovating in our community are making a difference. Thank you for your dedication. It is inspiring!

#### **Inspiring Hope**

In the midst of this challenging time, we are committed to Inspiring Hope in person and online. For a non-profit that relies on a steady stream of visitors, a reduction in guests with the added cost of additional cleaning protocols has created a challenge for us. Thank you to those donors who have helped us continue Inspiring Hope!

Alicen and EJ Blanchard Katie and Shawn Browning Frances and Justin Croft Margaret Cupples Lisa and Sean Didion Charley Frye
Emily and Kern Hoff
Olivia and Jerry Host
Carla and Richard Lewis
Jill Randall
Janet and Charlie Spain

Atmos Energy Institute of Museum and Library Services Mississippi Humanities Council Trustmark Wells Fargo W.K. Kellogg Foundation

#### **Building Tomorrow Together**

Thank you to those who are sparking change and innovation in East Mississippi! It is because of you that we are #BuildingTomorrowTogetherMCM for our first ever satellite location in Meridian. Children will soon be able to come learn, have fun, and be inspired by the immersive hands-on learning experience.

#### THOSE WHO BELIEVE IN OUR MISSION!

There are so many superheroes who continue to believe in our mission. Their annual support ensures we are continuing to create unparalleled experiences to inspire excellence and a lifelong joy of learning. Scan this QR code to see our annual donors.



#### Who We Are

We take fun seriously and provide children innovative learning experiences that tap into their curiosity and creativity! Our mission is achieved by providing hands-on and engaging exhibits and programs focusing on literacy, the arts, science, health, and nutrition— the keys to helping our children mature into healthy and productive adult learners.

Did you know that we provide activities you can do at home on our website that are sure to tap into the curiosity and creativity your child has? Visit **mschildrensmuseum.org/athome** to experience the joy of learning and innovating from home!

#### **OUR MEMBERS**

Our members are the best, and we want them to know it! They are like family to us and their feedback through surveys and support throughout the pandemic has been greatly appreciated.

Members get unlimited admission for one year, weekend birthday party exclusivity, invites to all the fun members-only events, 10% off at Louis LeFleur's Trading Post and Red Rocket Café, and a discount on all camps and our Launch into Learning programs.



The Mississippi Children's Museum - Meridian
Learn more about us and see SNEAK PEEKS
of our exhibits on social media!





@mcmmeridian

Scan this QR code for MCM-Meridian Youtube spoilers.



### WE TAKE FUN SERIOUSLY!





@mschildsmuseum



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Mississippi Children's Museum