Nicklaus Children's

Smart Stage

MATINEE SERIES

CURRICULUM CONNECTIONS

Super Scientific Circus

BROWARD CENTER FOR THE PERFORMING ARTS®

Nicklaus Children's

Where Your Child Matters Most™

What's included in Curriculum Connections:

Know Before you Go:

- Arrive at the theater 15 to 20 minutes before show time.
- Allow extra time for Broward County traffic. We are unable to start a show late.
- If you come by bus, please stay on the bus until greeted by an usher.
- If you arrive by any other mode of transportation, please gather your party together outside of the theater and enter as an entire group.

BROWARD CENTER FOR THE PERFORMING ARTS®
EDUCATION PROGRAMS

Dear Educators,

We are excited to present this Curriculum Connections (Study Guide) as a valuable resource to support your teaching journey. This guide has been carefully designed to offer engaging and meaningful activities for use in your classroom before and after seeing a performance at The Broward Center's Amaturo Theater and/or The Parker. Each section is structured to make it easier for you to integrate cross-curricular connections, providing a seamless experience for students to deepen their understanding while exploring the creative process.

The activities and lessons in this guide have been intentionally crafted to complement Florida's B.E.S.T. standards. By utilizing these resources, you will be able to foster a dynamic and creative learning environment while ensuring students meet key academic goals. We encourage you to adapt the materials to best fit your classroom's needs and objectives, empowering students to think critically and creatively across all disciplines.

We want to take a moment to express our sincere appreciation for the passion and dedication you bring to your classrooms every day. Your commitment to infusing art-full moments into education not only enriches your students' learning experiences but also ignites their curiosity and creativity. Thank you for inspiring the next generation of thinkers, creators, and innovators. We pay tribute to the impact you have on your students' lives. Consider joining the Teacher's Lounge (QR code below) to be notified of special events and discounts just for teachers. Finally, our gratitude to Nicklaus Children's for their commitment to our Smart Stage Matinee Series.

We look forward to seeing you at the theater this year!

Broward Center Education Team
education@browardcenter.org

"As South Florida's only specialty-licensed hospital exclusively for children, Nicklaus Children's provides expert pediatric care tailored to every stage of development. Nicklaus Children's is proud to support early learning through the Smart Stage series, nurturing young minds alongside their health. "

Nicklaus Children's
Where Your Child Matters Most™

Teacher's Lounge

Theater Etiquette

There is so much that goes into creating a show for the stage. Behind the scenes, there are people who control the lights and the sound, the sets and the props. There are directors, writers, producers, musicians, and choreographers. So many people work together to create the performance you and everyone in the audience watches.

It is helpful to remind students of appropriate audience etiquette by explaining and discussing WHY these rules of behavior are important:

- Restroom visits are best made prior to the performance.
- Listen carefully to the ushers and your teachers. This gets everyone to your seats quickly and ensures a pleasant experience.
- Turn watches and cell phones to silent.
- Walk single file, hold hand rails as you use the steps for your safety.
- Listen carefully to each performer. They are working hard to entertain and inform with lots of clues about the story.
- Refrain from TALKING. This allows everyone to enjoy the show without distraction. Sometimes we think that if we whisper it is okay. But, if everyone in the audience whispers, it becomes disruptive.
- Laugh if something is funny, but not too loudly, you don't want to miss any dialogue.
- Photography and recording are not permitted.
- Pay attention to the lighting, scenery, costumes and music. All of these elements help provide more details to tell the story in an interesting way.
- Applaud (clap) and laugh at the right moments. This shows the performers that you respect and appreciate their work.

Nature and purpose of the

Super Scientific Circus

The Super Scientific Circus is a program designed to help students understand that science can be appreciated in everything we see and do!

With the belief that science can be fun, the program features circus skills, magic tricks, comedy and mime to illustrate fundamental scientific concepts such as:

- gravity
- air pressure
- the speed of sound and light
- centripetal force
- airfoils

During the program students will learn:

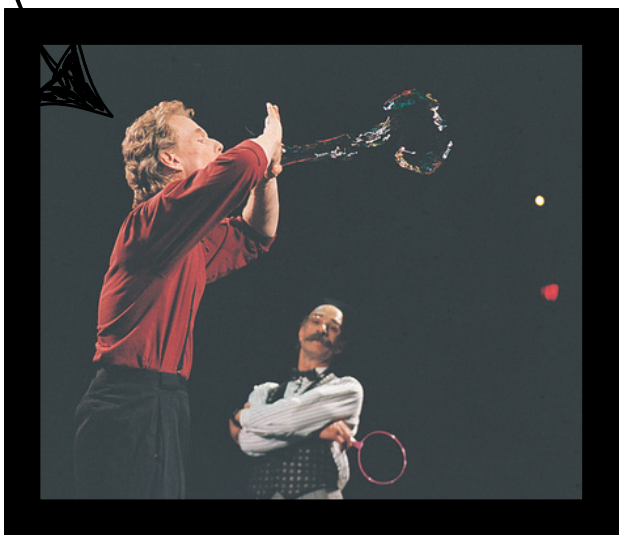
- how to make a boomerang
- why a whip cracks
- how to put a needle through a balloon
- how ultraviolet light is different from white light
- how to balance a broom in the palm of your hand
- why spinning objects defy gravity
- why bubbles are always round

Super Scientific Circus

Meet the Performers

Mr. Fish, born John James Lepiarz, is a long-time circus performer. He toured for seven years with New York's Big Apple Circus. He has appeared on national television on HBO and ABC's Great Circus Performances of the World. A graduate of Oberlin College, Mr. Fish is the proud father of four children.

Trent Arterberry, mime extraordinaire, has performed at thousands of schools, theatres and festivals. He has performed at New York's Radio City Music Hall, headlined on the QE2 and SS Norway, and was named College Campus Performing Artist of the Year. Trent is the father of two daughters and a son.



Super Scientific Circus-VOCABULARY

The vocabulary list covers concepts that are either directly addressed or implied by the program. Review these terms and concepts with the students before AND after seeing the show!

Physics: The study of matter, energy, motion and force.

Physicist: A scientist who specializes in physics. Albert Einstein and Sir Isaac Newton are considered the greatest physicists of all time.

Matter: Any object. Anything that takes up space and has weight.

Force: A push or pull on an object. Gravity, electricity, and magnetism are invisible forces that act from a distance. Hitting a ball with a bat is a visible force that acts in contact.

Motion: A change of position wherein an object comes closer or moves farther away from another object.

Inertia: The resistance to change in motion. An object at rest wants to stay at rest unless some force moves it. A moving object wants to keep moving unless some forces stops it.

Friction: The resistance to motion between objects that touch. This is the force that causes a moving object to slow down or stop.

Centripetal Force: Any force that makes something move in a circle. If we play tether ball, it is the rope that provides the centripetal force to keep the ball moving in toward the pole.

Centrifugal Force: The opposite of centripetal force. A force that tends to move objects away from the center when going in a circle. Centrifugal force keeps the water in a whirling bucket from spilling out.

Gravity: An invisible force that pulls downward on objects. Gravity is stronger on earth than it is on the moon. There is no gravity in outer space.

Balance: When the downward pull of gravity is equal on all sides of an object, so it does not fall.

Center of Gravity: The point at which an object will balance. The weight of the object seems to be centered on that point.

Energy: The ability to do work—to make an object move.

Light: A form of energy that allows us to see. The sun is the greatest source of light on earth.

Refraction: The bending of rays of light. When light bends, or refracts, it sometimes creates a rainbow or spectrum. A magnifying glass works by refracting light through a lens.

Spectrum: The colors found in a rainbow of light - red, orange, yellow, green, blue, indigo, and violet.

Sound: Vibrating energy that allows the sense of hearing.

Speed of Sound: Sound travels through the air at a rate of 761 miles per hour, or 1100 feet per second, or 1225 kilometers per hour.

Sonic Boom: The explosive sound that is created when an object travels faster than the speed of sound. Similar to thunder, a sonic boom is created by supersonic jet aircraft.

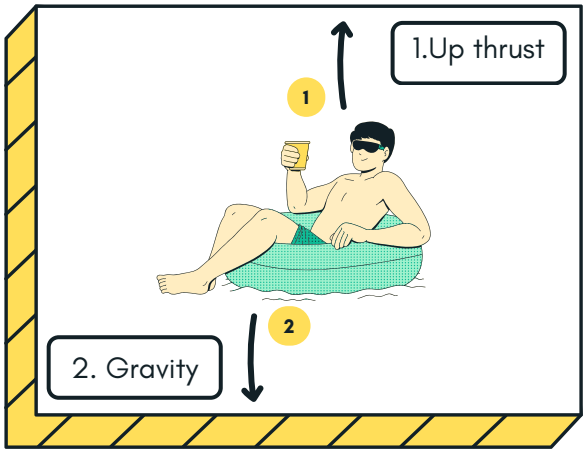
Air Pressure: The amount of force that the air exerts upon all objects. Air pressure on the planet earth is 14.7 pounds per square inch at sea level.

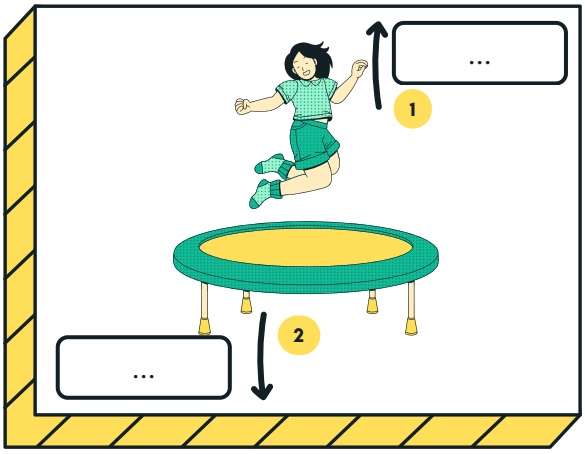
Airfoil: Any surface that helps lift or direct an aircraft by making use of air currents. An airplane wing provides lift by causing air to pass at a higher speed over the wing than below it, thereby creating greater air pressure below than above.

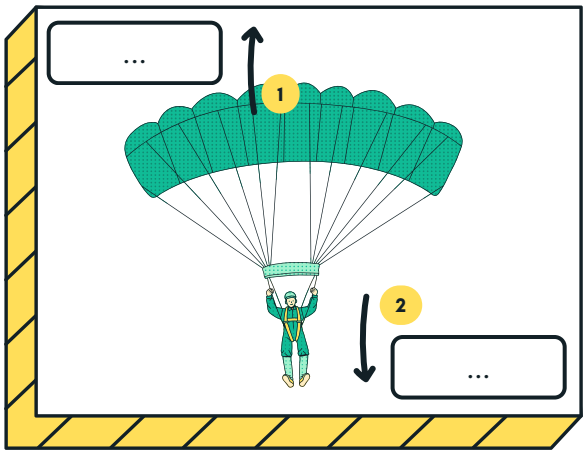
Super Scientific Circus

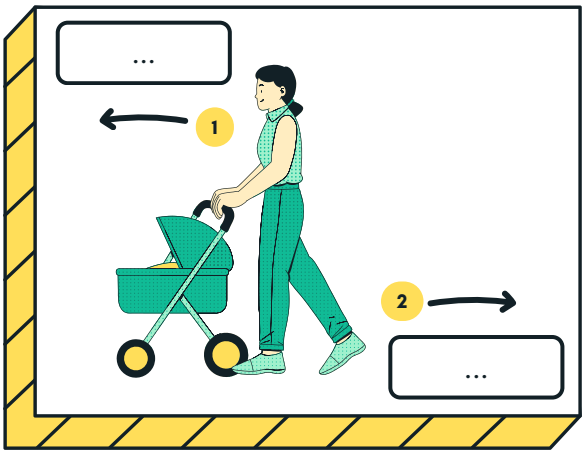
Identifying Forces

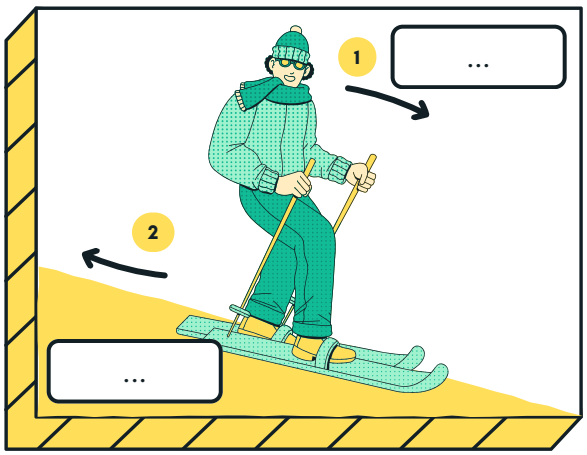
1) Look at each picture carefully. 2) Arrows indicate different forces acting in the scenario.
3) Write the correct name of each force next to the corresponding arrow.

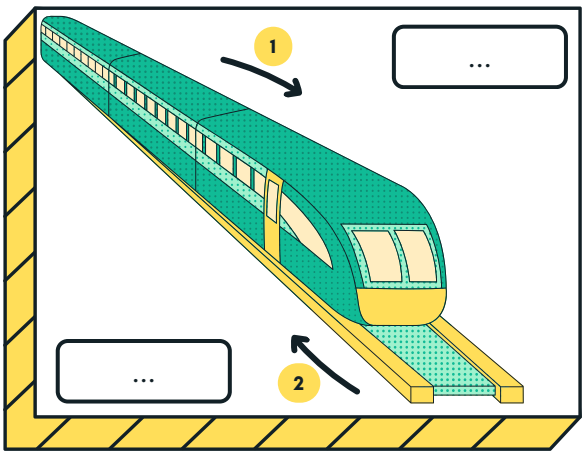












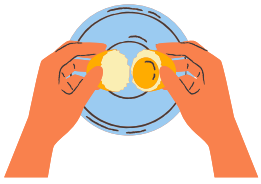
Super Scientific Circus

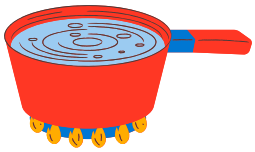
Changes in Matter

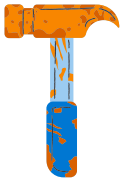
Identify whether a given situation is a physical or chemical change. Write PC for physical change and CC for chemical change.

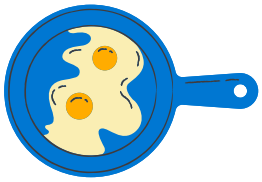
1. A piece of paper is torn in half.
2. A banana turns brown after being left out for a few days.
3. Ice cubes are left out on a warm day and melt into liquid.
4. A nail rusts after being exposed to air and moisture.
5. A piece of bread is toasted in a toaster and turns brown.
6. A glass of water is heated and starts to boil.
7. Mixing vinegar and baking soda, causing a fizzy reaction.
8. Carving a piece of wood into a bird sculpture.

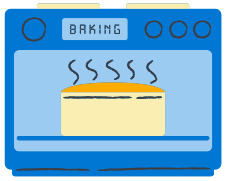
Label whether a given illustration is a physical or chemical change. Write PC for physical change and CC for chemical change.

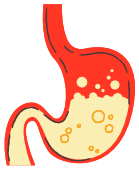












Super Scientific Circus

Forces

Use the words below to fill in the blanks.
Some words may be used more than once:

strength	speed	pull
push	direction	shape

A force is a _____ or a _____ that causes an object to change its _____, its _____ and even its _____.

Forces have two important properties: _____ and _____.

True or False?

1. Every force has an equal and opposite force acting on it: _____
2. Gravity is an example of a force: _____
3. Forces come in pairs: _____
4. A force can make an object speed up, but can not make it slow down: _____
5. Motion is when something changes its position: _____
6. Forces only work when they are in direct, physical contact with each other: _____
7. If two forces are the same strength, the object will move: _____
8. Nothing moves unless a force acts on it: _____
9. An object will only move when the opposing forces are balanced: _____
10. How an object moves depends on the strength and direction of the force: _____

Explain how forces work when an item is at rest:

_____

_____

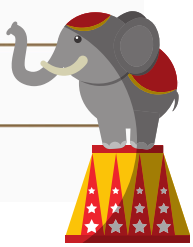
_____

Super Scientific Circus

if I joined the Circus

Directions: Finish the picture and then complete the sentence based on your drawing.

If I joined the circus



Super Scientific Circus

Facing My Feelings: S.E.L.

Give the circus clowns faces below by drawing what YOU look like based on how YOU feel.

Yesterday

Today

Tomorrow

Yesterday, I felt:

_____

Today, I feel:

_____

Tomorrow, I hope to feel:

_____

Student to Family Cooperative Activity Ideas:

- Create a home theater space: Dedicate a specific area in your home as a temporary theater space. It can be anywhere with a little bit of space to "put on a show". Create a cozy ambiance with lighting and comfortable seating.
- Create tickets and programs: Design and print them at home or even hand made. Deliver the tickets to family members, and the programs can include information about the performance, cast, and crew. This adds a touch of authenticity and excitement.
- Snack bar and concessions: Set up a snack bar or concessions stand with a variety of treats and refreshments. You can even create special themed snacks related to the performance you are watching.
- Interactive viewing experience: Encourage audience participation during the performance. For example, during a musical, you can sing along to the songs and clap during applause-worthy moments!
- Post-show discussions: After the performance, have a family discussion about the show. Share your thoughts, favorite moments, and discuss the themes or lessons portrayed. This can foster critical thinking and encourage creativity in your kids.
- **Remember, the goal is to create a memorable and immersive experience. Adapt these ideas based on your family's preferences and the resources available to you. The key is to have fun and enjoy the theater experience in your digs!**

Additional Activity Ideas:

- Memory jars: Create a memory jar with your children. Write down favorite childhood memories on small pieces of paper and put them in a jar. Each week or month, take turns pulling out a memory and sharing it. This can spark conversations and lead to further discussions about your childhood experiences, and theirs too!
- Bedtime stories: Instead of reading traditional bedtime stories, take turns sharing personal stories from your childhood. These could be tales of adventure, funny incidents, or heartwarming experiences. This can create a strong bond between you and your children as you share personal narratives.
- Encourage your kids to create their own journals or scrapbooks to document their childhood memories. Take the opportunity to share your childhood stories as you help them with their own projects. You can even contribute by adding some of your own stories or mementos to their journals.
- What was your favorite song, band or genre growing up? Play a few songs for your child/children and let them play a few of their favorites for you!
- Create traditions with your child/children!: Establish special rituals or traditions that you can share. It could be a weekly movie night, cooking together on weekends, going for a walk after dinner, or singing at the top of your lungs before bedtime.

Standards Alignment: Super Scientific Circus

Standards Alignment: The activities in this guide are aligned with the standards listed below. When teachers incorporate the arts, they increase student engagement, offer multiple points for students to access the curriculum, and provide alternate means for students to demonstrate what they know.

Florida's Benchmarks for Excellent Student Thinking (**B.E.S.T.**)/**NGSSS**	
Kindergarten through Grade 12/ English Language Arts	
ELA.K12.EE.1.1	Cite evidence to explain and justify reasoning.
ELA.K12.EE.2.1	Read and comprehend grade-level complex texts proficiently.
ELA.K12.EE.3.1	Make inferences to support comprehension.
ELA.K12.EE.4.1	Use appropriate collaborative techniques and active listening skills when engaging in discussions in a variety of situations.
ELA.K12.EE.5.1	Use the accepted rules governing a specific format to create quality work.
ELA.K12.EE.6.1	Use appropriate voice and tone when speaking or writing.
Next Generation Sunshine State Standards/Science	
SC.3.P.10.2	Recognize that energy has the ability to cause motion or create change.
SC.4.P.10.2	Investigate and describe that energy has the ability to cause motion or create change.
SC.5.P.13.1	Identify familiar forces that cause objects to move, such as pushes or pulls, including gravity acting on falling objects.
SC.5.P.13.2	Investigate and describe that the greater the force applied to it, the greater the change in motion of a given object.
SC.6.P.13.3	Investigate and describe that an unbalanced force acting on an object changes its speed, or direction of motion, or both.
SC.7.P.11.2	Investigate and describe the transformation of energy from one form to another.

My Theater Review

I saw: _____

Reviewed by: _____

This play/musical was about...

Here's a drawing of
my favorite character:

It made me feel:

I learned:

I gave this play/musical .... stars.

We'd love to hear from you! If you'd like to submit this review, please send to jenriquez@browardcenter.org