BROWARD CENTER FOR THE PERFORMING ARTS®

SEAS
STUDENT ENRICHMENT THROUGH THE ARTS

Established 1915 BROWARD County Public Schools

CURRICULUM CONNECTIONS

Let's Go Science

Support for the Student Enrichment Through the Arts program has been provided by

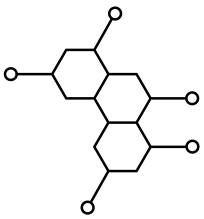
Frederick A. DeLuca FOUNDATION

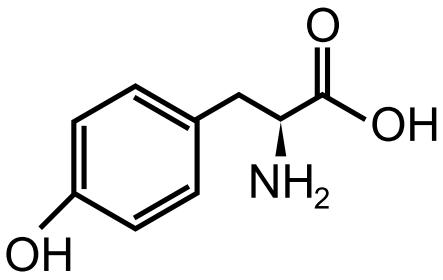
and the following Funds at the

COMMUNITY FOUNDATION OF BROWARD

Leonard & Sally Robbins Fund • Mary and Alex Mackenzie Community Impact Fund
The Frederick A. DeLuca Foundation Broward Community Fund

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.
- Please stay on the bus until greeted by a SEAS usher. At that time, please give the usher your BUS document and the usher will escort you to the theater.
- Remember to watch our Know Before You Go Video:

https://tinyurl.com/ElementarySeasWelcome

https://tinyurl.com/SecondaryWelcomeSEAS

BROWARD CENTER FOR THE PERFORMING ARTS®
EDUCATION PROGRAMS

Dear Educators,

We are excited to present this Curriculum Connection (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 S.E.A.S. performance at The Broward Center's Amaturo Theater, The Parker, or Miniaci at NSU. 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 are truly grateful for 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.

Don't forget to distribute your S.E.A.S. stickers when you return to school (after the trip) and share the magic that is Student Enrichment Through the Arts!

BEST TEACHER EVER

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.

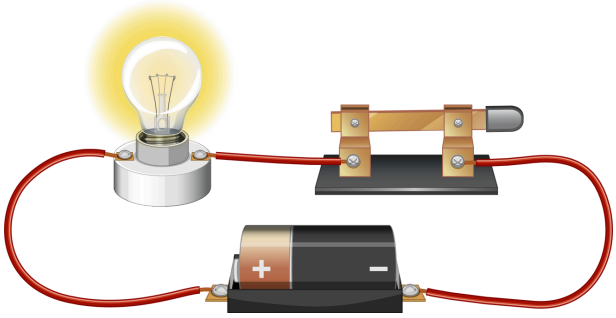
It is helpful to remind students of appropriate audience etiquette by explaining and discussing WHY these rules of behavior are important:

- 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.

Synopsis

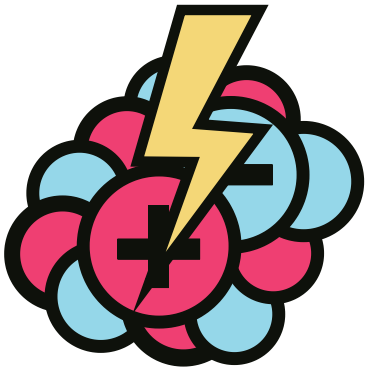
LET'S GO SCIENCE

Get ready to laugh and learn. Trained as jugglers and comedians, Todd Victor, also known as Professor Smart, and Lizette Guy, otherwise known as Dr. Knowitall, bring science to life with storytelling and cool demonstrations. Watch out because things will be flying!



<u>The Let's Go Science Show Goals:</u>

- Have fun learning about science.
- Increase your students' science vocabulary.
- Learn several physics concepts.
- Have students grasp the scientific method.
- Encourage kids to study science.



LET'S GO SCIENCE: VOCAB!

Atom: The basic unit of a chemical element. Example: A person weighing 150 pounds is made up of approximately 7,000,000,000,000,000,000,000,000,000 atoms.

Atmosphere: The mixture of gases that surrounds the earth and other planets. Example: The earth's atmosphere is made up of 78% nitrogen, 21% oxygen, and 1% argon, carbon dioxide, and other trace gases.

Attract: To pull or draw someone or something towards oneself. Example: A magnet is attracted to objects with iron in them

Balance: The point where two things are equal in weight or force. Example: Two teams pulling on a rope with equal force.

Center of Gravity: The center of mass of an object or thing. Also known as the point where gravity can be said to act. Example: In the human body, the center of gravity is an imaginary point that would exist if you crushed your body into a single, centrally located point. This point lies behind and just below the navel.

Circuit: A path that ends at its beginning. Example: A path where electrical current can flow in a circle. Column: An upright shaft or pillar, or a vertical, roughly cylinders haped thing.

Compression: To press something into a smaller space. Example: Your lungs can compress air into a balloon.

Data: A collection of facts and statistics collected together for reference or analysis.

Demonstrate: To show something and explain how it works.

Dimension: A measurement of the length, depth or height of an object.

Drag: To pull something across a surface with force. Example: The wings of an airplane have flaps that lift up to create a drag in the air that slows down the plane before it lands.

Effort: The physical or mental energy needed to accomplish a task.

Electricity: Electricity is the flow of electrical power. Example: Lights are powered by electricity. The computers, printers, and video games in your houses use a lot of the electricity in your home (13%).

Electrical Energy: The movement of charged particles, negative (-) and positive (+).

Electrons: Electrons orbit the positively charged nuclei of atoms and are responsible for binding atoms together in molecules and for the electrical, thermal, optical, and magnetic properties of solids. Electric currents in metal and in semiconductors consist of a flow of electrons and light, radio waves, x-rays and much heat radiation are all produced by accelerating and decelerating electrons.

LET'S GO SCIENCE: VOCAB CONTINUED

Force: A push or pull capable of moving or changing an object. Example: Racing dragsters leave the starting line of a race with a force nearly five times that of gravity.

Friction: The tension created when one object or thing slides against another object or thing. Example: By rubbing two sticks together quickly, you can create enough friction to cause heat. The heat generated by the friction can light a fire.

Fulcrum: The point at which a bar or object is balanced or supported. Example: The pivot point on a seesaw. Gas: The state in which a substance does not have a definite shape or volume. Example: Air, helium, and natural gas. Did you know that helium is lighter then air? That is why a balloon filled with helium floats but a balloon that you blow up with air from your lungs falls to the ground.

Gram: A unit of measurement equal to 1 thousandth of a kilogram. Example: There are 453.59 grams per pound. That means that a person weighing 150 pounds would weigh 68,038.5 grams.

Gravity: A force that attracts objects toward one another. Example: Gravity at the equator is slightly less than at the North Pole because the Earth bulges at the equator making it farther from the center of the Earth.

Gyroscope: A thing that has a disc or a wheel, which spins freely within it. Gyroscopic: Having the characteristics or qualities of a gyroscope. Example: The first gyroscope was invented in 1743 and was used at sea to measure where the horizon was in foggy and low-visibility conditions.

Hypothesis: An idea or explanation for something that is based on facts but has not yet been proven. Example: A guess as to why or how something happens.

Inertia: The property that keeps an object motionless unless a force is applied to it, or, keeps an object moving in a straight line unless a force is applied to it.

Kilo: Kilo means 1000 when put in front of another word. Example: 1 kilogram equals 1000 grams.

Kinetic Energy: Energy that pushes or pulls. Example: Sound, motion, heat, and electricity are all examples of kinetic energy.

Laws of Motion: Otherwise known as Newton's Laws of Motion. Three physical laws which provide relationships between the forces acting on a body and the motion of the body. I. Every object in the state of uniform motion tends to remain in that state of motion unless an external force is applied. II. The relationship between an object's mass (m), its acceleration (a), and an applied force (F) is F=ma. III. For every action there is an equal and opposite reaction.

Lever: A simple machine consisting of a rigid bar pivoted on a fixed point (fulcrum) used to move an object or thing.

Lift: To raise to a higher position or level. Example: The Liebherr LTM 11200-9.1 crane can lift objects up to 328 feet in the air. That is taller then a 30 story building.

LET'S GO SCIENCE: VOCAB CONTINUED

Machine: Any device that transmits or modifies energy. Example: Some of the simplest machines are inclined planes. wheels and axles, levers, pulleys, wedges, and screws.

Mass: The quantity of matter that any body contains. Example: On Earth we weigh our mass against the forces of the Earth's gravity. Massive: Very large in amount, size, or number.

Matter: Any substance that has mass, including gases, liquids, and solids which describe the three states of matter.

Microscope: A machine that is used to make small objects look bigger. Example: This is how a human hair looks under a microscope. Molecules: The smallest unit of a substance made up of atoms. Example: There are over 300 million molecules of hemoglobin in a single red blood cell.

Momentum: The force that keeps an object moving. Example: A car traveling at 70 mph needs a stopping distance of 324 feet to completely stop its forward momentum.

Ounce: A unit used to measure weight, smaller then a pound.

Particle: A very tiny piece of matter.

Physics: The study of matter and energy and how they interact.

Potential Energy: Energy that has built up or stored up but has not yet been used.

Pressure: The force used when something pushes against something else. Example: Steam engines use the pressure from vaporizing water to produce energy that is used to move an object.

Properties: A quality or description of an item or thing. Example: Gold is shiny and has a golden, butter yellow, metallic color.

Prove: Demonstrate the truth or the existence of something by evidence or argument.

Repel: To push someone or something away from oneself.

Research: A systematic study or investigation of sources and materials in order establish facts and reach new conclusions.

Resistance: A force that makes something slower or that stops its motion.

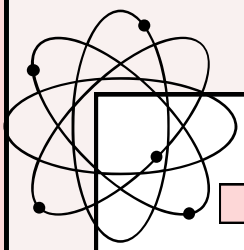
Scientific Method: The method by which scientific experiments are conducted. Usually consisting of a theory, hypothesis, designed experiments, and a conclusion of the results.

Scientist: A person who studies science.

LET'S GO SCIENCE

Science Vocabulary In Action

Use the vocabulary words from the previous pages to research what's new and interesting to you.
Choose FOUR new words from your list of vocabulary words.



_____

- [ ] What is the meaning of the word?
- [ ] Provide an example of the scientific use of the word.
- [ ] How would I explain it to someone else?

_____

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- [ ] Provide an example of the scientific use of the word.
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_____

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- [ ] Provide an example of the scientific use of the word.
- [ ] How would I explain it to someone else?

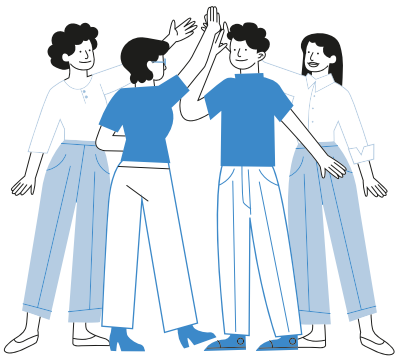
_____

- [ ] What is the meaning of the word?
- [ ] Provide an example of the scientific use of the word.
- [ ] How would I explain it to someone else?

LET'S GO SCIENCE: GROUP/CLASS WORK

Group Work:

Each group take a topic from the list below and research using the internet or classroom texts for **10** minutes. Share your findings with the class.
Don't forget to use visuals!



1. How did dry ice get its name?

2. What do the molecules do in matter when you add energy?

3. How could you turn a rock into a liquid?

4. Why do smaller things burn easier than big things?

5. What 3 things do you need to have a fire?

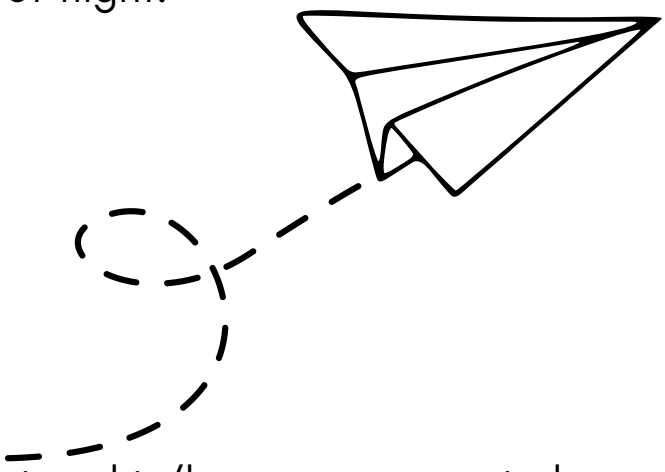
6. What is the scientific reason that a helium balloon floats?

7. What state(s) of matter are you?

8. How are molecules acting when in each of the different states - solid,liquid,gas?

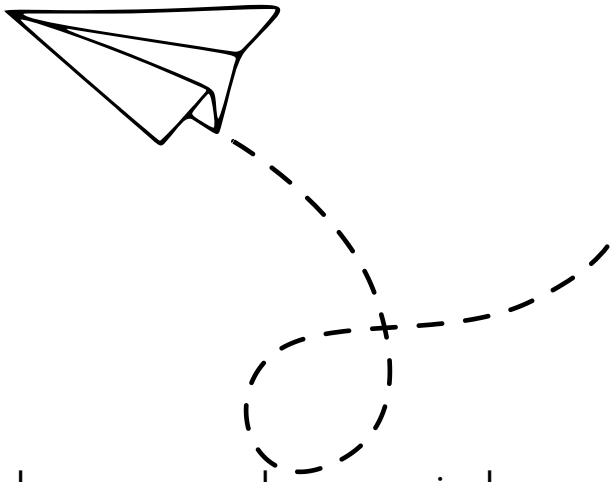
LET'S GO SCIENCE:
AERO DESIGN

Description: Make and fly a paper airplane and investigate what factors affect the aerodynamics of flight.



Materials:
paper
paper clips
tape

Procedure:
1. Each student designs his/her own paper airplane using **only** the provided supplies.
2. Students should analyze airplanes (preflight) to observe design variations.
3. Test planes for each of these criteria:
   1. height of flight
   2. length of flight
   3. stunt maneuvers



Discussion: Discuss how forces affect airplanes.

Here are some websites that show you how to make super cool paper airplanes:

http://www.bestpaperairplanes.com/

http://www.amazingpaperairplanes.com/

LET'S GO SCIENCE

CRACK THE CODE: SEL

positive affirmations

Use the key below to help you crack the code!

a	b	c	d	e	f	g	h	i	j	k	l	m
1	2	3	4	5	6	7	8	9	10	11	12	13
n	o	p	q	r	s	t	u	v	w	x	y	z
14	15	16	17	18	19	20	21	22	23	24	25	26

9		1	13		23	15	18	20	8	25

9		1	13		22	1	12	21	5	4

9		1	13		12	15	22	5	4

9		1	13		2	18	1	22	5

9		1	13		5	14	15	21	7	8

Theater Vocabulary: From Script to Spotlight

Play: A story told live on stage by actors in front of a live audience.

Musical: A story told live on stage by actors in front of a live audience that also involves singing and dancing.

Genre: The style of a play.

Plot: The timeline of actions in the story from beginning to end.

Setting: Where a story takes place.

Characters: Who the story is about.

Conflict: A problem that the characters in the story have to face and overcome. A conflict arises when a character wants something but something else gets in their way.

Objective: What a character wants to achieve or solve in the story. In other words, a character's goal.

Protagonist: The story's ***hero.*** This is the character who is out to accomplish a goal or find purpose.

Antagonist: The story's ***villain***. This character is usually against what the protagonist(s) needs to accomplish their objective or goal.

Dialogue: a conversation between two or more people in a play or musical.

Moment Before: an acting term that encourages actors to consider what is going on in their character's life just before the present moment.

Blocking: Movement the director give to the actors to show them where to go on the stage

Choreography: A sequence of dance moves assigned to a dancer in a musical number (song) that are used to help tell the story.

Cue: In theater, a cue signals when another action should begin. Ex: The actor's cue to enter the stage might be after they hear the thunder sound effect.

Make-Up: Artistically designed cosmetics to enhance an actor's portrayal of a character.

Playwright: The writer or writers of the play. Playwrights write the dialogue between characters in a play.

Composer: The artist who writes music for a musical.

Lyricist: the artist who writes words to the music in a musical.

Actor: the artist who embodies or puts themselves "in the shoes of" a character or characters in a play or musical to tell that character's story to the audience.

Audience: a group of people who attend a live event like a theatre performances to watch, listen, and respond to the event on stage.

Director: the artist who works with the writers, actors, and designers to tell a clear story on stage for the audience.

Stage Manager: The artist who manages the onstage and backstage areas before, during, and after a performance.

Costume Design: A costumer designer chooses and creates the articles of clothing that characters wear on stage to help tell the audience who the characters.

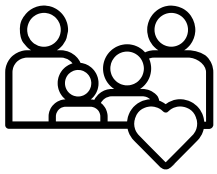
Sound Designer: an artist that creates the mood or atmosphere of the play through the use of sound, sound effects, and music in a play or musical.

Props: Objects used by a character on stage to help tell the story. Ex: A character may use a prop like an umbrella on stage if it is raining in that scene of the play.

K-5 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.

Let's Go Science Standards Alignment

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