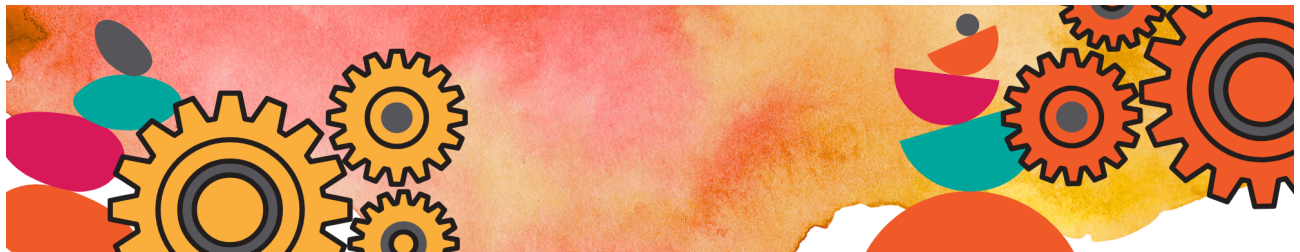




UNIT: CAN YOU BALANCE?
“IT’S SHOWTIME” (Lesson 4 of 4)
Grade Band: 3, 4
Content Focus: Theatre & Science



LEARNING DESCRIPTION

After students have created a Rube Goldberg machine in the previous lesson, students will be taking their hard work in the design studio and marketing it to an audience! Students will work collaboratively to write a persuasive script utilizing dialogue to clearly define a problem that their simple machine will solve. Students will try to persuade the audience to purchase their invention. Finally, it’s showtime and students will perform their scripts and scenes!

LEARNING TARGETS

Essential Questions	“I Can” Statements
How can I use a persuasive, strong voice to express my knowledge of simple machines?	I can present a persuasive pitch for why my Rube Goldberg machine is worth purchasing. I can work collaboratively to write a persuasive script, which clearly defines a problem that our Not-So-Simple-Machine will solve.



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	I can perform a scene using a persuasive strong voice that brings to life our script.
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GEORGIA STANDARDS

Curriculum Standards	Arts Standards
Grade 4: S4P3. Obtain, evaluate, and communicate information about the relationship between balanced and unbalanced forces. a. Plan and carry out an investigation on the effects of balanced and unbalanced forces on an object and communicate the results. b. Construct an argument to support the claim that gravitational force affects the motion of an object. c. Ask questions to identify and explain the uses of simple machines (lever, pulley, wedge, inclined plane, wheel and axle, and screw) and how forces are changed when simple machines are used to complete tasks.	Grade 4: TA4.CR.2 Develop scripts through theatrical techniques. TA4.PR.1 Act by communicating and sustaining roles in formal and informal environments. TA4.RE.1 Engage actively and appropriately as an audience member. TA4.CN.1 Explore how theatre connects to life experience, careers, and other content.

SOUTH CAROLINA STANDARDS

Curriculum Standards	Arts Standards
Grade 3: 3-PS2-1. Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.	Anchor Standard 1: I can create scenes and write scripts using story elements and structure. Anchor Standard 3: I can act in improvised scenes and written scripts. Anchor Standard 5: I can interpret and evaluate live or recorded dramatic performances as an active audience member. Anchor Standard 8: I can relate theatre to other content areas, arts disciplines, and careers.

KEY VOCABULARY

Content Vocabulary	Arts Vocabulary
<ul style="list-style-type: none"> <u>Force</u> - Any interaction that, when applied to an object, can cause it to change its motion or shape <u>Balanced forces</u> - Two or more forces 	<ul style="list-style-type: none"> <u>Volume</u> - How loud or soft something is <u>Script</u> - The written version of a play, movie, or other acted performance



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<p>acting on an object in such a way that they cancel each other out, resulting in no change in the object's motion</p> <ul style="list-style-type: none"> • <u>Unbalanced forces</u> - Two or more forces acting on an object are not equal in size or are not opposite in direction, causing the object to accelerate (change its speed or direction) • <u>Gravitational force</u> - The force of attraction that pulls objects toward each other due to their mass • <u>Motion</u> - The change in the position of an object over time • <u>Mass</u> - A measure of the amount of matter in an object or substance • <u>Simple machines</u> - Basic mechanical devices that make work easier by altering the direction or magnitude of a force; the building blocks for more complex machines • <u>Rube Goldberg</u> - An American cartoonist, engineer, and inventor best known for creating elaborate, humorous illustrations of complex machines designed to perform simple tasks in overly complicated ways • <u>Inclined plane</u> - A flat surface that is tilted at an angle • <u>Lever</u> - A simple machine consisting of a rigid bar or beam that pivots around a fixed point called the fulcrum • <u>Wedge</u> - A simple machine that consists of a triangular-shaped object, often with a sharp edge, which is used to split, cut, or lift objects • <u>Pulley</u> - A simple machine consisting of a wheel with a groove around its edge, through which a rope, chain, or belt can pass 	<ul style="list-style-type: none"> • <u>Scene</u> - A single situation or unit of dialogue in a play • <u>Dialogue</u> - A conversation between two or more persons • <u>Audience</u> - The group of spectators, listeners and viewers collectively, in attendance at a theater • <u>Props</u> - Items that actors use in a performance to depict real-life objects. Props can also be used to help students brainstorm for their writing or character study. • <u>Diction</u> - Using a “crisp and clear” actor voice that can be understood by everyone watching and listening • <u>Voice</u> - Actors use their voice to be heard by the audience clearly. Actors must also apply vocal choices such as pitch, tempo, and volume to the character they are dramatizing. • <u>Body</u> - Actors use their body to become a character through body posture and movement. What your mind thinks, what your emotions feel, all of this is supposed to show up in your body.
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- Screw - A type of simple machine that consists of an inclined plane wrapped around a central shaft or core
- Wheel and axle - A simple machine that consists of two circular objects—a larger wheel and a smaller axle—that are connected and rotate together

MATERIALS

- Table/desk to display Rube Goldberg machines
- [Shark Tank pitch for “Locker Boards”](#) starting at 8:45
- *Optional: Costumes—Each student can design or assemble a costume based on the product they are pitching. Example: Students may choose to wear a lab coat and safety goggles for the presentation.*
- *Optional—Tablecloth*

INSTRUCTIONAL DESIGN

Opening/Activating Strategy

- Students will participate in a whole group choral echo. The teacher and students will say the same phrase aloud repeating in chorus providing time for students to work on their “performance voice” with an emphasis on volume and diction.
 - Round 1:
 - Teacher: The big black bug.
 - Students: The big black bug.
 - Teacher: Ate the big black bear.
 - Students: Ate the big black bear.
 - Round 2: Students create two circles; the inner circle faces towards the outer circle. Each student will become partners with the student they are facing. Refer to the inner circle as Partner A and the outer circle Partner B.
 - Once students are set, the teacher will direct Partner A to say their lines and Partner B will respond. The outer circle will rotate clockwise one-step and pair up with a new Partner A in the inner circle.
 - Partner A: The big black bug.
 - Partner B: The big black bug.
 - Partner A: Ate the big black bear.
 - Partner B: Ate the big black bear.
 - Round 3: Students stay in their circles; the teacher will direct Partner B to say their lines and Partner A will respond. The outer circle will rotate clockwise one-step and pair up with a new partner A in the inner circle.
 - Partner B: The big black bug.
 - Partner A: The big black bug.
 - Partner B: Ate the big black bear.
 - Partner A: Ate the big black bear.

Work Session



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- With a partner, students will read aloud an example of [Reader's Theater: Deluxe Slushy Lemonade Machine](#). It will serve as a model for their classwork. Have students practice using different voices for their characters, pronouncing the words using clear diction, and projecting their voices.
- Discuss how the dialogue is written in first person.

Script-Writing:

- Students will write a script for their “Not So Simple Machine”. Tell students that their purpose is to persuade the audience to purchase their product. Students can use the example script as a model.
- Working collaboratively, students will need to include the following elements in their script.
 - Each member of the group must have a speaking role in the presentation.
 - The script must clearly define a problem and explain/show how their “Not So Simple Machine” will solve the problem.
 - They must include three reasons to support its purpose.
 - They should attempt to persuade the audience to purchase their simple machine.

Rehearsal:

- Watch the [Shark Tank pitch for “Locker Boards”](#) starting at 8:45 and discuss how the entrepreneur uses his voice and body in his presentation.
- Students will have the opportunity to rehearse their scene. Students will work in their groups to rehearse their scenes being mindful of having a strong, expressive performance voice.
- After rehearsing, students will prepare the presentation for the scene including the following criteria:
 - Group must set up their “Not So Simple Machine”
 - Determine the placement of each character onstage
 - If time permits, determine the costumes and props being included

Performance:

- It's showtime! Students will present their scenes to the class.
- Each group will take turns presenting their machines.
 - Review with the class the proper etiquette for an attentive audience member—Still, silent, and supportive. (Remind the students that part of their grade is in this category.)
 - Students will present with loud, clear voices with strong posture.
 - Students will “run” their machine and show the audience that it functions properly.
- After performances, have the audience identify which simple machines the group used.

Classroom Tips:

- *Students will often divide the tasks among themselves, however be sure to require all students to participate equally.*
- *Students may be frustrated when working in groups, prior to each work period, review strategies to ensure a positive experience.*
- *Depending on your class size and setting, the teacher may want to have all groups set up their presentation prior to the performances so that transition times are minimal.*

Closing/Reflection



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- Ask students to reflect on the scenes. Ask students—if they were investors and could invest in one machine not their own, which machine would they want to invest in? Why? How well did the presenters use their voices and bodies to convey confidence in their invention? What simple machines did they see in the design?

ASSESSMENTS

Formative

- The teacher will observe students while they work and engage in conversation about science concepts during the activator.
- The teacher will conference with groups to read scripts and offer feedback as necessary.

Summative

- [“It’s Showtime” Rubric](#)
- Students used their voices and bodies to communicate their ideas in their performances.
- Students demonstrate that they understand simple machines based on their script and performance.

DIFFERENTIATION

Accelerated: Within the given small groups, students will take on the role of the simple machine by personifying it and acting as if they were the simple machine persuading the class to make the purchase.

Remedial:

- Provide students with key vocabulary terms with definitions to be used in their scripts. Preview the key vocabulary on an anchor chart, word wall, or flashcards. Group heterogeneously with students with higher writing proficiencies.
- Allow students to illustrate different parts of the script to hold up during the whole group presentation.
- Provide sentence stems for the script.
- Give students a checklist or graphic organizer they may use to ensure that they include all required portions in their script in a logical sequence. Students should be expected to provide evidence to support their persuasive points.

ADDITIONAL RESOURCES

- Kids Shark Tank examples for their presentation, begin at 43 seconds:
<http://abcnews.go.com/GMA/video/shark-tank-life-kid-preneurs-edition-28427763>
- Students can use an avatar to present their persuasive script in their own voice using
<http://blabberize.com/>



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CREDITS

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**This integrated lesson provides differentiated ideas and activities for educators that are aligned to a sampling of standards. Standards referenced at the time of publishing may differ based on each state's adoption of new standards.*

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