

### Unit Essential Question

How can exploring balanced and unbalanced forces help us to understand cause and effect and change in our world?

#### UNIT DESCRIPTION

Students will artfully explore balanced and unbalanced forces by creating a Calder mobile, constructing a Rube Goldberg Machine, and creating an entrepreneurial presentation to pitch their creation for purchase. Students will unleash creativity, sharpen their critical thinking skills, while applying their scientific understanding of force and motion.

#### PROJECTS

- Project 1: Balancing Act: Calder Mobile
- Project 2: Goldberg's Not-So-Simple Machine
- Project 3: It's Showtime!

[www.artsnowlearning.org](http://www.artsnowlearning.org)

Units provide differentiated ideas and activities aligned to a sampling of standards.

The units do not necessarily imply mastery of standards, but are intended to inspire and equip educators.

Produced through the U.S. Department of Education: Arts in Education—Model Development and Dissemination Grants Program  
Cherokee County (GA) School District and ArtsNow, Inc.

**UNIT OVERVIEW**

Unit Description	Table of Contents
Students will artfully explore balanced and unbalanced forces by creating a Calder mobile, constructing a Rube Goldberg Machine, and creating an entrepreneurial presentation to pitch their creation for purchase. Students will unleash creativity, sharpen their critical thinking skills, while applying their scientific understanding of force and motion.	<ul style="list-style-type: none"> <li>• Project 1: Balancing Act: Calder Mobile</li> <li>• Project 2: Goldberg's Not-So-Simple Machine</li> <li>• Project 3: It's Showtime!</li> </ul>

**UNIT ESSENTIAL QUESTION**

How can exploring balanced and unbalanced forces help us to understand cause and effect and change in our world?

**CROSS-CUTTING INTERDISCIPLINARY CONCEPT**

Balance Cause/Effect Change	Inferencing Predicting Reflecting	Revising
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**REAL WORLD CONTEXT**

Students studying about balanced and unbalanced forces can understand the mechanics of the world around them. When objects are balanced, they are still, whereas, when forces are unbalanced the object is moving. They are able to understand how certain materials interact with one another to create movement.

**PROJECT ESSENTIAL QUESTIONS**

PROJECT 1: How can gravitational forces affect the balance of objects?  
How does proportion affect balance?

PROJECT 2:

- How do balanced and unbalanced forces relate to simple machines?
- How can simple machines combine to affect the balance of forces?
- How can simple machines combine to affect motion?
- How can simple machines make a task easier/harder?
- How do we sometimes make things more complicated than they need to be?

PROJECT 3: How can I use a persuasive, strong voice to express my knowledge of simple machines?

**STANDARDS**

Curriculum Standards	Arts Standards
<p><b>S4P3.</b> Obtain, evaluate, and communicate information about the relationship between balanced and unbalanced forces.</p> <p>a. Plan and carry out an investigation on the effects of balanced and unbalanced forces on an object and communicate the results.</p> <p>b. Construct an argument to support the claim that gravitational force affects the motion of an object.</p>	<p>VA4PR.1 Creates artworks based on personal experience and selected themes.</p> <p>a. Makes design decisions as the result of conscious, thoughtful planning and choices.</p> <p>b. Formulates visual ideas by using a variety of resources (e.g., books, magazines, Internet).</p> <p>VA4PR.3 Understands and applies media, techniques, and processes of three-dimensional works of art (ceramics, sculpture, crafts, and mixed-media) using tools and materials in a safe and appropriate manner to develop skills.</p> <p>a. Creates 3-D artwork that demonstrates a design concept: open or closed form, proportion, balance, color scheme, and movement.</p> <p>VA:Cr2.1.4a- Explore and invent art-making techniques and approaches</p> <p>TAES4.2 Developing scripts through improvisation and other theatrical methods</p> <p>a. Uses the playwriting process: pre-write/pre-play; prepare to write/plan dramatization; write/dramatize; reflect and edit; re-write/play; publish/perform</p> <p>b. Analyzes the elements of a well-written script</p> <p>e. Creates an organizing structure for writing scripts</p> <p>TAES4.3 Acting by developing, communicating, and sustaining roles within a variety of situations and environments</p> <p>a. Uses articulation, volume and vocal variety to communicate thoughts, emotions and actions of a character</p> <p>b. Uses stage areas and body movement to communicate thoughts, emotions, and actions of a character</p> <p>c. Uses imagination and real life experience to portray characters</p> <p>d. Collaborates with an ensemble to create theatre</p> <p>e. Dramatizes literature and original scripts through various dramatic forms such as story drama,</p>

	<p>pantomime, process drama, puppetry, improvisation and readers' theatre</p> <p>TAES4.7 Integrating various art forms, other content areas, and life experiences, to create theatre</p> <p>a.. Identifies and describes the connection between theatre arts, visual art, music, dance, and technology</p> <p>b. Selects elements of other art forms to develop theatre</p> <p>c. Examines other core content areas through theatre experiences</p> <p>TAES4.11 Engaging actively and appropriately as an audience member in theatre or other media experiences</p> <p>a. Assumes the roles and responsibilities of the audience</p> <p>b. Applies theatre etiquette</p> <p>VA4MC.1 Engages in the creative process to generate and visualize ideas.</p>
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**MATERIALS TO BE PURCHASED FOR UNIT**

<ul style="list-style-type: none"> <li>● Walmart.com pack of pipe cleaners 12 in- 1000 <a href="http://bit.ly/2sxGOWq">http://bit.ly/2sxGOWq</a></li> <li>● Factory Direct Craft Pipe Cleaners 18 in- 18 <a href="http://bit.ly/2q1Oqvi">http://bit.ly/2q1Oqvi</a></li> <li>● Walmart.com pack of foam sheets 78 sheets <a href="http://bit.ly/2l7jR3K">http://bit.ly/2l7jR3K</a></li> <li>● Staples.com Assorted Card Stock 250 sheets <a href="http://bit.ly/2rk5ydP">http://bit.ly/2rk5ydP</a></li> <li>● Walmart.com Paper Clips 1,000 <a href="http://bit.ly/2s2laUI">http://bit.ly/2s2laUI</a></li> <li>● Micheals.com Craft beads 7.0 oz <a href="http://bit.ly/2sy3iNz">http://bit.ly/2sy3iNz</a></li> <li>● Micheals.com Wood/Shell 10. oz <a href="http://bit.ly/2rzxFGe">http://bit.ly/2rzxFGe</a></li> </ul>	<p>4/school- \$13.70</p> <p>10/school- \$1.59</p> <p>4/school- \$17.99</p> <p>4/school- \$17.89</p> <p>1/ school \$8.20</p> <p>4/school \$7.99</p> <p>10/school \$9.99</p>
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**ASSESSMENTS**

<b>Summative Assessments</b>
<ul style="list-style-type: none"> <li>● Pre/ Post Test</li> <li>● Project 1 Rubric Balancing Act</li> <li>● Project 2 Rubric Not-So-Simple- Simple Machine</li> <li>● Project 3 Rubric It's Showtime!</li> </ul>

**CHARACTER EDUCATION COMPONENTS****CHARACTER ATTRIBUTES ADDRESSED DURING UNIT**

Students will collaborate with second grade students on their findings with the unit. The students will present their “Not-So-Simple-Simple Machine” to their peers, and their peers will determine which project is the best creation.	<ul style="list-style-type: none"><li>• Respect</li><li>• Fairness</li></ul>
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**APPENDIX**

- Pretest
- Project 1 Lesson Plan
- Project 1 Rubric
- Project 2 Lesson Plan
- Project 2 Rubric
- Project 3 Lesson Plan
- Project 3 Rubric

**ADDITIONAL RESOURCES**

**SUGGESTED BOOKS:**

*Alexander Calder: Meet the Artist* by Patricia Geis

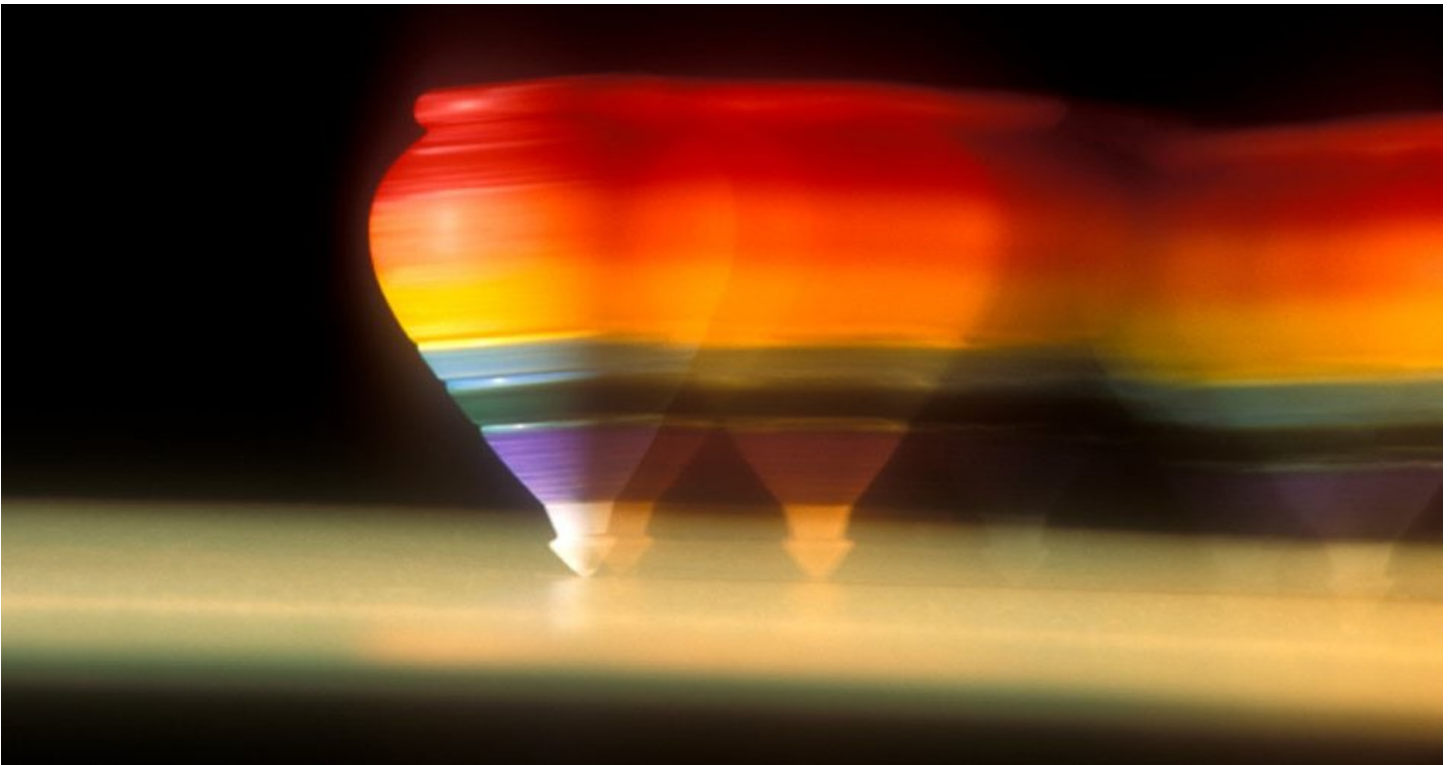
*Rube Goldberg Inventions*

*Sandy's Circus: A Story About Alexander Calder* by Tanya Lee Stone

*Alexander Calder and His Magical Mobiles*

**WEBSITES:**

- <https://connecticuthistory.org/a-world-in-motion-artist-and-sculptor-alexander-calder/>
- [https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=video&cd=14&cad=rja&uact=8&ved=0ahUKEwiDsvOLvJ\\_UAhVB0iYKHeKECrw4ChC3AgqvMAM&url=https%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3DFjKYmD1HHKs&usq=AFQjCNELe6fcoVaXPjDzImyiGX-ehslqw&sig2=1UfbCZBDcaDHVzpRWSMBxQ](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=video&cd=14&cad=rja&uact=8&ved=0ahUKEwiDsvOLvJ_UAhVB0iYKHeKECrw4ChC3AgqvMAM&url=https%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3DFjKYmD1HHKs&usq=AFQjCNELe6fcoVaXPjDzImyiGX-ehslqw&sig2=1UfbCZBDcaDHVzpRWSMBxQ)
- <http://thekidshouldseethis.com/post/experimental-balancing-sculptures>
- <http://www.learner.org/interactives/parkphysics/index2.html>
- <http://safeyoutube.net/w/Jp1b>
- [http://www.softschools.com/science/simple\\_machines/games/](http://www.softschools.com/science/simple_machines/games/) (students can visit to review 6 simple machines)
- <https://www.rubegoldberg.com/>
- <https://diy.org/skills/physicist/challenges/389/make-a-rube-goldberg-machine> (OKGo "This Too Shall Pass" video - incredible Rube Goldberg machine and music video) -or-
- <http://okgo.net/category/videos/> (alternate access to "This Too Shall Pass" video listed above)
- <https://www.youtube.com/watch?v=84cyAyzzic> (Helpful Rube Goldberg hacks)
- <https://www.youtube.com/watch?v=OCqGi2RDm5s> (Tips and Tricks)
- <https://www.rubegoldberg.com/contest/>
- <https://www-tc.pbs.org/wgbh/nova/assets/swf/1/galileo-experiments/galileo-experiments.swf>
- <http://www.learner.org/interactives/parkphysics/index2.html>
- 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/>



## Unit Essential Questions

How can gravitational forces affect the balance of objects?

How does proportion affect balance?

### PROJECT DESCRIPTION

In this project, students will use their knowledge of balance and unbalanced forces to design and create a Calder mobile. A Calder mobile is a mobile of 3 to 5 levels that has various materials attached to wire, that must be balanced upon completion. The material used to balance must be of various sizes including materials such as foam pieces, card stock, wire, string, paper clips, and/or beads. In completing this project, students will be using their critical thinking skills to utilize the materials to create a piece of artwork that incorporates the scientific concepts of gravitational forces, as well as balanced and unbalanced forces. Students will also write about their experience before, during, and after completion of the project.

## LEARNING TARGETS

“I Can...”

- I can identify and compare balanced and unbalanced forces
- I can create a balanced mobile using unbalanced forces
- I can analyze how forces affect balance and revise my plan as I design
- I can communicate my understanding of forces by reflecting upon my construction of my Calder mobile

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Units provide differentiated ideas and activities aligned to a sampling of standards.

The units do not necessarily imply mastery of standards, but are intended to inspire and equip educators.

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Project Description	Learning Targets
<p>In this project, students will use their knowledge of balance and unbalanced forces to design and create a Calder mobile. A Calder mobile is a mobile of 3 to 5 levels that has various materials attached to wire, that must be balanced upon completion. The material used to balance must be of various sizes including materials such as foam pieces, card stock, wire, string, paper clips, and/or beads. In completing this project, students will be using their critical thinking skills to utilize the materials to create a piece of artwork that incorporates the scientific concepts of gravitational forces, as well as balanced and unbalanced forces. Students will also write about their experience before, during, and after completion of the project.</p>	<p>“I Can...”:</p> <ul style="list-style-type: none"> <li>● I can identify and compare balanced and unbalanced forces</li> <li>● I can create a balanced mobile using unbalanced forces</li> <li>● I can analyze how forces affect balance and revise my plan as I design</li> <li>● I can communicate my understanding of forces by reflecting upon my construction of my Calder mobile</li> </ul>

### ESSENTIAL QUESTIONS

- How can gravitational forces affect the balance of objects?
- How does proportion affect balance?

### STANDARDS

Curriculum Standards	Arts Standards
<p><b>S4P3. Obtain, evaluate, and communicate information about the relationship between balanced and unbalanced forces.</b></p> <p>a. Plan and carry out an investigation on the effects of balanced and unbalanced forces on an object and communicate the results.</p> <p>b. Construct an argument to support the claim that gravitational force affects the motion of an object.</p> <p><b>ELAGSE4W2: Write informative/explanatory texts to examine a topic and convey ideas and information clearly.</b></p> <p>a. Introduce a topic clearly and group related information in paragraphs and sections; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension.</p>	<ul style="list-style-type: none"> <li>• <b>VA4PR.1 Creates artworks based on personal experience and selected themes.</b> <ul style="list-style-type: none"> <li>b. Makes design decisions as the result of conscious, thoughtful planning and choices.</li> </ul> </li> <li>• <b>VA4PR.3 Understands and applies media, techniques, and processes of three-dimensional works of art (ceramics, sculpture, crafts, and mixed-media) using tools and materials in a safe and appropriate manner to develop skills.</b> <ul style="list-style-type: none"> <li>a. Creates 3-D artwork that demonstrates a design concept: open or closed form, proportion, balance, color scheme, and movement.</li> </ul> </li> </ul>



<p>b. Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic.</p> <p>c. Link ideas within categories of information using words and phrases. (e.g., another, for example, also, because).</p> <p>d. Use precise language and domain-specific vocabulary to inform about or explain the topic.</p> <p>e. Provide a concluding statement or section related to the information or explanation presented.</p>	
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**KEY VOCABULARY**

Content Vocabulary	Arts Vocabulary
<ul style="list-style-type: none"> <li>• Balance</li> <li>• Unbalanced</li> <li>• Gravitational force</li> <li>• Force</li> <li>• Explanatory writing</li> <li>• Reflection</li> <li>• Precise language</li> <li>• Mass</li> </ul>	<ul style="list-style-type: none"> <li>• Balance: This is a sense of stability in the body of work. Balance can be created by repeating same shapes and by creating a feeling of equal weight.</li> <li>• Proportion: This refers to the relationships of the size of objects in a body of work. Proportion gives a sense of size seen as relationship of objects, such as smallness or largeness.</li> </ul>

**TECHNOLOGY INTEGRATION**

<ul style="list-style-type: none"> <li>• <a href="https://phet.colorado.edu/sims/html/forces-and-motion-basics/latest/forces-and-motion-basics_en.html">https://phet.colorado.edu/sims/html/forces-and-motion-basics/latest/forces-and-motion-basics_en.html</a></li> <li>• <a href="http://archive.artsmia.org/artists_toolkit/encyc_balancesymmetry.htm">http://archive.artsmia.org/artists_toolkit/encyc_balancesymmetry.htm</a></li> </ul>
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**ASSESSMENTS**

Formative	Summative
<ul style="list-style-type: none"> <li>• Teacher will observe the students to determine if they understand what gravitational force is.</li> <li>• Teacher will observe the students to determine if they understand what balanced and unbalanced forces are.</li> <li>• Teacher will observe the students' use of</li> </ul>	<ul style="list-style-type: none"> <li>• Project 1 Rubric</li> <li>• The teacher will check for student's communication of deeper thinking throughout the project (specifically checking for understanding of how proportion and gravitational forces affect balance).</li> </ul>

<p>proportion in relation to balance.</p>	<ul style="list-style-type: none"> <li>• The teacher will ask student reflection questions during the creation of their artwork:             <ul style="list-style-type: none"> <li>▪ How did you plan to balance your mobile?</li> <li>▪ How did you determine your number of levels?</li> <li>▪ How did you determine the material used to balance your mobile?</li> <li>▪ What did you have to rethink while attempting to balance your mobile?</li> <li>▪ How did gravitational force affect your plan?</li> </ul> </li> </ul>
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### MATERIALS

<ul style="list-style-type: none"> <li>• pipe cleaners</li> <li>• paper clips</li> <li>• foam sheets</li> <li>• card stock</li> <li>• beads</li> <li>• string</li> </ul>
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### Activating Strategy (5- 10 min)

Choose a book to explore as a class from the below list:

- [Alexander Calder: Meet the Artist](#) by Patricia Geis
- [Sandy's Circus: A Story About Alexander Calder](#) by Tanya Lee Stone
- [Alexander Calder and His Magical Mobiles](#) by Jean Lipman

Then introduce Alexander Calder to students and use this website to introduce students to the concept of mass: <http://thekidshouldseethis.com/post/experimental-balancing-sculptures>

### Main Activity

#### PROCESS:

#### PART 1:

- Facilitate class discussion on gravitational force. <http://study.com/academy/lesson/gravitational-force-definition-equation-examples.html>

## Project 1 of 3

Approx. Duration of Project: 90 minutes

- Students can also use the websites (Technology integration) to explore gravitational forces and proportion as well to explore with balance in art. This can be facilitated independently or in small research groups.
- Announce students that they are going to be challenged with a task. The task is to: **Create a balanced mobile using unbalanced forces.**

In small groups, direct students to:

- Determine the number of levels for mobile (3-5).
- Determine the lengths of wires.
- Determine other materials for use.
- Sketch the wire levels- predict how it will balance.
- Start assembling the levels.

**PART 2:**

- Review previous day's information, more mobiles, and notes.
- Start attaching materials: foam/cardstock/beads.
- Check for balance and re-check as needed.
- Record in journal how they balanced levels - did they have to omit materials, what changed?

(Give approximately 90 minutes total to design the mobile. If this time frame sounds prohibiting, structure this project to fit your students' needs).

**Classroom Tips:**

- Review project work pledge
- Review safe work procedures
- Review classroom rules
- Review peer interaction regulations
- Teacher will be in charge of cutting wire
- Other materials can be divided into kits

**REFLECTION**

**Reflection Questions**

- *How did you visualize your mobile?*
- *Did your original plan work?*
- *What did you have to fix?*
- *If you positioned levels differently, how would your final product change?*
- *If you changed materials, what would have changed? Why?*

**DIFFERENTIATION**

**BELOW GRADE LEVEL:** Modify number of levels required. Provide a graphic organizer with levels for students to draw and visualize materials to attach to each level. Give sentence frames for reflection journal. Provide opportunity for peer checks so students can get feedback on their project. You could also partner them with other students if this collaborative support is needed.

**ABOVE GRADE LEVEL:** Increase number of levels, write instructions to build a mobile for a classmate.

**EL STUDENTS:** Modify number of levels, give sentence frames, include visual cues, provide extra time, and peer help.

### ADDITIONAL RESOURCES

- <http://study.com/academy/lesson/gravitational-force-definition-equation-examples.html>
- <https://connecticuthistory.org/a-world-in-motion-artist-and-sculptor-alexander-calder/>
- [https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=video&cd=14&cad=rja&uact=8&ved=0ahUKEwiDsvOLvJ\\_UAhVB0iYKHeKECrw4ChC3AggvMAM&url=https%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3DFjKYmD1HHKs&usq=AFQjCNELe6fcoVaXPsJdzlmyiGX-ehslqw&sig2=1UfbCZBDcaDHVzpRWSMBxQ](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=video&cd=14&cad=rja&uact=8&ved=0ahUKEwiDsvOLvJ_UAhVB0iYKHeKECrw4ChC3AggvMAM&url=https%3A%2F%2Fwww.youtube.com%2Fwatch%3Fv%3DFjKYmD1HHKs&usq=AFQjCNELe6fcoVaXPsJdzlmyiGX-ehslqw&sig2=1UfbCZBDcaDHVzpRWSMBxQ)
- <http://thekidshouldseethis.com/post/experimental-balancing-sculptures>

### APPENDIX

- Project 1 Rubric

### CREDITS

U.S. Department of Education  
Arts in Education--Model Development and Dissemination Grants Program  
Cherokee County (GA) School District and ArtsNow, Inc.  
Ideas contributed and edited by:  
T. Renee Manuel, Edited by Jessica Espinoza

**Balancing Act: Calder Mobile**

**TASK: Create a balanced mobile using unbalanced forces.**

Task	4	3	2	1
<b>Creating Calder-Inspired Art</b>	Mobile is balanced; has appropriate number of levels	Mobile is balanced; missing one level	Mobile is unbalanced; all levels present	Mobile is unbalanced and missing more than one level
<b>Communicate</b>	Student has a fully developed plan of the construction of the artwork; student uses appropriate language skills; students can inform and explain to audience what they created	Student mostly has a clear plan for the construction of artwork; student has minimal errors in language skills, students can inform and explain to audience what they created	Student has an underdeveloped plan for the construction of artwork; student has major (more than 5) errors in language skills, students can inform and explain to audience what they created	Student does not have a plan for the construction of their artwork; language errors make understanding difficult; students do not inform/explain what they created
<b>Accuracy of Science Content</b>	Student has written about how balance and gravitational force are related and how it affected the outcome of their artwork	Student's writing demonstrates understanding of balance and force, but no relationship to the artwork is expressed	Student's writing demonstrates a minimal understanding of balance and force and relationship to the artwork is limited	The writing expresses minimal understanding of balance or gravitational force

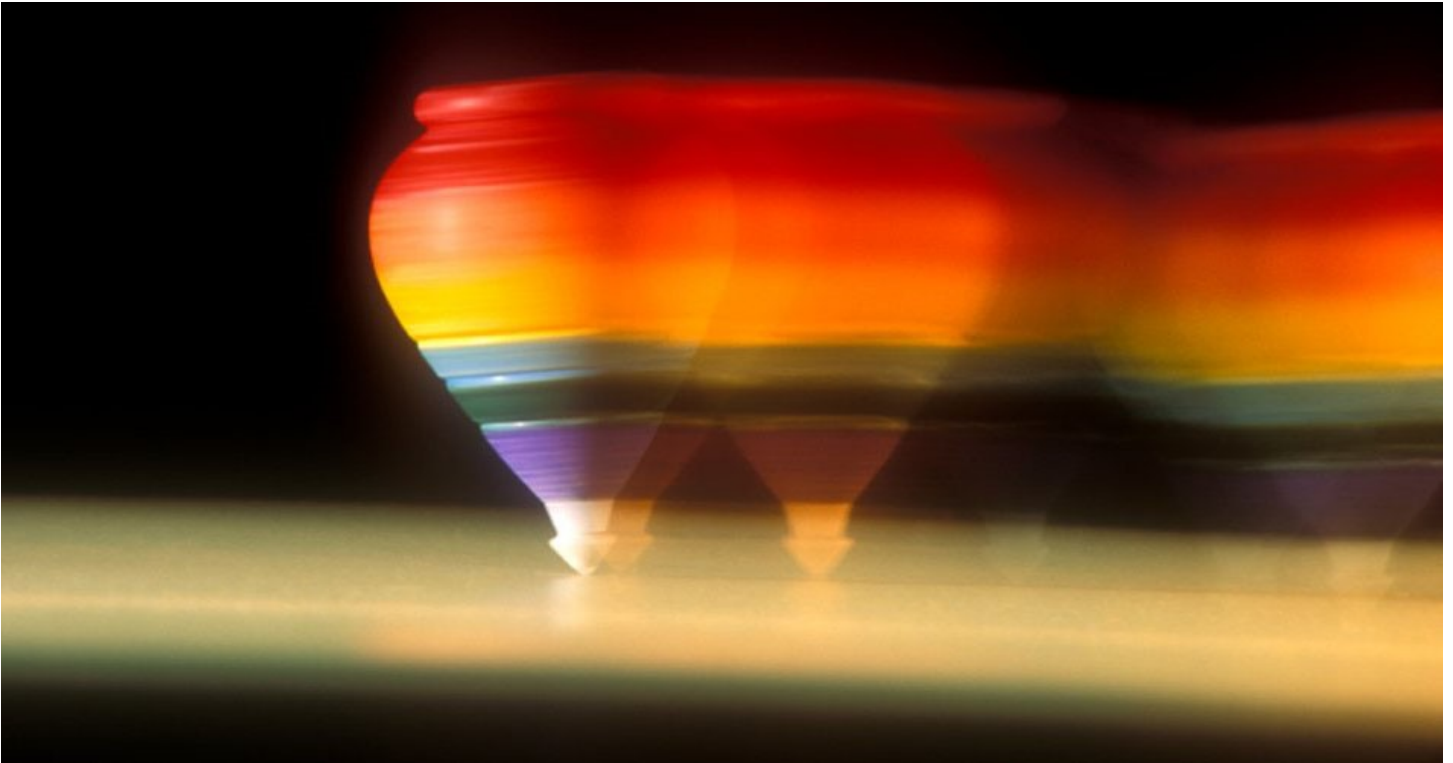
**Teacher Commentary:** \_\_\_\_\_

**Student Commentary:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Total Score:** \_\_\_\_\_



## Unit Essential Questions

How do balanced and unbalanced forces relate to simple machines?

How can simple machines combine to affect the balance of forces?

### PROJECT DESCRIPTION

In this project, students will engage in the design process around an exciting 4th grade science topic: Force & Motion! Students will create a drawing of a Goldberg Not-So-Simple-Machine and create a kinetic sculpture, or working model, of that machine. In this project, students will demonstrate how simple machines can be combined in a complicated way to perform a simple task.

### LEARNING TARGETS

#### “I Can...”

- Demonstrate how a simple machine does work
- Create sketches for planning and self-reflection
- Revise and refine my plans as I experiment with my creation
- Create a working model from a sketch.
- Represent a 3-dimensional model by a 2-dimensional drawing

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Units provide differentiated ideas and activities aligned to a sampling of standards.

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## Can you Balance?

## Project 2 of 3

Approx. Duration of Project: 4 (minimum) 45-minute class periods

Project Description	Learning Targets
<p>In this project, students will engage in the design process around an exciting 4th grade science topic: Force &amp; Motion! Students will create a drawing of a Goldberg Not-So-Simple-Machine and create a kinetic sculpture, or working model, of that machine. In this project, students will demonstrate how simple machines can be combined in a complicated way to perform a simple task.</p>	<p>“I Can...”:</p> <ul style="list-style-type: none"> <li>● Demonstrate how a simple machine does work</li> <li>● Create sketches for planning and self-reflection</li> <li>● Revise and refine my plans as I experiment with my creation</li> <li>● Create a working model from a sketch.</li> <li>● Represent a 3-dimensional model by a 2-dimensional drawing</li> </ul>

### ESSENTIAL QUESTIONS

- How do balanced and unbalanced forces relate to simple machines?
- How can simple machines combine to affect the balance of forces?
- How can simple machines combine to affect motion?
- How can simple machines make a task easier/harder?
- How do we sometimes make things more complicated than they need to be?

### STANDARDS

Curriculum Standards	Arts Standards
<ul style="list-style-type: none"> <li>• <b>S4P3. Obtain, evaluate, and communicate information about the relationship between balanced and unbalanced forces.</b></li> </ul> <p>a. Plan and carry out an investigation on the effects of balanced and unbalanced forces on an object and communicate the results.</p> <p>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.</p>	<ul style="list-style-type: none"> <li>• <b>VA4MC.1 Engages in the creative process to generate and visualize ideas.</b></li> </ul> <p>b. Formulates visual ideas by using a variety of resources (e.g., books, magazines, Internet).</p> <ul style="list-style-type: none"> <li>• <b>VA4MC.2 Formulates personal responses to visual imagery.</b></li> </ul> <p>a. Uses a sketchbook for planning and self-reflection.</p> <p>c. Self-monitors by asking questions before, during, and after art production to reflect upon and guide the artistic process.</p> <ul style="list-style-type: none"> <li>• <b>VA4PR.1 Creates artworks based on personal experience and selected themes.</b></li> </ul> <p>b. Makes design decisions as the result of conscious, thoughtful planning and choices.</p> <p>g. Combines materials in new and inventive ways to make a finished work of art.</p> <ul style="list-style-type: none"> <li>• <b>VA4PR.2 Understands and applies media, techniques, and processes of two-</b></li> </ul>

Can you Balance?

Project 2 of 3

Approx. Duration of Project: 4 (minimum) 45-minute class periods

	<p><b>dimensional art processes (drawing, painting, printmaking, mixed-media) using tools and materials in a safe and appropriate manner to develop skills.</b></p> <p>a. Produces drawings with a variety of media (e.g., pencils, crayons, pastels, and charcoal).</p> <p>• <b>VA4PR.3 Understands and applies media, techniques, and processes of three-dimensional works of art (ceramics, sculpture, crafts, and mixed-media) using tools and materials in a safe and appropriate manner to develop skills.</b></p> <p>a. Creates 3-D artwork that demonstrates a design concept: open or closed form, proportion, balance, color scheme, and movement.</p>
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### KEY VOCABULARY

Content Vocabulary	Arts Vocabulary
<ul style="list-style-type: none"> <li>• simple machine</li> <li>• balanced forces</li> <li>• unbalanced forces</li> <li>• force</li> <li>• work</li> <li>• inclined plane</li> <li>• lever</li> <li>• wedge</li> <li>• pulley</li> <li>• screw</li> <li>• wheel and axle</li> </ul>	<ul style="list-style-type: none"> <li>• assemblage: an artistic process in which a 3-dimensional artistic composition is made from putting together found objects</li> <li>• kinetic sculpture: 3-dimensional art that is designed to move</li> <li>• craftsmanship: skill in producing expertly finished products</li> <li>• sketch: a rough drawing, often made to help make a more finished picture</li> <li>• variety: refers to differences in a work</li> <li>• two-dimensional art: art depicted on a flat surface</li> <li>• three-dimensional art: art that has height, width, and depth</li> </ul>

### TECHNOLOGY INTEGRATION

<ul style="list-style-type: none"> <li>• <a href="http://www.softschools.com/science/simple_machines/games/">http://www.softschools.com/science/simple_machines/games/</a> (students can visit to review 6 simple machines)</li> <li>• <a href="https://www.rubegoldberg.com/">https://www.rubegoldberg.com/</a></li> <li>• <a href="https://diy.org/skills/physicist/challenges/389/make-a-rube-goldberg-machine">https://diy.org/skills/physicist/challenges/389/make-a-rube-goldberg-machine</a> (OKGo "This Too Shall Pass" video - incredible Rube Goldberg machine and music video) -or-</li> <li>• <a href="http://okgo.net/category/videos/">http://okgo.net/category/videos/</a> (alternate access to "This Too Shall Pass" video listed above)</li> <li>• <a href="https://www.youtube.com/watch?v=84cyAyzzzic">https://www.youtube.com/watch?v=84cyAyzzzic</a> (Helpful Rube Goldberg hacks)</li> </ul>
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Can you Balance?

Project 2 of 3

Approx. Duration of Project: 4 (minimum) 45-minute class periods

- <https://www.youtube.com/watch?v=OCqGi2RDm5s> (Tips and Tricks)

### ASSESSMENTS

Formative	Summative
<ul style="list-style-type: none"> <li>• Teacher will observe the students experimenting for understanding of how simple machines work.</li> <li>• Teacher will question students on the functions of their simple machines.</li> <li>• Teacher will observe cooperation and participation.</li> <li>• Teacher will periodically assign each group a different simple machine to act out for a neighboring group to identify.</li> </ul>	<ul style="list-style-type: none"> <li>• Initial pencil sketch of project idea</li> <li>• Pen and ink drawing of final product</li> <li>• Working Rube Goldberg Machine</li> <li>• Rubric</li> </ul>

### MATERIALS

- Mousetrap Game by Hasbro
- Copy paper (1-2 sheets for each student for sketch)
- 60# weight drawing paper (9"x12")
- Black matting
- Black Sharpies (fine point and extra-fine point)
- Paper storage boxes
- Safety goggles
- Dominoes
- Marbles
- Ping-pong balls
- Trains and tracks
- Cars and tracks
- Action figures
- LEGOs
- Wooden blocks (e.g. Jenga)
- String
- K'nex pieces
- Mini-pulleys
- *Rube Goldberg Inventions* (book)

Activating Strategy (5- 10 min)

Can you Balance?

Project 2 of 3

Approx. Duration of Project: 4 (minimum) 45-minute class periods

- Human Simple Machines: Each group chooses a card with the name/picture of a simple machine. The group acts out the simple machine for the class to identify.
- Encourage students to think about how they can creatively use their body to work together and become the various parts of a simple machine
- Show the OKGo music video of a Rube Goldberg machine for inspiration.
- Have the Mousetrap Game set up and choose a group of students to demonstrate to the class how it runs. Explain to students that they will be using their creativity to design an unnecessarily complicated machine to do a simple job.

### Main Activity

#### PROCESS

##### **PART I - Planning (45 minutes)**

###### **Students work in Small Groups:**

- Research videos online of Rube Goldberg machines.
- Brainstorm uses for materials.
- Experiment with various materials.
- Decide on a goal for the machine.
- Individually sketch an initial design with pencil on copy paper. The goal is to include 6 or more Individual steps, using 4 or more simple machines.
- Remind students that they should use as much variety as they can and try to include a "wow!" factor.
- Compare designs and choose which to build or combine ideas into 1 initial idea.

##### **PART 2 - Beginning Creation Day 1 (45 minutes)**

###### **Students work in Small Groups:**

- Students choose a simple machine to incorporate.
- Students choose materials to create their part of the machine.
- Students combine components as they get them to work.
- Students work together to test each step and trouble-shoot.
- At end of class, take photos of the machines created in each group and disassemble enough to store.

##### **PART 3 - Final Creation Day 2 (45 minutes)**

###### **Students work in Small Groups:**

- Refer back to photos to reassemble machines in small groups.
- Complete machine and test run the machine 3-4 times for evaluation.
- Students begin sketch of their final machine. (*Remind students that they must be very careful because they will only receive 1 piece of drawing paper.*) Trace the drawing with a Sharpie to create final pen and ink drawing.
- Neatly label all simple machines with ball-point pen or extra-fine Sharpie.

#### **Classroom Tips:**

Divide students into groups of 3-4. Students who are having difficulty might start with the last step and work backwards. 1 student in each group should take pictures of building progress at the end of each class period before machine is disassembled and stored. Each group should have a labeled box for storing partial products. Students should be cautioned to use dominoes sparingly due to difficulty of use

Can you Balance?

Project 2 of 3

Approx. Duration of Project: 4 (minimum) 45-minute class periods

and unpredictability.

## REFLECTION

### Reflection Questions

- *How did you choose the job you wanted your machine to do?*
- *What would have been the simplest way to do the job without the machine?*
- *Why was it important to plan before trying to build the machine?*
- *How did your drawing change from your first sketch to the final copy?*
- *What would have made the process simpler?*

## DIFFERENTIATION

### BELOW GRADE LEVEL:

Preview the key vocabulary with pictures listed beside each word on an anchor chart, word wall, or flashcards. The teacher and students will define words together. This may be done in small group the day before the unit begins.

Group students heterogeneously, and assist the group to help find appropriate contributions for each step of the project based on individual strengths.

### ABOVE GRADE LEVEL:

- Students keep a blog or vlog of the process.
- Students create a cartoon in the spirit of Rube Goldberg.

### EL STUDENTS: (ELP=English Language Proficiency)

- Pre/Post Test: read aloud or small group accommodation as needed
- Preview the key vocabulary with pictures listed beside each word on an anchor chart, word wall, or flashcards. The teacher and students will define words together. This may be done in small group the day before the unit begins. The ESOL teacher may meet with students who are lacking the basic vocabulary for additional practice before starting the unit.
- Written reflection: (a version with sentence starters is on pg. 2)

**ELP 1-2** Pair students with partners with higher writing proficiencies. Allow students to respond in their native language and have a peer translate their responses.

**ELP 3-6** Allow students to proofread their responses by dictating their reflections in OneNote (OneNote>Learning Tools Add-in>Dictate).

## ADDITIONAL RESOURCES

- Skype: "Talk with Jennifer George, Rube's Granddaughter and author of the best-selling book, *The Art of Rube Goldberg*. Jennifer discusses her grandfather's cartoons and little-known facts about the man she knew as Papa Rube." (from <https://www.rubegoldberg.com/education/skype-in-the-classroom/>)
- Students keep a blog or vlog of the process.
- Students create a cartoon in the spirit of Rube Goldberg.

Can you Balance?

*Project 2 of 3*

Approx. Duration of Project: 4 (minimum) 45-minute class periods

**APPENDIX**

- Rubric for this project

**CREDITS**

U.S. Department of Education  
Arts in Education--Model Development and Dissemination Grants Program  
Cherokee County (GA) School District and ArtsNow, Inc.  
Ideas contributed and edited by:  
Mark Thompson, Edited by Jessica Espinoza, Dr. Carla Cohen

**Goldberg's Not-So-Simple-Machine**

**TASK: Create a complex machine in the style of Rube Goldberg.**

Task	4	3	2	1
<b>Creating Goldberg Machine</b>	Machine successfully achieved its goal and included 6 or more individual steps, using 4 or more simple machines.	Machine mostly successfully achieved its goal and included 4 or more individual steps, using 4 or more simple machines.	Machine inconsistently worked and included less than 3 individual steps, using less than 3 simple machines.	Machine does not achieve its goal due to lack of individual steps and mastery of any simple machines.
<b>Communicate</b>	Student has planned out construction of machine; student uses appropriate language skills; students can inform and explain to audience what they created	Student has a plan for the construction of machine; student has minimal errors in language skills, students can inform and explain to audience what they created	Student doesn't have a plan for the construction of machine; student has major (more than 5) errors in language skills, students can inform and explain to audience what they created	Student does not have a plan for the construction of their machine; language errors make understanding difficult; students do not inform/explain what they created
<b>Sketching 2-Dimensional</b>	Student demonstrated how a simple machine worked and created sketches that communicated balanced and unbalanced forces of motion clearly.	Student's thoughts show understanding of balanced and unbalanced forces, but no relationship to the Goldberg machine they designed.	Students sketches show a minimal understanding of balanced and unbalanced forces; relationship to Goldberg machine is not apparent.	No understanding of balanced and unbalanced forces evident.

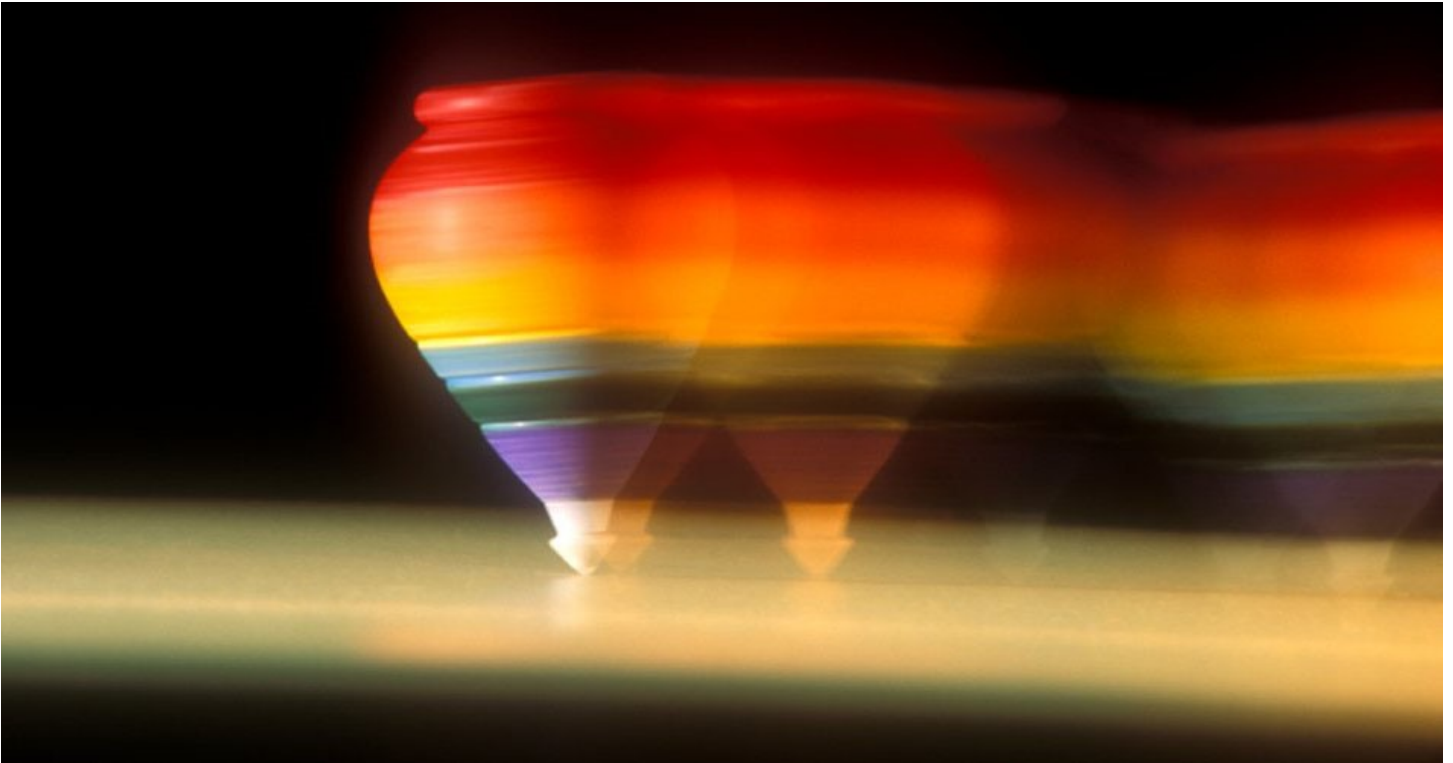
**Teacher Commentary:** \_\_\_\_\_

**Student Commentary:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Total Score:** \_\_\_\_\_



## Unit Essential Question

How can I use a persuasive, strong voice to express my knowledge of simple machines?

### PROJECT DESCRIPTION

In this project, students will have to first complete Project 2 in this 4th grade unit. In Project 2, they constructed a Rube Goldberg machine, using a set of simple machines that work together to comprise a complex machine with a specific function. In this particular project, students will be taking their hard work in the design studio and work on 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. The purpose of the script is to persuade the audience to purchase their invention. Finally, it's showtime and students will perform their script and skit!

### LEARNING TARGETS

"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
- Perform a skit using a persuasive strong voice that brings to life our script

[www.artsnowlearning.org](http://www.artsnowlearning.org)

Units provide differentiated ideas and activities aligned to a sampling of standards.

The units do not necessarily imply mastery of standards, but are intended to inspire and equip educators.

Produced through the U.S. Department of Education: Arts in Education—Model Development and Dissemination Grants Program  
Cherokee County (GA) School District and ArtsNow, Inc.

Project Description	Learning Targets
<p>In this project, students will have to first complete Project 2 in this 4th grade unit. In Project 2, they constructed a Rube Goldberg machine, using a set of simple machines that work together to comprise a complex machine with a specific function. In this particular project, students will be taking their hard work in the design studio and work on 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. The purpose of the script is to persuade the audience to purchase their invention. Finally, it’s showtime and students will perform their script and skit!</p>	<p>“I Can...”:</p> <ul style="list-style-type: none"> <li>● Present a persuasive pitch for why my Rube Goldberg machine is worth purchasing</li> <li>● I can work collaboratively to write a persuasive script, which clearly defines a problem that our Not-So-Simple-Machine will solve</li> <li>● Perform a skit using a persuasive strong voice that brings to life our script</li> </ul>

**ESSENTIAL QUESTIONS**

<ul style="list-style-type: none"> <li>• How can I use a persuasive, strong voice to express my knowledge of simple machines?</li> </ul>
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**STANDARDS**

Curriculum Standards	Arts Standards
<p><b>S4P3 Obtain, evaluate, and communicate information about the relationship between balanced and unbalanced forces.</b></p> <ol style="list-style-type: none"> <li>a. Plan and carry out an investigation of the effects of balanced and unbalanced forces on an object and communicate the results.</li> <li>b. Construct an argument to support the claim that gravitational force affects the motion of an object.</li> <li>c. Ask questions to identify and explain the uses of simple machines, and how forces are changed when simple machines are used to complete tasks.</li> </ol> <p><b>ELAGSE4W1: Write opinion pieces on topics or texts, supporting a point of view with reasons.</b></p> <ol style="list-style-type: none"> <li>a. Introduce a topic or text clearly, state an opinion, and create an organizational structure in which related ideas are grouped to support the writer’s purpose.</li> <li>b. Provide reasons that are supported by facts and details.</li> </ol>	<p><b>TAES4.2 Developing scripts through improvisation and other theatrical methods</b></p> <ol style="list-style-type: none"> <li>a. Uses the playwriting process: pre-write/pre-play; prepare to write/plan dramatization; write/ dramatize; reflect and edit; re-write/play; publish/perform</li> <li>b. Analyzes the elements of a well-written script</li> <li>c. Creates an organizing structure for writing scripts</li> </ol> <p><b>TAES4.3 Acting by developing, communicating, and sustaining roles within a variety of situations and environments</b></p> <ol style="list-style-type: none"> <li>a. Uses articulation, volume and vocal variety to communicate thoughts, emotions and actions of a character</li> <li>b. Uses stage areas and body movement to communicate thoughts, emotions, and actions of a character</li> <li>c. Uses imagination and real life experience to portray characters</li> </ol>

<p>c. Link opinion and reasons using words and phrases (e.g., for instance, in order to, in addition). d. Provide a concluding statement or section related to the opinion presented.</p>	<p>d. Collaborates with an ensemble to create theatre e. Dramatizes literature and original scripts through various dramatic forms such as story drama, pantomime, process drama, puppetry, improvisation and readers’ theatre</p> <p><b>TAES4.7 Integrating various art forms, other content areas, and life experiences, to create theatre</b></p> <p>a. Identifies and describes the connection between theatre arts, visual art, music, dance, and technology</p> <p>b. Selects elements of other art forms to develop theatre</p> <p>c. Examines other core content areas through theatre experiences</p> <p><b>TAES4.11 Engaging actively and appropriately as an audience member in theatre or other media experiences</b></p> <p>a. Assumes the roles and responsibilities of the audience</p> <p>b. Applies theatre etiquette</p>
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**KEY VOCABULARY**

Content Vocabulary	Arts Vocabulary
<ul style="list-style-type: none"> <li>• Balanced</li> <li>• Unbalanced forces</li> <li>• Gravitational Force</li> <li>• Motion</li> <li>• Simple Machines</li> <li>• Rube Goldberg</li> </ul>	<ul style="list-style-type: none"> <li>• Ensemble: this is all the parts of thing taken together, so that each part is considered only in relation to the whole</li> <li>• Volume: the degree of sound intensity or audibility</li> <li>• Dialogue: this is a conversation between two or more persons</li> <li>• Theater: dramatic literature or its performance</li> <li>• Audience: the group of listeners collectively as in attendance at a theater</li> <li>• Locomotive: this refers to a movement that travels through space</li> <li>• Non-Locomotive: this refers to a movement that does not travel through space</li> <li>• Pantomime: the art of technique of conveying emotions, actions, feelings by gestures without speech</li> <li>• Props: these are items that actors use in a performance to depict real-life objects</li> <li>• Diction: this is using a “crisp &amp; clear” actor voice that can be understood by everyone watching and listening</li> </ul>

**TECHNOLOGY INTEGRATION**



**Websites:**

- <http://okgo.net/> OKGO Music Video with Rube Goldberg Machine
- 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 create a Sway, Office Mix or Powerpoint; Students can use an avatar to present their persuasive script in their own voice using <http://blabberize.com/>

**ASSESSMENTS**

Formative	Summative
<ul style="list-style-type: none"> <li>• Teacher will observe students while they work and engage in conversation about science concepts during the activators for part 2 and 3.</li> <li>• Teacher will read scripts and offer feedback as necessary.</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher will assess student understanding of simple machines based on their script and performance.</li> <li>• Students will answer reflection questions.</li> </ul>

**MATERIALS**

- Costuming: 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.
- Tablecloth

**Activating Strategy (5- 10 min)**

- Activating Strategy Part 1: Students will read aloud an example of Reader's Theater: Deluxe Slushy Lemonade Machine (SEE DOWNLOAD). It will serve as a model for their classwork.
  - Students will pair up in groups of two and practice reading the example.
- Activating Strategy for Part 2: Whole group choral echo. (Teacher and student will say the same phrase aloud repeating in in chorus, students are perfecting 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 facing students will become their partner. Refer to the inner circle as Partner A, and the outer circle Partner B. Once children are set, 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 and try another phrase to the echo. Once children are set, 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.
- Partner A: The big black bear
- Partner B: The big black bear.
- Partner A: Ate the big black bug.
- Partner B: Ate the big black bug.

### **PROCESS:**

#### ● **PART I: SCRIPT- WRITING**

Students will have an opportunity to write a script for their machine. It is important for them to remember to persuade the audience to purchase their product and 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.
  - It must clearly define a problem and explain/show how their "Not So Simple Machine" will serve as its solution.
  - Include 3 reasons to support its purpose
  - Persuade the audience to purchase their simple machine.

#### ● **PART 2 : REHEARSAL**

Students will have the opportunity to rehearse their skit. Students will work in their groups to rehearse their skits being mindful of having a strong, expressive performance voice.

- Preparedness: They will prepare the presentation for the skit.
  - Group must showcase their rendering.
  - Group must set up their "Not So Simple Machine".
  - Determine the placement of each character onstage.
  - Determine the costumes and props being included.

#### ● **PART 3: PERFORMANCE**

It's showtime! Students will present their skit to the class.

- Each group will take turns for their presentation.
  - Review with the class the proper etiquette for an attentive audience member. Remind the

## Project 3 of 3

Approx. Duration of Project: 4-5 days.

- students that part of their grade is in this category.
- Students will present with loud, clear voices with strong bodies.
- Students will "run" their machine and show the audience that it functions properly.

**Classroom Tips:**

Teacher needs to establish reasonable, yet manageable goals for each part of the project. When students are working collaboratively, they must respect the needs of other groups. They can easily speak loudly and disrupt others while they are working. On another note, students will often divide the tasks among themselves, however be sure to require all students to participate equally. Children 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 show so that transition times are minimum.

**REFLECTION****Reflection Questions**

- *Identify the simple machines in your "Not So Simple Machine".*
- *Explain how each simple machine uses balanced and unbalanced forces to operate individually or as a whole.*
- *If you had the opportunity to do this project again what would you do differently next time?*

**DIFFERENTIATION**

**BELOW GRADE LEVEL:** 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.

**ABOVE GRADE LEVEL:** 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.

**EL STUDENTS: EL Students:** (ELP=English Language Proficiency)

- Preview the key vocabulary with pictures listed beside each word on an anchor chart, word wall, or flashcards. The teacher and students will define words together. This may be done in small group the day before the unit begins. The ESOL teacher may meet with students who are lacking the basic vocabulary for additional practice before starting the unit.

**ELP 1-2**

Option 1: Group heterogeneously with students with higher writing proficiencies. Allow level 1-2 students to illustrate different parts of the script to hold up during the whole group presentation.

**ELP 3-4** 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. Source: (WIDA CanDo Key Uses Gr4-5, pg. 9)

**APPENDIX**

- Rubric for this project
- Example of Readers Theatre: Deluxe Slushy Lemonade Simple Machine

Student Presentation

“It’s Showtime”

Grade 4

Project 3 of 3

Approx. Duration of Project: 4-5 days.

### **CREDITS**

U.S. Department of Education

Arts in Education--Model Development and Dissemination Grants Program

Cherokee County (GA) School District and ArtsNow, Inc.

Ideas contributed and edited by:

Andrea Pagano, Jessica Espinoza, Edited by Dr. Carla Cohen

### It's Showtime- Project 3 Rubric

**TASK: Students will present their Goldberg Not So Simple Machine**

Task	4	3	2	1
<b>Accuracy of Science Content</b>	All facts and vocabulary presented about balance, force and motion, and simple machines are complete and correct.	Most facts and vocabulary presented about balance, force and motion, and simple machines are complete and correct.	Some science facts and vocabulary was correct however the content wasn't fully developed.	The science content was minimally complete or correct.
<b>Purpose</b>	The script clearly defines a problem and explains how the not-so-simple machine will function and complete a specific task.	The script mostly defines a problem and explains how the not-so-simple machine will function and complete a specific task.	The script inconsistently defines a problem and explains how the not-so-simple machine will function and complete a specific task.	The script minimally defines a problem and explains how the not-so-simple machine will function and complete a specific task.
<b>Preparedness &amp; Collaboration</b>	The ensemble collaborated successfully the entire time. Student displayed their 2D rendering of their machine, the 3D machine was set up and ready to go, and students had incorporated necessary props, costumes and appeared well-rehearsed with their skit.	The ensemble collaborated successfully most of the time. Student mostly appeared prepared however not every item was complete: <ul style="list-style-type: none"> <li>● 2D machine rendering</li> <li>● 3D machine model</li> <li>● Props and costumes</li> </ul>	The ensemble collaborated on some things. Student lacked preparation of at least 2 of the following items: <ul style="list-style-type: none"> <li>● 2D machine rendering</li> <li>● 3D machine model</li> <li>● Props and costumes</li> </ul>	The ensemble minimally collaborated. Student was minimally prepared and the skit appeared to not be coherent or rehearsed.
<b>Performance</b>	Student held attention of entire audience with the use of direct eye contact, seldom looking at notes. Student spoke with fluctuation in pitch and emphasis on key points. Student was also a respectful and attentive audience member.	Consistent use of direct eye contact with audience, but returns to their notes. Student spoke with satisfactory variation of pitch and emphasis on key points. Student was also a respectful and attentive audience member most of the time.	Displays minimal eye contact with audience, while reading mostly from the notes. Student spoke with little or no inflection.  Student was a respectful and attentive audience member some of the time.	Holds no eye contact with the audience, as entire report is read from notes. Student spoke with little or no inflection. Student was a disrespectful and/ or inattentive audience member.

**Total Points** \_\_\_\_\_

# **EXAMPLE READERS THEATRE SCRIPT**

## **Deluxe Slushy Lemonade Simple Machine**

### **ACTOR 1**

Do you work outside in this insane summer heat? Has life got you thirsty?

### **ACTOR 2**

We have just the thing for you!

### **ACTOR 1**

Here we have the Deluxe Lemonade Slush Machine! It will quench all of your summertime thirst!

### **ACTOR 2**

The Deluxe Lemonade Slush uses two simple machines to get the job done. One, a screw that juices the lemon. We recommend doing this with three lemons per pitcher. This screw will extract the lemon juice right out of the fruit and will filter the seeds so your juice is fresh and seed-free.

### **ACTOR 1**

The second simple machine we use is our wheel and axle to make this lemonade the coldest it possibly can get. We spin and slush the lemon juice with sugar and ice to create a sensational icy treat!

### **ACTOR 2**

The Deluxe Lemonade Slush Machine is affordable, only \$29.99! The simple machines involved in the Deluxe Lemonade Slush Maker make the job easy, fun and effective. You will be so pleased with these slushy results.