

Leprechaun Trap

STEM



LOW PREP
ST. PATRICK'S DAY
STEM CHALLENGE

K-5TH GRADE

CREATED BY BROOKE BROWN

- ✓ SIMPLE SUPPLIES
- ✓ INTERACTIVE ANCHOR CHARTS
- ✓ VISUAL VOCABULARY
- ✓ QR CODE RESEARCH
- ✓ REFLECTION QUESTIONS

Leprechaun Trap

The leprechaun keeps trying to steal your gold!

Construct a trap for a leprechaun with simple machines that will lure him in and contain him.



MATERIALS:

- **OPTIONS FOR TRAP STRUCTURE:** Linking cubes, pattern blocks, building bricks, wooden planks, magnetic blocks
- **EXTRA MATERIALS:** yarn, tape, construction paper, large cups
- Pennies
- Paper leprechaun taped to the front of a mini cup

WORDS TO KNOW



trap



a device that is used to catch something

contain



to hold within

bait



an object that is used to attract something

simple machine



a basic device that uses force to make work easier

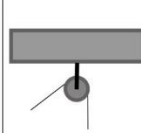
EXPLORE

MACHINES

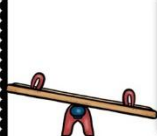
RAMPS



PULLEYS



LEVERS



MACHINES



Leprechaun Trap

REAL WORLD EXAMPLES



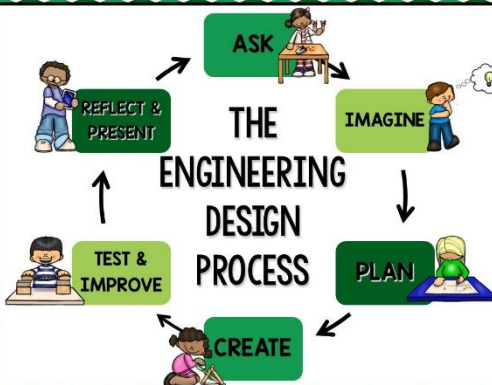
What is similar? What is different?
Ways to Lure in and Contain the Leprechaun

How Traps are Useful

Simple Machines in



THE ENGINEERING DESIGN PROCESS



LET'S REFLECT!



What was most difficult about this challenge?
What are some important features of traps?
How does your trap work?

How does your trap attract your leprechaun?
How does it prevent him from escaping?

Which simple machines did you use in your trap?

How might your trap design be useful in real life?

If you completed this challenge again, what would you do differently next time?

DIFFERENTIATED RECORDING SHEETS FOR K-5TH GRADE

LOWER GRADES

Leprechaun Trap

Name: _____

MY BLUEPRINT

Draw a picture of your trap.

How does your trap work?

Color the SIMPLE MACHINES that you used in your trap.

Inclined Plane

Lever

Pulley

Does your trap LURE in the leprechaun?

YES NO

Does your trap CONTAIN the leprechaun?

YES NO

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UPPER GRADES

Leprechaun Trap

Name: _____

BLUEPRINT

Explain how your trap works.

How does your trap LURE in the leprechaun?

How does your trap CONTAIN the leprechaun?

Which simple machines did you use in your trap?

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DIGITAL GOOGLE SLIDES NOTEBOOK

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STEM Challenge Assessment Rubric

Challenge: _____

Date: _____

Student Name: _____

3	2	1
Student followed all instructions for challenge.	Student followed some instructions for challenge.	Student did not follow instructions for challenge.
Student used best effort and perseverance on challenge.	Student used some effort and perseverance on challenge.	Student did not show effort or perseverance on challenge.
Student completed assigned blueprint and reflection sheet.	Student partially completed assigned blueprint and reflection sheet.	Student did not complete assigned blueprint and reflection sheet.
Student showed accuracy in testing, calculating, and measuring.	Student showed some accuracy in testing, calculating, and measuring.	Student did not show accuracy in testing, calculating, or measuring.
Student fully cooperated with group members and contributed fairly.	Student partially cooperated with group members and contributed fairly.	Student struggled to cooperate with group members and/or failed to contribute.
Student fully participated in class discussions.	Student somewhat participated in class discussions.	Student did not participate in class discussions.
TOTAL POINTS: ____/18		
Comments: _____		

We Need STEM Supplies!

Dear Families: We are learning all about Science, Technology, Engineering, and Math through STEM lessons, and we need your help! If you are able to donate any of the following supplies for our STEM Challenge, please detach and return the form below and send back to school with your child. We greatly appreciate your support and generosity!

We are in need of the following items by _____:

Thank you so much for helping to make our STEM lessons possible! Please contact me at _____ with any questions.

Sincerely, _____

If you are able to donate, please detach and return the form below:

Parent Name(s): _____

Child's Name: _____

I am able to donate: _____

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SAY *Hello* TO STRESS-FREE STEM!

SUPPLIES CHECKLIST			
STEM CHALLENGE	ITEM	NUMBER PER GROUP	I HAVE IT
Leprechaun Trap	paper leprechaun taped to the front of a mini cup	1	
	pennies	10	
	OPTIONS FOR TRAP CONSTRUCTION: magnetic blocks, wooden planks, linking cubes, pattern blocks, building bricks, large cups, construction paper, yarn, and tape	large tubs for class to share	
STANDARDS ALIGNMENT			
CHALLENGE	ENGINEERING	SCIENCE	MATH
Leprechaun Trap	K-2-ETS1 Engineering Design: K-2-ETS1-4, 3-5-ETS1-2, 3-5-ETS1-3 3-5-ETS1 Engineering Design: 3-5-ETS1-4, 3-5-ETS1-2, 3-5-ETS1-3	•Action/Reaction forces •Simple Machines (levers, pulleys, inclined planes)	MP1: Make sense of problems and persevere in solving them MP2: Reason abstractly and quantitatively MP5: Use appropriate tools strategically

SUPPLIES CHECKLIST & STANDARDS ALIGNMENT

CHALLENGE OVERVIEW

STEM CHALLENGE: Leprechaun Trap



OVERVIEW: Students will choose from a variety of materials to construct a contraption that will lure in and trap a leprechaun. They will experiment with actions/reactions and will attempt to use a simple machine in their design such as a pulley, lever, or ramp (inclined plane).

KEY SKILLS: Engineering Traps, Actions/Reactions, Simple Machines

SUGGESTED READ ALOUDS: [How to Trap a Leprechaun by Sue Fliess](#), [How to Catch a Leprechaun by Adam Wallace](#), [The Night Before St. Patrick's Day by Natasha Wing](#)

MATERIALS PER GROUP: paper leprechaun taped to a mini cup, pennies
OPTIONS FOR TRAP CONSTRUCTION: building bricks, linking cubes, wooden planks, pattern blocks, magnetic blocks, cups, yarn, tape, construction paper

KEY SKILLS

MATERIALS

SUGGESTED READ ALOUDS

STEP BY STEP INSTRUCTIONS

LESSON PLAN

1. Activate students' prior knowledge by asking them to share what they already know about traps and how they work, especially those that involve chain reactions or simple machines.
2. Share and discuss the videos on "Explore Machines."
3. Hold a class discussion, using the teacher chart and real world examples to guide student thinking. (You can project the chart on an interactive whiteboard or document camera.) Record their ideas on the teacher chart.
4. Introduce the STEM challenge and permitted materials.
Introduce and discuss key vocabulary cards related to the challenge.
5. Have students sketch blueprints of their designs on their recording sheets.
7. Distribute materials and allow students 45-60 minutes with partners or small groups to construct and test their leprechaun traps and explain how they work.
8. Hold a whole class closing discussion and reflection, allowing students to demonstrate and explain their leprechaun trap designs. Use the "Let's Reflect" poster to guide the discussion.