

shared supplies

STEM

**SHARED
SUPPLIES**



**LOW PREP
BACK TO SCHOOL
STEM CHALLENGE**

K-5TH GRADE

CREATED BY BROOKE BROWN

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

shared supplies

You and your classmates need a way to organize school supplies for your table.

Create a table caddy that stores and carries a variety of school supplies.



MATERIALS:

- 15 sheets of paper
- Tape
- Scissors
- Variety of school supplies such as pencils, crayons, markers, and glue sticks

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REAL WORLD EXAMPLES



What is similar? What is different?
School Supplies to Organize

Types of 3D Solids

Our Design

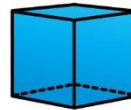
WORDS TO KNOW

container



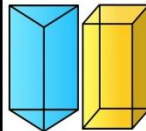
an object
used to hold
or transport
something

volume



the amount
of space
taken up
by an object

prism



a 3D solid with
rectangular
faces and two
bases that are
exactly the
same

net



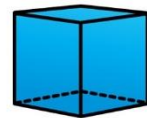
a flattened

EXPLORE

3D SOLIDS

3D SOLIDS

3D SOLIDS SONG



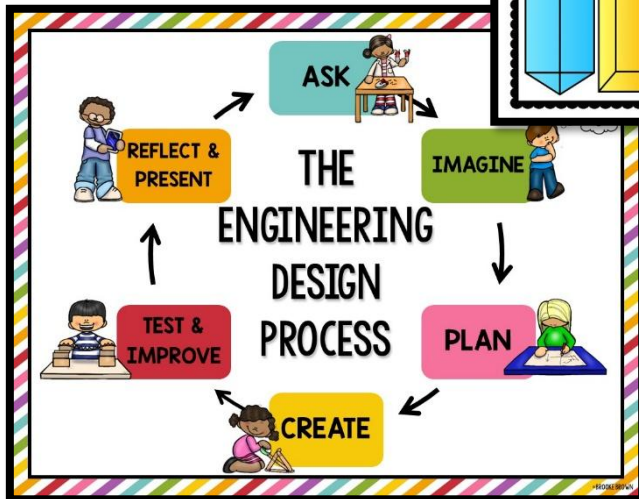
APES

STRONG STRUCTURES



LET'S REFLECT!

- What was most difficult about this challenge?
- Which 3D solids were the most effective in your design? Why do you think that is?
- Which school supplies did your caddy hold?
- What features make your supply caddy useful and unique?
- What other materials might be useful for this challenge?
- If we completed this challenge again, what would you do differently next time?



DIFFERENTIATED RECORDING SHEETS FOR K-5TH GRADE

LOWER GRADES

shared supplies

Name: _____

MY BLUEPRINT

Draw a picture of your supply caddy.

Color the 3D solids that you used in your supply caddy design.

Color the supplies that your supply caddy holds.

shared supplies

Name: _____

BLUEPRINT

Draw and label a blueprint of your supply caddy.

What makes your supply caddy useful and unique?

Color and name the 3D solids that you used in your supply caddy design.

List the school supplies that your supply caddy holds.

1. _____
2. _____
3. _____
4. _____

DIGITAL GOOGLE SLIDES NOTEBOOK

shared supplies

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- 15 sheets of paper
- Tape
- Scissors
- Variety of school supplies such as pencils, crayons, markers, and glue sticks

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 recording 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,

Parent Name(s):

Child's Name:

I am able to donate: _____

SAY Hello TO STRESS-FREE STEM!

SUPPLIES CHECKLIST			
STEM CHALLENGE	ITEM	NUMBER PER GROUP	I HAVE IT
Shared Supplies	copy paper or construction paper	20 sheets per group	
	tape	1 roll	
	various school supplies such as pencils, crayons, scissors, and glue sticks	at least 12 items	
	Markers and crayons (optional to decorate)	small tub	

STANDARDS ALIGNMENT			
CHALLENGE	ENGINEERING	SCIENCE	MATH
Shared Supplies	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	2.Structure and Properties of Matter	(MP) Make sense of problems and persevere in solving them (MP) Reason abstractly and quantitatively (MP) Model with mathematics (MP) Use appropriate tools strategically (MP) Look for and make use of structure

SUPPLIES CHECKLIST & STANDARDS ALIGNMENT

CHALLENGE OVERVIEW

STEM CHALLENGE: Shared Supplies

OVERVIEW: For this collaborative challenge, students will create a paper supply caddy for their table that will hold a variety of school supplies. They may cut, fold, and tape the paper into a variety of 3D solids such as cylinders, rectangular prisms, and triangular prisms to hold different supplies.

KEY SKILLS: Engineering containers, volume, 3D solids

SUGGESTED READ ALOUDS: [The Day the Crayons Came Home by Drew Daywalt](#), [When Pencil Met Eraser by Karen Kilpatrick](#), [The Legend of Rock, Paper, Scissors by Drew Daywalt](#)

MATERIALS PER GROUP: 15 sheets of copy paper or construction paper, 1 roll of tape, scissors for each group member, various school supplies such as crayons, markers, pencils, scissors, and glue sticks.

MATERIALS



KEY SKILLS

SUGGESTED READ ALOUDS

STEP BY STEP INSTRUCTIONS

LESSON PLAN

1. Activate students' prior knowledge by asking them to brainstorm different types of containers and how they work. Ask them to share different types of shapes and solids that containers are made out of.
2. Share and discuss the videos on "Explore 3D Solids."
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.
5. Introduce and discuss key vocabulary cards related to the challenge.
6. Have students sketch blueprints of their designs on their recording sheets.
7. Distribute materials and allow students 30-45 minutes with partners or small groups to construct their paper table caddies and test them with a variety of school supplies.
8. Hold a whole class closing discussion and reflection, allowing students to share their caddy designs. Use the "Let's Reflect" poster to guide the discussion.