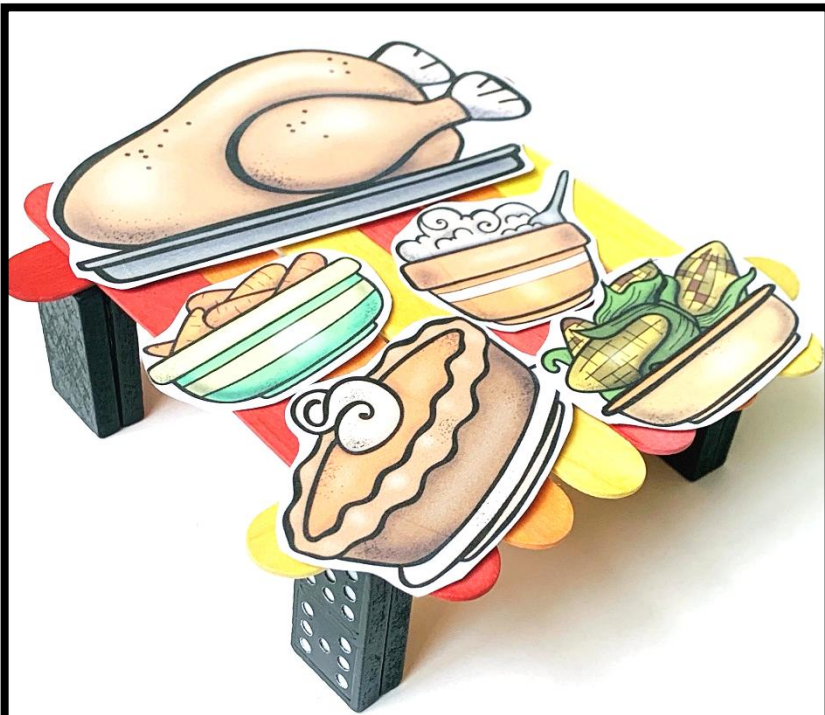


Dinner Table STEM



.....
DINNER TABLE

LOW PREP
THANKSGIVING
STEM CHALLENGE

K-5TH GRADE


CREATED BY BROOKE BROWN

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

Dinner Table

Your family prepared too much food for Thanksgiving!

Construct a dinner table that will hold all the Thanksgiving dishes without overlapping.




MATERIALS:

- Dominoes
- Popsicle sticks
- Copies of Thanksgiving dishes with food cut apart
- Rulers

Dinner Table

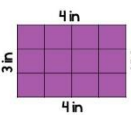
REAL WORLD EXAMPLES



What is similar? What is different?

How to find PERIMETER

To find the perimeter of a shape, measure the lengths of each side and then add them together.

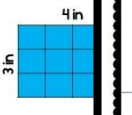


3 in + 4 in + 3 in + 4 in = 14 in

Important Features of Tables

How to find the area

To find the area of a shape, multiply the number of squares by the area of one square.



EXPLORE WOODWORKING

FURNITURE MAKERS




HOW TABLES ARE MADE




WOODWORKING TOOLS FOR KIDS





AREA AND PERIMETER




WORDS TO KNOW


surface

the face or layer of something




balance

equal distribution of weight




area

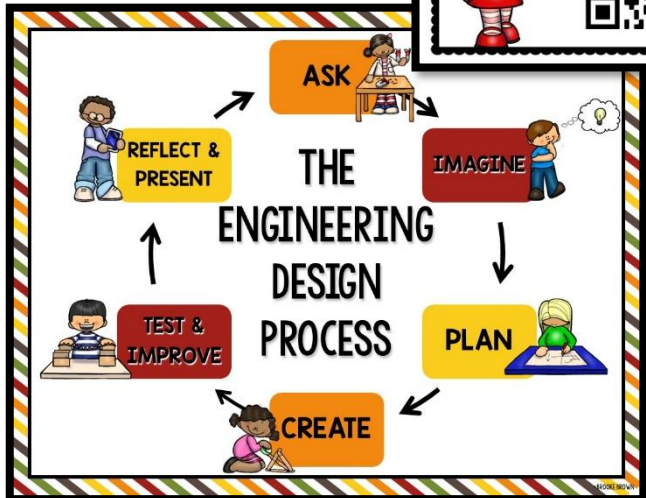
the size of a surface



perimeter

the boundary of a closed geometric shape





WHAT DO YOU REFLECT?

- What was most difficult about this challenge?
- How does the shape of the table surface affect how much food it will hold?
- How did you make your table as sturdy and as balanced as possible?
- What improvements did you make to your table design?
- If you were to build a full-sized table, what materials/design would you use and why?
- If we completed this challenge again, what would you do differently next time?

DIFFERENTIATED RECORDING SHEETS FOR K-5TH GRADE

LOWER GRADES

Dinner Table

Name: _____

MY BLUEPRINT

Draw a picture of your dinner table.

Measure your table.

Color the foods that your table holds.

UPPER GRADES

Dinner Table

Name: _____

BLUEPRINT

How many pieces of food did your table hold?

TEST 1	
TEST 2	
TEST 3	

Measure your final table design.

_____ inches long

_____ inches wide

_____ inches high

PERIMETER

_____ + _____ + _____ + _____

= _____ inches

AREA

_____ x _____

= _____ square inches

What improvements did you make to your table design?

DIGITAL GOOGLE SLIDES NOTEBOOK

Dinner Table

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- Dominoes
- Popsicle sticks
- Copies of Thanksgiving dishes with food cut apart
- Rulers

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: _____

SAY Hello TO STRESS-FREE STEM!

SUPPLIES CHECKLIST

STEM CHALLENGE	ITEM	NUMBER PER GROUP	I HAVE IT
Dinner Table	dominoes	24	
	popsicle sticks	20	
	food cutouts	1 set	
	ruler	1	

STANDARDS ALIGNMENT

CHALLENGE	ENGINEERING	SCIENCE	MATH
Dinner Table	<p>K-2-ETS1 Engineering Design: K-2-ETS1-1, 3-5-ETS1-2, 3-5-ETS1-3</p> <p>3-5-ETS1 Engineering Design: 3-5-ETS1-1, 3-5-ETS1-2, 3-5-ETS1-3</p>	<p>•Action/Reaction forces, tension and compression forces, weight and balance, stability, surface area and perimeter</p>	<p>MP1: Make sense of problems and persevere in solving them MP2: Reason abstractly and quantitatively MP3: Model with mathematics MP5: Use appropriate tools strategically MP6: Attend to precision MP7: Look for and make use of structure</p>

SUPPLIES CHECKLIST & STANDARDS ALIGNMENT

CHALLENGE OVERVIEW

STEM CHALLENGE: Dinner Table

OVERVIEW: Students will use limited materials to construct a model of a dinner table that holds as many Thanksgiving dishes as possible on the surface. They will likely figure out that the dominoes serve well as the legs of the table and the popsicle sticks can balance on the top for the surface. Ensure that they allow enough "legroom" underneath the table and attempt to fit all food dishes on top without overlapping. Younger students can measure the dimensions of their table and older students can measure perimeter and area.

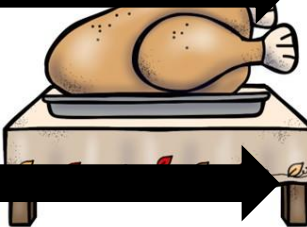
KEY SKILLS: Engineering tables, Balance/Weight Distribution, Measurement, Surface Area, Perimeter

SUGGESTED READ ALOUDS: [Our Table](#) by Peter H. Reynolds, [The Night Before Thanksgiving](#) by Natasha Wing, [Perimeter, Area, and Volume: A Monster Book of Dimensions](#) by David A. Adler

MATERIALS PER GROUP: 24 dominoes, 20 popsicle sticks, 1 set of food cutouts, ruler

KEY SKILLS

MATERIALS



LESSON PLAN

1. Activate students' prior knowledge by asking them to share what they already know about table designs. Ask them to brainstorm different styles and important parts of tables.
2. Share and discuss the videos on "Explore Woodworking."
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 tables, determine how much food will fit on the surface, and measure the dimensions and/or perimeter and area.
8. Hold a whole class closing discussion and reflection, allowing students to share their table designs. Use the "Let's Reflect" poster to guide the discussion.

SUGGESTED READ ALOUDS

STEP BY STEP INSTRUCTIONS