Nick’s favorite candy is red licorice and he decides that using licorice would be a great addition to put on the edge of the frosting around his birthday cake. How much licorice will he need if his cake is 13 inches long and 9 inches wide?

Jenny needs to cover the office bulletin board with electric yellow paper to advertise the all-school fundraiser. The bulletin board is five feet six inches tall and seven feet long. How much yellow paper will she need to get the job done?

Zandra’s family just moved into their new home and she needs a desk. She finds two desks at Office Depot. Desk 1 is 4 ft. long by 30 in. wide. Desk 2 is 54 in. long by 2 ft. wide. Her desk must fit into a space with the area of 1360 sq. in. Which desk will most closely fit? Show your work and explain your answer.

Katherine is edging her mother’s rectangular vegetable garden with decorative bricks. The garden measures 12 feet long by 5 feet wide, and the bricks are 6 inches long. How many bricks will Katherine need to edge the garden?

Eli is planning to turn one of the bedrooms in his house into a storage room. He must tile the room so it is easy to keep clean. The floor in this room measures 5 yards long by 4 yards wide. If each tile is 12 inches square, how many tiles will Eli need to cover the floor of his storage room?

Austin is filling a sandbox with sand for his little sister. The sandbox measures 6 feet long by 6 feet wide by 1.5 feet tall. Austin must make sure that the sand stays inside so he is building a wooden frame. How much wood will he need to frame in the sandbox?

Mr. Black is planting a vegetable garden. One length of his garden measures 12 meters. The width of his garden is 9 meters. Mr. Black estimated the area of his garden would be 42 square meters. Is Mr. Black’s estimate reasonable? Explain your reasoning.

Frances is organizing a camping trip. She has 25 campers signed up. Each camper’s tent takes up a 6 foot by 4 foot space. How much space will be needed for all the tents?
Ryan is in charge of laying down the chalk lines around each track event area. If one bag will lay 65 feet of chalk, how many bags will be needed for 6 areas that are 24 yards long and 3 yards wide, and 5 areas that are 12 ft. square? Will there be any chalk left over?

Samantha is looking for a new couch, and she has space in her house for a couch that is no longer than 5 feet. The furniture tag said the couch covered an area of 2244 sq. inches. She measured the width and found that it was 34 inches wide but forgot to measure its length. Will the couch fit in her house? Explain your thinking.

Stephanie is working a part-time job at Cost Cutter. She is stocking shelves with crackers. The box is 3 inches wide, 8 inches long and 9 ½ inches high. If the shelf is 12 inches wide, 6 feet long and 12 inches high, how many boxes of crackers will she be able to fit on the shelf?

Emily is going to be cleaning her marble collection and needs a place that will keep the marbles from rolling off the table. She will be taping a 1 inch high piece of cardboard around the edge of her table. How much edging will she need if the table is shaped like a regular hexagon with each side 21 inches long?

Levi wants to wallpaper one wall of his room with baseball cards. If each baseball card is 2 inches by 3 inches, how many cards will he need to wallpaper his wall if it measures 7 feet high and 12 feet 6 inches wide?

Kate wants to build a fence around her garden to keep the rabbits out. Her dad has 60 square yards of fencing that is 3 foot high that she may have. If her garden is 30 feet long and 20 feet wide, will her dad’s fencing do the job or will she have to buy more? If she must buy more, how much must she buy?

Jordyn is carpeting her bedroom, so she must measure the room to see how much carpet she needs. She has no ruler or yardstick, but she knows that each of her steps is 2 feet long. How can Jordyn use this knowledge to find the amount of carpet needed? The room is 7 ½ steps by 18 steps. Solve it.

Bryce is totally covering his rectangular-shaped pizza with cheese slices. Each slice is a 4 inch square. His pizza is an extra large 18 inches wide and it is twice as long as it is wide. How many cheese slices will Bryce need to cover the whole pizza?
**Student Sorting Extension:**

**Project Cover Proposal**

You will be constructing an attractive project cover with a complimentary binding using the principles of area and perimeter. Use a tag board base paper as the cover base stiffener and careful construction for maximum durability for your finished cover. A title plate, including the project title and your name, will be centered on the finished cover.

Submit the following proposal to the Materials Department, then select the cover and edging papers of your choice.

**Specifications for the cover:**

- An attractive paper must cover the entire tag board base.
- The binding paper must completely enclose the outside edge of your project cover base.
- The paper selected for the edging will be one inch wide. It will be folded in half lengthwise to accommodate an equivalent width, \(\frac{1}{2}\) inch border on the front side of the tag board base and \(\frac{1}{2}\) inch border on the back side of your cover paper.
- A title plaque must be measured, drawn, and added to your final cover page. The size of the title plaque is to be determined by you.

1. Draw a **diagram** of the tag board base you will be using for your cover. Use U.S. standard measurements. (Diagramming means to include the labels)
2. Calculate and explain how much paper you will need to cover the entire front of your project cover. No extra paper should be left over, so calculate carefully. Remember, office workers will be filling your order after hours and will not be able to talk with you about your project, so be specific. You may use numbers, words, and pictures in your request.

• Will you be finding area or perimeter? ____________________________

3. Calculate and explain how much binding paper you will need to edge your cover page. Remember, office workers will be filling your order after hours and will not be able to talk with you about your project, so be specific. You may use numbers, words, and pictures in the request.

• Will you be finding area or perimeter? ____________________________

My choice for cover paper is ____________________________.
My choice for binding paper is ____________________________.

When all calculations and explanations are complete, sign and submit your proposal to the Materials Department.

________________________________  _______________________________
(Signature)    (Date of Submission)

_______________________________
(Date Materials were received)
**Book Cover Assembly**

Assemble the cover by:

**Step 1:** Fit the decorative paper to the tag board cover. If it fits properly, glue it securely in place. When finished, go to Step 2.

*Is there a **PROBLEM**??* If you notice that the fit is too small or too large, figure out what was done wrong. Fill out the attached complaint form and take it to the Materials Department for verification and correction. Be sure to clearly explain your problem and include suggestions on how the problem should be solved. Do this immediately. You will be unable to proceed with your project until this is fixed.

**Step 2:** Fold the binding paper in half so that you now have a folded strip of paper ½ inch wide and as long as you requested.

**Step 3:** Place the fold over the edge of your cover. At each corner of the cover, cut the binding to match the very edge of the cover. Be very careful in your cutting, you may not have extra to spare. Glue this piece of edging. Continue around the other edges of the cover until you have the border completed.

**Step 4:** If you have successfully completed this portion, go on to Step 5.

*Is there a **PROBLEM**??* If you notice that the fit is too small or too large, figure out what was done wrong. Fill out the attached complaint form and take it to the Materials Department for verification and correction. Be sure to clearly explain your problem and include suggestions on how the problem should be solved. Do this immediately. You will be unable to proceed with your project until this is fixed.
**Step 5:** This cover will be used for ______________________. You must now think about including a rectangular background for the project title and your name.

- ✓ Draw a diagram of your newly constructed book cover with binding on the edge. Show all your work. Use U.S. standard measurements. Calculate the area left on the inside of the binding.

The cover area without binding is ______________________.

- ✓ Draw a diagram of the rectangular title plaque area you will be adding to your cover and calculate its area. Explain your answer. **Note:** If you wish to layer the rectangular title background adding color or depth, include your ideas in the plan and the dimensions for each layer needed.

The title background area is _________________.
Step 6: Collect the necessary color background paper(s), cut to specifications and paste onto your cover. Add the title.

Step 7: Complete the following questions and submit your cover with this completed proposal.

What was the most difficult part of this project and why?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Did you use the mathematics of area and perimeter in this project? How?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

If you used this plan again, would you do anything differently? What would it be?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Are you pleased with your results? Did you learn anything new?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Complaint Form

Name: ____________________________________________

Nature of Complaint:

What is your suggestion to fix the problem.

Submit your request to the Materials Department with the original materials attached.
Sign and date your request.

_______________________, __________
(Signature)     (Date)