Oakland CUSD #5

Geometry
May 4 - 8, 2020

Emily Myers

Week of May 4-8, 2020
Ms. Myers

Hello everyone. Choose 2 of the following activities for the class you are enrolled in to complete for this week. All assignments may be turned in via google classroom. Take a picture or scan it in and turn it into the corresponding assignment. Or you may turn in paper copies to the office and they will get them to me. Both choices are due by Monday, May 11 at noon. Be sure to write whatever choice you are doing at the top of your page.

I will be at my computer for questions on Tuesday 10a-12p, Wednesday 3p-5p & Thursday 12p-2p.

NO WORK = NO CREDIT

Class	Choice 1	Choice 2	Choice 3	Choice 4	Choice 5
Algebra 2	Water Park Project Show all work!	Duct Tape/Pencil Pouch Project Show all work!	Cross Number Wkst Show all work!	$1,000,000 Challenge Show all work!	Geometry Careers Project
Algebra 3/Trig	Complete the assignment that was assigned on Khan Academy.	Water Park Project Show all work!	Cross Number Wkst Show all work!	$1,000,000 Challenge Show all work!	Geometry Careers Project
Geometry	Year 9 Algebra Revision Sheet Show all Work!	Duct Tape/Pencil Pouch Project Show all work!	Cross Number Wkst Show all work!	$1,000,000 Challenge Show all work!	Geometry Careers Project
Tech Math	Duct Tape/Pencil Pouch Project Show all work!	Year 9 Algebra Revision Sheet Show all work!	Cross Number Wkst Show all work!	$1,000,000 Challenge Show all work!	Geometry Careers Project

Geometry Myers Choice 1

1 of 11

YEAR 9 ALGEBRA 1 REVISION SHEET

1. Match each algebraic expression with the correct phrase from the list on the right:

1.	$x + 3$	**A.** a number with five added to it
2.	$x - 2$	**B.** two times a number
3.	$5x$	**C.** a number with five subtracted from it
4.	$x + 5$	**D.** a number with three added to it
5.	$x - 5$	**E.** five times a number
6.	$2x$	**F.** a number divided by ten
7.	$\frac{10}{x}$	**G.** ten divided by a number
8.	$\frac{x}{}$	**H.** a number with two subtracted from it

2. True or False:

a) "a,b,c..." is the same as saying $a^1, b^1, c^1 \ldots$

b) "a,b,c..." is the same as saying 1a, 1b, 1c...

c) Letters don't have to be in alphabetical order when doing algebra

d) Numbers come before letters when they are attached to the letter (e.g. multiplied)

e) Like terms can be added and subtracted but unlike terms cannot

f) The sign in an equation (+, -) belongs to the letter or number following the sign

3. SIMPLIFY the following expressions (i.e. take away the (X) sign):

a) $4 \times 3x =$
b) $a \times c =$
c) $3 \times p =$
d) $1 \times d =$
e) $2a \times 4b =$
f) $2g \times 3f =$
g) $3r \times q \times 2p =$
h) $1 \times 10q \times 1 =$

4. SIMPLIFY (write the following expressions as simply as possible by adding or subtracting):

a) $p + p =$
b) $x + x + x =$
c) $y + y + y + y =$
d) $x + 3x =$
e) $5p + 3p =$
f) $10r - 3r =$
g) $20x - 19x =$
h) $6p - 5p + p =$
i) $3x + 2x - x + 8x =$

5. Which of the following are LIKE terms (in each group)?

a) $(3y, 6y, 3z) =$
b) $(x, 2x, 4x) =$
c) $(6a, b, 6c, 6d, 4b) =$
d) $(3y, 2z, 4p, 8w) =$

6. SIMPLIFY the following expressions (by collecting like terms (adding or subtracting):

a) $4x + 5y + 3x + 5y =$
b) $12x + 3y + 4x =$
c) $x + 1 + 9x + x =$
d) $4c - c + 2 =$
e) $10x + 3y - 4x =$
f) $5x - 4y + 2x - 2y =$

Geometry Myers Choice 1

2 of 11

7. **SIMPLIFY these expressions (Don't forget BEDMAS!):**

a) $5 \times x + 1$ =
b) $4 \times y + 2$ =
c) $x \times y + 5$ =
d) $a \times b + c$ =
e) $15 \times x - 4 \times y$ =

8. **Powers : Write the following in index form (e.g. x^3 = index form):**

a) $r \times r \times r$ =
b) $w \times w$ =
c) $p \times q \times q$ =
d) $x \times x \times y \times y \times z \times z$ =

9. **Powers: Write these expressions in full:**

a) x^5 =
b) s^3 =
c) p^2q =
d) t^3u^2 =

10. **Simplify the following expressions (remember your INDEX RULES):**

a) $6 \times p \times p$ =
b) $2 \times 5 \times x \times x$ =
c) $3p \times p$ =
d) $10x \times 10x$ =
e) $r \times 3r \times 4r$ =
f) $4x \times 2x \times y \times 3y$ =

11. **SUBSTITUTION: Work out the following when: a = 4, b = 3 & c = 2**

a) $a + b$
b) $b - a$
c) $a \times b$
d) $2a + c$
e) $12c$

12. **The distance (in km) that a car can travel in *h* hours is given by the formula:**

d = 100h

Use the formula to calculate the distance the car traveled in:

a) 2 hours
b) 3 hours
c) 6.5 hours
d) 9 hours

13. **A baker pays his assitant baker $8 an hour. Each week the baker adds $10 for a food allowance. The bakers weekly earnings are given by the formula: E = 8h +10**

a) What does "h" mean in this formula?
b) How much would the assistant baker be paid if he worked a 35 hour week?
c) A 40 hour week?

14. **PATTERNS: Complete the following sequences:**

a) 3, 5, 7, 9, 11, _, _, _, _
b) 2, 4, 8, 16, _, _, _, _
c) 12, 9, 6, 3, _, _, _, _
d) 3, 5, 8, 12, 17, _, _, _, _

GOOD LUCK!

?

Suggested Materials:

- Print pages 1-4 in landscape mode, double side, flip on short edge. (These settings work on my HP LaserJet, you may need to adjust). Fold book in half and staple. Print one per student or group.

-Gallon size plastic storage bags (regular seal and slider seal). Enough for one per student.

-Variety of duct tape (patterns and solid colors)

-Rulers

-Painters tape

-Calculators to check work

-Copy of answer key for teacher or for student self-check

-Scissors

-Heavy duty 3-hole punch

Prerequisite Skills and Knowledge:

Based on working without a calculator this is a list of knowledge and skills students should have before working on this activity.

-Know Area formula for rectangle **Area=Length x Width**

-Converting numbers: fraction/decimal/percent, mixed number/improper fraction

-Rounding to nearest cent, tenth of a cent

- Find the % of a number

-Unit conversions given conversion factors

-Unit rate/price

-Decimal operation fluency (addition, multiplication, division)

Project timeline:

Depending on skill level of students, without a calculator, this project generally takes students 2 or 3 class periods (50 minutes) .to complete.

Lesson Suggestions:

-Begin the project by discussing the startup of a fictitious student business that makes and sells pencil pouches made of duct tape. Invite students to guess how much it would cost to make and how much they should sell for in retail stores. Post guesses in classroom.

-Next I place students into pairs and have them come up with a name for their company and decorate the front cover with their business name and/or logo. I also give small pieces of duct tape if they want to include on cover to get them interested.

-Students complete the word problems practicing skills in computation, area, and percent word problems. I have students compute without a calculator and check with calculator or answer key at each step (to ensure accuracy as many steps build upon previous answers), but those are all teacher decisions. You

Geometry Myers Choice 1 3 of 11

may want to have students compute on scrap paper or on white boards and transfer to booklet when correct.

-Once a pair of students complete all questions correctly I give them a printed sheet with directions to make the pencil pouch (see "How to Make Duct Tape Pencil Pouch" in zip folder). I let students select the type of bag they calculated costs for in the activity. I allow each student to make one pouch.

-If time allows I have had students make extra pencil pouches to donate to our student service center for students needing school supplies.

-If allowed at your school, offer students extra credit or free time to bring in supplies (bags, a roll of duct tape, etc.).

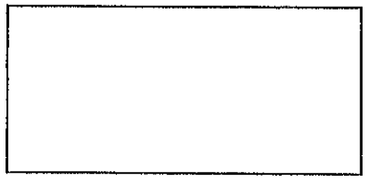
-I allow students one solid color and one pattern when constructing their pouches. No more than ½ the area can be patterned as it is more expensive.

-I have better luck ripping the duct tape than cutting. Scissors get all sticky by end of day. You may need to demonstrate this skill to students.

Geometry Myers Choice 2

1. Your company will create a duct tape pencil pouch using duct tape and a gallon plastic bag. Your bag will have the following dimensions:

$10\frac{9}{16}$ inches



6 inches

Find the area of your bag:

You will be covering both sides of the bag with tape, so what surface area will your bag have?

2. During trial production, you notice some wasted duct tape so you plan for waste during production (overlapped tape, destroyed tape, etc.). Estimates for waste in trial production are 15% of the total surface area per pencil pouch.

Write 15% as a decimal. _____

Find 15% of the total surface area. This is your wasted duct tape per pencil pouch.

3. Find the total surface area you will cover with duct tape (including predicted waste) per pencil pouch.

Geometry
Myers Choice X
5 of 11

4. If you unroll a roll of duct tape it would be 15 yards x 1.88 inches. There are 3 feet in every yard, and 12 inches in every foot.

   a. Convert 15 yards into feet.

   b. Next convert the answer from above into inches.

   c. Now find the area that the roll of duct tape will cover in square inches.

5. A roll of duct tape costs $5.29 including tax. What is the cost per square inch? **Round to the nearest tenth of a cent.**

6. Using the total surface area of your bag (Step 3) and the cost of duct tape per square inch (Step 5) find the cost to cover your entire bag in duct tape. **Round to the nearest cent.**

Geometry
Myers
Choice 2
Lesson 11

7. Regular bags are sold in a box with 38 bags for $5.09 per box. Slider bags are sold in a box of 30 for $5.29 per bag. For each type of bag, what is the price per bag? **Round to the nearest cent.**

8. An employee can make 6 pencil pouches in an hour. Your company pays a minimum wage of $7.25 per hour. What is the average amount the employee earns per pencil pouch? **Round to nearest cent.**

9. Decide which type of bag to produce. _____
What is the total cost to produce 1 pencil pouch (materials and labor)?

10. The finance manager insists that the company needs to sell the pencil pouches for 85% more than they cost to produce to be profitable. Find 85% of the total cost. **Round to nearest cent.**

11. What is the total price that your company will sell the pencil pouches to retailers for to ensure that you earn an 85% profit on the pencil pouches?

Geometry Myers Choice 7

12. Retailers selling your pencil pouches need to make a profit as well. To assist retailers in pricing please calculate three suggested retail prices including 35%, 45%, and 50% profit.

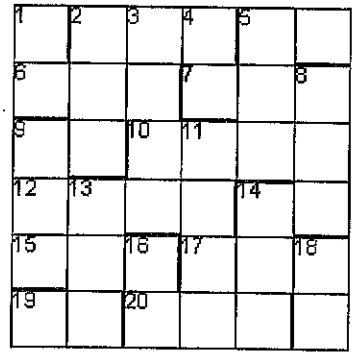
13. Reflections: Reflect on how this activity relates to real business practices. What other factors not included in this activity might a business consider when making and pricing their goods for sale to retailers?

Copyright © 2015 by Daniel Przybylski

Geometry Myers Choice P

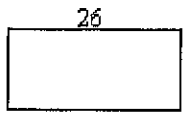
Geometry Myers Choice 3

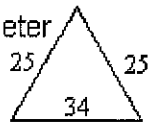
CROSSNUMBER

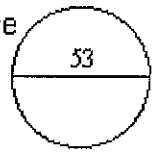


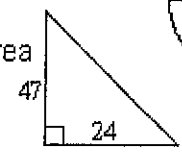
Round your answers to the nearest whole number

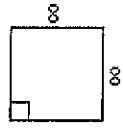
Across

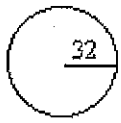
2. Area 

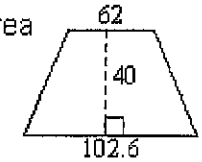
5. Perimeter 

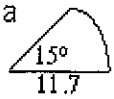
6. Circumference 

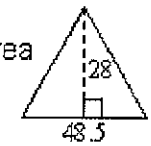
7. Area 

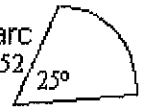
9. Area 

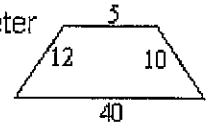
10. Area 

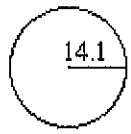
12. Area 

14. Area 

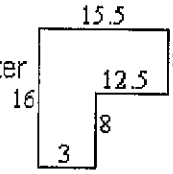
15. Area 

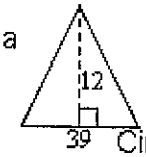
17. Length of arc 

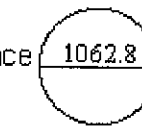
19. Perimeter 

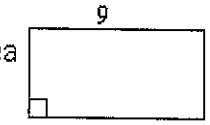
20. Area 

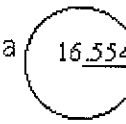
Down

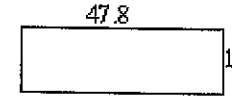
1. Perimeter 

2. Area 

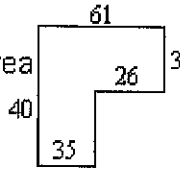
3. Circumference 

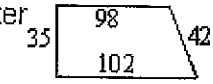
4. Area 

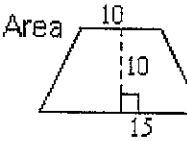
5. Area 

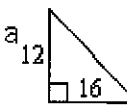
8. Area 

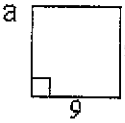
9. Area 

11. Area 

13. Perimeter 

14. Area 

16. Area 

18. Area 

... Geometry Myers Choice 4

$1,000,000 Challenge

Imagine getting a letter that states:

Congratulations! You have inherited $300,000,000. However, there is a stipulation. You have exactly 30 days to spend exactly $1,000,000; no more, no less. If you complete this challenge you will receive the $300,000,000.

You may not donate more than 10% to charity. You may not put it in the bank to collect interest. You may not give it away to friends or family.

Make a presentation of everything you spend the money on with pictures showing the prices of your purchases. This will also include what you eat during this month and activities that you participate in.

You may do this on a poster or in google slides. You must also include a page of all of the calculations.

Geometry Myers Choice 5

11 of 11

Geometry Careers Project

You are always asking "When will we ever use this?"
Here is your chance to tell me why.

Research 5 careers that use geometry. Find different characteristics about each career such as salary, schooling, and job description. Draw or print a picture of each career. Put all of the information on a poster board. Be sure to cite your sources. Remember: NO plagiarism! You may turn in the poster to the school or take a picture of it and turn in the picture.

OR

Research 5 careers that use geometry. Find different characteristics about each career such as salary, schooling, and job description. Make a google slides presentation of the information. Be sure to cite your sources. Remember: NO plagiarism!