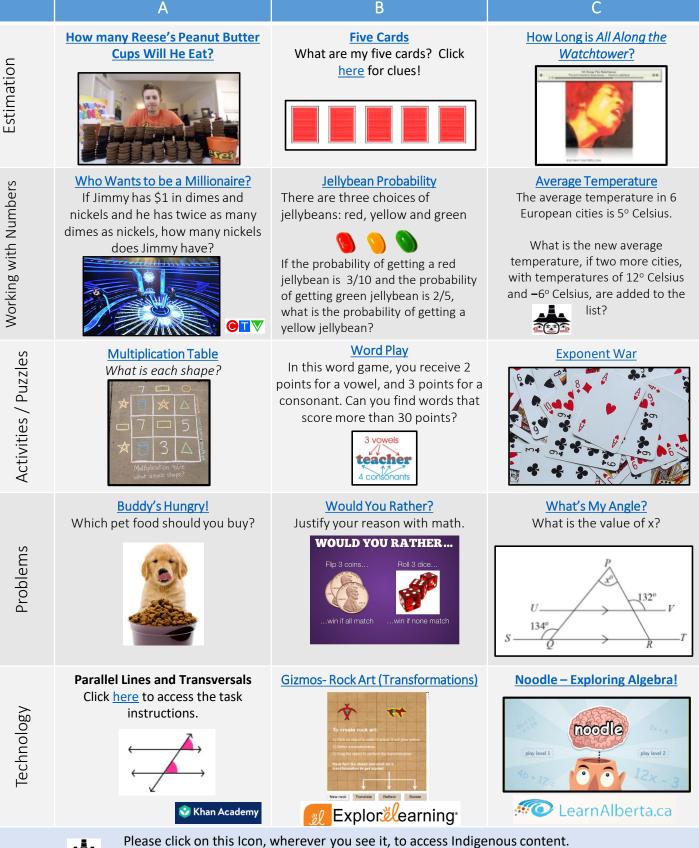


Math 7 -8 Activities- Menu I







Choice Board Background Information:

- Choice boards were created to provide flexibility in learning at home;
- Boards were planned for divisions: K 3, 4-6, 7-8 for open, individualized
 learning;
- Planned with recognition that parents may currently hold various roles at home;
- Designed to enhance the materials provided by the Ministry;
- Experiential learning focus with accessible materials at home;
- Low/No tech options;
 Accessible on mobile devices.

Choice Board Activities Provide:

- ✓ Clear connections to curriculum expectations and process skills;
- ✓ Open activities with options to individualize learning;
- Accessibility (many require little to no technology);

١

- ✓ Math focus on numeracy skills;
- Literacy focus on reading, writing, oral language and media literacy;
- ✓ French learning opportunities;
- Health and Physical Well-Being;
- Opportunities to foster connections within the household;
- ✓ Focus on conversation and thinking.

Choice Boards - Parents Can:

- Choose as many or as few learning opportunities as desired;
- Follow the days of the week or be flexible in using the choice boards;
- Be confident that the learning is based in curriculum;
- Engage other children in the home in common experiential learning (i.e., baking, reading, playing math games, being active together);
 - Click on the links provided for further learning and sample questions to ask;
 - ✓ Have fun!



Π

Explanatory Notes: LEARN AT HOME CHOICE BOARDS FOR PARENTS AND EDUCATORS

Creating Futures, Leading and Learning for All

П

П

Choice Boards -Teachers Can:

 Create classroombased choice boards
 for students while they are learning at home;

- Incorporate ideas from the choice boards into teaching practices, daily and weekly planning;
- Explore and incorporate new resources into classroom learning;
- Engage students and families in virtually sharing learning with one another;
- Expand on activities in order to provide individualized learning opportunities;
- Incorporate other UCDSB resources (i.e., Math Tool, VLC, links) to extend student learning.

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Learn at Home Activity Menu I: Grades 7 – 8 Math

How Many Reese's Peanut Butter Cups Will He Eat?



Source: https://tapintoteenminds.com/3act-math/reeses/

This question can be broken up into two parts: 1) Estimate how many Reese's Peanut Butter Cups are in the picture. 2) How many Reese's Peanut Butter Cups do you think ErikTheElectric will eat?

| COTAP | | | |
|---------------|---------|----------|------------|
| MINDS | Too Low | Too High | Just Right |
| Estimate # 1 | | | |
| Estimate # 2 | | | |
| Reasoning # 1 | | | |
| Reasoning # 2 | | | |

Use the picture below to help determine your estimate or watch the following video <u>here</u>



Click here for the answer as well as an extension activity!

Learn at Home Activity Menu I: Grades 7 – 8 Math

How Many Reese's Peanut Butter Cups Will He Eat? – Solution!

Source: <u>https://tapintoteenminds.com/3act-math/reeses/</u>

The Reveal!



ErikTheElectric ate all of the 250 Reese's Peanut Butter Cups that were stacked in front of him! Watch the video <u>here.</u>



Extension #1:



Extension #2:



REESE'S PEANUT BUTTER CUPS, 2.3 OUNCES

The classic conditation of choiceles and packed butter, REER'S Peaked Butter Cups are the perfect comparison for review, sports and perfect.

At a party, guests ate 14 packages of Reese's Peanut Butter Cups.

There is 1 sixth cups of sugar in each package.

How much sugar is in 14 packages?

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Learn at Home Activity Menu I: Grades 7 – 8 Math

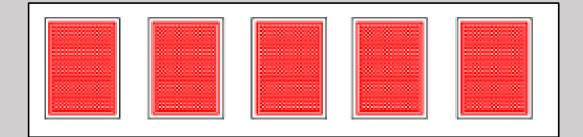


What Are My Five Cards?

Source: https://webmaths.wordpress.com/rich-tasks/

Clues:

- I have five cards numbered 1 to 9.
- I put five of them down in a row.
- The 1st & 2nd cards add to 13.
- The 2nd & 3rd cards add to 10.
- The 3rd & 4th cards add to 9.
- The 4th & 5th cards add to 11.



What are my cards? How many solutions are there?

Click <u>here</u> for the solutions!

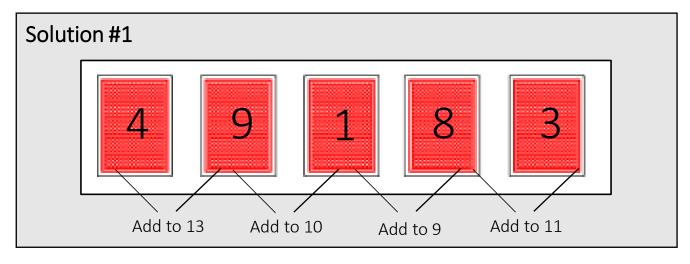
Upper Canada District School Board

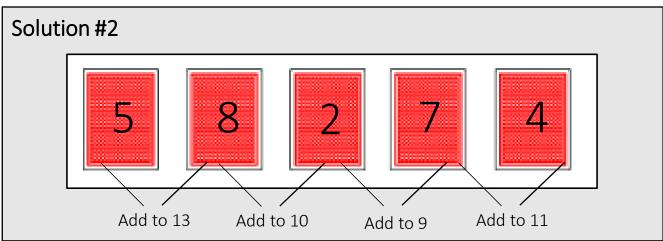
Learn at Home Activity Menu I: Grades 7 – 8 Math

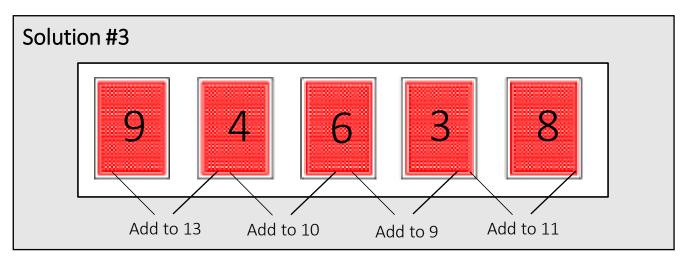
What Are My Five Cards? -Solutions



Source: https://webmaths.wordpress.com/rich-tasks/







Upper Canada District School Board

Learn at Home Activity Menu I: Grades 7 – 8 Math

How Long is All Along the Watchtower?

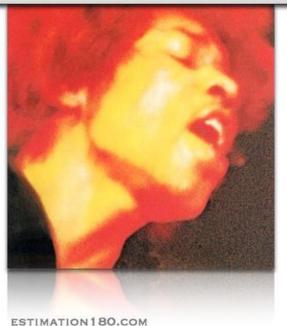


Source: http://www.estimation180.com/day-133.html

Estimate the length of the song, *All Along the Watchtower*, by Jimi Hendrix.

| ESTIMATION 8 | Too Low | Too High | Just Right |
|-----------------|---------|----------|------------|
| Estimate | | | |
| Reasoning | | | |





Verify your estimate here or watch the video reveal here

Upper Canada District School Board

Learn at Home Activity Menu I: Grades 7 – 8 Math

Who Wants to be a Millionaire? M

If Jimmy has \$1 in dimes and nickels and he has twice as many dimes as nickels, how many nickels does Jimmy have?





Click <u>here</u> to see the answer.



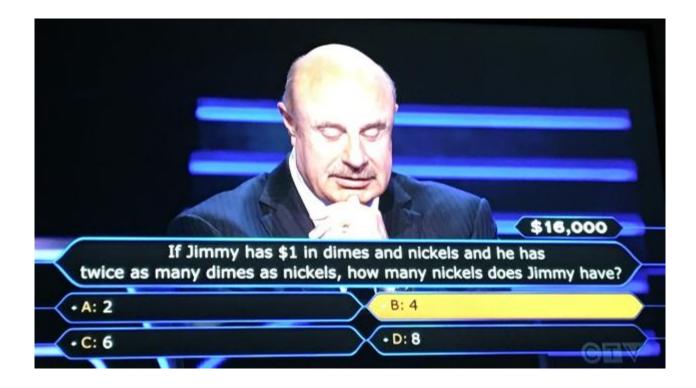
Source: https://www.ctv.ca/Who-Wants-To-Be-A-Millionaire

Upper Canada District School Board

Learn at Home Activity Menu I: Grades 7 – 8 Math

Who Wants to be a Millionaire?

If Jimmy has \$1 in dimes and nickels and he has twice as many dimes as nickels, how many nickels does Jimmy have?



The reasoning:

To have twice as many dimes as nickels you could have 4 nickels and 8 dimes. Check to see if this would give you \$1.

If you have 4 nickels, you would have 20 cents $0.05 \times 4 = 0.20$

To make \$1 you would need 80 cents, or an additional 8 dimes.

The math: \$0.05 x 4 = \$0.20 \$0.10 x 8 = \$0.80



Upper Canada District School Board

Learn at Home Activity Menu I: Grades 7 – 8 Math

Jellybean Probability



There are three choices of jellybeans: red, yellow and green.



If the probability of getting a red jellybean is 3/10 and the probability of getting green jellybean is 2/5, what is the probability of getting a yellow jellybean?

Solution:

We can work out the probability of getting a yellow jellybean by subtracting the other two probabilities from 1:

Probability of Yellow = $1 - \frac{3}{10} - \frac{2}{5}$

$$= \frac{10}{10} - \frac{3}{10} - \frac{4}{10}$$
$$= \frac{3}{10}$$

Average Temperature



• The average temperature in 6 European cities is 5 • Celsius.

What is the new average temperature, if two more cities, with temperatures of 12° Celsius and –6° Celsius, are added to the list?



Please click here to access Indigenous content.

Source: https://nrich.maths.org/13434

Solution:

Finding the sum of the temperatures

The mean of the first 6 cities is the sum of all of the temperatures and then dividing by 6. So the sum of the temperatures, before dividing by 6, must have been $6 \times 5 = 30^{\circ}$ C.

When 12° C and -6° C are added to the list, the new sum will be $30+12-6=36^\circ$ C.

There are now 8 cities on the list, so the new average temperature can be found by dividing by 8.

 36° C \div 8 $=4.5^\circ$ C so the new average temperature is 4.5° C





It seems that the average temperatures are rising world-wide.

Indigenous knowledge, stories, medicines are slowly being proven valid by modern day science.

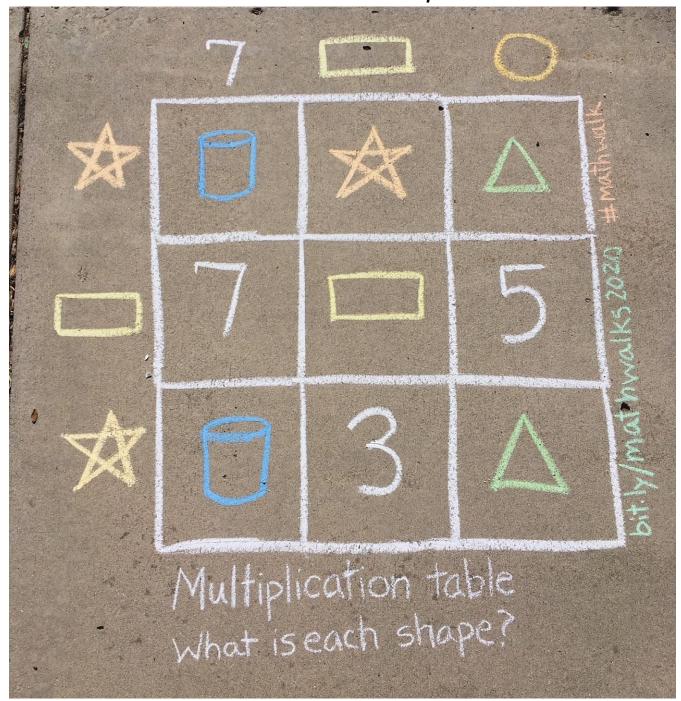
Researchers have recently included the contributions of the Inuit in exploring occurrences and direction in combating climate change.

Watch the attached video to see this collaboration and the hope it is garnering.

How Indigenous Knowledge...

Multiplication Table What is each shape?





Click here to see the solution.

Source: https://sites.google.com/powayusd.com/math-walks/home

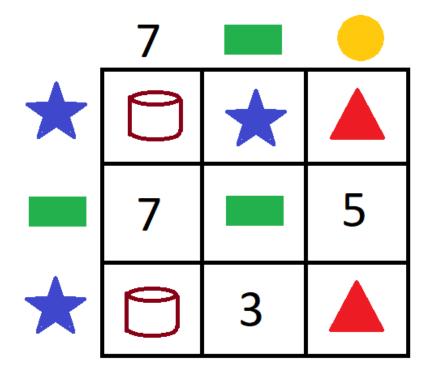
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Learn at Home Activity Menu I: Grades 7 – 8 Math

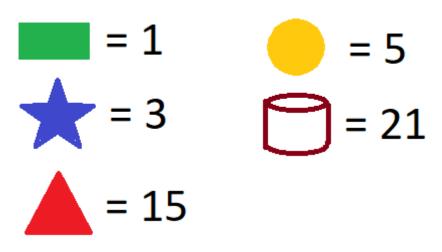
Multiplication Table

M

What is each shape?



Solutions: Can you use math to prove each of these? Make sure you provide full and detailed solutions.



Source: https://sites.google.com/powayusd.com/math-walks/home

Upper Canada District School Board

Learn at Home Activity Menu I: Grades 7 – 8 Math

Word Play



3 vowels

sonants

In this word game, you receive 2 points for a vowel, and 3 points for a consonant.

Word Value = 3 x the number of consonants + 2 x the number of vowels

The word **teacher** would be scored as 4 consonants worth 3 points each, plus 3 vowels worth 2 points each.

Word Value = 3(4) + 2(3) = 12 + 6 = 18

1. Determine the value of each of the following words.

Show your calculations.

a) Algebra

b) Variable

c) Constant

d) Integer

e) Pattern

f) Substitute

2. Write an algebraic expression that you could use to find the point value of any word.

3. Use your expression to calculate the value of **six different words**. Can you find words that score more than 30 points?

Click <u>here</u> to see the solutions.

Source: <u>https://oame.on.ca/main/files/Gr7TIPS-2009/gr7Unit5.pdf</u>

Upper Canada District School Board

Learn at Home Activity Menu I: Grades 7 – 8 Math



Word Play - Solutions

1. Determine the value of each of the following words. Show your calculations.

a) Algebra Word Value = 3(4) + 2(3) = 12 + 6 = 18

b) Variable Word Value = 3(4) + 2(4) = 12 + 8 = 20

c) Constant Word Value = 3(6) + 2(2) = 18 + 4 = 22

d) Integer Word Value = 3(4) + 2(3) = 12 + 6 = 18

e) Pattern Word Value = 3(5) + 2(2) = 15 + 4 = 19

f) Substitute Word Value = 3(6) + 2(4) = 18 + 8 = 26

2. Write an algebraic expression that you could use to find the point value of any word.

Word Value = 3(Consonants) + 2(Vowels) = 3C + 2V

3. Use your expression to calculate the value of **six different words**. **Answers will vary**

Source: https://oame.on.ca/main/files/Gr7TIPS-2009/gr7Unit5.pdf

Upper Canada District School Board

Learn at Home Activity Menu I: Grades 7 – 8 Math



May 25, 2020 - May 29,

2020



Exponent War



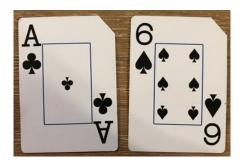
Materials Required: Two standard decks of playing cards with the Jacks, Queens, and Kings removed.

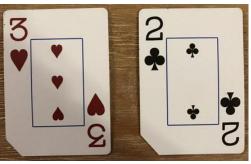
Goal: To determine who has the higher power.

Game: Each player turns over two cards and chooses which card is the **exponent** and which is the **base** in order to achieve the highest value. The player with the higher value takes all four cards.

Sample hand:

For example, an Ace and a 6 could be one to the sixth power, OR six to the first power.









| Option 1 | Option 2 | Option 1 | Option 2 |
|-----------------------------|------------------------|---------------------------|------------------------|
| one to the sixth power | six to the first power | three to the power of two | two to the third power |
| 1 ⁶ | 6 ¹ | 3 ² | 2 ³ |
| = 1 x 1 x 1 x 1 x 1 x 1 x 1 | = 6 | = 3 x 3 | = 2 x 2 x 2 |
| = 1 | | = 9 | = 8 |

Player 1 should choose six as the base and 1 as the exponent. Player 2 should choose three as the base and two as the exponent.

In this hand player 1 would choose option 2 (with a value of 6) and player 2 would choose options 1 (with a value of 9).

Player 2 would win and keep all 4 cards. Play continues until one player has all of the cards from the deck.

Source: https://www.oame.on.ca/main/files/resosale/Website-Playing%20Cards.pdf



Learn at Home Activity Menu I: Grades 7 – 8 Math

Buddy's Hungry!

Buddy, one of the teacher's dogs, is very hungry. Ms. Jones stops at the pet store on her way home from school. She is always looking for the most economical buy. While at the pet store, she notices the following prices of pet food:



- Five 150mL cans of Perfect Pet dog food for \$1.26
- Twelve 400mL cans of Doggies Love It for \$7.38
- Ten 150mL cans of Rover's Chow for \$2.60
- Six 400mL cans of Man's Best Friend for \$3.94

Which pet food should Ms. Jones buy? Explain in as many different ways as possible. Make sure you provide full and detailed solutions.



Click <u>here</u> to see the solutions.

Upper Canada District School Board

Learn at Home Activity Menu I: Grades 7 – 8 Math

Buddy's Hungry! - Solution

Given:

- Five 150mL cans of Perfect Pet dog food for \$1.26
- Twelve 400mL cans of Doggies Love It for \$7.38
- Ten 150mL cans of Rover's Chow for \$2.60
- Six 400mL cans of Man's Best Friend for \$3.94

Which pet food should Ms. Jones buy? Explain in as many different ways as possible.

Here's one possible solution:

| | Perfect Pet dog | Doggies Love It | Rover's Chow | Man's Best Friend |
|--|--|--|---|--|
| Determine the total volume of each brand of dog food | Five 150mL cans = 5 x 150 = 750 mL | Twelve 400mL cans = 12 x 400 = 4800 mL | Ten 150mL cans = 10 x 150 = 1500 mL | Six 400mL cans = 6 x 400 = 2400 mL |
| Cost | \$1.26 | \$7.38 | \$2.60 | \$3.94 |
| Determine the unit price of each brand of dog food | 750 mL ÷ \$1.26 = 595 mL per dollar | 4800 mL ÷ \$7.38 =650 mL per dollar | 1500 mL ÷ \$2.60 = 577 mL per dollar | 2400 mL ÷ \$3.94 = 609 mL per dollar |
| | | BEST value | WORST value | |

Can you think of another way to justify your response?



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Would You Rather?

Whichever option you choose, justify your reasoning with mathematics.



You may want to organize your thoughts in a table similar to the one below:

| Option A | O | | Option B |
|---|---------------------|-----------------------|---------------------------------|
| | Break it down | | |
| Conclusion: I would rather | | | |
| Because | | | |
| Click <u>here</u> to see a sample solution. | Source: <u>http</u> | ://www.wouldyourather | math.com/would-you-rather-38-2/ |
| Upper Canada District School Board | Learn at Hon | ne Activity Menu I: | May 25, 2020 – May 29, |

Grades 7 – 8 Math

2020

Would You Rather? - Solution





You may want to organize your thoughts in a table similar to the one below:

| Option A | Or | Option B |
|--|---------------|--|
| The probability of flipping 3 coins and getting the same result. There are 8 possible outcomes when flipping 3 fair coins: HHH, HHT, HTH, THH, TTH, THT, HTT, TTT. All of these are equally likely since a coin has a 50/50 chance of heads/tails. Only two of these outcomes have all coins the same (HHH,TTT). So the likelihood of this happening is 2/8 = 0.25 = 25% | Break it down | The probability of rolling 3 dice and getting different results. For all 3 dice to be different numbers, the first die has 6 possibilities, the second 5 and the third 4. Written as a product of probabilities out of 6 (6-sided die) we get $\left(\frac{6}{6}\right), \left(\frac{5}{6}\right), \left(\frac{4}{6}\right) = \frac{120}{216} = 0.555 \dots = \sim 56\%$ |

Conclusion: I would rather

Because

Click <u>here</u> to see how to solve this problem using Probability Trees!

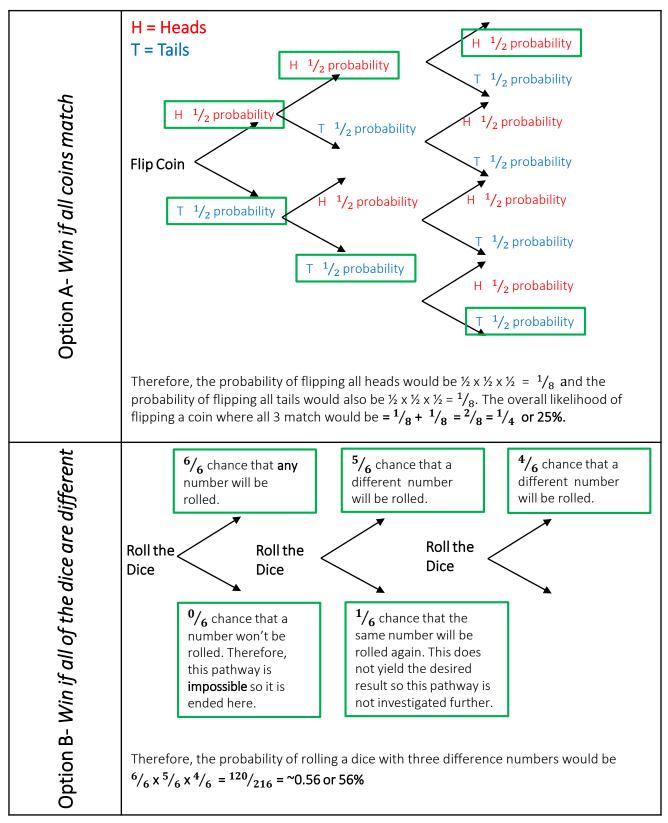
Source: https://www.wouldyourathermath.com/would-you-rather-38-2/

Learn at Home Activity Menu I: Grades 7 – 8 Math

Would You Rather- Solution #2

Probability Trees



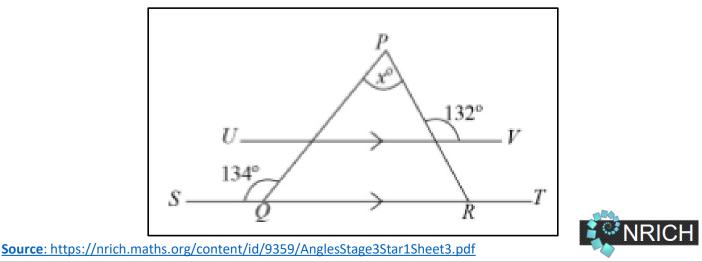


What's My Angle?



In the diagram ST is parallel to UV.

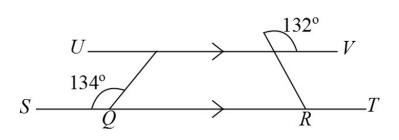
What is the value of x?



Hint:

It may help to look at this question in stages.

First find the missing angles using parallel lines and transversals. Then, solve for x using triangle angle facts. P_{λ}



Click <u>here</u> to see the solution.

Learn at Home Activity Menu I: Grades 7 – 8 Math

What's My Angle? - Solutions

Note: There are may different ways to solve this question. Here is one possible solution.

 U_{-}

134°

 U_{-}

 134°

S

S

180 - 134

= 46°

180 - 134

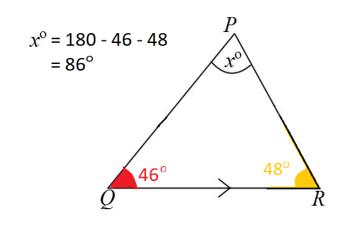
= 46°

Step 1:

Use parallel lines and other angles facts to find the two bottom angles in the triangle. It may help if you remove the top portion of the drawing to just focus on the parallel lines and the desired missing angles.

Step 2:

Redraw the triangle with the determined angles (from above) and the unknown angle, x^o. Use triangle angle facts to solve for the desired unknown angle, x^o.



Can you find another way to solve this problem?



132°

 132°

R

48⁰

48⁰

= 48°

____*V* 180 - 132

V

T

180 - 132

 $= 48^{\circ}$

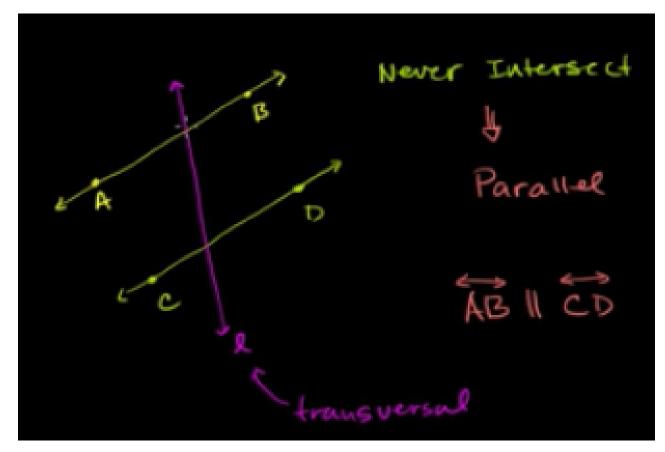
Source: https://nrich.maths.org/content/id/9359/AnglesStage3Star1Sheet3.pdf

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Learn at Home Activity Menu I: Grades 7 – 8 Math

Angles, parallel lines, & transversals M

Click the link <u>here</u> to access the task from Khan Academy.



Watch the video clip lessons and then try a few Practice questions.





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Learn at Home Activity Menu I: Grades 7 – 8 Math



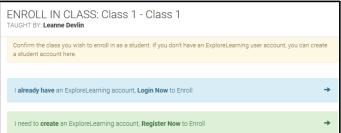
Gizmos – Rock Art (Transformations)

Instructions

Need a review of Transformations? Click <u>here</u> for a link to the Khan Academy!

- 1. Go to <u>www.explorelearning.com</u>
- Click on "Login/Enroll" \$\overline\$ ~ Q Find Gizmos Learn More ~ Login / Enroll Request Info •
 Enter "LZC47M" into the Student Class Enrollment
 \$\overline\$ ~ Q Find Gizmos Learn More ~ Login / Enroll •
 Username Username
 Password Password
 Login Help? Login +
 Glass Code Enrollment
- 4. If you have used Gizmos before, enter your login information.

If you have not used Gizmos, create an account!



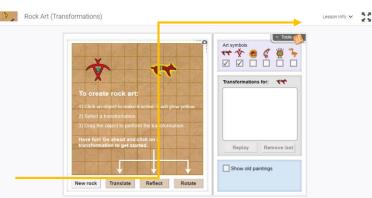
5. Click on "Rock Art (Transformations)" to launch the Gizmo!



6. Your screen should look like this!

You can also scroll down on the page for assessment questions!

7. Click on "Lesson Info" found on the top right hand side of the page to download further activities!



Learn at Home Activity Menu I: Grades 7 – 8 Math



Estimation

Working with Numbers

Activities / Puzzles

Problems

Math 7 -8 Activities Menu I **Curriculum Expectations**





How Many Reese's Peanut Butter Cups Will He Fat?

А

Number Sense and Numeration Grade 7 & 8

Specific: solve multi-step problems arising from real-life contexts and involving whole numbers and decimals, using a variety of tools and strategies.

Five Cards

В

Mathematical Processes

Problem Solving

Develop, select, apply, and compare a variety of problem-solving strategies as they pose and solve problems and conduct investigations, to help deepen their mathematical understanding.

Reasoning and Proving

Develop and apply reasoning skills (e.g., recognition of relationships, generalization through inductive reasoning, use of counter-examples) to make mathematical conjectures, assess conjectures and justify conclusions, and plan and construct organized mathematical arguments.

Jellybean Probability

Number Sense and Numeration

Grade 7

Specific: Add and subtract fractions with simple like and unlike denominators, using a variety of tools and algorithms.

Grade 8

Specific: Solve problems involving addition, subtraction, multiplication, and division with simple fractions.

Data Management and Probability

Grade 7

Specific: research and report on real-world applications of probabilities expressed in fractions, decimal, and percent form Grade 8

Overall: use probability models to make predictions

about real-life events

Word Play

Patterning and Algebra

Grade 7

Specific: Translate phrases describing simple mathematical relationships into algebraic expressions using concrete materials.

Specific: Evaluate algebraic expressions by substituting natural numbers for the variables.

Grade 8

Specific: Describe different ways in which algebra can be used in real-life situations.

Specific: Evaluate algebraic expressions with up to three terms, by substituting fractions, decimals, and integers for the variables.

Would You Rather?

Data Management and Probability

Grade 7

Specific: research and report on real-world applications of probabilities expressed in fractions, decimal, and percent form:

Represent in a variety of ways all the possible outcomes of a probability experiment involving two independent events and determine the theoretical probability of a specific outcome involving two independent events. Grade 8

Specific: identify the complementary event for a given

event, and calculate the theoretical probability that a given event will not occur

Gizmos - Rock Art (Transformations) Geometry and Spatial Sense

Grade 7

Specific: create and analyse designs involving translations, reflections, dilatations, and/or simple rotations of two-dimensional shapes, using a variety of tools and strategies.

Grade 8

Specific: identify, through investigation, real-world movements that are translations, reflections, and rotations.

How Long is All Along the Watchtower? Number Sense and Numeration

С

Grade 7

Specific: use estimation when solving problems involving operations with whole numbers decimals, and percents, to help judge the reasonableness of a solution.

Grade 8

Specific: use estimation when solving problems involving operations with whole numbers, decimals, percents, integers, and fractions, to help judge the reasonableness of a solution.

Average Temperature Data Management and Probability

Grade 7

Overall: Make and evaluate convincing arguments, based on the analysis of data.

Specific: Determine, through investigation, the effect on a measure of central tendency of adding or removing a value or values.

Grade 8

Overall: Apply a variety of data management tools and strategies to make convincing arguments about data.

Specific: Determine, through investigation, the appropriate measure of central tendency needed to compare sets of data.

Exponent War

Number Sense and Numeration

Grade 8

Overall: Represent, compare, and order equivalent representations of numbers, including those involving positive exponents.

Specific: Express repeated multiplication using exponential notation.

Mathematical Processes – Communicating

Communicate mathematical thinking orally, visually, and in writing, using mathematical vocabulary and a variety of appropriate representations, and observing mathematical conventions.

What's My Angle?

Geometry and Spatial Sense

Grade 8

Specific: Solve angle-relationship problems involving triangles (e.g., finding interior angles or complementary angles), intersecting lines (e.g., finding supplementary angles or opposite angles), and parallel lines and transversals (e.g., finding alternate angles or corresponding angles).

Mathematical Processes – Problem Solving

Develop, select, apply, and compare a variety of problem-solving strategies as they pose and solve problems and conduct investigations, to help deepen their mathematical understanding.

Noodle – Exploring Algebra! Patterning and Algebra

Grade 7

Specific: evaluate algebraic expressions by substituting natural numbers for the variables. Grade 8

Specific: evaluate algebraic expressions with up to three terms, by substituting fractions, decimals, and integers for the variables

Who Wants to be a Millionaire? Number Sense and Numeration

Grade 7

Specific: Solve problems involving the multiplication and division of decimal number to thousandths by one-digit whole numbers, using a variety of tools and strategies.

Grade 8

Overall: Solve problems by using proportional reasoning in a variety of meaningful contexts.

Multiplication Table Mathematical Processes

Problem Solving

Develop, select, apply, and compare a variety of problem-solving strategies as they pose and solve problems and conduct investigations, to help deepen their mathematical understanding;

Selecting Tools and Computational Strategies

Select and use a variety of concrete, visual, and electronic learning tools and appropriate computational strategies to investigate mathematical ideas and to solve problems.

Buddy's Hungry!

Number Sense and Numeration

Grade 7

Overall: Demonstrate an understanding of proportional relationships using percent, ratio, and rate.

Specific: Solve problems involving the calculation of unit rates.

Grade 8

Grade 8

Overall: Solve problems by using proportional reasoning in a variety of meaningful contexts. Specific: Solve problems involving rates.

Parallel Lines and Transversals Geometry and Spatial Sense

Specific: Determine, through investigation using a variety of tools, the angle relationships for intersecting lines and for parallel lines and transversals, and the sum of the angles of a triangle.

Specific: Solve angle-relationship problems involving triangles (e.g., finding interior angles or complementary angles), intersecting lines (e.g., finding supplementary angles or opposite angles), and parallel lines and transversals (e.g., finding alternate angles or corresponding angles).