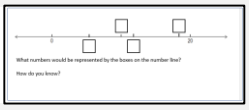
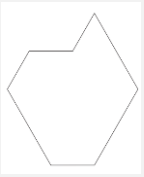
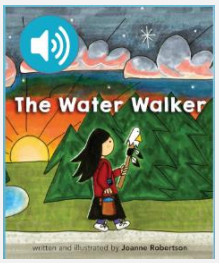
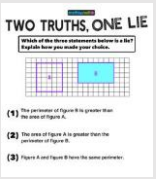
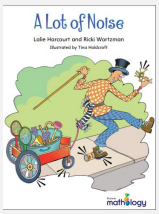
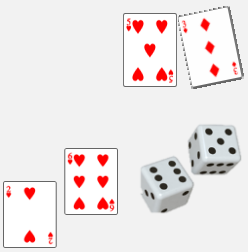
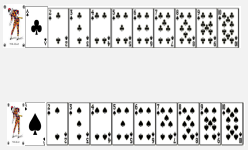
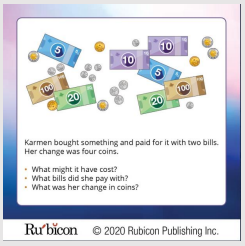
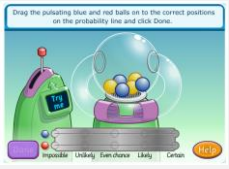
Math 1-3 Activities Menu K

Curriculum Connections

Creating Futures, Leading and Learning for All

Instructions: Choose from the options below. Enjoy as many or as few as you have time for.

	A	B	C	D	E
Estimation	Number Line Estimation 	As Close as It Gets: How Many Pattern Blocks? 		How Many Flowers? 	Super Mario Estimation 
Talking about Math	Smudged Math 	Piggy Bank Money 	All **Task C** activities relate to the story *The Water Walker* by Joanne Robertson. Complete the tasks and activities that follow. *Listen* to the story here. 	Which One Doesn't Belong? 	Two Truths and a Lie 
Activities / Games	Code the Story 	1-10 Game 	Estimation Task Talking About Math Activity Problem Technology	Flip a Coin Workout 	Turnover 
Problems	Rugby Math To win a game of rugby you need to score the most points. Points can be scored as follows: • *Try* = 5 points • *Try* with *conversion* = 7 points • *Penalty kick or drop goal* = 3 points See Rugby Math problems on pages that follow.	How Many Biscuits Can You Make? 		Flip a Coin Workout Part 2 Keep a tally of every heads and tails you flip, then: • Graph it • Predict next flip • Make your own *Flip a Coin* workout 	Money, Money, Money 
Technology	SolveMe MysteryGrid 	Probability Game for Kids 		Math Data Game for Kids 	SolveMe Who Am I? 

Please click on this icon, wherever you see it, to access Indigenous content.

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 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!

UPPER CANADA District School Board

Explanatory Notes:

LEARN AT HOME CHOICE BOARDS FOR PARENTS AND EDUCATORS

Creating Futures, Leading and Learning for All

Choice Board Activities Provide:

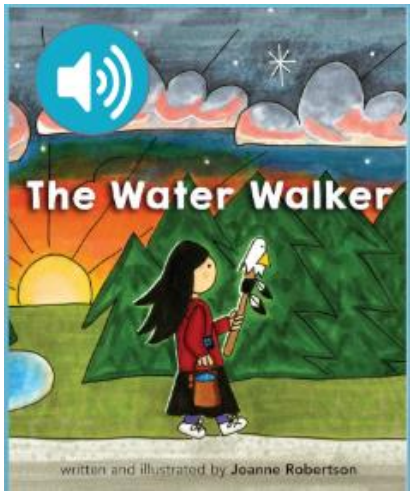
- ✓ Clear connections to curriculum expectations and process skills;
- ✓ Open activities with options to individualize learning;
- ✓ Accessibility (many require little to no technology);
- ✓ Math – focus on numeracy skills;
- ✓ Literacy – focus on reading, writing, oral language and media literacy;
- ✓ French learning opportunities;
- ✓ Health and Physical Well-Being;
- ✓ Opportunities to foster connections within the household;
- ✓ Focus on conversation and thinking.

Choice Boards - Teachers Can:

- ✓ Create classroom-based 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.

The Water Walker

Activities adapted from Choice Boards Created by SCDSB



Listen

Listen and follow along as the author and illustrator, Joanne Robertson, reads her book *The Water Walker*.

"The story is about a determined Ojibwe Grandmother (Nokomis) and her great love for Nibi (water). Nokomis walks to raise awareness of our need to protect Nibi for future generations, and for all life on the planet. "

Estimation Task

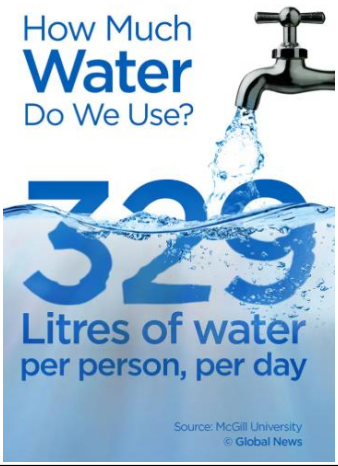
Make sure you have listened to the story *The Water Walker*.

About how much water gets used in your household per day?

Give your answer to the nearest hundred litres?

Give your answer to the nearest fifty litres?

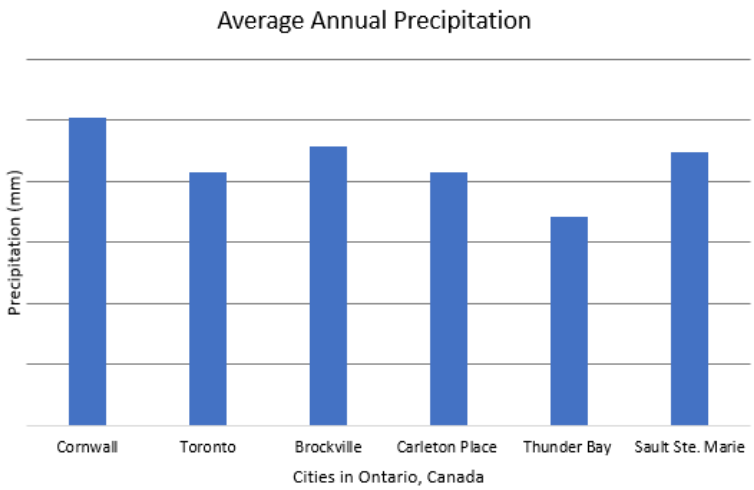
How did you come up with your estimates?



Talking About the Math

What do you notice and wonder about the graph?

If Cornwall had an average annual precipitation of just over 1000 mm, then what would you estimate the annual precipitation in Toronto to be? What about Thunder Bay?



The Water Walker *continued*

Activities adapted from Choice Boards Created by SCDSB

Activity: Water Scavenger Hunt

Item	Tally	Frequency
A storm drain		
A body of water		
Something blue or green		
Something wet or damp		
A hill		
An animal		
Something that is okay to throw in the water		
Something that is on land but belongs on water		
Something that floats		

The Water Walker *continued*

Activities adapted from Choice Boards Created by SCDSB

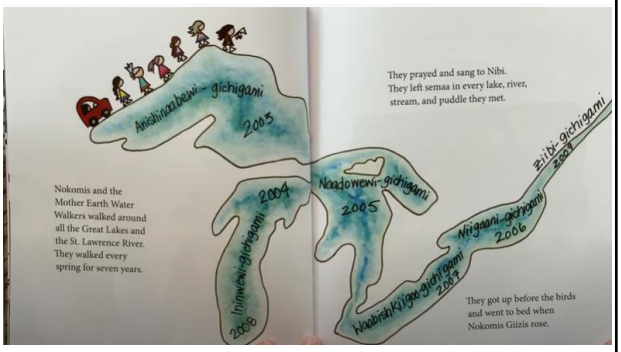
Problem:

Nakomis and the Mother Earth Water Walkers walked around all the great lakes and the St. Lawrence River.

They got up before the birds and went to bed when the moon rose.
What time might they have gotten up? About what time did they go to bed?
How long were they awake each day? How do you know?

If they walked every spring for seven years, how many months did they walk?

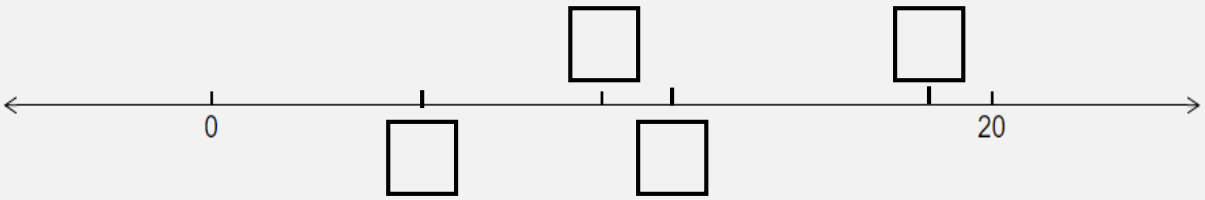
How many days did they walk?



Technology:

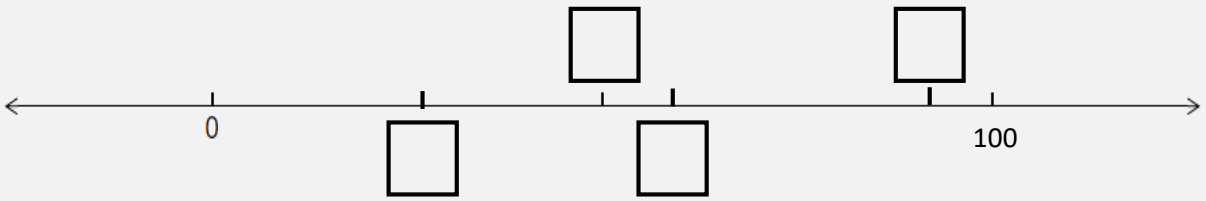
Water Experiments: Watch this video and try some of the water experiments at home.

Number Line Estimation



What numbers would be represented by the boxes on the number line?

How do you know?



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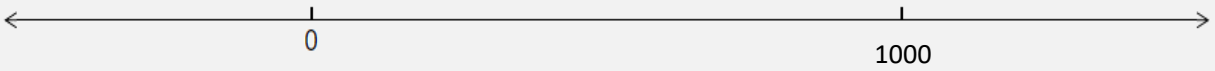


Place the following numbers on the number line. How did you know where to place them?

a) 300 b) 2000 c) 100 d) 900

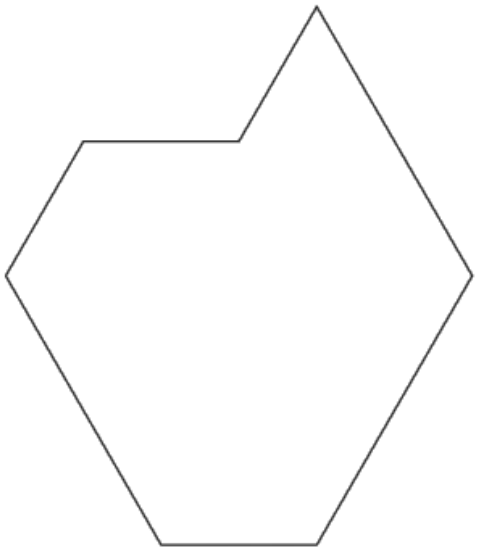
As Close as It Gets: Geometry

https://www.eqao.com/en/assessments/primary-division/assessment-docs/g3-geometry-spatial-sense-strand-2012-2016.pdf

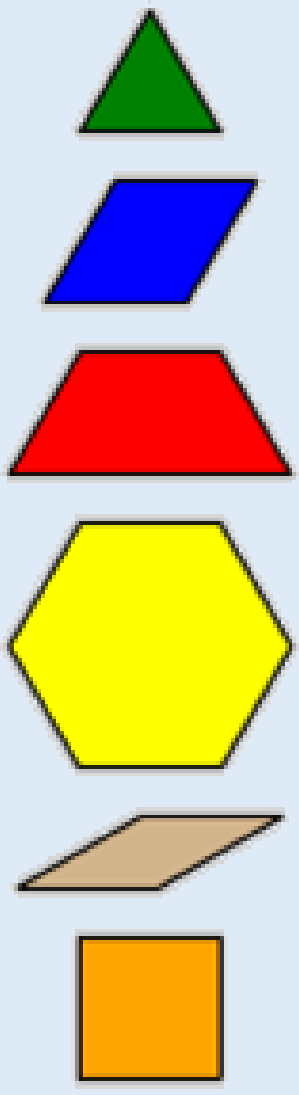
Chris saw the image below. He challenged his friend and said, "I bet I can cover this image with fewer pattern blocks than you."

What is the fewest number of pattern blocks Chris used to cover the shape without any gaps or overlaps?	
a) 3	b) 4
c) 5	d) 6

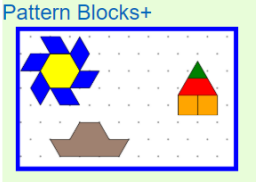
How do you know?



Standard Pattern Block Shapes



Challenge: Can you recreate this shape with pattern blocks? What different combinations will cover it? Try this mathies tool to help!



Estimate the Number of Flowers to Create

1. How many complete flowers can you create from the pile of pattern blocks?

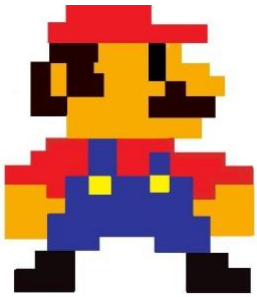
	Too Low	Just Right	Too High
Estimate			
Reasoning			

2. How does the image of one complete flower help you to estimate?
3. If there are 105 wooden diamonds altogether, calculate the total number of flowers that can be created.

http://ntimages.weebly.com/suites--strings.html

Super Mario Estimation

http://brianaspinall.com/wp-content/uploads/2015/02/Size_chart.jpg



Graphics have changed over the years, but Mario's size has stayed the same. Mario is estimated to be 155 cm tall.

Based on this information, estimate the heights of the other characters in the Super Mario universe. How did you come up with your answers?

Talking About the Math – Part 1

Task A: Smudged Math

Link to original question.

The paper is smudged. What could the solution be? What different possibilities are there?

Task B: Notice and Wonder

https://mathbeforebed.com/2018/03/08/mystery-bank/

There are *two mystery coins* in the piggy bank. What could the coins be to make the total amount of money greater than $1?

Talking About the Math - Part 2

Task D: Which One Doesn't Belong?
https://twitter.com/rubiconpubs/status/1262786400312844294?s=20

Which pattern do you think doesn't belong?
Why do you think that?
A friend picked a different pattern.
Which pattern might they have picked?
What would their reasoning be?

1, 2, 3, 4, 1, 2, 3, 4, …

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, …

2, 4, 6, 8, 0, 2, 4, 6, 8, 0, 2, 4, 6, 8, 0, …

5, 0, 5, 0, 5, 0, …

Sample solution provided by Marian Small and Rubicon Publishing:

SAMPLE RESPONSE

E.g., I think the second one doesn't belong. It doesn't look like it repeats.

OR

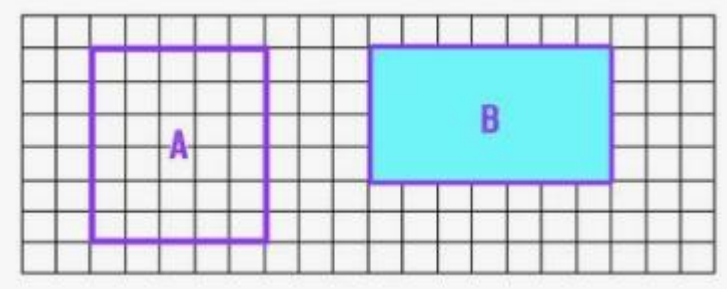
I think the last one doesn't belong because there is no 4 in it.

OR

I think the last one doesn't belong because it repeats really fast.

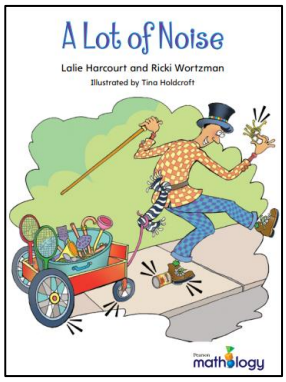
Remind students of the letter name structures they learned about for geometric patterns. Encourage them to consider how they might name any of the repeating number patterns shown using that convention. [The patterns above could be called (1) ABCD, (2) does not repeat OR ABCDEFGHIJ, (3) ABCDE, and (4) AB.]

Task E: Two Truths and a Lie
www.mashupmath.com



Which of the statements below is a lie?
How do you know?

1) The perimeter of Figure B is greater than the area of Figure A.
2) The area of Figure A is greater than the perimeter of Figure B.
3) Figure A and Figure B have the same perimeter.



Code the Story

Read / Listen to the story

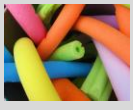
A Lot of Noise by Lalie Harcourt and Ricki Wortzman

Click on the image for a link to the book.

Instructions:

You are going to code the story *A Lot of Noise* using the board on the next page.

1. Complete the coordinate chart. This will tell you where to place the different items *The Guy* picked up. Roll two dice (or one die twice). These numbers will provide the coordinates for placing the item (you can draw or write these in). The first number indicates which column and the second number indicates which row.

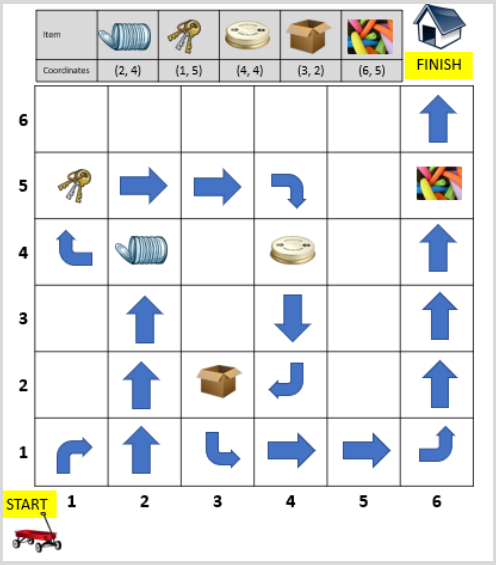
Item					
Coordinates	(,)	(,)	(,)	(,)	(,)

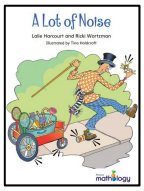
2. Once you have all the images on the grid, give directions to re-tell the story. Start at the red wagon and end at the shed. Be sure to reach every item, in order.

3. Can you tell someone how to make their way through the board to collect all the items?

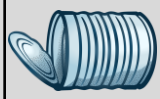
Extension: Try this again with your favourite story.

Example of what your board might look like:





Code the Story

Item					
Coordinates	(,)	(,)	(,)	(,)	(,)

FINISH

6						
5						
4						
3						
2						
1						
	1	2	3	4	5	6

START

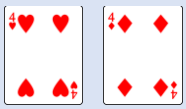
1 to 10 Game (addition)

2-player

You need:
- 2 dice
- 1 deck of cards (*discard face cards; Ace = 1*)

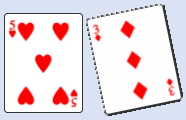
Set-up:
- Player 1 takes the red cards
- Player 2 takes the black cards
- Take turns

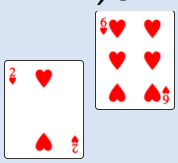
Player 1:
- Roll the dice and determine the sum.
- Remove enough cards from your hand to add up to this sum. ***Switch Players***.
- If you can't make a sum with the cards in your hand, roll again.
- If you can't make a sum after three rolls, you lose the game.



Example:

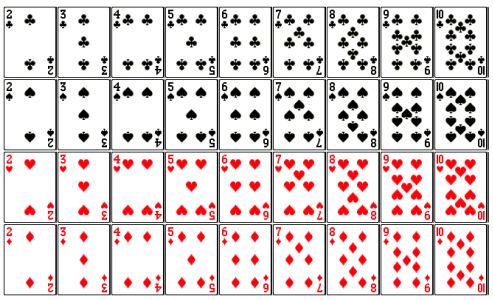
If you roll a 5 and a 3, you can make 8 in a variety of ways (5 + 3, 4 + 4, 4 + 2 + 2, 3 + 2 + 3, etc.).





The Winner:

You win if your partner can't make a number in three rolls ***or*** if you remove all your cards.



Flip a Coin Workout – Parts 1 & 2

FLIP A COIN WORKOUT

@workouts_daily	Heads:	Tails:
1st time	15 jump squats	25 calf raises
2nd time	:60 jog in place	25 jumping jacks
3rd time	20 kneeling pushups	10 pushups
4th time	20 jumping jacks	:50 jog in place
5th time	40 high knees	40 jumping jacks
6th time	35 crunches	20 sit-ups
7th time	10 pushups	20 kneeling pushup:
8th time	:60 jog in place	25 jumping jacks
9th time	50 crunches	20 sit-ups

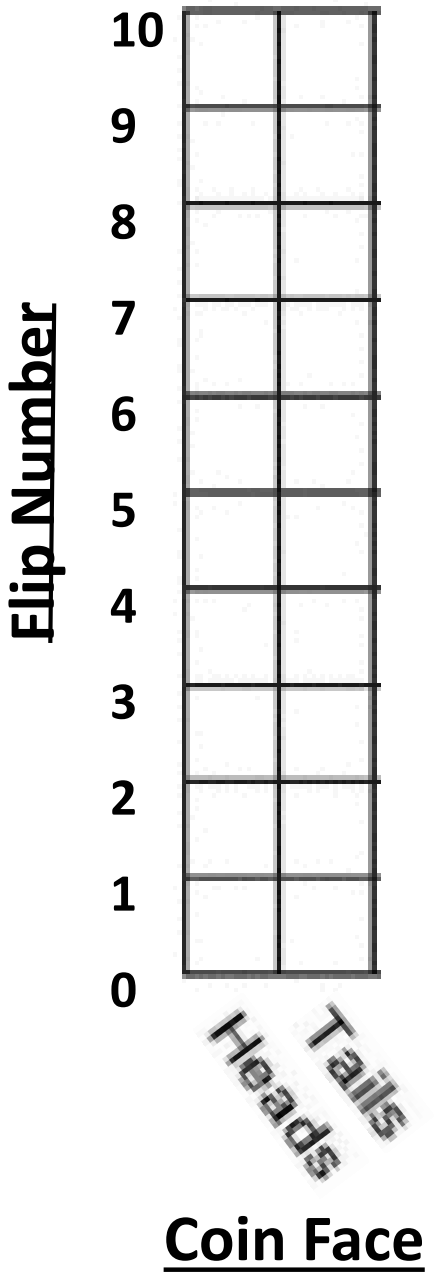
FLIP A COIN WORKOUT

Tally Chart

Heads	Tails

Flip a Coin Workout – Parts 1 & 2

_____ Create a title for this graph



Predict:
What coin face will appear on your next flip?

Explain:
Why do you think you'll see that coin face appear on your next flip?

Flip a Coin Workout – Parts 1 & 2

Create your own

FLIP A COIN WORKOUT

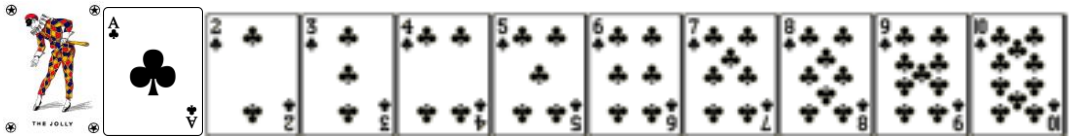
	Heads:	Tails:
1st time		
2nd time		
3rd time		
4th time		
5th time		
6th time		
7th time		
8th time		
9th time		

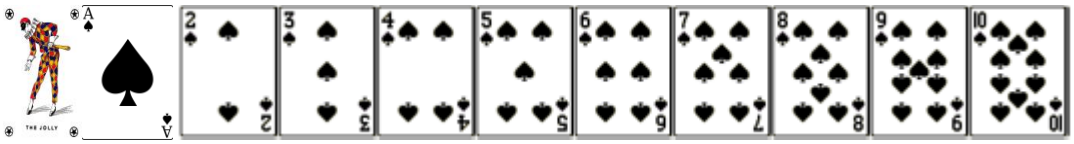
Turnover (addition & subtraction)

2-4 players

You need:
• 2 dice
• 11 cards per player, numbered 0-10
  ○ cards may be hand-written
  ○ if using a card deck, let Ace = 1 and a face card = 0
	Set-up:
	• Each player places cards face-up in a row

Method: • Player 1 rolls both dice and may choose to add or subtract the two numbers shown on the dice. • If the resulting sum or difference equals one of the number cards still face-up, the player can turn that card face-down. • Switch players.	
The Winner: Play continues until one of the players wins by turning all 11 cards face-down.	





Rugby Math

Taken from:
https://www.atm.org.uk/write/MediaUploads/News/MWE_Rugby_Scores_FINAL.pdf

The men's Rugby World Cup 2019 was held in October in Japan. To win a game of rugby you need to score the most points. Points can be scored in these different ways:

Try = 5 points Try with conversion = 7 points Penalty kick or drop goal = 3 points

England beat Tonga 35 to 3. Tonga scored three points though a penalty kick or drop goal. How did England score 35 points? Hint: it wasn't by scoring 7 tries.

Show your thinking here:

To watch: 3 Minutes of [Best] Rugby Ever Highlanders vs Chiefs

Rugby Math *continued*

Taken from:
https://www.atm.org.uk/write/MediaUploads/News/MWE_Rugby_Scores_FINAL.pdf

Try = 5 points Try with conversion = 7 points Penalty kick or drop goal = 3 points

The final scores for the other England games are below. Can you work out how all the teams scored their points? Is there more than one way to score some of these points?

England 45	USA 7
England 39	Argentina 10
England 40	Australia 16
England 19	New Zealand 7
England 12	South Africa 32

See following page for score chart.

Rugby Math *continued*

Taken from:
https://www.atm.org.uk/write/MediaUploads/News/MWE_Rugby_Scores_FINAL.pdf

	Total Score	Try (5)	Try with Conversion (7)	Penalty Kick/Drop Goal (3)
England	**45**			
USA	**7**			
England	**39**			
Argentina	**10**			
England	**40**			
Australia	**16**			
England	**19**			
New Zealand	**7**			
England	**12**			
South Africa	**32**			

How Many Biscuits Can You Make?

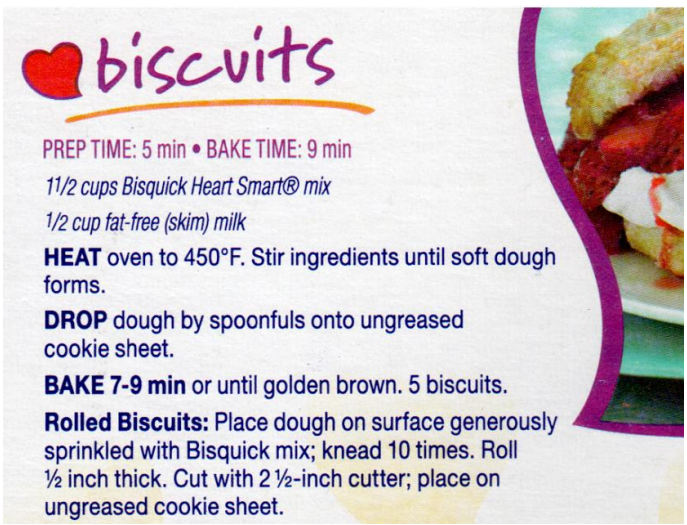
http://robertkaplinsky.com/work/how-many-biscuits-can-you-make/

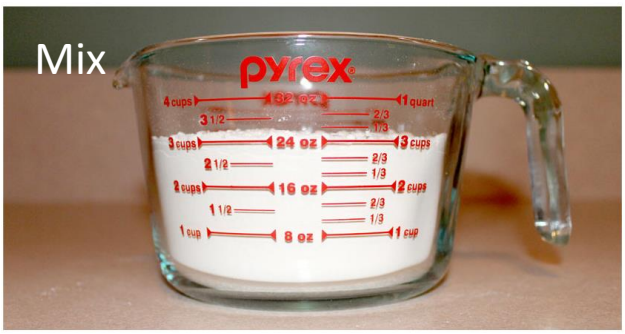
You are hosting a barbeque and you want to make as many biscuits as possible with the ingredients you already have.

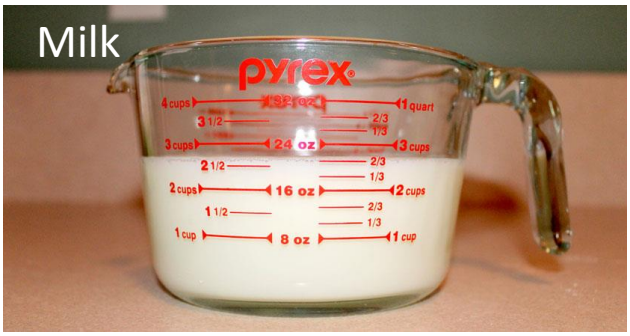
How many biscuits can you make?

What problem are you trying to figure out?	What guesses do you have?
What do you already know?	What information do you need to know to solve the problem?

More Information:

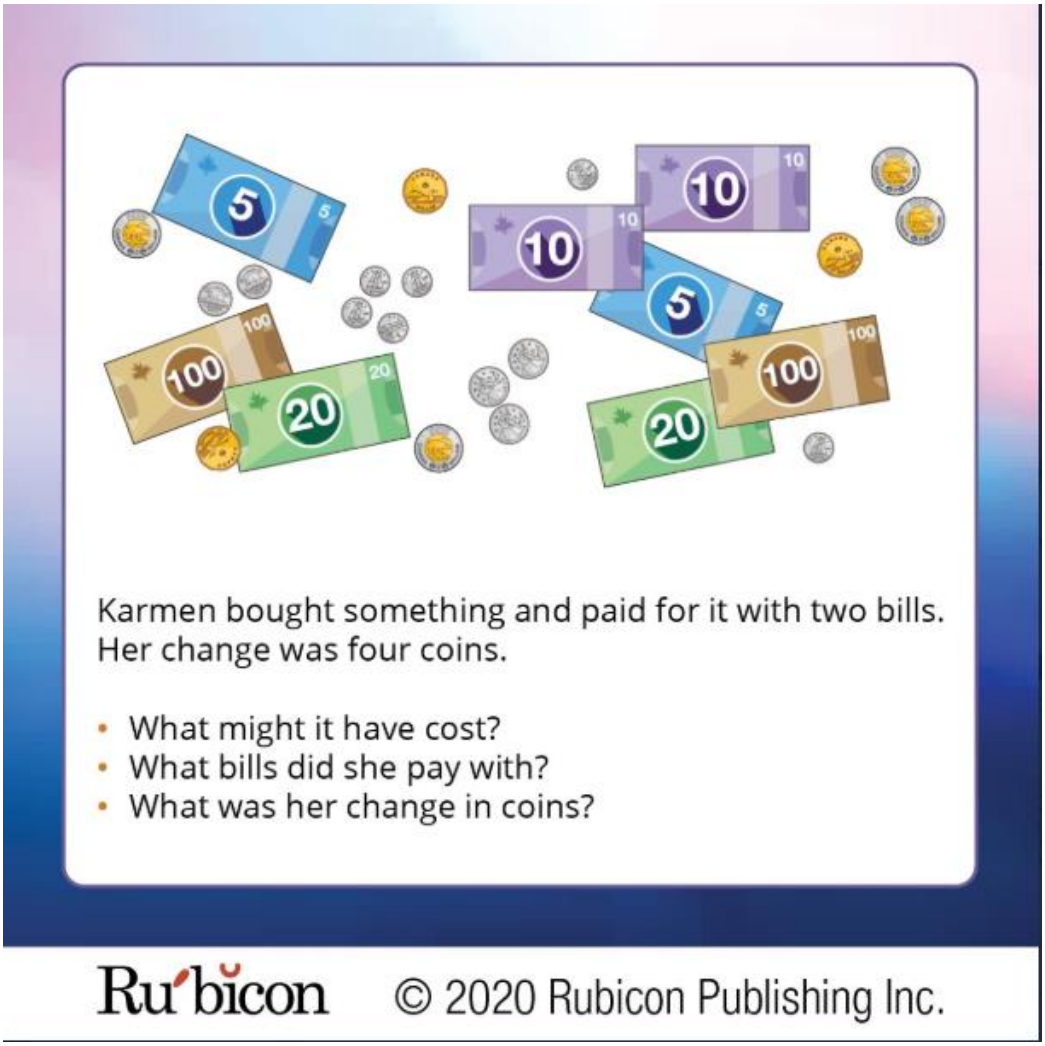




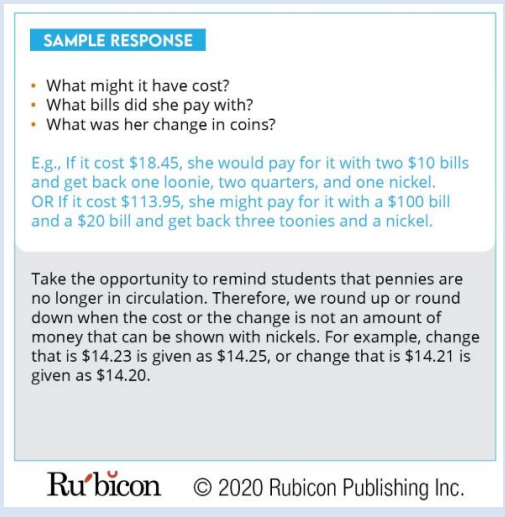


Money, Money, Money

https://twitter.com/rubiconpubs/status/1263165752410083337?s=20



Sample response from Marian Small and Rubicon Publishing:



Verify your solutions using the Mathies Money Tool.

Grades 1 - 3 Curriculum Continuum Connections

Note: highlighted expectations are addressed in this menu

	Grade 1	Grade 2	Grade 3
Process Skills	❑ Problem Solving ❑ Reasoning and Proving	❑ Reflecting ❑ Selecting Tools and Computational Strategies ❑ Connecting	❑ Representing ❑ Communicating
Number Sense and Numeration	❒ read, represent, compare, and order whole numbers to 50, and use concrete materials to investigate fractions and money amounts ❒ demonstrate an understanding of magnitude by counting forward to 100 and backwards from 20; ❒ solve problems involving the addition and subtraction of single-digit whole numbers, using a variety of strategies.	❒ read, represent, compare, and order whole numbers to 100, and use concrete materials to represent fractions and money amounts to 100¢ ❒ demonstrate an understanding of magnitude by counting forward to 200 and backwards from 50, using multiples of various numbers as starting points ❒ solve problems involving the addition and subtraction of one- and two-digit whole numbers, using a variety of strategies, and investigate multiplication and division.	❑ read, represent, compare, and order whole numbers to 1000, and use concrete materials to represent fractions and money amounts to $10 ❑ demonstrate an understanding of magnitude by counting forward and backwards by various numbers and from various starting points ❑ solve problems involving the addition and subtraction of single- and multi-digit whole numbers, using a variety of strategies, and demonstrate an understanding of multiplication and division.
Patterning and Algebra	❒ identify, describe, extend, and create repeating patterns ❒ demonstrate an understanding of the concept of equality, using concrete materials and addition and subtraction to 10	❒ identify, describe, extend, and create repeating patterns, growing patterns, and shrinking patterns ❒ demonstrate an understanding of the concept of equality between pairs of expressions, using concrete materials, symbols, and addition and subtraction to 18	❒ describe, extend, and create a variety of numeric patterns and geometric patterns ❒ demonstrate an understanding of equality between pairs of expressions, using addition and subtraction of one- and two-digit numbers
Measurement	❒ estimate, measure, and describe length, area, mass, capacity, time, and temperature, using non-standard units of the same size ❒ compare, describe, and order objects, using attributes measured in non-standard units	❒ estimate, measure, and record length, perimeter, area, mass, capacity, time, and temperature, using non-standard units and standard units ❒ compare, describe, and order objects, using attributes measured in non-standard units and standard units	❒ estimate, measure, and record length, perimeter, area, mass, capacity, time, and temperature, using standard units; ❒ compare, describe, and order objects, using attributes measured in standard units
Geometry and Spatial Sense	❒ identify common two-dimensional shapes and three-dimensional figures and sort and classify them by their attributes ❒ compose and decompose common two-dimensional shapes and three-dimensional figures ❒ describe the relative locations of objects using positional language	❒ identify two-dimensional shapes and three-dimensional figures and sort and classify them by their geometric properties ❒ compose and decompose two-dimensional shapes and three-dimensional figures ❒ describe and represent the relative locations of objects, and represent objects on a map	❒ compare two-dimensional shapes and three-dimensional figures and sort them by their geometric properties ❒ describe relationships between two-dimensional shapes, and between two-dimensional shapes and three-dimensional figures ❒ identify and describe the locations and movements of shapes and objects.
Data Management and Probability	❒ collect and organize categorical primary data and display the data using concrete graphs and pictographs without regard to the order of labels on the horizontal axis ❒ read and describe primary data presented in concrete graphs and pictographs ❒ describe the likelihood that everyday events will happen	❒ collect and organize categorical or discrete primary data and display the data, using tally charts, concrete graphs, pictographs, line plots, simple bar graphs, and other graphic organizers, with labels ordered appropriately along horizontal axes, as needed ❒ read and describe primary data presented in tally charts, concrete graphs, pictographs, line plots, simple bar graphs, and other graphic organizers ❒ describe probability in everyday situations and simple games	❒ collect and organize categorical or discrete primary data and display the data using charts and graphs, including vertical and horizontal bar graphs, with labels ordered appropriately along horizontal axes, as needed ❒ read, describe, and interpret primary data presented in charts and graphs, including vertical and horizontal bar graphs ❒ predict and investigate the frequency of a specific outcome in a simple probability experiment