

	A	B	C	D	E
Estimation	<p><u>Estimate the total number of tiles needed for the first 9 figures. Investigate!</u></p>	<p><u>How many recycled milk jugs were used to make this blue trash receptacle?</u></p>	<p><u>About How Long?</u> Jen worked outside in the garden. What is closest to the time she spent working?</p>	<p><u>How Many Boxes of Popcorn?</u></p>	<p><u>Money Splat</u></p>
Talking about Math	<p><u>Which One Doesn't Belong?</u></p>	<p><u>Money Splat</u></p>	<p><u>Find out the highest possible no. by moving only 2 match sticks.</u></p>	<p><u>Which One Doesn't Belong?</u></p>	<p><u>Visualizing Multiplication</u></p>
Activities / Games	<p><u>21 Flags</u> Can you take the last flag?</p>	<p><u>Fraction Exploration</u></p>	<p><u>Chip, Chip, Chooray!</u> Help Biscuit Elementary School solve their baking dilemma and then try out the recipe!</p>	<p><u>Sort the Digits</u> Sort the digits so the product of the top row equals the sum of the bottom row.</p>	<p><u>Hundredths Double Hat Trick</u></p>
Problems	<p><u>Cubic Competition</u></p>	<p><u>Choose a date and time as a start time. What date and time will it be 1000 days + 1000 hours + 1000 minutes from that start time?</u></p>	<p><u>Weighty Box Puzzle</u></p>	<p>When 86 is divided by a number, the remainder is 2. What could the possible divisors be?</p>	<p><u>Exploring A Line Graph</u></p>
Technology	<p><u>Ordering Fractions, Decimals and Percents</u></p>	<p><u>iknowit</u></p>	<p><u>Toads and Vines</u></p>	<p><u>Match the Net to Its Solid</u></p>	<p><u>Exploring Algebra</u></p>



## 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!



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



## Choice Boards - Teachers Can:

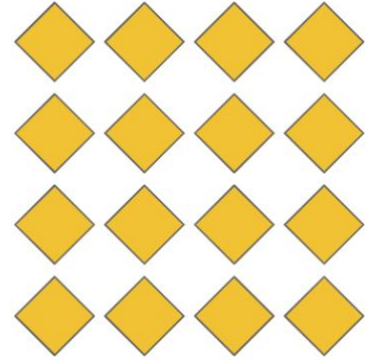
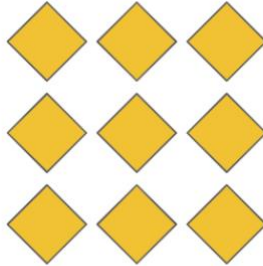
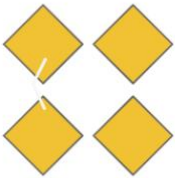
- ✓ Create classroom-based choice boards for students while they are learning at home;
- ✓ Incorporate ideas from the choice boards into teaching practices, daily and weekly planning;
- ✓ Explore and incorporate new resources into classroom learning;
- ✓ Engage students and families in virtually sharing 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.

## 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.



## Visual Patterns: Estimation Activity



**What do you notice about the figures?**

How would you describe the pattern to someone else at home?

**How many tiles would you estimate there to be in the 9<sup>th</sup> figure?**

Investigate and record your thinking.

**How might a table help organize your thoughts?**

Estimate the total number of tiles within the first 9 figures.

**What estimate would be too high? Too low?**

Investigate.

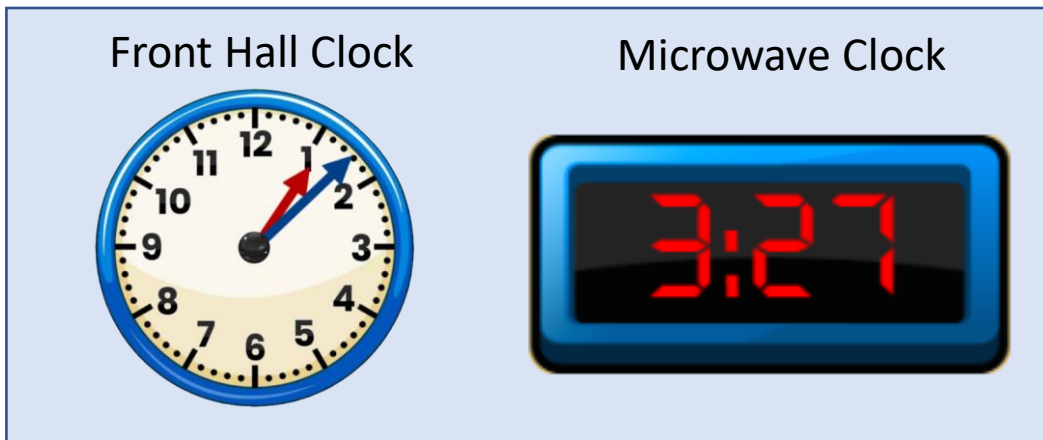
For more patterning exploration, click the link below.

<http://www.visualpatterns.org/>

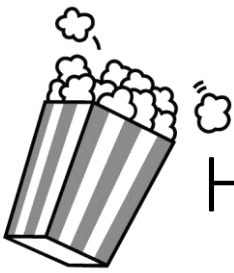


# About How Long?

Jenn went outside to help her dad work in the garden. On her way out the door, she checked the time on the front hall clock. When she came in through the back door, she checked the time on the microwave.

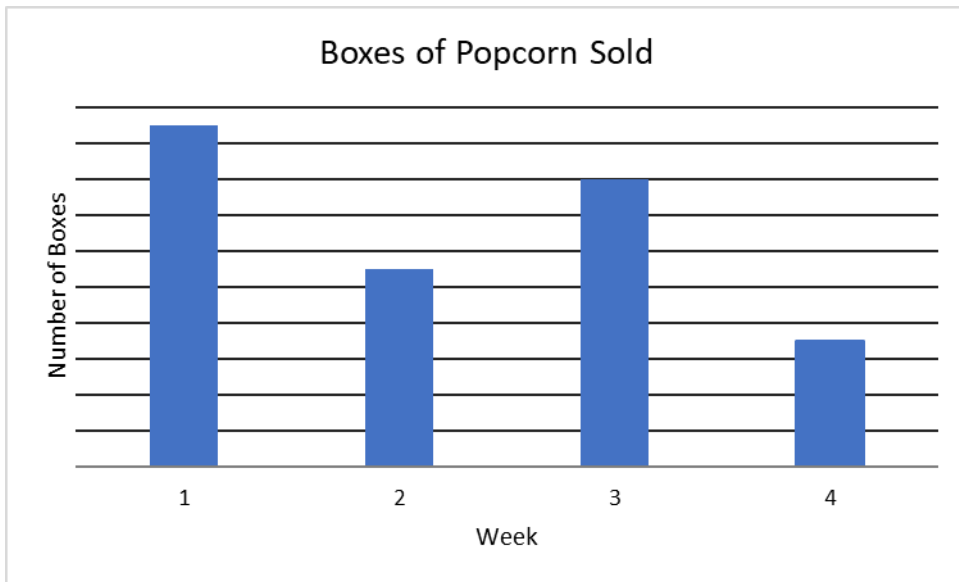


Which of the following is closest to the time Jenn spent working outside? How do you know?	
a) 3 hours	b) 2.5 hours
c) 2 hours 15 minutes	d) 1 hour 30 minutes



# How Many Boxes of Popcorn?

Chad was selling boxes of popcorn. Each week he plotted how much he sold on the graph below.



Which of the statements below best describes how much popcorn was sold in week 3? Justify your answer.

a) Double the sales of week 2

b)  $\frac{3}{4}$  of the sales of week 1

c) Equal to the sales of weeks 2 and 4 combined

d) A little more than double what was sold in week 4



It's hard to keep popcorn in our house. Goes too fast.

Some foods are just special.

Sometimes it's a way of staying in touch with who you are.

## [Just Like Home](#)

# Money Splat



adapted from: [www.stevewyborney.com](http://www.stevewyborney.com)



**\$112.91**

If there is \$112.91 total.

Estimate how much money is under the Splat!

Too Low	Just Right	Too High
Reasoning:	Reasoning:	Reasoning:

Verify how much money is hiding under the splat? How do you know?

A friend figured it out a different way, how might they have solved the problem?

What different combinations of money could you have?

What combination of money would be the fewest bills and coins?



# Which One Doesn't Belong?

$\begin{array}{r} 5231 \\ + 4331 \\ \hline 9562 \end{array}$	$\begin{array}{r} 3696 \\ + 6939 \\ \hline 10,635 \end{array}$
$\begin{array}{r} 1842 \\ + 1614 \\ \hline 3456 \end{array}$	$\begin{array}{r} 2184 \\ + 4812 \\ \hline 6996 \end{array}$

**Step 1:** Examine the four addition problems.

**Step 2:** Identify the one you believe doesn't belong.  
Explain your reasoning.

**Step 3:** Imagine another student has chosen a different addition problem as the one that doesn't belong. What might be their reasoning?

**Challenge:** Provide an argument for each of the four addition problems not belonging with the others.

<https://wodb.ca/numbers.html>





# Money Splat

adapted from: [www.stevewyborney.com](http://www.stevewyborney.com)



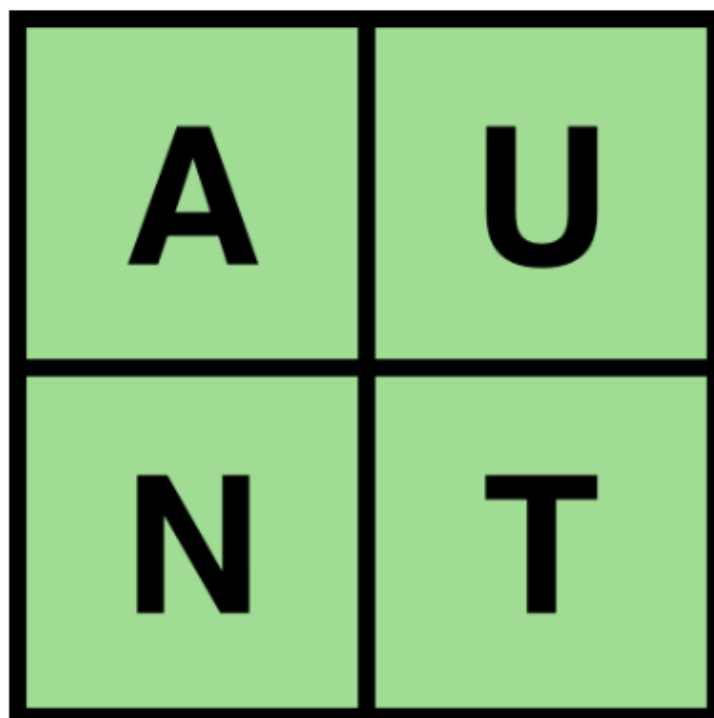
If there is \$2.25 total, how much money is hiding under the splat? How do you know?

A friend figured it out a different way. How might they have solved the problem?

What different combinations of money could you have?



# Which One Doesn't Belong?



**Step 1:** Examine the four upper case letters.

**Step 2:** Identify the one you believe doesn't belong. Explain your reasoning.

**Step 3:** Imagine another student has chosen a different letter as the one that doesn't belong. What might be their reasoning?

**Challenge:** Provide an argument for each of the four letters not belonging with the others. What mathematical language did you include in your explanations?

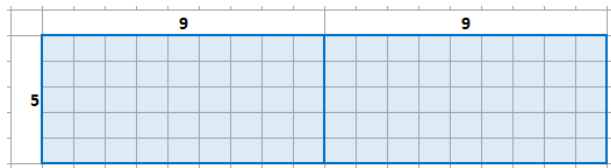
<https://wodb.ca/shapes.html>

# Visualizing Multiplication

From [bit.ly/mathwalks2020](http://bit.ly/mathwalks2020)

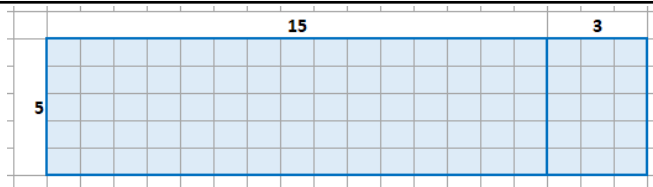
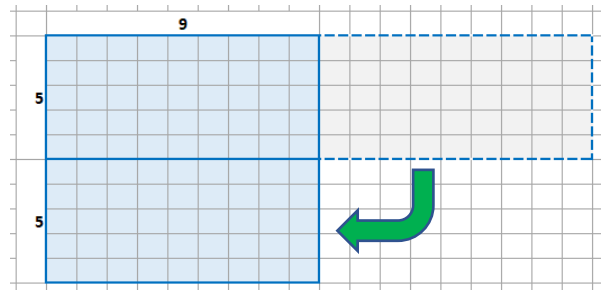


Here are some ways we can visually show  $18 \times 5$



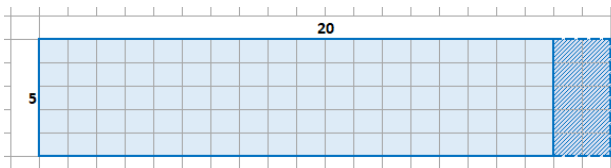
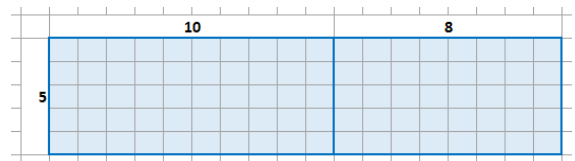
$$\begin{aligned} &5 \times 9 + 5 \times 9 \\ &= 45 + 45 \\ &= 90 \end{aligned}$$

$$\begin{aligned} &5 \times 18 \\ &= 10 \times 9 \\ &= 90 \end{aligned}$$



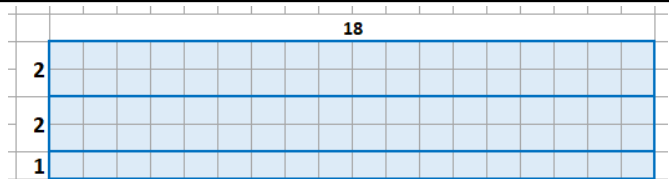
$$\begin{aligned} &5 \times 15 + 5 \times 3 \\ &= 75 + 15 \\ &= 90 \end{aligned}$$

$$\begin{aligned} &5 \times 10 + 5 \times 8 \\ &= 50 + 40 \\ &= 90 \end{aligned}$$



$$\begin{aligned} &5 \times 20 - 5 \times 2 \\ &= 100 - 10 \\ &= 90 \end{aligned}$$

$$\begin{aligned} &2 \times 18 + 2 \times 18 + 1 \times 18 \\ &= 36 + 36 + 18 \\ &= 90 \end{aligned}$$



**What are the different ways you could visualize  $8 \times 26$ ?**

# 21 Flags



## Instructions:

- 2 players take turns
- On their turn, each player can “take” 1, 2 or 3 flags
- Goal: Take the last flag

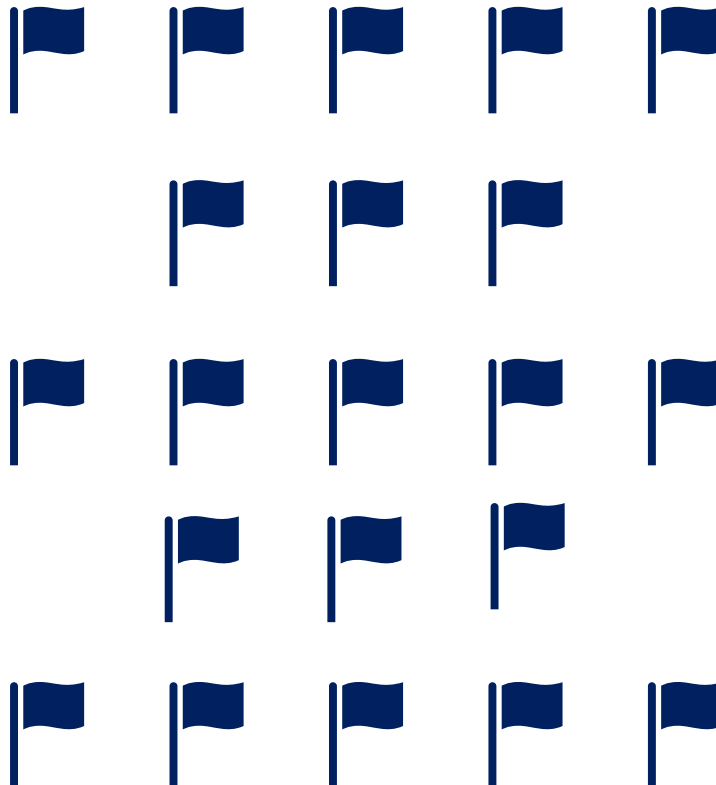
You may wish to use 21 Lego pieces, buttons, chocolate chips, or other small tokens to represent the flags.

## Think about it:

What’s your strategy?

What would you do differently next time?

Can you find a way to always win?



# Fraction Exploration



Featured  
Problem



**Make drawings or  
take pictures of  
different ways to  
make  $\frac{2}{3}$ .**

## **Things to Consider:**

Engaging in this problem at home allows students to look for representations of fractions in their environment. For instance, a student could make a set with 2 red cups and 1 blue cup, or two brothers and one sister. Finding  $\frac{2}{3}$  of the distance across a room is another way they could illustrate  $\frac{2}{3}$ . Encourage students to explain to someone how they know their drawings/pictures all show  $\frac{2}{3}$ . Use questions like the following to encourage reflections and generalizations about  $\frac{2}{3}$ . What do you notice about each of your drawings/pictures? How are they alike and how are they different?

<https://mathsolutions.com/at-home-learning-grades-3-4/>



## Problem of the Week


### Problem B and Solution

### Chip, Chip, Chooray!

#### Problem

At Biscuit Hill Elementary School, Chip and his sister, Charlene, have decided that they want to make cookies for all of the junior students in their school.

The recipe that they found makes enough chocolate chip cookies of 7 cm diameter for 16 people.

Recipe		Junior Classes	
1 cup	butter	Mrs. Martin	25 students
1 cup	brown sugar	Mrs. Laing	26 students
$\frac{1}{2}$ cup	white sugar	Ms. Richmond	23 students
2	eggs	Mrs. Kelter	24 students
2 tsp	vanilla	Mr. Hallett	22 students
$2\frac{1}{4}$ cups	flour		
1 tsp	baking soda		
300 g	chocolate chips		

- How many batches should Chip and Charlene make so that they make the exact number of cookies needed for all of the students in the junior classes?
- They decide to make a whole number of batches so that they have some extra cookies to save for later and one cookie for each teacher. What quantity of each ingredient in the recipe will they need?

Click here for the  
[solution!](https://www.cemc.uwaterloo.ca/resources/potw/2019-20/English/POTWB-19-NN-24-P.pdf)

<https://www.cemc.uwaterloo.ca/resources/potw/2019-20/English/POTWB-19-NN-24-P.pdf>



# Sort the Digits

<https://twitter.com/JRappaport27/status/1257761151678648328?s=20>

Can you sort the digits 1 – 9 into the top or bottom row, using each digit exactly once, so that the product of the digits in the top row equals the sum of the digits in the bottom row?

1	2	3	4	5	6	7	8	9

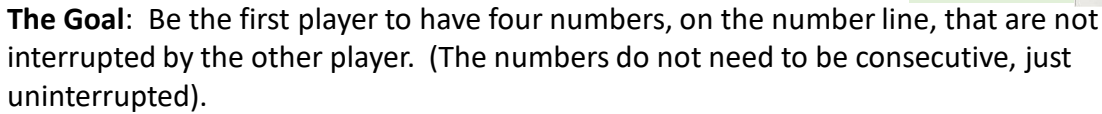
What was your strategy?

Did your initial strategy work? How did you change your strategy?



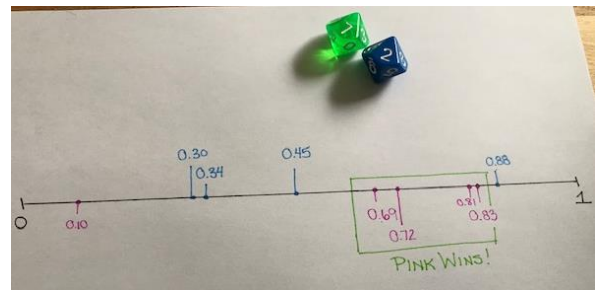
### Required Materials:

- Watch  
the game  
in action  
here

A horizontal number line is shown, starting at 0 on the left and ending at 1 on the right. A tick mark is placed exactly halfway between 0 and 1, and it is labeled with the fraction  $\frac{1}{2}$  below the line.

- Pink has a chance to win here. They need one more number!
- 
- A number line is drawn on a piece of paper, starting at 0 and ending at 1. There are tick marks at 0.10, 0.45, 0.69, 0.88, and 0.9. A red box is drawn around the segment between 0.69 and 0.88.

- ☐ What number can you make?
- ☐ Why did you decide to make \_\_\_\_ instead of \_\_\_\_\_ ?
- ☐ How do you know where your number goes?
- ☐ What are you hoping to roll? Why? (This is effective if your child rolls each die - or picks a card - one at a time).
- ☐ What would you do differently next time you play?
- ☐ What strategy were you using?



June 1, 2020 to June 5, 2020





## Problem of the Week

### Problem B

### Cubic Competition

Duha and Mamdouh play a game with different sized cubes. Duha gets a point for each square cm of surface area, and Mamdouh gets a point for each cubic cm of volume.

They start with a  $1 \times 1 \times 1$  cm cube for round one. Duha gets 6 points and Mamdouh gets 1 point, so Duha wins this round.




They continue playing the game by increasing the cube dimensions by 1 cm each round.

- a) For which cube will Duha's points for that round be twice Mamdouh's?

- b) For which cube will they have a tie for the number of points for that round?

- c) For which cube will Mamdouh finally win a round?

- d) Explain the reasons for your answers to b) and c) to a classmate.

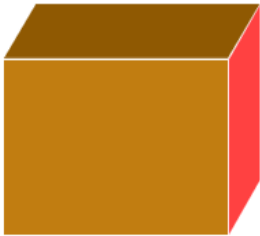
Cube	Surface Area (Duha)	Volume (Mamdouh)
1. 	6	1
2. 		
3. 		
4.		
5.		
6.		
7.		

[Click here for solution!](#)

<https://www.cemc.uwaterloo.ca/resources/potw/2019-20/English/POTWB-19-ME-22-P.pdf>



# Weighty Box Puzzle



I have ten boxes, with a total weight of 75kg:

15 kg, 13 kg, 11 kg, 10 kg, 9 kg, 8 kg, 4 kg, 2 kg, 2 kg, 1 kg

I want to pack the boxes into 3 crates, but each crate can carry a maximum of 25 kg.

How can I pack the boxes into the crates?

(There may, or may not, be more than one way!)

Solution: <https://www.mathsisfun.com/puzzles/a-weighty-problem-solution.html>

## Your turn:

Imagine you are filling a crate that can carry a maximum of 25 kg. What items from your home would you choose to fill the crate. How close to 25 kilograms can you get?

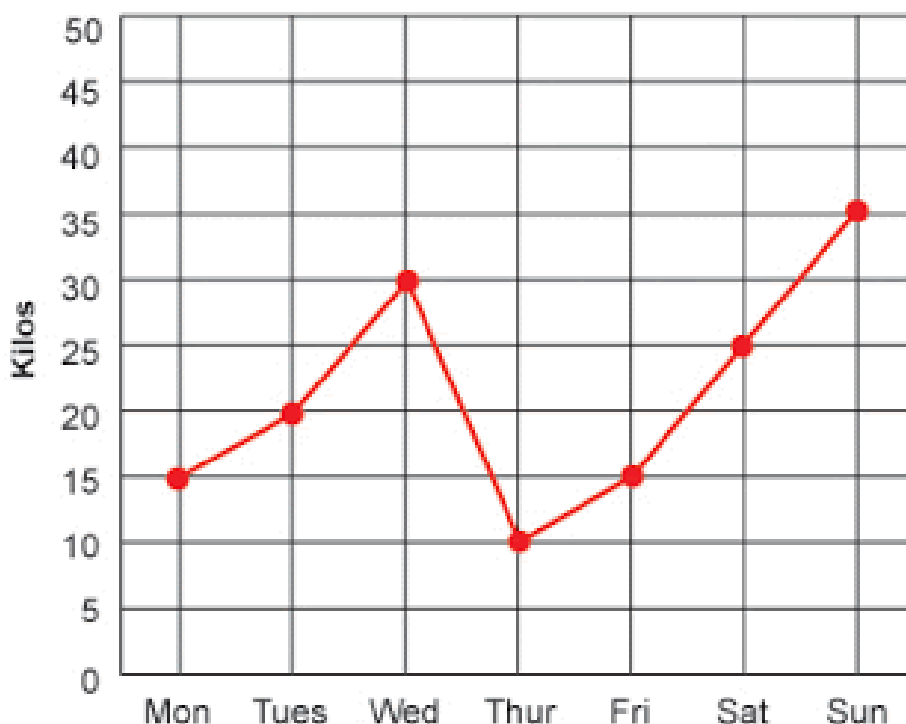
# Exploring a Line Graph



Examine the line graph below.

What do you notice? What do you wonder?

If you added a title, what would it be? Explain your thinking to a family member.



## Exploring the line graph further:

- What is the range in the data?
- What is the average (mean) kilos in one week?
- If you learned that the title of the graph is **"Potatoes Consumed,"** describe a story that would explain the data presented in the graph from Monday through Sunday. Be creative and share your story with someone!

# Grades 4 – 6: Curriculum Continuum

Note: highlighted expectations are addressed in this menu



	Grade 4	Grade 5	Grade 6
Process Skills	<ul style="list-style-type: none"><li>❑ Problem Solving</li><li>❑ Reasoning and Proving</li><li>❑ Reflecting</li></ul>	<ul style="list-style-type: none"><li>❑ Selecting Tools and Computational Strategies</li><li>❑ Connecting</li></ul>	<ul style="list-style-type: none"><li>❑ Representing</li><li>❑ Communicating</li></ul>
Number Sense and Numeration	<ul style="list-style-type: none"><li>❑ read, represent, compare, and order whole numbers to 10 000, decimal numbers to tenths, and simple fractions, and represent money amounts to \$100</li><li>❑ demonstrate an understanding of magnitude by counting forward and backwards by 0.1 and by fractional amounts</li><li>❑ solve problems involving the addition, subtraction, multiplication, and division of single- and multi-digit whole numbers, and involving the addition and subtraction of decimal numbers to tenths and money amounts, using a variety of strategies</li><li>❑ demonstrate an understanding of proportional reasoning by investigating whole-number unit rates</li></ul>	<ul style="list-style-type: none"><li>❑ read, represent, compare, and order whole numbers to 100 000, decimal numbers to hundredths, proper and improper fractions, and mixed numbers</li><li>❑ demonstrate an understanding of magnitude by counting forward and backwards by 0.01</li><li>❑ solve problems involving the multiplication and division of multi-digit whole numbers, and involving the addition and subtraction of decimal numbers to hundredths, using a variety of strategies;</li><li>❑ demonstrate an understanding of proportional reasoning by investigating whole-number rates.</li></ul>	<ul style="list-style-type: none"><li>❑ read, represent, compare, and order whole numbers to 1 000 000, decimal numbers to thousandths, proper and improper fractions, and mixed numbers</li><li>❑ solve problems involving the multiplication and division of whole numbers, and the addition and subtraction of decimal numbers to thousandths, using a variety of strategies</li><li>❑ demonstrate an understanding of relationships involving percent, ratio, and unit rate</li></ul>
Patterning and Algebra	<ul style="list-style-type: none"><li>❑ describe, extend, and create a variety of numeric and geometric patterns, make predictions related to the patterns, and investigate repeating patterns involving reflections;</li><li>❑ demonstrate an understanding of equality between pairs of expressions, using addition, subtraction, and multiplication</li></ul>	<ul style="list-style-type: none"><li>❑ determine, through investigation using a table of values, relationships in growing and shrinking patterns, and investigate repeating patterns involving translations;</li><li>❑ demonstrate, through investigation, an understanding of the use of variables in equations.</li></ul>	<ul style="list-style-type: none"><li>❑ describe and represent relationships in growing and shrinking patterns (where the terms are whole numbers), and investigate repeating patterns involving rotations;</li><li>❑ use variables in simple algebraic expressions and equations to describe relationships.</li></ul>
Measurement	<ul style="list-style-type: none"><li>❑ estimate, measure, and record length, perimeter, area, mass, capacity, volume, elapsed time, using a variety of strategies</li><li>❑ determine the relationships among units and measurable attributes, including the area and perimeter of rectangles.</li></ul>	<ul style="list-style-type: none"><li>❑ estimate, measure and represent time intervals to the nearest second estimate and determine elapsed time, with and without using a time line, given the durations of events expressed in minutes, hours, days, weeks, months, or years</li><li>❑ measure and record temperatures to determine and represent temperature changes over time</li><li>❑ estimate and measure the perimeter and area of regular and irregular polygons, using a variety of tools and strategies.</li></ul>	<ul style="list-style-type: none"><li>❑ estimate, measure, and record quantities, using the metric measurement system;</li><li>❑ determine the relationships among units and measurable attributes, including the area of a parallelogram, the area of a triangle, and the volume of a triangular prism.</li></ul>
Geometry and Spatial Sense	<ul style="list-style-type: none"><li>❑ identify quadrilaterals and three-dimensional figures and classify them by their geometric properties, and compare various angles to benchmarks;</li><li>❑ construct three-dimensional figures, using two-dimensional shapes;</li><li>❑ identify and describe the location of an object, using a grid map, and reflect two-dimensional shapes</li></ul>	<ul style="list-style-type: none"><li>❑ identify and classify two-dimensional shapes by side and angle properties, and compare and sort three-dimensional figures;</li><li>❑ identify and construct nets of prisms and pyramids;</li><li>❑ identify and describe the location of an object, using the cardinal directions, and translate two-dimensional shapes</li></ul>	<ul style="list-style-type: none"><li>❑ classify and construct polygons and angles;</li><li>❑ sketch three-dimensional figures, and construct three-dimensional figures from drawings;</li><li>❑ describe location in the first quadrant of a coordinate system, and rotate two-dimensional shapes</li></ul>
Data Management and Probability	<ul style="list-style-type: none"><li>❑ collect and organize discrete primary data and display the data using charts and graphs, including stem-and-leaf plots and double bar graphs</li><li>❑ read, describe, and interpret primary data and secondary data presented in charts and graphs, including stem-and-leaf plots and double bar graphs</li><li>❑ predict the results of a simple probability experiment, then conduct the experiment and compare the prediction to the results</li></ul>	<ul style="list-style-type: none"><li>❑ collect and organize discrete or continuous primary data and secondary data and display the data using charts and graphs, including broken-line graphs</li><li>❑ read, describe, and interpret primary data and secondary data presented in charts and graphs, including broken-line graphs</li><li>❑ represent as a fraction the probability that a specific outcome will occur in a simple probability experiment, using systematic lists and area models.</li></ul>	<ul style="list-style-type: none"><li>❑ collect and organize discrete or continuous primary data and secondary data and display the data using charts and graphs, including continuous line graphs;</li><li>❑ read, describe, and interpret data, and explain relationships between sets of data;</li><li>❑ determine the theoretical probability of an outcome in a probability experiment and use it to predict the frequency of the outcome.</li></ul>