## What's New?

What are people talking about these days?

1. Recall: More and more we are realizing that students aren't retaining information. Our CTTCS Data supports this, as students often perform well on summative assessments at end of a unit of study, yet later they can not recall that information as we see in screener data. We are not unique in this; recall and retention are common themes in math discussions, articles, and webinars.

Without the ability to recall information, students cannot develop fluency and cannot progress to deeper understanding of mathematics. They cannot apply and transfer information. When students cannot recall prerequisite skills, teaching slows down and classes fall behind.

Why don't our kids remember stuff we teach them?
Hermann Ebbinghaus (1885) first described "The Forgetting Curve":
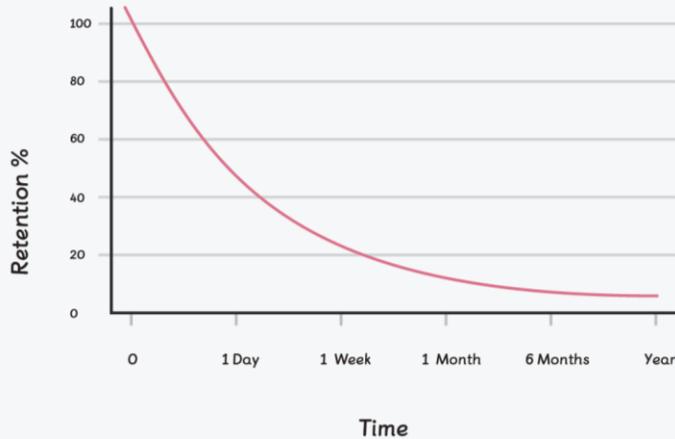
Notice this is not a straight line. The rate at which we forget slows over time, with the biggest drop in retained information happening in the first 24 hours.
Ebbinghaus wrote that when we are given opportunities to reengage with topics over time, the learning curve changes:
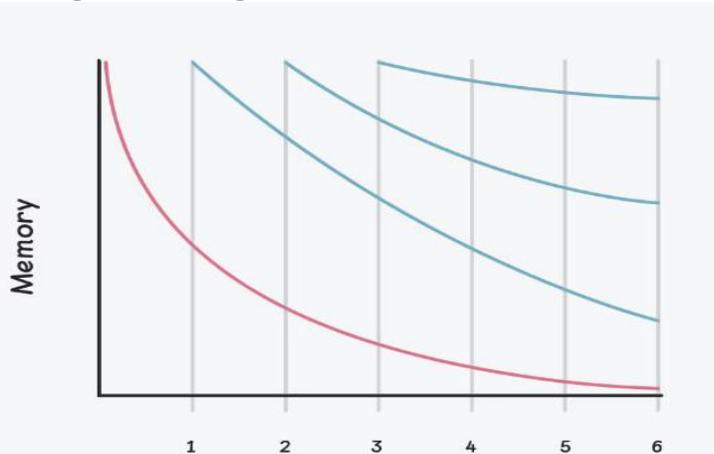
Spaced Practice means revisiting concepts at regular intervals to ensure students retain the information.

Math learning enters "*working memory*" first; this is like a short-term storage system that is easily and quickly overwritten by subsequent information, if there are not opportunities to apply, consolidate, and revisit. We know we have students with low working memory and cognitive overload because of lack of fluency in math, math anxiety or life anxiety in general. These students struggle even more to retain learning.

Memories are built on "schema"; connected ideas that translate to neural connection in the brain. **The more senses we engage when we create a memory, the more likely the brain is to recall that information.** This is why dynamic, collaborative classrooms with rich discussion and experiences create learning that lasts longer than classrooms that may look "on task", with students working quietly and independently on practice problems. Of course, practice is important too! But independent book work needs to be balanced with social interaction, dialogue, and active learning.

" The brain forgets what it doesn't use."

Teaching for Retention:

1. Hands down, spaced practice is most likely to create more long-term memories and improve retrieval. Revisit topics over time and *interleave* concepts. Include discussion and questioning on prior topics when creating practice and assessment on current learning topic.

2. Mathematical Dialog: We think about math differently when we verbalize math. Being an active learner is important. Classroom discussion, turn and talk, and collaborative group activities that require students to explain what they have learned or explain their reasoning allows the brain to reactivate fading memories.

3. Retrieval practice: Provide frequent small quizzes to train students to recall information. Entrance and exit slips allow opportunities to reactivate memories, summarize and consolidate information, and practice retrieval. https://www.cultofpedagogy.com/retrieval-practice/

4. Combine information with images. The numerical-spatial association is well documented in research. Using diagrams, models and representations enhances the memory of concepts. When the brain remembers mathematical information it is accompanied by a remembered visual-spatial image; a part-part whole, ten frame, area model, fraction model, number line, place value arrangement, and so on.

5. Create active learning opportunities: Collaborative activities, math labs, games, and real-life experience create more lasting learning than rote practice. Again, we know independent practice is important too, but we need to balance that with movement and social activities strengthen understanding, consolidation, and memory. The more senses we engage when we create a memory, the more likely we can recall it.

References
Alloway, T. P., & Passolunghi, M. C. (2011). The relationship between working memory, IQ, and mathematical skills in children. *Learning and Individual Differences*, *21*(1), 133–137.

https://www.mathnasium.com/math-centers/midlothian/news/why-kids-forget-math-and-how-to-improve-retention
https://ed.stanford.edu/news/learning-math-without-fear
https://www.edutopia.org/article/why-students-forget-and-what-you-can-do-about-it/
https://mathsnoproblem.com/blog/teaching-practice/helping-learners-retain-knowledge

Web resources that have my attention:

**Numeracy Consultants.net**

https://numeracyconsultants.net/

This site offers free math intervention resources, including videos, research, and online courses. There are digital games that reinforce concepts, and a FREE primary numeracy intervention program (professional development). I'm learning lots on this site!

Mix & Math https://www.mixandmath.com/
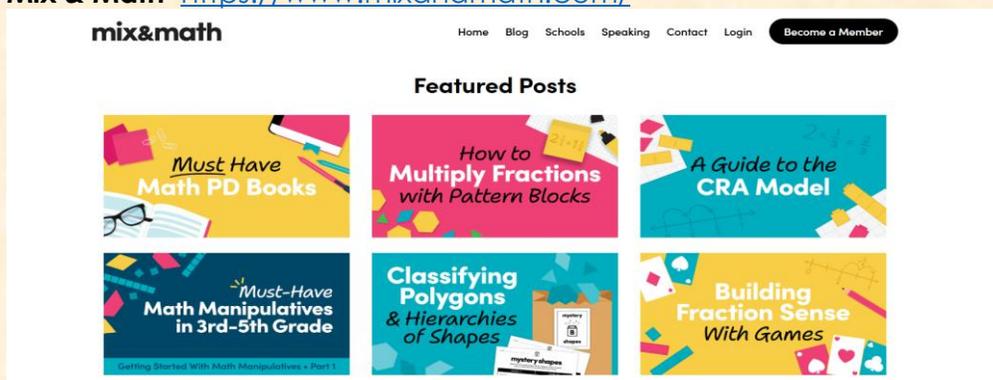
This site has lots of freebies around strategies and models that will support number sense development, including webinars, games and manipulative ideas that extend up to Grade 8. Check out the **free strategy posters** https://www.mixandmath.com/fluency
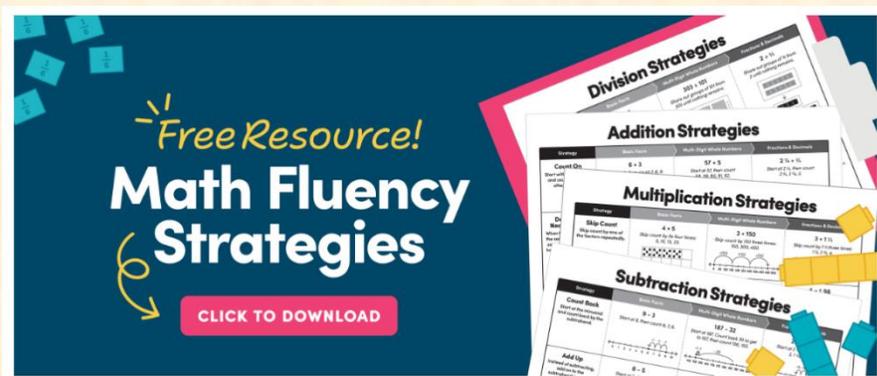
Curriculum support from **Coast Metro Math Project** https://coastmetro.ca/elementary-math-project/

What is it about? It is a collaborative effort by BC teachers to create a framework for teaching and assessing K-8 math, based on work by Marian Small.

Note that this aligns with the BC curriculum, but it is not vastly different from the SK curriculum. On this site you will find material to help you understand the curriculum topic, resources for teaching including activities, lessons, connections to real-world math, practice questions, year plans, games, and more.

And...check this out!

YAY !! ☺
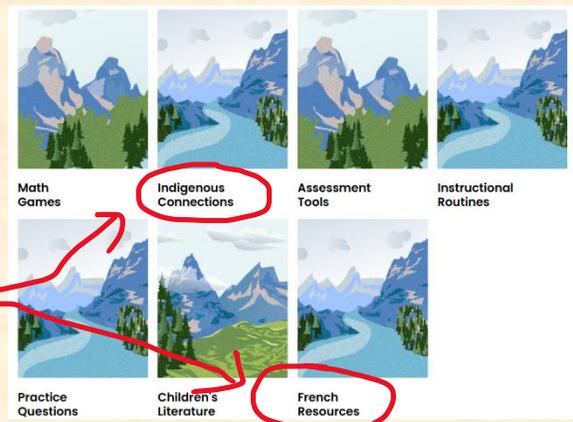
A collection of rich tasks, sorted by grade, by Kyle Webb. Great for Building Thinking Classrooms work: https://tasks.kylewebb.ca/

Visualizing Fractions: Let's get a sense of quantity https://mathslinks.net/links/slice-the-pie

Interactive Math Glossary
https://jukebox.esc13.net/interactiveGlossary/HTML_files/_interactiveVocabularySearch.html
Send this link home to parents! Especially EAL families. Note that some links to activities are obsolete, but the videos still play. Here's another math dictionary https://www.amathsdictionaryforkids.com/qr/qr.html . Here's and English-Tagalog Math Dictionary, Gr 3 – 6 ish https://www.scribd.com/document/670209898/elementary-math-3-5-tagalog
and Ukrainian
https://www.is234.com/ourpages/auto/2025/9/23/38988003/ms_6_8_math_ukrainian.pdf?rnd=1758672208542

Interactive Ten Frame https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Ten-Frame/ I like this because students can fill 5 at once, helping reinforce that a full side is 5 and we don't have to count it. This connects to fingers on our hand and the rekenrek.

Are you coming to the SUM conference??????

More Upcoming PD

27 APR

PROFESSIONAL GROWTH OPPORTUNITIES

Numeracy in Nature: Math...

🕓 2026-04-27 - 09:00 AM - 2026-04-27 - 03:30 PM

📍 McDowell Conference Room 2311 Arlington Ave, Saskatoon, SK

https://www.stf.sk.ca/event/numeracy-in-nature-2026/

12 MAY

Supporting Indigenous Ways ...

🕓 2026-05-12 - 09:00 AM - 2026-05-13 - 03:30 PM

📍 Greater Saskatoon Catholic Schools Learning Centre - 1402 Fletcher Avenue- 2nd Floor, Saskatoon, SK

https://www.stf.sk.ca/event/siwok-gscs-2026/

Problem Solving Intervention Offered here in CTTCS

Do you find that your students can demonstrate math skills but then fall apart as soon as the problem is written in context? Are "word problems" a source of dread for your class?

   You (and your students) are not alone! Why not call me to do a 3 – 5 period problem solving workshop with your class. I will plan together with the classroom teacher and then we will work with students to introduce a problem solving strategy. We will work on vocabulary, reading and comprehension approaches, and representation. This work is timely because the provincial math assessment has lots of written questions that require students to read and understand. We could do this school wide in a staff meeting too!

Students were asked "When do you feel good about problem solving?" (from Building Thinking Classrooms)

Students in Gr 5 FI St Michael's solve open, collaborative problems
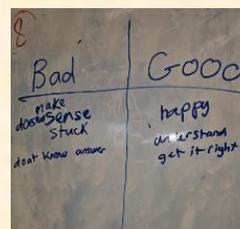
Anchor Charts; A Step Beyond the Word Wall

What is an anchor chart? A purposeful poster of important information in a unit of study. The anchor chart reinforces vocabulary, like a word wall, but it's even BETTER because it is very visual, in context, timely, and accompanied by important models and examples.

Why are anchor charts better than word walls? *The importance of explicitly teaching vocabulary cannot be overstated*. Acquiring mathematical terminology is foundational to conceptual comprehension, and deficits in math understanding nearly always involve gaps in vocabulary. Often word walls cover *all* the vocabulary in a course, or in several years of math, but are in discreet and disconnected arrangements: Words only, often showing up alphabetically, which means they are pulled from all units of the course and not grouped in theme. Furthermore, they are often left up all year long, so they become "wall paper", and students don't refer to them. Enter the anchor chart. These are dynamic, they can be cocreated with students and involve the vocabulary in the context of the unit of study. These are visual reference charts, and authorship/ownership is shared with the whole class. They are a reference during a unit of study, and can be put away and then brought back for review.
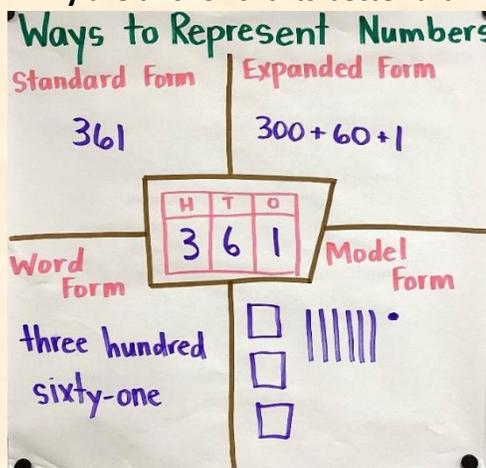
Ideas

- Create your anchor charts collaboratively with the class. work. Peter Liljedahl's Building Thinking Classroom work advocates for note *making* rather than note *taking,* where students consolidate their learning by creating "Notes to My Future Forgetful Self". The work from these student-built summaries can be used to create anchor charts.

- Use handmade charts, created at the time of learning so they are relevant. Avoid factory made "canned" posters—the ones **you make** during the unit with the input from your class are far more meaningful.

- Leave them up for kids to refer to. Put them away and bring them back for review.

- Give them to next year's teacher to be brought out as reminders of prerequisite skills (or as proof when students declare "we didn't learn that last year!").
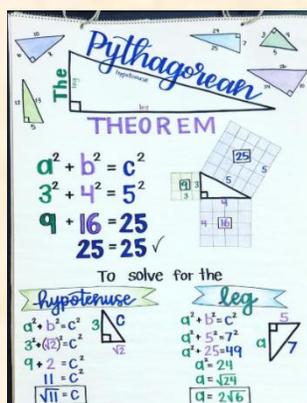
- Take a photo and print it so kids can keep a copy in their notebook. Put the photo in your google classroom or on remind, so parents can see it and hopefully use it.

- Create a booklet of the year's anchor charts to use as end of year summary, and something students can bring with them next year. This creates flow from year to year, helping students see math as a connected learning continuum rather than isolated topics.

Need ideas? Just Google "Anchor Chart _____" and insert your topic. You'll get lots of images!

Ministry Math Assessment Grades 5 and 9

Students will do this assessment for the first time June 8 – 19 this year. The assessments were created by working committees of Saskatchewan teachers. They are designed to take about 120 minutes, are done digitally, all questions are multiple choice, and students can do the assessment in more than one sitting. This year is a "field test" of the assessment:

Grade	2025-26	2026-27	2027-28	2028-29
1	Reading Data Collection	Reading Data Collection	Reading Data Collection	Reading Data Collection
2	Reading Data Collection	Reading Data Collection	Reading Data Collection	Reading Data Collection
3	Reading Data Collection	Reading Data Collection	Reading Data Collection	Reading Data Collection
4		ELA Field Test	ELA Assessment	ELA Assessment
5	Math Field Test	Math Assessment	Math Assessment	Math Assessment
6				
7	ELA Field Test	ELA Assessment	ELA Assessment	ELA Assessment
8				
9	Math Field Test	Math Assessment	Math Assessment	Math Assessment
10		ELA Pre-Field Test*	ELA Field Test	ELA Assessment

Data this school year will be collected to help help create a baseline of performance and review the assessment. Beginning next year, data is given to schools, parents, and stakeholders.

Each test has 50 questions:

Table of Specifications: Mathematics 5

Curricular Strand	Outcome	Number of questions
Number (~ 40%)	N5.1	2–4
	N5.2 & N5.3	4–6
	N5.4	2–4
	N5.5	3–5
	N5.6 & N5.7	4–6
Patterns and Relations (~ 15%)	P5.1	3–5
	P5.2	2–4
Shape and Space (~ 30%)	SS5.1 & SS5.2	3–5
	SS5.3 & SS5.4	3–5
	SS5.5 & SS5.6	4–6
	SS5.7	2–4
Statistics and Probability (~ 15%)	SP5.1 & SP5.3	3–5
	SP5.2	2–4

Table of Specifications: Mathematics 9

Curricular Strand	Outcome	Number of questions
Number (~30%)	N9.1	4–6
	N9.2	4–6
	N9.3	2–4
Patterns and Relations (~40%)	P9.1	5–7
	P9.2	5–7
	P9.3	2–4
	P9.4	5–7
Shape and Space (~30%)	SS9.1	3–5
	SS9.2	4–6
	SS9.3	3–5
	SS9.4	2–4
Statistics and Probability	* As the outcomes within the Statistics and Probability strand are best assessed at the classroom level, this strand has not been included in the assessment.	

Practice Tests can be found here: Login | Vretta Many of the questions are written with context. Here's a sample question:

Which of the following situations uses division to solve a problem?

- A carpenter cuts 50 cm off a board to get the needed length.
- A soccer coach makes 4 equal groups of players during a practice.
- A painter uses the length and width to find the perimeter of a window.
- A grocery store clerk counts the egg cartons to find the total number of eggs.

Read more **here**

Must Do Can't Fail Topics

(really really essential outcomes!) These are things students need to master by end of year indicated:

(Draft) Essential Learning Outcomes (End of Year): Saskatchewan Mathematics

Strand	K	1	2	3	4	5	6	7	8	9	10
Number	Rote Count forward to 10 and back.										
		Rote Count forward and back to 100.									
			Count to 100 by skip count - by 2's, 5's, and 10's.								
	Subitizing 1 - 5.										
		Subitize 0 - 10.									
	Relate numerals to quantities 0 to 10.										
			Write numbers in words up to 20.								
				Write numbers in words up to 1000.							
					Write numers in words in expanded form numbers up to 10000.						
						Write numbers in words and in expanded form numbers up to 1000000.					
		Represent numbers to 20 concretely and pictorially.									
		Represent numbers to 20 symbolically.									
			Represent numbers to 1000 concretely.								
			Represent numbers to 1000 symbolically.								
				Represent numbers to 10000 symbolically.							
					Represent numbers to 1000000 symbolically.						
						Represent numbers larger than 1000000 symbolically.					
							Represent integer numbers concretely, pictorially, symbolically.				
			Identify the value of a digit in a number up to 1000.								
				Identify the value of a digit in a number up to 10000.							
					Identify the value of a digit in a number up to 1000000.						
			Compare and order whole numbers to 100.								
				Compare and order whole numbers to 1000.							
					Compare and order whole numbers to 10000.						
					Compare and order decimal numbers from smallest to greatest - hundredths.						
						Compare and order whole numbers to 1000000.					
						Compare and order decimal numbers - thousandths.					
						Compare fractions with like and unlike denominators.					
							Compare and order integer numbers.				
									Compare and order all types of rational numbers.		
										FPC Compare and order irrational numbers.	

(Draft) Essential Learning Outcomes (End of Year): Saskatchewan Mathematics

Strand	K	1	2	3	4	5	6	7	8	9	10
Parts of a Whole				Describe, represent, and relate fractions to quantity.							
					Understand fractions less than 1 as parts of a whole or parts of a set.						
					Represent fraction concretely and pictorially.						
						Create and identify equivalent fractions.					
						Understand fractions greater than 1.					
								Relate rational numbers to other types of numbers.			
									FPC Represent, identify, simplify irrational numbers.		
								Understand rates and ratios and how they are related to fractions.			
								Create and solve proportions.			
									WPA use proportional reasoning in context.		
					Describe and represent decimals - tenths and hundredths.						
						Describe and represent decimals - thousandths.					
							Describe and represent decimals - smaller than thousandths.				
					Relate fractions and decimals - tenths and hundredths.						
						Relate fractions and decimals - thousandths.					
							Relate whole number percents between 0% and 100% to fractions and decimals.				
								Relate fractional percents between 1% and 100% to fractions and decimals.			
								Understand percents between 0% and 1%.			

(Draft) Essential Learning Outcomes (End of Year): Saskatchewan Mathematics

	K	1	2	3	4	5	6	7	8	9	10

Number Operations

- Compose and decompose numbers to 100.
- Develop estimation strategies.
- Addition and subtraction to 20 with manipulatives.
- Addition and subtraction facts to 20 with automaticity.
- Addition and subtraction to 100 with and without manipulatives.
- Addition and subtraction to 1000 with and without manipulatives.
- Addition and subtraction to 10000 with and without manipulatives.
- Addition and subtraction of decimals to hundredths with and without manipulatives.
- Addition and subtraction of decimals to thousandths with and without manipulatives.
- Addition and subtraction of decimals with larger number of decimal places.
- Addition and subtraction of like and unlike denominator fractions concretely, pictorially, and symbolically.
- Multiplication and Division facts to 25 (5x5) concretely, pictorially, and symbolically.
- Multiplication and Division facts to 100 (10x10) concretely, pictorially, and symbolically.
- Multiplication and division facts to 100 (10 x 10) with automaticity.
- Multiplication and division of integers.
- Multiplication and division of fractions.
- Determine factors and multiples of numbers to 100.
- Understand squares and square roots.
- Represent and evaluate powers.
- FPC Determine cube roots.
- Understand lowest common multiple (LCM) and greatest common factor (GCF).
- Identify prime and composite numbers.
- Apply LCM and GCF to addition of fractions.
- Multiplication (2- and 3- digit by 1-digit) and Division (1-digit divisor and 2-digit dividend) using arrays, manipulatives, and strategies.
- Multiplication (2-digit by 2-digit) and Division (1-digit divisor and 3-digit dividend) using arrays, manipulatives, and strategies, including remainders.
- Multiplication and division of decimals (1-digit whole number multiplier, 1-digit whole number divisor)
- Multiplication and division of decimals with greater number of decimal places.
- Perform order of operations including addition, subtraction, multiplication, and division of whole numbers.
- Perform order of operations including addition, subtraction, multiplication, and division of decimals.
- Perform order of operations with all types of rational numbers, including exponents.
- FPC Apply exponent laws.
- FPC Multiplication and factorization of polynomial expresssions.

Note the added concepts of addition and subtraction facts to 20 with automaticity and Understand lowest common multiple (LCM) and greatest common factor (GCF). Like us, this team of teachers recognized that an understanding of factors and multiples underpins many subsequent concepts.

(Draft) Essential Learning Outcomes (End of Year): Saskatchewan Mathematics

	K	1	2	3	4	5	6	7	8	9	10

Patterns

- Describe the core of a repeating pattern.
- Creating a repeating pattern using 3 - 5 elements.
- Describe the rule of an increasing or decreasing pattern.
- Create an increasing and decreasing pattern.
- Describe number patterns in found in visual representations, tables, and diagrams.
- Describe number patterns symbolically, and relate to tables, graphs, and visual representations.
- Create and represent patterns concretely, symbolically, in tables, graphs, and visual representations.
- Represent patterns and relationships using expressions and equations.
- Plot and read points on a cartesian plane.
- Interpolate and extrapolate graphs.
- FPC Distinguish between functions and relations.
- FPC Understand slope, domain, range.
- FPC Understand linear relations and how to generate their equations.
- Distinguish between expressions and equations.
- Evaluate expressions.

Equality

- Record equality as balance using the equal sign
- Compare and model equalities and inequalities concretely, pictorially and symbolically
- Solve one step addition and subtraction equations involving symbols and an unknown quantity
- Write and solve one step equations (no letter variable) involving addition and subtraction.
- Write and solve one step equations (with letter variable) involving addition and subtraction.
- Write and solve one step equations with letter variable involving addition and multiplication.
- Write and solve one and two step equations involving all operations.
- Write and solve one and two step equations involving brackets.
- Identify and solve problems involving pythagoras.
- Write and solve equations with the variable on both sides.
- WPA Solve equations involving income.
- FPC Solve systems of equations involving 2 equations.

Why did the two fours skip lunch?

They already eight (ate)!

I had a hen who counted her eggs.

She was a mathemachicken!

Why can't you argue with a 90° angle?

It's always right.