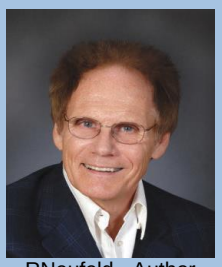
WEBINAR or PRESENTATION Outline

Please REGISTER at info@umathx.com

CONSTRUCTING UNDERSTANDING OF MATHEMATICS



RNeufeld - Author

Math or Magic

Empower Students to Algebraic Thinking through Number Tricks

SESSION DESCRIPTION: We will explain number tricks through a sequence of lessons from **Words to Algebra Tile Models (Pictures) to Algebraic Expressions** to explain numbers and variables in a sequence of activities involving algebraic thinking. Learning environments include computer and paper activities. Participants will receive access to online resources and lessons for their classes. **Gr 5 to 9**

Instructions Before a Webinar Session

- Register at **info@umathx.com** at least 24 hours before the session.
- State a number of session times that are good for you.
- We will confirm session topic and time to you by email.
- Registered attendees will be invited to the webinar by email at the begin time.

JHastings – OH

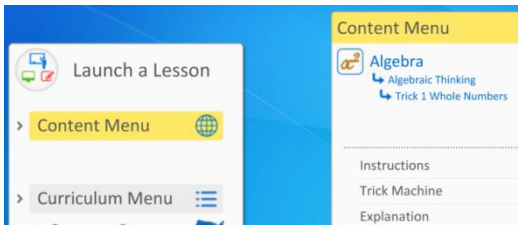
AGolem – OH

MATH or MAGIC #1 – The Picture Explains It!

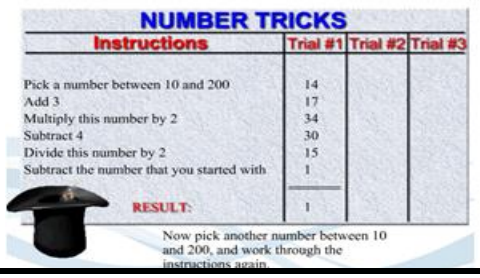
Enter the **URL** www.umathx.com/preview into the address box of any browser.
Enter the **Username that you have been given for you and students.** Enter the **Password: umathx.**

Select the CONTENT MENU

Follow the path below:
Algebra > Algebraic Thinking > Trick 1 Whole Numbers >



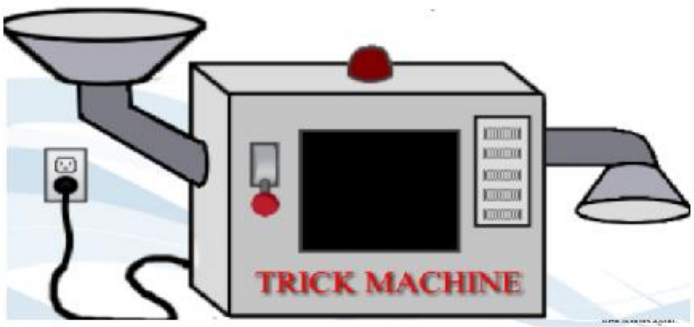
Now select Instructions, then Trick Machine, then Explanation



NUMBER TRICKS

Instructions	Trial #1	Trial #2	Trial #3
Pick a number between 10 and 200	14		
Add 3	17		
Multiply this number by 2	34		
Subtract 4	30		
Divide this number by 2	15		
Subtract the number that you started with	1		
RESULT:	1		

Now pick another number between 10 and 200, and work through the instructions again.



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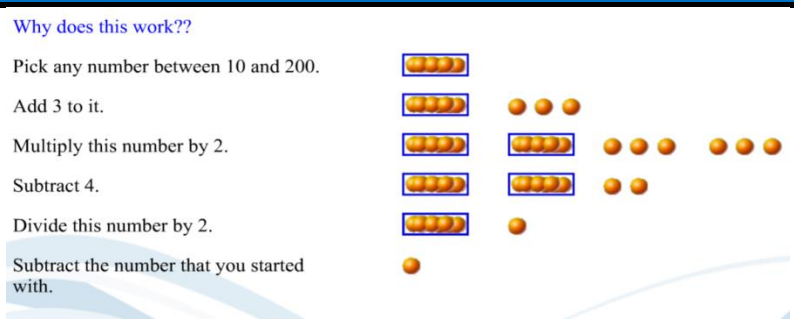
CONSTRUCTING UNDERSTANDING OF MATHEMATICS

LLink – Flint, MI

PMorrison – AL

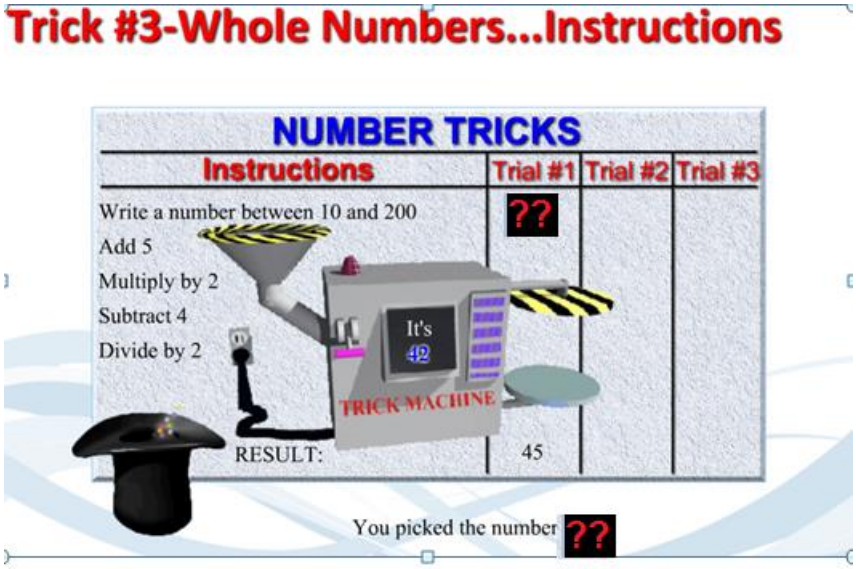


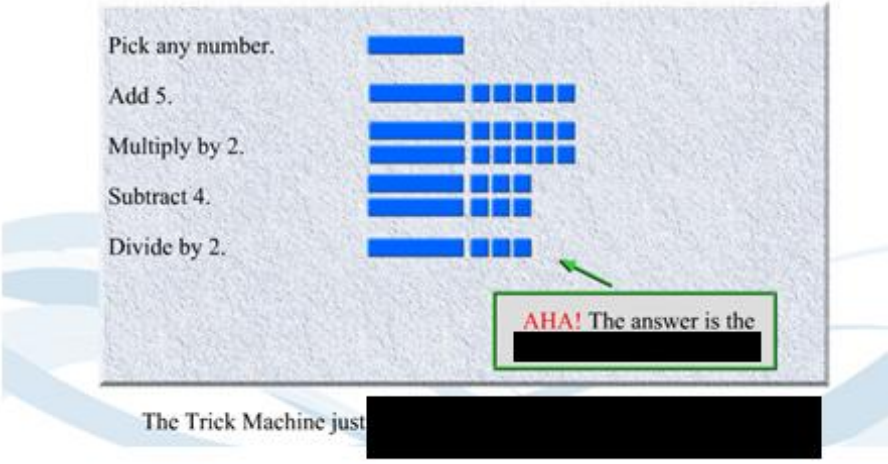
MATH or MAGIC #2 – The Picture Explains It!

Follow the path below:

Algebra > Algebraic Thinking > Trick 3 Whole Numbers >

Now select Instructions, then Explanation





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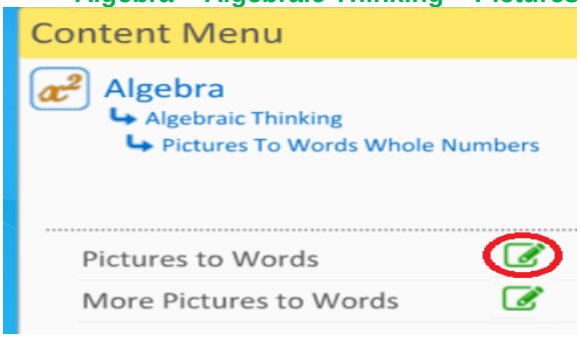
CONSTRUCTING UNDERSTANDING OF MATHEMATICS

MATH or MAGIC #3 – The Picture Explains It! .. You Try to Design a "Trick"

In the Content Menu, follow the path below:

Algebra > Algebraic Thinking > Pictures to Words Whole Numbers > Pictures to Words



Note a green pencil icon beside "Pictures to Words" which indicates that a **FRAMEWORK**, a 3 part model lesson for this lesson exists on paper. Click on it and print it. Follow directions.

Framework for Learning: **Algebraic Thinking – Pictures to Words**

Leader's Name: .....

Co-Leader's Name: .....

Instructor's Initials: .....

Getting Started:

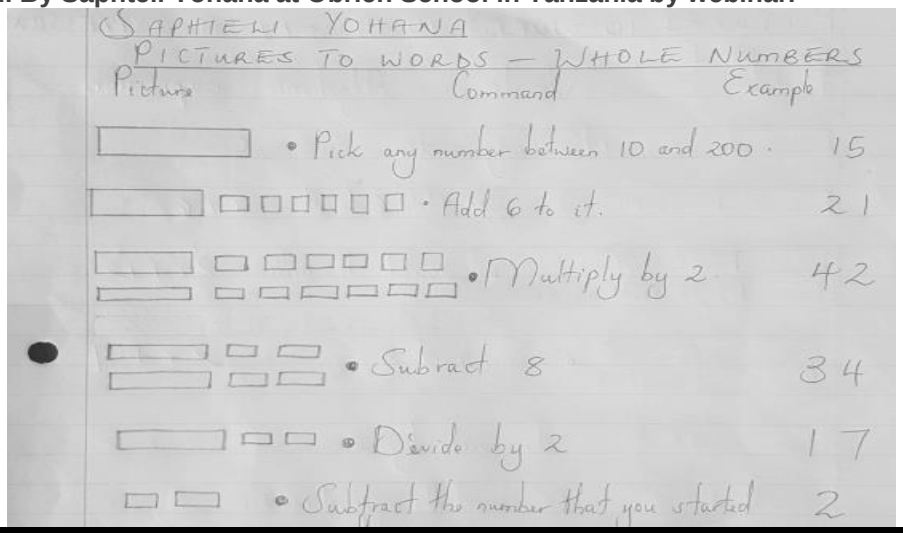
In UMATH X within the **Content Menu**, follow the path:
Algebra > Algebraic Thinking > Pictures to Words Whole Numbers > Pictures to Words
Complete the ***Picture*** and ***Example 1*** columns in table below as you work through the lesson.

Picture	Command	Example 1	Example 2	Example 3
	Pick any # between 10 and 200.			
	Add 6 to it.			
	Multiply by 2.			
	Subtract 8.			
	Divide by 2.			
	Subtract the # you started with.			

Do you think the answer will ***always*** be the ***same***? **Explain.**

Repeat Example 2 and Example 3. Discuss the picture.

Below .. By Saphteli Yohana at Obrien School in Tanzania by webinar.



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CONSTRUCTING UNDERSTANDING OF MATHEMATICS

Working In It: **Complete** the table below using three numbers of your choice.

Picture	Command	Example 1	Example 2	Example 3
	Pick any # between 10 and 100.			
	Multiply by 2.			
	Add 6.			
	Add the # you started with.			
	Divide by 3.			
	Subtract 2.			

In UMATH X within the **Content Menu,** follow the path:
Algebra > Algebraic Thinking > Pictures to Words Whole Numbers > MORE Pictures to Words
Check your answers in the table above using the lesson. **Correct** any mistakes.

Reflect & Connect:
Go to www.umathx.com/supportsheets. **Select** *Algebra Section 1 – Introduction to Algebraic Thinking.* **Print** pages 1-2 and **complete** questions 1 – 3.

Write your own number trick and use it to complete the table below. **Exchange** papers with a partner. **Check** each other's work. **Discuss and correct** any mistakes.

Picture	Command	Example 1	Example 2	Example 3

Build It. Draw It. Talk It. Write It. Now you OWN It!

Neufeld Learning Systems Inc

www.UMathX.com

MATH or MAGIC #4 –From Algebra Tile Model (picture) to Words to Algebraic Expression

Pictures, Visual Learning, are the Key to Understanding Algebra.
Hence teachers are encouraged to use Algebra Tiles to represent Algebraic Expressions.

In the following lesson, we will use algebra tiles, the computer and paper to help construction of knowledge to occur. Teachers and students are encouraged to ...

Built it, Draw it, Talk it, Write it to OWN IT!!

Login to UMathX – Content Menu.

Follow the path to: **Algebra > Tiles and Algebra > Area**

A green pencil beside "**Area…The Concept**" indicates a **FRAMEWORK**, a model lesson, exists.

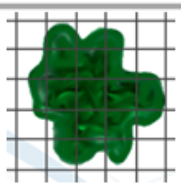
UMATH X

Framework for Learning: Tiles and Algebra

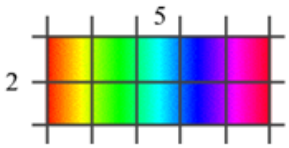
Leader's Name: .....

Co-Leader's Name: ..... Instructor's Initials: .....

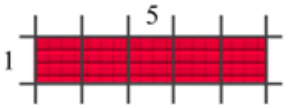
Getting Started: **Calculate** the area of each shape.



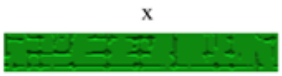
Area: _____ sq units



Area: _____ sq units



Area: _____ sq units



Area: ____ sq units

In UMATH X follow the path:

Algebra > Tiles and Algebra > Area… The Concept and **Area… Examples 1 - 3**

Compare your answers above with those in the lessons. **Correct** any mistakes.

Working In It:

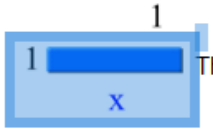
In UMATH X follow the path:

Algebra > Tiles and Algebra > Introduction to Tiles > Tile Representation and **Like Tiles**

Complete the notes below as you work through the lessons.

Tile Representation

This tile represents _____ and is called a _____ tile.



This tile represents an unknown number of unit tiles and is called an _____ tile.

This tile represents _____.

This tile represents an unknown number of _____ tiles and is called a _____ tile.

Like Tiles **Like tiles** are the same _____ and _____.

These **like tiles** represent ____ + ____ + ____ + ____ = ____

These are **unlike tiles**. They represent _____ + _____ .

Reflect & Connect:

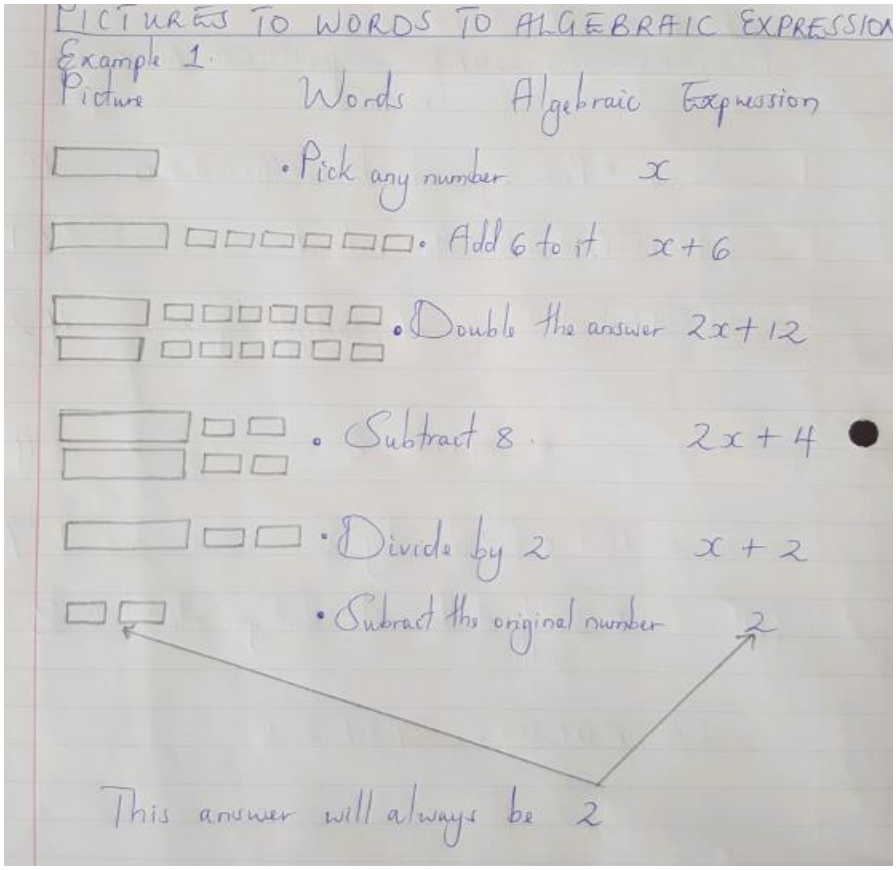
In UMATH X follow the path:

Algebra > Tiles and Algebra > Pictures to Words to Algebraic Expressions > Example 1

Complete the table below as you work through the lesson.

Algebra Tile Model	Words	Algebraic Expression
	Pick any #.	
	Add 6 to it.	
	Double the answer.	
	Subtract 8.	
	Divide by 2.	
	Subtract the original #.	

From teachers at Obrien School in Tanzania .. Webinar.



VIDEO: ***http://www.jamesnottingham.co.uk/learning-pit***

SUMMARY VIDEO: Ma & Pa Kettle on "Constructing the Math"