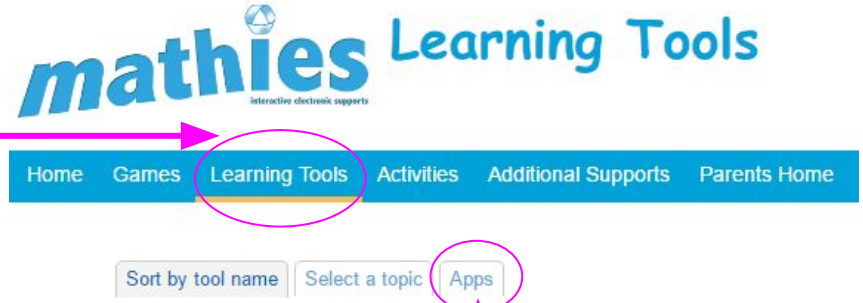
Go to mathies.ca
Learning Tools page



Desktop

Make sure you can Open tools like Colour Tiles, Fraction Strips and Notepad

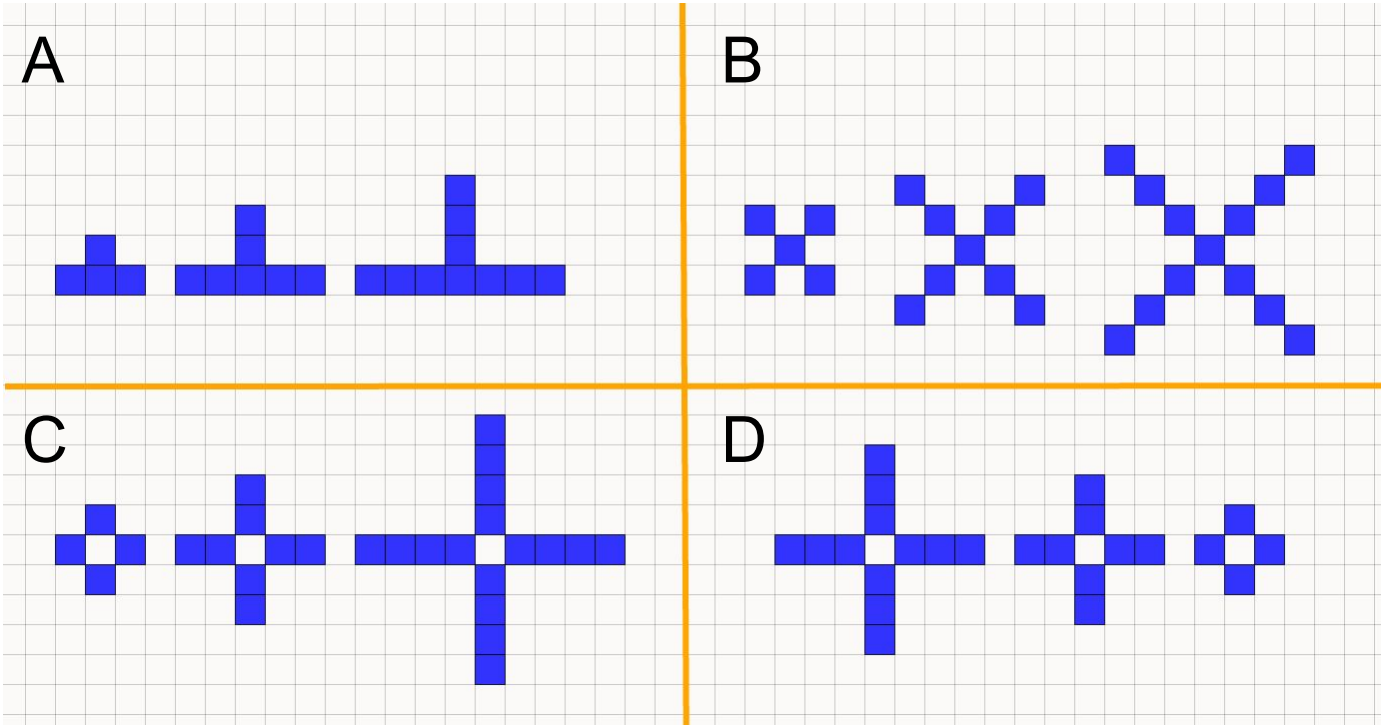
Mobile

Click Apps and Install:

- Colour Tiles
- Fraction Strips
- Notepad

#ONmathies

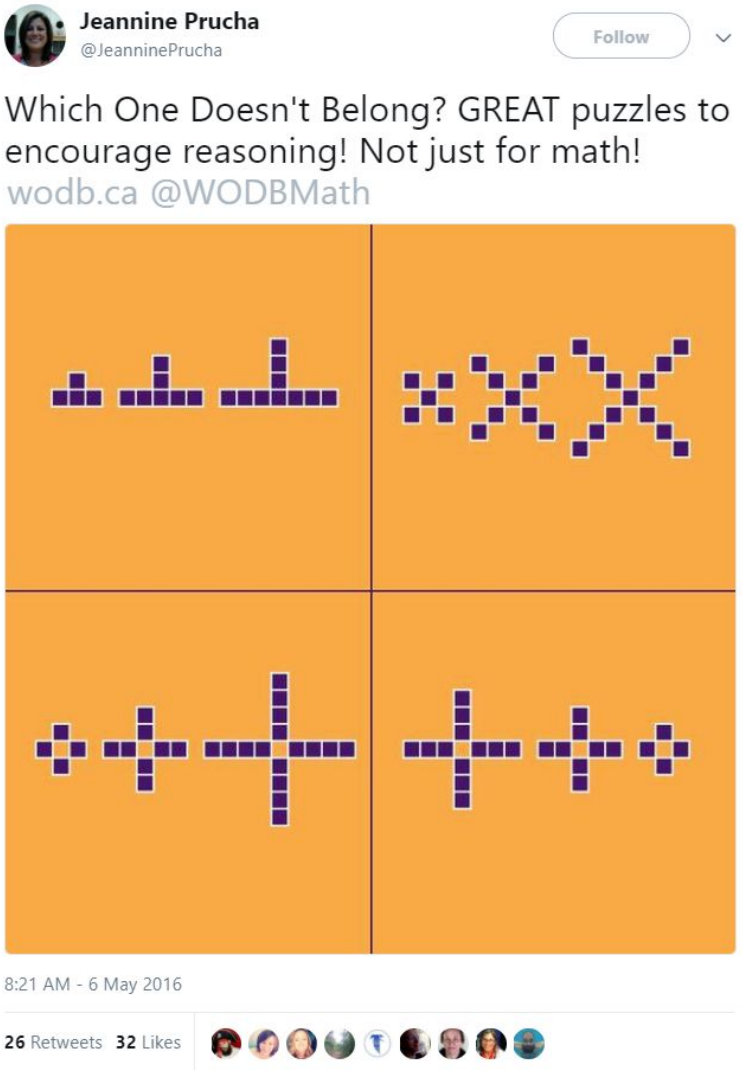
Which One Doesn’t Belong?



mathies.ca/apps.php

Lots more

- At wodb.ca
  (Shapes - Chris Hunter)
- On Twitter
  @WODBMath
- visualpatterns.org



MKN Exploring Critical Transition Issues

Crossing the Digital Divide with MATHIES Tools and Resources

March 20, 2018

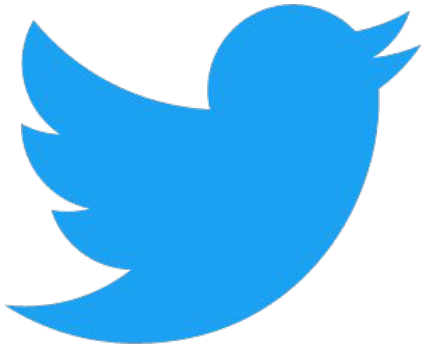
Greg Clarke and Ross Isenegger

Tweet With Us

#ONmathies

@mknrcm

@RE4MUL8



Learning Focus

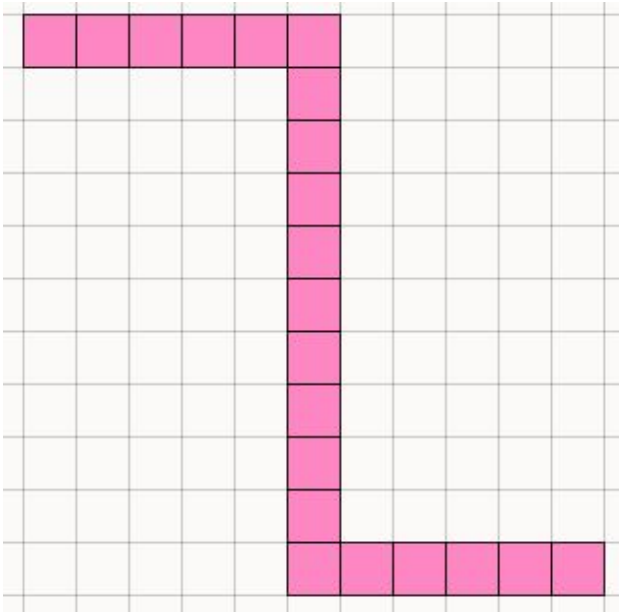
- explore the power of visual representations related to mathematical topics in the Transition from Grade 8 to 9
- experience some of the ways that mathematical understanding can be developed, demonstrated and shared using math tools

Agenda

- Exploring Patterns with Colour Tiles
- Representing Linear Patterns
- Thinking about Operations
- Additional Resources
- Wrap up and Feedback

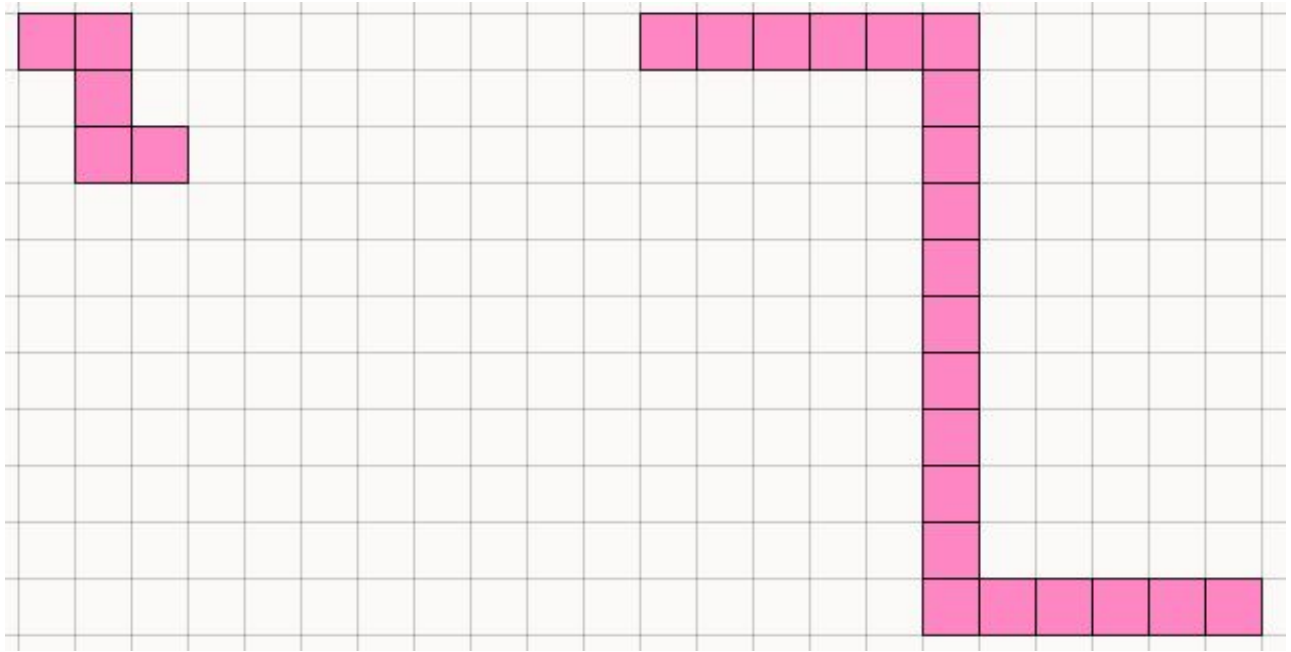
Exploring Patterns with Colour Tiles

Colour Tiles - Explore



★ Can you use the transformation buttons to create the pattern above with 15 or fewer undo/redo steps?

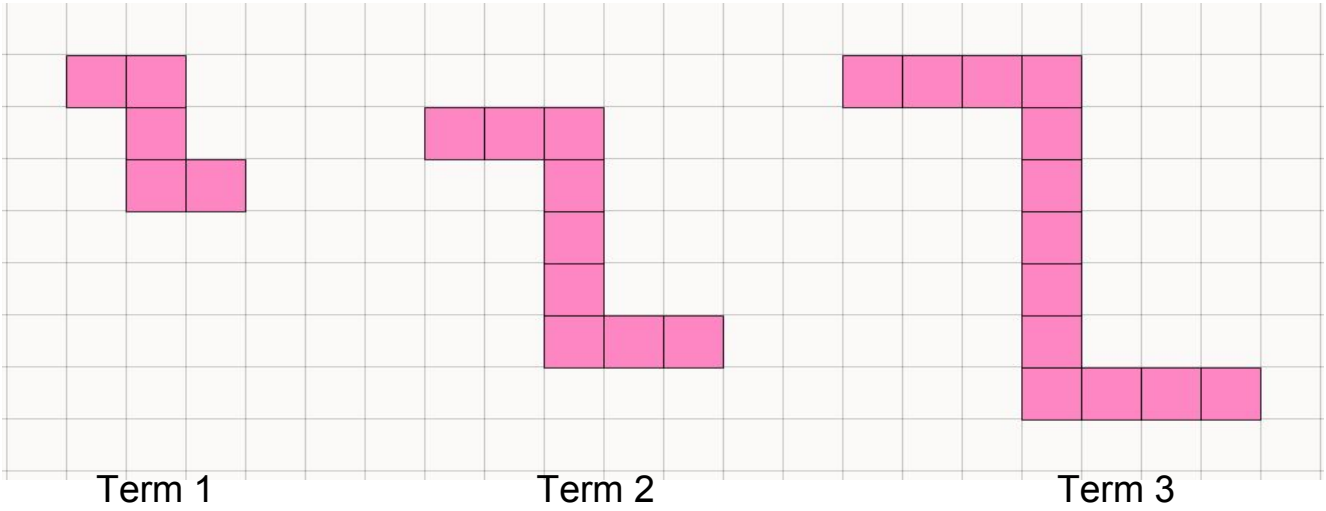
Colour Tiles - Explore



★ Here are the 1st and 5th term of a pattern.
Draw the 2nd, 3rd and 4th terms.

Representing Linear Patterns

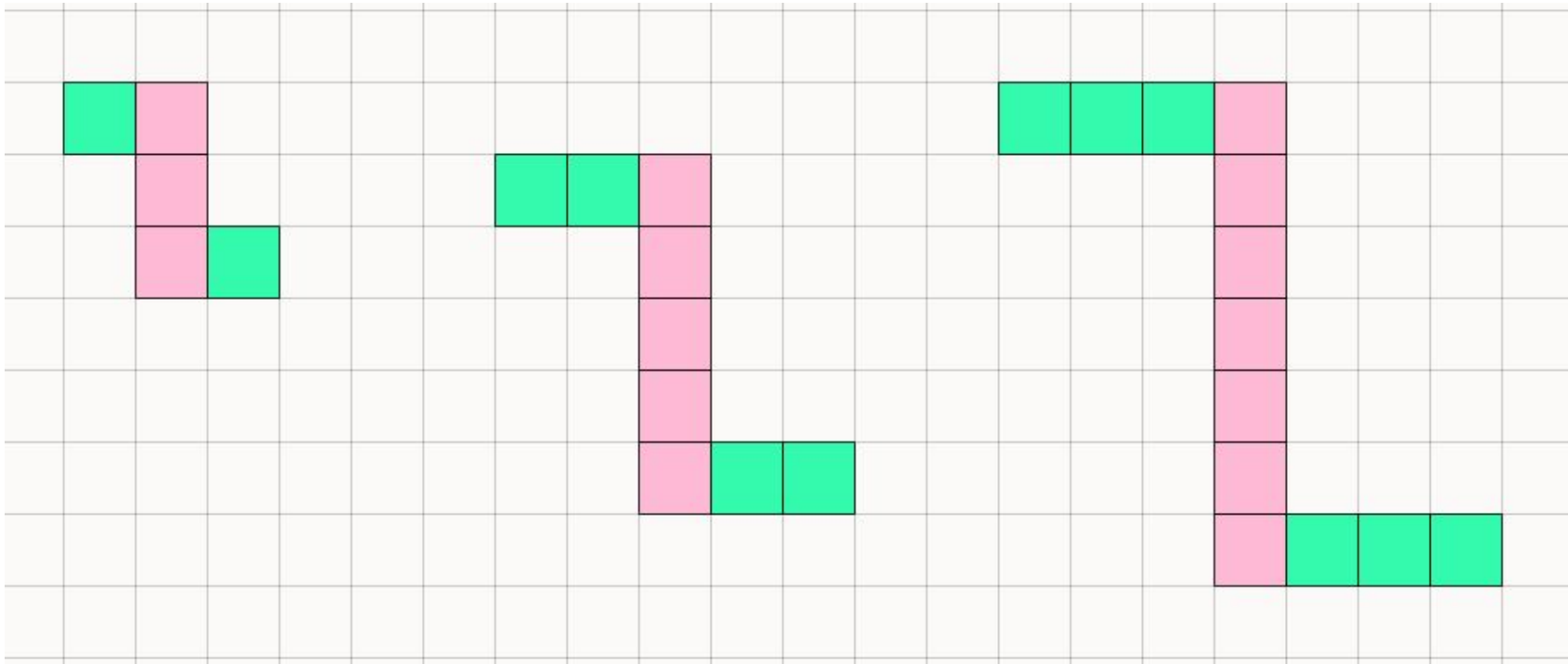
Building Linear Patterns



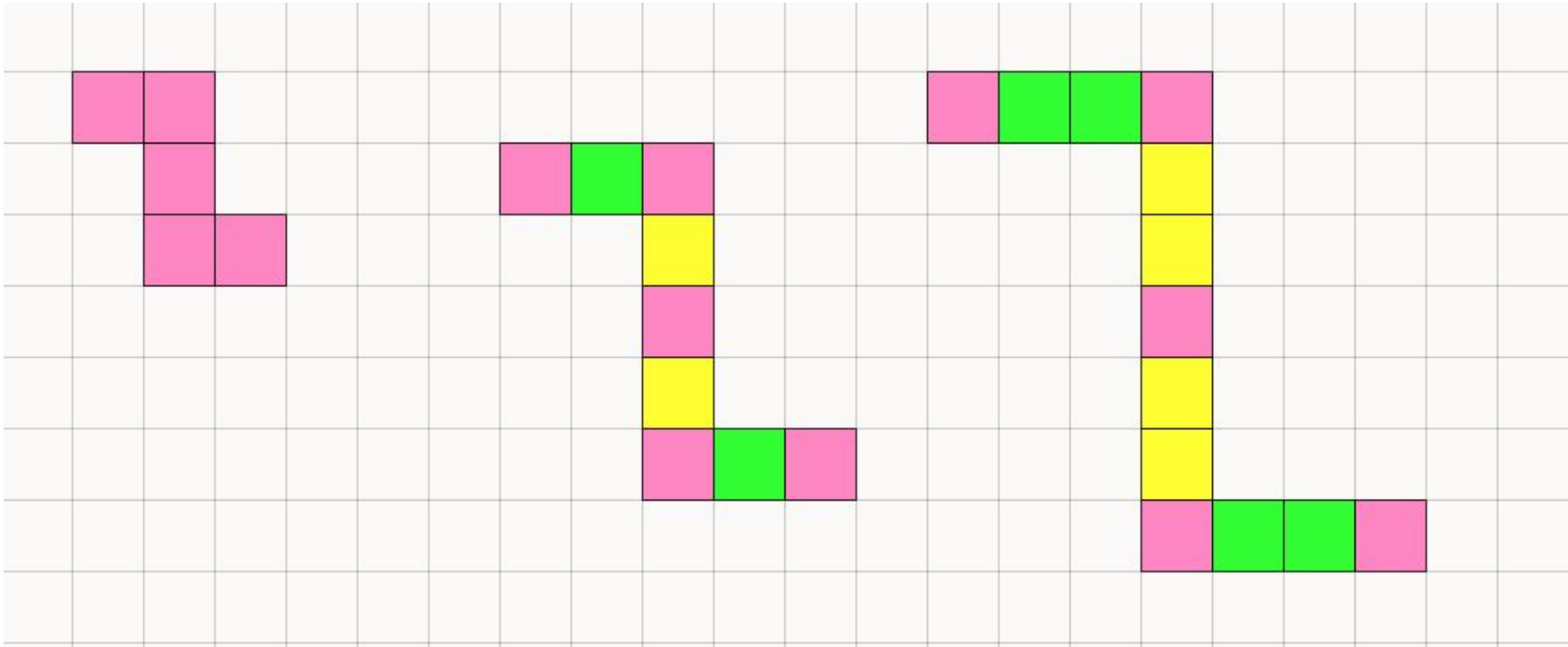
How could you recolour the tiles to help you better see its pattern rule?

What is the pattern rule?

Does this help?



Does this help?

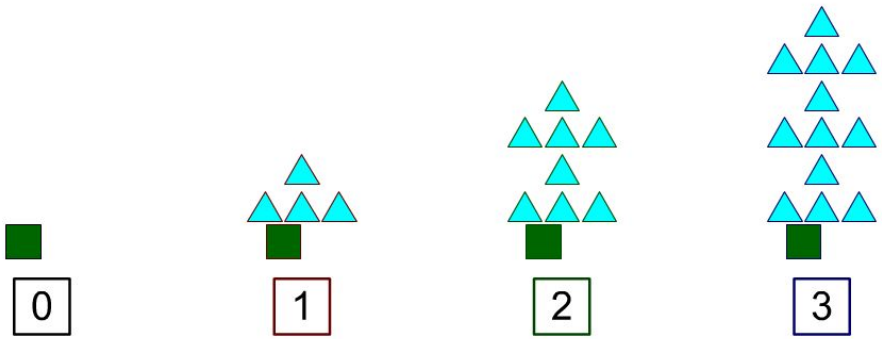


Exploring Different Reps

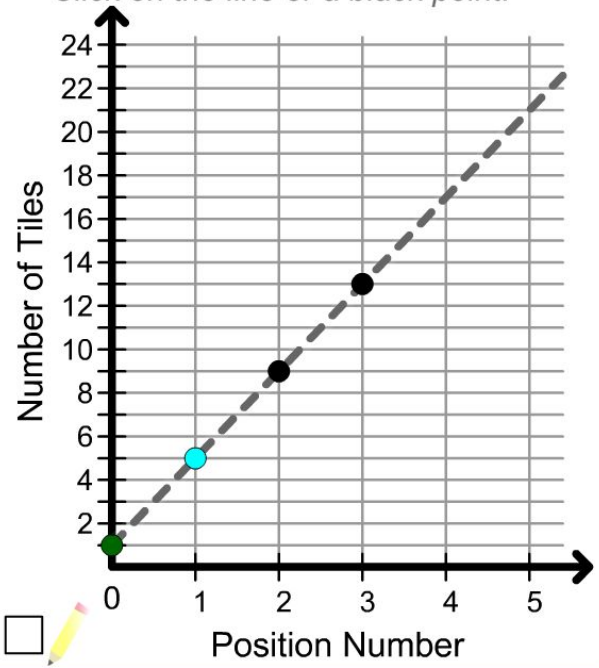
Menu
New
Clear

Pattern Rule Representation
change to Algebraic Representation
Click the up/down buttons.
(Number of Tiles) = (Position Number) x 4 + 1

Pictorial Representation
change to Story Representation
Add, remove, rearrange, customize tiles.



Graphical Representation
Drag the coloured points on the graph.
Click on the line or a black point.



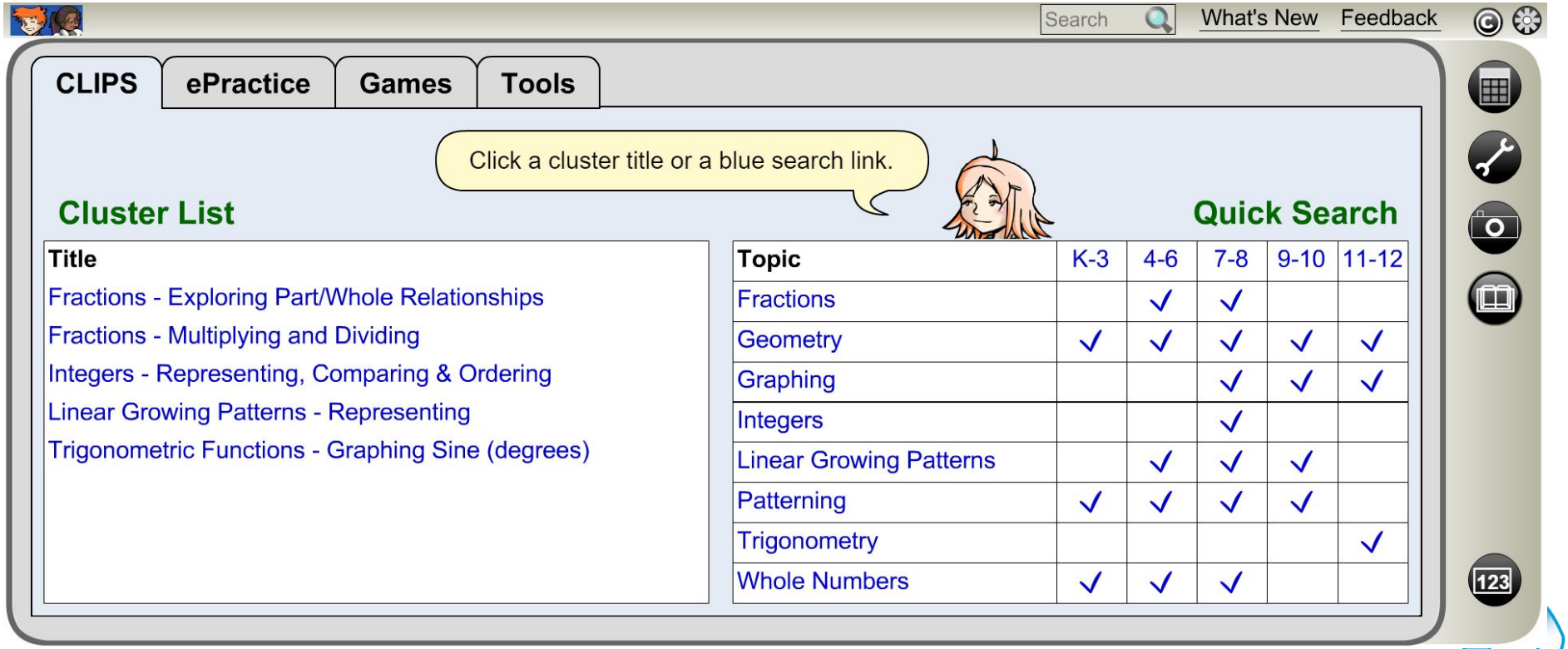
mathclips.ca Linear Growing Patterns

Simple Linear Growing Patterns

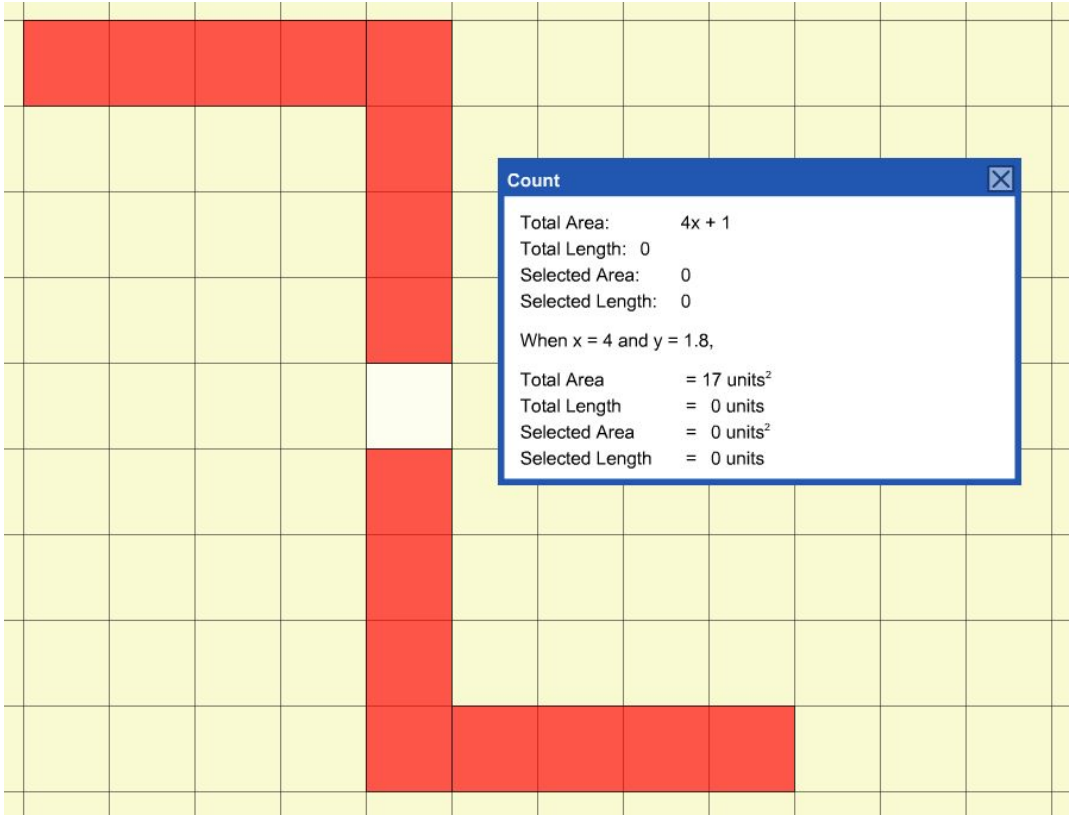
What math am I going to do?

You will learn how to represent a pattern rule using a graph, and how a change in the multiplier of a pattern rule affects the graph.

mathclips.ca and ePractice.ca



Sneak Peek at Algebra Tiles



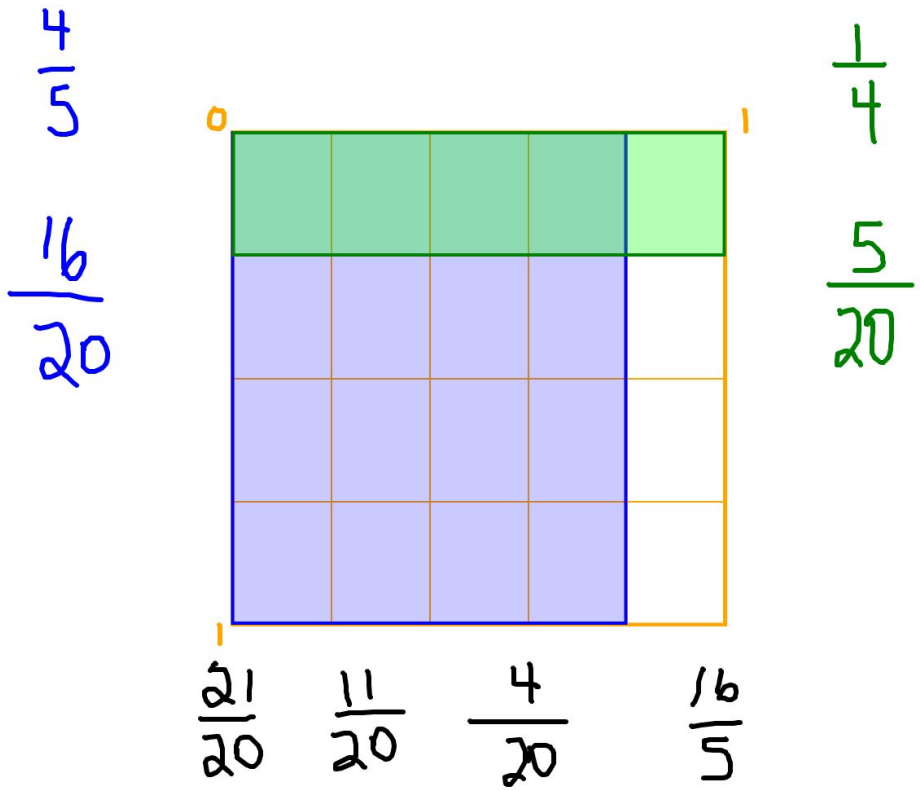
Thinking about Operations

	Colour Tiles	Fraction Strips	Money	Notepad Number Line	Notepad Grid	Relational Rods
Addition	-8 + (-3)	1/4 + 4/5	2.13 + 0.32	23 + (-8)	1/4 + 4/5	12 + 8
Subtraction	-8 - (-3)	4/5 - 1/4	10000 - 1	23 - 8	4/5 - 1/4	23 - 8
Multiplication	12 x (-6)	2/3 of 3/4	2.65 x 3	8 x 9 3 x 3/4	2/3 x 3/4	8 x 9
Division	10 by 2 -10 by -2	15/3 by 2/3	7.75 by 3	10 by 2 -10 by -2		

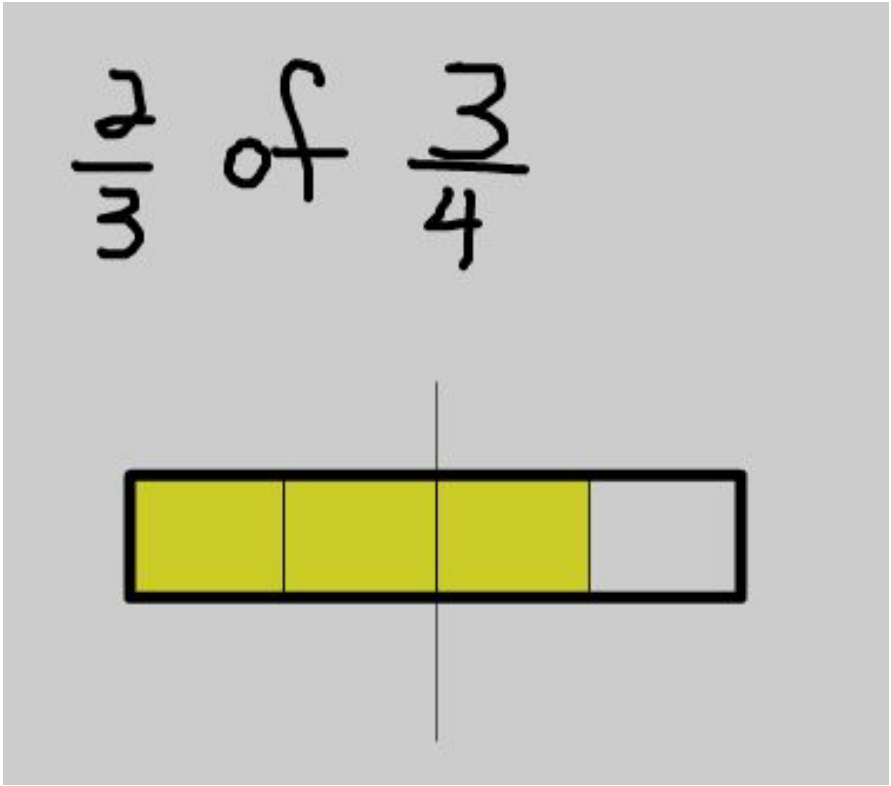
Sharing our Thinking

How does the use of the tool support your understanding of the operation you were performing?

How can this grid model all operations?



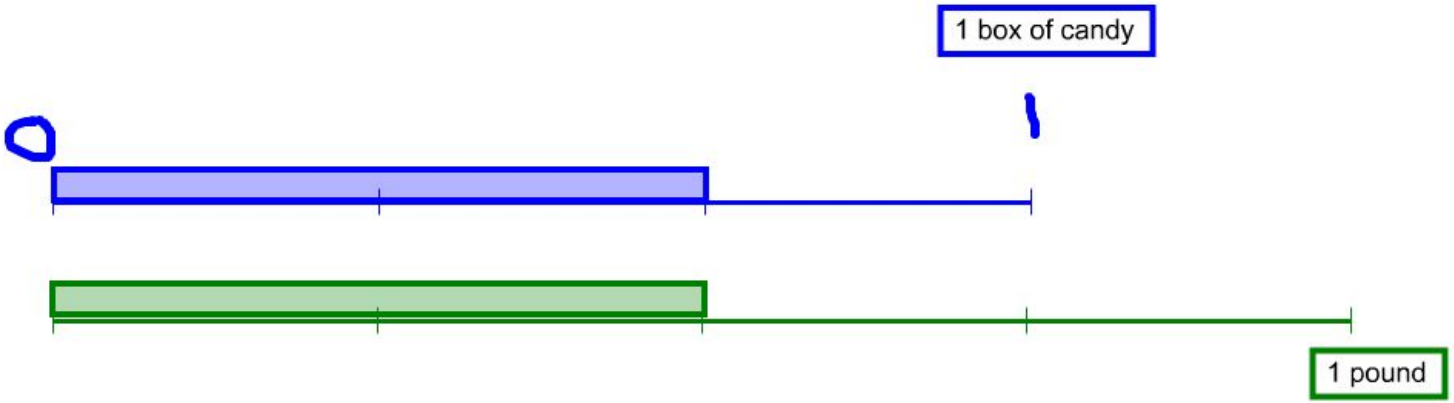
2/3 x 3/4



Context sometimes helps

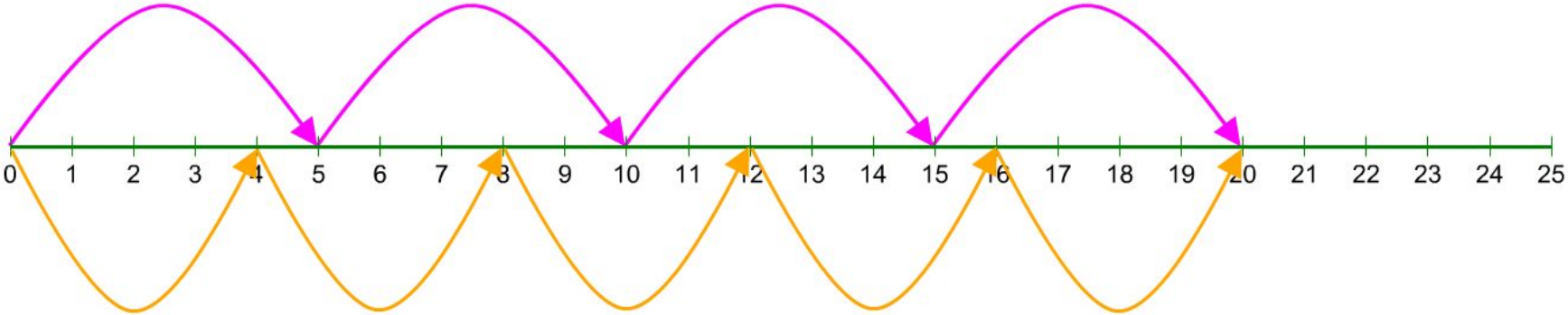
I have ⅔ box of candy. A full box of candy weighs ¾ pound. How many pounds of candy do I have?

(Empson p 191)



4 x 5

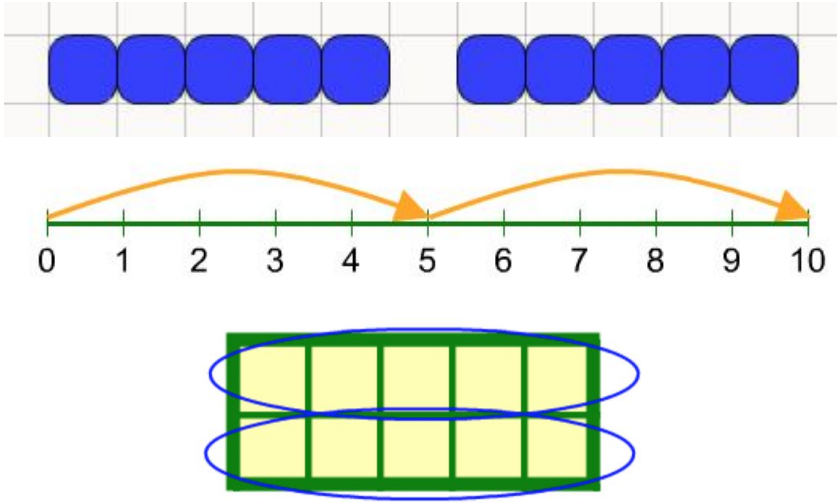
4 hops of length 5



A hop of length 4, 5 times

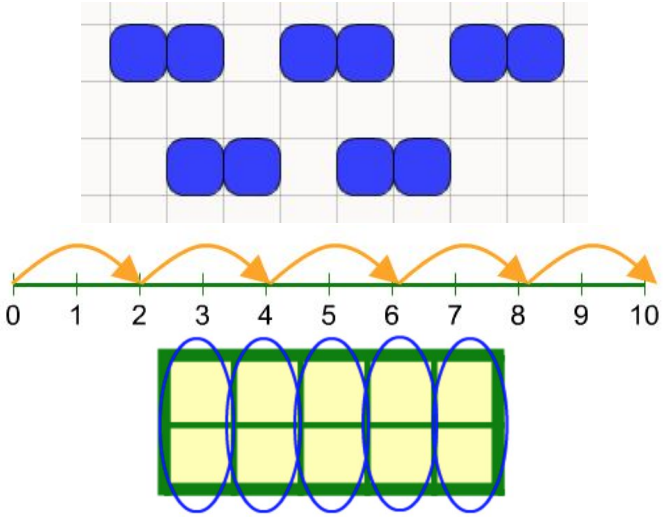
How were you thinking about 10÷2 ?

10 divided into 2 groups



Partitive - Fair Sharing
How many in each group?

Make groups of 2 from 10

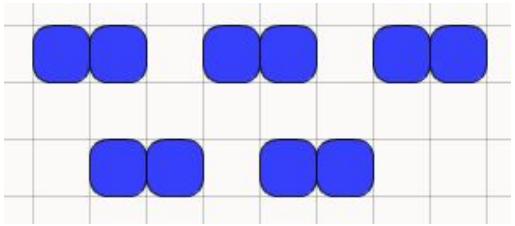


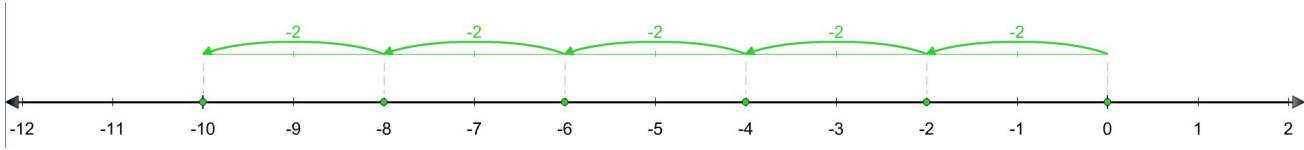
Quotative - Groups of
How many groups are there?

How were you thinking about -10 ÷ (-2) ?

-10 divided into -2 groups

Make groups of -2 from -10

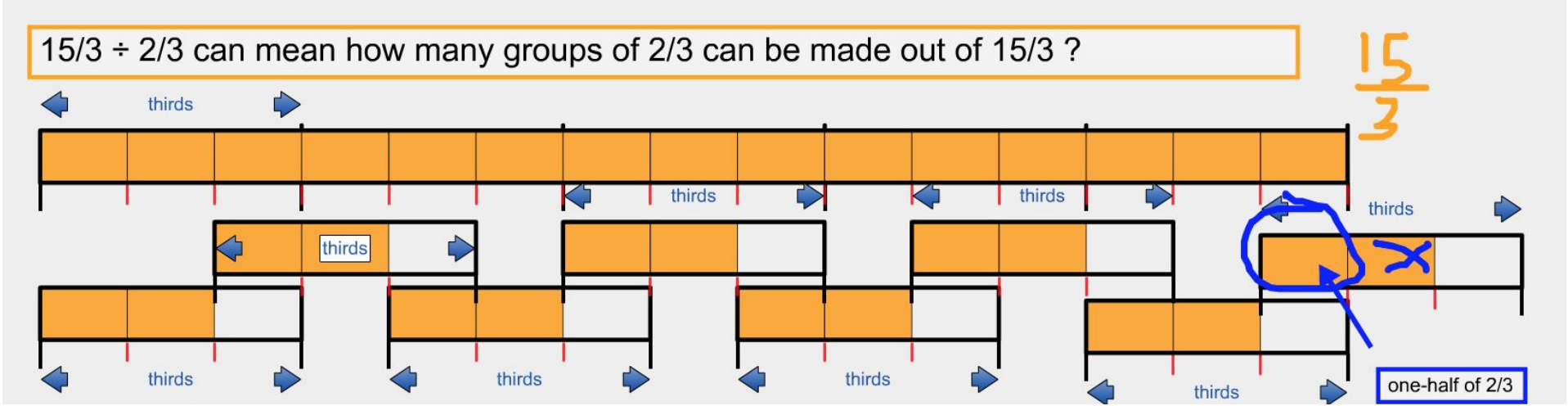




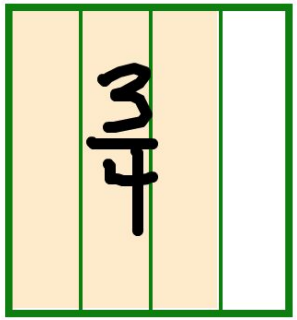
Partitive - Fair Sharing
How many in each group?

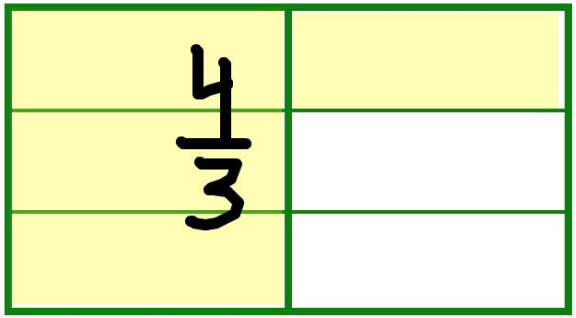
Quotative - Groups of
How many groups are there?

(15/3) ÷ (2/3)

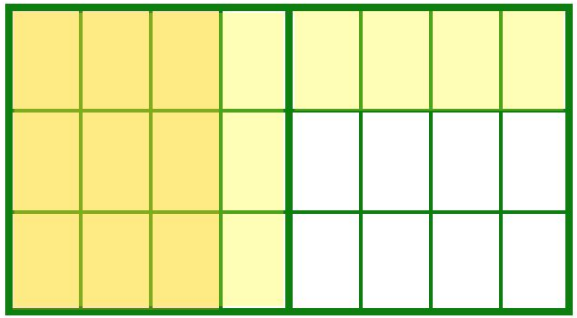

15/3 ÷ 2/3 can mean how many groups of 2/3 can be made out of 15/3 ?
15/3
thirds
thirds
thirds
thirds
thirds
thirds
thirds
thirds
thirds
one-half of 2/3

Comparison of Areas (3/4) ÷ (4/3)





3/4 ÷ 4/3 = 9/16



Ontario Mathematics Gazette

8 PAGE INSERT ELEMENTARY MATH

ABACUS

Regular Column

Fraction Operations (Sept, Dec 2017)

Support Wiki

Wrap up & Feedback

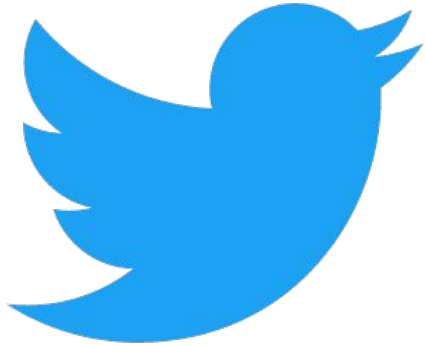
Learning Tool Supports

mathies Learning Tools

- created based on current Ontario research and field requests
- developed in collaboration with Ontario educators
- available online or offline at no cost to the user
- free from advertisement
- available as download and can be used in the Virtual Learning Environment (VLE)
- new tools available on Desktop, iOS and Android devices
- tools are updated based on feedback

Hear about updates

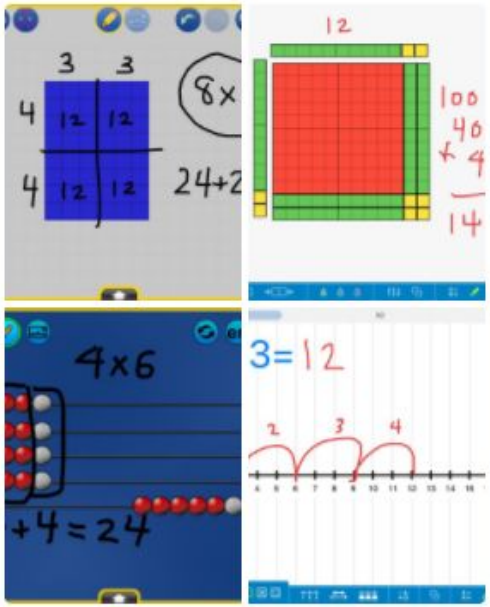
Follow @ONmathies



mathclips.ca/WhatsNewEmailList.html

Bonnie Sears
@BonnieSears20

Students @RicksonWolves learning to represent their thinking in multiplication with digital tools #accessiblemath @JenApgar @TScottEducator #mathchat @ugdsb @ONmathies

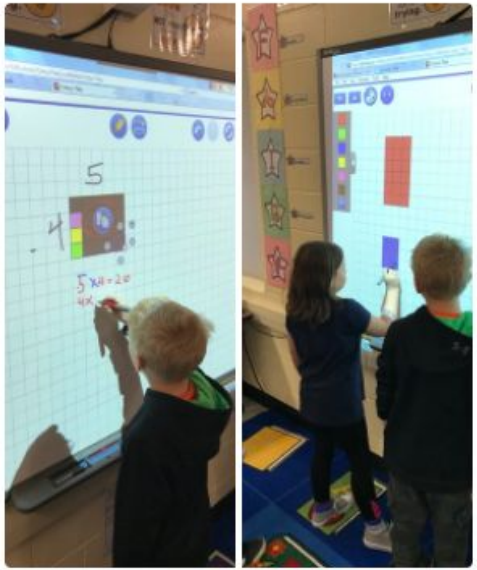


9:09pm · 27 Feb 2018 · Twitter for iPad

1 REPLY 12 RETWEETS 23 LIKES

Emma Power
@7Pcps

Using @ONmathies to explore arrays and prove the commutative property in Grade 4! #UCDSB #ucdsbmath



2:49pm · 20 Feb 2018 · Twitter for iPhone

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Cirque de Szalay
@cirquedeszalay

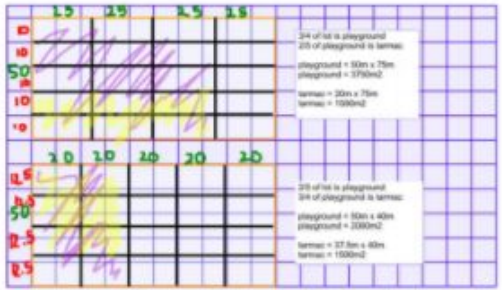
Learning to count coins and make change- showing our thinking with @ONmathies

11:18am · 15 Feb 2018 · Twitter for iPhone

2 LIKES

Megan Haessler
@MeganHaessler

Thanks, @andrealslater, for introducing me to @TheMathPod. After our conversation, I had to tackle this question voiced.ca/shurley/the-ma…. I started on paper and then realized I could make my thinking clearer if I used @ONmathies Notepad. #ugmath



3:13pm · 2 Feb 2018 · Twitter Web Client

4 REPLIES **4** RETWEETS **14** LIKES

Jackie Leardi
@JackieLeardi

Niko était pas mal fier de son travail sur l'argent. Et nous aussi! @EcoleUrsule @CscpTechnoped @CscProvidence @ONmathies

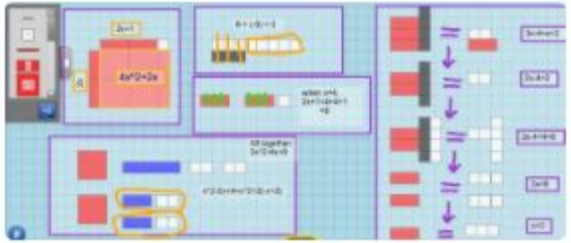
Translate Tweet

7:16pm · 15 Jan 2018 · Twitter for Android

1 RETWEET **2** LIKES

Robin McAteer
@robintg

Having fun playing with @ONmathies new Algebra Tiles tool under development. So powerful for learning to make the concept of a variable so concrete and visual! #ocdsbMath #ocdsblearns



11:31pm · 19 Nov 2017 · Twitter Web Client

2 REPLIES **14** RETWEETS **17** LIKES

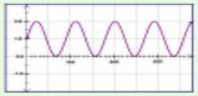
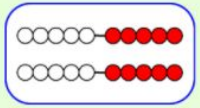
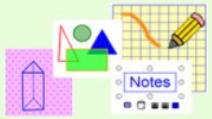
mathclips.ca/WhatsNewEmailList.html

mathies
interactive electronic supports

This site is designed for Ontario K-12 students, educators and parents/guardians.

Google Custom Search

Home | Games | Learning Tools | Activities | Additional Supports | Home Supports | About Us | Contact Us

Games				more..
Learning Tools				more.. fr
Activities				
Additional Supports				
Home Supports				

Transitions

Using visual representations levers student thinking and earlier experiences

Using visual representations helps students make sense of operations and extend to other number systems

RMS Virtual Series

Engaging Students with the mathies Learning Tools: Grades 7, 8, 9

Engaging Students with the mathies Learning Tools: Primary/Junior

Engaging Students with Math Learning Tools: Grades 10, 11, 12

https://rms.thelearningexchange.ca/virtuallearningseries/