Numeracy

Print Package

Grade 4

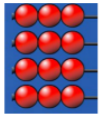
Topic:	**Grade 4**
Big Idea:	**Operational Sense**
Curriculum Expectations:	**-multiply two-digit whole numbers by one-digital whole numbers using a variety of tools (e.g., base ten materials or drawings of them, arrays) student generated algorithms and standard algorithms**
Learning Goal:	**I can use arrays and algorithms when I am multiplying numbers** **I can use estimation to determine if my answers are reasonable**

Helpful Information

Tips

- There are many strategies to develop math facts.
- Learning tools can be used to develop and apply foundational skills and concepts.
- The way your child interacts with the tool can reveal your child's thinking
- They can be used for your children to communicate their thinking
- Encourage your child to take the time to use the learning tools in each activity

Mathematical Words/Symbols



Array; is a set of object, symbols or numbers organized in rows and columns
Equation; a mathematical statement that shows two expressions are equal
Expression; is made up of numbers and operations. For example, 4x3 and 4+3 are numeric expressions
Product; the result of multiplying, for example, 6 is the product of 2x3
X; multiplication symbol
3x2 has many interpretations including;

- *Three times two*
- *Three, two times*
- *Three groups of two*

	Day 1	Day 2	Day 3	Day 4	Day 5
Mathematics **Strand:** *Gr. 4 Number Sense and Numeration* **Overall Expectation:** *-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;*	**Minds-On Math:** Post a photo from Number Talk Image using arrays and have students respond to the following prompts; How many do you see? How do you see them? **Math Action:** Have students look at Would you Rather Peeps math task and answer; Would you rather have 8 packages of ghost peeps or 3 packages of pumpkin peeps? **Math for Practice:** Students can answer a few of the questions from the Nelson E Text Resource where the focus is multiplication fact families	**Minds-On Math:** Present students with the Same and different image for multiplication and ask students to share their responses **Math Action:** Give students Problem of the week: Chicken and Sheep, Heads and Feet and have them share their responses **Math for Practice:** Gr. 4 Learning task “How many fruits?” from the Guide to Effective Instruction 4-6 Multiplication. Students use arrays to describe how fruits are in the pictures.	**Minds-On Math:** Have students create estimations that are too high, too low and reasonable for the image on Estimation 180 using the template provided **Math Action:** Students must determine the number of chairs to arrange in a 7x24 array in the Gr. 4 Learning Activity: Chairs, Chairs and More Chairs! Prompting questions to consider asking; What strategy are you using to solve this problem? How does your strategy work? **Math for Practice:** Students can play the game, “Block out” from Home Connections Math activities to create the most rectangles on the grid.	**Minds-On Math:** Have students play a game of Multiplication war for 10 minutes **Math Action:** Multiplication Match Up activity from youcubed.com. Students must use the number cards provided to match up 2 equations, the answer and a visual representation of the equation. **Math for Practice:** **Nelson E-Text** Nelson practice questions on fact families and arrays	**Minds-On Math:** Have students participate in Which One Doesn't Belong Number 38. Ask students to choose which one doesn’t belong and justify *why*. **Math Action:** Students will complete the Zios and Zepts problem solving task from the NRich site. They must use multiplication strategies to solve **Math for Practice:** What’s my missing number? From edugains asks students complete the blank equations so they are accurate

Minds On Math Day 1



How many do you see?

How do you see them?

http://ntimages.weebly.com

Math Action Day 1

Which would you rather have?

Option A

8 packages of Ghost Peeps



Option B

3 packages of Pumpkin Peeps



Name _____

Would You Rather?

Option A	or	Option B
	Break it down. ↓	
	Conclusion	
I would rather…		
because		

http://www.wouldyourathermath.com/

Math Practice Day 1

CHAPTER 6

Getting Started

Patterns in a Multiplication Table

You will need

- a multiplication table

×	1	2	3
1	1	2	3
2	2	4	6
3	3	6	9

? What patterns can you find in a multiplication table?

diagonal

column

row

×	1	2	3	4	5	6	7
1	1	2	3	4	5	6	7
2	2	4		8		12	14
3	3	6	9		15	18	
4	4	8	12	16		24	28
5	5	10		20	25		35
6		12	18	24		36	42
7	7	14			35		49

A multiplication table includes many different kinds of patterns. Some of these are

- adding patterns
- subtracting patterns
- digit patterns



Miki's Pattern

I found an adding pattern.

Each number in row 3 is the sum of the 2 numbers above it.

A. Look for patterns and use them to complete the multiplication table.

B. What kinds of patterns did you use? Make a list with examples.

C. Compare your patterns with someone else's. What patterns can you add to your list?

D. Write 5 multiplication facts from the multiplication table.

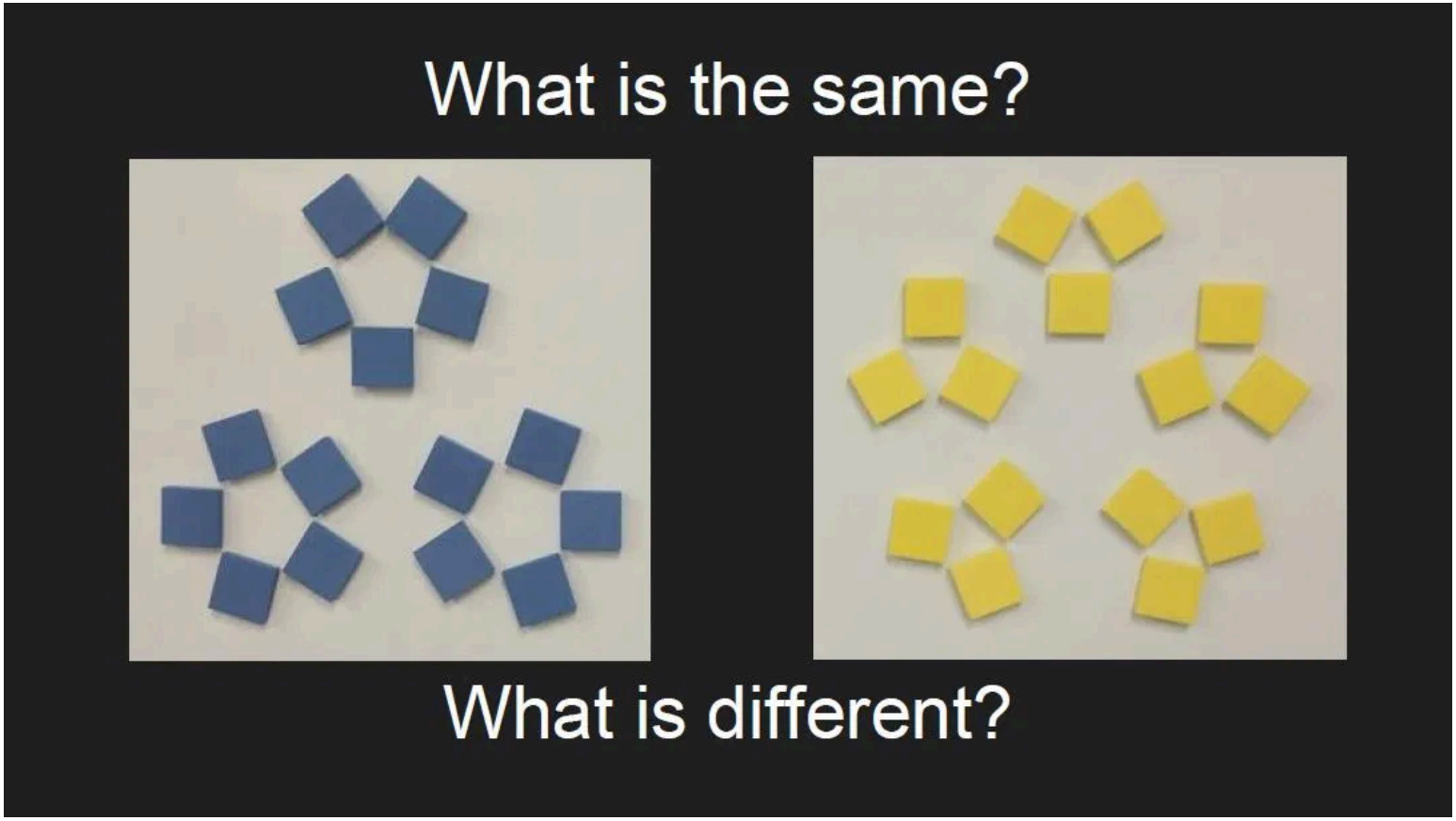
Do You Remember?

1. Count on.
   - a) 2, 4, 6, 8, ■, ■, ■
   - b) 10, 20, 30, 40, ■, ■, ■
   - c) 5, 10, 15, 20, ■, ■, ■
   - d) 20, 18, 16, 14, ■, ■, ■
2. Multiply or divide.
   - a) 5 × 2
   - b) 10 ÷ 5
   - c) 5 × 4
   - d) 20 ÷ 5
   - e) 6 × 5
   - f) 30 ÷ 5
   - g) 5 × 5
   - h) 25 ÷ 5
3. Explain how factors and products are related.

$4 \times 6 = 24$

factor factor product

Minds On Day 2



https://samedifferentimages.wordpress.com/author/stockbox13/

Math Action Day 2

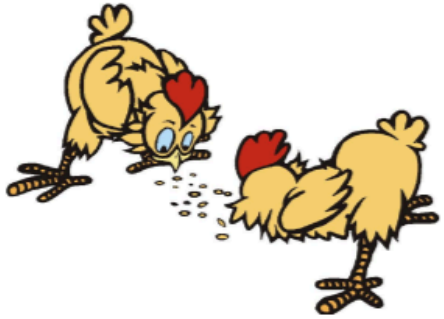
CEMC.UWATERLOO.CA | The CENTRE for EDUCATION in MATHEMATICS and COMPUTING

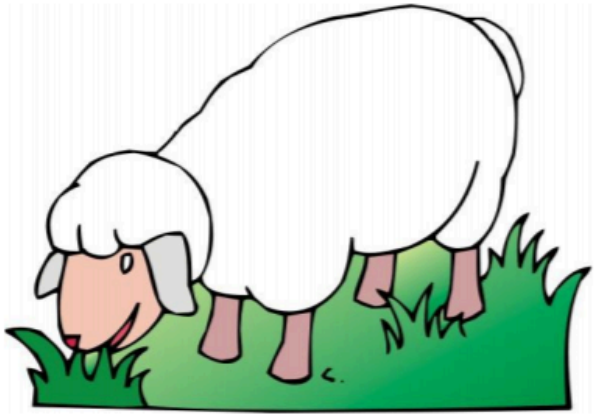
Problem of the Week

Problem A

Chicken and Sheep, Heads and Feet

Samantha has chickens and sheep on her farm. Each chicken has two legs and each sheep has four legs. Each chicken has one head and each sheep has one head. She looked out one day and counted 48 animal heads and 134 legs. How many of each animal live on the farm?



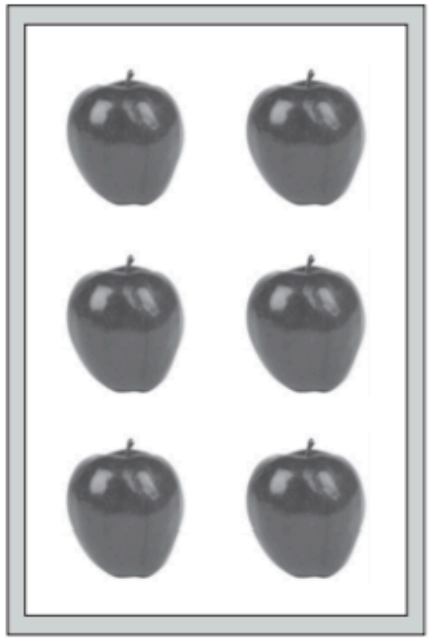


https://cemc.uwaterloo.ca/resources/potw.p

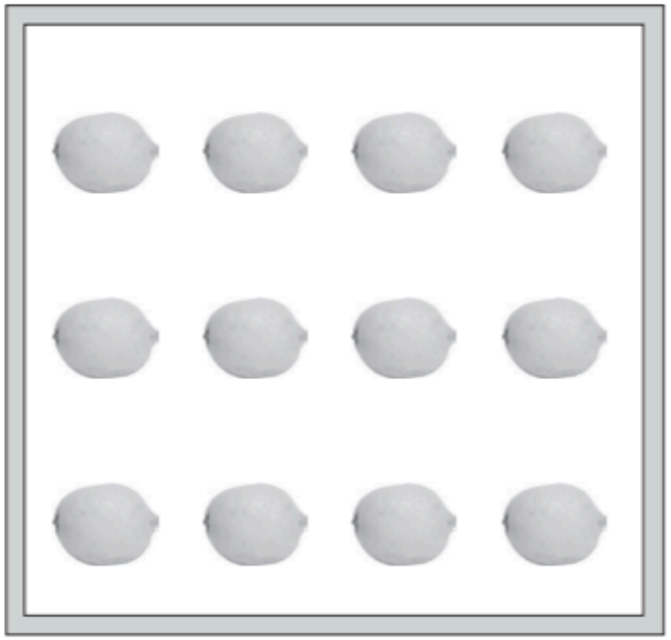
Math Practice Day 2

How many Fruits?

Have students look at the photos of the fruits. Talk about how fruits are organized into arrays in grocery stores. Ask students to describe the different arrays they see in the following pictures.







How many pieces of fruit are there?

How did you count them?

Minds On Day 3



What is an estimate that is too high?

What is an estimate that is too low?

What a reasonable estimate?

Explain your thinking.

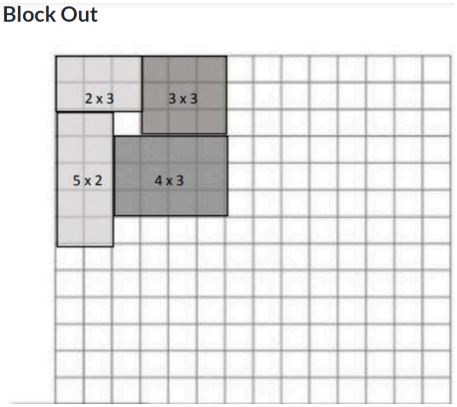
Math Action Day 3

"The custodian at our school needs to set up chairs in the gym for a parents' meeting. He plans to arrange the chairs in 7 rows with 24 chairs in each row. He is wondering, though, whether there will be enough chairs for 150 parents. How many chairs will there be altogether? Will there be enough chairs?"

http://eworkshop.on.ca/edu/resources/guides/NSN_vol_3_Multiplication.pdf

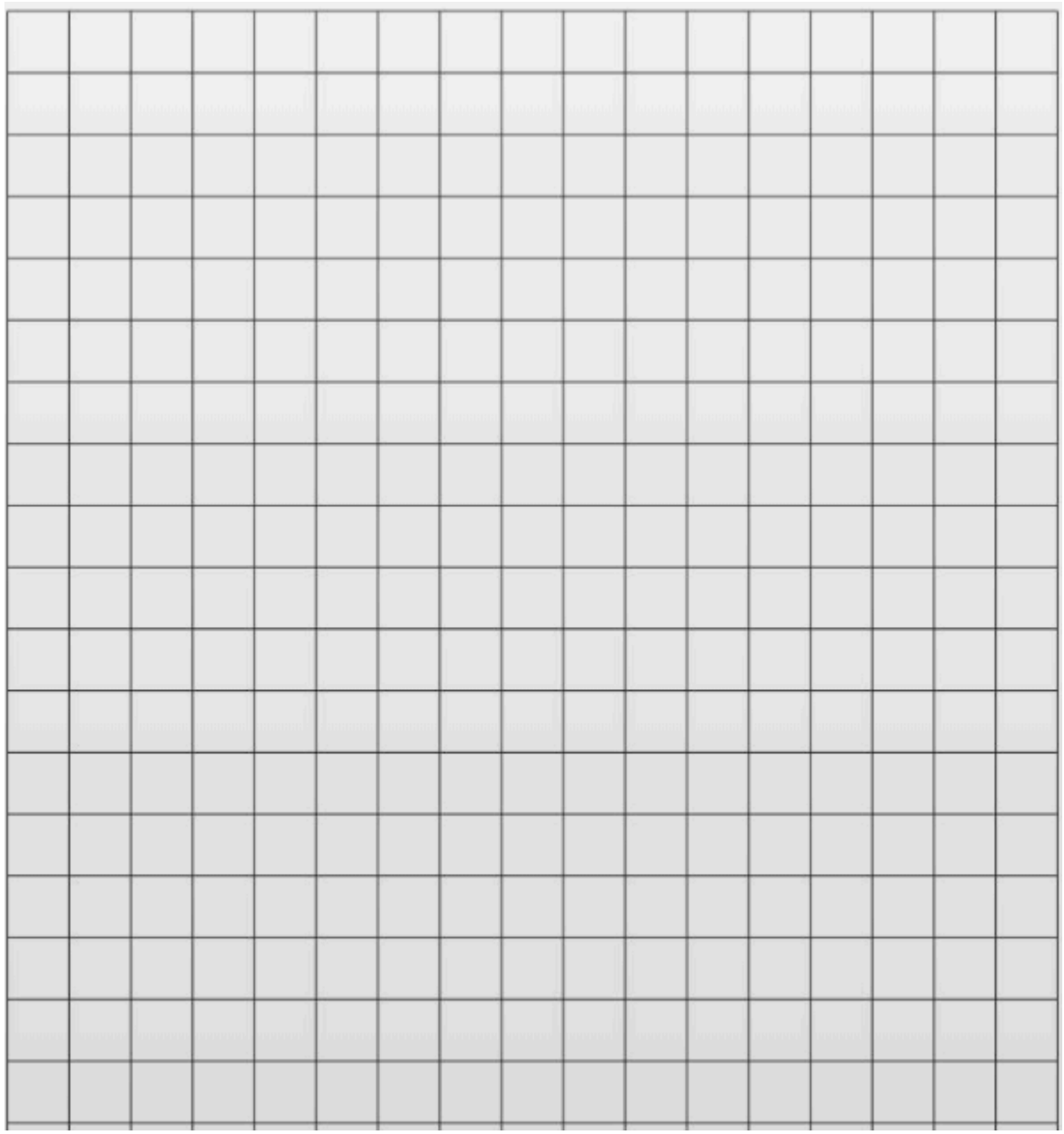
Math Practice Day 3

Block Out



You'll need graph paper and colored pencils for this dice game about figuring areas. Player one rolls 2 dice and draws a rectangle using the numbers rolled as the length and width on graph paper, coloring it in if desired. The second player does the same, with play continuing until there is no room to draw any more rectangles. Decide the winner by figuring the area of the rectangles of each and adding them together.

https://mathies.ca/activitiesTogether.html#HC



Minds on Day 4



Multiplication War Card Game: How to Play

1. Remove the Jacks, Kings and Queens from a regular deck of cards.
2. Shuffle.
3. Players place cards face down in a pile.
4. At the count of three, both players flip over their first card.
5. The first person to say the product of the 2 cards receives both cards and puts them in a separate pile.
6. If both players say the answer at the same time, the cards are put in the middle of the table.
7. The next player to win the "flip" gets the cards in the middle of the table in addition to the cards just played.
8. The winner is the person with the most cards at the end of play.

https://www.multiplication.com/our-blog/jen-wieber/multiplication-war-card-game-

Math Action Day 4

Multiplication Match up

36	
9×4	4×9

1. The aim of the activity is to match cards with the same numerical answer, shown through different representations.
2. Lay all the cards down on a table and ask children to take turns picking them; pick as many as they find with the same answer (shown through any representation).

For example 9 and 4 can be shown with an area model, sets of objects such as dominoes, and the number sentence. When students match the cards they should explain how they know that the different cards are equivalent. This activity encourages an understanding of multiplication as well as rehearsal of math facts.

Math Card Handout included as an additional package

https://www.youcubed.org/tasks/math-cards/

Math Practice Day 4

Write the fact family for each.

a) 7, 3, 21

b) $5 \times 6 = \blacksquare$

c) 

d) $8 \div 4 = \blacksquare$

e) 4, 6, 24

f) 

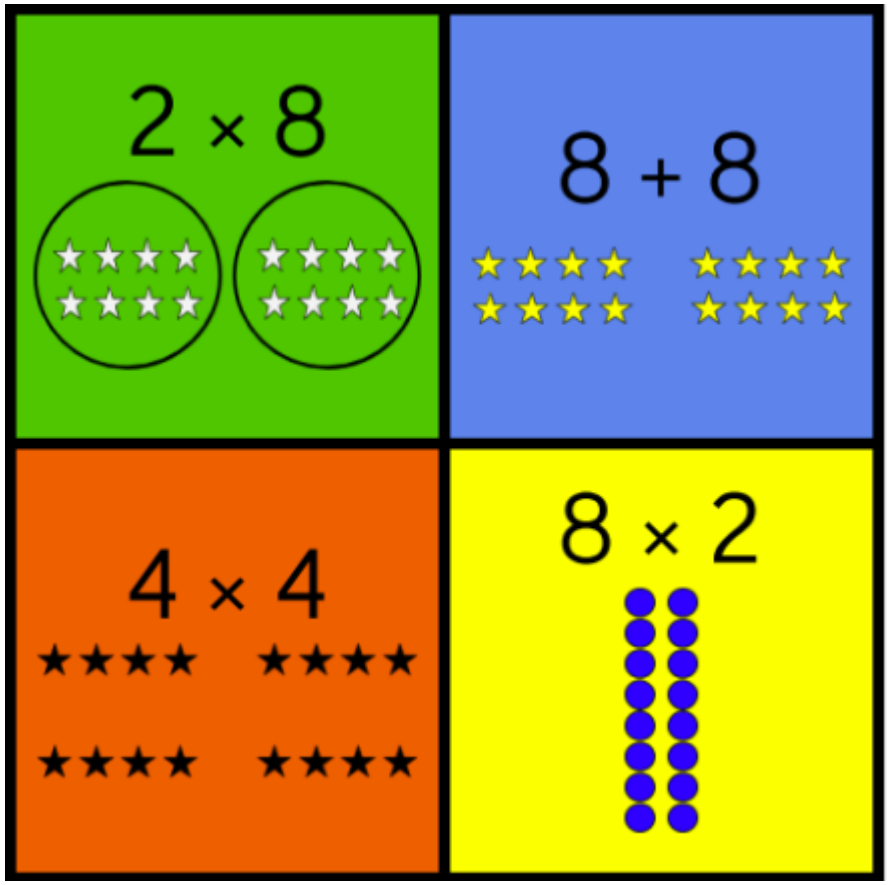
g) $40 \div 5 = \blacksquare$

h) $2 \times 4 = 8$

i) 

Draw the array to show the fact family for 7, 3, 21.

Minds On Math Day 5



Which one doesn't belong?

Justify why that one doesn't belong.

https://wodb.ca/

Math Action Day 5

On the planet Vuv there are two sorts of creatures. The Zios have 3 legs and the Zepts have 7 legs.



The great planetary explorer Nico, who first discovered the planet, saw a crowd of Zios and Zepts. He managed to see that there was more than one of each kind of creature before they saw him. Suddenly they all rolled over onto their backs and put their legs in the air.

He counted 52 legs. How many Zios and how many Zepts were there?
Do you think there are any different answers?

https://nrich.maths.org/1005

Math Practice Day 5

What's My Missing Number?

Have your child fill in the blanks to create number sentences (see example), and explain his or her reasoning.

Example:

12	12

___ x ___ = ___
___ + ___ = ___
___ - ___ = ___

12	12

12 x 1 = 12
12 + 12 = 24
12 - 12 = 0

10	8

___ x ___ = ___
___ + ___ = ___
___ - ___ = ___

8	6

___ x ___ = ___
___ + ___ = ___
___ - ___ = ___

4	5

___ x ___ = ___
___ + ___ = ___
___ - ___ = ___

7	14

___ x ___ = ___
___ + ___ = ___
___ - ___ = ___

3	6

___ x ___ = ___
___ + ___ = ___
___ - ___ = ___

12	2

___ x ___ = ___
___ + ___ = ___
___ - ___ = ___

3	5

___ x ___ = ___
___ + ___ = ___
___ - ___ = ___

9	6

___ x ___ = ___
___ + ___ = ___
___ - ___ = ___

7	9

___ x ___ = ___
___ + ___ = ___
___ - ___ = ___

Let's Talk About It

- Which number sentences did you find easy to make? Why?
- Which number sentences did you find hard to make? Why?
- Create your own number sentences.

https://mathies.ca/activitiesTogether.html#HC