



Makes Maths Fun

Level 2 PATTERNS & ALGEBRA

Bloomsmath is a comprehensive mathematics program which provides a fun way for every student to be learning to the best of their ability.

Patterns & Algebra

Level 2 is designed for students in their second year at school often called Year 1. The Patterns & Algebra strand allows students to create, represents and continue a variety of number patterns and provide missing elements in patterns and build number relationships.

Knowledge: Students complete patterns using a 3 part pattern which must be repeated twice.



Students who demonstrate proficiency in this activity move on to Comprehension.



Students stop here as they require additional teacher support to master this activity.

Comprehension: Students draw, then make, a breakfast cereal bead bracelet on a pipe cleaners using a 5 colour pattern as determined by the colours of the breakfast cereal (Cheerios or Fruit Loops).



Students who demonstrate proficiency in this activity move on to Application.



Students stop here if time has run out or they require additional support with this activity.

Application: Students complete number bond patterns using addition, subtraction, division and multiplication facts.



Students who demonstrate proficiency in this activity move on to Analysis.



Students stop here if time has run out or they require additional support with this activity.

Analysis: Students complete basic algebra problems ie $4 + x = 7$. While they should know the answer they can employ a guess and check method if they choose.



Students who demonstrate proficiency in this activity move on to Synthesis.



Students stop here if time has run out or they require additional support with this activity.

Synthesis: Students are given 2 "Choose a Number" riddles and test each of them with 3 numbers to see if they always work. They then try to create and test their own "Choose a Number" riddle.

Evaluation: Suggested questions provide a starting point for discussions related to Patterns and Algebra.



Students may complete more or fewer activities for each learning outcome depending on the time allocated and their strength in the area being covered.



All students should participate in the Evaluation discussion to encourage the use of mathematical language, logical reasoning and reflection on that which they have completed.

Name: _____

Repeating Patterns

Repeat each three part pattern in the spaces provided.

1       _____

2 1 4 7 1 4 7 _____


3 S M A S M A _____

4 + - X + - X _____

5 3 6 9 3 6 9 _____

6 _____

7       _____

8       _____

9 + x * + x * _____

10 E N D E N D _____

Knowledge
Comprehension
Application
Analysis
Synthesis
Evaluation

Patterns & Algebra - Level 2 - Students will continue patterns and build number relationships.



Let's Try This Again

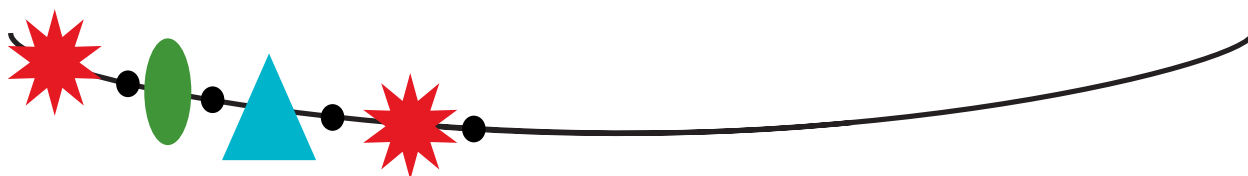


Progress To Comprehension

Name: _____

Edible Patterns

Continue each pattern and then make some of your own. Choose one of your patterns to convert into a real bracelet with a pipe cleaner and breakfast cereal beads.



Knowledge

Comprehension

Application

Analysis

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Patterns & Algebra - Level 2 - Students will continue patterns and build number relationships.



Let's Try This Again



Progress To Application

Name: _____

Patterns and Gears

Complete each number bond pattern below. Addition, subtraction, multiplication and division have all been used.

7 + 3 = 10 3 + 7 = 10
10 - 7 = 3 10 - 3 = 7

4 × 3 = 12 3 × 4 = 12
12 ÷ 4 = 3 12 ÷ 3 = 4

___ × ___ = ___ ___ × ___ = ___
___ ÷ ___ = ___ ___ ÷ ___ = ___

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

$7 + 3 = \underline{\quad}$	$2 \times \underline{\quad} = 8$	$\underline{\quad} + 7 = 13$	$3 \times 3 = \underline{\quad}$	$9 + 5 = \underline{\quad}$	$\underline{\quad} \times 4 = 8$
$3 + \underline{\quad} = 10$	$4 \times 2 = \underline{\quad}$	$7 + \underline{\quad} = 13$	$3 \times \underline{\quad} = 9$	$5 + \underline{\quad} = 14$	$4 \times 2 = \underline{\quad}$
$10 - \underline{\quad} = 7$	$\underline{\quad} \div 4 = 2$	$13 - \underline{\quad} = 7$	$9 \div \underline{\quad} = 3$	$14 - 5 = \underline{\quad}$	$\underline{\quad} \div 2 = 4$
$10 - \underline{\quad} = 3$	$\underline{\quad} \div 2 = 4$	$\underline{\quad} - 7 = 6$	$9 \div 3 = \underline{\quad}$	$\underline{\quad} - 9 = 5$	$8 \div \underline{\quad} = 2$



Let's Try This Again



Progress To Analysis

Name: _____

Basic Algebra

Solve each basic word problem below using algebra.

1. If pencils cost 10c each how much for 5 pencils?

Solution: $10c \times 5 = ?$ $10 \times 5 = 50$ $? = 50$



2. If ice creams cost \$1 each how much for 6 ice creams?



3. If 8 cup cakes cost \$16 how much for 1 cup cake?



4. How much for 3 cup cakes?



5. If cricket bats cost \$7 each how many would you get for \$14?



6. If Mary is twice as old as Tim and she is 10 how old is Tim?

10

7. If a pear and an apple cost 37c and the apple cost 20c how much is the pear?



8. If John ate half his sweets and had 6 left how many did he have to start?



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BLISSMATH



Let's Try This Again



Progress To Synthesis

Name: _____

Choose A Number

Have a go at the 2 "Choose of a Number" riddles below. Test each of them with 3 numbers to see if they always work. Then try to create and test your own "Choose of a Number" riddle.

Choose a number from 1 to 10	<input type="text"/>	<input type="text"/>	<input type="text"/>
Double it	<input type="text"/> x 2 = <input type="text"/>	<input type="text"/> x 2 = <input type="text"/>	<input type="text"/> x 2 = <input type="text"/>
Add 4.	<input type="text"/> + 4 = <input type="text"/>	<input type="text"/> + 4 = <input type="text"/>	<input type="text"/> + 4 = <input type="text"/>
Times it by 5.	<input type="text"/> x 5 = <input type="text"/>	<input type="text"/> x 5 = <input type="text"/>	<input type="text"/> x 5 = <input type="text"/>
Divide by 10.	<input type="text"/> ÷ 10 = <input type="text"/>	<input type="text"/> ÷ 10 = <input type="text"/>	<input type="text"/> ÷ 10 = <input type="text"/>
Subtract original number.	<input type="text"/> - <input type="text"/> = 2	<input type="text"/> - <input type="text"/> = 2	<input type="text"/> - <input type="text"/> = 2

Choose a number from 1 to 10	<input type="text"/>	<input type="text"/>	<input type="text"/>
Times it by 3.	<input type="text"/> x 3 = <input type="text"/>	<input type="text"/> x 3 = <input type="text"/>	<input type="text"/> x 3 = <input type="text"/>
Add 9.	<input type="text"/> + 9 = <input type="text"/>	<input type="text"/> + 9 = <input type="text"/>	<input type="text"/> + 9 = <input type="text"/>
Divide it by 3.	<input type="text"/> ÷ 3 = <input type="text"/>	<input type="text"/> ÷ 3 = <input type="text"/>	<input type="text"/> ÷ 3 = <input type="text"/>
Take away the first number.	<input type="text"/> - <input type="text"/> = <u>3</u>	<input type="text"/> - <input type="text"/> = <u>3</u>	<input type="text"/> - <input type="text"/> = <u>3</u>

Create your own Choose a Number riddle below. (Hint: Any number x 0 = 0)

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Let's Try This Again



Progress To Evaluation

Patterns and Algebra Discussion

The following questions and activities are provide as a starting point for fun discussions related to Patterns and Algebra. During these conversations students will have an opportunity to use appropriate mathematical language in its correct context, to engage in reflection on the Patterns and Algebra activities they have completed and to use logical reasoning to tie their in-class mathematics to its everyday context.



Have students continue a physical pattern which you or other students lead such as clap, snap, snap, clap, snap, snap etc.



Have students make necklaces using beads or buttons and encourage them to use 4 part patterns or repeating bead patterns such as blue, blue, orange, orange, green, green, blue, blue, orange, orange, green, green.



Create paper patterns using strips of paper stapled in a loop through each other as are seen at Christmas time. Students can create both colour and picture patterns if they draw on the pieces of paper.



Have students work as a class to solve harder algebra problems such as if 2 toy cars and 2 trucks cost \$5 and the cars are \$1.50 each how much is each truck?



Share students Choose a Number riddles and see if they can work out why these work and how to assist students who may be struggling.

