



Makes Maths Fun

# Level 6

## 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.

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## Patterns & Algebra

Level 6 is designed for students in their sixth year at school often called Year 5. Students will record, analyse and describe geometric and number patterns that involve one operation using tables and words.

**Knowledge:** Students will solve 2 simple logic puzzles given pieces of information.



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 will find numbers to solve the given riddle.



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 will solve a number of word based problems using guess and check.



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 will find ways to use algebra to solve word problems.



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 will write additional product and sum word problems for other students to solve.

**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: \_\_\_\_\_

# Knowledge

See if you can solve these 2 logic puzzles.

There are 4 students on the bus - Cameron, Sandeep, Moham and Susan. Each has a different sport on after school. Can you work out where each student is going?

	Soccer	Dance	Tennis	Hockey
Cameron				
Sandeep				
Moham				
Susan				

- Sandeep's sport starts with the same letter as his name.
- Susan's sport does not involve a ball.
- Moham plays hockey.

There are 4 siblings - Peter, Rupert, Mary and Sarah. All 4 children attend the same school but are different ages and have different teachers. See if you can work out how old each child is and who their teacher is.

	Peter	Rupert	Mary	Sarah	Kindy	Year 3	Year 5	Year 6
Mrs Smith								
Mr Tonks								
Mrs Claire								
Mr Toms								
Kindy								
Year 3								
Year 5								
Year 6								

- The children have a teacher the same sex as themselves so both girls have female teachers and both boys have male teachers.
- Mary, the eldest child, is in the grade higher than the one taught by Mrs Smith.
- Mr Tonks teaches Kindergarten
- Peter is the youngest of the 4 children.



Let's Try This Again



Progress To Comprehension



Name: \_\_\_\_\_

# Application

See if you can use guess and check to solve each of the problems below.

1. Pat, Tiffany and Joan are friends.  
Pat is taller than Joan.  
Joan is taller than Tiffany.  
Who is the shortest? \_\_\_\_\_
  
2. Cal has more money than Fred.  
Fred has less money than Don.  
Don has more money than Carl.  
Who has the least amount of money? \_\_\_\_\_
  
3. Harry is 2 years older than Jan.  
Mary is 1 year younger than Butch  
Luis is 4 years older than Harry.  
Mary is 5 years older than Jan.  
How much older is Luis than Jan? \_\_\_\_\_
  
4. Three boys were comparing their house numbers. Each house number contains three digits. By coincidence, the sum of the digits of each house is the same.
  - a. None of the numbers begins with a 4.
  - b. Bill's number is 252.
  - c. Ben's number begins with a 6.
  - d. Bart's number ends with a 1.What is Bart's house number? \_\_\_\_\_



Let's Try This Again



Progress To Analysis

Name: \_\_\_\_\_

# Analysis

See if you can solve the same problems as in the **Application** but this time use basic algebra for example:

Mary, Martha and May are all sisters.

Their ages are directly related to the number of letters in their name.

If May is the youngest who is the oldest?

Mary = 4L, Martha = 5L and May = 3L. If 3L is smallest then 5L is largest so Martha is the oldest.

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What is Bart's house number? \_\_\_\_\_



Let's Try This Again



Progress To Synthesis

Name: \_\_\_\_\_

# Synthesis

See if you can write 4 word problems with at least 3 pieces of information for other students to solve.

1.

2.

3.

4.

Patterns & Algebra - Level 6 - Students will record, analyse and describe patterns using tables and words.

Knowledge

Comprehension

Application

Analysis

Synthesis

Evaluation



Let's Try This Again



Progress To Evaluation

# Evaluation

The following questions and activities are provide as a starting point for fun discussions related to Patterns & 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 & Algebra activities they have completed and to use logical reasoning to tie their in-class mathematics to its everyday context.



Comparing both word and algebra based solutions - which makes solving puzzles easiest?



Solve a logic grid problem as a class.



Ask students to guess the number you are thinking of by giving them clues ie. Between 1 and 100, an even number, a 5 in the 10s column and divisable by 4.



Have students choose a number and give clues for other students to find the number.

## Knowledge Logic Problem Answers:



Cameron plays tennis, Sandeep plays soccer, Moham plays hockey and Susan attends dance.



Peter is in Kindy with Mr Tonks, Rupert is in Year 3 with Mr Toms, Sarah is in Year 5 with Mrs Smith and Mary is in Year 6 with Mrs Claire.

