# BLOOMSM4TH

## Makes Maths Fun

# Level 1

# 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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# BLOOMSM4TH

## Makes Maths Fun

Whole Number
Addition
Subtraction
Multiplication & Division
Fractions & Decimals
Probability
Data
Length
Area
Volume
Mass
Time
3D Shape
2D shape
Position

# BLOOMSM4TH
## Makes Maths Fun
# Level 1

# Patterns & Algebra

Level 1 is designed for teachers of students in their first year at school.  The Patterns & Algebra strand allows students to continue, describe and create repeating patterns.

**Knowledge:** Students continue the repeating pictorial patterns with 2 elements in each pattern.

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

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

**Comprehension:** Students complete repeating patterns with 2 elements in each set but this time both pictorial and numerical patterns are provided and the missing elements are not always at the end of the pattern.

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

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

**Application:** Students use the 6 basic shapes provided to make their own repeating pictorial patterns and may select either 2 or 3 elements to repeat in each pattern.

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

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

**Analysis:** Students are given a large number of repeating numerical patterns and must identify and insert the missing numbers throughout each patterns.

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

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

**Synthesis:** Students are given templates which they can cut out and use with paint to make stamps so that they can make artistic repeating patterns with minimal cleaning up required.

**Evaluation:** Suggested questions and activities provide a starting point for discussions related to Patterns & Algebra such as looking at where patterns can be found in the natural world.

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.
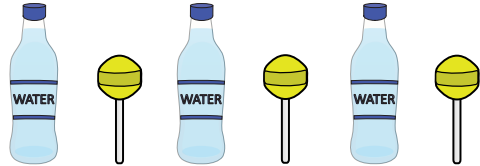
Name: _____

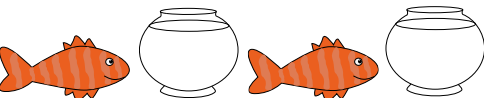# Making Repeating Patterns

Continue each pattern below.

1.  _____ _____ _____

2.  _____ _____ _____

3.  _____ _____ _____

4.  _____ _____ _____

5.  _____ _____ _____

6.  _____ _____ _____

7.  _____ _____ _____

Patterns & Algebra - Level 1 - Students will continue, describe and create repeating patterns.

Knowledge
Comprehension
Application
Analysis
Synthesis
Evaluation

Let's Try This Again

Progress To Comprehension

PA 1 KN

Name: _____

# More Pretty Patterns

Complete these patterns using pictures and numbers.

1.  _____ _____ _____

2. 8 1 8 1 8 1 _____ _____ _____

3. 

4. 20 10 20 10 _____ 10 20 _____

5. 

6. 42 50 42 50 _____ 50 42 _____

7. ____  ____ _____

Patterns & Algebra - Level 1 - Students will continue, describe and create repeating patterns.

Knowledge
Comprehension
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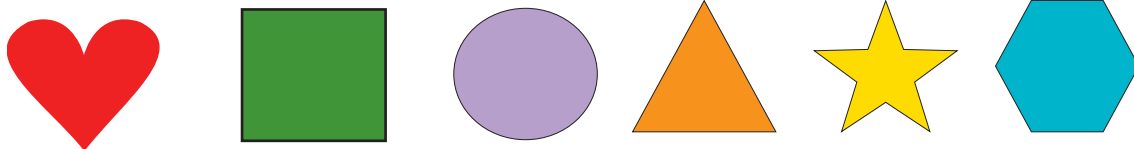BLOOMSM4TH

Let's Try This Again        Progress To Application

PA 1 CP

Name: _____

# Make Your Own Patterns

Use the pictures below to make repeating patterns of your own.  You can use 2 or 3 pictures in each pattern.

1. _____ _____ _____ _____ _____ _____

2. _____ _____ _____ _____ _____ _____

3. _____ _____ _____ _____ _____ _____

4. _____ _____ _____ _____ _____ _____

5. _____ _____ _____ _____ _____ _____

6. _____ _____ _____ _____ _____ _____

7. _____ _____ _____ _____ _____ _____

8. _____ _____ _____ _____ _____ _____

9. _____ _____ _____ _____ _____ _____

Let's Try This Again          Progress To Analysis

PA 1 AP

Knowledge | Comprehension | Application | Analysis | Synthesis | Evaluation

Patterns & Algebra - Level 1 - Students will continue, describe and create repeating patterns.

BLOOMSMATH

Name: _____

# Missing Number Patterns

Fill in the missing numbers in each pattern below.

1.  1   2   3   __   5   6   7   8   __   10   11   __

2.  2   4   6   __   10   12   14   __   18   __   22   __

3.  21   20   19   __   17   __   15   __   13   12   __   10

4.  5   10   __   20   25   __   __   40   45   __   55   60

5.  3   5   7   __   11   __   15   __   19   21   __   __

6.  10   20   __   40   50   __   70   80   __   100   110   __

7.  55   50   __   40   35   30   __   20   15   __   5   0

8.  12   15   18   __   24   27   __   33   __   39   __   45

9.  16   18   __   22   24   __   28   30   __   34   __   __

10.  74   72   __   68   66   64   __   __   58   __   54   50

11.  150   140   __   120   __   100   90   __   __   __   50   __

12.  16   26   __   46   56   __   __   86   __   106   __   126

13.  22   25   28   31   __   37   __   43   __   49   __   55

Let's Try This Again        Progress To Synthesis

Patterns & Algebra - Level 1 - Students will continue, describe and create repeating patterns.

Knowledge
Comprehension
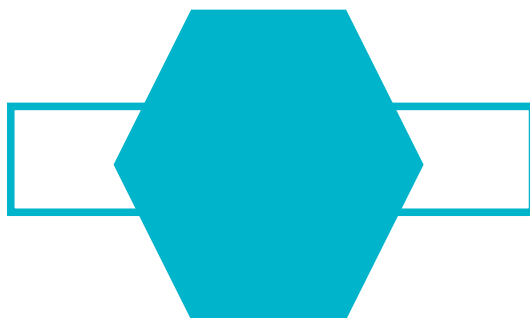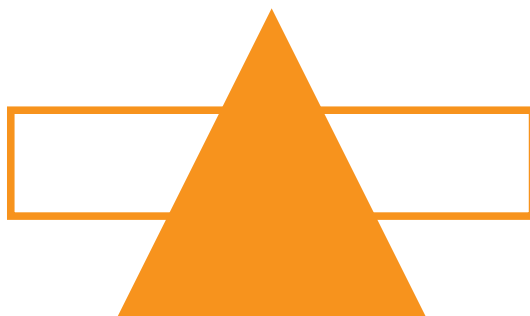Application
Analysis
Synthesis
Evaluation

BLOOMSMATH

Name: _____

# Pattern Art

Copy the stamps onto cardboard and use them to make repeating patterns.
Fold the tabs up to use as handles so you don't get paint on your hands.
When you are finished you can throw the stamps away.

Let's Try This Again          Progress To Evaluation

Patterns & Algebra – Level 1 – Students will continue, describe and create repeating patterns.

Knowledge

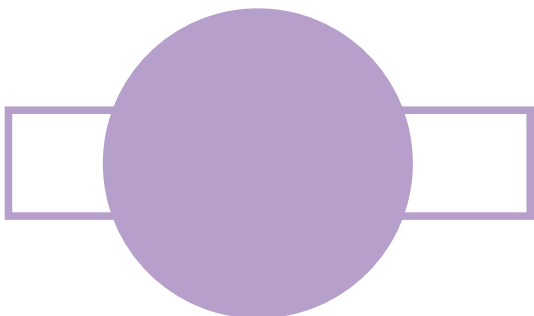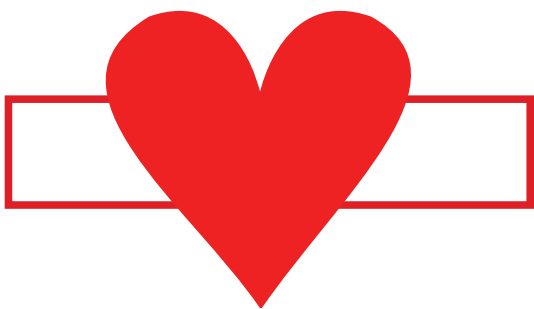Comprehension

Application

Analysis

Synthesis

Evaluation

BLOOMSMATH

# Patterns and Algebra 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.

Where do we find patterns in nature? ie. a corn cob, a sun flower, flower petals etc.

Ask students to solve basic algebra problems and find the missing number ie. If $4 + X = 7$ - What is $X$?

Give students examples of when patterns are needed ie. decorating or art works.

Have students find the mistake in a number of patterns and correct it ie. 1, 3, 5, 6, 9 or 2, 4, 6, 9, 12.

Let students attempt to solve some riddles using a guess and check technique. These could include questions such as - If Farmer Brown has 4 animals and these animals have 12 legs between them. How many are horses and how many are ducks?

Patterns & Algebra - Level 1 - Students will continue, describe and create repeating patterns.

Knowledge

Comprehension

Application

Analysis

Synthesis

Evaluation

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