

Elementary Mathematics Methods

Video Guide Sheet

Patterns

Focus

- AAAA...Patterns

Concepts To Think About

- Patterns can be found in many places in our environment (e.g., nature, music).

Tool

- pattern blocks

Process

- This is the simplest pattern.
- Only one element is repeated.
- In numerical form, it might be: 444444....

Try Another Example

- Use pattern blocks to create an AAAA pattern.

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Patterns

Focus

- ABAB...Patterns

Concepts To Think About

- Patterns can extend indefinitely.

Tools

- pattern blocks

Process

- This is the next simplest pattern.
- Only two elements are alternated.
- In numerical form, it might be: 79797979...

Try Another Example

- Use pattern blocks to create an ABAB pattern.

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Patterns

Focus

- AABBAABB...Patterns

Concepts To Think About

- Patterns can be simple or complicated.

Tools

- pattern blocks

Process

- This pattern uses only two distinct elements.
- Each element is double and alternated in the repetition.
- In numerical form, it might be: 119911991199...

Try Another Example

- Use pattern blocks to create an AABBAABB pattern.

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Patterns

Focus

- Square Numbers

Concepts To Think About

- Numerical patterns are an important component of number theory, the study of numbers and related properties.

Tools

- square tiles

Process

- Square numbers are 0, 1, 4, 9, 16, ...
- This pattern can be represented by using square tiles.

Try Another Example

- Use square tiles to create a square number pattern beginning at the number 16.

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Patterns

Focus

- Triangular Numbers

Concepts To Think About

- Numerical patterns such as the one determined by triangular numbers can be represented pictorially.

Tools

- pattern blocks

Process

- Triangular numbers 0, 1, 3, 6, 10, ...
- This pattern can be represented by using pattern blocks.

Try Another Example

- Use pattern blocks to create a triangular number pattern beginning at the number 10.

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Patterns

Focus

- Fibonacci Numbers

Concepts To Think About

- Numbers arranged in some kind of pattern is called a sequence.

Tools

- unifix cubes

Process

- Fibonacci numbers are 1, 1, 2, 3, 5, 8, 13, ...
- A key to unlocking the pattern of Fibonacci number is to consider the sum of the first two numbers.

Try Another Example

- Use unifix cubes to create a Fibonacci number pattern beginning at the number 13.

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Patterns

Focus

- Pascal's Triangle

Concepts To Think About

- Blaise Pascal was a French mathematician of the 17th century.

Tools

- number tiles

Process

- Note the placement of the number tiles.
- This represents Pascal's Triangle. It has many patterns contained within.

Try Another Example

- Use number tiles to create a Pascal's triangle pattern begin at the number and follow the pattern down 7 rows.