







#### Topic: Patterns and algebra

#### Continuing patterns

##### Lesson concepts

-  **Patterns** — Pattern/non-pattern
-  **Patterns** — Describing patterns
-  **Patterns** — Repeating
-  **Patterns** — Spatial (nonlinear)

Today students will:

- ▶ continue and describe simple patterns.

#### Resources

##### Digital

Slideshow — Patterns

##### Find and prepare

Objects or toys for creating patterns

Sheet — Toy pictures (cut out)

Bag to hold pictures

Sheet — Pattern cards (cut out)

Question mark cards (pieces of paper/card with a question mark on them)

Digital camera (optional)

#### Key terms

For definitions and explanations of terms, please see the [Glossary](#).

## Lesson

### Introduce the lesson

#### Note

The following language is important to highlight and develop throughout this lesson.

pattern, same, describe, copy, non-pattern, repeating, rule,  
continue, colour, shape, size, direction

Explain to students that they are going to copy and continue repeating patterns.

### Classify as pattern or non-pattern

#### Object patterning

Display objects or toys in a pattern sequence.

#### Focus questions

Q: *Is this a repeating pattern? How do you know?*

A: For example: Yes, I can see a repeated part.

Q: *What is the repeated part?*

A: Bus, man.

Q: *What might come next in the sequence?*

A: Bus.

Place a sequence that is not a pattern below the first sequence.

Question students again.



This is not a repeating pattern because I cannot see a repeated part.

Have students make patterns with the objects.

Ask the students to identify:

- if they have made a repeating pattern
- what the repeated pattern is
- what would come next in the sequence.

## Continue and describe visual patterns

Provide students with a bag of patterning pictures or shapes such as the images from the **Sheet** — [Toy pictures](#).

Ask students to make a pattern with the images.

### Focus questions

Q: *Does your pattern look the same as this one? How can you tell?*

A: For example: Yes, I can see a repeated part.

Q: *What would come next? How do you know that?*

A: For example: bear, ball

Q: *How would you describe the pattern?*

A: Personal response required.

Display images from the **Sheet** — [Pattern cards](#).

Explain that these are examples of a pattern with two parts repeating.



Ask students to:

- identify the pattern and the two parts
- make their own pattern like the one on the card using the patterning cards (from the **Sheet** — **Toy pictures**).

Display a pattern card with larger units repeating, for example:



### Say to students

‘ Some patterns have more than one of each part. ’

### Focus questions

Q: *How can you make a pattern like this with your pictures?*

Q: *How would you describe the pattern?*

Q: *How could you make another pattern with more than one of each part?*

## Pattern — Not a pattern

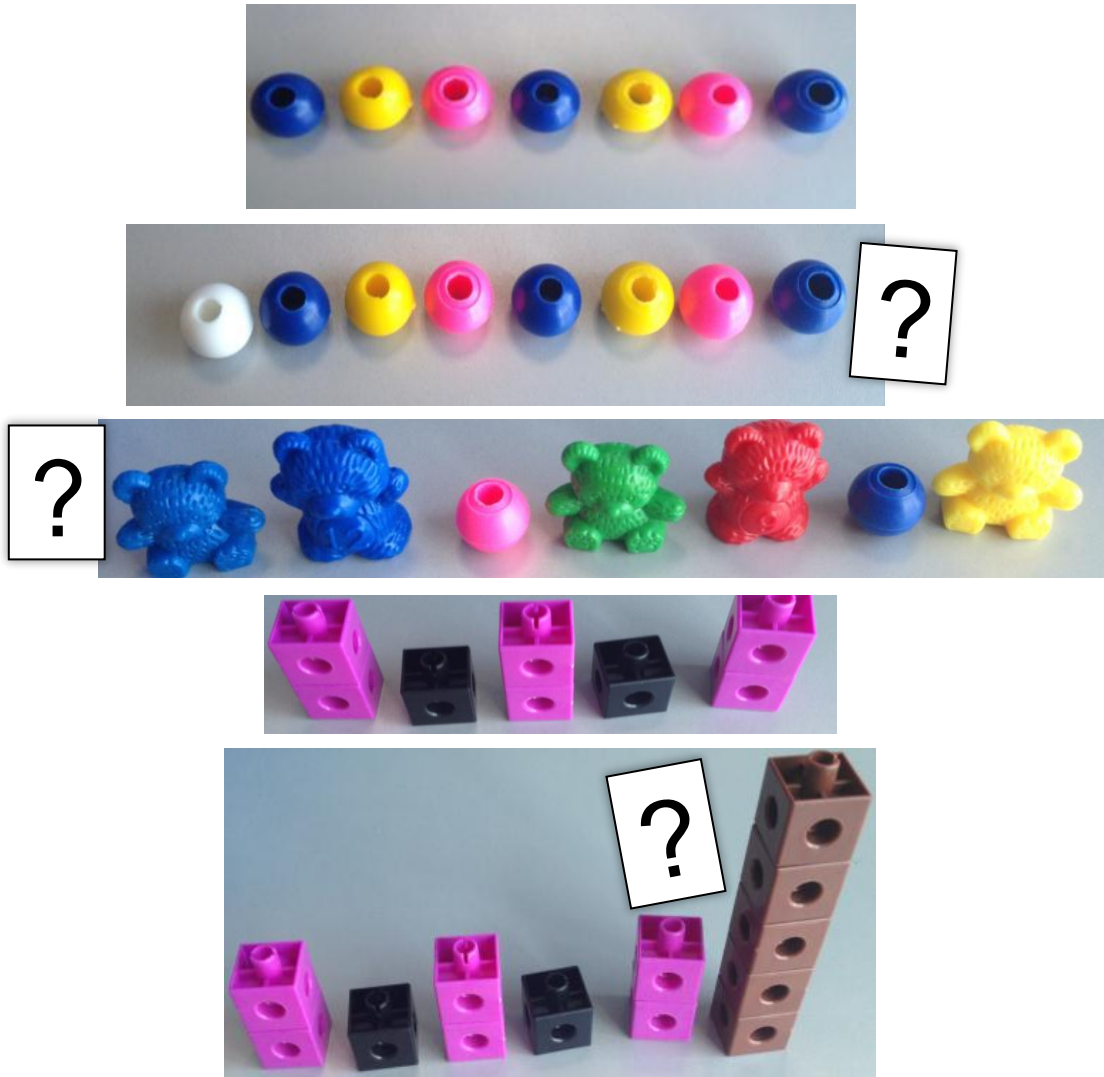
Ask students to select from a variety of materials for creating patterns.

Ask students to:

- make their own repeating patterns with the chosen materials
- describe their pattern.

When the patterns are completed, give students a question mark card and ask them to:

- place the question card next to a pattern if they think it is not a repeating pattern, for example:



Discuss the patterns where there are question cards and suggest corrections or alternatives if they are needed.

### Focus questions

Q: *Why did you think it is not a repeating pattern?*

Q: *How could you check?*

Q: *How could you change it to make it a repeating pattern?*

## Identify repeated elements of spatial patterns

### Say to students

Repeating patterns can include those that don't just run in a line. Here are some examples.

View and discuss images such as:



Have students:

- identify examples in their own environment
- photograph them (optional)
- display them
- mark the patterns they can see.

### Focus questions

Q: *How do you know that this is a repeating pattern?*

A: For example: I can see a repeated part.

Q: *What part is repeated?*

A: For example: the brick shape.

Q: *Why do you think a repeated pattern is useful here?*

A: For example: to make the house stable, to stop the tyres from skidding, to look good.