

# Over and Over Again—Patterns That Repeat

## What is the algebra?

Describing, extending, and analyzing patterns

## What do you need?

- ▶ “Over and Over Again—Patterns That Repeat” activity sheets (pp. 8–9) for each child
- ▶ “Design Your Own Patterns That Repeat” activity sheet (p. 10) for each pair of students.
- ▶ Pattern blocks (available in the Appendix)
- ▶ Crayons

## Some classroom procedures

Introduce patterns to students. Patterns that repeat usually begin as sound patterns, such as clap, clap, snap, snap, clap, clap, snap, snap. Students then work with visual patterns, such as:



They can also be patterns formed using repeating geometry shapes such as the ones in this lesson. The sound pattern above is an A A B B pattern—clap, clap is represented by the letter A and snap, snap by the letter B. The visual or color pattern is an A A B pattern: Two white squares (A) and one dark square (B) make up the pattern. It is important that students understand how the letters used help define the pattern. To help students become comfortable with this model, have them design a sound pattern that is an A A B B B pattern. Ask, “How do you know that it can be defined in this way?” Once students are comfortable with patterns, hand out the “Over and Over Again—

Patterns That Repeat” activity sheet and the pattern blocks. Then:

1. Have students use their pattern blocks to form patterns and define them using the AB model.
2. Design an original pattern block pattern that has the same model as the one shown above.

Give students a chance to describe and name their patterns based on the symbols used. Not all students will understand that a collection of symbols can only be described as a pattern if we can predict what will come next. Discussing student examples will help clarify, using this hands-on activity, the meaning of a repeating pattern.

## How to extend the lesson

After students have completed the pattern worksheet, they can make their own unique repeating patterns working with a partner and using templates of pattern blocks or other geometric shapes. These can be shared with the rest of the class who will then be asked to “name” the patterns using letters from the alphabet.

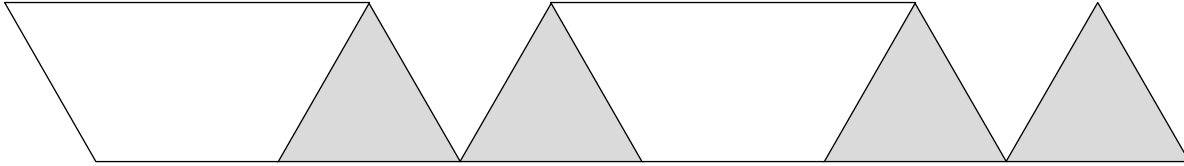
## Activity answers

1. ABB, ABB
2. AB, AB, AB

# Over and Over Again— Patterns That Repeat



**Directions:** Use your pattern blocks to make this pattern.



1. This is called an               ,                pattern. Explain why you named this pattern the way you did.

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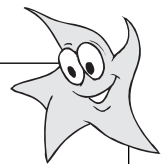
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Use your pattern blocks to design a pattern that is also an ABB pattern.

Draw it in this space.

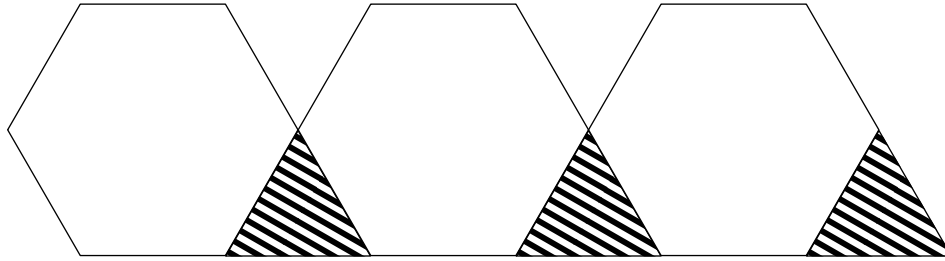


# Over and Over Again—Patterns That Repeat

(continued)



**Directions:** Use your pattern blocks to make this pattern.



2. This is called an          ,          ,          , pattern. Explain why you named this pattern the way you did.

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Use your pattern blocks to design a pattern that has the same name as the one above. Draw it in this space.

.....

# Design Your Own Patterns That Repeat



**Directions:** Use your pattern blocks to design your own original pattern. It can use two or three different pattern blocks . . . but remember that if it is a **pattern**, your partner must be able to predict what will come next.

My pattern is named an \_\_\_\_\_  
because:


\_\_\_\_\_

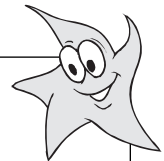
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\_\_\_\_\_

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\_\_\_\_\_

This is a picture of my pattern: 



Large empty rectangular box for drawing the pattern.