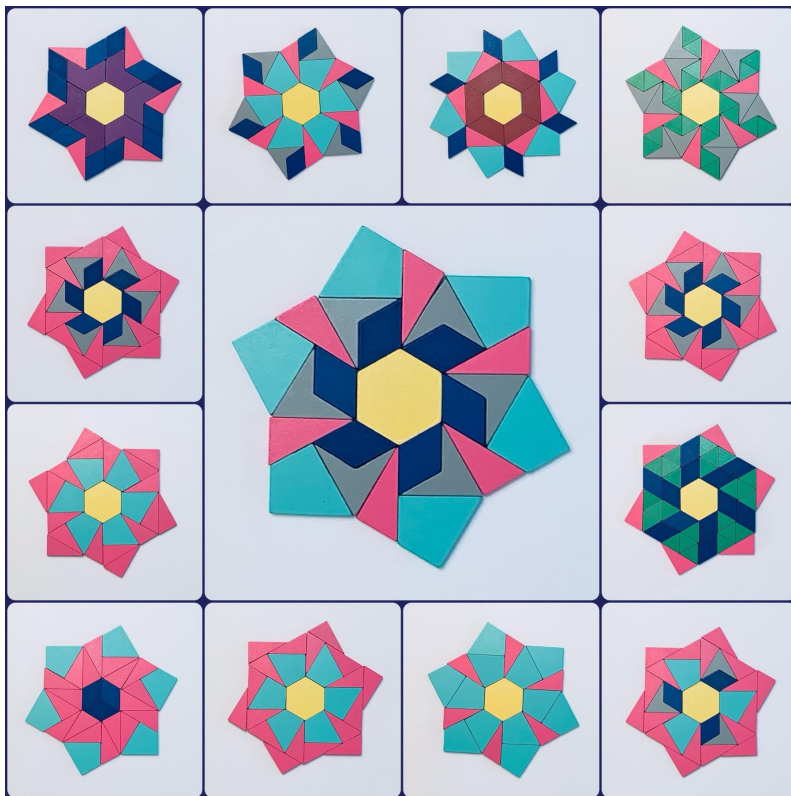


# 21st Century Pattern Blocks



Pattern Blocks for the Next Generation

# Blocks in the Box



Regular Hexagon



Equilateral Triangle



Kite



Concave Hexagon



Concave Quadrilateral  
a.k.a. "Dart"



Rhombus



Trapezoid



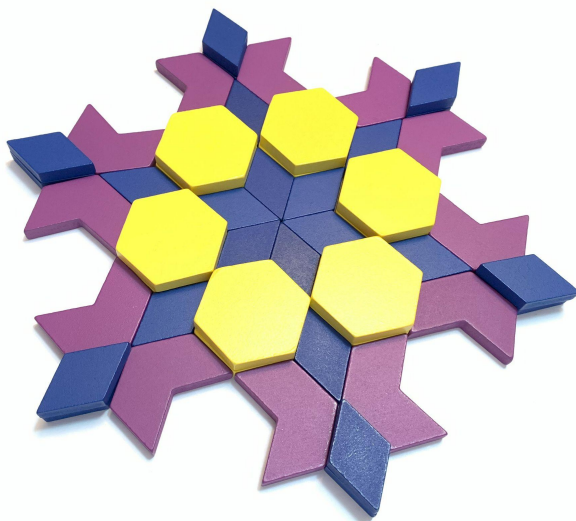
Right Triangle

# Playing with 21st Century Pattern Blocks

The 21st Century Pattern Blocks are designed with play in mind.

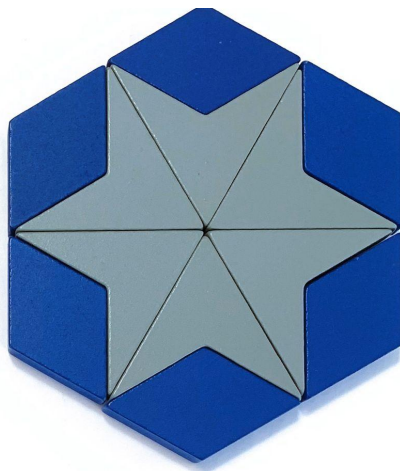
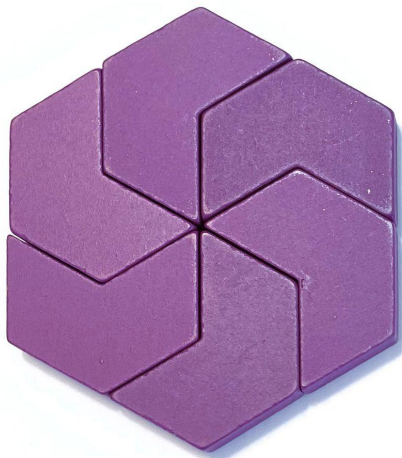
Watch what children do! They may arrange the blocks in stacks, create elaborate structures, or build scenes. Some children may pretend the blocks are everyday objects, while others create abstract designs.

All these ways of playing lead to ideas and questions worth exploring. This booklet will help you get started.



# Hexagon Challenge!

Below are two hexagons that are the same size.



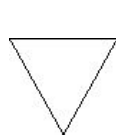
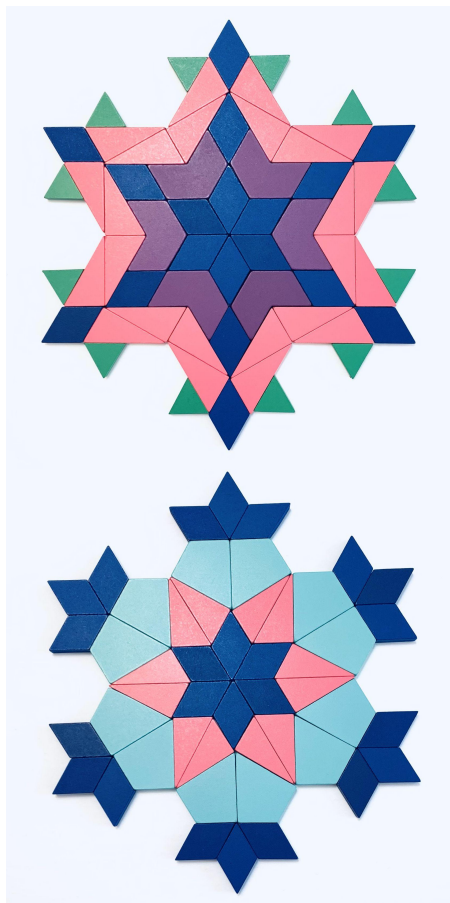
## Your Turn to Play

- How many ways can you build the same size hexagon?

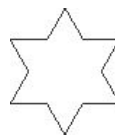
Outlines of the shapes are provided in the inserts.



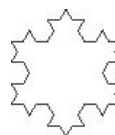
# Snowflake Challenge!



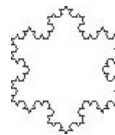
Stage 0



Stage 1



Stage 2



Stage 3

The Koch Fractal is a shape worth exploring.

The sides of an Equilateral Triangle (Stage 0) are divided into thirds and then smaller equilateral triangles are added outward to make a Star (Stage 1), then a Snowflake (Stage 2), and so on.

It's mind-boggling to imagine the stages continuing to infinity!

## Your Turn to Play

- Build the Triangle, the Star, and the Snowflake!

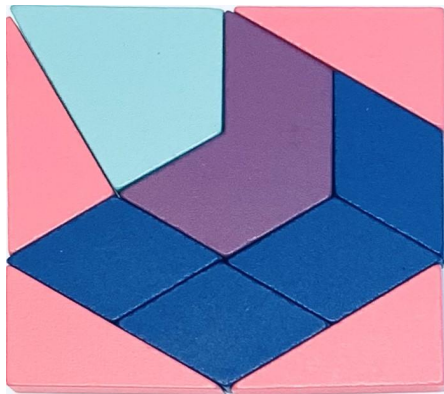
Outlines of the shapes are provided in the inserts.

# Rectangles

You can build this rectangle with 6 pink triangles.



You can build this rectangle with 4 pink triangles.

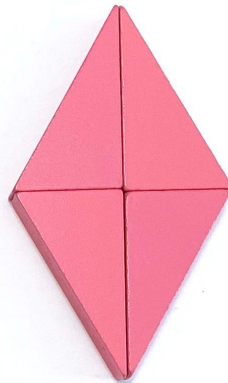


## Your Turn to Play

- Try building other rectangles.
- Can you build rectangles with no pink triangles?

## Larger Versions of the Blocks

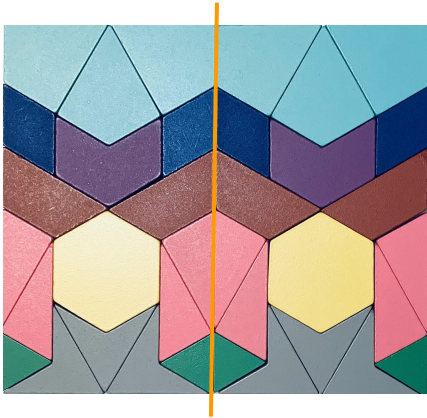
The rhombus can make a larger version of itself.  
You can make the same shape with four right triangles.



### Your Turn to Play

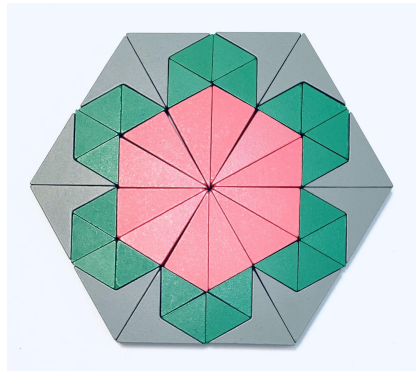
- Can you make larger versions of all the blocks?

# Symmetry



## Reflection Symmetry

A rectangle looks the same on both sides of the line of symmetry.



## Rotational Symmetry

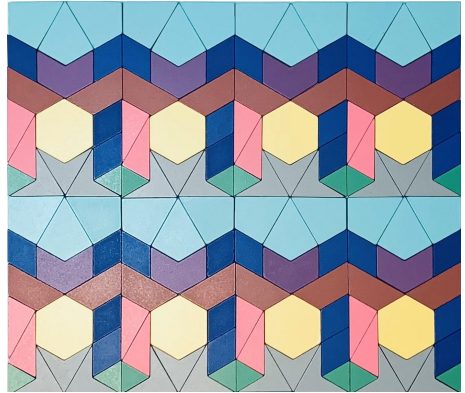
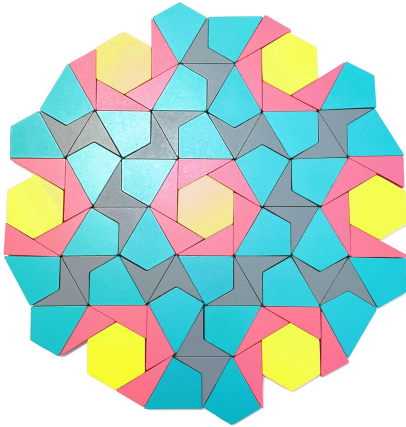
The hexagon looks the same if you rotate it around the center point.

## Your Turn to Play

- Build a shape with symmetry.

# Tessellations

Tessellations, or tilings, are repeating patterns that stretch as far as you want them to with no gaps or holes.

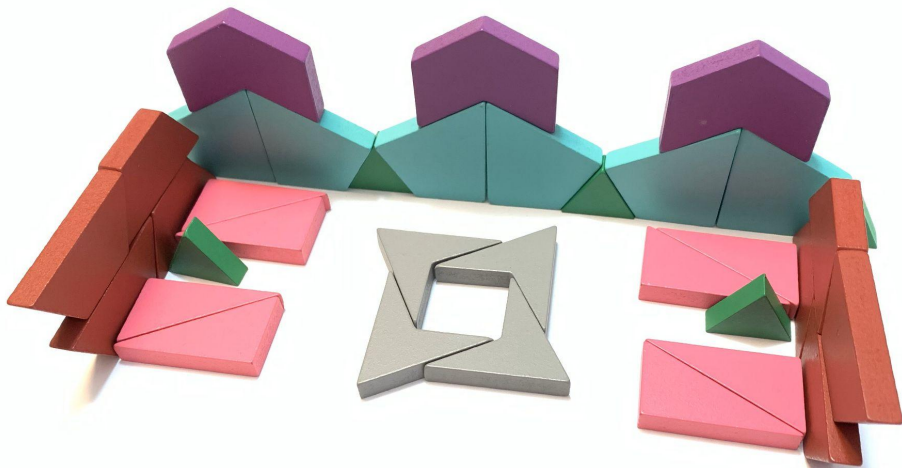


## Your Turn to Play

- Make your own tessellation!
- What different repeating patterns can you create?

# Building in Three Dimensions!

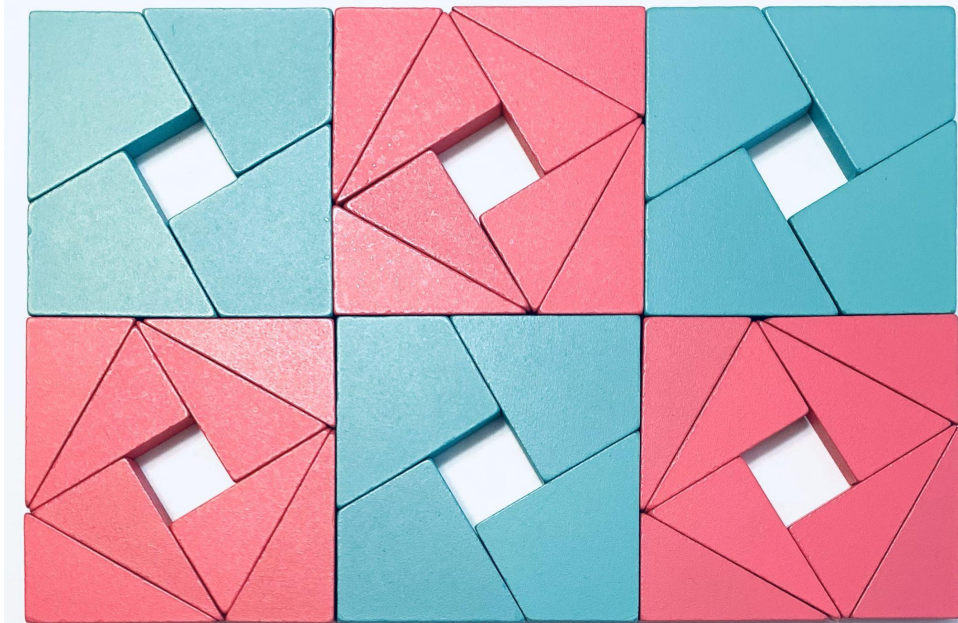
You can play by arranging the blocks in stacks, building upwards, or assembling them in various structures.



## Your Turn to Play

- Create a design that stacks up!

# Negative Space



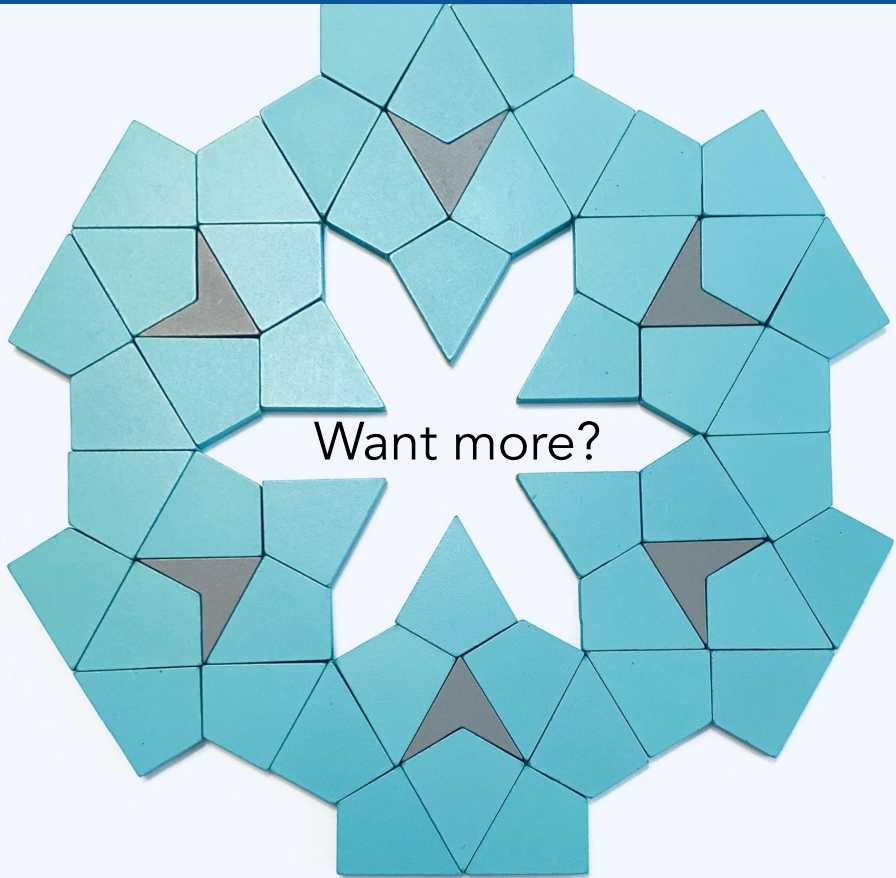
It's not just where the blocks are, it's where they are not. These gaps are called *negative space*.

## Your Turn to Play

- Create a design using negative space!



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