HYPERTILES® CHALLENGE

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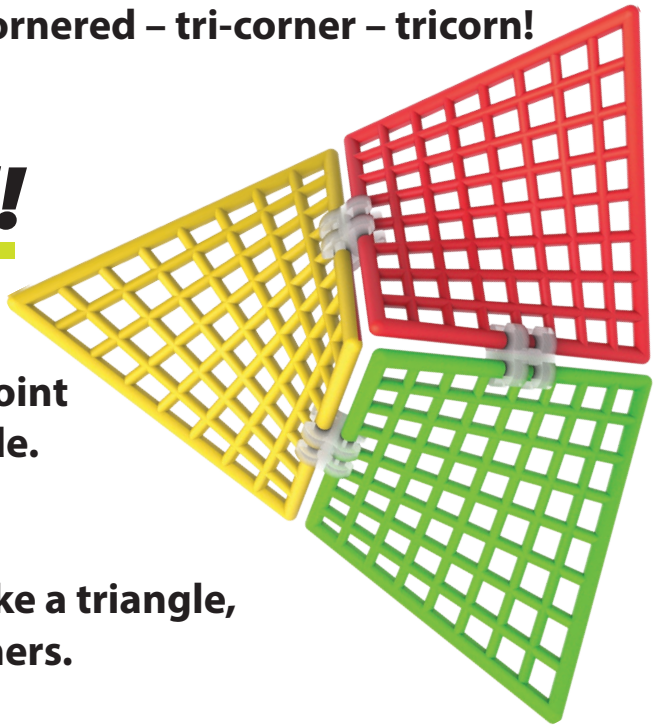
WHAT IS THE SHAPE?



Tricorn – 3-Corner Hat

This TRIANGULAR hat worn during the 1700's showed authority and leadership. Think: 3-cornered – tri-corner – tricorn!

MAKE THE SHAPE!



Are you ready?

Connect 3 different color tiles to form a point in the middle with 3 corners on the outside.

VOCAB

TRIANGULAR – shaped like a triangle, having 3 sides and 3 corners.

THINK About It...

It looks like a hat with the center point up. What does it look like when you flip it over?

BONUS!

Using those same three tile colors and this exact shape, how many different hats could you make?

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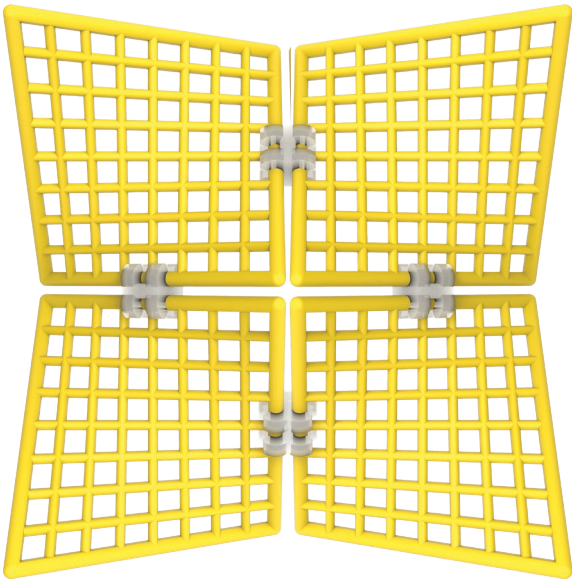
WHAT IS THE SHAPE?



4-Corner Square Hat

Finely woven, brightly colored hats with four pointed tips were worn by ancient cultures of the Andes in South America: the Wari (in what is now Peru) and the Tiwanaku (in what is now Bolivia).

MAKE THE SHAPE!



Are you ready?

Connect 4 tiles to form a square shape with upward pointing peaks.

VOCAB

FLEXIBLE – able to bend or fold easily, without breaking.

THINK About It...

What can the 4-corner 'square' hat do that the 3-corner 'triangle' hat could not?

BONUS!

Why are square objects generally more FLEXIBLE than triangles?

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WHAT IS THE SHAPE?

5-Pointed Star



Shine brightly like the star you are! The five-pointed star dates back to Egyptian hieroglyphs. Modern uses include movie stars and pop stars. Some are awarded a star on the Hollywood Walk of Fame!

MAKE THE SHAPE!

Are you ready?

Connect 5 different color tiles to make a star.

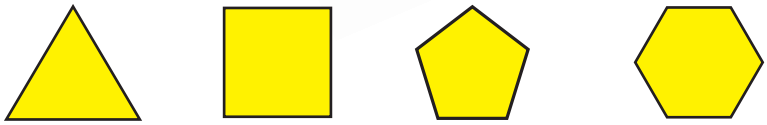


VOCAB

POLYGON – a flat shape made of straight lines.

THINK About It...

Which POLYGON is most similar to the star shape?



triangle **square** **pentagon** **hexagon**

BONUS!

Using the same colors in the same order, make another star and place them side by side. Take one star and flip it over: are these two stars the same?

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WHAT IS THE SHAPE?

5-Pointed Crown

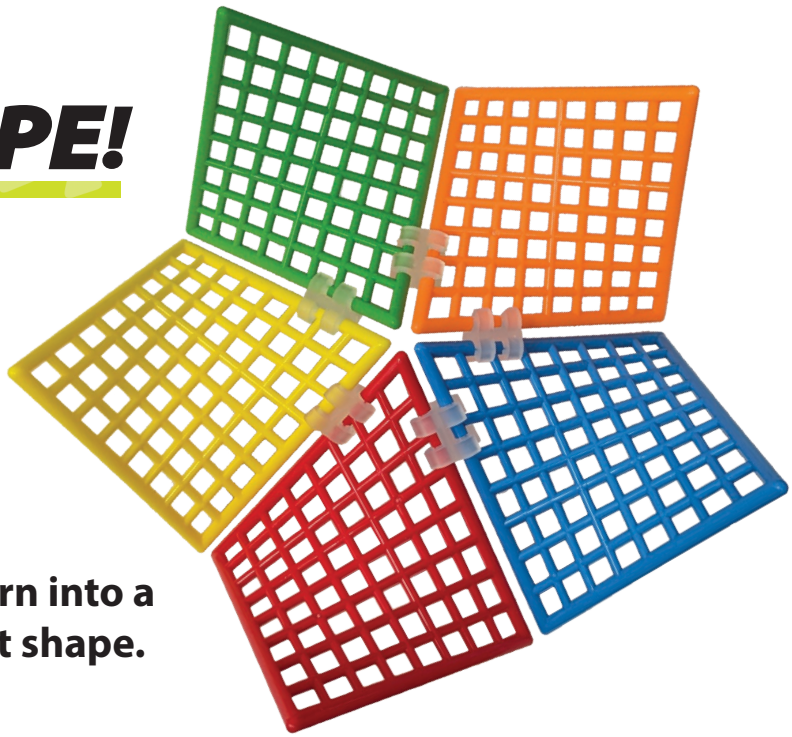
A crown is worn by king or queen to show grace and power as the head of state in a monarchy.



MAKE THE SHAPE!

Are you ready?

Connect 5 different color tiles to make a crown.



VOCAB

TRANSFORM – to turn into a completely different shape.

THINK About It...

What happens if you gently push the center point down? Does the shape TRANSFORM?

BONUS!

The 5-pointed crown can TRANSFORM into one specific shape – what is it?

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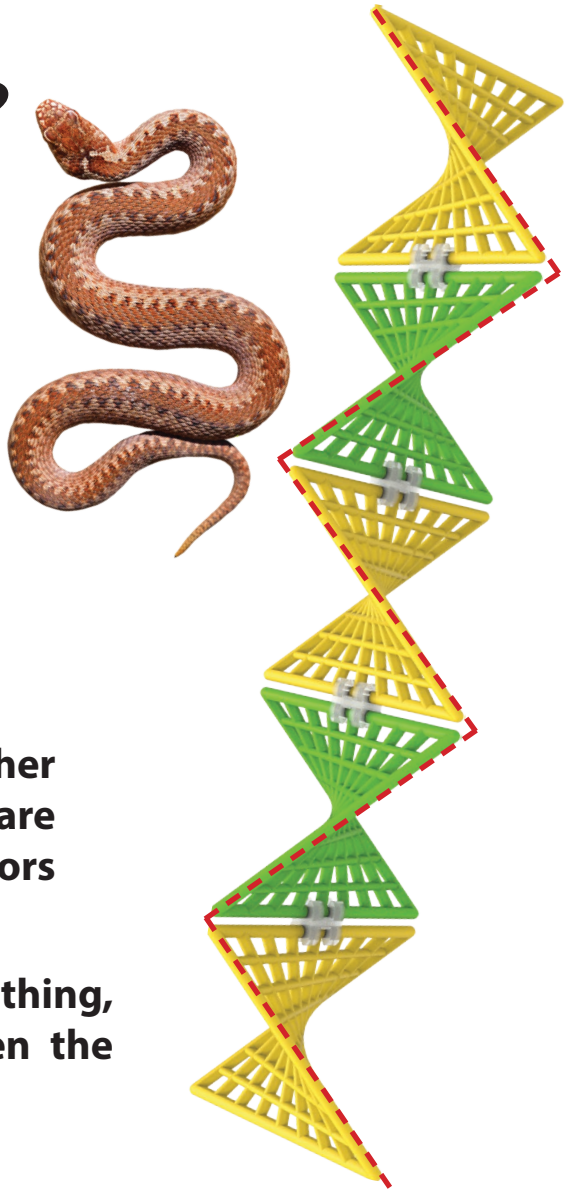
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WHAT IS THE SHAPE?

Zigzag Chain

The brown common viper snake is a perfect model for zigging and zagging – you can see this pattern in the scales of the snake and also in its movement.



MAKE THE SHAPE!

Are you ready?

Connect 5 tiles of two different colors together in a zigzag formation. Make sure your tiles are ALTERNATING between the two different colors like this pattern: A-B-A-B-A

VOCAB

ALTERNATING – first with one thing, then another thing, and then the first thing again, and so on…

THINK About It...

Can you fold your zigzag chain, ALTERNATING one direction and then the other, into a shape you have already seen?

BONUS!

What other shapes can you fold the zigzag chain into?

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WHAT IS THE SHAPE?

Butane

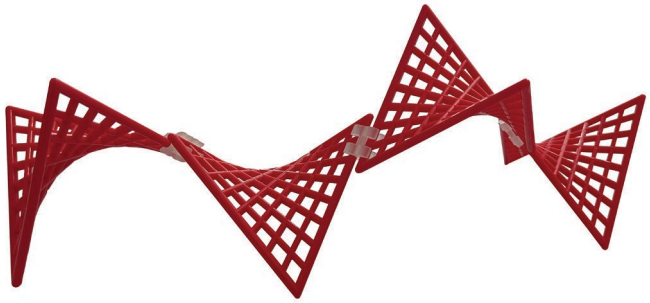
Butane, propane, methane and octane are all substances we rely on for fuel – to cook with, to heat our homes and to drive around.



MAKE THE SHAPE!

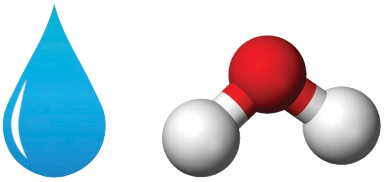
Are you ready?

Connect 4 tiles of the same color to make the butane MOLECULE. Each tile represents an atom of carbon. Each corner sticking out represents an atom of hydogen.



VOCAB

MOLECULE – a group of atoms bonded together – like this H_2O (water) molecule.



THINK About It...

How many carbon (C) atoms do you count?
How many hydrogen (H) atoms do you count?

BONUS!

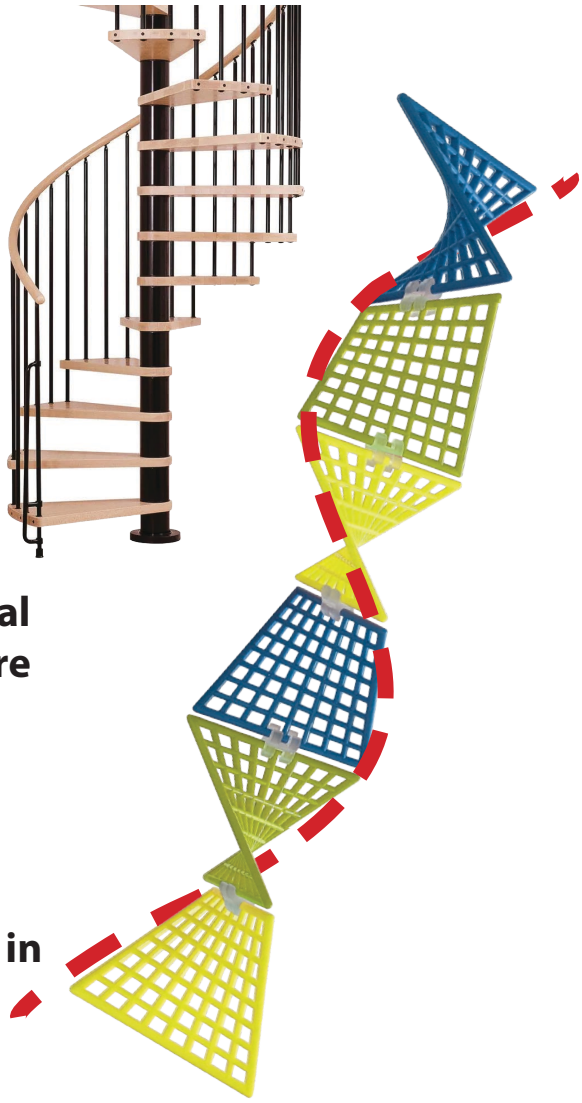
The formula for a water MOLECULE is H_2O.
What is the formula for a butane MOLECULE?

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WHAT IS THE SHAPE?



Spiral Chain

A spiral – also called a helix – is a shape you'll see in buildings and playgrounds.

MAKE THE SHAPE!

Are you ready?

Connect 6 tiles of 3 different colors into a spiral chain. Make sure the color tiles in your chain are following a repeated SEQUENCE: A-B-C-A-B-C

VOCAB

SEQUENCE – a particular order in which things occur.

THINK About It...

Following the SEQUENCE, if you added another tile, what color would it be?

BONUS!

There's a molecule shaped like the spiral chain that plays an important role when it comes to you looking like your parents. What is the name of that molecule?

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WHAT IS THE SHAPE?

Short Spiral Chains

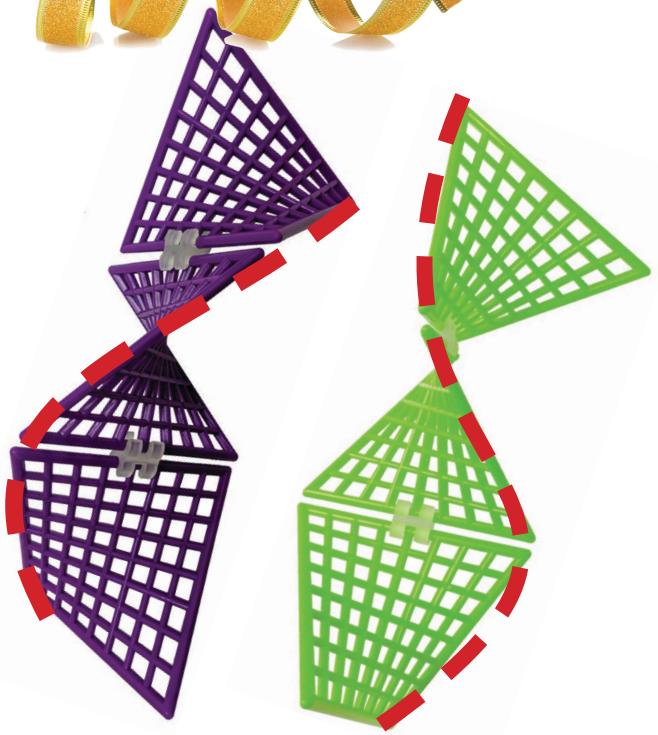
Short spiral chains can be found in many different places, like the ribbon and pasta pictured here.



MAKE THE SHAPE!

Are you ready?

Connect 3 tiles of one color to make one short spiral chain. Then connect 3 more tiles of a different color to make the other spiral chain. Careful: the second chain is different from the first one, not just in color.



VOCAB

MONOCHROMATIC – being just one color

THINK About It...

Each spiral chain is MONOCHROMATIC, and each is a different color. How else are they different?

BONUS!

Which of your two spiral chains is twisting in the same direction as this screw?

