

FABULOUS FABRICS

Describe the clothes you are wearing today. What color are they? What do they feel like? What fabric are they made of? (Hint: Look at the label to find out the fabric.) Did you know the clothes we wear are also called textiles?



What is fabric?

Fabric is made by weaving, knitting, crocheting, or bonding fibers together. Fabric can be dyed, embroidered, painted, beaded, and more to create an endless variety of designs. Look closely at the fabric of your clothes. How do you think they were made?



Plain Weave

If you are wearing jeans and a t-shirt your clothes are both knitted and woven. Denim for jeans is usually woven, while cotton t-shirts are usually knitted. Both are made by machines. Are your clothes decorated in any way? How?

Why are the fabrics in Fallingwater special?

The fabrics of Fallingwater are special for many different reasons. Edgar Kaufmann, jr. felt that fabrics were important accents to Wright's architecture and that without the color and warmth they provided, Fallingwater looked cold and uninviting. Some of the fabrics have traveled far distances, are very old, tell stories, or have been damaged in the past and have been **restored** (cleaned and repaired) to return them to the way they looked when the Kaufmann family first bought them.

Scavenger Hunt!

Things we see every day, like people, plants, and shapes inspire many of the fabric designs in Fallingwater. How many examples of fabrics can you find that have these items in them?

Remember bedspreads, chairs, sofas, carpets and more can be made of fabric.



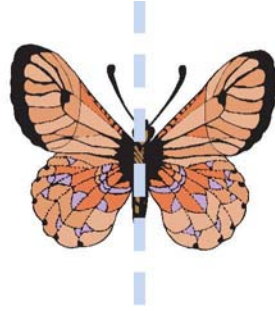
Did You Know?



Oils from our hands can damage artwork. Please don't touch the fabrics, furniture, or art in Fallingwater

Patterns Everywhere!

Every day we see symmetrical patterns: brick buildings, wallpaper, tire tracks, playing cards, insects, and more. Some fabrics are also decorated with symmetrical patterns.



These are all symmetrical patterns because they repeat a design by sliding it over a line, flipping it over a line, or turning it around a point.

Did you know all patterns are based on MATH!

You need two things to make a pattern:

1. A form
2. A way to organize the pattern (usually a grid like you would use in tic-tac-toe, only much bigger).

To make a pattern, take a copy of your original form and move it in one of these four ways.



Translation
(repeat original)



Reflection
(flip horizontal)



Glide Reflection
(flip upside down)



Rotation
(turn around)

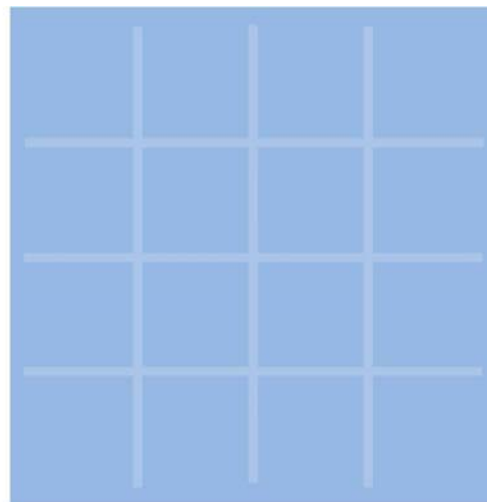
Using these motions, mathematicians have discovered that there are 17 symmetrical patterns you can make. The simplest pattern is to repeat the object exactly the like the original over and over again (translation) on the grid.

Producing a Pattern

Can you finish the pattern below?

What type of motion is it?

Design your own symmetrical pattern using one of the four motions shown above.



How many examples of symmetrical patterns can you find in Fallingwater?