Tessellations

STEMbits

Tessellations: Standards

Computational Thinker

5d: understand how algorithmic and automation works to create code

Tessellations: Standards

4th - Measurement (4md7): Recognize that angles add together

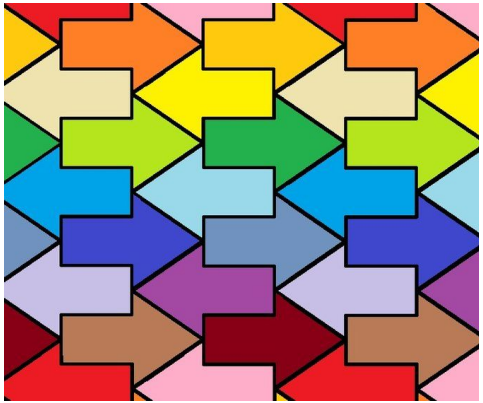
4th - Geometry (4G3): Line of symmetry

8th - Geometry (8G2): Two figures can be the same even if they are rotated

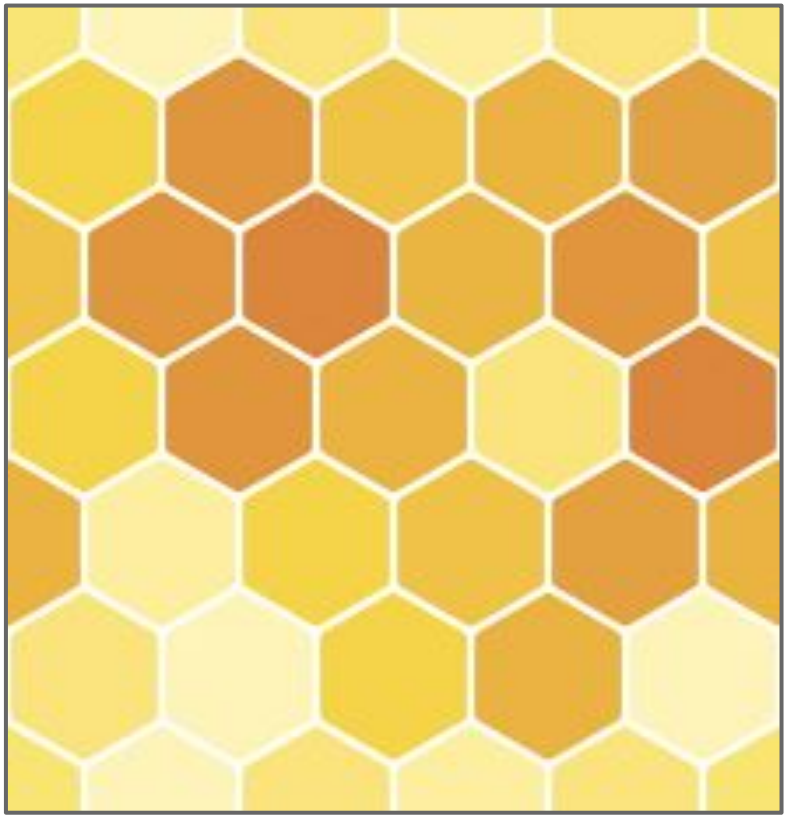
Tessellations: Defined

Tessellations are a pattern that follows these rules:

- Uses one or more repeating shapes
- There are no gaps between the shapes
- None of the shapes overlap
- Shapes can be rotated



Tessellation?



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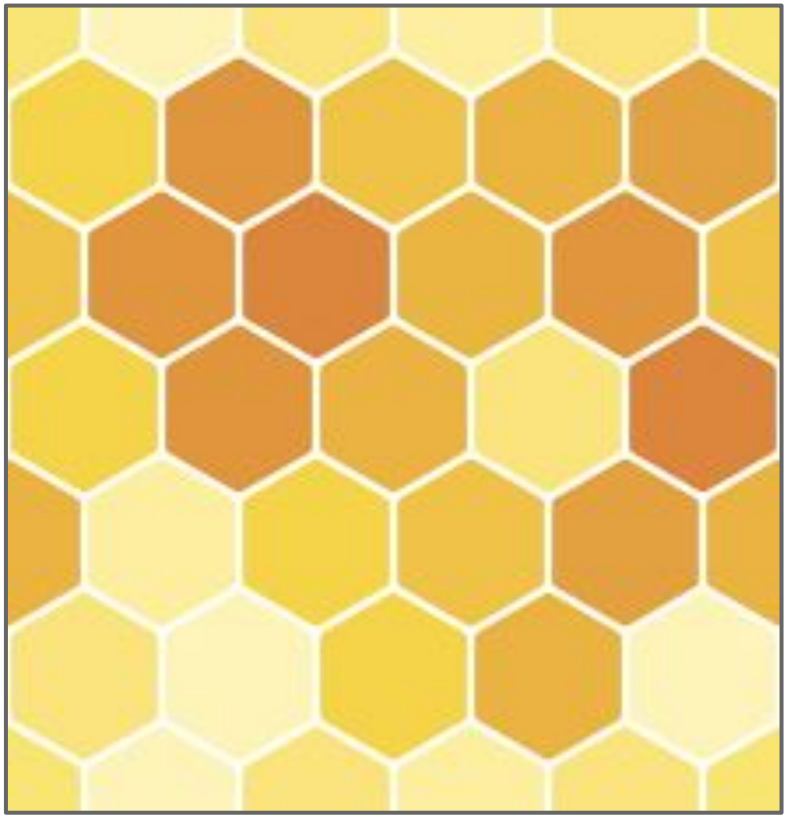
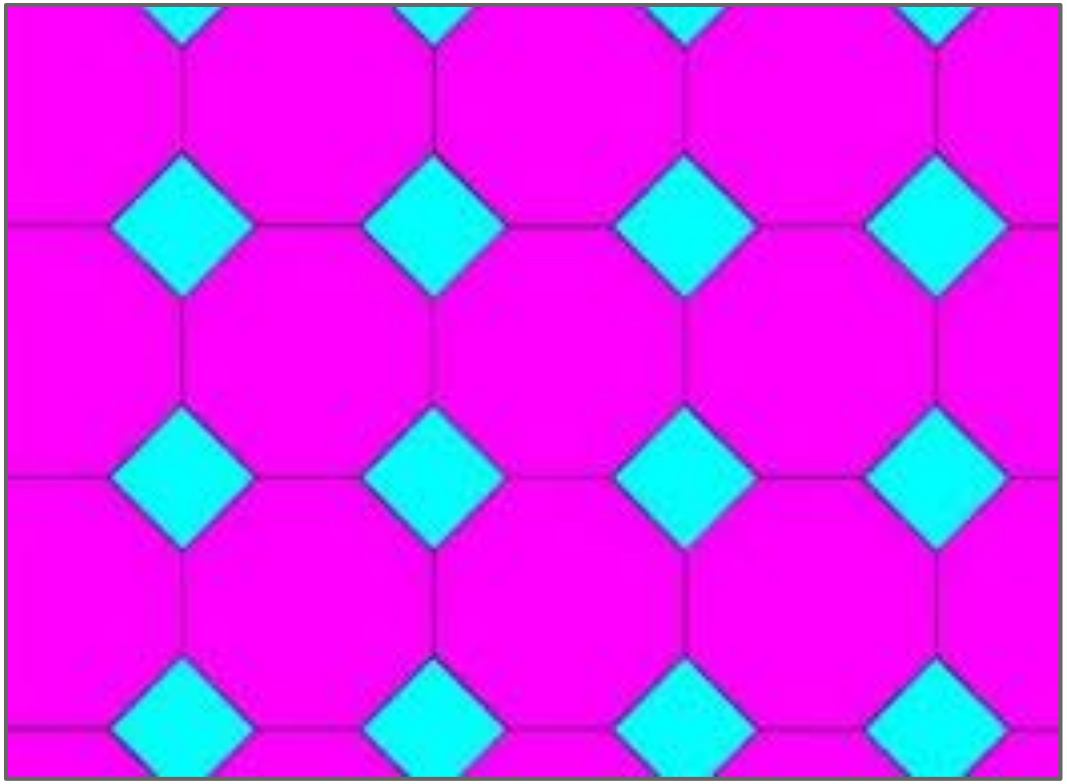


YES

Tessellation?



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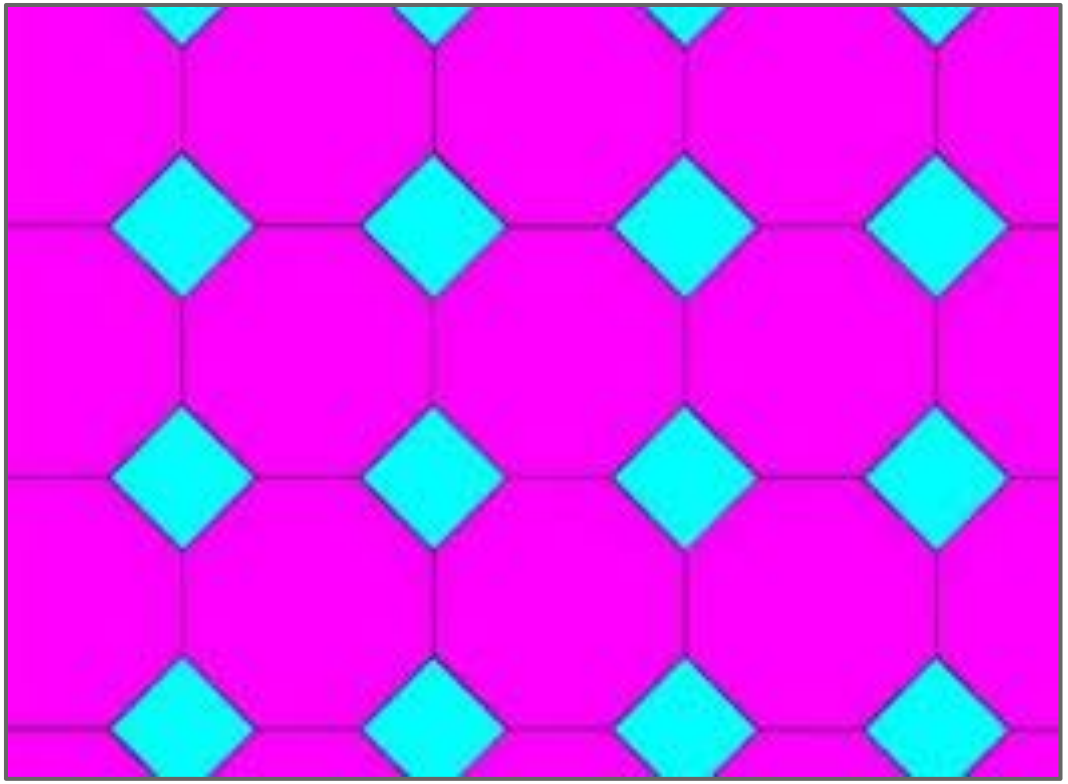
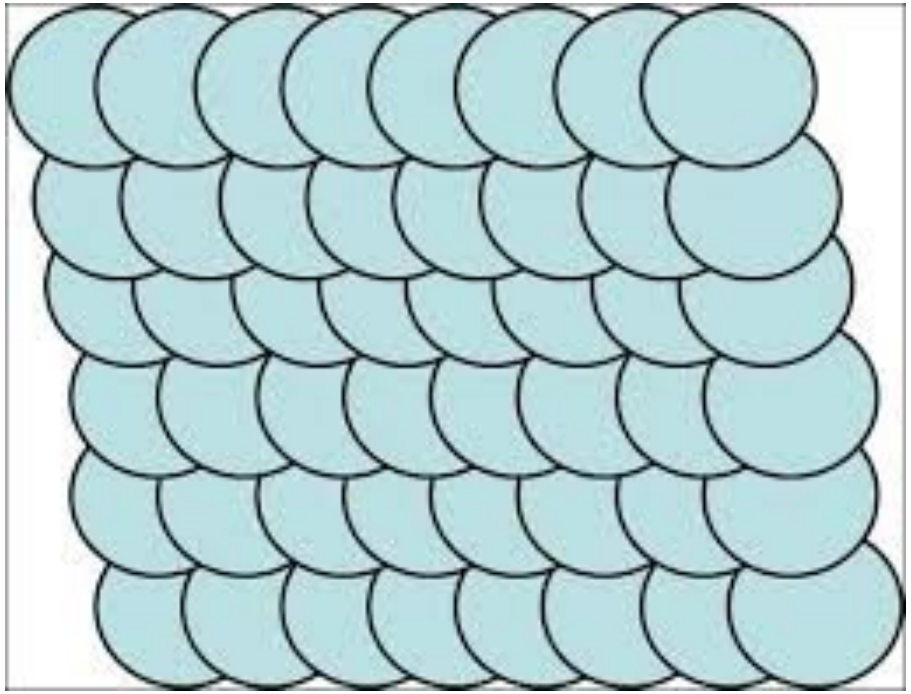
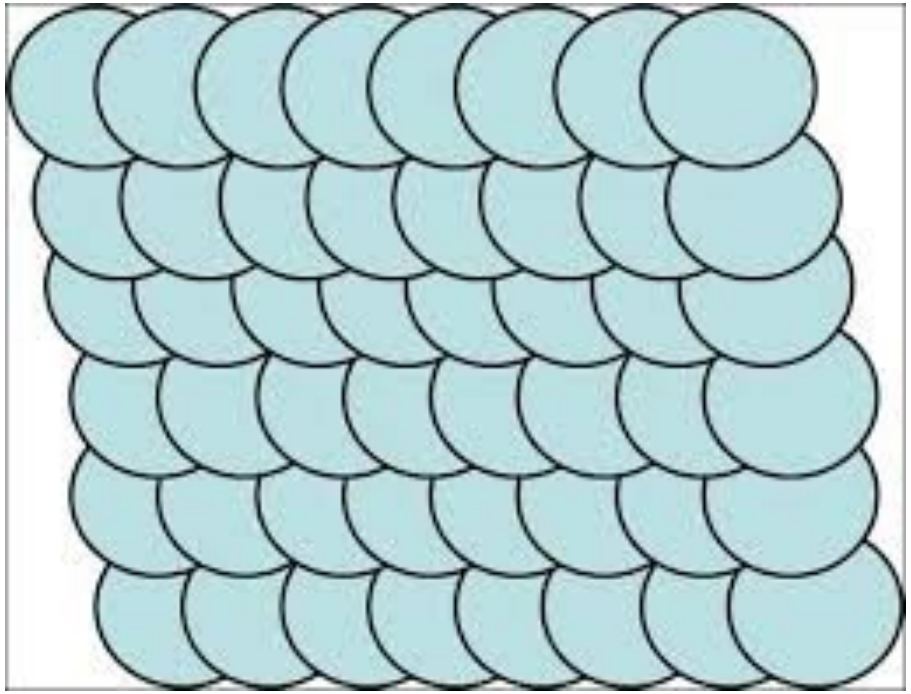


YES

Tessellation?

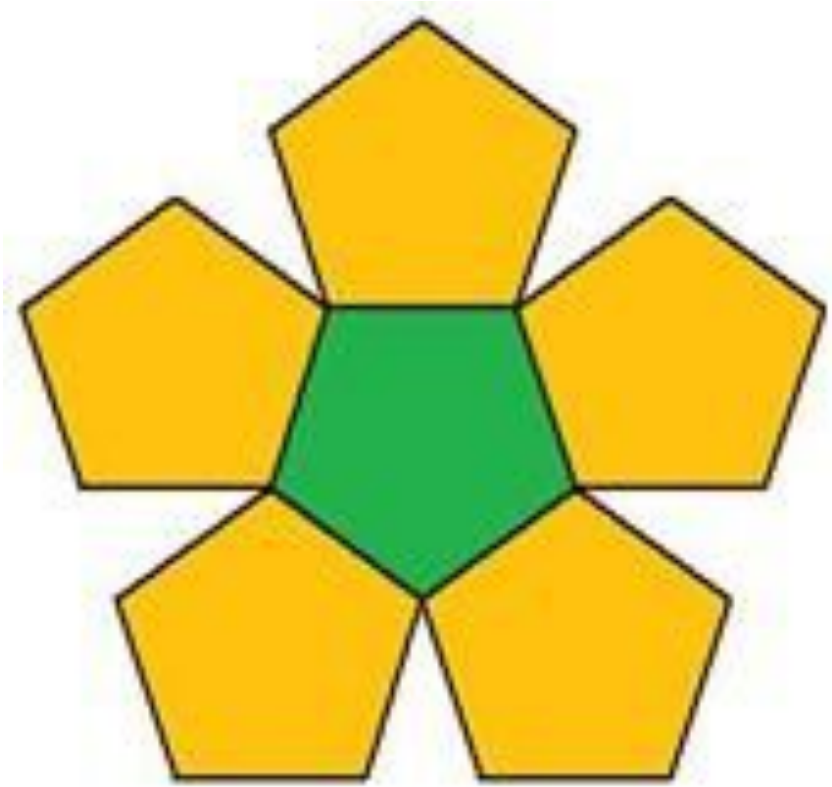


Tessellation?

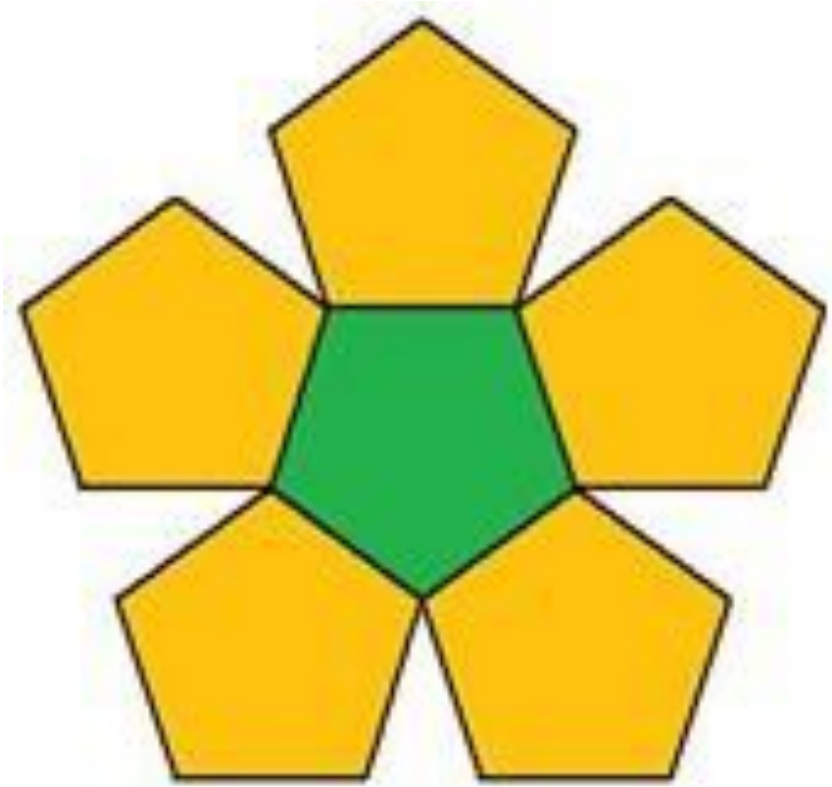


NO
Overlap

Tessellation?



Tessellation?



NO
GAP

Tessellations: History

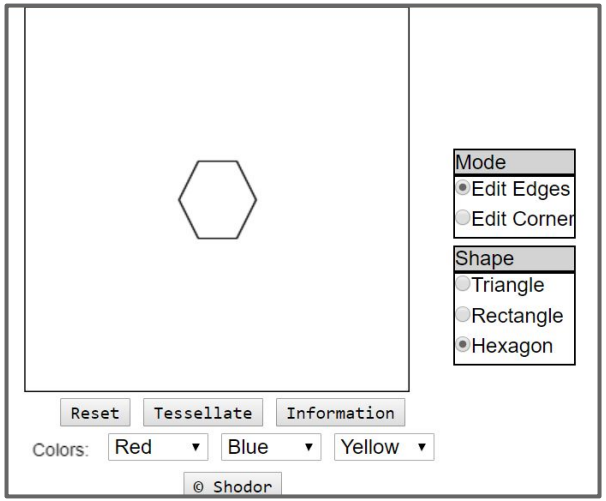
Tessellations have been around for a long time. In fact, tessellations have been found on the walls of temples and homes made over 6000 years ago. In more recent times, the Dutch graphic artist M.S. Escher is famous for creating tessellations.

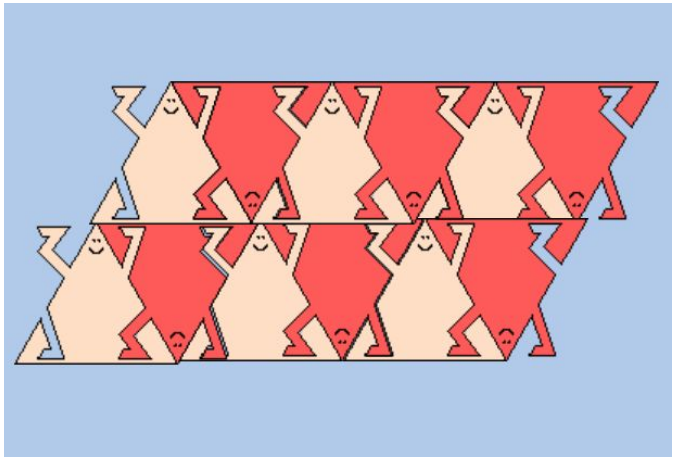
Tessellations: Examples

Tessellations are common designs we see all around us from on the bottom of sneakers, the patterns in sidewalks, and the hexagons that make up the honeycomb pattern.

Tessellations: Activities

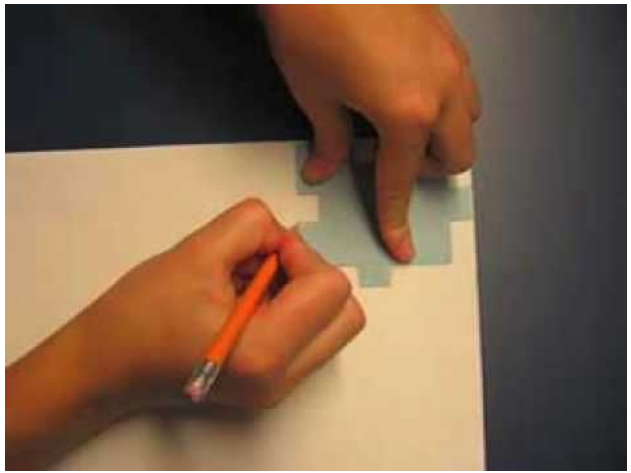
Try some of the tessellation online activities on the STEMbits Tessellation page.

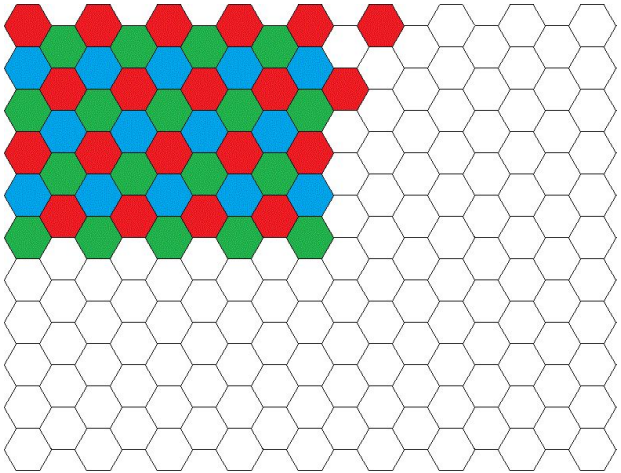




Tessellations: Activities

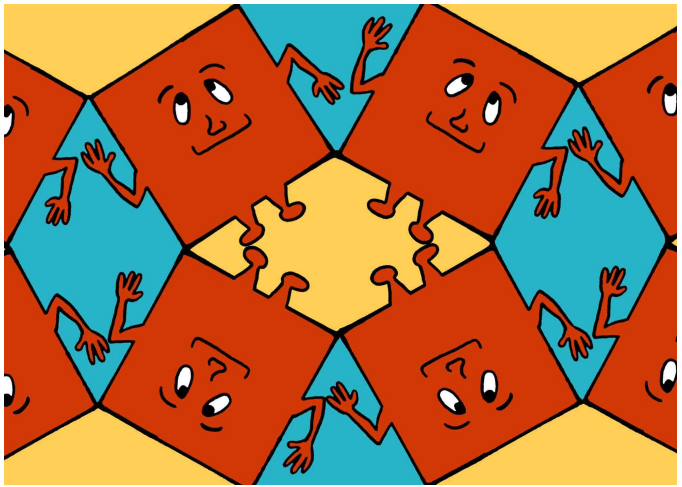
Try some of the tessellation art activities on the STEMbits Tessellation page.





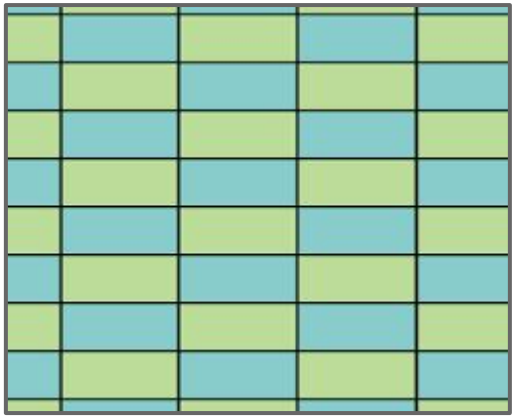
Tessellations: Learn More

Learn more about Tessellations by watching the videos or looking at the websites on the STEMbits Tessellation page under Learn More About Tessellations



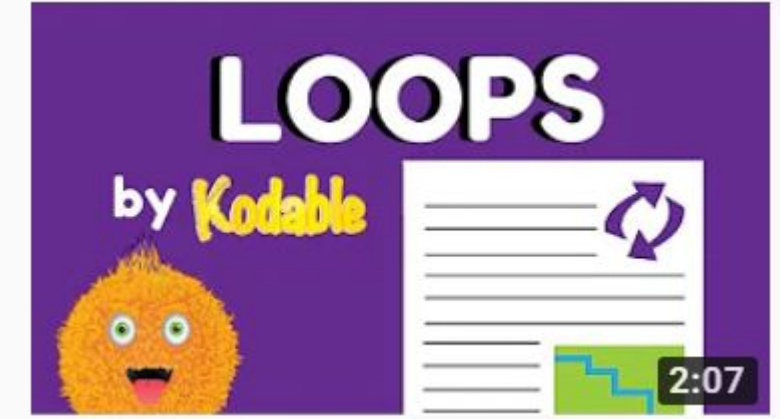
Tessellations: Coding

Learn how to instruct a computer to make a tessellation by writing a program in Scratch by following the video on the STEMbits Tessellation Page



Tessellations: Loops

Loops are an important aspect of coding that is used in the tessellation coding Scratch program. Learn more about loops on the next page and watching this video.



Coding: Loops

A **loop** is a group of instructions that repeats a set number of times or until something happens that makes the loop stop. For example, we could create a square by moving forward 100 steps and turning 90 degrees 4 times.