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# Geometiles™

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## GETTING ACQUAINTED

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You will find Geometiles™ to be a versatile and engaging tool in your classroom. This short booklet will help you make the most of them.

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Patent Pending

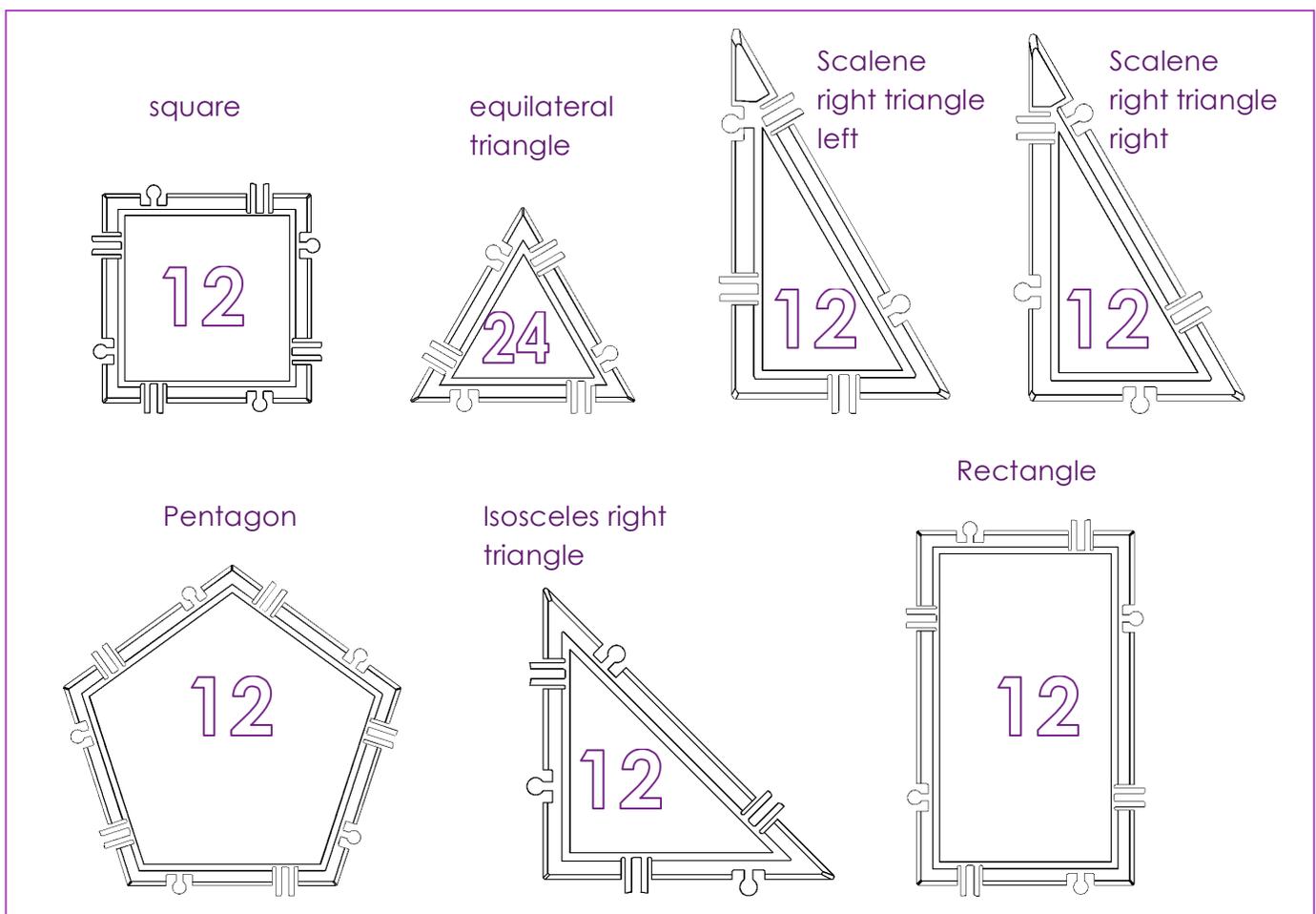
Geometiles™ is a product of



## Welcome to Geometiles™!

In order to enhance your experience with Geometiles™, we recommend that you familiarize yourself with this booklet. For detailed lesson plans, please see the workbooks at [www.geometiles.com](http://www.geometiles.com). **Please keep your box, as the access code is contained on the inside of its lid.**

### Meet the pieces in your package:



The number on each piece is the number of pieces of that shape you have in your package. Colors will vary.

How many tiles each student gets, and which tiles (s)he gets is quite important. This is indicated with each exercise. If you don't have enough tiles for the entire class, it is better

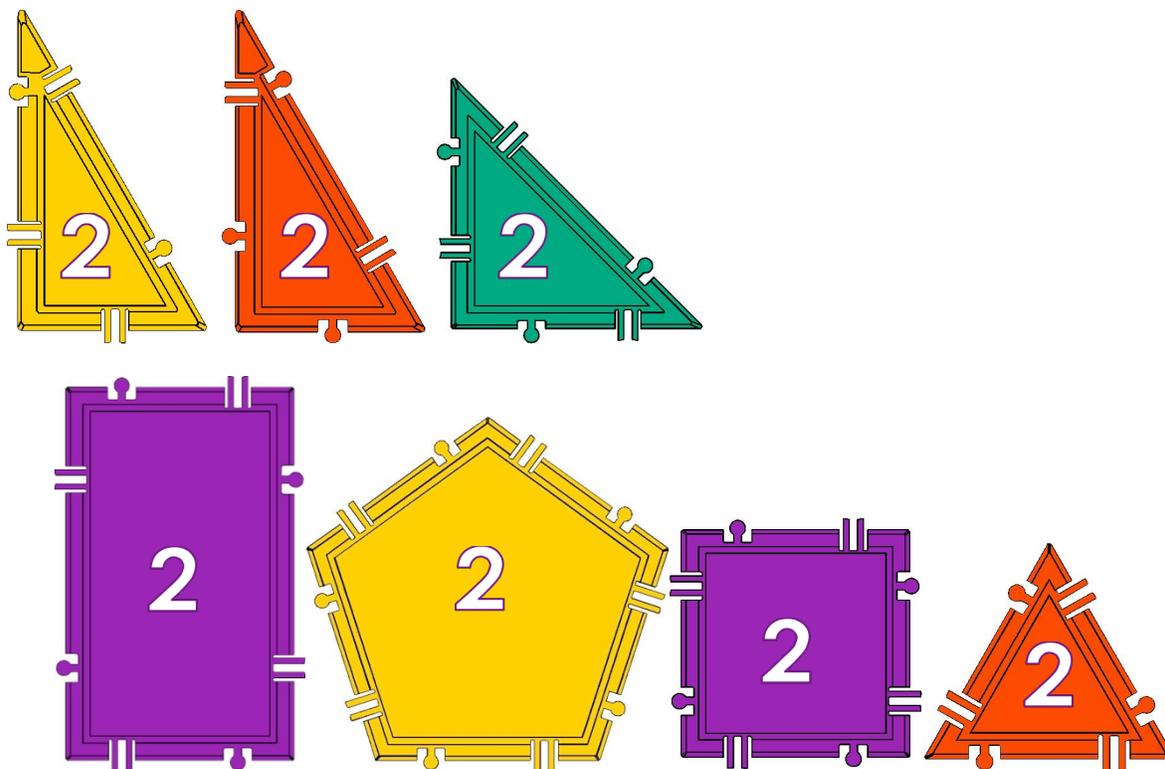
to break up the students into smaller groups and have the groups take turns than to give too few pieces to each student.

Also, a great way to ensure that students focus on the lesson plan at hand is to limit the types of tiles to which they have access. You can do this by preparing plastic bags with tiles prior to the class. The contents of each plastic bag will vary according to the lesson plan.

### Helping your students acquaint themselves with the Geometiles™

Students typically want to start building their own structures with Geometiles™ right away. Before you let them play with the entire set, or do a lesson plan with them, you may want to make sure they understand what every piece in the set is, and how it connects with the other pieces. Here is one way you can do this:

1. Place **TWO** of each of the following 7 tiles (color doesn't matter, as long as two types of scalene triangles have different colors):



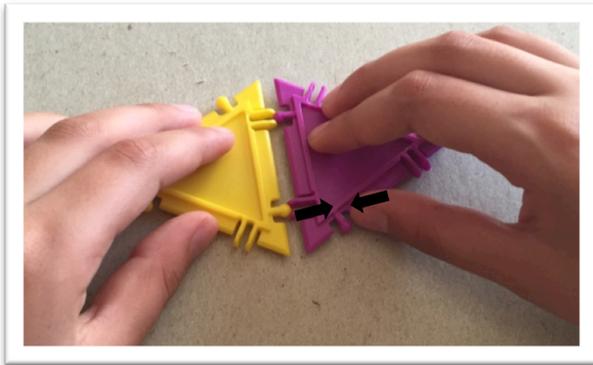
2. Ask the students: "How many different shapes (not colors) are there in your package?" [6. The two scalene triangles have the same shape but different connectors]

3. Ask the students to describe in words how the tiles are different from one another using as much mathematical language as possible and appropriate for their grade level. Some examples of what they may talk about are:
  - a. Count the number of sides and/or corners (grade 1 and up)
  - b. Triangles with all equal length sides and triangles with different lengths sides (grade 1 and up)
  - c. Some "corners" are sharper than others (grade 1 and up)
  - d. Use terms like square, rectangle, triangle, pentagon (grade 2 and up)
  - e. Be specific about their description of triangles, e.g. scalene, right, etc. (grade 4 and up)
4. Ask the students: "Can you make any two tiles that are the same fit together?" The answer is "yes". "What if the two tiles are not the same?" The equilateral triangle, pentagon, and square only connect to each other and the rectangle. The scalene and isosceles triangles also connect to each other and the rectangle. Thus, the rectangle is the only piece that connects to all the pieces. Answering these questions will warm up the students and prepare them for lesson plans or making the best of the tiles in free form play.
5. After the students have familiarized themselves with the tiles, you may want to allow them approximately 30 minutes to play with them on their own. Most students are very eager to build their own structures. That way they get the playing "out of their system" and can then follow a particular lesson plan.
6. "If they don't fit, they are not meant to fit" .Geometiles™ were carefully designed so that some connections are possible and some are not. If two tiles don't fit together in the way that a student would like them, they should not be forced to fit together. It is up to the student, and part of the exercise, to find a different connection.

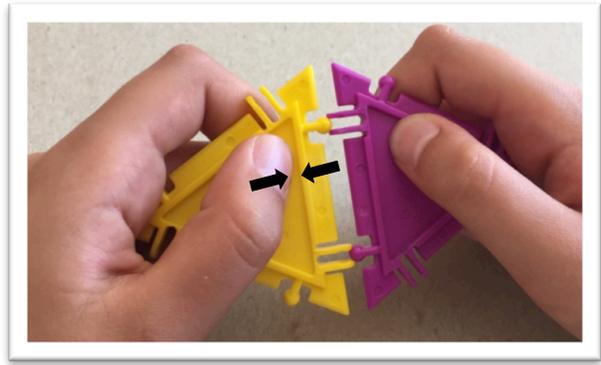
## How to connect the pieces

There are many ways to connect tiles together. Take your pick!

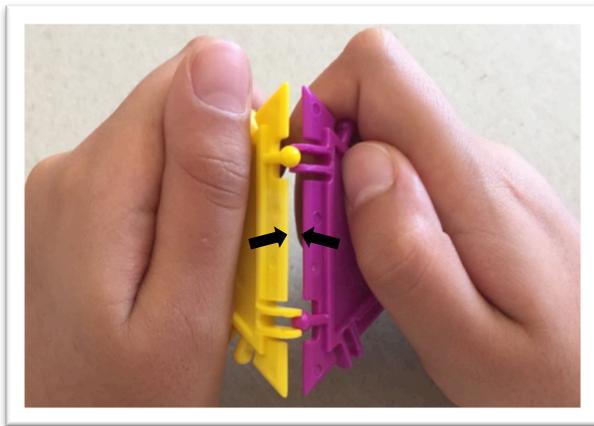
Push together on a surface,



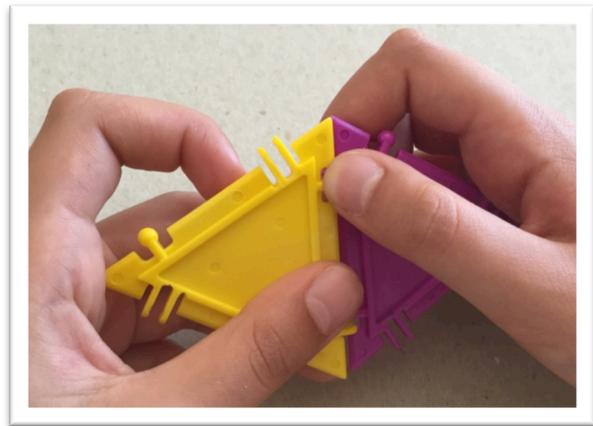
or in the air,



or at an angle,



or after aligning connectors.



## How to take apart closed structures

Geometiles™ fit together so precisely that taking apart a closed structure can sometimes be challenging.

Here is how to pry apart closed shapes:

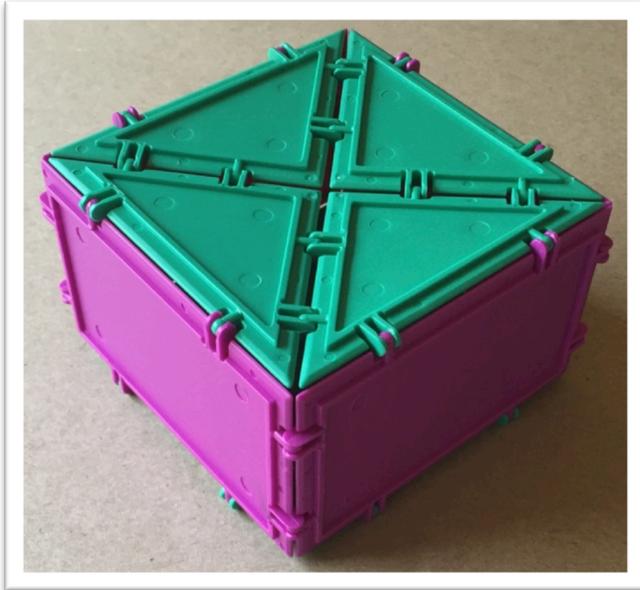


1. Grip your closed shape in one hand and a triangle with a sharp corner in your other hand.
2. On your closed shape, locate a corner with a ball and socket joint.
3. Using the triangular shape in your other hand, slowly insert the point into the opening between the ball and the socket. *Note: This space is small, but you will be able to fit the triangular piece into the area slowly and steadily.*
4. Continue inserting the piece by applying light pressure. **DO NOT TWIST TO INSERT.** Twisting will not help - just gently push and squeeze the triangular piece into the closed shape in one direction.
5. When the tip of the triangular piece has been inserted into the closed shape, you will hear a slight pop as the closed shape becomes "unlocked" - once this happens, you should be able to easily disassemble the closed shape.

## Hint on creating closed shapes

When creating closed shapes, it is generally easier to create the entire “lid” and attach it than to attach the lid piece by piece.

For example, suppose you are trying to build a box like this:



The non-recommended way to do this would be to attach the green pieces one by one. Then the last piece will be difficult to attach:



Instead, make the entire lid first, and then attach it to the box:

