

**Curriculum topics:**

- Polygons
- Angles
- Vertices
- Sides
- Measurement
- Symmetry

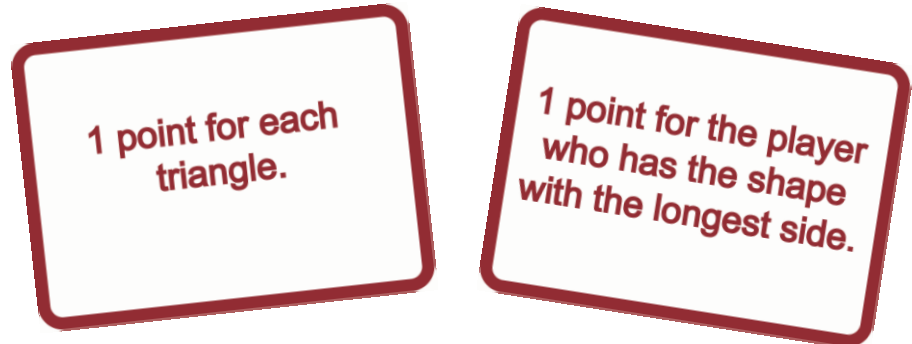
**Subject:**

**Mathematics**

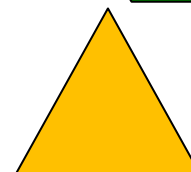
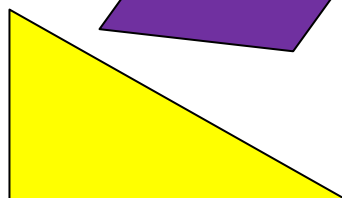
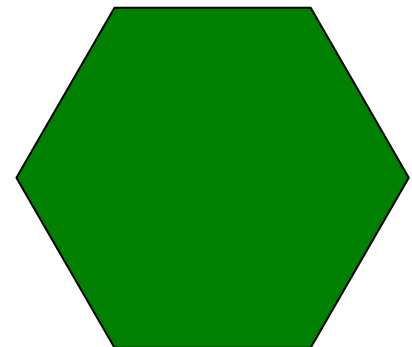
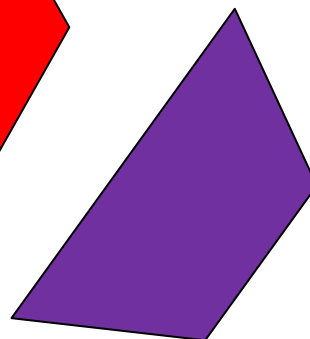
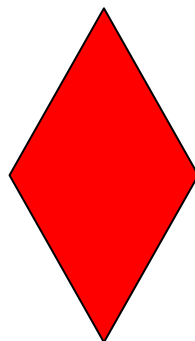
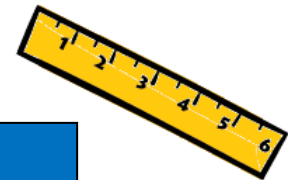
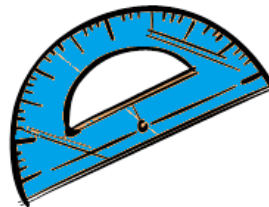
**Grade range: 5 – 8**

# POLYGON PURSUIT

Win by having the most shapes that match specific geometrical characteristics



This fun hands-on game reinforces recognition of several geometrical attributes such as polygonal shape, angular measurement, & symmetry.



**Who we are:**

Resource Area for Teaching (RAFT) helps educators transform the learning experience through affordable “hands-on” activities that engage students and inspire the joy and discovery of learning.

For more ideas and to see RAFT Locations

[www.raft.net/visit-raft-locations](http://www.raft.net/visit-raft-locations)

# Materials required

- **Polygon Pursuit** cards
- Protractor and ruler, 1 per pair of players
- **Polygon Pursuit** Polygons, set of 10 shapes per pair of players, see page 3, (cut apart)
- Scratch paper and pencils

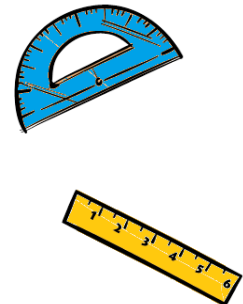
[A template for the labels for the cards can be downloaded at <http://www.raft.net/raft-idea?isid=689>]

## Preparation before the game

Teachers: Become familiar with each card. Use only those cards that support the skill level of geometry that serves your students, and store the remaining cards for later use. Optional: Use blank cards to create new cards.

## Playing the game (for pairs of players)

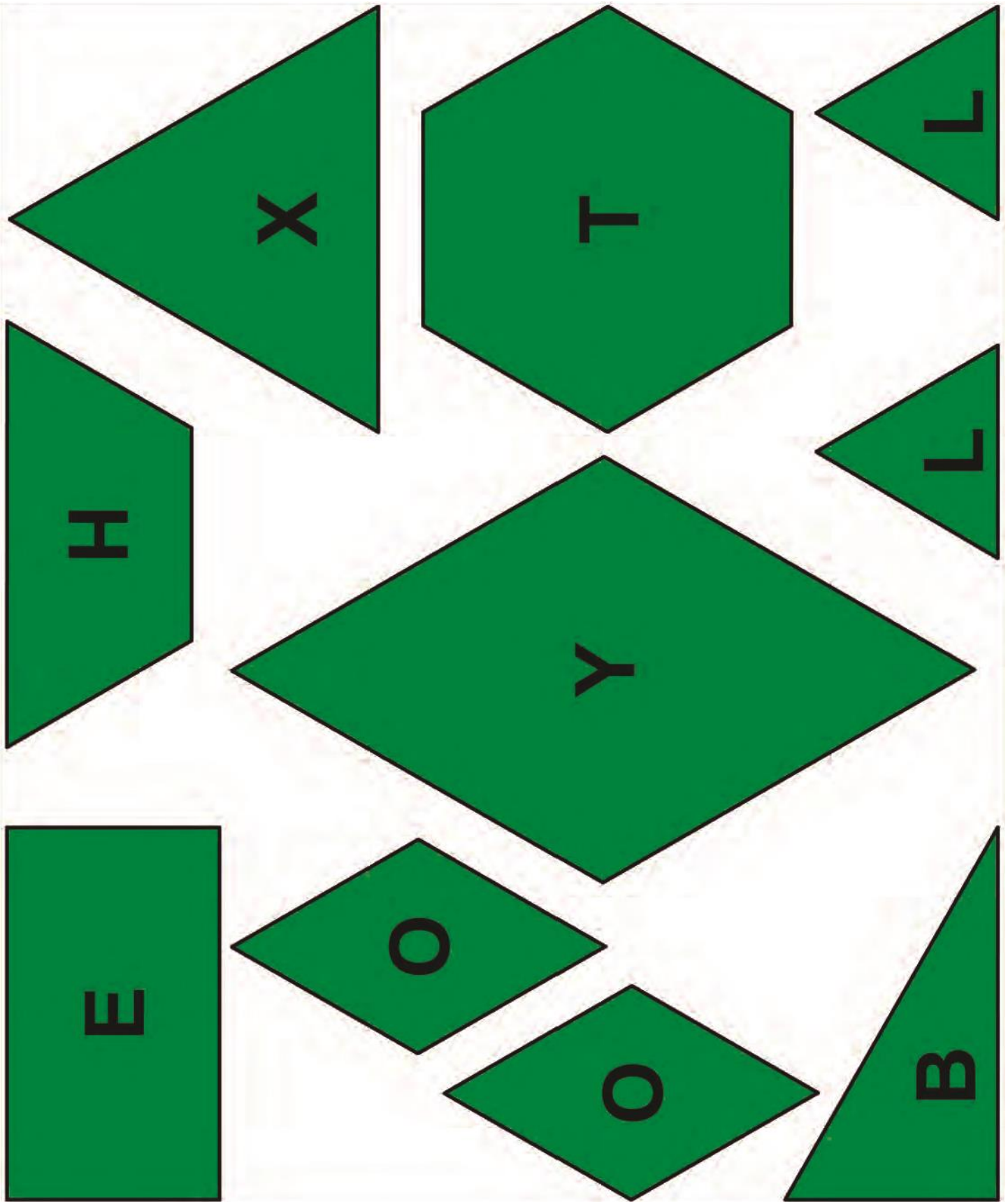
- 1** Pass out 10 shapes of the same color to each pair of players. The players then take turns picking shapes so that each has 5 out of the 10 shapes to use for the duration of the game.
- 2** The teacher shuffles the cards and reads the question on the first card to all the students. (Optional: Pass out a small portion of the card deck to each pair of players. The players take turns reading the cards.)
- 3** When a card is read, players examine their shapes to determine how many points are scored. Players may use protractors and rulers as needed. If both players have shapes that satisfy the condition – then both receive a point.  
For example if the card reads “1 point for the player who has the shape with the fewest sides” and both players have triangles, each receives a point.
- 4** Continue playing until all the cards are read. The player with the highest number of points is the winner!



*Teacher Tip: For students who are still mastering geometric vocabulary use the letter printed on a shape to refer to that particular shape.*

## The math behind the activity

This stimulating hands-on game reinforces student recognition of various geometric shapes and their attributes. This not only gives players a chance to investigate and to verify the properties of various shapes, it also encourages the understanding of accurate geometric vocabulary. Knowledge of shapes also gives students the opportunity to develop a spatial sense and apply geometric properties to other subjects such as art, social science, and science.



## Curriculum Standards:

Two-dimensional figures  
(Common Core Math Standards: Grade 5, Geometry, 3, 5, & 6)

Problems involving angles & area  
(Common Core Math Standards: Geometry, Grade 6, 1; Grade 7, 5 & 6; Grade 8, 5)

Problem Solving and Reasoning  
(Common Core Math Standards: Mathematical Practices, Grades 5-8)

Additional standards at:  
<http://www.raft.net/raft-idea?isid=689>

# Learn more

- Have students create new cards.
- Have younger children practice sorting by shape and color. It may be necessary to cover the letters on the shapes or flip the shapes over so that students can focus on the desired attribute.

**Related activities:** See RAFT Idea Sheets:

### ***Patterning with Polygons –***

<http://www.raft.net/ideas/Patterning with Polygons.pdf>

### ***Shape Skeletons -***

<http://www.raft.net/ideas/Shape Skeletons.pdf>

### ***Tangram Tactics! -***

<http://www.raft.net/ideas/Tangram Tactics.pdf>

### ***Tangrams -***

<http://www.raft.net/ideas/Tangrams.pdf>

### ***Tessellating Lizard -***

<http://www.raft.net/ideas/Tessellating Lizard.pdf>

### ***What are Penrose Tiles? -***

<http://www.raft.net/ideas/What are Penrose Tiles.pdf>

# Resources

Visit [www.raft.net/raft-idea?isid=689](http://www.raft.net/raft-idea?isid=689) for “how-to” video demos & more ideas!

See these websites for more information on the following topics:

- **Sorting geometric shapes –**  
<http://illuminations.nctm.org/LessonDetail.aspx?ID=L277>
- **Identify geometric shapes –** <http://www.math-play.com/basic-shapes-game.html>
- **Properties of polygons –**  
<http://www.wou.edu/~burtonl/courses/math494.594/PolygonPropertiesDeharrt.pdf>
- **Videos and exercises on geometry topics from the Khan Academy -**  
<https://www.khanacademy.org/math/geometry>
- **Teacher designed math courses from the New Jersey Center for Teaching & Learning –** <https://njctl.org/courses/math>