

PUZZLES for Squeak beginners

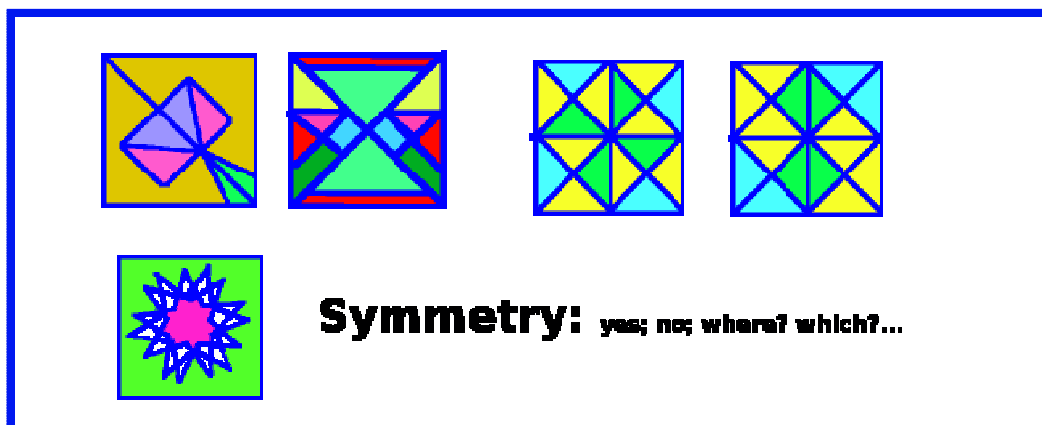
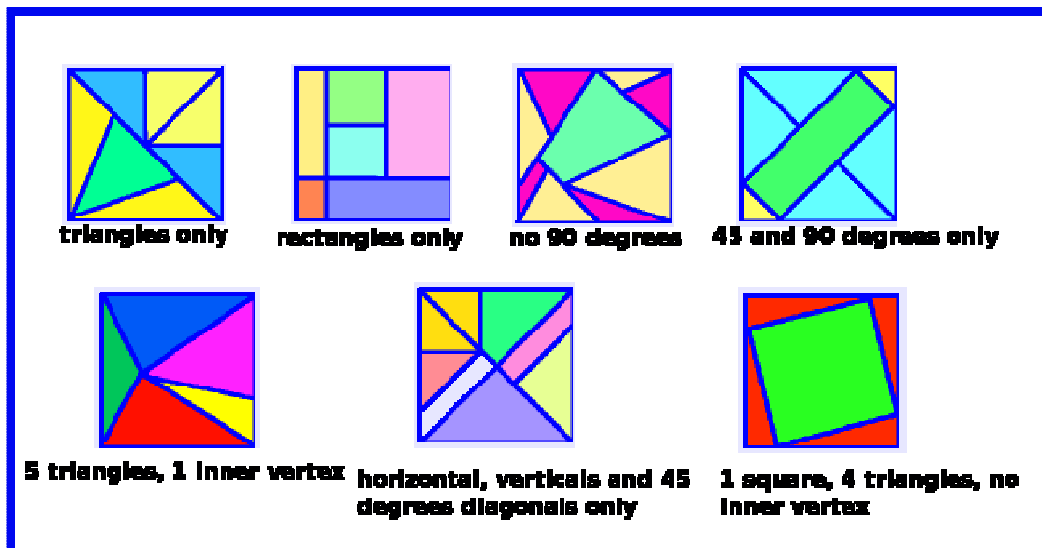
Grades: 1st and up

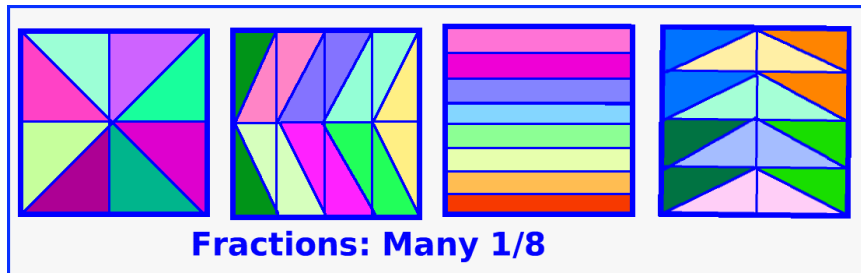
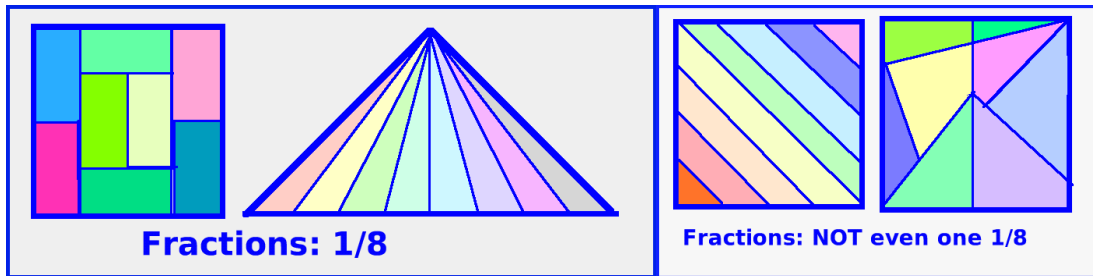
Key Words: Puzzle; Geometry; Geometric Shapes; Line; Vertex; Angles; Symmetry

Squeak Project: Math Create a Puzzle

Puzzles are fun to play with. It is even more fun to create and share with friends. Creating puzzles is great for introducing the paint-tool, the concept of object and the halo. It can be integrated to many Math standard curriculum subjects: Geometric shapes; Angles; Similarity; Symmetry; Rotation and Fractions.

Bellow is few examples of patterns with titles that connect them to Math terminology and ideas.



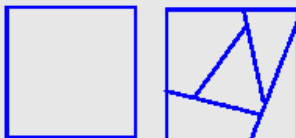


Directions for creation of a simple puzzle

(Taken from a book inside the squeak project: Math Create a Puzzle)

CREATE A PUZZLE:

1) Open a paint tool by clicking on pen in navigator flap; Click on line tub at bottom right of painting tool; Choose rectangle-tool and draw a rectangle for puzzle frame; Choose line-tool and draw borders of puzzle-pieces inside the frame; When done, click on "keep" to get out of painting mode.



CREATE A PUZZLE (2):

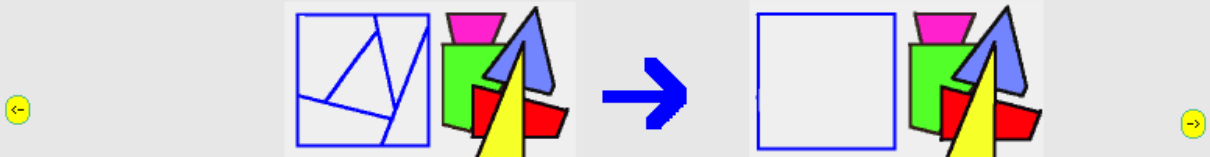
2) Open a new painting tool; Go over the border of one piece and then fill it with color, by using the bucket-tool; Click on "keep" to get out of this painting tool. Repeat by painting each piece with a new painting tool.



CREATE A PUZZLE (3):

3) When all pieces are painted and you are out of painting mode, drag pieces off the frame.

Erase the pattern-lines from the frame: open its own paint tool (get frame's halo and choose the grey pen at right side); choose eraser (looks like brush) and erase inside pattern-lines; Choose "keep" in order to go out of painting mode.



Important Squeak points

- Painted parts that were done by same painting-tool are considering one object and can not be manipulated independently.
- Every object has its own painting tool; Changes in painting of object can be done only by this object own painting-tool opened from its halo.
- It is recommended that the inside of the puzzle frame will be transparent, and not colored, so puzzle parts will not be able to hide under it.
- One can get congruent pieces by duplicating one of them, as long as you can get one by moving and/or rotating the other (no left-right flipping for this application).
- Another way to get the pieces after creating the frame: duplicating the original frame and erase all but the piece you want to create at the time. This method makes it easier to create puzzles with non linear borders.

In the book within the Squeak project you will find directions for creating buttons; one to put puzzle pieces aside and the other to assemble puzzle pieces in place.

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April 2008