Let's Start with a Problem! Grades 3-5

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Problem Situations

	Verbal	Static	Dynamic	Symbolic
Application (Modeling)				
Math Structures				
Games				
Math Representations				

One Fish, Two Fish

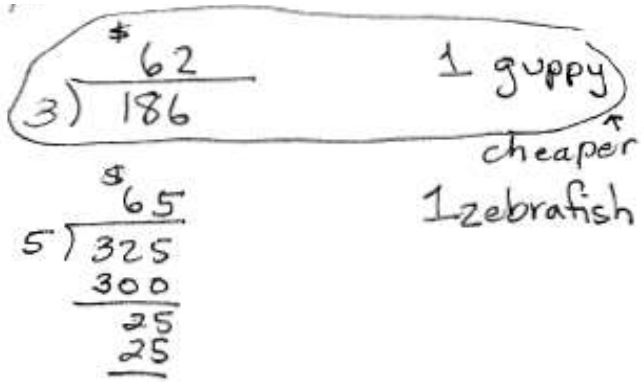
3 Guppies  $186

5 zebrafish  $325

Are guppies or zebra fish cheaper?

Possible Solutions

Two Divisions



Divide & Multiply

$186 ÷ 3 = $62 for 1 guppy

5 × 62 = 300 + 10 = $310 for 5
Guppies are cheaper

Use Number Sense

Both about $60.

Guppies $6 over for 3 - so cost $62
Zebras $25 over for 5 - so cost $65
Guppies cheaper

Aunt Martha's Cupcakes

- Aunt Martha has 5 trays of cupcakes.
- There are 100 total cupcakes on the trays.
- The first and second trays have 52 cupcakes.
- The second and third trays have 43 cupcakes.
- The third and fourth trays have 34 cupcakes.
- The fourth and fifth trays have 30 cupcakes.
- How many cupcakes are on each tray?

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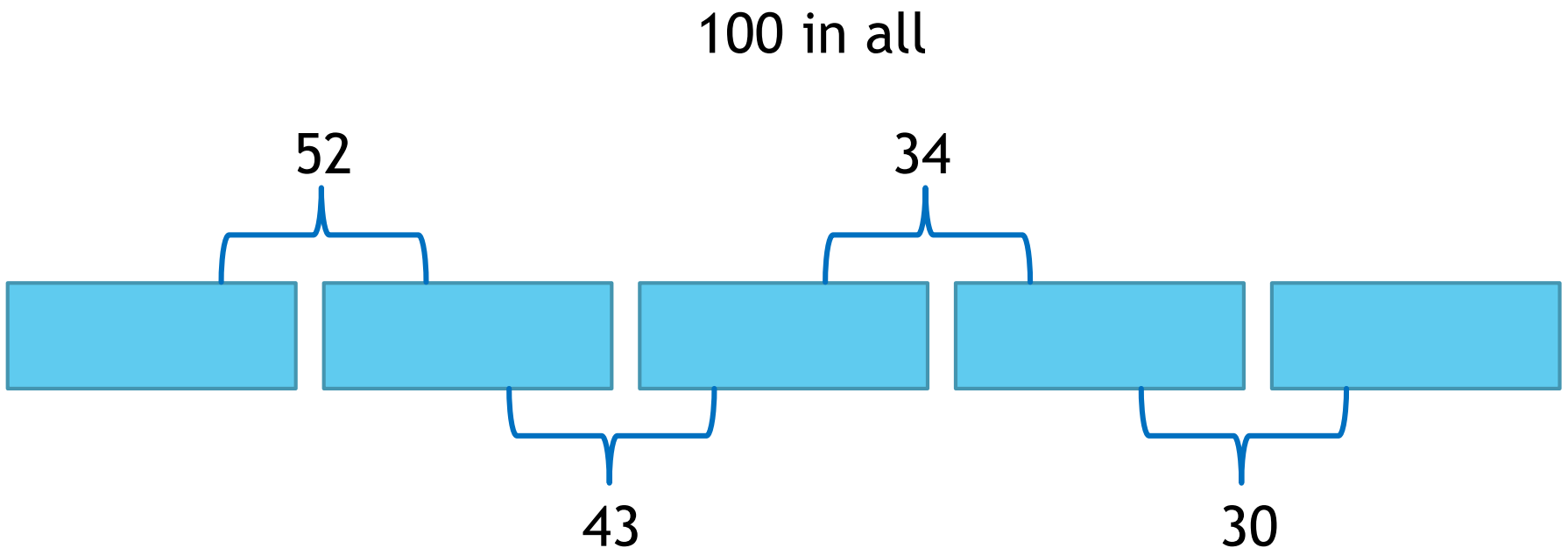
Can a picture help?

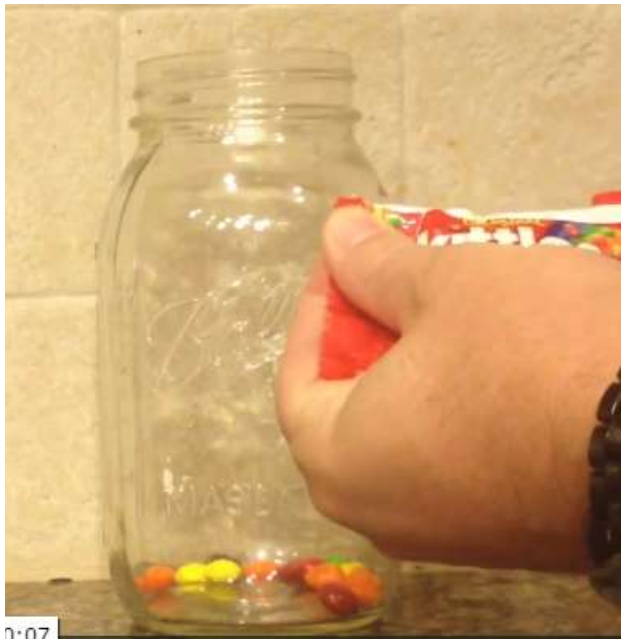


Possible Scaffolding

- To help students get started
- To help students who are stuck
- To help students going down a wrong path
- To help students clarify thinking

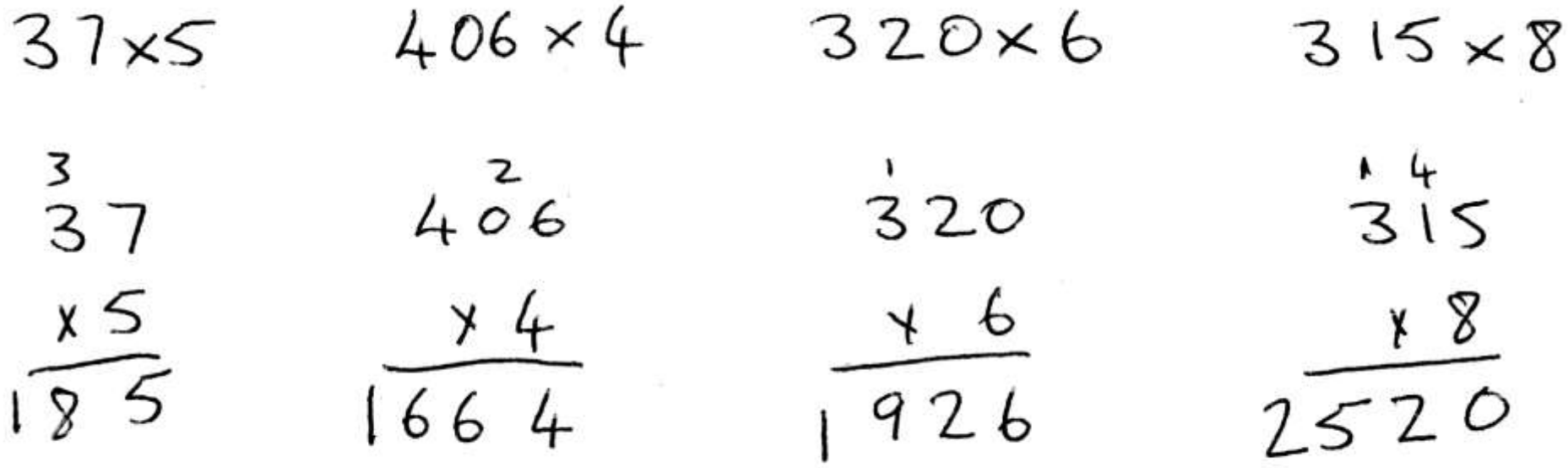
Array-bow of Colors

- Act 1: Watch the video



Problems without Words

What's Gone Wrong?



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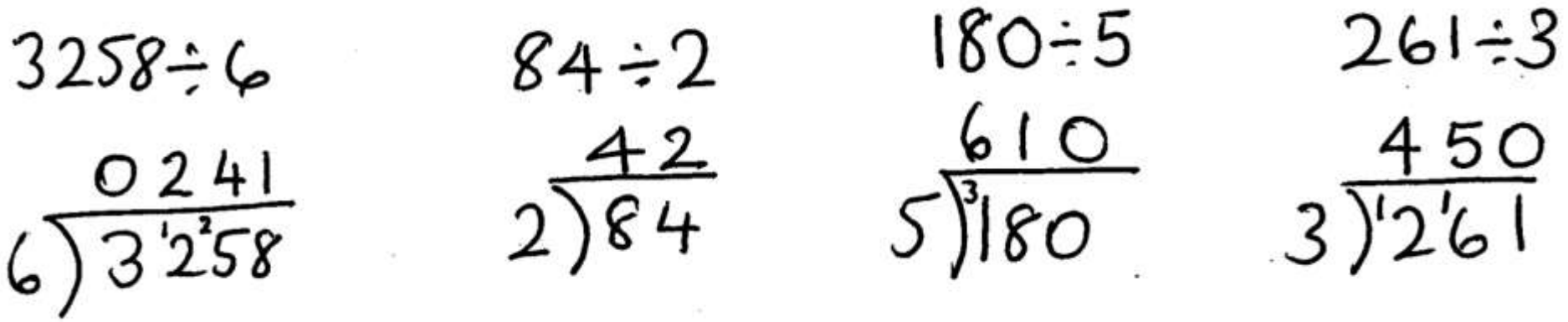
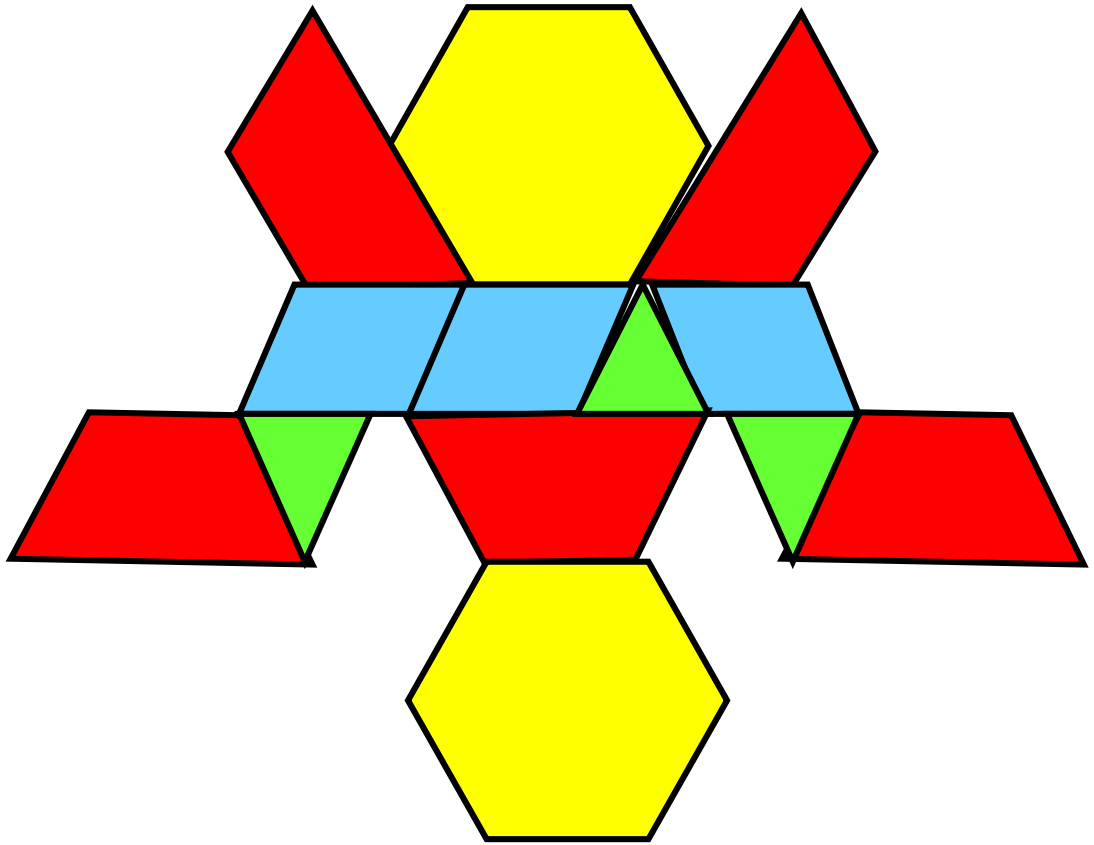


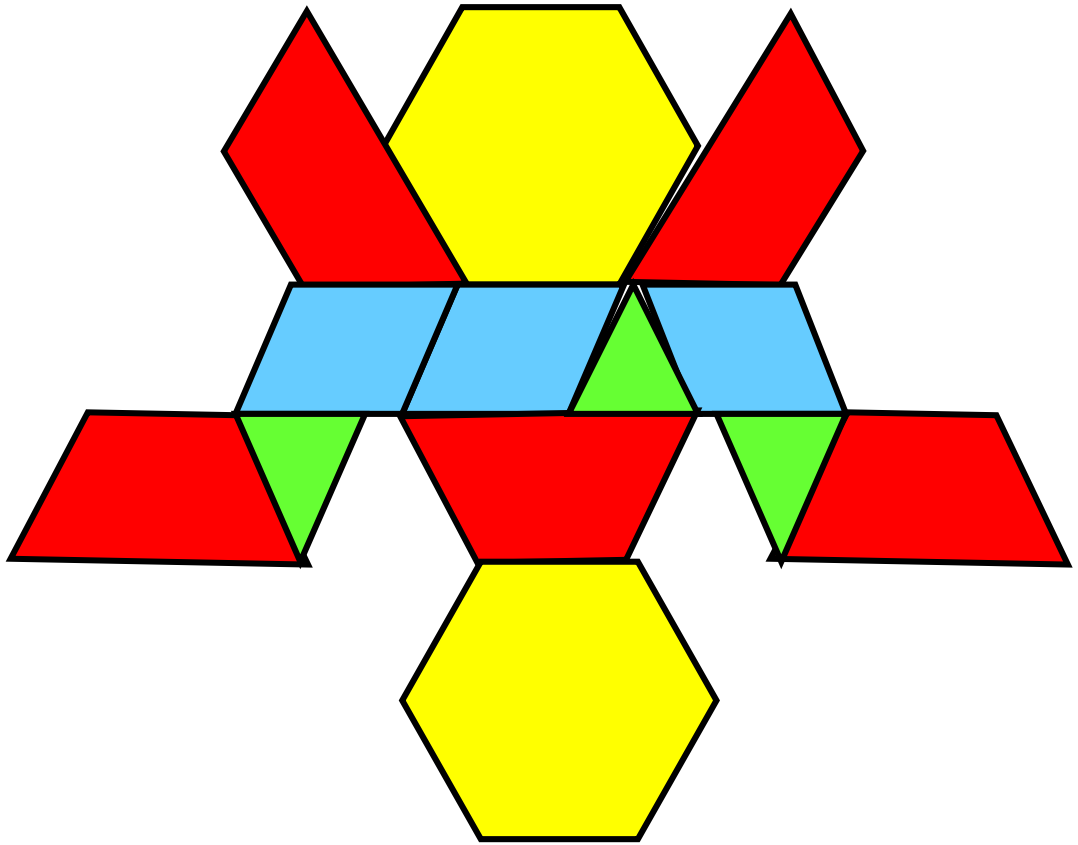
The Pencil Task

- Mrs. Washington cleans her classroom on the last day of school and finds some pencils left over from the year. She knows there are 24 pencils in a full box. Mrs. Washington finds ¼ of a box in her desk. How many pencils does she find in her desk?
- Mrs. Washington finds ¾ of a box of pencils in the closet of her classroom. How many pencils does she find in the closet?
- Mrs. Washington finds $1\frac{1}{8}$ boxes of pencils in the lost and found in her classroom. How many pencils does she find in the lost and found?

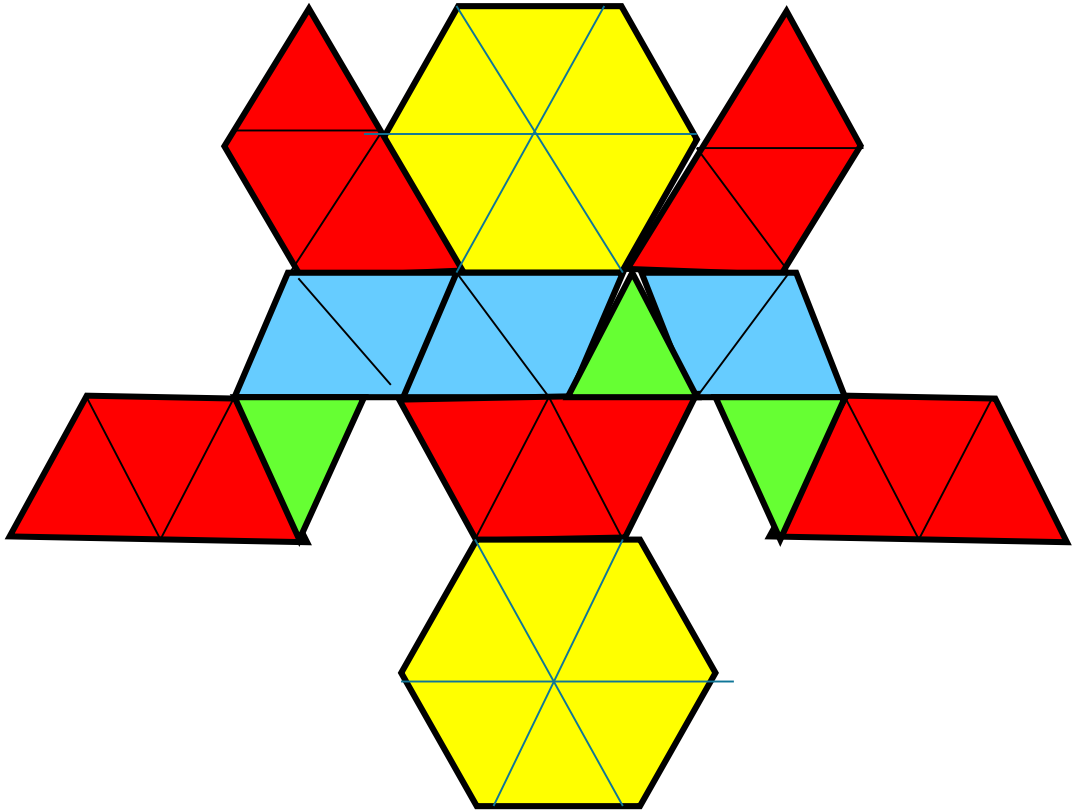
What fraction is blue?



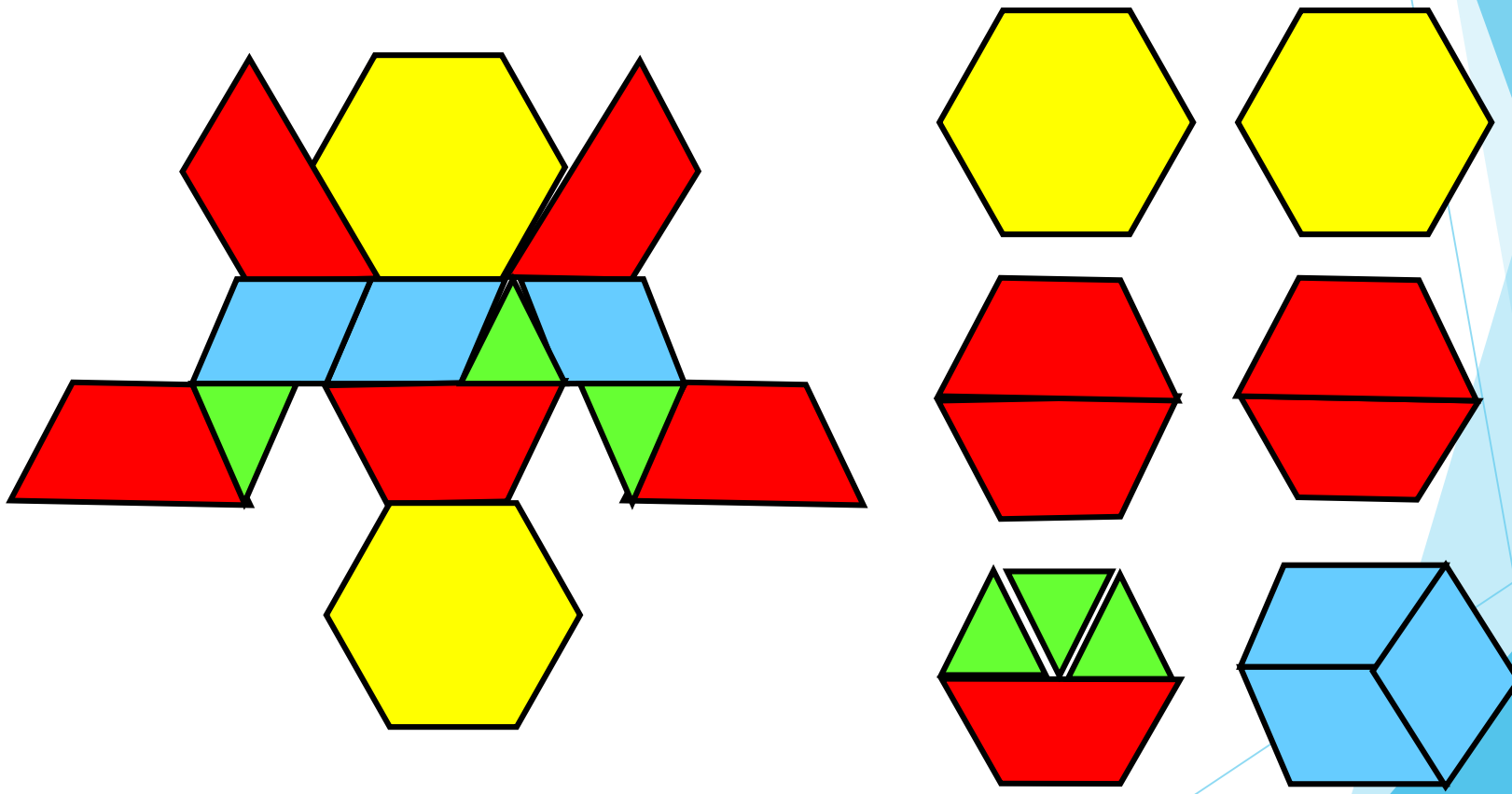
Part of a Set – 3 of 13 pieces



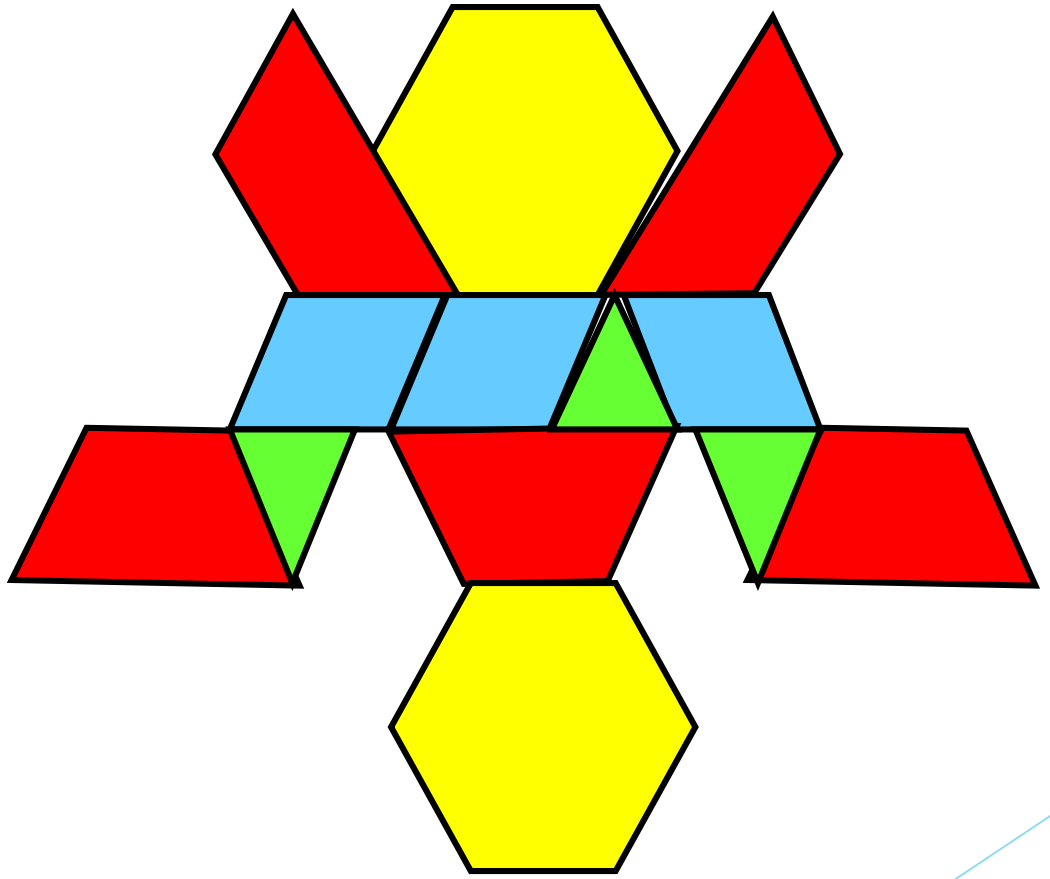
Part of an Area - 6 of 36 triangles



Part of an Area
1 of 6 hexagons



Part of an area –
Blue is 1/3 of largest piece



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- Goal is to make 21st tally mark.
- Two people take turns adding to one set of tally marks.
- On each turn, you may make 1, 2, or 3 tallies.