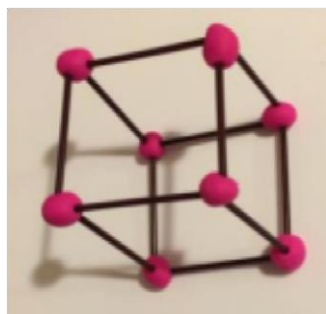


Analyzing, Comparing, and Composing Shapes

Our kindergarten mathematics work comes to a close with another opportunity for students to explore geometry. In Module 6, students build on their previous experience with two- and three-dimensional shapes and expand their spatial reasoning skills. They lay the groundwork for understanding area by composing various geometric figures.



A student-made cube of sticks and clay



What Came Before this Module:

We took our first steps toward understanding place value. We composed and decomposed teen numbers as “10 ones and some ones” and practiced counting to 100 by ones and tens.

New Terms and Strategies in this Module:

Ordinal Numbers: first, second, third, fourth, fifth, sixth, seventh, eighth, ninth, tenth

Familiar Terms and Strategies in this Module:

Position Words: above, below, beside, in front of, next to, behind

Two-Dimensional (Flat) Shape Words:

Circle
Triangle
Rectangle
Square
Hexagon
Face—a two-dimensional side of a three-dimensional shape

Three-Dimensional (Solid) Shape Words:

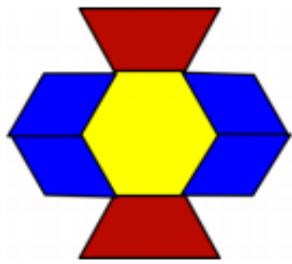
Sphere
Cube
Cylinder
Cone

Key Common Core Standards:

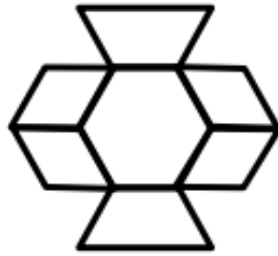
+ How You Can Help at Home:

- Continue to review and practice counting numbers up to 100 or as high as possible.
- Ask your student to use position words (see key terms box) to describe object locations relative to each other, e.g., “that pen is beside the glass of water on the table.”

- **Count to tell the number of objects.**
 - Understand the relationship between numbers and quantities; connect counting to cardinality.
 - Develop understanding of ordinal numbers (first through tenth) to describe the relative position and magnitude of whole numbers.
- **Analyze, compare, create, and compose shapes.**
 - Model shapes in the world by building shapes from components; draw shapes.
 - Compose simple shapes to form larger shapes.



Simple



Complex

Students will work with pattern blocks such as the ones above to create more complex shapes out of the shapes they already know. Activities can begin with matching pattern blocks to a color picture, then move to filling in the outlined shapes, and eventually require students to develop their own combinations and ideas to fill a larger shape.

Spotlight on Math Strategies:

Pattern Blocks

Students will use these blocks to compose shapes in this module of *A Story of Units*.

A Story of Units has several key mathematical strategies that will be used throughout a student's elementary years.

This module challenges students to use their basic understanding about shapes to combine and create the shapes they know into new, composite shapes. For example, a student may combine 4 small triangle blocks to make a larger triangle (see image below). Pattern blocks are not exclusive to *A Story of Units*. They are tools that have been used to support math learning for many generations of students.

As students use the pattern blocks to create new, larger shapes, we reinforce a central idea of *A Story of Units*: smaller units combine to make larger units. This is true in our work with shapes and area, but it also supports our work with the base ten number system, building a strong foundation for Grade 1.

Sample Problem from Module 6:

Trace to show two ways to make each shape. How many shapes did you use?

(Students will have several large shapes to fill with different pattern blocks of their choice.)

Sample taken from Module 6, Lesson 6



I used 3 shapes.



I used 4 shapes.