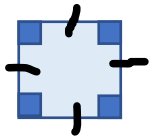
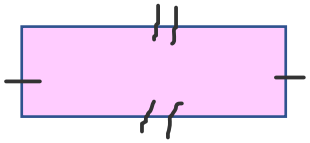
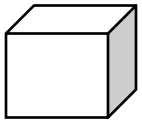
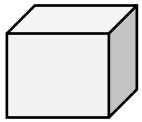
van Hiele Levels of Geometric Thought

Examples of how the language and levels of thought change from one level to the next.

Shape	**Level 0 – Visualization** Describe shapes by appearance	**Level 1 – Analysis** Describe shapes by properties	**Level 2 - Abstraction** Describe the relationship between the properties of shapes
Square	This is a square.  This is like a piece of cheese or a floor tile.	A square has 4 equal sides and 4 right angles. 	A square is a special kind of rectangle. It is also a parallelogram. • Opposite sides are equal • It has 4 square corners • Opposite sides are parallel
Rectangle	This is a rectangle.  This is the shape of a box, a door, or a book.	A rectangle has 4 square corners. Opposite sides are equal length. 	A rectangle is a quadrilateral. It is also a parallelogram. All squares are rectangles, but not all rectangles are squares. All rectangles are parallelograms, but not all parallelograms are rectangles.
Cube	This is a cube:  This is the shape of a block and a dice.	A cube has 6 square faces, 8 vertices, and 12 edges.  This shape can stack and slide.	A cube is a rectangular prism with 6 equal size faces. The edges form a line segment where 2 faces meet. The vertex is where 3 edges come together. If I know the length of one side of a cube, I can determine the volume and surface area.

C. Elkins, 2018