Home Connection

Students have learned the terms faces, corners, and edges of 3-dimensional solids. They have also learned that a vertex is a point where two lines meet. They have learned how to find the area of a rectangle. In this chapter, students will see parallel and perpendicular relationships between edges and faces through examining, composing, and decomposing shapes.

Cuboids

Cuboid is another term for a rectangular prism. It is a closed, solid shape that has 6 faces, 8 vertices, and 12 edges. On a cuboid, all cross sections are rectangles, and all faces are rectangles. A cube is a cuboid in which all faces are the same size and shape, and all edges are the same length.

After identifying the two-dimensional surfaces of cuboids, students will learn to represent the cuboids by nets. A net is a single flat shape that when folded on the edges forms a 3-dimensional object.

When students cut and fold nets to build cuboids, they can visualize how edges and faces connect. It's a very helpful spatial awareness activity.

Parallel and Perpendicular Relationships

Students will identify parallel and perpendicular lines on cuboids. They will see that all of the pairs of faces that share a common edge meet at right angles.
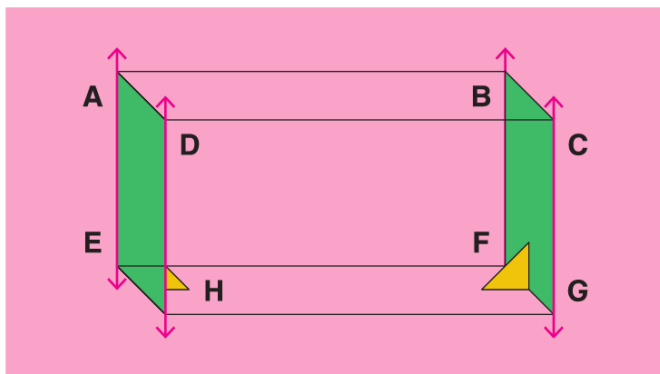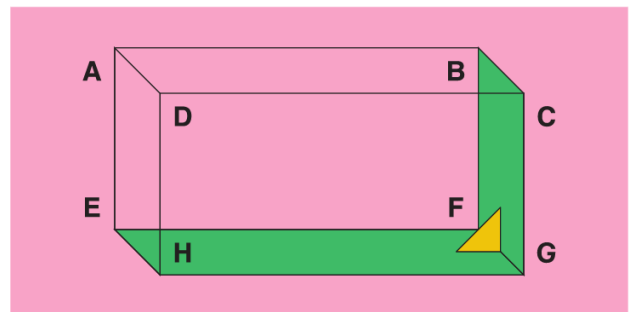
Just as lines can be perpendicular to each other, faces can be perpendicular to each other, too. Lines intersect at a point. Faces intersect at a line. Perpendicular faces always define 3-dimensions (length, width, and height). Students will also see that opposite faces on a cuboid are parallel.

What Can We Do At Home?

<u>Making Nets</u>

Materials:
- Carboard boxes of all shapes and sizes (hang on to those Amazon boxes!)
- Scissors (A safety discussion of handling scissors and carboard boxes would be helpful. i.e., cut away from yourself, if you come to a part that is hard to cut ask for help from an adult, cut slowly, etc.)

Give your student a pair of scissors and let them cut the boxes apart in different ways by cutting along edges. Then lay them flat to reveal different shaped nets. This allows students to spatially understand that cuboids can be formed from folding 2-dimensional shapes.