

Module 5 - Lesson 16:

Identify attributes and properties of right rectangular prisms.

CCSS Standard – 5.MD.C.3 / 5.MD.C.3.a / 5.MD.C.3.b

FLUENCY (10-min)

Beep Counting by 2 Tenths by 6 Tenths



Listen carefully as I count by 2 tenths or 6 tenths. I will replace one of the numbers with the word beep.
Raise your hand when you know the beep number. Ready?

0, 0.2, _____

1.0, _____, 1.4

1.0, 0.8, _____

2.0, _____, 1.6

0, 0.6, _____

3.0, _____, 4.2

3.0, 2.4, _____

6.0, _____, 4.8

FLUENCY (10-min)**Hidden Addends**

Determine the sum then write and say an addition equation or related subtraction equation.

0.1

0.2

0.3

0.4

0.5

0.6

0.7

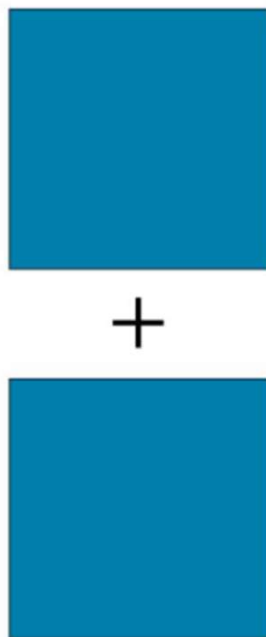
0.8

0.9

Partner A and B: "Sum is 0.8"

Partner A "0.5 + 0.3 = 0.8"

Partner B "0.8 - 0.5 = 0.3"

**Task:**

- Place deck of cards facedown.
- Flip over a card and place it on a blue square.
- Both partners say the sum.
- Partner A records an ADDITION equation on their whiteboard.
- Partner B records a SUBTRACTION equation.
- Finish when all cards have been used.

LAUNCH (10-min)

Identify Similarities and Differences between a Square and a Cube.

THINK-PAIR-SHARE:

What are the properties of a square including other names for squares.

- A square has four sides that are the same length.
- A square has four right angles.
- A square has four lines of symmetry.
- A square is a rectangle, rhombus, parallelogram, trapezoid, and a kite.
- A square is a quadrilateral.
- A square is a polygon.
- A square is two-dimensional.
- We can tile a square to find its area.

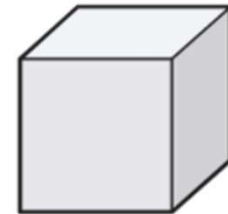
Square



THINK-PAIR-SHARE:

Now that everyone has a centimeter cube, what similarities and differences are there between a cube and the square?

- A square is flat, but a cube is not.
- A cube has squares on all sides.
- Both a cube and a square have right angles.
- A cube is a three-dimensional figure.
- A square is two-dimensional figure.
- A square has four corners, but a cube has more than four corners.
- A square is a polygon, but a cube is not.

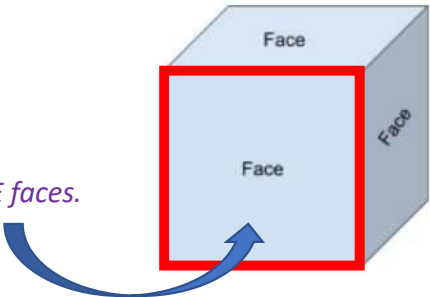


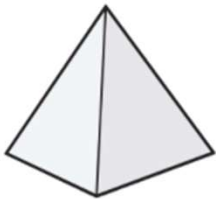
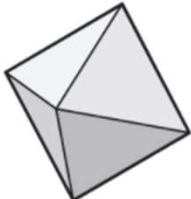
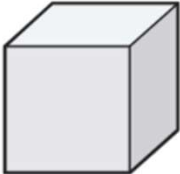


LAUNCH (10-min)

Identify Similarities and Differences between a Square and a Cube.

A square is a two-dimensional shape and lies in a plane.
A cube is a three-dimensional shape and does not lie in a plane.

A cube has 6 SQUARE faces.



Tetrahedron	Octahedron	Cube	Dodecahedron	Icosahedron
				
4 equilateral triangles	8 equilateral triangles	6 squares	12 regular pentagons	20 equilateral triangles

teh·truh·**hee**·druhn

aak·tuh·**hee**·druhn

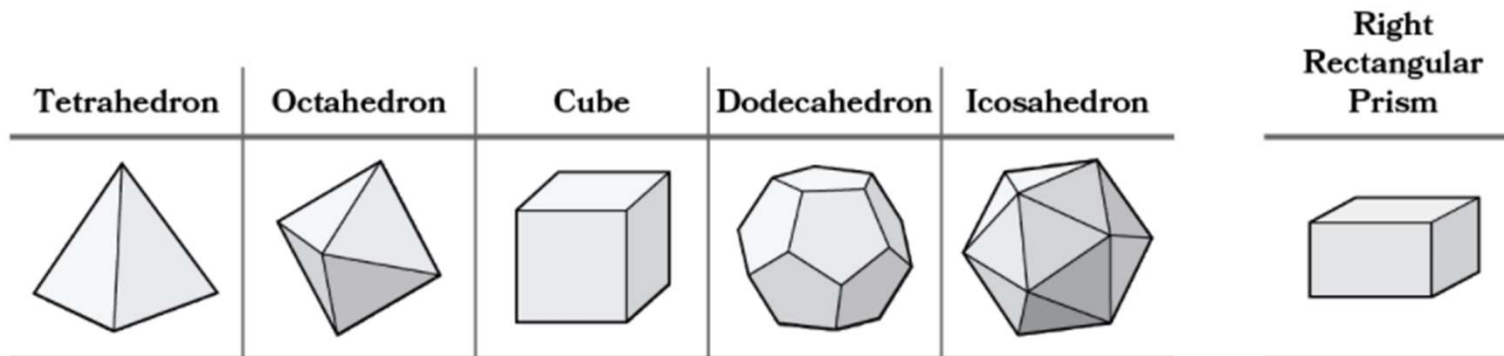
dow·deh·kuh·**hee**·druhn

ai·kow·suh·**hee**·druhn

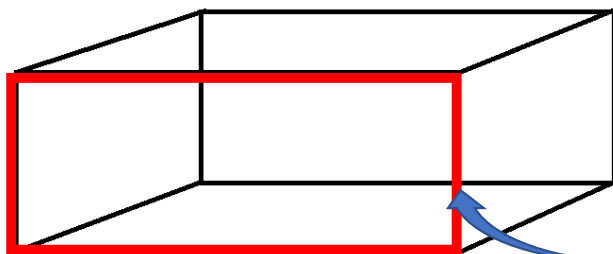
The ancient Greeks studied solids, including a group of solids known as the **Platonic solids**. All the faces of Platonic solids are **identical regular polygons**, or identical polygons that have sides that are the same length and angles that are the same measure.

A square has all the same side lengths and the same four angles.

A cube is one of the Platonic solids because its **faces are squares that are identical regular polygons.**

LAUNCH (10-min)**Identify Similarities and Differences between a Square and a Cube.**

On page 143 of your LEARN book, you have a net of a **Right, Rectangular Prism**. The 'net' of a shape (also called a geometry net) is a term used to describe what a 3D shape would look like if it was opened out and laid flat. If you were to cut out the shape and tape the prism together it would look like this:



A right, rectangular prism has 6 rectangular faces.

Is the Right, Rectangular Prism a Platonic solid?

No! All the faces are not identical.
There are only five Platonic solids.

LEARN (30-min)

Length, Width, and Height

Use the digital interactive to create rectangular prisms.



Notice that the **rectangular base does not change** even though the height does. The rectangle base is a **flat, two-dimensional figure that lies on a plane**. The length and width do not change!

Height

Width

Length

Two-dimensional rectangle
(Length & Width)
AREA = L X W
5 x 3 = 15 units squared

Three-dimensional rectangle
(Length & Width & Height)

See Rectangle

See Rectangular Prism

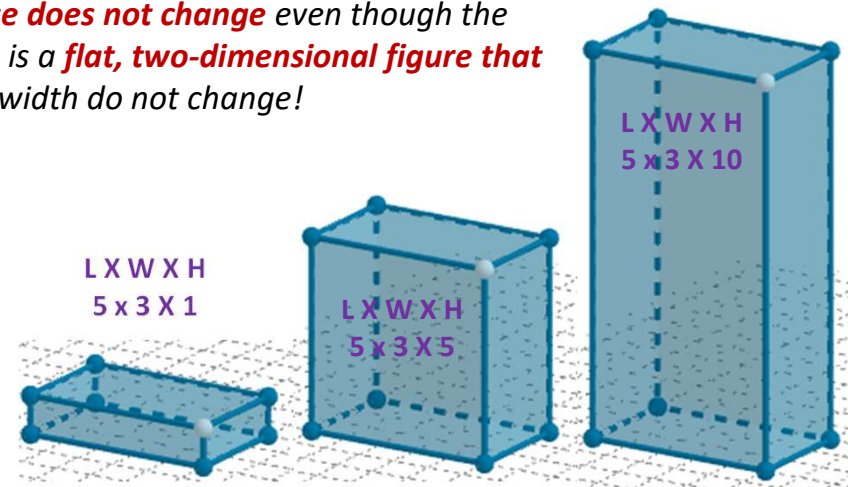
See Both

Show Edges

Show Vertices

Show Faces

Reset View



The base of a right, rectangular prism is one of the faces of the prism. It is often thought of as the surface on which the prism rests. The base of this right rectangular prism has a length of 5 units and a width of 3 units.

The length and width of the base are the length and width of the prism. The height adds in a 3rd dimension making it 3D.

LEARN (30-min)

Length, Width, and Height

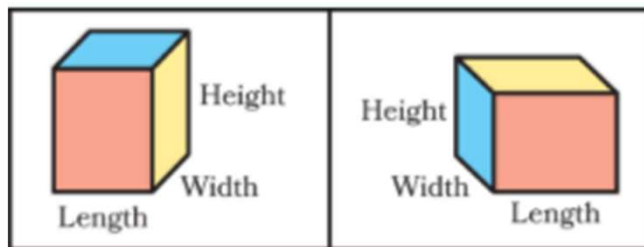
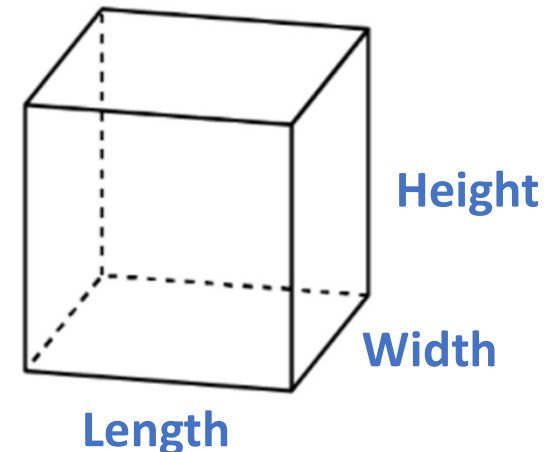
LEARN book page 145.

1. Label the length, width, and height of the right rectangular prism.

Look at the cube, how would you label the **length**, **width**, and **height**?

What if the prism is turned? Would the labels change?

Since a prism can be turned in different ways, the labels can change even though the prism stays the same size



LEARN (30-min)

Faces, Edges, and Vertices

LEARN book 145

We know all rectangles have four sides. The points where two sides meet are vertices. All rectangles have the same number of vertices – four.

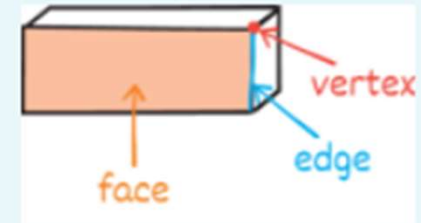
Right rectangular prisms are different. A rectangular prism, has **faces**, **edges**, and **vertices**.

- A right rectangular prism has **6 faces**.
- A right rectangular prism has **12 edges**.
- A right rectangular prism has **8 vertices**.

Often, the bottom face of a right rectangular prism is called the prism's **base**. Any face can be called the base if the prism is turned over.

The number of faces, edges, and vertices do not change when the length, width, and height change.

All angles of a right rectangular prism are right angles.



Term	
Face	flat part of a three-dimensional shape
Edge	a line segment where two faces of a three-dimensional shape meet
Vertex	a point where the sides meet in a two-dimensional shape and a point where the edges meet in a three-dimensional shape

LEARN (30-min)

Faces, Edges, and Vertices

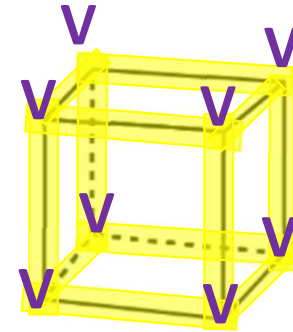
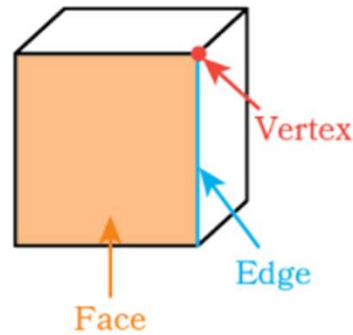
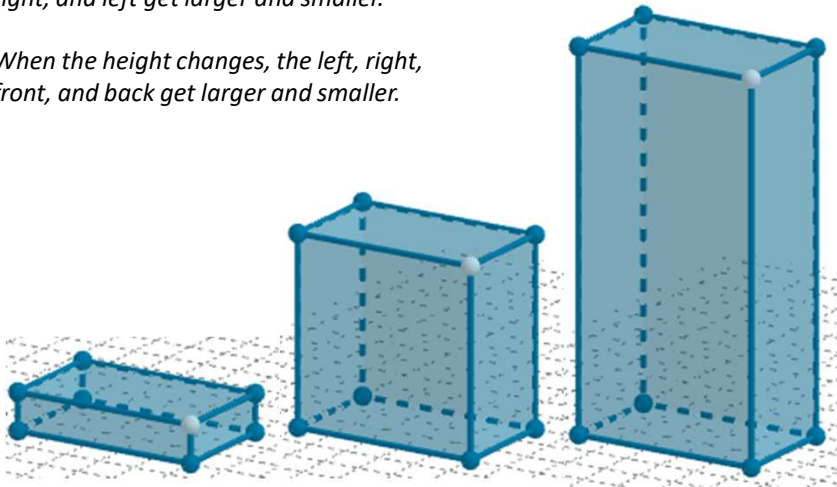
LEARN book page 145.

2. Highlight the edges and label the vertices of the right rectangular prism with a V.

When the length changes, the top, bottom, front, and back get larger and smaller.

When the width changes, the top, bottom, right, and left get larger and smaller.

When the height changes, the left, right, front, and back get larger and smaller.



- A right rectangular prism has 12 edges.
- A right rectangular prism has 8 vertices.

Use the digital interactive to create rectangular prisms.



LEARN (30-min)

Rectangle or Right Rectangular Prism?

Take a Stand!

How can you tell whether a figure is rectangle or a right rectangular prism?

Which statement do you most agree with?



The sheet of paper is a **rectangle**.

The sheet of paper is a **right rectangular prism**.

The sheet of paper is **both** a rectangle and a right rectangular prism.

The sheet of paper is **neither** a rectangle nor a right rectangular prism.

A rectangle is flat, and right rectangular prism is not flat.

A rectangle lies in a plane, but a right rectangular prism does not lie in a plane.

A right rectangular prism has a height, but a rectangle does not have a height.

A right rectangular prism is three-dimensional, but a rectangle is two-dimensional.



Exit Ticket – PAGE 151

Small Group Time:
Problem Set Pages 147 - 150

Homework:
Page 103 APPLY BOOK



Name

Date

16

Indicate whether each statement is true or false. If the statement is false, correct the statement.

Statement	True or False	Correct Statement
A three-dimensional figure is flat.	True False	
A three-dimensional figure has length, width, and height.	True False	
A three-dimensional figure does not lie in a plane.	True False	
All right rectangular prisms have 4 faces.	True False	
All right rectangular prisms have 12 edges.	True False	
All right rectangular prisms have 6 vertices.	True False	