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2018 Technology Integration Workshop

Unit Title: Three-Dimensional Figures

Grade Level: 5th

Subject Area: Math

Duration/Length/Number of class periods: 7 classes 45 min each

Description: In this unit we will be exploring three-dimensional figures. They will be learning about the different parts of three-dimensional figures and how to identify them. They will also be learning about how to find the volume of rectangular prisms using different strategies.

Established Goals (National, State, Local): Math

Standard 5.3.1 Three-Dimensional Figures

Describe, classify, and draw representations of three-dimensional figures.

Standard 5.3.2 Area, Surface Area and Volume

Determine the area of triangles and quadrilaterals; determine the surface area and volume of rectangular prisms in various contexts.

What Enduring Understandings are desired?

- All three-dimensional figures have features.
- Use various tools and strategies to measure the volume and surface area of objects that are shaped like rectangular prisms.
- Understand concepts of volume and relate volume to multiplication and addition.

What Essential Questions will be considered?

- How do we know a shape is three-dimensional?
- How do we represent the inside of a three-dimensional figure?
- How do we find the volume of rectangular prisms?
- Why do we use cubic units to help us find the volume for three-dimensional figures?

Students will know / be able to:

- Students will be able to recognize and draw a net for three-dimensionals figures.
- Students will be able to identify the vertices, edges, and faces of three-dimensional figures.
- Students will understand a cubic unit is a measure of volume, 1 unit wide by 1 unit tall by 1 unit long.
- Students will be able to find the volume of rectangular prisms through counting the cubic units.
- Students will be able to find the volume of rectangular prisms by using a formula they have developed.

Description *Units must include at least one of each formative, summative, introductory activity and learning activity. Check the appropriate box; one per row.*	Formative	Summative	Introductory Activity	Learning Activity	Student Technology Used	Teacher Technology Used	ISTE Standards
Give the students different 3-D figures and nets and have the students match the two together. Use dynamic paper on illuminations to create the nets and 3-D figures.	x		**x**			**x**	
Students are given 9 different nets and they have to decide which make cubes and which don't. An extension is they have to come up with all the nets that there are for a cube. (11) Cube nets on illuminations.	x			**x**	**x**		
Exploration with volume and rectangular prisms on illuminations. Have a sheet to guide them through and activity.	x		**x**		**x**		
Have the students pick two different 3-D figures and have them create a project displaying the different parts, explaining the names of the 3-D figures, how they know something is 3-D, and the net of the 3-D figures. They also have to draw a rectangular prism, draw the net, label the side lengths and explain a step by step process on how to find the volume using two different strategies. The students get to pick what they create the project on, using technology.		**x**		**x**	**x**		**1c, 6a-d**

Materials, tools and resources:

- Chromebooks
- Illuminations website
- Nets and 3-D figures created from dynamic paper on Illuminations
- Cube Detective Activity
- Activity guide for Volume and Rectangular Prisms Exploration

Unit Plan Author (name, school and optional email address or hyperlink to teacher's web page): Paige Maxwell, Saint Helena

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