

Yenka 3D Shapes Lesson Plan

Volume of Cuboids



Duration	10-15 minutes
Materials	Yenka software: <ul style="list-style-type: none">• installed with version 1.0 or greater• licensed with School Site Licence for Yenka 3D Shapes or a free Trial Licence available from yenka.com• projected onto a whiteboard
Objective(s)	To demonstrate how to calculate the volume of cuboids.
Setup	The teacher should prepare a model file with three cuboids of varying volume. The dimensions of each cuboid should vary significantly so that the longest or widest cuboid is not necessarily the one with the greatest volume.
Instruction	<p>The lesson begins with the prepared cuboids, but the view is restricted so that only one face of the shapes can be seen. The teacher asks the class which cuboid has the greatest volume, expecting that the class will choose the shape with the greatest visible surface area. Next, the teacher rotates the view so that the full dimension of each shape is clear. The teacher then asks the class if they still think their earlier choice is the shape with the greatest volume.</p> <p>Next, the teacher describes that the volume of a cuboid is equal to its length, multiplied by its width, multiplied by its height. Using length measurement tools in Yenka, the teacher measures the dimensions of each cuboid and performs the calculations with the class to determine the volume of each shape. Finally, volume measures can be added to the shapes in Yenka to confirm the calculations.</p>
Extensions	As a continuation, the teacher could: <ul style="list-style-type: none">• Create larger cuboids with more challenging calculations.• Explore the relationship between length, area, and volume.• Calculate the volume of combined shapes.



A video showing how this lesson plan can be used with Yenka 3D Shapes is available here: www.yenka.com/en/Getting_Started/