

Topic 11 Overview

TOPIC FOCUS: Build on knowledge of area, arrays, and multiplication to develop an understanding of the measurable attribute of volume and on using numbers and operations to compute the volume of rectangular prisms and composite shapes. Topic lessons begin with unit cubes to create rectangular prisms and then proceed to develop two formulas.

ESSENTIAL QUESTION: What is the meaning of volume of a solid? How can the volume of a rectangular prism be found?

STANDARDS: The Major focus standards for this topic are **5.MD.C.3a, 5.MD.C.3b, 5.MD.C.4, 5.MD.C.5a, 5.MD.C.5b, and 5.MD.C.5c**. *Recognize volume as an attribute of solid figures and understand volume measurement in terms of cubic units and relate volume to the operations of multiplication and addition and solve real-world and mathematical problems involving volume.*

Topic 11 has a 3-Act Task that should be included into the lesson sequence after lesson 11-2. Use the 3-ACT Math Record Sheet.

ASSESSMENT: **5.MD.C.3a, 5.MD.C.3b, 5.MD.C.4, 5.MD.C.5a, 5.MD.C.5b, and 5.MD.C.5c** standards are only assessed at the end of Topic 11, so the Topic 11 Assessment should be used summatively for those standards.

MANIPULATIVES:

- Multi-sided Linking Cubes

Printable Teaching Tools:

- Teaching Tool 4- Place-Value Blocks
- Teaching Tool 9- Centimeter Grid Paper

REQUIRED ASSESSMENTS

**Resources for Formative
and Summative
Assessment from
enVision Mathematics**

- Pre-Assessment: Review What you Know
- Use item analysis to identify MDIS lessons

Pocatello/Chubbuck School District #25

5th Grade

TOPIC 11: Understand Volume Concepts

Pacing: 8 Days

	Topic 11 Review (Select one) • Topic 11 Assessment Practice (TE pg 481-482): may be projected and used as a review. • Topic 11 Performance Task (TE pg 483-484: #1 Part A, #1 Part B, #1 Part C, and #1 Part D): to be used as guided instruction with the whole group. Topic 11 Assessment (Pick one) Administer as a summative assessment for 5.MD.C.3a, 5.MD.C.3b, 5.MD.C.4, 5.MD.C.5a, 5.MD.C.5b, and 5.MD.C.5c. • Online Topic 11 Assessment • Topic 11 Assessment (Print from online) Suggested FIAB Gr 5 - Volume Concepts
--	---

STANDARDS	Topic Learning Intentions	Topic Success Criteria
The standards are clustered with Learning Intentions and Success Criteria (LI/SC) and are identified to provide coherence in teaching and learning. Students should spend the large majority of their time on the major work of the grade. Major clusters (□) address the most important standards at that grade level. Supporting clusters (△) are strongly connected to the content of the major clusters, and additional clusters (⊠) address other content to be taught at that grade level.	LI Identified on Math Background: Focus Page	SC identified in Topic Planner - math objectives
 5.MD.C.3 Recognize volume as an attribute of solid figures and understand volume measurement in terms of cubic units.  5.MD.C.3a A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume.  5.MD.C.3b A solid figure which can be packed without	We are learning to develop an understanding of the measurable attribute of volume and computing the volume of rectangular prisms and composite shapes.	I can: 11-1: Find the volume of solid figures. 11-2: Find the volume of rectangular prisms using a formula. 11-3: Find the volume of a solid figure that is the combination of two or more rectangular prisms.

Pocatello/Chubbuck School District #25
TOPIC 11: Understand Volume Concepts

5th Grade

Pacing: 8 Days

gaps or overlaps using n unit cubes is said to have a volume of n cubic units.  5.MD.C.5 Use concrete and/or visual models to measure the volume of rectangular prisms in cubic units by counting cubic cm, cubic in, cubic ft, and nonstandard units.  5.MD.C.5a Find the volume of a right rectangular prism with whole-number edge lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base.  5.MD.C.5b Apply the formulas $V = l \times w \times h$ and $V = B \times h$ (where B stands for the area of the base) for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths, and in the context of solving real-world and mathematical problems.  5.MD.C.5c Recognize volume as additive. i. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts. ii. Apply this technique to solve real-world problems.		11-4: Use models, prior knowledge of volume, and previously learned strategies to solve word problems involving volume. 11-5: Use previously learned knowledge about volume to show the appropriate tools to solve volume word problems.
--	--	--