

Module 5: Addition and Multiplication with Volume and Area (Trimester 3: 25 Days)

Topic A	Concepts of Volume		5.MD.3 5.MD.4
Topic B	Volume and the Operations of Multiplication and Addition		5.MD.3 5.MD.5
ASSESSMENT	5.MD.3, 4	Reporting Strand: Understands volume, attributes of 2-D figures, and the coordinate plane	Report Card: 0-4
	5.MD.5		
Topic C	Area of Rectangular Figures with Fractional Side Lengths		5.NF.4 5.NF.6
ASSESSMENT	5.NF.4	Reporting Strand: Understands volume, attributes of 2-D figures, and the coordinate plane	Report Card: 0-4
Topic D	Drawing, Analysis, and Classification of Two-Dimensional Shapes		5.G.3 5.G.4
ASSESSMENT	5.G.3, 4	Reporting Strand: Understands volume, attributes of 2-D figures, and the coordinate plane	Report Card: 0-4

- 5.NF.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
- b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.
- 5.NF.6 Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.
- 5.MD.3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement.
- a. 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.
 - b. A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.
- 5.MD.4 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.
- 5.MD.5 Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.
- a. Find the volume of a right rectangular prism with whole-number side 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. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.
 - b. Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems.
 - c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.
- 5.G.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.
- 5.G.4 Classify two-dimensional figures in a hierarchy based on properties.

Reporting Strand: Understands volume, attributes of 2-D figures, and the coordinate plane

CCSS	4 – Mastery	3- Proficient	2 – Basic	1 – Below Basic	0 – No Evidence
5.G.3, 5.G.4	<p>Can extend thinking beyond the standard, including tasks that may involve one of the following:</p> <ul style="list-style-type: none"> • Designing • Connecting • Synthesizing • Applying • Justifying • Critiquing • Analyzing • Creating • Proving 	Identify attributes of a two-dimensional shapes to <u>classify them into a hierarchy</u> based on properties	Identify two-dimensional shapes <u>based on properties and the attributes of two-dimensional shapes</u>	Identify two-dimensional shapes	<p>Little evidence of reasoning or application to solve the problem</p> <p>Does not meet the criteria in a level 1</p>
5.MD.3, 5.MD.4		Given a figure filled with unit cubes, find <u>and explain</u> the volume by counting the number of cubic units (measured in cm, in, ft, or improvised units)	<u>Given a figure filled with unit cubes</u> , find the volume by counting the number of cubic units (measured in cm, in, ft, or improvised units)	<u>Pack a figure with unit cubes</u> with no gaps or overlaps, and find the volume by counting the number of cubic units (measured in cm, in, ft, or improvised units)	
5.MD.5		<p><u>Explain why</u> the volume of a right rectangular prism is the same when:</p> <ul style="list-style-type: none"> • Packing the prism with unit cubes • Multiplying the edge lengths • Multiplying the height by the area of the base. <p>Solve volume word problems involving rectangular prism using the formulas $V = l \times w \times h$ and $V = b \times h$</p> <p><u>Solve volume word problems involving solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts</u></p>	<p><u>Show</u> that the volume of a right rectangular prism is the same when:</p> <ul style="list-style-type: none"> • Packing the prism with unit cubes • Multiplying the edge lengths • Multiplying the height by the area of the base. <p><u>Solve volume word problems</u> involving rectangular prism using the formulas $V = l \times w \times h$ and $V = b \times h$</p>	<p><u>Show</u> that the volume of a right rectangular prism is the same when:</p> <ul style="list-style-type: none"> • Packing the prism with unit cubes • Multiplying the edge lengths • Multiplying the height by the area of the base. 	
5.NF.4b	<p><u>Explain</u> that the area of a rectangle with fractional sides is the same by doing <u>all</u> of the following:</p> <ul style="list-style-type: none"> • multiplying fractions/mixed numbers • tiling • using an area model 	Find the area of a rectangle with fractional sides by doing <u>two</u> of the following: <ul style="list-style-type: none"> • multiplying fractions/mixed numbers • tiling • using an area model 	Find the area of a rectangle with fractional sides by doing <u>one</u> of the following: <ul style="list-style-type: none"> • multiplying fractions/mixed numbers • tiling • using an area model 		

Comprende el volumen, los atributos de las figuras 2-D y el plano de coordenadas

CCSS	4 – Dominio	3- Apto	2 – Básico	1 – Por debajo de lo Básico	0 – No hay Evidencia
5.G.3, 5.G.4	<p>Puede pensar más allá del estándar, incluyendo tareas que puedan involucrar uno de los siguientes aspectos:</p> <ul style="list-style-type: none"> • Diseñar • Conectar • Sintetizar • Aplicar • Justificar • Criticar • Analizar • Crear • Demostrar 	Identifican atributos de figuras bidimensional para clasificarlas dentro de una jerarquía según sus propiedades	Identifican figuras bidimensionales según sus propiedades y los atributos de las figuras bidimensionales	Identifica figuras bidimensionales	<p>Hay poca evidencia de razonamiento o aplicación para resolver el problema</p> <p>No reúne los criterios del nivel 1</p>
5.MD.3, 5.MD.4		Dada una figura con unidades cúbicas, hallan y explican el volumen contando el número de unidades cúbicas (medidas en cm, pulgadas, pies o unidades improvisadas)	Dada una figura con unidades cúbicas , hallan el volumen contando el número de unidades cúbicas (medidas en cm, pulgadas, pies o unidades improvisadas)	Llena una figura con unidades cúbicas sin espacios ni superposiciones, y hallan el volumen contando el número de unidades cúbicas (medidas en cm, pulgadas, pies, o unidades improvisadas)	
5.MD.5		<p>Explican por qué el volumen de un prisma rectangular recto es el mismo cuando:</p> <ul style="list-style-type: none"> • Se llena el prisma con unidades cúbicas • Se multiplican las longitudes de sus bordes • Se multiplica la altura por el área de la base. <p>Resuelve problemas verbales de prismas rectangulares usando las fórmulas $V = l \times a \times h$ and $V = b \times h$</p> <p>Resuelve problemas verbales de volumen con figuras sólidas compuestas por dos prismas rectangulares rectos que no se sobreponen sumando los volúmenes de las partes que no se sobreponen</p>	<p>Demuestran que el volumen de un prisma rectangular recto es el mismo cuando:</p> <ul style="list-style-type: none"> • Se llena el prisma con unidades cúbicas • Se multiplican las longitudes de sus bordes • Se multiplica la altura por el área de la base. <p>Resuelve problemas verbales de prismas rectangulares usando las fórmulas $V = l \times a \times h$ and $V = b \times h$</p>	<p>Demuestran que el volumen de un prisma rectangular recto es el mismo cuando:</p> <ul style="list-style-type: none"> • Se llena el prisma con unidades cúbicas • Se multiplican las longitudes de sus bordes • Se multiplica la altura por el área de la base. 	
5.NF.4b		<p>Explica que el área de un rectángulo con lados de longitudes fraccionales es lo mismo haciendo todo de lo siguiente:</p> <ul style="list-style-type: none"> • Multiplica fracciones/números mixtos • Utiliza fichas cuadradas • Utiliza un modelo de área 	<p>Halla el área de un rectángulo con lados de longitudes fraccionales haciendo dos de lo siguiente:</p> <ul style="list-style-type: none"> • Multiplica fracciones/números mixtos • Utiliza fichas cuadradas • Utiliza un modelo de área 	<p>Halla el área de un rectángulo con lados de longitudes fraccionales haciendo uno de lo siguiente:</p> <ul style="list-style-type: none"> • Multiplica fracciones/números mixtos • Utiliza fichas cuadradas • Utiliza un modelo de área 	