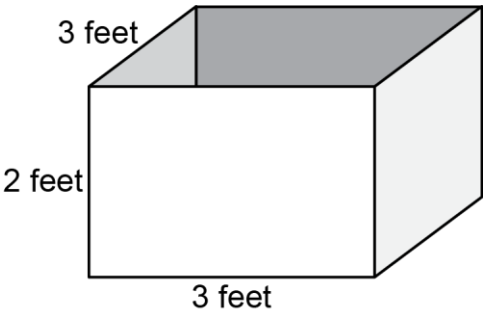
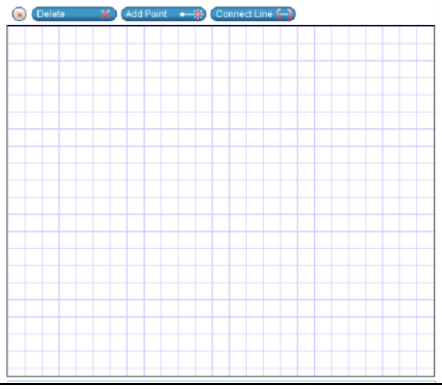
Content Standard	***MAFS.5.MD:*** *Measurement and Data* ***MAFS.5.MD.3*** *Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.* **MAFS.5.MD.3.5** Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. **MAFS.5.MD.3.5a** 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. **MAFS.5.MD.3.5b** 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. **MAFS.5.MD.3.5c** 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.
Assessment Limits	Whole number side lengths. Right rectangular prisms. No more than two non-overlapping prisms – non-overlapping means that two prisms may share a face, but they do not share the same volume.
Calculator	No
Acceptable Response Mechanisms	Equation Response Graphic Response – Drawing/Graphing Matching Item Response Multiple Choice Response Multi-Select Response
Context	Allowable
Example	
Context	Volumes between 50 and 100 square units. Volumes greater than 100 square units where at least one of the side lengths is a multiple of 10.
Context easier	Volumes under 50 square units. Volumes greater than 50 where at least one side length is 10.
Context more difficult	Volumes greater than 100, where no side length is a multiple of 10. The student is presented with multiple prisms to evaluate (i.e., multi-select items where each option is a prism).

Sample Item Stem	Response Mechanism	Notes, Comments
A shipping box in the shape of a rectangular prism has the dimensions shown.  What is the volume of the box in cubic feet?	Equation Response	
Select all the shipping boxes that are shaped like rectangular prisms that have a volume of 384 cubic feet (ft). ○ 6 ft x 8 ft x 8 ft ○ 4 ft x 12 ft x 24 ft ○ 4 ft x 6 ft x 16 ft ○ 4 ft x 8 ft x 12 ft ○ 3 ft x 10 ft x 20 ft	Multi-Select Response	
A shipping box in the shape of a rectangular prism has a volume of 48 cubic feet, a length of 4 feet, and a width of 3 feet. What is the height, in feet, of the box?	Equation Response	
A shipping box in the shape of a rectangular prism has a height of 6 feet (ft) and a volume of 96 ft^3. Use the Connect Line tool to draw a possible base for the box.  	Graphic Response – Drawing/Graphing	