

Math 6+: Measurement

Perimeter, Area, Surface Area, and Volume

Volume

Students **Learning Continuum Statements:**

Students:

RIT 201-210:

- Determines the volume of figures by counting unit cubes
- Determines the volume of rectangular prisms, formula not provided
- Represents the volume of rectangular prisms composed of unit cubes, using multiplication expressions or equations

Students:

RIT 211-220:

- Determines the volume of figures by counting unit cubes
- Determines the volume of rectangular prisms, formula not provided
- Recognizes situations which describe volume
- Solves problems involving rectangular prisms composed of unit cubes

Students:

RIT 221-230:

- Determines the length, width, or height given the volume of a rectangular prism and two of the dimensions
- Determines the volume of figures by counting unit cubes
- Determines the volume of rectangular prisms, formula not provided
- Determines the volume of rectangular prisms, given the formula
- Identifies a unit cube as a unit for measuring volume
- Identifies units for measuring volume
- Recognizes situations which describe volume
- Represents the volume of rectangular prisms composed of unit cubes, using repeated addition expressions or equations
- Solves problems involving volumes of rectangular prisms within a real-world or mathematical context

Students:

RIT 231-240:

- Determines the length, width, or height given the volume of a rectangular prism and two of the dimensions
- Determines the volume of a rectangular prism given a net shown on a grid
- Determines the volume of cylinders, given the formula
- Determines the volume of figures composed of rectangular prisms
- Determines the volume of pyramids, given the formula
- Determines the volume of rectangular prisms, formula not provided
- Identifies a unit cube as a unit for measuring volume
- Identifies units for measuring volume
- Recognizes situations which describe volume
- Represents the volume of rectangular prisms composed of unit cubes, using repeated addition expressions or equations
- Solves problems involving volumes of rectangular prisms within a real-world or mathematical context

Students:**RIT 241-250:**

- Describes the effect on volume when dimensions of a cylinder are changed
- Describes the effect on volume when dimensions of a rectangular prism are changed
- Determines the length, width, or height given the volume of a rectangular prism and two of the dimensions
- Determines the volume of cylinders, formula not provided
- Determines the volume of cylinders, given the formula
- Determines the volume of figures composed of rectangular prisms
- Determines the volume of pyramids, given the formula
- Determines the volume of spheres, given the formula
- Identifies units for measuring volume
- Represents the volume of rectangular prisms composed of unit cubes, using repeated addition expressions or equations
- Solves problems involving volumes of rectangular prisms within a real-world or mathematical context

Students:**RIT 251-260:**

- Describes the effect on volume when dimensions of a cylinder are changed
- Describes the effect on volume when dimensions of a rectangular prism are changed
- Determines the height of a cylinder given the volume and the radius or diameter
- Determines the radius or diameter of a cylinder given the volume and height
- Determines the radius or diameter of a sphere given the volume
- Determines the side length of a cube given the volume
- Determines the volume of a cube given the surface area
- Determines the volume of cylinders, formula not provided
- Determines the volume of cylinders, given the formula
- Determines the volume of figures composed of rectangular prisms
- Determines the volume of pyramids, formula not provided
- Determines the volume of pyramids, given the formula
- Solves problems involving volumes of rectangular prisms within a real-world or mathematical context
- Understands that the volume of a cone is one-third the volume of a cylinder with the same base area and height
- Uses geometric modeling as a method to solve real-world problems with given physical or cost requirements

Students:**RIT 261-270:**

- Describes the effect on volume when dimensions of a cylinder are changed
- Describes the effect on volume when dimensions of a rectangular prism are changed
- Describes the effect on volume when dimensions of a sphere are changed
- Determines a base length given the volume and height of a rectangular pyramid
- Determines the area of the face of a cube given the volume
- Determines the volume of cylinders, formula not provided
- Determines the volume of figures composed of rectangular and triangular prisms
- Determines the volume of pyramids, formula not provided
- Determines the volume of pyramids, given the formula
- Determines the volume of spheres, formula not provided

- Solves problems involving volumes of 3-D figures composed of cones, cylinders, and spheres within a real-world or mathematical context
- Solves problems involving volumes of cylinders within a real-world or mathematical context
- Solves problems involving volumes of rectangular prisms within a real-world or mathematical context
- Understands that the volume of a cone is one-third the volume of a cylinder with the same base area and height

Students:

RIT 271-280:

- Describes the effect on volume when dimensions of a rectangular prism are changed
- Determines the volume of cones, formula not provided
- Determines the volume of cylinders, formula not provided
- Determines the volume of pyramids, formula not provided
- Solves problems involving volumes of cones within a real-world or mathematical context
- Solves problems involving volumes of cylinders within a real-world or mathematical context
- Understands that the volume of a cone is one-third the volume of a cylinder with the same base area and height

Students:

RIT 281-290:

- Understands that the volume of a cone is one-third the volume of a cylinder with the same base area and height