

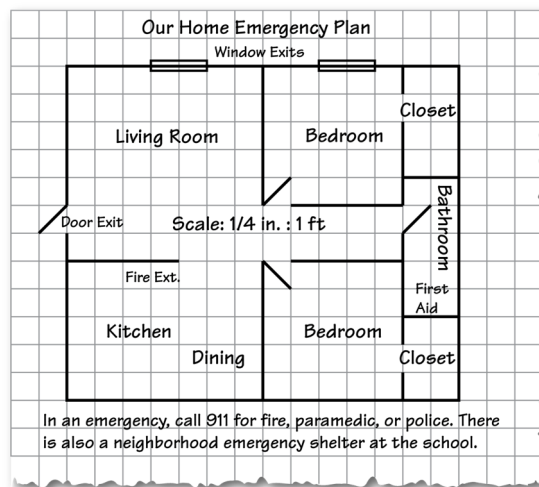
Chapter
5
Ratios and Proportions

Dear Family,

An emergency evacuation plan is required in most commercial buildings. A good plan shows the locations of exits in the building as well as the locations of fire extinguishers and other emergency equipment. The plan is usually shown on a scale drawing of the building's floor plan.

Creating an emergency evacuation plan for your home is a good idea as well. You and your student can work together to make a scale drawing of your home.

Choose a scale that will make measurements relatively easy and allow the plan to fit on a single piece of paper. A common scale is $\frac{1}{4}$ inch for every foot. This scale will allow a building as large as 34 x 44 feet to fit on a letter-sized piece of paper. If your home won't fit within those dimensions, you can choose larger paper or a smaller scale—such as $\frac{1}{8}$ inch for every foot.



Mark the exits, fire extinguishers, and any alarms in red. If you have emergency medical equipment available, such as a first aid kit, mark those in blue.

Ask your student to help you with the following.

- Make measurements of each room in the home. Include measurements of doors and windows that will work as exits.
- Convert your measurements to the scale you have chosen.
- Draw the plan on $\frac{1}{4}$ -inch graph paper. The sides of each square have a length of $\frac{1}{4}$ inch, which makes it easier to use for $\frac{1}{4}$ -inch and $\frac{1}{8}$ -inch scales.

It's a good idea to include other information on the plan as well, such as the numbers for fire, paramedic, and police services (provided by 911 in many towns). Work with your student to decide what information should be included.

Being prepared will give you great peace of mind!

Lesson	Learning Target	Success Criteria
5.1 Ratios and Ratio Tables	Understand ratios of rational numbers and use ratio tables to represent equivalent ratios.	<ul style="list-style-type: none"> I can write and interpret ratios involving rational numbers. I can use various operations to make tables of equivalent ratios. I can use ratio tables to solve ratio problems.
5.2 Rates and Unit Rates	Understand rates involving fractions and use unit rates to solve problems.	<ul style="list-style-type: none"> I can find unit rates for rates involving fractions. I can use unit rates to solve rate problems.
5.3 Identifying Proportional Relationships	Determine whether two quantities are in a proportional relationship.	<ul style="list-style-type: none"> I can determine whether ratios form a proportion. I can explain how to determine whether quantities are proportional. I can distinguish between proportional and nonproportional situations.
5.4 Writing and Solving Proportions	Use proportions to solve ratio problems.	<ul style="list-style-type: none"> I can solve proportions using various methods. I can find a missing value that makes two ratios equivalent. I can use proportions to represent and solve real-life problems.
5.5 Similar Triangles	Understand the concept of similar triangles.	<ul style="list-style-type: none"> I can name corresponding parts of similar triangles. I can identify similar triangles. I can use proportions to find side lengths of similar triangles.
5.6 Graphs of Proportional Relationships	Represent proportional relationships using graphs and equations.	<ul style="list-style-type: none"> I can determine whether quantities are proportional using a graph. I can find the unit rate of a proportional relationship using a graph. I can create equations to represent proportional relationships. I can compare proportional relationships.
5.7 Scale Drawings	Solve problems involving scale drawings.	<ul style="list-style-type: none"> I can find an actual distance in a scale drawing. I can explain the meaning of scale and scale factor. I can use a scale drawing to find the actual lengths and areas of real-life objects.