

Name _____

**Chapter
4**

Equations and Inequalities

Dear Family,

Gardeners are familiar with uncertainty. Will there be enough sun? Will there be enough rain? Did I use too much fertilizer? Planning a garden can be a challenge, whether in a small container or over several acres.

You might work with your student to plan and create a small potted garden. Make sure you plant more seeds than you need—some will not germinate and some will produce weak plants. Make sure the plants get enough sun but not too much heat. Have your student write an *inequality* to represent each of these situations.

As your garden grows, ask your student to keep track of the growing conditions. Track your garden's basic needs and have your student write an inequality to represent these situations:

- How tall are the plants likely to get?
- Research how much water the plants need. Check the soil's moisture content every day—plants need water to survive. However, too much water can be just as bad as too little.
- Make sure the recommended amount of sunshine is available. The seed packet will usually tell you the minimum amount required.
- In a potted garden, your plants will probably need some fertilizer to stay healthy. Keep an eye out for signs of overfeeding, however.

Not all problems in mathematics involve a single answer. Many problems have answers that fall into a range. Your plants need at least enough fertilizer to grow, but you must limit the amount of fertilizer to what the plant can safely use. You must make sure the water stays in the right range.

It's hard to beat the satisfaction of growing a successful garden—and the fruits of your labor are beautiful to behold!

Lesson	Learning Target	Success Criteria
4.1 Solving Equations Using Addition or Subtraction	Write and solve equations using addition or subtraction.	<ul style="list-style-type: none"> I can apply the Addition and Subtraction Properties of Equality to produce equivalent equations. I can solve equations using addition or subtraction. I can apply equations involving addition or subtraction to solve real-life problems.
4.2 Solving Equations Using Multiplication or Division	Write and solve equations using multiplication or division.	<ul style="list-style-type: none"> I can apply the Multiplication and Division Properties of Equality to produce equivalent equations. I can solve equations using multiplication or division. I can apply equations involving multiplication or division to solve real-life problems.
4.3 Solving Two-Step Equations	Write and solve two-step equations.	<ul style="list-style-type: none"> I can apply properties of equality to produce equivalent equations. I can solve two-step equations using the basic operations. I can apply two-step equations to solve real-life problems.
4.4 Writing and Graphing Inequalities	Write inequalities and represent solutions of inequalities on number lines.	<ul style="list-style-type: none"> I can write word sentences as inequalities. I can determine whether a value is a solution of an inequality. I can graph the solutions of inequalities.
4.5 Solving Inequalities Using Addition or Subtraction	Write and solve inequalities using addition or subtraction.	<ul style="list-style-type: none"> I can apply the Addition and Subtraction Properties of Inequality to produce equivalent inequalities. I can solve inequalities using addition or subtraction. I can apply inequalities involving addition or subtraction to solve real-life problems.
4.6 Solving Inequalities Using Multiplication or Division	Write and solve inequalities using multiplication or division.	<ul style="list-style-type: none"> I can apply the Multiplication and Division Properties of Inequality to produce equivalent inequalities. I can solve inequalities using multiplication or division. I can apply inequalities involving multiplication or division to solve real-life problems.
4.7 Solving Two-Step Inequalities	Write and solve two-step inequalities.	<ul style="list-style-type: none"> I can apply properties of inequality to generate equivalent inequalities. I can solve two-step inequalities using the basic operations. I can apply two-step inequalities to solve real-life problems.