Practice Standards	Questions to Support Students
1. Make sense of problems and persevere in solving them. Students analyze the meaning of the problem – consider its constraints, givens and goals. They think about the solution and plan how to approach the problem. They check their solutions and consider if it makes sense. They understand other ways to solve the problem and can identify commonalities between approaches. They can explain the connections between tables, equations, and graphs.	**1.** • What is the question asking? What do you need to find out? • Restate the problem in your own words. • How can you make the problem simpler? • What do you know about the problem? • What problems have you solved that are similar to this one? • How is the information shown in the graph? In the table? In the equation? How do these relate to one another? • How did you reach that conclusion? Convince us that it makes sense. • How else can you approach this problem? • How does their approach compare to yours?

Practice Standards	Questions to Support Students
2. Reason abstractly and quantitatively. Students can represent a situation symbolically and they can also consider a context in which the symbols could apply. They consider the units involved in the problem, and they create a coherent representation of the problem. They flexibly use properties of operations and objects.	**2.** • How can you represent the problem with a diagram or table or equation? • What is the relationship between these quantities? What do these quantities mean? • What context might this equation represent? • What properties of operations are represented in this problem? • How can a chart of picture support your solution? • Where, in the world, in this modeled?

Practice Standards	Questions to Support Students
3. Construct viable arguments and critique the reasoning of others. Students use definitions and previously established results to make conjectures and build a logical progression of statements. They analyze situations by breaking them into cases and they recognize and use counterexamples. They communicate their argument and respond to the arguments of others. They compare two arguments and decide whether they make sense. They ask useful questions to clarify or improve arguments.	**3.** • What steps did you take to develop your solution? Explain your reasoning, or how you solved the problem. • How else can you solve this problem? • What evidence supports your argument? • Who has the same solution but a different way to explain it? • Use your own words to explain how another groups' solution is similar to yours. • What questions can you ask another group to help them clarify or improve their explanation (or solution)? How do you know if their explanation is valid? • How does this problem relate to another you have explored previously? • Convince us that your solution makes sense. What assumptions did you make?

Practice Standards	Questions to Support Students
4. Model with mathematics. Students apply math to problems that arise in everyday life, society, and the workplace. They make approximations to simplify a complicated situation. They identify important quantities and use diagrams, tables, graphs, flowcharts and formulas. They analyze relationships to draw conclusions and interpret their results in the context situation. They improve the model if it doesn't serve its purpose.	**4.** • How might a diagram help? A table? A graph? A formula? • How do you know if this is an effective model? Why did you use this model? • How can you communicate your solution clearly to others? • What makes your solution presentation convincing? How can you convince others that your solution makes sense? • How did you use approximations to simplify the complexity of the problem? • What conclusions can you draw? What does this mean in the problem context? • How can you improve your model so that it is more easily understood by others?

Practice Standards	Questions to Support Students
5. Use appropriate tools strategically. Students consider the tools available and can include paper and pencil, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Students make decisions about when to use tools and recognize what limitations they have and when they might be helpful. Students are able to identify relevant external mathematical resources and use them to solve problems.	**5.** • What tools can help organize your work? How can they help you solve this problem? • How can a concrete model or technology help you? (manipulatives, calculator, graphing calculator, spreadsheet, number line, protractor and compass, dynamic geometry software). • What tools can improve your accuracy? • What resources can you use to find information needed? • How do you know if your solution makes sense?

Practice Standards	Questions to Support Students
6. Attend to precision. Students communicate precisely to others, using clear definitions and stating the meaning of symbols they choose. They use the equal sign consistently and appropriately, specify units of measure, and label axes. They calculate accurately and efficiently and with the appropriate degree of precision for the problem.	**6.** • How can you be sure your conclusion is accurate? • How can you solve the problem more efficiently? • What mathematical language can you use to help clarify? How can the equal sign (=) be used? How could you label your axes? • What does the variable represent? • What units of measure make sense in your solution? • How could you make your solution more precise? How do you know if it should be more precise? • What do you notice about your solution?

Practice Standards	Questions to Support Students
7. Look for and make use of structure. Students look for a pattern or structure. They can step back for an overview and can shift perspective. They can see complicated things as a single object or as being composed of several objects.	**7.** • What pattern do you see? What pattern leads to that conclusion/result? • How do you get from this term to the next? • How can you extend your pattern to any figure in the sequence? • What is similar in the examples given? • What properties are helpful in this problem? How do you know? • How is that entered on the calculator? • How could another representation, such as a table or graph, help you?

Practice Standards	Questions to Support Students
8. Look for and express regularity in repeated reasoning. Students notice if calculations are repeated, and look both for general methods and for shortcuts. Students maintain oversight of the process while attending to the details. They continually evaluate the reasonableness of their intermediate results.	**8.** • How can the solution be generalized? For what kinds of problems does the method work? • Is your answer reasonable? How do you know? • Where in the process did you make a mistake? How did you know you were on the wrong track? • What shortcuts will work? Do they always work? Why do they work? • How do you know if that procedure will work with other numbers? • How can you write that symbolically?