



Dr. John D. Barge, State School Superintendent
"Making Education Work for All Georgians"

High School Math Homework Assignment

Student's Name: _____ Date: _____

Family Partner's Name: _____ Period: _____

Dear Family Partner,

I hope that you will work with me on this assignment! In my math class, we have been developing ourselves as mathematicians by working on representing real world situations mathematically so that we can solve problems in the community. This assignment is on representing real world situations.

This assignment is due: _____.

Sincerely,

Student Signature

Part 1: Refresh Our Minds

Using the example below, explain to your family partner your representation and what the different components of it represent.

When Marissa picked her puppy up from the pet shop, the puppy only weighed 3 pounds. Since the time she brought him home, the puppy has gained 2 pounds every month. Write an equation to represent the puppy's weight over time.

1. Remember that x is the **independent** variable, y of $f(x)$ is the **dependent** variable, m represents **slope** (the rate), and b represents the **starting point**.
2. Discuss what information is represented by each part of the equation:

$$\text{total weight} = \text{rate of weight gain} \cdot \# \text{ of months} + \text{starting weight}$$

3. Write an equation to represent the story problem:

$$f(x) = 2x + 3$$

Part 2: Let Me Show You

Show your family partner how to write an equation to represent the following situation (once you have discussed the problem, flip to the last page to check your answer):

1. Each day after school, Isabella has to read for 20 minutes. In addition, it takes her about 15 minutes for each homework assignment that she has to complete. Write an equation to represent the amount of time she needs daily for school assignments.

Part 3: Let's Practice Together

With your family partner, write equations to represent the following situations.

2. Dave got a part-time job helping his cousin clean up a construction site. Dave gets paid a flat amount of \$20 for coming to help, and he earns an additional \$0.50 for every screw or nail that he picks up off of the ground. Write an equation to model how much money Dave can earn.

3. Mable is trying to decide whether to purchase a gym membership at her local gym. To become a member, the gym would charge her \$45.50. Once Mable becomes a member, it will cost her \$2.50 each time she goes to the gym to work out. Help her decide whether to join by writing an equation to represent the cost.

4. Oscar's teacher told him that he has twenty minutes of detention for throwing a paper airplane during class. When he started to protest, she told him that he would get five more minutes of detention for every excuse she hears. Help Oscar make the right decision by writing an equation to show him how much time he may have to spend in detention.

Part 4: Our Own Lives

With your family partner, brainstorm a situation in your lives that could be represented by an equation (some ideas: cell phone plan plus texting costs, birth height plus approximate monthly growth, down payment plus monthly payments). Ask your family partner what he or she thinks the rate is, what the starting points is, and then together write an equation.

Describe the situation you chose: _____

What is the rate? _____ What is the starting point? _____

Write an equation to represent the situation: _____

Talk to your family partner about situations in your own lives where using an equation could be helpful. Think about what you can do with the equation once you write it and what types of information you can solve for.

In two sentences, describe what you and your family partner came up with.

Part 5: Let My Teacher Know...

Dear Parent or Guardian,

Thank you for working with your student on this assignment! Please help me help your student by completing the following questions.

1. Did your child understand how to complete this assignment?
 2. Did you and your child enjoy working together on this assignment?
 3. Are you interested in completing more family assignments with your child in the future?
 4. Do you have any suggestions for ways I can further engage your child?
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Let Me Show You **Answer Key**

1. $f(x) = 15x + 20$, can also be written as $f(x) = 20 + 15x$