

Remodeling a Home

I. ASSESSMENT TASK OVERVIEW & PURPOSE:

Each student will be instructed to solve a real-world situation pertaining to remodeling a home. The situation will include having to find the amount of flooring needed to cover a kitchen, bathrooms, and bedrooms in a house, then decide which flooring to use based on the budget given. The student will use geometry formulas and algebraic methods to solve the problem and analyze the problem by deciding which flooring option they choose based on the budget.

II. UNIT AUTHOR:

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III. COURSE: Geometry

IV. CONTENT STRAND:

Geometry-Three-Dimensional Figures

V. OBJECTIVES:

The learner will be able to address a real-world situation and solve the problem by using an algebraic approach and utilizing geometric formulas for area. Then, the learner will analyze the real-world situation by researching and deciding which flooring to buy based upon the budget given on the student handout.

VI. REFERENCE/RESOURCE MATERIALS:

Each student will be given a graphing calculator and a worksheet expressing the real-world scenario of remodeling a home. Each student will be expected to research the best option for new flooring in the rooms of a house by calculating the square footage in each room, as well as calculating the cost to lay the new flooring, depending on the type of flooring they choose. The worksheet will have questions that each student will need to answer to determine the student's level of understanding of the math concept presented.

VII. PRIMARY ASSESSMENT STRATEGIES:

Students will display understanding and communicate reasoning by successfully completing the activity and answering the questions located on the handout.

The student will provide answers to show knowledge and understanding of

- finding the area of regular and irregular shaped figures that are displayed as rooms found on a floor plan
- researching and finding the cost of new flooring after determining the correct square footage in each room
- analyzing which flooring option is best suited to remain under the given budget based on the square footage and pricing of the flooring chosen.

VIII. EVALUATION CRITERIA:

The students will be expected to complete the worksheet by showing all necessary work and answering all the questions. For each question/section, the teacher will use the attached rubric to grade the students' work. This rubric may also be used as a checklist for the student upon completion of the activity. After completing the work, the students will be instructed to write a brief summary of the activity. This summary is to include

what the student learned from the activity, any misconceptions or errors made while completing the activity, and any new revelations or understandings that were developed from the activity. Also, the student will need to include the importance of understanding and utilizing this math concept in daily situations or real-world scenarios.

IX. INSTRUCTIONAL TIME:
90 minutes

Remodeling a Home

Strand

Geometry – Three-Dimensional Figures

Mathematical Goals and Objective(s)

The mathematical goal of this activity is to find the area of a room. Once the student has found the area using basic geometry formulas, the next skill assessment will involve analyzing the real-world situation and making a decision based on the information given.

Related SOL

- **5.8a** – The student will find perimeter, area, and volume in standard units of measure.
- **G.8** -The student will solve real-world problems involving right triangles by using the Pythagorean Theorem and its converse, properties of special right triangles, and right triangle trigonometry.
- **G.9** -The student will verify characteristics of quadrilaterals and use properties of quadrilaterals to solve real-world problems

NCTM Standards

- Write equivalent forms of equations, inequalities, and systems of equations and solve them with fluency – mentally or with paper and pencil in simple cases and using technology in all cases.
- Draw reasonable conclusions about a situation being modeled
- Use symbolic algebra to represent and explain mathematical relationships

Materials/Resources

- Graphing calculator
- Student handout/worksheet

Assumption of Prior Knowledge

In order to successfully complete the assessment, the student must show prior knowledge in understanding how to find the area of regular and irregular geometric shapes, as well as properties of right triangles. The student must also display an understanding of calculating a total price when given the price of a single unit, which in this case is “per square foot”. All of the categories of understanding should coincide with the Abstractions level on the Van Heile scale with respect to finding area.

During this activity, a student may find it difficult to discover the different costs associated with laying down new flooring in the different rooms of a house, as directed on the worksheet. A student may also find it difficult to analyze which flooring would be best suited in each room that they are theoretically remodeling, based upon the given budget and the stipulation of having to remain under budget.

The context in this activity that is relevant to a real-world scenario includes remodeling a home and researching/deciding which flooring options are the most affordable and sensible for the budget provided. Students will learn to use and associate geometry concepts in order to solve the real-world problem.

Introduction: Setting Up the Mathematical Task

In this task, the student will investigate the real-world relationship between finding area and remodeling a home. To begin, the student will be given a handout with a floor plan of a house on it. The student will be directed to find the square footage of the rooms that will need new flooring. After calculating the square footage, the student will research online the different options for the type of flooring for each room being remodeled as directed on the handout. Finally, the student will calculate the cost of laying down the new flooring. To conclude this activity, each student will be expected to complete the questions located at the end of the handout and write a brief reflection of the activity. Then, each student will be given the opportunity to discuss what flooring they chose and the amount it would cost to complete the remodel, as well as share his/her reflection of the activity.

Student Exploration

Student/Teacher Actions:

- The teacher will review how to find the area using basic geometric formulas, such as the formula for area of a square, rectangle, and triangle. Next, the teacher will pass out the activity handout and read the scenario at the top of the page. After the situation has been read, the teacher will explain the directions for the remainder of the assessment. After all the students understand the instructions of the activity, and all questions concerning the activity have been answered, the teacher will divide the class up into partners. Once the students know who they will be working with, the teacher will instruct the students to get with their partner and begin working to complete the activity. As the students are working, the teacher will walk around the room answering any questions the students may have. The teacher will also ask the students questions that allow the students the opportunity to explain their reasoning and level of thinking. Such questions may be “Why are you using this formula?” and “What is your reasoning for picking this flooring?” After students have completed the assignment, each student will be instructed to record his/her reflections of the activity. The teacher will then provide the students with the opportunity to share their answers, results, and reasoning from the activity. After groups have discussed the activity, the teacher will close the activity by summarizing how the geometric formulas are used in everyday life, which leads to showing the importance of knowing and understanding the math concepts presented.
- The students will begin the class by reviewing with the teacher how to calculate the area of basic geometric shapes, such as squares and rectangles. Next, the students will listen as the teacher reads the directions and explains how to successfully complete the assignment. Once the teacher has discussed the necessary information from the handout, the students will be given a partner to complete the assignment. Once all the students have been given a partner, the activity will begin. After each group has finished the assessment, each student will be expected to write a brief summary, or personal reflection, of the activity. To conclude, each student will be given the opportunity to share their results and reasoning with the rest of the class. After the student has been given the opportunity to share his/her personal summary, the student will listen as the teacher leads the class in concluding the activity.

Monitoring Student Responses

- During the activity, each pair of students should work together to completely answer all of the questions located on the handout. While the students are working, the teacher will migrate around the room assessing each pair of students’ mathematical thinking and reasoning based upon the completion of the questions on the handout. Once the handout is completed, the teacher will continue to walk around the room, monitoring the students’ responses and reflections in the brief summary that each student is expected to write to conclude the activity. This will again allow the teacher to see how the students have

developed a better understanding of the math topic presented, or identify some misconceptions that need to be addressed.

- After each pair of students has completed the student worksheet, as well as writing his/her own reflection of the activity, the teacher will allow the students the opportunity to share the results of the activity. A student may want to share his/her research of flooring and what flooring he/she chose, as well as the cost in picking the new flooring. A student may also choose to share any misconceptions or errors made while completing the task. This will allow the teacher an opportunity to assess a student's understanding and learning from the activity.
- To conclude the activity, the teacher will reintroduce the real-world situation of remodeling a home with a given budget. The teacher will review how to find the area of the rooms needed by explaining the geometric formulas. Next, the teacher will explain how to calculate the total cost of the new flooring for a home remodel. Finally, the teacher may use the extra time to address any misconceptions or errors made throughout the activity.

Assessment List and Benchmarks

The students will express their knowledge and understanding of the concepts presented in the activity based on the level of completion of answering the questions on the student worksheet. Based on their answers, the teacher will be able to identify problem areas, levels of understanding, and each student's ability to analyze the real-world situation. After answering the questions on the worksheet, the students will be asked to write a summary of the activity. This summary may include explanations of reasoning and misconceptions or errors made throughout the activity. The teacher will assess the students on total completion, accuracy, and explanations from the activity.

“Remodeling a Home” Activity – Grading Rubric

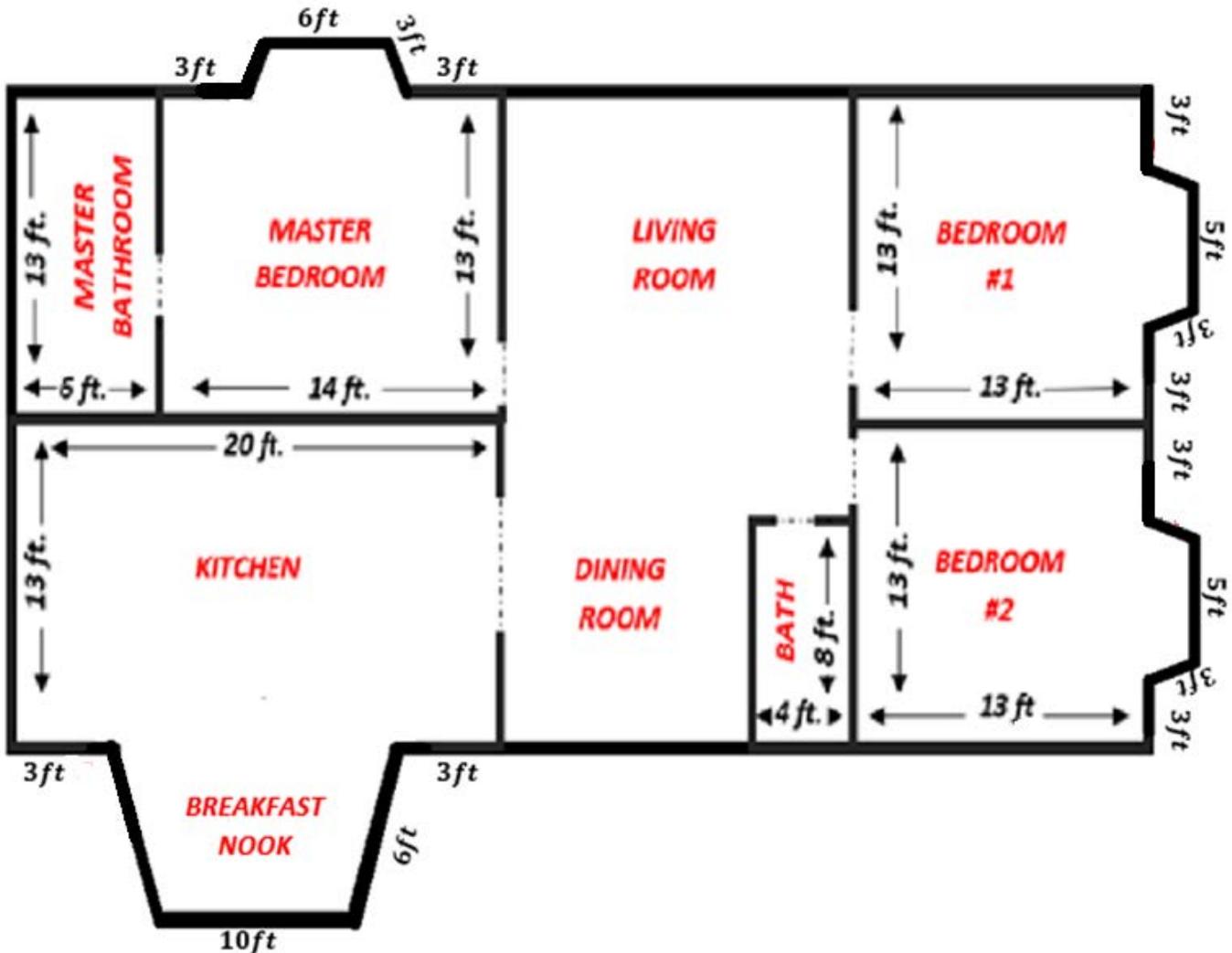
Category	Scale – 0	Scale - 1	Scale – 2	Scale - 3	Student Score	Teacher Score
Completion of Question 1	Did not attempt	Incorrect Attempt, did not mention either correct shape.	Half Correct, mentioned one shape and not the other	Correct Attempt Correct Computation		
Completion of Question 2	Did not attempt	Incorrect Attempt Wrong Computation	Correct Attempt Wrong Computation	Correct Attempt Correct Computation		
Completion of Question 3	Did not attempt	Incorrect Attempt Wrong Computation	Correct Attempt Wrong Computation	Correct Attempt Correct Computation		
Completion of Question 4 - Kitchen	Did not attempt	Incorrect Attempt Wrong Computation	Correct Attempt Wrong Computation	Correct Attempt Correct Computation		
Completion of Question 4 – Master Bedroom	Did not attempt	Incorrect Attempt Wrong Computation	Correct Attempt Wrong Computation	Correct Attempt Correct Computation		
Completion of Question 4- Master Bathroom	Did not attempt	Incorrect Attempt Wrong Computation	Correct Attempt Wrong Computation	Correct Attempt Correct Computation		
Completion of Question 4 – Bedroom #1	Did not attempt	Incorrect Attempt Wrong Computation	Correct Attempt Wrong Computation	Correct Attempt Correct Computation		
Completion of Question 4 – Bedroom #2	Did not attempt	Incorrect Attempt Wrong Computation	Correct Attempt Wrong Computation	Correct Attempt Correct Computation		
Completion of Question 4 – Small Bath	Did not attempt	Incorrect Attempt Wrong Computation	Correct Attempt Wrong Computation	Correct Attempt Correct Computation		
Completion of Question 5 –	Did not attempt	Not all information that was asked for Wrong Computations	Some information that was asked for Wrong Computations	All information that was asked for Correct Computations		
Completion of Question 6	Did not attempt	Not all information that was asked for Wrong Computations	Some information that was asked for Wrong Computations	All information that was asked for Correct Computations		

Completion of Question 7 -	Did not attempt	Not all information that was asked for Wrong Computations	Some information that was asked for Wrong Computations	All information that was asked for Correct Computations		
Completion of Question 8 -	Did not attempt	Incorrect Attempt Wrong Computation	Correct Attempt Wrong Computation	Correct Attempt Correct Computation		
Completion of Question 9 – Journal/Summary	No attempt	Little detail (2-3 sentences)	Detailed (4-5 sentences)	Very detailed (6 or more sentences)		
Neat/Organized	Did not attempt	Not Neat	Neat	Very Neat		
				TOTAL: out of 60 pts		

REMODELING A HOME

GROUP MEMBERS: _____ DATE: _____

You are currently remodeling your home. The last step of your remodeling journey is to replace the flooring in the kitchen, all bedrooms (including the master), and all bathrooms. You must research flooring options online. You must use hardwood in the kitchen, tile in the bathrooms, and carpet in the bedrooms. You only have \$2,500.00 to spend on your remodel. Answer the following questions about your remodel. Below you will find your floor plan to help complete your task.



4. Calculate the square footage of the following. (Show all necessary calculations, including formulas)

Kitchen:	Bedroom #1:
Master Bedroom:	Bedroom #2:
Master Bathroom:	Small Bath:

5. Explain the type, price, and retailer of the hardwood you chose for the kitchen. What is your reasoning for choosing this particular type of flooring? Is it sold in a prepackaged box or individually? Depending on how this item is sold, will you have extra hardwood left over? Exactly how many square feet of hardwood will you need to buy in order to have enough to floor all bathrooms? What will be the total cost?

6. Explain the type, price, and retailer of the carpet you chose for all bedrooms. What is your reasoning for choosing this particular type of flooring? Does this particular carpet come in a standard width? If so, please explain if you will have an excess of carpet, and how you plan to limit the extra. Exactly how many square feet of this carpeting will you need to buy in order to have enough to floor all bedrooms? What will be the total cost?

7. Explain the type, price, and retailer of the tile you chose for all bathrooms. What is your reasoning for choosing this particular type of flooring? Is this tile sold prepackaged or individually? Depending on how the tile is sold, explain if you will have an excess of tile, and how you plan to limit the extra. Exactly how many square feet of tile will you need to buy in order to have enough to floor all bathrooms? What will be the total cost?

8. What will be the total cost of your remodel project? Explain your procedure for staying under budget.

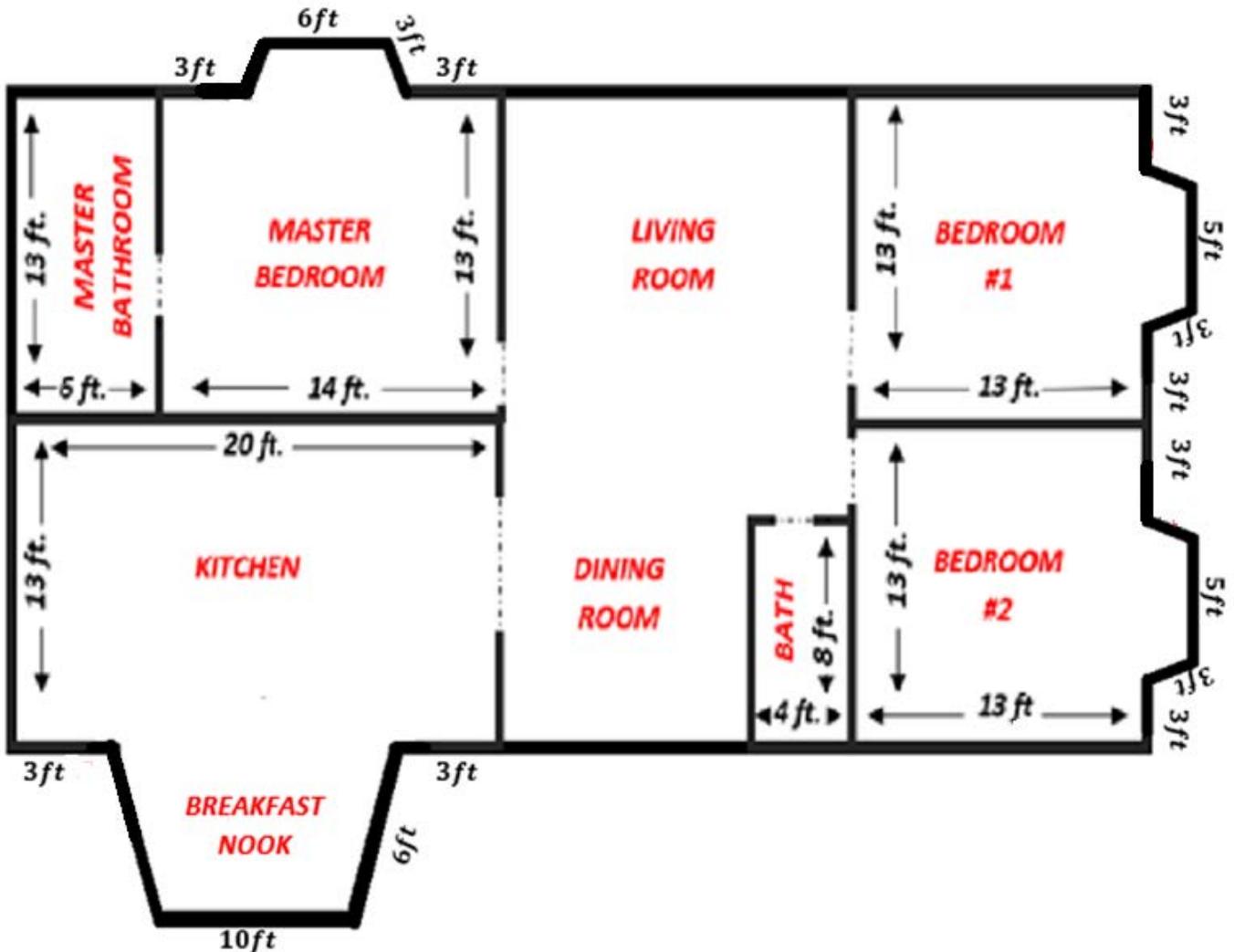
9. Please write a brief summary of this project. Please include what you have learned from this activity, any misconceptions or errors made while completing the activity, and any new revelations or understandings that were developed. Why is this project relevant to real-world scenarios?

ANSWER KEY

REMODELING A HOME

GROUP MEMBERS: _____ DATE: _____

You are currently remodeling your home. The last step of your remodeling journey is to replace the flooring in the kitchen, all bedrooms (including the master), and all bathrooms. You must research flooring options online. You must use hardwood in the kitchen, tile in the bathrooms, and carpet in the bedrooms. You only have \$2,500.00 to spend on your remodel. Answer the following questions about your remodel. Below you will find your floor plan to help complete your task.



1. Is there a general formula for the polygon we are currently calling the Kitchen and Bedrooms? If not, explain how you can find the area of those rooms.

Student should respond with No, there is no general formula for this shape. You should find the area of the compound shape formed by a trapezoid and quadrilateral.

2. You forgot to bring your tape measure to find the depth of the bay window in the bedrooms and the breakfast nook in the kitchen. Explain your method for finding and calculating the depth of the breakfast nook and all bay windows?

Student should respond with either using the Pythagorean Theorem or find the adjacent angles value using inverse sin, cos, or tan. The student should also state that the length of the base of the right triangle we will use to find the height must be 1ft on the bay windows and 2ft in the breakfast nook. Student should explain how they found this value, such as finding the length of the opposite side wall and subtracting the values you were given on that wall and dividing those values by 2.

3. Find the depth of the bay windows in the bedroom and the breakfast nook.

Bay Windows	Breakfast Nook
$a^2 + 1^2 = 3^2$ $a^2 = 8$ $a \approx 2.8ft$	$a^2 + 2^2 = 6^2$ $a^2 = 32$ $a \approx 5.7ft$

4. Calculate the square footage of the following. (Show all necessary calculations, including formulas)

<p>Kitchen:</p> $A = LW$ $= 13ft \cdot 20ft$ $= 260ft^2$ $A = \frac{1}{2}h(b_1 + b_2)$ $A = \frac{1}{2}(5.7)(10 + 14)$ $A = 68.4 ft^2$ $Total Area = 260 + 68.4 = 328.4ft^2$	<p>Bedroom #1:</p> $A = LW$ $= 13ft \cdot 13ft$ $= 169ft^2$ $A = \frac{1}{2}h(b_1 + b_2)$ $A = \frac{1}{2}(2.8)(5 + 7)$ $A = 16.8 ft^2$ $Total Area = 169 + 16.8 = 185.8ft^2$
<p>Master Bedroom:</p> $A = LW$ $= 14ft \cdot 13ft$ $= 182ft^2$ $A = \frac{1}{2}h(b_1 + b_2)$ $A = \frac{1}{2}(2.8)(6 + 8)$ $A = 19.6 ft^2$ $Total Area = 182 + 19.6 = 201.6ft^2$	<p>Bedroom #2:</p> $A = LW$ $= 13ft \cdot 13ft$ $= 169ft^2$ $A = \frac{1}{2}h(b_1 + b_2)$ $A = \frac{1}{2}(2.8)(5 + 7)$ $A = 16.8 ft^2$ $Total Area = 169 + 16.8 = 185.8ft^2$
<p>Master Bathroom:</p> $A = LW$ $= 13ft \cdot 6ft$ $= 78ft^2$	<p>Small Bath:</p> $A = LW$ $= 8ft \cdot 4ft$ $= 32ft^2$

5. Explain the type, price, and retailer of the hardwood you chose for the kitchen. What is your reasoning for choosing this particular type of flooring? Is it sold in a prepackaged box or individually? Depending on how this item is sold, will you have extra hardwood left over? Exactly how many square feet of hardwood will you need to buy in order to have enough to floor all bathrooms? What will be the total cost?

Student should respond with a type of type of hardwood, location, how it is sold, price of the item, how much excess they will have left over, how many square feet they will need to buy, and the total cost.

6. Explain the type, price, and retailer of the carpet you chose for all bedrooms. What is your reasoning for choosing this particular type of flooring? Does this particular carpet come in a standard width? If so, please explain if you will have an excess of carpet, and how you plan to limit the extra. Exactly how many square feet of this carpeting will you need to buy in order to have enough to floor all bedrooms? What will be the total cost?

Student should respond with a type of type of carpet, location, how it is sold, price of the item, how much excess they will have left over, how they plan to limit the extra, how many square feet they will need to buy, and the total cost.

On this particular example, students need to have an explanation of how they plan to lay this carpeting, since carpet is only sold in particular widths.

7. Explain the type, price, and retailer of the tile you chose for all bathrooms. What is your reasoning for choosing this particular type of flooring? Is this tile sold prepackaged or individually? Depending on how the tile is sold, explain if you will have an excess of tile, and how you plan to limit the extra. Exactly how many square feet of tile will you need to buy in order to have enough to floor all bathrooms? What will be the total cost?

Student should respond with a type of type of tile, location, how it is sold, price of the item, how much excess they will have left over, how they plan to limit the extra, how many square feet they will need to buy, and the total cost.

8. What will be the total cost of your remodel project? Explain your procedure for staying under budget.

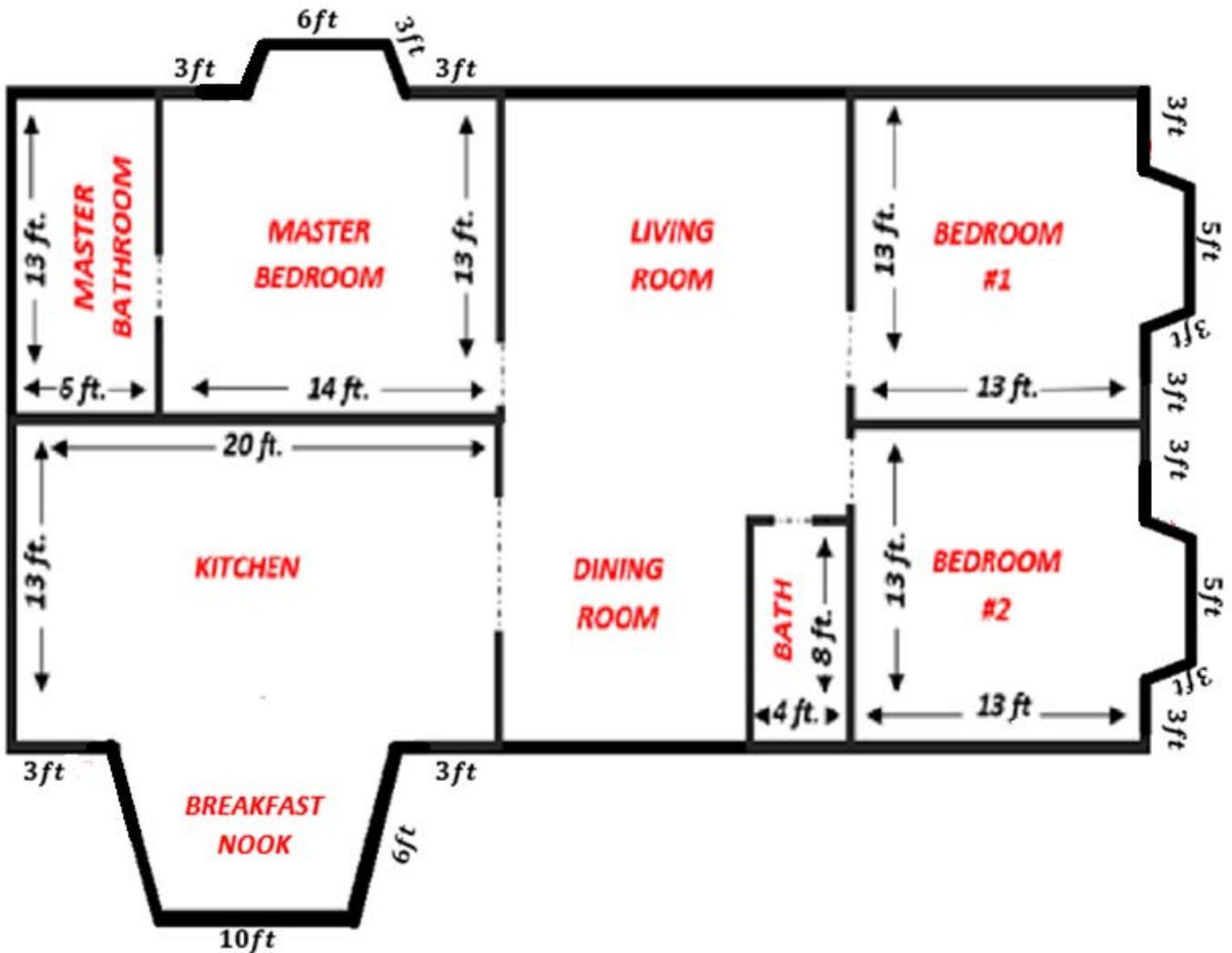
Student should respond with an accurate total cost, coming from questions 5, 6, 7. Student should have a brief explanation of how they chose their materials in order to stay under budget.

9. Please write a brief summary of this project. Please include what you have learned from this activity, any misconceptions or errors made while completing the activity, and any new revelations or understandings that were developed. Why is this project relevant to real-world scenarios?

Student summary should be a minimum of 6 sentences. In this summary they must address what they learned from this activity, errors or misconceptions, new understandings and how this would be relevant to real-world scenarios.

GROUP MEMBERS: Exemplary Student Work DATE: _____

You are currently remodeling your home. The last step of your remodeling journey is to replace the flooring in the kitchen, all bedrooms (including the master), and all bathrooms. You must research flooring options online. You must use hardwood in the kitchen, tile in the bathrooms, and carpet in the bedrooms. You only have \$2,500.00 to spend on your remodel. Answer the following questions about your remodel. Below you will find your floor plan to help complete your task.



1. Is there a general formula for the polygon we are currently calling the kitchen and bedrooms? If not, explain how you can find the area of those rooms.

No, there is no general formula for this particular shape. In order to find the area of these two rooms, you must break the two rooms into rectangles or squares and trapezoids. You must find the area of the individual pieces in each room and find the sum of their areas.

2. You forgot to bring your tape measure to find the depth of the bay window in the bedrooms and the breakfast nook in the kitchen. Explain your method for finding and calculating the depth of the breakfast nook and all bay windows?

To find the depth, or height, of the trapezoid, we are calling a bay window, we would use the Pythagorean Theorem. In the kitchen, we know the hypotenuse of the right triangle would be 6ft and the short leg would be 2ft. We find the short leg by taking the 20ft from the opposite wall and subtracting the 3ft, 10ft, and 3ft from the other side. That leaves us with 4ft for the short leg, so we then divide by 2.

In the master bedroom, the hypotenuse would be 3ft and the short leg would be 1ft. In the small bedrooms, the hypotenuse would also be 3ft and the short leg would be 1ft. We also find these values from subtracting the values from the wall containing the bay window from the opposite wall, then dividing the remainder by 2.

3. Find the depth of the bay windows in the bedroom and the breakfast nook.

We only have to do the bay windows once, since they have the same dimensions in all rooms. Using the Pythagorean Theorem, the depth, or the height of the trapezoid would be as follows:

<i>Bay Windows</i>	<i>Breakfast Nook</i>
$a^2 + 1^2 = 3^2$ $a^2 = 8$ $a \approx 2.8ft$	$a^2 + 2^2 = 6^2$ $a^2 = 32$ $a \approx 5.7ft$

4. Calculate the square footage of the following. (Show all necessary calculations, including formulas)

<p>Kitchen:</p> $A = LW$ $= 13ft \cdot 20ft$ $= 260ft^2$ $A = \frac{1}{2}h(b_1 + b_2)$ $A = \frac{1}{2}(5.7)(10 + 14)$ $A = 68.4ft^2$ <p>Total Area = 260 + 68.4 = 328.4ft²</p>	<p>Bedroom #1:</p> $A = LW$ $= 13ft \cdot 13ft$ $= 169ft^2$ $A = \frac{1}{2}h(b_1 + b_2)$ $A = \frac{1}{2}(2.8)(5 + 7)$ $A = 16.8ft^2$ <p>Total Area = 169 + 16.8 = 185.8ft²</p>
<p>Master Bedroom:</p> $A = LW$ $= 14ft \cdot 13ft$ $= 182ft^2$ $A = \frac{1}{2}h(b_1 + b_2)$ $A = \frac{1}{2}(2.8)(6 + 8)$ $A = 19.6ft^2$ <p>Total Area = 182 + 19.6 = 201.6ft²</p>	<p>Bedroom #2:</p> $A = LW$ $= 13ft \cdot 13ft$ $= 169ft^2$ $A = \frac{1}{2}h(b_1 + b_2)$ $A = \frac{1}{2}(2.8)(5 + 7)$ $A = 16.8ft^2$ <p>Total Area = 169 + 16.8 = 185.8ft²</p>
<p>Master Bathroom:</p> $A = LW$ $= 13ft \cdot 6ft$ $= 78ft^2$	<p>Small Bath:</p> $A = LW$ $= 8ft \cdot 4ft$ $= 32ft^2$

5. Explain the type, price, and retailer of the hardwood you chose for the kitchen. What is your reasoning for choosing this particular type of flooring? Is it sold in a prepackaged box or individually? Depending on how this item is sold, will you have extra hardwood left over? Exactly how many square feet of hardwood will you need to buy in order to have enough to floor all bathrooms? What will be the total cost?

The type of flooring for the kitchen is Bruce 3-in Prefinished Oak Engineered Hardwood flooring from Lowe's. I chose this flooring, because the price is reasonable and it has a limited lifetime residential finish warranty. This flooring is \$2.25 per square foot, but is only sold in boxes that are prepackaged to cover 15 square feet. The price per box is \$33.75. We need to buy 328.4 square feet for the kitchen, but since it is only sold in prepackaged boxes, we will have to buy 22 boxes, giving us a total of 330 square feet. This only gives us an excess of 1.6 square feet. Buying this option will cost at total of \$742.50.

6. Explain the type, price, and retailer of the carpet you chose for all bedrooms. What is your reasoning for choosing this particular type of flooring? Does this particular carpet come in a standard width? If so, please explain if you will have an excess of carpet, and how you plan to limit the extra. Exactly how many square feet of this carpeting will you need to buy in order to have enough to floor all bedrooms? What will be the total cost?

The type of carpet for the bedrooms is Shaw Intuition Stainless Textured Indoor Carpet from Lowe's. I chose this flooring because it has a 20 year stain warranty and the price is reasonable. This flooring is \$1.58 per square foot. It is sold only in widths of 15ft, which is 1ft of this is called a linear foot. We currently need 573.2 square feet to carpet all bedrooms, so if we only buy the amount we need in 15ft widths, we must purchase 585 square feet. That would give us an excess of 11.8 square feet. That would give us 39 linear feet. If we choose this option, we will have to cut the excess from each room, such as the 1linear foot from the master bedroom and piece it with other carpet where needed. We would also need to cut 2 linear feet from each bedroom. To save from cutting and piecing an excessive amount of carpet, the best option is to cut the previously mentioned sections from the bedrooms, and extend the carpet 13.8 feet to the bay windows. That would leave us with only a 2ft section to piece together, which we would have enough extra carpeting from the two small bedrooms. This option would require us to buy 3 more linear square feet, making our purchase 42 linear square feet. We must do this if we extend the carpet 13.8 feet in all rooms, which would be a total of 41.4 linear square feet. This option would cost a total of \$995.4, with the purchase of 630 square feet, giving us an excess of 56.8 square feet.

7. Explain the type, price, and retailer of the tile you chose for all bathrooms. What is your reasoning for choosing this particular type of flooring? Is this tile sold prepackaged or individually? Depending on how the tile is sold, explain if you will have an excess of tile, and how you plan to limit the extra. Exactly how many square feet of tile will you need to buy in order to have enough to floor all bathrooms? What will be the total cost?

The type of tile for the bathrooms is Style Selections Floriana Heather Porcelain Floor Tile from Lowe's. I chose this flooring, because it is reasonably priced and is a stain and scratch free surface. This tile is sold in individual pieces at a price of \$0.69 per tile. The dimensions of each tile is 1 square foot. We must have 110 square feet of tile in order to floor all bathrooms. Since all tiles are 1 square foot, we will need 110 of them to complete our project, with no excess. This option with cost a total of \$75.90.

8. What will be the total cost of your remodel project? Explain your procedure for staying under budget. *The total cost for our remodeling project is \$1,813.80. This is well under our budget. Our procedure for staying under budget was to look at cost effective materials and not buy an excess of materials that we do not need.*

9. Please write a brief summary of this project. Please include what you have learned from this activity, any misconceptions or errors made while completing the activity, and any new revelations or understandings that were developed. Why is this project relevant to real-world scenarios?

This activity was very insightful on what it actually takes to remodel a home. This activity allowed me to analyze the price of flooring, how it is sold, and the wide range of prices and materials there are to choose from. I did not know all the time and effort it takes to plan a building or remodeling project. I definitely know that if you do not go into this with a budget, you could easily spend a lot of money. The most troublesome part of this project was trying to find how to lay the carpeting without a lot of waste, but not making it look like a patchwork quilt. The geometry of finding the area and the best way to lay out the flooring to eliminate the possibility of wasting money on materials I would normally have no use for after the project is complete. I will apply this project in the future when I purchase my own home, or when others need help with their remodeling or building project. Everyone will someday be placed in this situation, so this project is very relevant to the real-world.