

## 4<sup>th</sup> Grade Unit 1: Number and Operations Real World Experience

Good News! You are charged with designing wallpaper for your computer screen that is pixilated in the style of the computer game of Minecraft.

### Task 1:

Since your design is for a computer screen, your finished image should be rectangular and cover at least half of the supplied graph paper.

- Mentally develop a pixilated design that you like.
- Transfer your developed design to the graph paper.  
(Your Minecraft designs should use complete blocks in the images.)



### Task 2:

You would like to have your image replicated in a mural on a school wall. Since the design is pixilated, it can be easily replicated on a wall with square tiles.

- Use an area model to calculate how many tiles you will need in total to complete the design on the graph paper.

### Task 3:

Now you need to calculate the cost to buy enough tiles to complete the mural. Each tile costs \$4.

- How much would it cost to buy enough tiles to complete the mural?  
(Since the design only uses whole tiles, and no tiles need to be cut, it is not necessary it buy any extra tiles incase some break while cutting.)

### Task 4:

The store is advertising a sale on the exact tile you want to use for the design. If you buy the tiles in cases, then you get a discounted price. Each case of 9 tiles costs \$32.

- How many cases of tiles do you need to buy?
- What is the cost of the tile if you buy them per case?

### Task 5:

In order to realize your dream of having your design on the wall of the school, you need to create a proposal for the principal and PTO. In your proposal, you need to show your various calculations to support the proposal.

Your proposal should include:

- an original design on graph paper
- area model calculations for how many tiles are in the design
- an explanation of the area model calculations
- calculations for how much it costs to buy the tiles individually
- an explanation of how you calculated the total cost if you purchase the tiles individually
- calculations for how many cases you need for the design
- an explanation of how you calculated the amount of cases you need to purchase
- calculations for how much it costs to purchase the tiles by the case
- an explanations of how you calculated the total cost if you purchase the tiles by the case
- calculation for the difference between the per case price and per tile price
- an explanation of how you determined the difference in price between buying the tiles individually versus per case.



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### **Meeting**

Mural proposal should include:

- an original design on graph paper
- area model calculations for how many tiles are in the design
- an explanation of the area model calculations
- calculations for how much it costs to buy the tiles individually
- an explanation of how you calculated the total cost if you purchase the tiles individually
- calculations for how many cases you need for the design
- an explanation of how you calculated the amount of cases you need to purchase
- calculations for how much it costs to purchase the tiles by the case
- an explanation of how you calculated the total cost if you purchase the tiles by the case
- calculation for the difference between the per case price and per tile price
- an explanation of how you determined the difference in price between buying the tiles individually versus per case.

### **Developing**

Meets 8 out of 11 proficient criteria

### **Beginning**

Meets fewer than 8 of the proficient criteria

Task to be repeated after re-teaching

**Comments:**



