



Construction Cost Calculation



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While it is important to keep buildings safe in an earthquake, it is also important to make them affordable. When designing a building there are several things you must remember in order to tell how much your building will cost to make:

Building Material	Cost Per Piece
Yellow Pieces	\$10
Red Pieces	\$20
Grey Pieces	\$30
Joint Pieces	\$2

1. Initial construction costs: how much will it cost to buy all your materials and construct your building?

2. Functionality: it's no use building a tower if no one is going to use it! You will be paid \$150 per floor on your tower for people renting out your space.



3. Damage and repair costs: in the case of an earthquake, how much will you have to pay in order to repair your structure? This we will calculate later when we come back to shake your structure.

Here is an example of how to calculate the cost of building a tower. If you had a building with 20 Reds, 4 Greys, 8 yellows, and 30 joints then the total cost of your building is:

Red Pieces	Grey Pieces	Yellow Pieces	Joints	Total
\$20	\$30	\$10	\$2	\$400
<u>x 20</u>	<u>x 4</u>	<u>x 8</u>	<u>x 30</u>	\$120
\$400	\$120	\$80	\$60	\$80
				<u>+ \$60</u>
				\$660

NAME: _____ Date: _____ Teacher: _____

Now figure out how much your building cost. Use the table below and fill in the blanks to help your calculations:

Red Pieces	Grey Pieces	Yellow Pieces	Joints	Total
\$20	\$30	\$10	\$2	\$ _____
X _____	X _____	X _____	X _____	\$ _____
				\$ _____
				+ \$ _____

Now you get to be paid! Find how much money you receive if you get \$150 per floor in your tower. Subtract your construction costs from how much you are paid to find out how much money you made on your tower. Look at the example below for help.

EX: If you had 5 floors and your construction costs were \$660:

\$150	Price per floor
X _____	Number of floors
\$750	How much you are paid

\$ 750	Total paid
<u>-\$ 660</u>	Total construction cost
\$90	Total Profit

Now you try it.

\$150	Price per floor
X _____	Number of floors
	How much you are paid

\$	Total paid
<u>-\$ _____</u>	Total construction cost
	Total Profit

Did you make money or lose money on your building? What are some ways that you could have made your tower cheaper or increased your profit?
