UNIT 05: It Figures!

Address: http://www.destinationsuccess.com

# It Figures!

Welcome back to my Web site! I'm really excited about this post. I wanted to add this page to show how to make some really cool designs using math. My hobby is making interesting and colorful mosaics. Mosaics are designs made by fitting together many little pieces of tile or glass. I'd never heard of them, but then my teacher showed me a picture of a mosaic in class. She encouraged me to try it for myself. She helped me with the first couple. I've made about seven more since then.

Then something really cool happened at school. Our principal asked me to make a giant mosaic design on a wall at school! This mural would honor our math teacher, Mr. Lu, when he retired.

Look at the word "mural." If you're not sure how to pronounce a word it can sometimes help to break it into syllables. First, try breaking the word into syllables after the vowel. For example, the word "mural" is pronounced "mu-ral."

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So where does the math come in? The mosaics that I make often use patterns. A pattern is a regular design, one that repeats over and over. Sometimes I prefer to use an irregular design. That's a design that isn't made of repeating pieces. The mural mosaic that I made for Mr. Lu is based on his favorite design. It's called a Chinese tangram. This is a famous puzzle that contains seven shapes or figures. It's challenging because you have to get the seven pieces to form a square.

To make the mural, I sketched a square on the wall where the giant mosaic would go. Each side of the square had to be exactly eight feet long. Luckily, Mr. Lu had taught us some handy ways to measure angles! I also had to sketch the seven figures inside the square. My knowledge of angles was really useful. Starting with the big blue triangle, I worked out the size of its three angles. Since all triangles have 180 degrees, I could work out each triangle the same way. They had similar angles, even though they were different sizes.

Context clues are words and phrases around a word that help you figure out that word's meaning. Antonyms and synonyms are sometimes context clues. Suppose you didn't know the meaning of the word "shapes" in the sentence "This is a famous puzzle that contains seven shapes or figures." What word would be a good context clue to help you figure out its meaning?

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Because I had drawn all five triangles very carefully, the blue square and the red parallelogram fit into the spaces left over. Therefore, I didn't even need to measure them! If the sides of my triangles hadn't been straight, the square and parallelogram would have been wrong.

With the design drawn on the wall, I was ready to start the mosaic. I used red, green, blue, and purple tiles. I estimated the amount of each color I'd need. First, I had to work out the area of each figure. Then, since I knew the area that each box of tiles would cover, it wasn't too difficult to calculate how many boxes of each color I'd need. I ordered some extra, because I knew some pieces wouldn't fit.

A cause results in another event. An effect is the event created by the cause. To find an effect, ask yourself: What happened? To find what caused it - Why did it happen? In the first paragraph, the author states that the parallelogram fit into the spaces that were left over. This was an effect. What was the cause? Why did this happen?

In this paragraph the author states that they ordered some extra boxes of tiles. This is an effect. Can you identify the cause?

If you come to a word you can't pronounce, try breaking it into syllables. If the word has a vowel followed by just one consonant, try breaking it before the consonant. If that doesn't work, try breaking it after the consonant. That's what works here. This word is pronounced "cov-er."

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Then came my favorite part: breaking up the tiles. To be safe, I put some tiles in an old bag before smashing them. I wore safety glasses, too. Then I stuck the pieces onto the design with special glue. When it was dry, my dad helped with the grouting. Grout's the gray stuff that goes between pieces of tile. When we finished, the mosaic looked amazing. You should try doing your own mosaic!

Why do you think the author wore safety glasses when smashing the tiles?

What kind of skills do you think you'd need to make mural mosaics? Why would it be important to be very precise when you're designing a mosaic?