

4D - TESSERACT

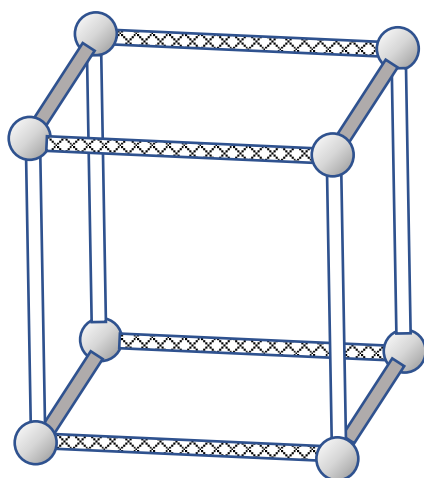


"What is that!?" asked Deb pointing at a drawing of a cube inside a cube up for sale at Dave & Diana's garage sale.

"That's a tesseract," explained Dave. "Think four-dimensional cube. It's really tricky to portray a 4-D object on a 2-D surface like a piece of paper, but that drawing will have to do."

"And did you ever notice," chimed in Diana, "how a regular cube has four edges that run left-right (shaded criss-cross on the left-hand diagram below), four edges that run up-down (shaded white) and four edges that run in and out of the paper (shaded gray)?"

"Oh, I see where you're going," exclaimed Darnell as he joined them. "It looks like a tesseract has eight edges that run left-right (criss-cross), eight edges that run up-down (white), eight edges that run back-forth (gray), and then eight more edges that run in a new dimension (black). Let's call that dimension 'in-out.'"

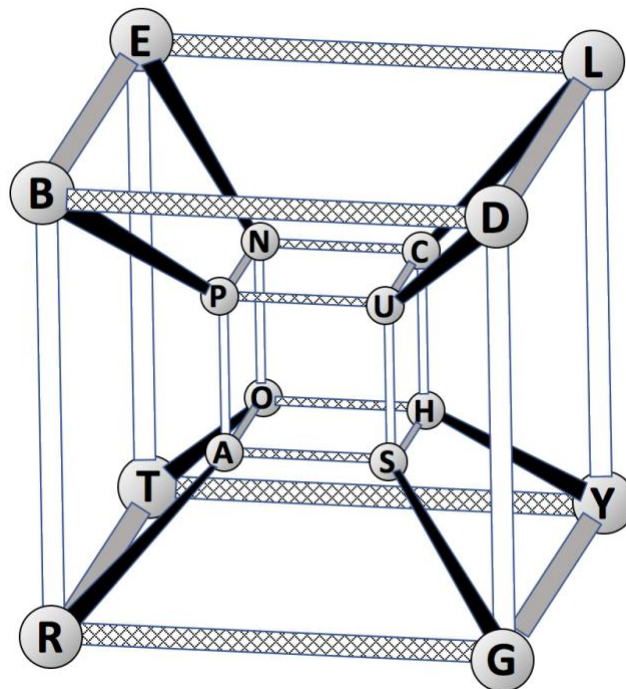


"Does this fourth dimension run perpendicular to the other three, just as they all run perpendicular to each other?" asked Deb.

"Yep," said Dave. "Kind of hard to wrap your mind around, isn't it?"

"Hey, check it out," exclaimed Deb, pointing at the tesseract with the lettered vertices. "Do you see what is special about the word BENCH?"

"I sure do," said Dave, "And BRASH and PUSHY are also special in that same way. Wow!" Dave was starting to get overly excited, like he was trying to sell everyone on this amazing tesseract idea!



Find four more words in the tesseract like BENCH, BRASH and PUSHY that match the four clues below. Once you've done this, consider how many times each letter gets used. Then you'll understand what all the ballyhoo is about.

- Considered a compliment in some countries, seen as rude in others _____
- A soiree or political faction _____
- Describes a person when the pants don't fit – or a finger when the ring doesn't fit _____
- Glistened and gleamed _____

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