

Now that you have been able to explore the relationship between cell dimensions and diffusion time, let's see if you can put your new-found understanding to good use. Cells do come in many shapes and sizes in organisms. Natural selection has crafted them to do their jobs better with their unique form. You will find that the relationship between structure and function is a recurrent theme throughout biology.

## THE CELL DIFFUSION RACE RULES:

- Table 2. Cell Mass and Time for Diffusion (Part 2)**

[illegible]

1. Explain why cells can't get very, very big.

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2. Describe your cell design. What principles were you basing your design on to decrease diffusion time?

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3. Describe different ways that cell shape can be modified so that diffusion time will be decreased to support life processes.

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4. Give an example of a type of cell in a living organism (animal or plant) that is shaped very differently than the classical round or boxy shape that you see drawn in introductory textbook chapters on cells. Explain how that unique shape is tied to the function that those cells perform.

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5. Which cell design won the race? Offer an idea as to why.

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