

Why do cells have a size limit?

In this lab you will model cell size. You will be assessed on data collection and data processing as well as your answers to the questions.

Method: Using the square paper and a ruler make four different sized cubes and record for each the following:
total surface area
volume of cube
distance from center of cube to flat edge
total surface area

Find the surface area to volume ratio and the surface area to weight ratio.

What do you conclude?

Find your error for surface area, volume and weight.

How does it affect your conclusion?

Answer the following questions:

1. All the cell requires or excretes must go through the membrane. Which measurement represents the membrane?
2. Which measurement represents the cell content?
3. As the cell grows larger and gets more cell content, will it need more or less cell membrane to survive?
4. What can cells do to increase their surface area to volume ratio?