

**AP Biology Topic 2.3 Cell Size Video Notes**

1. Why are cells typically small?
  
2. Explain in detail the experiment the teacher conducted with the beet cubes. Include her materials, setup, steps followed, and results.
  
3. Which cube was bleach able to move more through? How does this correlate to cells?
  
4. Cells need a sufficient amount of
  
5. What is the surface area of a cell defined as?
6. What is the relationship between surface area and volume?
  
- 7.

Length of sides (cm)	0.5	1	2
Surface Area (cm <sup>2</sup> )			
Volume (cm <sup>3</sup> )			
SA:V Ratio			

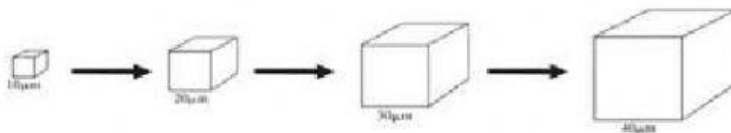
8. Write the steps the teacher took to solve for the surface area and volume of the smallest cube: (s=0.5)
  
9. Pause the video and calculate the surface area, volume, and surface area to volume ratio of the second cube (s = 1 cm)
  
10. Pause the video and calculate the surface area, volume, and surface area to volume ratio of the third cube (s = 2 cm)

11. Smaller cells typically have

12. As cells increase in volume,

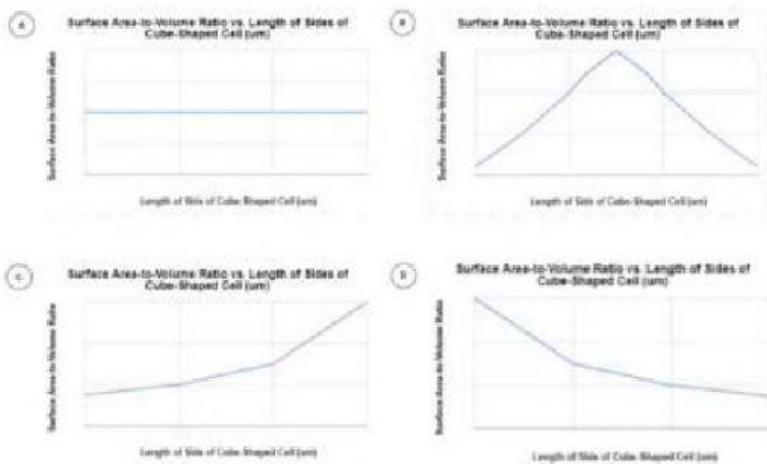
### Skill Practice

Below is a diagram of a cell increasing in size (Figure 1).



**Figure 1: Cube-shaped cell increasing in size**

Which of the following graphs best represents the effect of the cell's increasing size on its surface area-to-volume ratio?



### Key Takeaways

1. Smaller cells typically have a  
Surface area-to-volume ratio

2. Using the formulas given on the AP Formula Sheet,

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