

SURFACE AREA TO VOLUME RATIO

- ◆ All organisms must exchange materials with their _____ through membranes. Because their requirements are greater, large organisms must exchange _____ material than small organisms.
- ◆ As any object gets larger, its volume increases more rapidly than its surface area.

<i>Side Length</i>	<i>Surface Area</i>	<i>Volume</i>	<i>S.A. to Volume Ratio</i>
1 cm	6 cm ²	1cm ³	6
10 cm	600 cm ²	1000cm ³	0.6

- ◆ In the table, while the volume increases 1000 times, the surface area only increases _____ times.
- ◆ Very small organisms have the most effective materials exchange through membranes by having a _____ shape.
- ◆ One way that larger organisms overcome the problem is to change _____. For example, flatworms and algae are flattened in shape for greater surface area.