

Digestion and Nutrition

Lesson 9 - Adaptations of the small intestine

Biology - Key Stage 3

Mrs Walsh

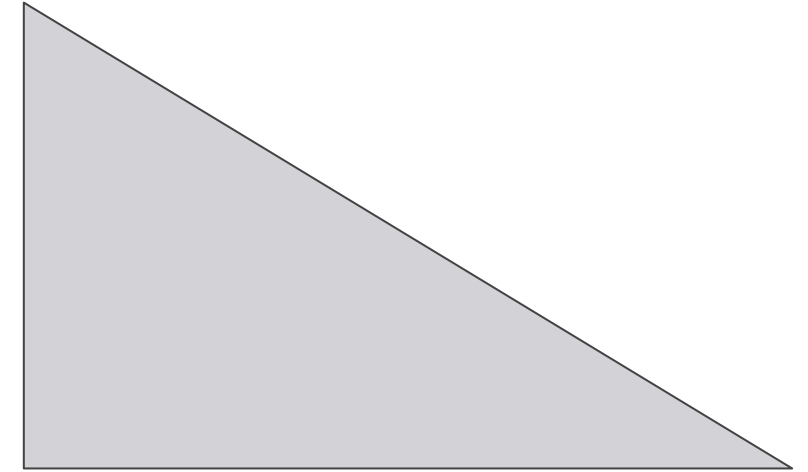


Diffusion

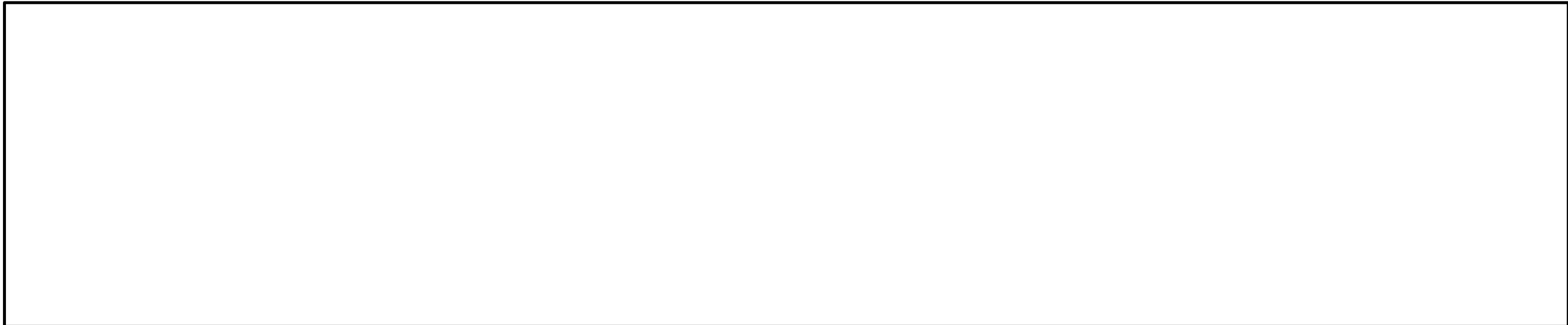


Recap: diffusion

Diffusion is the passive process where substances move from a region of concentration to a region of concentration, moving the concentration gradient.



Factors affecting diffusion



Adaptations of the small intestine



Independent task

- 1. Why are people with bad absorption in their intestines more likely to have worse health generally?

People with bad absorption in their intestine are more likely to have worse health because:

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Independent task

2. In some surgeries a person's intestine can be shortened by a section being removed. What is the effect of this on absorption? Explain your answer.

The effect of removing a section of intestine on absorption is

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because

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Independent task

3. Explain why increasing the temperature increases the rate of diffusion.

Increasing temperature (increases/decreases) the rate of diffusion, because:

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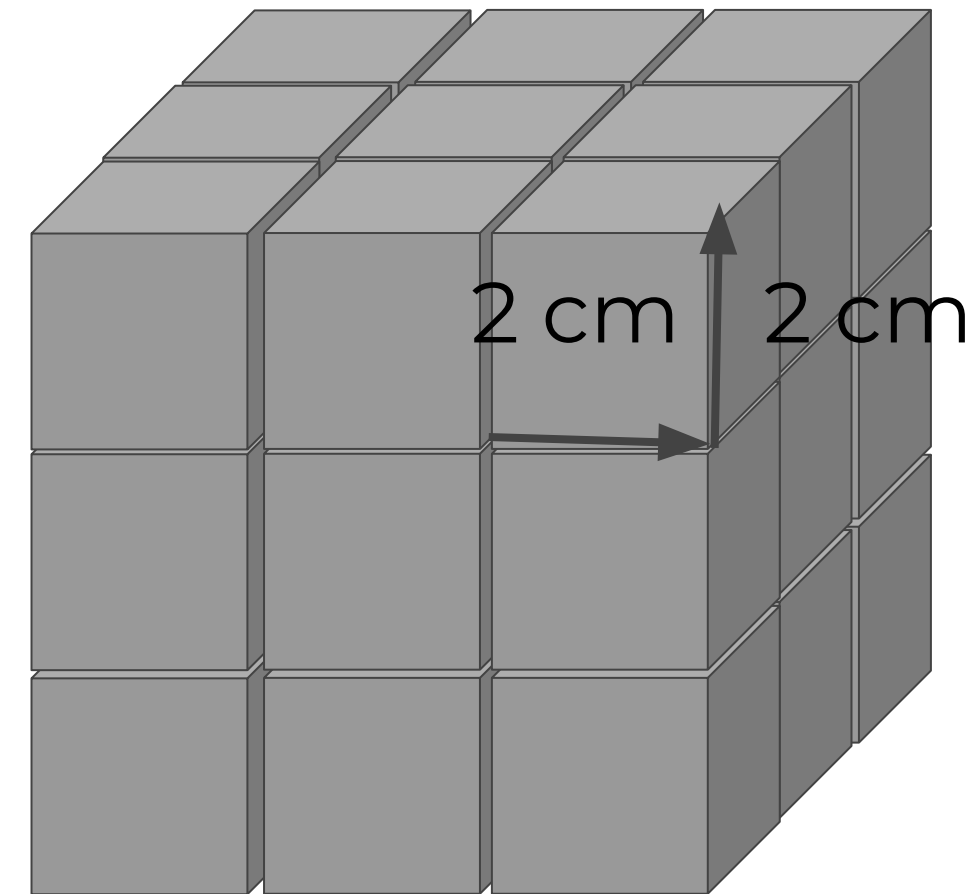
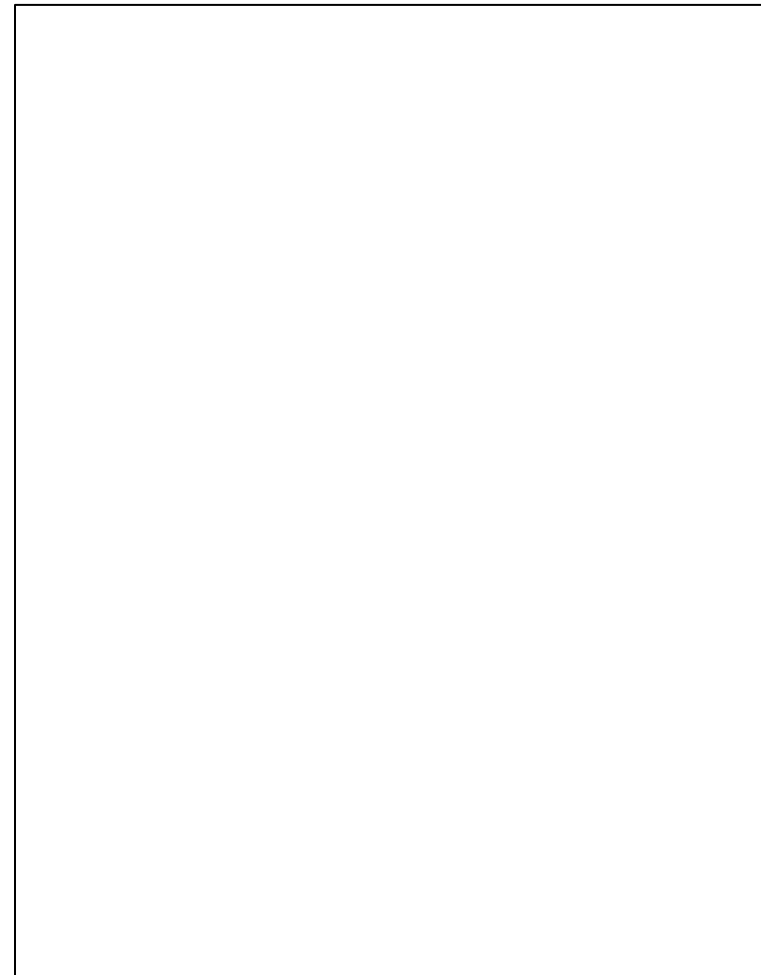
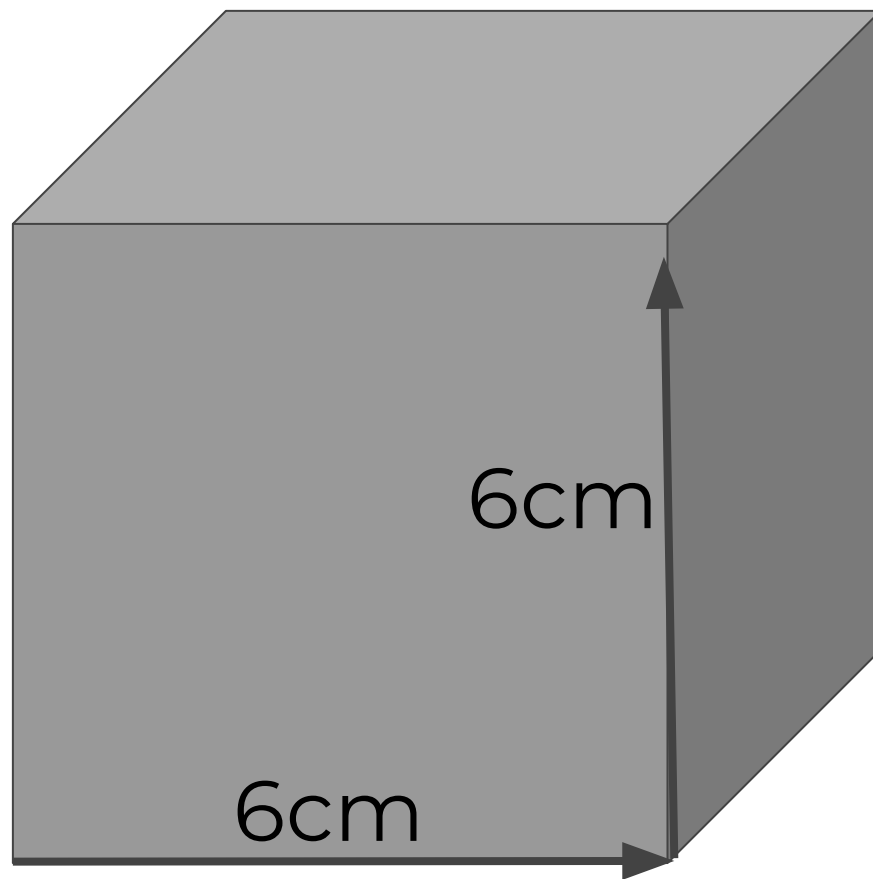


Surface area



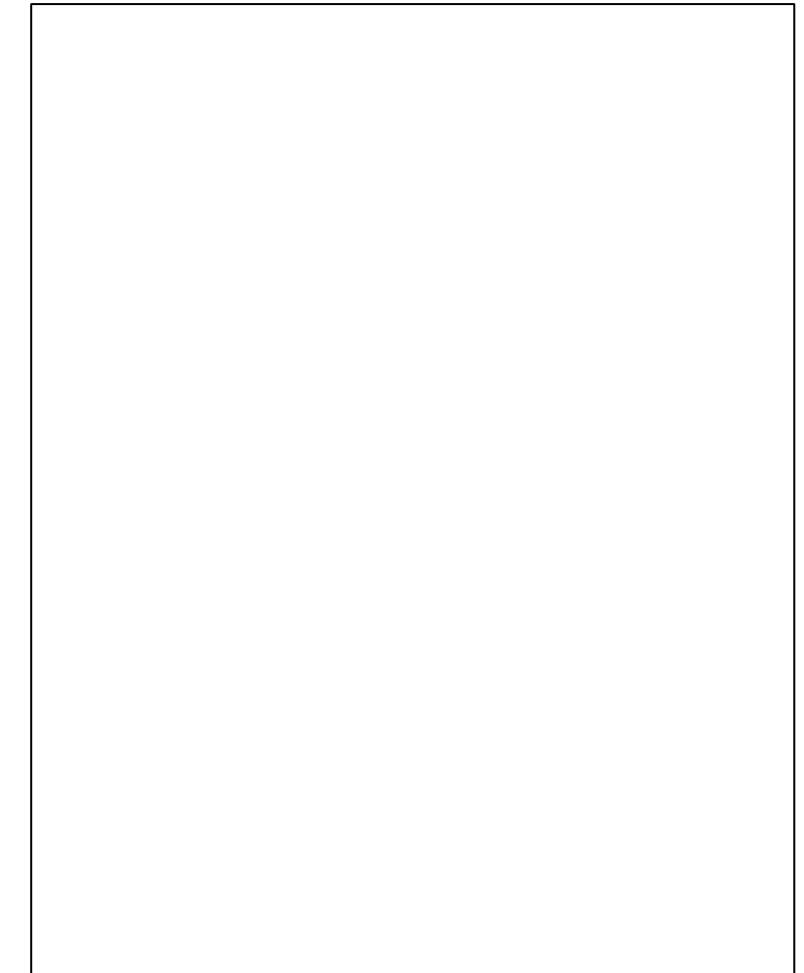
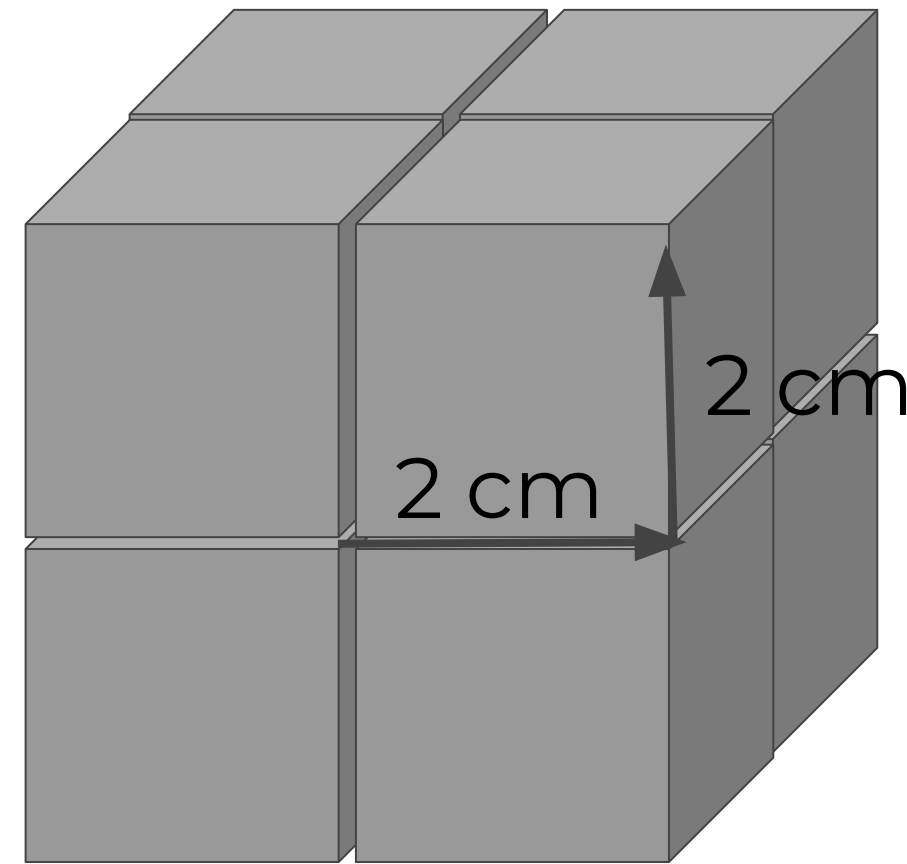
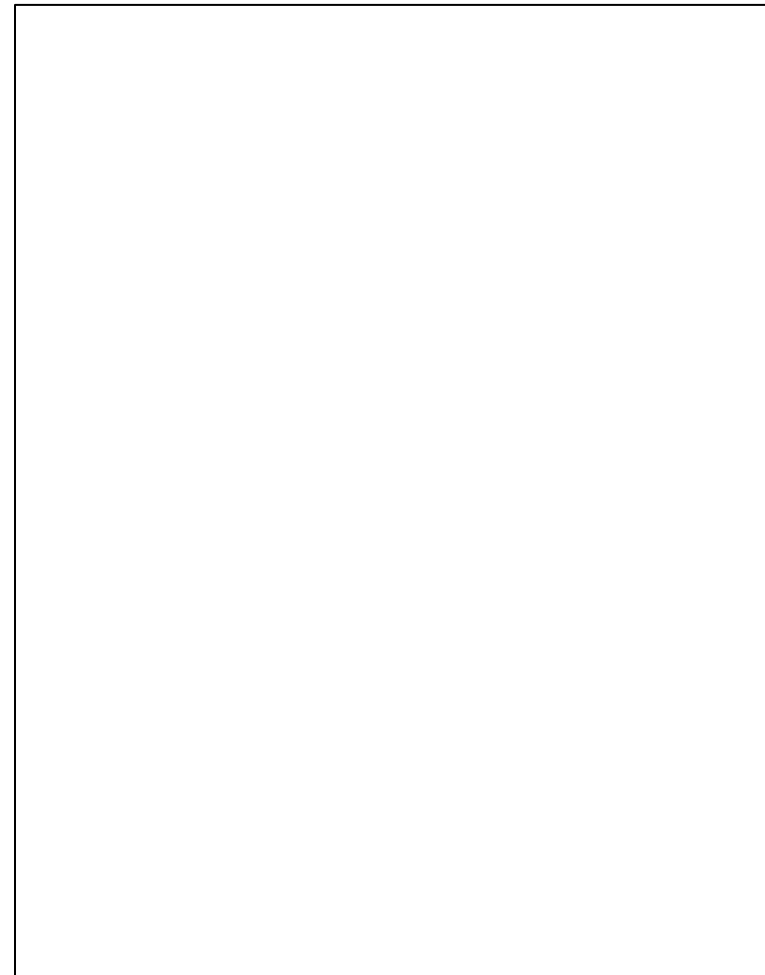
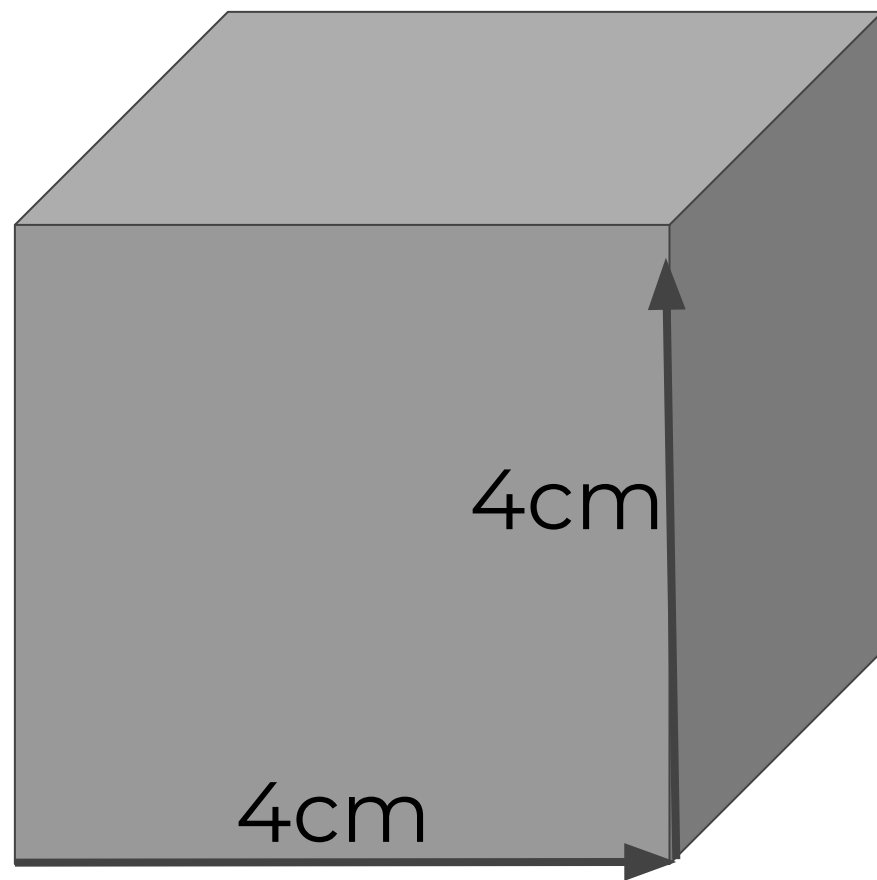
Surface area and diffusion - guided practice

Surface area = total area of all the sides



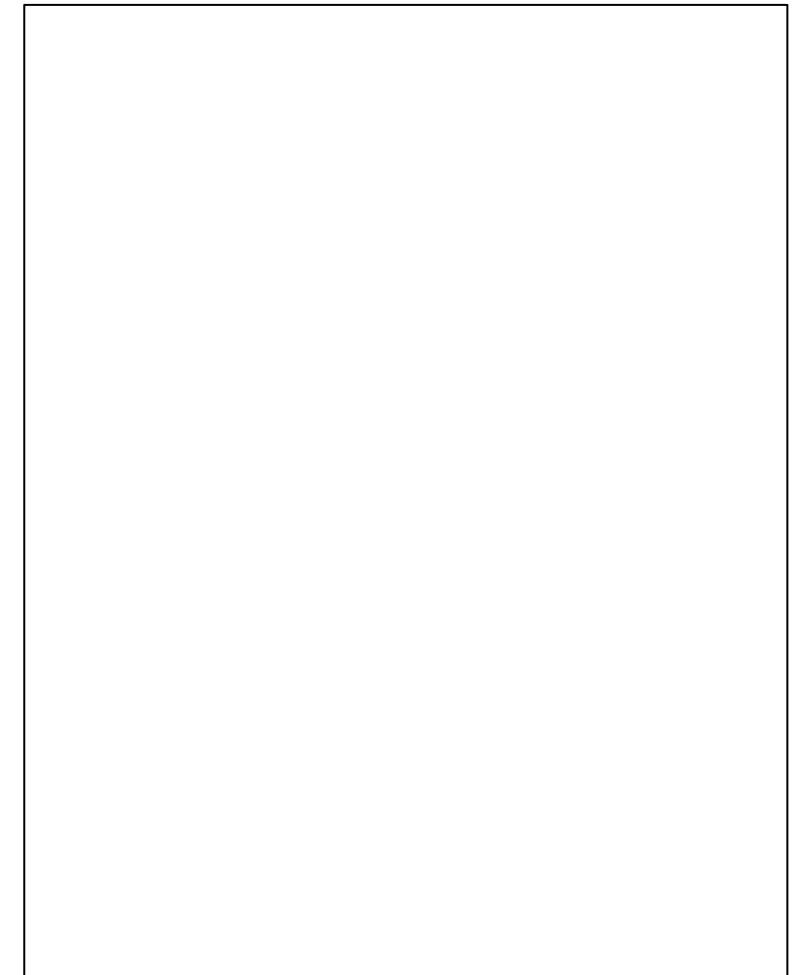
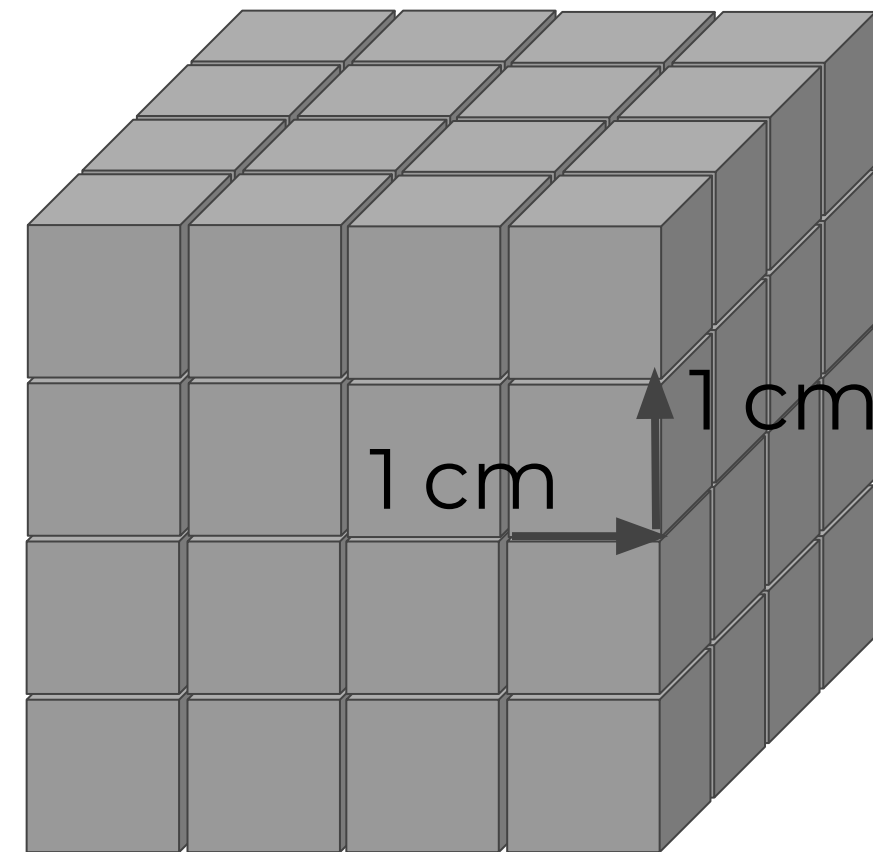
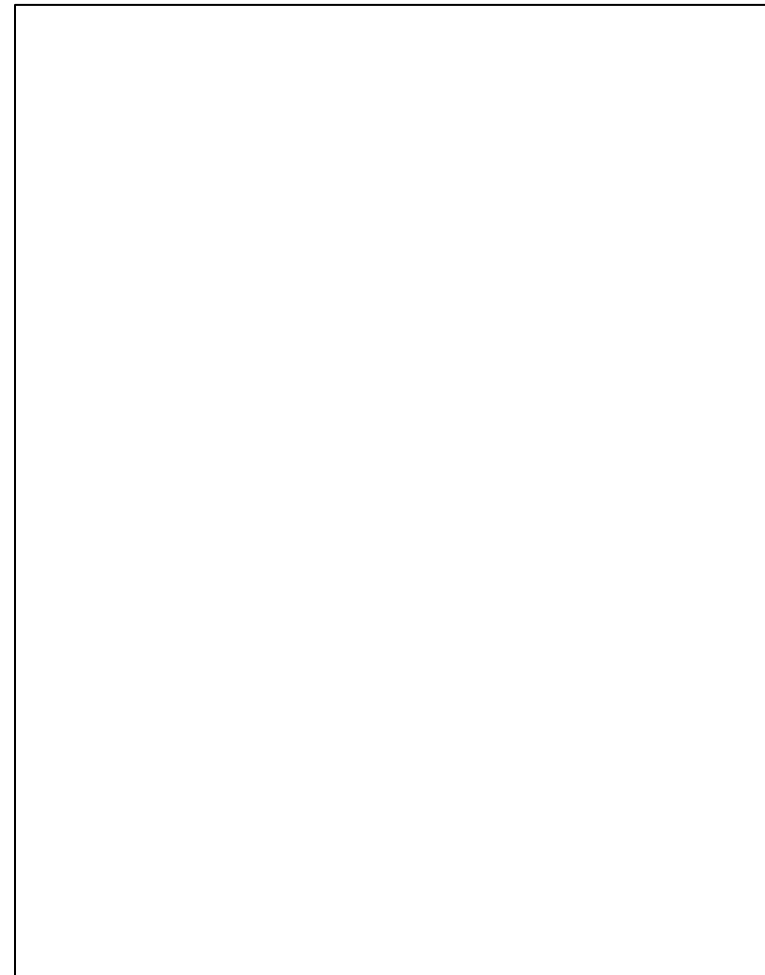
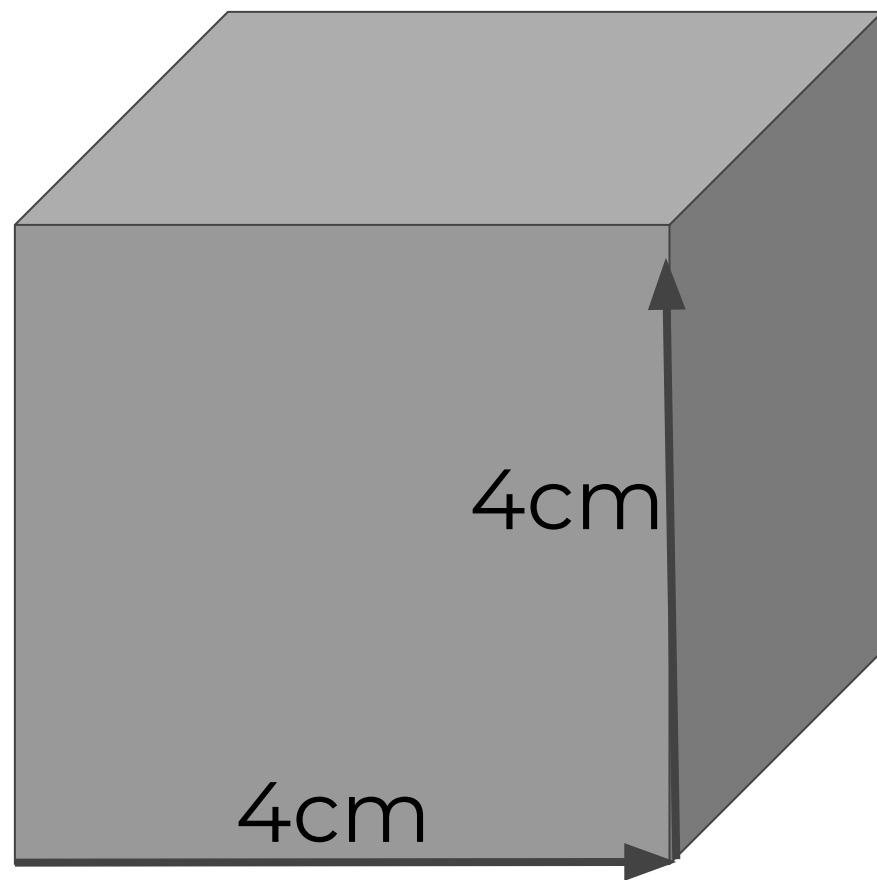
Surface area and diffusion - independent practice

Surface area = total area of all the sides



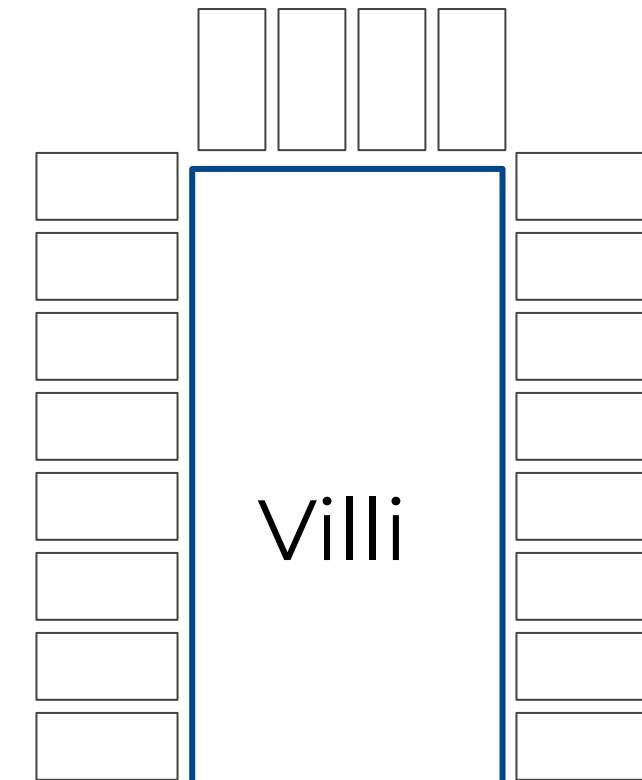
Surface area and diffusion - independent practice

Surface area = total area of all the sides



Independent task

How do the microvilli affect the surface area of the small intestine? Justify your answer.



The villus is 4 mm x 8 mm;
each microvillus is 1 mm x 2 mm



Adaptations of the small intestine - Summary

Adaptation	Explanation
Very long	
Has villi	
Villi have microvilli	
Rich blood supply	



Role of bacteria in digestion



Independent task

“All bacteria are harmful to our bodies”

To what extent is this statement true?
Support your answer with your scientific knowledge and understanding gained in this lesson so far.

Keywords: *pathogen, lactobacillus, vitamin, symbiotic*

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- ***This statement is fully/partially/not at all true.***
- ***I think this because...***
- ***However...***

