**Experiment: Modelling Villi**

**Background**: The small intestine is lined with microscopic, finger-like structures called villi. They increase the surface area of the intestine, so that nutrients are absorbed more effectively

**Aim**: To model the effect of villi in the small intestine

**Equipment**: 2 x 200mL beakers

20mL measuring cylinder

2 squares of bath mat, one with threads and one with threads removed

**Method**:

1. Place the piece of bath mat without threads in one beaker.
2. Measure approximately 15mL of water in the measuring cylinder.
3. Record the volume of water in the table.
4. Pour the water onto the bath mat and gently mix the bath mat with the water.
5. Gently shake any excess water from the bath mat, making sure it stays in the beaker.
6. Pour the water back into the measuring cylinder and record the volume in the table.
7. Calculate the amount of water absorbed. (water added - water left = water absorbed)
8. Repeat steps 1 to 7 for the bath mat with threads.

**Results**:

|  |  |  |  |
| --- | --- | --- | --- |
| Type of bath mat | Volume of water added | Volume of water left | Volume of water absorbed |
| Without threads |  |  |  |
| With threads |  |  |  |

**Discussion Questions:**

1. Which piece of bath mat absorbed the most water? Explain your choice using the results.
2. What is the function of the small intestine in the digestive system?
3. In this experiment, what do the threads on the bath mat represent? What is their function in the process of digestion?
4. What do you think would happen if you did not have villi in your small intestine and it was a flat surface?