**Modelling the small intestine:**

1. Cut two lengths of dialysis (20cm) tubing and seal one end by tying a knot in the tubing
2. Pour into one a mixture of 10ml of 1% starch solution and 1ml of 1% amylase solution.
3. Into the second one pour in 10ml of 1% starch solution and 1ml of water.
4. Tie the top of each bag either with a knot or with an elastic band.
5. Put both into separate test tubes and surround with water
6. Place the test tubes into a water bath at 40 degrees and leave for an 45 minutes.

*In your exercise book…*

* *Write the title (above)*
* *Draw and label the equipment*
* *Indicate what the tubing and water outside the tubing represent*
* *Write a hypothesis. The dialysis tubing is permeable to small molecules but not large ones. What do you think is going to happen? After 45 minutes you will test for glucose and starch in the tubes and in the surrounding water*

**Results:**

1. Take the bags out of the test tubes, open them and pour the solutions into separate test tubes.
2. Split the solutions into two more test tubes (so you should have four samples – two of each)
3. Test each for starch and for sugar (methods below)
4. Split half the water in each beaker and repeat the tests for starch and glucose

**Sugar:**

Add 10 drops of Benedict's solution to each test tube. Carefully heat the test tubes by suspending in a hot water bath at 40 degrees celsius for five minutes. Note any color change. If sugar is present solution will turn green, yellow, or brick-red, depending on sugar concentration.

**Starch:**

Add iodine solution to each, if it turns blue/black there is starch present.

|  |  |  |
| --- | --- | --- |
|  | Starch and water solution | Starch and amylase solution |
| Contained starch after experiment? |  |  |
| Contained sugar after experiment? |  |  |

**Conclusion:**

What do the results tell you?

Is this a good method to re-create the small intestine?

In what was is it different to the real small intestine?