

Candidate evidence

7 Evaluation

Example 1

• Throughout the experiment the temperature may have fluctuated. As temperature is a factor that can affect enzyme activity, this may have had an impact on the amount of foam produced, making my results less reliable. If I were to repeat the experiment I would use a water bath to ensure the temperature stays constant throughout.

Example 2

I could have found a second source of data which repeated the experiment to increase reliability of the results. As temperature affects enzyme activity I could have ensured that the temperature was kept the same. I could have done this by using water baths with a specific temperature. I believe that the results from my experiment were reliable as both mass of grams lost in both experiments were fairly similar. Repeating my experiment twice also increased the reliability of the results I gained.

Example 3

Evaluation:

I could have made my data more reliable by making the substrate concentration higher. This is due to me not allowing to see the initial reaction rate. My data shows the enzyme reaction rate increasing however it does not show it at its highest ~~fast~~ reaction rate. I could also have put the measuring cylinders in a waterbath, as enzyme reaction is affected by temperature. The temperature of the room was not controlled. Also I could have found a graph with numbers. This would allow me to see ~~the~~ the comparison of their data, ~~at~~ ^{when at} the same substrate concentration:

Example 4

Evaluation

We could have improved this experiment by accurately measuring the size of each piece of liver in each boiling tube, rather than simply cutting each piece about the same. Also, we could have accurately measured out the detergent, rather than 2 drops in each as ~~that~~ there is no evidence only 2 went into each boiling tube. Lastly, we should have measured boiling tube temperature as they were all at room temperature - next time, make sure all are the same temperature by putting in a 30°C water bath. This would make the overall experiment more reliable.

Example 5

giving us more valid results. To make sure we had the correct concentration of catalase on the filter paper disc we could have timed how long each disc soaked in the tube to show that it had the same concentration of catalase. If done, there would have ~~been~~ made the results obtained more reliable. To increase reliability of the results to a further extent we could have washed the tweezers between each use to make sure no cross contamination occurred between the different concentrations throughout the experiment.