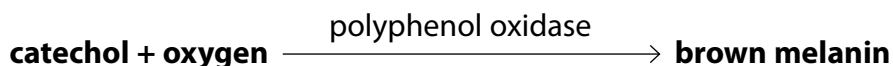
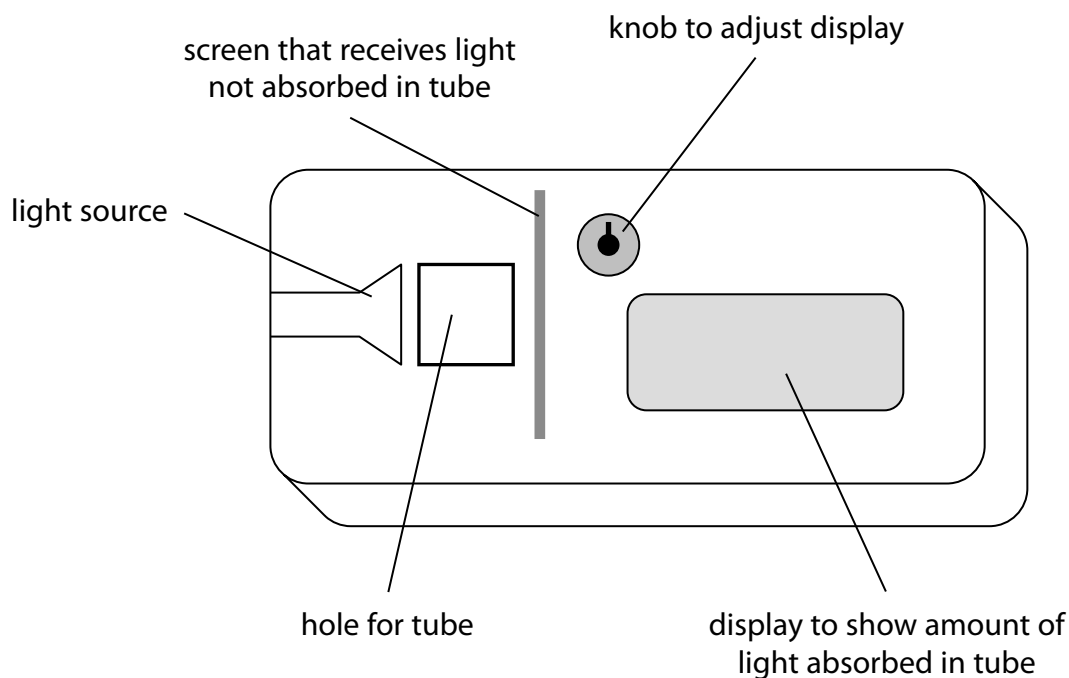


- 8 When banana flesh is cut or mashed up, a chemical compound called catechol is released which reacts with oxygen to form brown melanin. This reaction is catalysed by the enzyme polyphenol oxidase.



A student investigated the rate of this reaction by using a colorimeter to measure the rate of appearance of the brown colour.

The diagram below shows a colorimeter.



- (a) The student recorded absorbance in the colorimeter every 10 seconds for 60 seconds. He repeated the process and calculated the mean for each 10-second period. The results are shown in the table.

Time in colorimeter / s	Mean absorbance / absorbance units
0	0.2
10	0.8
20	1.3
30	1.6
40	1.8
50	1.9
60	1.9

(i) Calculate the mean rate for the first 20 seconds of this reaction.

(3)

Answer.....

(ii) Explain why the mean rate changes after the first 20 seconds of this reaction.

(3)

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(iii) Describe how the initial rate of reaction could be obtained from a graph of this data. You may use a diagram to illustrate your answer.

(3)

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