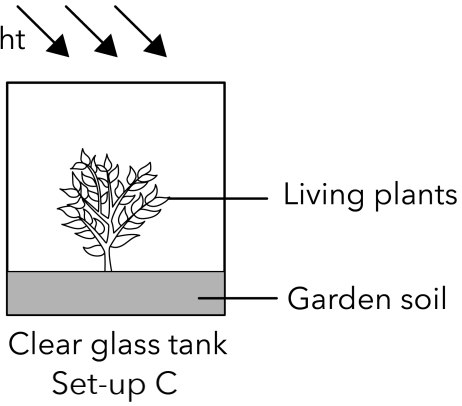


Guide Booklet - Answers

| Q1 | Sam was trying to find out how the brand of insecticide affects the number of fruit flies still alive after 20 minutes. | | | | | | | | | | | | | | |
|--------------------|--|--------------------|------|------------------|---|---------------|--|-------------|--|---------------|---|-------------|---|-------|---|
| Q2 | As the temperature of the water increases from 20°C to 25°C, the rate of photosynthesis for plant A increases. As the temperature of the water increases from 25°C to 40°C, the rate of photosynthesis for plant A decreases. | | | | | | | | | | | | | | |
| Q3 | Using the 3 steps: <ol style="list-style-type: none"> 1. More than one variable has been changed in the experiment. 2. The age of the girls were not kept the same, 3. and this would affect the size of their lungs, affecting the amount of air each girl breathes out into the balloon, affecting the size of the balloon. | | | | | | | | | | | | | | |
| Q4 | He carried out the experiment 3 times to take the average change in his heart rate for a more reliable result. | | | | | | | | | | | | | | |
| Q5a | Copper sulfate solution, salt solution and limewater are conductors of electricity while detergent and milk are insulators of electricity. | | | | | | | | | | | | | | |
| Q5b | As the amount of substance X added to the detergent increases, the electrical conductivity of the mixture increases. | | | | | | | | | | | | | | |
| Q6a | <table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th style="padding: 5px;">Items for Set-up C</th> <th style="padding: 5px;">Tick</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">Clear glass tank</td> <td style="text-align: center; padding: 5px;">√</td> </tr> <tr> <td style="padding: 5px;">Tracing paper</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;">Black paper</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;">Living plants</td> <td style="text-align: center; padding: 5px;">√</td> </tr> <tr> <td style="padding: 5px;">Garden soil</td> <td style="text-align: center; padding: 5px;">√</td> </tr> <tr> <td style="padding: 5px;">Light</td> <td style="text-align: center; padding: 5px;">√</td> </tr> </tbody> </table> | Items for Set-up C | Tick | Clear glass tank | √ | Tracing paper | | Black paper | | Living plants | √ | Garden soil | √ | Light | √ |
| Items for Set-up C | Tick | | | | | | | | | | | | | | |
| Clear glass tank | √ | | | | | | | | | | | | | | |
| Tracing paper | | | | | | | | | | | | | | | |
| Black paper | | | | | | | | | | | | | | | |
| Living plants | √ | | | | | | | | | | | | | | |
| Garden soil | √ | | | | | | | | | | | | | | |
| Light | √ | | | | | | | | | | | | | | |

EXPERIMENTAL TECHNIQUES MASTERCLASS

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|-----|--|
| Q6b |  <p>Light</p> <p>Living plants</p> <p>Garden soil</p> <p>Clear glass tank</p> <p>Set-up C</p> |
| Q6c | Set-up C acts as a control set-up to ensure that the rate of photosynthesis in plants is caused only by the amount of light received by the plants and not any other variable in the experiment. |