Combined Science - Biology - KS4

Homeostasis and Response

Required Practical Reaction Time - Part 1

Miss Ray

Please note these slides contain colour font.

Method

1. Work with a partner.
2. Person A places their elbow on the table and opens their dominant hand.
3. Person B places the ruler in between the fingers and thumb with the ruler at 0 cm.
4. Person B drops the ruler whilst talking to person A and person A catches it.
5. The number level with the top of person A's thumb is recorded in a suitable table. Repeat this three times and calculate a mean.
6. Repeat the experiment with person B dropping the ruler silently.

Image - Oak National Academy.

Using the method, identify the independent, dependent and control variables.

Independent -

Dependent -

Control -

Answers

Independent variable - **Presence of noise when dropping the ruler.**

Dependent variable - **Distance the ruler falls before it is caught.**

Control variables - **Same starting height**
Same mass of ruler
Same person catching the ruler
Always using dominant hand

Draw a results table

Dependent variable

Independent variable

Model results table

	Distance (cm)			
	1	2	3	Average
With noise				
Without noise				

Calculate the means

	Distance (cm)			
	1	2	3	Average
With noise	4.6	5.3	6.0	
Without noise	2.7	3.5	3.4	

	Distance (cm)			
	1	2	3	Average
With noise	4.6	5.3	6.0	**5.3**
Without noise	2.7	3.5	3.4	**3.2**

4.6 + 5.3 + 6.0 = 15.9
15.9 ÷ 3 = 5.3

2.7 + 3.5 + 3.4 = 9.6
9.6 ÷ 3 = 3.2

Use this data to draw a line graph

	Distance (cm)			
	1	2	3	Average
With noise	4.6	5.3	6.0	**5.3**
Without noise	2.7	3.5	3.4	**3.2**

4.6 + 5.3 + 6.0 = 15.9
15.9 ÷ 3 = 5.3

2.7 + 3.5 + 3.4 = 9.6
9.6 ÷ 3 = 3.2