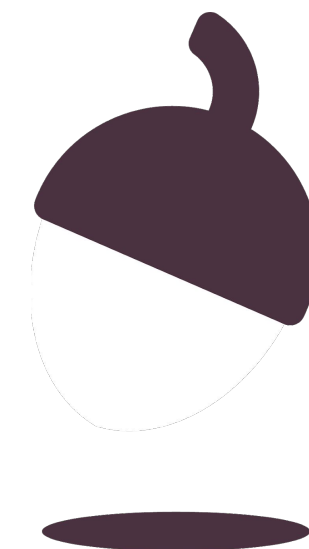


Combined Science - Biology - KS4
Homeostasis and Response

Required Practical Reaction Time - Part 1

Miss Ray



OAK
NATIONAL
ACADEMY

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

$$4.6 + 5.3 + 6.0 = 15.9$$

$$15.9 \div 3 = 5.3$$

$$2.7 + 3.5 + 3.4 = 9.6$$

$$9.6 \div 3 = 3.2$$



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

$4.6 + 5.3 + 6.0 = 15.9$
 $15.9 \div 3 = 5.3$

$2.7 + 3.5 + 3.4 = 9.6$
 $9.6 \div 3 = 3.2$

