

Connor, Spencer, Nick, and Jake F's Carbon Dioxide Output Experiment

Purpose:

The purpose of this experiment was to discover what effect exercise has on a human's CO₂ output.

Hypothesis:

The more exercise performed, the greater the increase of the output of CO₂ in every exhale.

Background:

**When you exercise, you breathe deeper and faster.
Carbon Dioxide is a waste product of cellular respiration.**

Materials:

- **360 ml of distilled water**
- **Test tube**
- **240 drops of Bromothymol Blue**
- **Stopwatch**
- **The space to perform jumping jacks**
- **Straw**
- **2 holed Test tube cap**
- **Dropper**
- **A Test Tube Cap With No Holes**



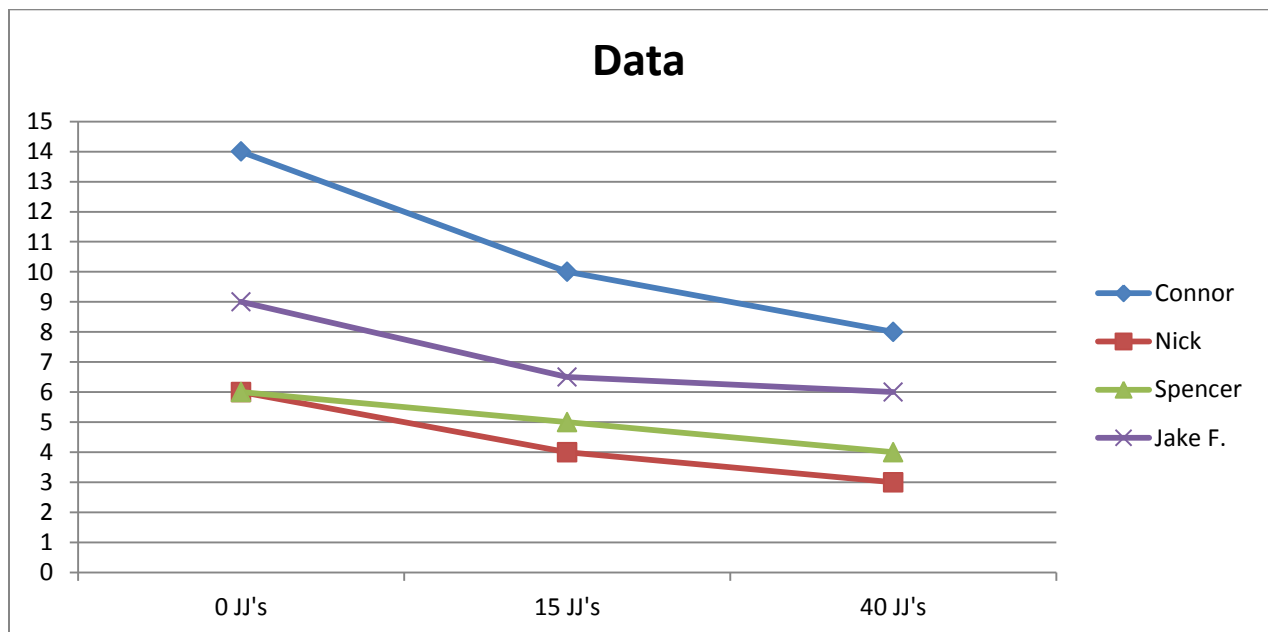
Procedure:

- 1. Acquire all materials.**
- 2. Carefully pour 30 ml of distilled water in the test tube.**
- 3. Use the dropper to drop 20 drops of Bromothymol Blue into the test tube half-full of water from step 2.**
- 4. Carefully insert a test tube cap with no holes in the top on the test tube and flick the test tube until the two items are mixed completely.**
- 5. Carefully replace the hole-less cap with a two holed cap on the test tube.**

- 6. Insert straw into one of the holes and cover the other one with a paper towel**
- 7. Blow carefully and gently into the straw and time the amount of seconds until the indicator turns yellow.**
- 8. Record your data**
- 9. Repeat steps 1-8 after doing 0, 15 and 40 jumping jacks for every person. The amount of materials is made for 3 trials per person and for 4 people.**

Data: (JJ = Jumping Jacks) Amount of seconds = amount of sec. until our indicator (Bromothymol Blue) turns yellow.

Names ↓ JJ's →	0 JJ's	15 JJ's	40 JJ's
Connor	14 sec.	10 sec.	8 sec.
Nick	6 sec.	4 sec.	3 sec.
Spencer	6 sec.	5 sec.	4 sec.
Jacob F.	9 sec.	6.5 sec.	6 sec.



Conclusion: Every time we did this experiment the amount of seconds until the Bromothymol Blue turned yellow went down the more we exercised. The experiment proved our hypothesis correct in every test we did.