Science Fair Logbook

2026

Gobind Sarvar School

Calgary, Alberta, Canada

Grade:9A

Name Of The Student:Ravneet & Ravreet

Date	Summary of work you have done!
December 21, 2025	**Planned experiment design** **Selected participants: 5 teenagers (13–19 years) and 5 adults (25–35 years)** **Updated music genres to: Classical, Hip-Hop, Heavy Metal** **Prepared equipment: Heart rate monitor, stopwatch, quiet testing room** **Standardized volume level for all music (same decibel level)** **Observations/Notes:** **Confirmed participants' consent**
December 22, 2025	**Conducted Trial 1: Measured baseline heart rates** **Played Classical music for 3 minutes per participant** **Measured heart rate immediately after listening** **Observations/Notes:** **Teenagers' heart rates slightly decreased or remained stable** **Adults' heart rates decreased slightly** **Participants appeared calm and relaxed**
December 23, 2025	**Conducted Trial 2: Hip-Hop music for 3 minutes** **Measured heart rate before and after** **Observations/Notes:** **Teenagers showed noticeable increase in heart rate** **Adults showed moderate increase** **Some participants moved slightly to the rhythm**

December 24, 2025	**Conducted Trial 3: Heavy Metal music for 3 minutes** **Recorded heart rate changes** **Observations/Notes:** **Teenagers showed significant increase in heart rate** **Adults showed moderate to significant increase** **Music caused visible excitement in some participants**
January 1, 2026	**Repeated all three trials for reliability** **Calculated average heart rate changes for each genre and age group** **Observations/Notes:** **Heavy Metal caused the largest increase in heart rate overall** **Hip-Hop caused moderate increases** **Classical resulted in stable or reduced heart rate**
January 2, 2026	**Analyzed data: created tables and graphs** **Compared teenagers and adults across all three genres** **Observations/Notes:** **Teenagers had stronger reactions to fast-paced music** **Adults had smaller but consistent changes** **Clear pattern between tempo and heart rate increase**
January 3, 2026	**Wrote discussion and conclusions** **Observations/Notes:** **Music genre affects heart rate** **Faster tempo = higher heart rate** **Teenagers are more sensitive to stimulating music**

	Classical music may help with relaxation
January 4,2026	**Continued detailed data analysis** **Calculated percentage change in heart rate** **Identified possible sources of error** **Observations/Notes:** **Small sample size may affect accuracy** **Individual music preference may influence results** **Physical fitness levels may also impact heart rate response**
February 9, 2026	**Found out we won our school science fair and qualified for regionals** **Restarted and improved our project design** **Improvements Made:** **Increased participant number from 10 to 20** **Separated participants by exact age instead of broad range** **Controlled volume level more precisely using decibel meter** **Ensured 5-minute rest period between each genre** **Randomized order of music genres to prevent order bias** **Observations/Notes:** **Decided to collect more trials to strengthen reliability** **Planned to record emotional responses in addition to heart rate**
February 10, 2026	**Began second round of data collection** **Measured resting heart rate after 5-minute silence period**

	Conducted randomized genre testing **Observations/Notes:** **Data appears more consistent with controlled rest periods** **Participants reported stronger emotional reactions to Heavy Metal**
February 11, 2026	**Continued data collection** **Recorded participants' self-reported stress/excitement levels (scale 1–5)** **Observations/Notes:** **Correlation forming between reported excitement and heart rate increase** **Teenagers reported higher excitement levels overall**
February 12, 2026	**Started deeper statistical analysis** **Calculated mean, range, and percent increase** **Created improved graphs for regional presentation** **Observations/Notes:** **Heavy Metal consistently produced highest average increase** **Classical consistently lowest** **Hip-Hop moderate**
February 13, 2026	**Worked on regional presentation board** **Revised hypothesis and research question** **Improved conclusion with stronger scientific explanation (sympathetic nervous system response)** **Observations/Notes:** **Added explanation of adrenaline and fight-or-flight response** **Connected findings to real-world applications (studying, workouts, relaxation**
