

# Steam Fair Project Ideas For High School

Here are the top-rated Steam Fair Project Ideas For High School:

## Environmental Science & Sustainability

1. Solar-powered water filter system
2. Plastic made from banana peels
3. Small wind turbine energy test
4. Comparing rainwater harvesting systems
5. How food waste turns into compost
6. Air pollution detector using Arduino
7. Vertical garden to save water
8. Robots to clean up the ocean
9. Testing the strength of eco-friendly packaging
10. Solar oven with temperature control
11. Bacteria that eat plastic
12. Green roofs that keep buildings cool
13. Simple wave energy generator
14. Testing the strength of recycled paper
15. How home compost piles create heat
16. Natural water filter test
17. Safe urban beekeeping system
18. Air cleaner made from algae
19. Robot for sorting trash
20. Comparing renewable energy costs

## Robotics & Engineering

21. A robot that follows lines with lights
22. Robotic arm made from old materials
23. A doorbell that sees motion
24. A robot that waters plants by itself
25. Lights controlled by your voice
26. Pet feeding robot with a timer
27. Book-sorting robot using colours
28. Walking robots from household items
29. A security system that hears sounds
30. Solar-powered toy car
31. Magnetic floating train model
32. Robotic hand-made with straws
33. Robot controlled by hand gestures
34. A robot that sends emergency signals
35. Fan that adjusts to the temperature
36. A robot that avoids obstacles
37. Earthquake detector using Arduino
38. Wind-powered clock model

- 39. Smart trash can for sorting waste
- 40. Robot to check water levels

## **Computer Science & Programming**

- 41. A machine that predicts the weather
- 42. Door lock using face recognition
- 43. Program to sort music by type
- 44. App to find plant diseases
- 45. Simple chatbot made with Python
- 46. An AI system for game characters
- 47. Program to control lights with voice
- 48. Traffic prediction software
- 49. Program to study pet behaviour
- 50. Smart home energy app
- 51. Sign language translation app
- 52. Handwriting recognition system
- 53. Program to detect emotions from text
- 54. App to check password strength
- 55. Basic stock market prediction program
- 56. App for people with colour blindness
- 57. Fun math learning game
- 58. Voice-to-text conversion program
- 59. App to check food freshness
- 60. Real-time language translator

## **Health & Medical Science**

- 61. Heart rate checker using Arduino
- 62. Blood pressure tracking system
- 63. Exercise tracker smart device
- 64. Tool to study sleep patterns
- 65. System to measure stress levels
- 66. Device to help with posture
- 67. Air quality and health study
- 68. App for eye tests
- 69. Game to measure reaction time
- 70. Smart bottle to remind you to drink water
- 71. Device that warns about UV exposure
- 72. Mood tracker for mental health
- 73. Simple brain wave monitor
- 74. Blood sugar tracker for diabetes
- 75. Device to measure lung capacity
- 76. System to test colour blindness
- 77. Game for testing balance
- 78. Game to help memory
- 79. Test for hand sanitiser strength
- 80. Tool to measure muscle activity

## **Chemistry & Materials**

81. Study on how to make natural dyes
82. Crystal-growing experiment
83. Comparing rust prevention methods
84. Testing how well soap is made
85. Research on battery life improvement
86. Analysing metal corrosion
87. Monitoring chemical reaction temperatures
88. Testing water hardness
89. Study on paint durability
90. Plastic melting point experiment
91. Tracking colour changes in reactions
92. Natural preservatives study
93. Measuring oil thickness
94. Timer for chemical reactions
95. Measuring gas pressure
96. Tool to calculate solution concentrations
97. System to monitor pH levels
98. Testing machine for material strength
99. Catalyst study in chemical reactions
100. Testing biodegradable material breakdown

## **Physics & Energy**

101. Device to see sound waves
102. System to measure light bending
103. Tester for magnetic field strength
104. Model to show energy-saving
105. Simple electric motor experiment
106. Device to see heat transfer
107. Tool to reduce friction
108. Pendulum motion tracking
109. Solar energy calculator
110. Tool to measure wind resistance
111. Study on static electricity
112. Simple electric generator project
113. Model for energy transformation
114. Tracking system for projectiles
115. Generator for wave interference patterns
116. Tool to analyse sound frequencies
117. Demonstration of light polarisation
118. Setup to show momentum conservation
119. Design for an electromagnetic detector
120. Simple gravity measurement device

## **Space & Astronomy**

- 121. Model to show planet orbits
- 122. System to track star movements
- 123. Device to predict moon phases
- 124. Calculator for solar system distances
- 125. Model to simulate meteor impacts
- 126. Tracking system for space debris
- 127. Tool to help view constellations
- 128. Solar flare detection device
- 129. Study on planet atmospheres
- 130. Space weather prediction tool
- 131. Asteroid orbit calculation system
- 132. Program to classify galaxies
- 133. Device to measure space radiation
- 134. A study comparing planet temperatures
- 135. Rocket efficiency calculator
- 136. Prototype for space suit design
- 137. Model for a Mars habitat
- 138. System for preserving space food
- 139. Device to simulate zero gravity
- 140. A computer system for space navigation

## **Earth Science & Geology**

- 141. Earthquake prediction system
- 142. Device to monitor volcano activity
- 143. Model showing rock formation
- 144. Tool for analysing soil composition
- 145. Weather prediction system
- 146. Device to measure river flow
- 147. Kit for identifying minerals
- 148. System to track glacier movement
- 149. Model of how caves form
- 150. Simulator for tectonic plate movement
- 151. Device to measure erosion rates
- 152. Model of how mountains form
- 153. System to simulate desert climates
- 154. Ocean current tracking device
- 155. Device to detect underground water
- 156. Model of how fossils form
- 157. Device to demonstrate cloud formation
- 158. Wind pattern visualisation tool
- 159. Sea level rise calculator
- 160. Model to study climate change impact

## **Biology & Life Science**

- 161. System to track plant growth
- 162. Study on DNA extraction

163. Device to observe cell division
164. Animal behaviour tracking tool
165. Model to show ecosystem balance
166. Calculator for predicting genetic traits
167. Program to simulate species adaptation
168. Device to measure photosynthesis rates
169. System for monitoring bacteria growth
170. Computer model for evolution simulation
171. Study on heart rate variability
172. Brain wave pattern analyser
173. Tool for tracking muscle movement
174. Blood cell counting device
175. Tool for visualising gene expression
176. Simulation of protein synthesis
177. System to measure hormone levels
178. Nerve signal simulation device
179. Tracker for immune system responses
180. Device to study biological clocks

## **Mathematics & Data Science**

181. Fibonacci sequence visualisation tool
182. Device to generate prime numbers
183. System to recognise statistical patterns
184. Model to demonstrate geometry theorems
185. Visualisation tool for data clustering
186. Simulation to calculate probabilities
187. Model to apply graph theory
188. Program for recognising match patterns
189. Device to show number theory concepts
190. System to demonstrate calculus ideas
191. Tool for linear algebra applications
192. Visualisation tool for data mining
193. Program to simulate mathematical models
194. Tool for statistical analysis visuals
195. Device to demonstrate trigonometry
196. System for plotting coordinate geometry
197. Tool for matrix operations visualisation
198. Model for set theory demonstration
199. Logic gate simulation program
200. Cryptography demonstration device

## **Agriculture & Food Science**

201. System to monitor soil nutrients
202. Model to predict crop growth
203. Study on food preservation techniques
204. Device to detect plant diseases

- 205. Measuring system for irrigation efficiency
- 206. Study on pest control effectiveness
- 207. Calculator for seed germination rates
- 208. Device to check fruit ripeness
- 209. System to test food safety
- 210. Hydroponics monitoring tool
- 211. Model to predict crop yields
- 212. Device to measure soil moisture
- 213. Detector for plant nutrient deficiencies
- 214. System to prevent food spoilage
- 215. Climate control device for greenhouses
- 216. System to monitor livestock health
- 217. Program for agricultural drone control
- 218. Tool to plan crop rotation
- 219. Device for food quality testing
- 220. Design for a smart farming system

## **Architecture & Design**

- 221. Model of earthquake-resistant buildings
- 222. System for designing solar-efficient houses
- 223. Tool for calculating wind loads
- 224. Testing system for sound insulation
- 225. Calculator for building energy efficiency
- 226. Smart home automation system
- 227. Tester for green building materials
- 228. Tool for analysing structure stability
- 229. Model for urban planning simulation
- 230. System for optimising natural lighting
- 231. Calculator for building ventilation efficiency
- 232. Tool for analysing space use in buildings
- 233. Simulator for traffic flow in cities
- 234. System to reduce noise pollution
- 235. Device to control building temperatures
- 236. Model to demonstrate sustainable architecture
- 237. Smart city planning tool
- 238. System for monitoring infrastructure
- 239. Simulator for public space design
- 240. Tool for assessing building safety

## **Psychology & Behavior**

- 241. System to test memory capacity
- 242. Device to measure reaction time
- 243. Tool to analyse learning patterns
- 244. Simulator for decision-making processes
- 245. Program to test attention span
- 246. Model to predict behaviour patterns

- 247. Tool for measuring emotional intelligence
- 248. Analyser for social interaction patterns
- 249. System to track cognitive development
- 250. Program for identifying personality types
- 251. Device to measure mental fatigue
- 252. System for testing problem-solving skills
- 253. Tool to monitor stress levels
- 254. Brain function mapping system
- 255. Program for psychological assessments
- 256. Analyser for human behavior patterns
- 257. Tool to track mental health
- 258. System for Social Psychology Experiments
- 259. Program to detect cognitive biases
- 260. Tool for assessing learning styles

## **Transportation & Mobility**

- 261. System to optimise traffic flow
- 262. Device to test vehicle efficiency
- 263. Design for smart parking solutions
- 264. Tool to track public transportation
- 265. Navigation system for self-driving cars
- 266. Device to monitor road safety
- 267. Optimiser for electric vehicle charging
- 268. System to measure transportation pollution
- 269. Controller for smart traffic lights
- 270. System to prevent vehicle collisions
- 271. Tool to monitor pedestrian safety
- 272. Program to optimise transportation routes
- 273. Calculator for vehicle fuel efficiency
- 274. Model to predict traffic congestion
- 275. Smart system for bike-sharing
- 276. Device for testing vehicle emissions
- 277. Tool to assess transportation accessibility
- 278. System to monitor vehicle speed
- 279. Device to analyse road conditions
- 280. Tool for transportation safety evaluations

## **Art & Creative Technology**

- 281. System for creating digital art
- 282. Device to visualise music
- 283. Tool for demonstrating the color theory
- 284. Creator of sound wave art
- 285. Interactive system for art installations
- 286. Program for designing digital sculptures
- 287. Virtual reality space for art
- 288. System to control light-based art

- 289. Tool to create motion-capture art
- 290. Analyser for digital painting styles
- 291. Creator of sound-based sculptures
- 292. Program for generating art patterns
- 293. System for interactive projection mapping
- 294. Tool for mixing digital colours
- 295. Device to assess art therapy outcomes
- 296. System to track creative processes
- 297. Tool to preserve digital art
- 298. Program to analyse art styles
- 299. Virtual museum design tool
- 300. System for interactive art feedback

## **Communication & Media**

- 301. Device to transmit radio waves
- 302. System to measure signal strength
- 303. Calculator for video compression efficiency
- 304. Tool to test audio quality
- 305. System to optimise media storage
- 306. Device for communication encryption
- 307. Tool to test network speed
- 308. Calculator for data transmission efficiency
- 309. System to detect signal interference
- 310. Tool to convert media formats
- 311. Device to test communication ranges
- 312. Analyser for video streaming quality
- 313. System to reduce audio noise
- 314. Tool for digital signal processing
- 315. Device to assess media accessibility
- 316. System to test communication latency
- 317. Tool to measure signal amplification
- 318. Calculator for data compression efficiency
- 319. Device to test media synchronisation
- 320. Tool for evaluating communication security

## **Energy & Power Systems**

- 321. Tester for solar panel efficiency
- 322. Calculator for wind turbine performance
- 323. Design for energy storage systems
- 324. Tool to monitor power use
- 325. Calculator for energy conversion efficiency
- 326. Model for power distribution systems
- 327. Device to measure energy loss
- 328. System to simulate power grids
- 329. Calculator for energy harvesting efficiency
- 330. Tool to monitor power quality



- 331. Design for energy management systems
- 332. Device for correcting power factor
- 333. Tool to assess energy audits
- 334. Calculator for power generation efficiency
- 335. System to monitor energy conservation
- 336. Calculator for power transmission losses
- 337. Tool for rating energy efficiency
- 338. Analyser for power system stability
- 339. Calculator for optimising energy costs
- 340. Tester for power supply reliability

## **Safety & Security**

- 341. Fire detection system design
- 342. Motion tracker for security cameras
- 343. Calculator for emergency response times
- 344. Device to test safety equipment
- 345. System for detecting security breaches
- 346. Tool to monitor personal safety
- 347. Device to detect hazards
- 348. Calculator for security system efficiency
- 349. Tool to monitor safety compliance
- 350. Design for emergency alert systems
- 351. Calculator for assessing security risks
- 352. Tester for safety equipment effectiveness
- 353. System to test security protocols
- 354. Calculator for training safety programs
- 355. Tool to measure security monitoring
- 356. Model to predict safety incidents
- 357. Calculator for optimising security systems
- 358. Device to monitor safety performance
- 359. Tool for assessing security awareness
- 360. System to design safety management

## **Waste Management & Recycling**

- 361. Calculator for waste sorting efficiency
- 362. System to optimise recycling processes
- 363. Tool to measure waste reduction
- 364. Device to test composting efficiency
- 365. System to track waste management
- 366. Calculator for recycling effectiveness
- 367. Analyser for waste decomposition rates
- 368. System to detect recycling contamination
- 369. Optimiser for waste collection routes
- 370. Tool to assess recycling quality
- 371. Calculator for reducing waste volume
- 372. System for recycling energy efficiency

- 373. Calculator for waste treatment processes
- 374. Device for separating recycling materials
- 375. Optimiser for waste management costs
- 376. Tool to monitor recycling processes
- 377. Calculator for waste disposal efficiency
- 378. Analyser for recycling performance
- 379. Calculator for waste management impacts
- 380. Tool to assess recycling technologies