

Physical Science Project Ideas For High School

These are some of the best physical science project ideas for high school:

Chemistry Projects

1. Make a rainbow flame using different metal salts
2. Create a lava lamp using household items
3. Grow crystals in different shapes and colors
4. Make a battery using fruits or vegetables
5. Test pH levels of everyday household products
6. Create a non-Newtonian fluid and test its properties
7. Make invisible ink and decode secret messages
8. Create a DIY water filter using natural materials
9. Make soap from scratch using different oils
10. Create a density column with various liquids
11. Make rock candy and study crystal formation
12. Create a CO₂ fire extinguisher using baking soda
13. Make biodegradable plastic from milk and vinegar
14. Study the effects of temperature on reaction rates
15. Create a foam explosion using hydrogen peroxide
16. Make homemade ice cream to study freezing point
17. Create a galvanic cell using different metals
18. Study the effects of salt on water's boiling point
19. Make a natural indicator using red cabbage juice
20. Create a DIY hand warmer using a supersaturated solution

Physics Projects

21. Build a simple electric motor using magnets
22. Create a pinhole camera to study light properties
23. Make a homemade barometer to measure air pressure
24. Build a bridge using only popsicle sticks
25. Create a DIY spectroscope to study light spectra
26. Build a rubber band-powered car and test the speed
27. Make a cloud in a bottle to study condensation
28. Create a DIY seismograph to measure ground vibrations
29. Build a solar oven and test its efficiency
30. Make a simple hydraulic system using syringes
31. Create a DIY wind turbine to generate electricity
32. Build a hovercraft using a CD and balloon
33. Make a DIY telegraph to send Morse code
34. Create a Cartesian diver to study buoyancy
35. Build a simple catapult and study projectile motion
36. Make a DIY electroscope to detect static electricity
37. Create a pendulum wave to study harmonic motion
38. Build a simple circuit to power LED lights

39. Make a DIY thermometer using coloured alcohol
40. Create a water rocket and study Newton's laws

Earth Science Projects

41. Make a model of Earth's layers using clay
42. Create a DIY weather station to record data
43. Build a model volcano and simulate an eruption
44. Make a terrarium to study the water cycle
45. Create a model of the solar system to scale
46. Build a DIY rain gauge to measure precipitation
47. Make a model glacier and study its movement
48. Create a DIY earthquake-resistant building design
49. Build a model of a watershed using clay
50. Make a sundial to study Earth's rotation
51. Create a model of plate tectonics using foam
52. Build a DIY anemometer to measure wind speed
53. Make a model of the rock cycle using candy
54. Create a DIY erosion simulator using sand
55. Build a model of ocean currents using water
56. Make a DIY cloud identification chart
57. Create a model of a tornado in a bottle
58. Build a DIY water cycle in a bag
59. Make a model of the greenhouse effect
60. Create a DIY fossil cast using plaster

Astronomy Projects

61. Build a model of a constellation using LEDs
62. Create a DIY planisphere to identify stars
63. Make a scale model of distances in space
64. Build a simple telescope using lenses
65. Create a model of lunar phases using Styrofoam
66. Make a DIY comet using dry ice
67. Build a model of a black hole using fabric
68. Create a DIY spectrograph to study star colors
69. Make a model of the Milky Way galaxy
70. Build a DIY astrolabe to measure celestial objects
71. Create a model of the International Space Station
72. Make a DIY star projector using a shoebox
73. Build a model of a Mars rover
74. Create a DIY sundial using paper plates
75. Make a model of the Big Dipper's movement
76. Build a DIY orrery to show planetary motion
77. Create a model of different types of galaxies
78. Make a DIY solar eclipse viewer
79. Build a model of a space shuttle launch
80. Create a DIY meteor shower simulator

Environmental Science Projects

81. Build a DIY air quality monitor
82. Create a model of a sustainable city
83. Make a DIY solar water heater
84. Build a composting system to study decomposition
85. Create a model of a food web
86. Make a DIY water pollution detector
87. Build a model of a green roof
88. Create a DIY bioplastic from potato starch
89. Make a model of an ecosystem in a bottle
90. Build a DIY soil erosion simulator
91. Create a model of a carbon cycle
92. Make a DIY solar-powered water purifier
93. Build a model of a sustainable house
94. Create a DIY ocean acidification experiment
95. Make a model of a landfill and study leaching
96. Build a DIY air pressure change detector
97. Create a model of a coral reef ecosystem
98. Make a DIY biodegradability test for materials
99. Build a model of a rainwater harvesting system
100. Create a DIY experiment on microplastic pollution

Energy and Technology Projects

101. Build a DIY solar-powered phone charger
102. Create a model of a hydroelectric dam
103. Make a DIY thermoelectric generator
104. Build a simple electric circuit board
105. Create a model of a nuclear power plant
106. Make a DIY wind turbine using plastic bottles
107. Build a model of a smart home
108. Create a DIY electric motor using magnets
109. Make a model of a geothermal power plant
110. Build a DIY solar-powered water fountain
111. Create a model of a hydrogen fuel cell
112. Make a DIY electromagnet and test the strength
113. Build a model of a biomass power plant
114. Create a DIY solar-powered fan
115. Make a model of a wave energy converter
116. Build a DIY Faraday cage
117. Create a model of a fusion reactor
118. Make a DIY battery using lemons
119. Build a model of a smart grid system
120. Create a DIY solar-powered LED light

Mechanics and Engineering Projects

121. Build a DIY hydraulic arm using syringes
122. Create a model of a simple machine system
123. Make a DIY water wheel to generate power
124. Build a bridge using only newspaper and tape
125. Create a model of a pulley system
126. Make a DIY Newton's cradle using marbles
127. Build a model of a Da Vinci bridge
128. Create a DIY Rube Goldberg machine
129. Make a model of a steam engine
130. Build a DIY Archimedes screw water lifter
131. Create a model of a gear system
132. Make a DIY balloon-powered car
133. Build a model of a trebuchet
134. Create a DIY magnetic levitation device
135. Make a model of a pneumatic system
136. Build a DIY wind-powered walking machine
137. Create a model of a suspension bridge
138. Make a DIY hoverboard using leaf blowers
139. Build a model of a robotic arm
140. Create a DIY egg drop protection device

Sound and Waves Projects

141. Build a DIY string telephone
142. Create a model of sound waves using springs
143. Make a DIY musical instrument from PVC pipes
144. Build a simple speaker using magnets
145. Create a model of different types of waves
146. Make a DIY echo chamber
147. Build a model of a human ear
148. Create a DIY resonance tube
149. Make a model of a sound-proof room
150. Build a DIY tuning fork
151. Create a model of a Doppler effect
152. Make a DIY ultrasonic distance sensor
153. Build a model of a noise-canceling headphone
154. Create a DIY water ripple tank
155. Make a model of a standing wave
156. Build a DIY microphone using simple materials
157. Create a model of sound refraction
158. Make a DIY seismic wave simulator
159. Build a model of a musical scale
160. Create a DIY sonar system

Optics and Light Projects

161. Build a DIY kaleidoscope
162. Create a model of light refraction

163. Make a DIY hologram projector
164. Build a simple periscope
165. Create a model of different types of lenses
166. Make a DIY camera obscura
167. Build a model of the human eye
168. Create a DIY rainbow maker
169. Make a model of light polarization
170. Build a DIY fiber optic lamp
171. Create a model of a lighthouse
172. Make a DIY spectroscope using a CD
173. Build a model of a laser light show
174. Create a DIY mirror maze
175. Make a model of light dispersion
176. Build a DIY projector using a smartphone
177. Create a model of bioluminescence
178. Make a DIY night vision scope
179. Build a model of a solar cooker
180. Create a DIY LED color mixer

Thermodynamics Projects

181. Build a DIY Stirling engine
182. Create a model of heat transfer methods
183. Make a DIY cloud chamber
184. Build a simple calorimeter
185. Create a model of a refrigeration cycle
186. Make a DIY thermocouple
187. Build a model of a heat engine
188. Create a DIY Leidenfrost effect demonstration
189. Make a model of thermal expansion
190. Build a DIY Seebeck effect generator
191. Create a model of a passive solar house
192. Make a DIY Peltier cooler
193. Build a model of a heat pump
194. Create a DIY Crookes radiometer
195. Make a model of a [Carnot cycle](#)
196. Build a DIY bimetallic strip thermometer
197. Create a model of entropy
198. Make a DIY heat conduction experiment
199. Build a model of a thermostat system
200. Create a DIY phase change material experiment

Physical Science Project Ideas for College Students

1. Build a quantum eraser to study wave-particle duality
2. Create a plasma speaker using high-voltage electricity
3. Design a magnetic levitation system for frictionless transport
4. Construct a DIY particle accelerator using common materials

5. Develop a machine learning model for crystal structure
6. Build a Foucault pendulum to demonstrate Earth's rotation
7. Create a superconductor using liquid nitrogen cooling
8. Design an experiment to measure the speed of light
9. Construct a DIY scanning tunneling microscope for imaging
10. Develop a system for wireless power transmission
11. Build a cloud chamber to detect cosmic rays
12. Create a DIY laser interferometer to measure tiny distances
13. Design a system to harness energy from bacterial metabolism
14. Construct a DIY nuclear magnetic resonance spectrometer
15. Develop a method for 3D printing with metallic glass
16. Build a quantum random number generator using photons
17. Create a DIY mass spectrometer for chemical analysis
18. Design an experiment to demonstrate quantum entanglement
19. Construct a DIY electron microscope for nanoscale imaging
20. Develop a system for acoustic levitation of small objects