

Chemistry Project Ideas For High School Students

Here's a list of unique chemistry project ideas for high school students:

Organic Chemistry Projects:

1. Make soap from kitchen oils
2. Create natural dyes from plants
3. Extract caffeine from coffee beans
4. Grow crystals using household chemicals
5. Test fruit ripeness with iodine
6. Make plastic from milk proteins
7. Create perfume using essential oils
8. Measure vitamin C in fruit juices
9. Make biodiesel from vegetable oil
10. Extract DNA from strawberries
11. Create bioplastic from potato starch
12. Test the acidity of standard drinks
13. Make ice cream using liquid nitrogen
14. Create invisible ink from lemon juice
15. Extract pectin from fruit peels
16. Make biofuel from algae
17. Create homemade lip balm
18. Test sugar content in soft drinks
19. Make cheese using different acids
20. Create natural room fresheners

Inorganic Chemistry Projects:

21. Grow copper sulfate crystals
22. Make a lava lamp
23. Create colourful flame tests
24. Build a simple galvanic cell
25. Make a lead-acid battery
26. Create a chemical garden
27. Purify water using activated charcoal
28. Make invisible glass using oils
29. Create a non-newtonian fluid
30. Build a hydrogen fuel cell
31. Make elephant toothpaste
32. Create a CO₂ fire extinguisher
33. Make a density column
34. Create a chemical clock reaction
35. Build a simple electrolysis apparatus
36. Make a miniature hot air balloon
37. Create artificial snow
38. Build a simple spectroscope

39. Make glow-in-the-dark slime
40. Create a chemical traffic light

Environmental Chemistry Projects:

41. Test local water quality
42. Measure soil pH in gardens
43. Create a mini water filter
44. Test air pollution using plants
45. Make a solar water purifier
46. Measure acid rain in your area
47. Create a compost accelerator
48. Test household cleaners' effectiveness
49. Make biodegradable plastic alternatives
50. Measure CO₂ levels in classrooms
51. Create natural pesticides for gardens
52. Test soil nutrients in farms
53. Make eco-friendly cleaning products
54. Measure microplastics in water samples
55. Create a mini biogas generator
56. Test the effectiveness of water purifiers
57. Make natural fertilisers from waste
58. Measure ozone levels in the air
59. Create a mini greenhouse
60. Test local soil for heavy metals

Biochemistry Projects:

61. Extract chlorophyll from leaves
62. Test enzyme activity in fruits
63. Measure protein content in foods
64. Create a model of DNA
65. Test effects of temperature on enzymes
66. Extract betacyanin from beets
67. Make a model of a cell
68. Test antioxidant levels in teas
69. Create a blood type test kit
70. Measure fermentation rates in yeast
71. Extract amylase from saliva
72. Test effects of pH on enzymes
73. Create a model of protein synthesis
74. Measure osmosis in plant cells
75. Make a model of photosynthesis
76. Test factors affecting enzyme activity
77. Create a model of cellular respiration
78. Measure transpiration rates in plants
79. Make a model of ATP synthesis
80. Test effects of exercise on metabolism

Physical Chemistry Projects:

81. Measure reaction rates at different temperatures
82. Create a phase change demonstration
83. Test factors affecting crystal growth
84. Measure the heat of neutralisation reactions
85. Create a colligative properties demonstration
86. Test factors affecting surface tension
87. Measure enthalpy changes in reactions
88. Create a model of gas laws
89. Test factors affecting solubility
90. Measure the vapour pressure of liquids
91. Create a model of molecular geometry
92. Test factors affecting reaction equilibrium
93. Measure boiling point elevation
94. Create a model of diffusion
95. Test factors affecting osmosis
96. Measure freezing point depression
97. Create a model of atomic orbitals
98. Test factors affecting adsorption
99. Measure colloidal properties of mixtures
100. Create a model of intermolecular forces

Analytical Chemistry Projects:

101. Perform titrations with household acids
102. Create a simple colourimeter
103. Measure concentration using Beer's Law
104. Perform paper chromatography on inks
105. Create a pH indicator from cabbage
106. Measure the hardness of water samples
107. Perform thin-layer chromatography on plants
108. Create a conductivity meter
109. Measure dissolved oxygen in water
110. Perform flame tests on metal salts
111. Create a simple spectrometer
112. Measure caffeine content in drinks
113. Perform column chromatography on pigments
114. Create a turbidity meter
115. Measure iron content in cereals
116. Perform gas chromatography on perfumes
117. Create a simple polarimeter
118. Measure calcium content in milk
119. Perform electrophoresis on food dyes
120. Create a simple refractometer

Electrochemistry Projects:

121. Build a fruit battery
122. Create an electroplating setup
123. Measure the conductivity of different solutions
124. Build a simple voltaic cell
125. Create a corrosion protection experiment
126. Measure electrolysis of water
127. Build a simple lead-acid battery
128. Create an electrochemical etching setup
129. Measure factors affecting battery performance
130. Build a simple fuel cell
131. Create an electrochemical cleaning experiment
132. Measure electrophoresis of food dyes
133. Build a simple aluminium air battery
134. Create an electrochemical metal recovery setup
135. Measure factors affecting electroplating quality
136. Build a simple zinc-carbon battery
137. Create an electrochemical water purification setup
138. Measure factors affecting corrosion rates
139. Build a simple magnesium battery
140. Create an electrochemical metal detector

Polymer Chemistry Projects:

141. Make slime using different polymers
142. Create a super-absorbent polymer
143. Test the strength of different plastics
144. Make a biodegradable plastic
145. Create a heat-sensitive polymer
146. Test flame resistance of polymers
147. Make a conductive polymer
148. Create a self-healing polymer
149. Test UV resistance of polymers
150. Make a shape-memory polymer
151. Create a polymer-based water filter
152. Test chemical resistance of polymers
153. Make a polymer-based adhesive
154. Create a polymer foam
155. Test thermal insulation of polymers
156. Make a polymer-based sensor
157. Create a polymer-metal composite
158. Test impact resistance of polymers
159. Make a polymer-based artificial muscle

