STEM Project Ideas For High School Students

List of interesting STEM Project Ideas For High School Students:

Biology and Life Science Projects

1. Build a mini greenhouse to grow plants inside all year.
2. Test which music helps plants grow faster and stronger.
3. Make a water filter using sand, rocks, and cotton.
4. See how different lights change plant growth and color.
5. Build a model heart that pumps water like blood.
6. Test which foods make bacteria grow fastest on plates.
7. Make a simple microscope using a magnifying glass.
8. Build a DNA model with colorful beads and wire.
9. Test how salt water changes plant growth over time.
10. Draw a food web to show how animals eat each other.
11. See which hand soap kills the most germs.
12. Make a butterfly garden to watch their life cycle.
13. Test how warmer or cooler water changes fish breathing.
14. Build a model lung that inflates and deflates on its own.
15. See which fertilizer makes flowers bloom biggest.
16. Create a seed bank to save different plant seeds.
17. Test how exercise changes your heart rate over time.
18. Make a bird feeder and count the birds each day.
19. See which drinks stain teeth the most over time.
20. Build a simple weather station to track daily changes.

21. Test how different soils change root growth patterns.
22. Make a compost bin to turn scraps into soil.
23. See which colors bring the most flying insects outside.
24. Build a model stomach that “digests” food with acid.
25. Test how not sleeping enough changes memory and learning.
26. Create a terrarium in a glass jar to make a tiny ecosystem.
27. See which natural materials clean water the best.
28. Make a chart of local animal tracks and signs.
29. Test how adding vitamins changes plant health over weeks.
30. Build a model to show how muscles move your bones.
31. See which household cleaners kill mold best today.
32. Build a simple hydroponics system to grow plants indoors.
33. Test how sugar makes yeast grow in warm water.
34. Create a field guide for local trees and leaves.
35. See which foods give you the most lasting energy.
36. Build a model to show how your eye sees light.
37. Test how different waters change crystal growth over days.
38. Make a worm farm to turn food scraps into soil.
39. See which natural bug sprays work best on pests.
40. Draw a timeline showing how your favorite animal evolved.

Chemistry and Materials Science Projects

41. Make slime that changes color when you touch it.
42. Test which materials carry electricity the best.

43. Create invisible ink with lemon juice and heat.

44. See how different acids change metal over time.

45. Grow crystals using salt, sugar, and hot water.

46. Test which kitchen items work as pH indicators.

47. Build a volcano that erupts with baking soda and vinegar.

48. See how temperature changes how fast things dissolve.

49. Make soap from oils and safe chemicals.

50. Test which materials keep heat in the best.

51. Make a rainbow with water, light, and a mirror.

52. See how different salts change how fast ice melts today.

53. Build a battery using coins, foil, and salty water.

54. Test which cleaners take out stains best right now.

55. Make color-changing milk with soap and food coloring.

56. See how air pressure changes balloon size and shape.

57. Build a simple thermometer using colored water in tubes.

58. Test which materials resist fire the longest.

59. Make a density tower with liquids of different weights.

60. See how catalysts speed up reactions in water.

61. Make biodegradable plastic from corn starch and natural items.

62. Test which acids clean pennies the shiniest.

63. Create a perfume using alcohol and flower petals.

64. See how different gases change flame color and brightness.

65. Make a mood ring that changes with body temperature.

66. Test which materials soak up oil spills best today.

67. Make paint from plant pigments you find outside.
68. See how pressure changes water’s boiling point.
69. Mix safe ingredients to make simple rocket fuel.
70. Test which materials pass heat the fastest.
71. Build a color wheel to show how primary colors mix.
72. See how different surfaces change friction when things move.
73. Make glue from flour, water, and vinegar.
74. Test which natural items dye fabric the brightest.
75. Grow a chemical garden with salt solutions and crystals.
76. See how temperature changes how high a rubber ball bounces.
77. Build a fire extinguisher that works with baking soda.
78. Test which objects float or sink in different liquids.
79. Make a homemade lava lamp with oil and water.
80. See how different sugars change candy texture.

Physics and Engineering Projects

81. Build a catapult that launches marshmallows across the room.
82. Create a simple robot that moves with vibrating motors.
83. Make a bridge from pasta that holds heavy books.
84. Test which paper airplane flies the farthest.
85. Build a marble run with tubes, ramps, and loops.
86. Create a motor with magnets, wire, and batteries.
87. Make a telescope to see craters on the moon.
88. Test which materials make the strongest foundations today.

89. Build a wind turbine that makes electricity from air.

90. Create a lever system to lift heavy objects.

91. Make a periscope to look around corners.

92. Test which wheel shapes roll down hills fastest.

93. Build a simple pendulum clock that keeps time.

94. Create a pulley system to lift weights more easily.

95. Make a pinhole camera that takes upside-down pictures.

96. Test which parachutes fall to the ground most slowly.

97. Build a seismograph to detect shaking ground.

98. Create a water rocket that shoots high into the air.

99. Make an electromagnet with nails, wire, and batteries.

100. Test which ramp angles help cars go the farthest.

101. Build a radio to receive music stations.

102. Create a shadow clock that tells time with sunlight.

103. Make a kaleidoscope with mirrors and beads inside.

104. Test which surfaces build up the most static electricity.

105. Build a generator with magnets and spinning coils.

106. Create a balance scale to weigh objects.

107. Make a gyroscope that spins and stays balanced.

108. Test which materials block sound best today.

109. Build a hydraulic lift with syringes and colored water.

110. Create a compass with a magnetized needle in water.

111. Make a working doorbell with batteries, wire, and a buzzer.

112. Test which shapes cut through air with least resistance.

113. Build a telescope with lenses and cardboard tubes.
114. Create a friction car that moves on its own.
115. Make a simple thermometer using liquids that expand.
116. Test which materials reflect light the brightest.
117. Build a mechanical hand with cardboard, string, and straws.
118. Create an alarm system using light sensors today.
119. Make a working elevator model with pulleys and weights.
120. Test which structures handle earthquakes best.

Computer Science and Technology Projects

121. Make a simple website about your favorite science topic.
122. Build a basic calculator that adds, subtracts, multiplies, and divides.
123. Create digital art using code and colors.
124. Design a simple game where players catch falling objects.
125. Build a password maker for super-strong codes.
126. Make a digital clock that shows time and date.
127. Create an animation of bouncing balls on screen.
128. Design a quiz game about space and planets.
129. Build a digital photo album of your favorite memories.
130. Make a simple chatbot that answers basic science questions.
131. Create a digital music player that plays songs.
132. Design a virtual pet you feed and care for.
133. Build a weather app that shows temperature and conditions.
134. Make a drawing program with different brush tools.

135. Create a digital journal for your daily thoughts.
136. Design a memory game with colorful card pairs.
137. Build a simple budget tracker for your spending money.
138. Make a digital compass that points north.
139. Create a joke maker that tells random jokes.
140. Design a maze game with moving characters.
141. Build a digital recipe book of your favorite foods.
142. Make an alarm clock with a snooze button.
143. Create a word scramble game with science words.
144. Design a virtual garden to plant digital flowers.
145. Build a calendar app with date reminders.
146. Make a digital dice roller for board games.
147. Create a piano app with keys and sounds.
148. Design a fitness tracker that counts your steps.
149. Build a flashcard app for studying science facts.
150. Make a paint program with brushes and colors.
151. Create a name generator for characters and pets.
152. Design a simple timer for cooking and homework.
153. Build a bookmark manager for your favorite sites.
154. Make a currency converter for world money.
155. Create a habit tracker for good routines.
156. Design a virtual aquarium with fish and plants.
157. Build an expense splitter for restaurant bills.
158. Make a color picker tool for art projects.

159. Create a language translator for basic words today.
160. Design a virtual night sky with stars and planets.

Environmental Science and Sustainability Projects

161. Build a solar oven that cooks food with sunlight.
162. Make a rain gauge to measure how much rain falls.
163. Create a wind vane to show which way the wind blows.
164. Test which materials break down fastest in soil.
165. Build an air quality monitor with household items.
166. Make a recycling sorter for different materials.
167. Build a worm bin to turn food scraps into soil.
168. Test which plants clean indoor air best.
169. Create a water-saving system for your garden.
170. Make a pollution tracker for your neighborhood.
171. Build a solar phone charger with small panels today.
172. Test which cleaners harm the environment the least.
173. Build a greenhouse gas detector using color strips.
174. Make a wildlife habitat in your backyard or school.
175. Create a natural pesticide with safe plant ingredients.
176. Test which materials keep buildings warm the best.
177. Build a rainwater collection system for plants.
178. Make a carbon footprint calculator for daily activities.
179. Build a noise meter to measure sound pollution.
180. Test which renewable energy works best in your area.

181. Build a composting toilet model that saves water.
182. Create a native plant garden for local wildlife.
183. Make a natural dye from nearby plants.
184. Test which packaging harms oceans and fish least.
185. Build a greywater system to reuse home water.
186. Create a bee-friendly garden with flowers.
187. Make a pH tester for soil and water.
188. Test which transport methods pollute the least.
189. Build erosion control for steep slopes.
190. Create a microplastic detector for stream water.
191. Make a natural air freshener with plants.
192. Test which farming methods use the least water.
193. Build a green roof model with growing plants.
194. Create a habitat corridor for city wildlife.
195. Make a natural mosquito repellent with plant oils.
196. Test which building materials store the most heat.
197. Build a tidal pool ecosystem in a container.
198. Create a seed bomb launcher to plant flowers.
199. Make a water filter with sand, rocks, and plants.
200. Test which renewable materials replace plastic best.

Mathematics and Data Science Projects

201. Create a survey about favorite foods and make a graph.
202. Build a simple calculator with buttons and math.

203. Make a probability game with dice and colored marbles.

204. Test which lottery numbers come up most often over time.

205. Create a budget planner for your weekly allowance.

206. Build a voting system and count results correctly.

207. Make a pattern finder to spot number sequences today.

208. Test which sports stats predict winners best.

209. Create a growth chart for plants, pets, or people.

210. Build a code breaker for secret number messages.

211. Make a weather model using past temperature data.

212. Test which study methods improve test scores best.

213. Create a counter for local animal populations.

214. Build an interest calculator for savings accounts.

215. Make geometry art using shapes and angles.

216. Test which exercises burn calories most efficiently today.

217. Create a distance calculator for trip planning.

218. Build a grade calculator for school assignments.

219. Make a recipe scaler to change ingredient amounts.

220. Test which sleep patterns help memory and learning.

221. Create a stats tracker for your favorite sports team.

222. Build a loan calculator for borrowing money.

223. Make a time planner for daily schedules.

224. Test which study spots help you focus best.

225. Create a unit converter for different measurements.

226. Build a calorie counter for daily food intake.

227. Make a shape finder using angles and measurements.
228. Test which factors change plant growth rates most.
229. Create a stock tracker for company prices.
230. Build an encryption tool with number patterns.
231. Make a population growth model for your town.
232. Test which teaching methods help students learn math.
233. Create an expense tracker for monthly spending.
234. Build an art maker using math formulas today.
235. Make a data tool to show experiment results.
236. Test which factors affect how fast people react.
237. Create a mortgage calculator for home buying.
238. Build a pattern finder for number sequences.
239. Make a tool to analyze sports performance data.
240. Test which factors affect student success most.

STEM Projects for Middle School

1. Build a simple robot that follows a line using small sensors
2. Set up a weather station to record temperature, humidity, and air pressure each day
3. Make and test paper airplanes to learn how air moves them
4. Build a tiny greenhouse to watch how plants grow in different conditions
5. Create a small electric motor with magnets, wire, and a battery
6. Put together a water filter using sand, gravel, and cloth layers
7. Use popsicle sticks to build a bridge that can hold heavy weights
8. Build a solar oven that cooks food with focused sunlight
9. Make a simple periscope with mirrors to see around corners

10. Build a catapult to learn how things fly through the air
11. Create a model volcano that shows a safe baking soda reaction
12. Put together a simple telescope to watch the moon and planets
13. Build a shake table to test how buildings stand up to quakes
14. Make a battery from lemons or potatoes to light a small bulb
15. Build a model wind turbine that makes power from moving air
16. Create a water rocket with a plastic bottle and air pressure
17. Make a basic microscope using magnifying glasses and a light
18. Build a marble run to show how gravity and motion work
19. Design a simple alarm system with wires and a buzzer
20. Grow crystals on strings with salt water and jars
21. Build a robotic arm using syringes and plastic tubes
22. Test how seeds sprout in different places with soil and water
23. Make an electromagnet to pick up small metal parts
24. Create a tiny ecosystem in a clear box to watch living things
25. Challenge yourself to stack paper towers using only paper and tape

STEM Projects for College Students

1. Make a simple computer program to guess stock market trends
2. Build a self-flying drone that gathers environmental data
3. Engineer bacteria that turn waste into clean biofuel
4. Create a neural network to read and analyze medical pictures
5. Design a small power grid using solar and wind for a village
6. Build a virtual reality app for hands-on science lessons

7. Make a water filter using nanotech and tiny filters
8. Create a farm robot that checks plants and crops automatically
9. Develop building blocks from recycled plastic and natural fibers
10. Build a phone app that uses AI to help with health checks
11. Design a smart prosthetic arm with touch feedback
12. Simulate a quantum computer to solve hard math problems
13. Plan a gene editing tool to fix inherited illnesses safely
14. Create a city network of sensors to track air and noise
15. Test new materials for use on long space trips
16. Automate lab tests to speed up biology experiments
17. Design a system that captures carbon in clean ways
18. Build a blockchain tool to keep medical records safe
19. Make better solar panels that last longer and make more power
20. Create a car that drives itself using cameras and sensors
21. Design a scaffold to grow tissues for medical use
22. Predict how climate change will affect local wildlife
23. Develop a stronger battery for electric cars
24. Automate a factory line with smart robots and AI
25. Track space junk to keep satellites safe from crashes

STEM Project Ideas for Engineering Students

1. Control traffic lights with a tiny computer to ease city jams
2. Monitor bridge health using wireless sensors and data checks
3. Automate quality tests on a factory line to catch errors

4. Store renewable energy in new types of batteries
5. Build a robot line that assembles parts quickly and well
6. Test new materials with a machine that measures strength
7. Simulate airflow in planes with easy-to-use software
8. Control a greenhouse’s heat and water with a smart system
9. Measure how much weight a bridge can carry safely
10. Set up electric car chargers that talk to the power grid
11. Detect earthquakes early with a network of ground sensors
12. Automate a water plant to clean town water supplies
13. Test airplane shapes in a small wind tunnel
14. Build a robot that parks cars in tight spots
15. Simulate the power grid to keep electricity steady
16. Cool computer parts with a smart heat control system
17. Make a factory cell where robots work with conveyors
18. Optimize structures using computer models and tests
19. Automate lights, heat, and locks in a smart building
20. Send a robot through pipes to check for cracks
21. Control factory machines with advanced computer systems
22. Balance renewable power in a smart energy network
23. Test electronic parts fast with a robot-run station
24. Plan delivery routes to cut fuel use with smart software
25. Set up sensors in nature to collect data on air and water

STEM Activities for 3-5 Year Olds

1. Mix baking soda and vinegar to watch it fizz like a volcano
2. Plant seeds in clear cups to see roots grow down
3. Stack blocks into towers and see which shapes stay up
4. Make slime with glue and contact solution to feel the texture
5. Shine sunlight through a prism or mist to see a rainbow
6. Sort toys by color, size, and shape to learn to classify
7. Fold paper airplanes and see which one flies the farthest
8. Look at bugs with a magnifying glass in the yard
9. Freeze water in different molds and watch how ice forms
10. Build ramps and roll balls to learn how machines work
11. Blow bubbles with different tools to see big and small bubbles
12. Mix food coloring and water to see new colors appear
13. Hang a bird feeder and watch which birds come to eat
14. Balance two cups on a hanger to make a simple scale
15. Play with magnets and metal toys to learn about attraction
16. Record daily weather on a chart with pictures and numbers
17. Pile sand or dirt and pour water to watch it wash away
18. Make instruments from cups and rubber bands to hear sound
19. Shine a flashlight on shapes to study shadows on walls
20. Build towers with marshmallows and toothpicks to test strength
21. Float and sink toys in water to learn about density
22. Collect leaves and rocks to glue into a nature picture
23. Snap batteries, wires, and bulbs together to make light
24. Create car ramps and roll toy cars to test speed and distance

25. Touch sandpaper and cloth to feel rough and smooth textures

STEM Activities for Teens

1. Code a phone app that solves a real-life problem
2. Design and 3D print a model to test an engineering idea
3. Make charts from social media data to spot trends
4. Build an Arduino system that sends weather data wirelessly
5. Simulate CRISPR gene editing to learn how DNA changes
6. Create a VR scene for learning or fun in science
7. Power small gadgets with a home-made solar or wind setup
8. Train a computer to guess sports scores using stats
9. Mix safe lab chemicals to learn about reactions
10. Build a competition robot that follows challenge rules
11. Plan a green building model with eco-friendly features
12. Analyze DNA codes on a computer to find patterns
13. Build an electronic project with sensors and microcontrollers
14. Test small rockets or plane designs in real life
15. Study a local ecosystem with water and soil samples
16. Teach a camera system to recognize faces or items
17. Develop a tool to help people with movement challenges
18. Use math ideas to explore shapes and numbers by hand
19. Check home energy use and suggest ways to save power
20. Test new materials for strength using simple tools
21. Code a chatbot that talks like a real person

22. Make plastic from safe ingredients that break down in nature

23. Try physics ideas in a small lab to see quantum effects

24. Grow helpful bacteria in a lab for science projects

25. Solve a local problem with a big final project idea