SAE Project Ideas for High School Students

Here are SAE Project Ideas for High School Students:

Engineering and Technology Projects

1. Build a phone charger that uses sunlight to save electricity.
2. Create a small windmill that lights up an LED.
3. Design a system that collects rain to water school gardens by itself.
4. Make a simple robot that moves by following a line.
5. Build a small greenhouse that changes its temperature using Arduino.
6. Create a 3D-printed bridge that can hold weight without breaking.
7. Design a basic water filter using natural items.
8. Make a tiny crane that lifts objects using water pressure.
9. Build an electronic dice with LED lights and buttons.
10. Create a plant watering system that knows when plants need water.
11. Design a small solar car that moves in a straight line.
12. Build a simple weather station that tells the temperature and humidity.
13. Create a mechanical arm that can pick up light objects.
14. Make a tiny elevator that moves with a motor.
15. Design a rubber band car that can travel a long way.
16. Build a small water wheel that creates electricity.
17. Create a simple security alarm using motion sensors.
18. Make a light that turns on when you clap.
19. Design a model house that stays strong during earthquakes.
20. Build a mini hovercraft using a CD and a balloon.
21. Create a floating magnet experiment using simple magnets.
22. Make a small electric motor using copper wire.
23. Design a mini catapult that safely throws soft objects.
24. Build a flashlight that works by turning a handle, no batteries needed.
25. Create a water rocket using plastic bottles.
26. Make a wind speed meter using cups.
27. Design a solar oven to cook simple foods.
28. Build an electric quiz board game.
29. Create a small bridge that lifts up using gears and motors.
30. Make a musical instrument that works by touching foil.
31. Design a moving belt system that sorts objects.
32. Build a simple water pump using basic items.
33. Create a small machine that makes energy from ocean waves.
34. Make a paper airplane launcher with adjustable speed.
35. Design a tiny vacuum cleaner using a small motor.
36. Build a machine that detects shaking, like an earthquake.
37. Create a fog machine using safe materials.
38. Make a compass using simple items.
39. Design a small water filter that shows different layers.
40. Build a tiny electric car with motors and wheels.

Environmental Science Projects

41. Create a compost bin that turns food scraps into soil.
42. Build a small ecosystem inside a bottle that stays alive.
43. Design a vertical garden that grows food in tight spaces.
44. Make a simple tester to check water quality.
45. Create a small solar-powered device that cleans dirty water.
46. Build a worm farm to help make soil better.
47. Design a tiny greenhouse using recycled items.
48. Make a rain gauge that accurately measures rainfall.
49. Create a butterfly garden to attract local species.
50. Build a small wind barrier to protect plants.
51. Design an air purifier using plants.
52. Make a model landfill showing different layers.
53. Create a simple model to show soil erosion.
54. Build a small water cycle demonstration.
55. Design a bird feeder that keeps seeds dry.
56. Make a small oil spill cleanup demonstration.
57. Create a station to test how fast different materials break down.
58. Build a water-saving system for plants.
59. Design a model that filters plastic pollution from water.
60. Make a small solar heater for water.
61. Create a pollution monitoring station with basic sensors.
62. Build a tiny biogas generator using food scraps.
63. Design a system to sort recyclable materials.
64. Make a simple air quality testing station.
65. Create a board showing different energy sources.
66. Build a small model showing how watersheds work.
67. Design a natural way to control pests in gardens.
68. Make a tiny weather station to predict conditions.
69. Create a soil test kit using household items.
70. Build a drought simulation model.
71. Design a system to track how much waste is reduced.
72. Make a small carbon footprint calculator.
73. Create a display comparing different types of energy.
74. Build a small model showing how to restore habitats.
75. Design a model for eco-friendly transportation.
76. Make a simple water purification demonstration.
77. Create a model showing climate change effects.
78. Build a system to reduce food waste.
79. Design a tiny eco-friendly building model.
80. Make a small station to track different species in an area.

Agricultural Science Projects

81. Build a system that grows vegetables without using soil.
82. Create a small chicken house for a backyard farm.
83. Design a water drip system for garden beds.

84. Make a station to start seeds with controlled warmth.
85. Build a tiny greenhouse that opens and closes by itself.
86. Create a spinning bin that turns food scraps into fertilizer fast.
87. Design a tall stand to grow strawberries in layers.
88. Make a small water-and-fish-growing system.
89. Build a setup to collect rainwater for watering plants.
90. Create a little room for growing mushrooms.
91. Design a garden that helps bees with local flowers.
92. Make a model to show how to trim fruit trees.
93. Build a station to test if soil is too sour or too bitter.
94. Create a small model to show how to switch crops in a field.
95. Design a system that keeps bugs away without chemicals.
96. Make a small indoor herb garden.
97. Build a worm bin that helps turn food scraps into compost.
98. Create a tiny greenhouse that runs on its own.
99. Design a station to track how plants grow.
100. Make a model to plan a small farm.
101. Build a system to make garden soil better.
102. Create a small feeding area for farm animals.
103. Design a plan to handle farm trash in a smart way.
104. Make a model to plan how to water crops.
105. Build a setup to save and store seeds.
106. Create a small tool organizer for a farm.
107. Design a system to keep plants safe in winter.
108. Make a model to show how pollination works.
109. Build a station to teach about staying safe on a farm.
110. Create a small system for keeping food fresh longer.
111. Design a way to show smart and earth-friendly farming.
112. Make a station to take care of farm tools.
113. Build a way to track how much crops grow.
114. Create a small setup to teach how to protect soil.
115. Design a system to handle water on a farm.
116. Make a plan to advertise farm goods.
117. Build a way to keep track of farm records.
118. Create a small model for planning a farm business.
119. Design a station to organize farm safety gear.
120. Make a plan to handle risks on a farm.

Business and Entrepreneurship Projects

121. Create a small stand to sell local farm products.
122. Build a school shop that sells things students make.
123. Design a service to care for pets in the neighborhood.
124. Make a plan for a lawn care business with tools listed.
125. Create a system for scheduling student tutoring.
126. Build a car wash business plan with needed supplies.
127. Design a handmade jewelry business with prices.
128. Make a food truck business plan with menu ideas.

129. Create a plan to use social media for a small business.
130. Build a photography business package with service choices.
131. Design a computer repair business with prices.
132. Make a schedule for a dog walking business.
133. Create a portfolio for a website design service.
134. Build a plan for a local delivery business.
135. Design a cleaning service with a list of supplies.
136. Make a plan for a custom t-shirt printing business.
137. Create an inventory system for a used book store.
138. Build a toolkit for a bike repair service.
139. Design a package for a party planning business.
140. Make a list of tools for a gardening service.
141. Create a plan for a business that collects recycling.
142. Build a system for organizing a home cleaning service.
143. Design a pet grooming business package.
144. Make a plan for removing snow from driveways.
145. Create a station for a gift-wrapping service.
146. Build a plan to help people move their things.
147. Design a face painting business package.
148. Make a plan for a mobile car cleaning service.
149. Create a system for a homework help business.
150. Build a plan for yard care services.
151. Design a personal shopping business package.
152. Make a plan for a mobile tech support business.
153. Create a service that rents out sports gear.
154. Build a system for delivering food.
155. Design a package for a house painting business.
156. Make a plan for a pet grooming service that goes to homes.
157. Create a toolkit for a handyman business.
158. Build a babysitting business with a scheduling system.
159. Design a repair service for fixing phones.
160. Make a plan for a window cleaning business.

Community Service Projects

161. Build a way to gather food for a local pantry.
162. Create a school recycling plan with sorting bins.
163. Design a garden where families can grow food.
164. Make a system to collect and give away clothes.
165. Create a plan to help older adults with technology.
166. Build an organized way to clean up parks.
167. Design a system to collect school supplies for kids.
168. Make a schedule for volunteers at a pet shelter.
169. Create a small library where people can trade books.
170. Build a system for a neighborhood watch group.
171. Design a project to save local history.
172. Make a kit for emergency situations in the community.
173. Create a schedule for mentoring young people.

174. Build a board for sharing community news.
175. Design a plan to make schools look nicer.
176. Make a schedule for free fitness programs.
177. Create a composting station for neighborhoods.
178. Build a system to display local art.
179. Design a plan to protect wild animal habitats.
180. Make a lending library for sports gear.
181. Create a tool-sharing program for neighbors.
182. Build a place to teach people about gardening.
183. Design a program to cut down on food waste.
184. Make a bike repair station for the community.
185. Create a safety patrol system for the neighborhood.
186. Build a library where people can borrow seeds.
187. Design a program to teach about nature.
188. Make a plan for how to help after a disaster.
189. Create a system for a neighborhood cleanup day.
190. Build a station to teach about recycling.
191. Design a program to save water in the community.
192. Make a campaign to help people use less energy.
193. Create a tree planting program for neighbors.
194. Build a station for community exercise.
195. Design a project to check air quality.
196. Make a system to track local weather.
197. Create a program to make streets safer.
198. Build a demo to show how solar power works.
199. Design a campaign to cut down on waste.
200. Make a system to track wild animals in the area.

SAE Project Ideas For High School Science

Biology Project Ideas

1. See how different colors of light affect how plants grow. Use LED lights and houseplants to measure things like how tall the plants get and how many leaves they grow.
2. Check how caffeine changes the heart rate of tiny water animals called daphnia. Use different coffee strengths and a microscope to watch their hearts beat.
3. Test if natural or store-bought antibacterial products work better. Grow bacteria and see which one stops them the most.
4. Study how hard exercise changes how fast heart rates return to normal. Measure heartbeats in students after they work out.
5. Look at how temperature changes how well an enzyme works. Use potato extract and hydrogen peroxide to test this.
6. See if different types of music help people remember things better. Test students to find out.
7. Check if soil pH affects how well plants take in nutrients and grow. Use radish plants for the experiment.

8. Find out which type of sugar helps yeast make the most gas. Measure how much CO_2 is produced.
9. Test different natural preservatives to see which one keeps food from spoiling the longest.
10. See if artificial sweeteners or natural sugars help bacteria grow more. Compare their effects.
11. Find out if larger leaves lose more water. Test different plant types to see how much they evaporate.
12. Test how different colored lights change the speed of photosynthesis in water plants.
13. Study how temperature affects how fast fruit flies grow and how long they live.
14. Check if the size of a seed changes how well it grows. Test different plant seeds.
15. See how different amounts of salt in water affect how many brine shrimp survive.

Chemistry Project Ideas

16. Test how temperature affects how fast Alka-Seltzer tablets dissolve in water.
17. See how adding more catalyst changes how fast hydrogen peroxide breaks down.
18. Compare different antacids to find out which one stops stomach acid best.
19. Test if smaller pieces of a substance dissolve faster than bigger pieces.
20. See how temperature affects how much salt can dissolve in water.
21. Test how changing the amount of vitamin C affects how fast it reacts with iodine.
22. Check if different pH levels make metals rust faster.
23. Compare different ways to remove rust from nails and see which one works best.
24. Study how temperature changes how crystals form in a supersaturated solution.
25. Test how different ingredients change the quality of homemade soap.
26. See if the shape of a molecule affects how high or low its boiling point is.
27. Test how pressure changes how much gas dissolves in different liquids.
28. See if temperature affects how well batteries work and how long they last.
29. Test how changing the amount of dissolved salt affects how well water conducts electricity.
30. Compare different substances to see which one helps turn vegetable oil into biofuel the best.

Physics Project Ideas

31. See if the length of a pendulum changes how fast it swings back and forth.
32. Test how different surfaces affect friction and movement.
33. Compare different materials to see which one blocks sound the best.
34. Test how changing string length affects the pitch of a musical instrument.
35. See if temperature affects how strong a magnet is.
36. Check how different factors change how well solar panels produce energy.
37. Test if heavier objects accelerate differently when using simple machines.
38. Compare how different materials transfer heat.
39. Test how different wing shapes change how far paper airplanes fly.
40. See if a spring’s stiffness changes how fast it moves up and down.
41. Test how different factors change how a ball moves when thrown.
42. See if changing air pressure affects how well a water rocket flies.
43. Test if changing the resistance in a circuit changes how much current flows.

44. Compare different materials to see which one builds up static electricity best.
45. Test how different shapes affect how fluids move in a wind tunnel.

Environmental Science Project Ideas

46. See how different pollutants change water quality by using small water organisms.
47. Test if different kinds of mulch help soil hold water better.
48. Compare different ways to clean dirty water and see which one works best.
49. Test if air quality changes based on how close a place is to busy roads.
50. See if different plastics break down faster or slower over time.
51. Test if different fertilizers make algae grow faster in water.
52. Check if more buildings in an area make the local temperature higher.
53. Test how different materials affect how well compost breaks down.
54. See if more light pollution changes how many nighttime insects are active.
55. Compare different rainfall pH levels and see how they change soil.
56. Test if different laundry detergents affect how well water plants grow.
57. See if different packaging materials help keep food fresh longer.
58. Compare different types of cars to see which ones produce more carbon emissions.
59. Test how different roofing materials change the temperature inside buildings.
60. Compare different ways of handling waste to see which one makes things break down the fastest.

Earth Science Project Ideas

61. See if different types of rocks erode at different speeds.
62. Test if steeper slopes cause soil to erode more.
63. Compare different ways to stop soil from washing away.
64. See if minerals cool at different speeds and how that changes their crystal size.
65. Test different ways to predict the weather and see which one is the most accurate.
66. Check if different materials filter groundwater better.
67. See if volcanic ash changes how good soil is for growing plants.
68. Test what conditions help fossils stay preserved the longest.
69. Compare different factors to see what shapes sand dunes.
70. Test how different building designs hold up during earthquakes.
71. See if different factors change how fast glaciers melt.
72. Check if ocean currents affect how much land washes away on beaches.
73. Test if more air pollution changes how clouds form.
74. See if different factors change how rivers twist and turn over time.
75. Compare different factors to see how they change the way crystals grow in minerals.

Biotechnology Project Ideas

76. Test if changing conditions makes bacteria take in new DNA better.
77. See which method extracts the most DNA from a sample.
78. Compare different ways to grow cells in a lab and see which one works best.
79. Test if different environmental conditions change how genes are expressed.
80. See what factors change how much enzyme microorganisms produce.
81. Compare different conditions to see what makes proteins break down the fastest.

82. Test if the size of a plasmid changes how well bacteria take it in.
83. See which method purifies proteins the best.
84. Compare different factors to see how they affect how well PCR works.
85. Test if stress in the environment changes how fast mutations happen.

Engineering and Technology Project Ideas

86. See if changing the design of a solar oven makes it work better.
87. Test if different materials make bridges stronger or weaker.
88. Compare different ways to filter water and see which one works best.
89. Test if different wing designs make wind turbines produce more energy.
90. See what factors change how well robots move and follow directions.
91. Test different building designs to see which ones can handle earthquakes best.
92. Compare how different gear sizes affect mechanical advantage.
93. See which materials block or change sound the most.
94. Test if different hydroelectric power designs make more electricity.
95. Compare different coding methods to see which makes programs run faster.
96. See what factors change the quality of objects made with 3D printing.
97. Test if different building shapes help save more energy.
98. See if different antenna shapes change how strong a signal is.
99. Compare different materials to see which keeps heat in or out the best.
100. Test different designs to see which makes the best renewable energy system.