

# Amazing STEM Capstone Research Topics for Students

## Technology and Computer Science

1. Build a smart pet feeder that knows when pets are hungry.
2. Make a game that teaches math using fun space stories.
3. Design a robot that sorts trash into the right bins.
4. Make an app that helps people find lost pets.
5. Build a program that turns drawings into cartoons that move.
6. Make a smart garden that waters plants when the dirt is dry.
7. Design a website that helps kids find reading buddies.
8. Create a robot that can play easy songs on a piano.
9. Build an app that changes animal sounds into silly human words.
10. Make a computer game where players fix the planet by solving puzzles.
11. Design a smart mirror that shows the weather and homework reminders.
12. Make a coding game where kids build castles.
13. Create a robot that reminds older people to take their medicine.
14. Build an app that makes exercise fun with friends.
15. Make a computer that helps teachers grade work fast.

## Simple Capstone Project Ideas for IT Students

16. Make a chatbot that tells what's for lunch every day.
17. Build a program that makes study plans for each student.
18. Make a digital library that picks books kids might like.
19. Design a website to help kids join study groups.

20. Create an app that checks homework time.
21. Build a program that makes custom math worksheets.
22. Make a system that helps teachers plan online field trips.
23. Design a site where kids share science project results.
24. Make a game that turns facts into fun quizzes.
25. Create a typing app with fun stories.
26. Build a website that helps kids find volunteer jobs.
27. Make a tool to track lost and found items at school.
28. Build a program that makes spelling tests for each kid.
29. Create an app that helps plan healthy school lunches.
30. Make a tool to teach about different world cultures.

## **STEM Research Topics for High School Students**

31. Study how music changes how fast plants grow.
32. Test which natural stuff cleans pond water best.
33. See how exercise time changes how teens remember things.
34. Check which apps help kids study better.
35. Study how light colors change plant growth indoors.
36. Test which bird feeders bring the most birds.
37. Learn how social media changes teen sleep.
38. See which natural sprays keep bugs away.
39. Study how breakfast affects focus in morning classes.
40. Test which trash makes the strongest toy car bridges.
41. Learn how weather affects local animals during the year.
42. See which ways help kids remember science facts longer.

- 43. Study how exercise helps lower stress in teens.
- 44. Test which cleaners work best on stains.
- 45. Learn how screen time changes hand-eye skills in gamers.

## **Biology and Life Sciences**

- 46. Make a butterfly garden that brings many kinds of butterflies.
- 47. Study how soil types change how fast veggies grow.
- 48. Build a worm bin that makes soil from food waste.
- 49. Learn which natural ways keep bugs away in school gardens.
- 50. Create a bird guide for birds near your school.
- 51. Study how water types affect fish in tanks.
- 52. Make a terrarium that doesn't need daily care.
- 53. Learn which plants grow best on sunny windows.
- 54. Create a seed bank for saving wildflowers.
- 55. Study how safe plant food helps houseplants grow.
- 56. Build a garden for bees and butterflies.
- 57. Learn which natural stuff makes good mulch.
- 58. Make mushrooms grow in dark school areas.
- 59. Study how colored lights change bean plant growth.
- 60. Build a garden without soil using water and nutrients.

## **Chemistry and Materials Science**

- 61. Test which natural things can make earth-friendly plastic.
- 62. Make fun slime to learn about chemical changes.
- 63. Learn which home items clean best naturally.
- 64. Build a water filter using nature items only.

65. Test which natural dyes color cloth best.
66. Do fun and safe acid-base experiments.
67. Study which materials carry electricity the best.
68. Build a cooker that uses sunlight only.
69. Test which things keep heat in the best.
70. Make a safe volcano that shows how chemicals react.
71. See which baking mixes make fluffiest bread.
72. Make a battery with fruits or veggies.
73. Test which items stop metal from rusting.
74. Grow crystals safely and see how they form.
75. Study which things make good earth-safe soap.

## **Physics and Engineering**

76. Build a windmill that lights up a small bulb.
77. Make a marble run to learn physics while playing.
78. Study which bridges hold toy cars the best.
79. Build a soft-launch catapult.
80. Make a pulley that helps lift heavy things.
81. Study which paper planes fly the farthest.
82. Build a safe magnet that picks up metal.
83. Make a pendulum clock with easy items.
84. Test what blocks sound the most.
85. Build a telescope to look at the moon.
86. Make a lever that lifts heavy books easily.

- 87. Study which balloons fly highest with helium.
- 88. Build a motor with magnets and wire.
- 89. Design a parachute to protect an egg.
- 90. See which balls bounce highest on different surfaces.

## **Environmental Science and Sustainability**

- 91. Make a garden that soaks rain and helps animals.
- 92. Learn which clean energy works best in different weather.
- 93. Build a compost that turns food into soil.
- 94. Find out which trees clean air best.
- 95. Create a system to save water at home.
- 96. Study which lunch boxes break down safely in nature.
- 97. Build a weather station to track changes.
- 98. Find plants that need little water to grow.
- 99. Make a project that turns old tech into new things.
- 100. Study which travel ways make less pollution.
- 101. Build a solar greenhouse for year-round food.
- 102. Learn which bug sprays are safe for gardens.
- 103. Test water in streams to check for pollution.
- 104. Study what keeps homes cool in hot summer.
- 105. Build a rain catcher to water garden plants.

## **Health, Medicine, and Human Body**

- 106. Study how germs spread using safe jelly powder.
- 107. Make a model of the heart that really pumps.
- 108. Test which hand-washing soap kills the most germs.

- 109. Learn how much sugar is in drinks.
- 110. Build a model to show how lungs work.
- 111. Test how heart rate changes when you exercise.
- 112. Make a kit to help with cuts and scrapes.
- 113. Learn which veggies have the most vitamins.
- 114. Make a mini skeleton to learn about bones.
- 115. Study how sleep changes how well we learn.
- 116. Build a brain model using clay.
- 117. Make a food plate that shows healthy eating.
- 118. Learn which exercises are best for strong muscles.
- 119. Test how much air lungs can hold with a balloon.
- 120. Study how smells affect what food we like.

## **Robotics and Automation**

- 121. Build a small robot that follows a line.
- 122. Make a robot that moves when it hears a sound.
- 123. Build a robot that waters plants.
- 124. Make a robot that sorts colors.
- 125. Create a robot that can write your name.
- 126. Build a robot arm to pick up toys.
- 127. Make a robot that claps when it hears music.
- 128. Build a robot that draws shapes.
- 129. Make a robot that avoids walls.
- 130. Create a dancing robot for fun.
- 131. Build a robot that tells time.

- 132. Make a robot that can push small blocks.
- 133. Build a robot that finds light.
- 134. Make a robot pet that makes happy sounds.
- 135. Build a robot that follows a magnet.

## **Electronics and Circuits**

- 136. Build a simple flashlight using wires and a battery.
- 137. Make a light that turns on when it's dark.
- 138. Build a sound alarm using a buzzer.
- 139. Make a game with lights that blink in order.
- 140. Create a night light that uses motion.
- 141. Make a buzzer that rings when doors open.
- 142. Build a quiz game with buttons and lights.
- 143. Make a toy with flashing lights.
- 144. Build a fan that runs with solar power.
- 145. Make a toy that makes noise when touched.
- 146. Build a lamp that turns on with hand claps.
- 147. Make a battery using saltwater.
- 148. Build a circuit that plays a song.
- 149. Make a paper robot that lights up.
- 150. Build a button panel to turn on lights.

## **Math-Based STEM Ideas**

- 151. Study how fast numbers grow in patterns.
- 152. Make a chart that shows weather changes.
- 153. Build a model to show how money grows with saving.

- 154. Use math to plan a trip with fake money.
- 155. Make shapes and learn about area and size.
- 156. Track sports scores and make graphs.
- 157. Learn about symmetry by making snowflakes.
- 158. Use dice to study chance and luck.
- 159. Make patterns using beads or blocks.
- 160. Count birds or bugs and make a graph.
- 161. Measure how fast toy cars go.
- 162. Use math to plan a pretend birthday party.
- 163. Build towers and see how shapes stay strong.
- 164. Learn about fractions using pizza pieces.
- 165. Measure how shadows change with time.

## **Aerospace and Flight**

- 166. Build a paper airplane that flies far.
- 167. Make a balloon rocket and test speed.
- 168. Build a glider that stays in air long.
- 169. Test which wings fly best.
- 170. Build a simple helicopter with straws.
- 171. Study how weather affects kite flying.
- 172. Make a mini parachute and test drops.
- 173. Learn how planes stay up using wind.
- 174. Build a launcher for small rockets.
- 175. Make a model of the solar system.
- 176. Study what makes good rocket fuel (safe ones!).



- 177. Test how shape changes flight time.
- 178. Make a paper spinner that falls slowly.
- 179. Build a tiny hot air balloon with safe tools.
- 180. Study which angle gives best flight.

### **Creative and Fun STEM Projects**

- 181. Build a marble maze game.
- 182. Make a robot that draws cool shapes.
- 183. Create a story where robots save a city.
- 184. Build a city using recycled boxes.
- 185. Make a math board game.
- 186. Create a science comic book.
- 187. Build a music maker using bottles.
- 188. Make a puppet that teaches science.
- 189. Design a theme park with math rules.
- 190. Create a song about planets.
- 191. Make a game that teaches science words.
- 192. Build a zoo with info cards and maps.
- 193. Make a craft about the water cycle.
- 194. Build a shadow theater to show Earth science.
- 195. Make a book of science jokes and facts.

### **For Group STEM Projects**

- 196. Build a robot soccer team.
- 197. Make a science play to show plant growth.
- 198. Create a city that uses only solar power.

199. Build a machine that sorts shapes.
200. Make a science fair booth about space travel.