

# Experimental Research Topics for Young Scientists

## Science and Nature Projects

1. Try growing plants in boxes with different color lights to see which grows faster.
2. See if seeds grow better in salt water or fresh water.
3. Check how tall plants get when music is played every day.
4. See if plants lean toward real sunlight or fake light.
5. Try different liquids to see which keeps cut flowers fresh the longest.
6. Talk to your plants every day to see if they grow taller.
7. See which kind of dirt helps bean plants grow the best.
8. Find out if round or square pots help plants grow better.
9. Give plants different amounts of water to see what works best.
10. Cover plants with plastic and see if they grow quicker.
11. Use different plant foods to see which one makes tomato plants grow more fruit.
12. Try growing plants in warm and cold rooms to see which is better.
13. Check if plants grow better in the morning or afternoon sun.
14. Place plants close together to see if they grow taller.
15. Try different types of water to see which makes grass greener.

## Food and Kitchen Science Projects

16. Put bread in different spots to see which stays fresh longer.
17. Add salt to water and see if it makes the water boil faster.
18. Try different milks to see which goes bad faster at room temperature.

19. Use hot and cold water to see which melts sugar faster.
20. Leave out different fruits and see which turn brown first.
21. Put bananas near other fruits and see if they ripen faster.
22. Try different cooking oils to see which makes the crispiest fries.
23. Freeze bread and taste it later to see if it changes.
24. Use lemon juice on apples to see if it keeps them from turning brown.
25. Make cookies with different flours and see how they taste.
26. Open sodas and check which one loses bubbles fastest.
27. Cook veggies in water with and without vinegar to see what works best.
28. Put potatoes in dark and light places and check for changes.
29. Use different sugars in cookies to see how they spread.
30. Try different containers to see which keeps cereal crunchy the longest.

## **Weather and Climate Projects**

31. Catch rain in different-shaped cups and see which fills up fastest.
32. Put ice in different materials to see which melts slowest in heat.
33. Measure wind at low and high spots to see if it's different.
34. Check temperatures in sunny and shady spots to compare.
35. See if wet clothes dry faster in high or low humidity.
36. Watch air pressure to see if it changes before it rains.
37. Use a wind tool to see which way the wind blows most.
38. Watch clouds on windy and calm days to see how fast they move.
39. Put snow in sun and shade to see which melts faster.
40. Check if it's warmer on grass or concrete.
41. Try different thermometers to see which one is most correct.

42. See if more dew forms on metal or plastic in the morning.
43. Watch if air pressure drops when storms come.
44. Stand outside and see if wind makes it feel colder.
45. Put materials in sun to see which gets hottest fastest.

## **Animal Behavior Projects**

46. Use different seeds to see which brings the most birds.
47. Give ants sweet and salty food and see what they pick.
48. Make loud and soft sounds to see how pets react.
49. Shine different color lights to see if bugs come or stay away.
50. Use different smells to see what keeps mosquitoes away.
51. Put fish in warm and cold water and watch how fast they swim.
52. Watch hamsters to see if they move more in the day or night.
53. Play music and watch how pets act.
54. Try foods and see which makes dogs drool most.
55. Give cats toys that move and still ones to see which they like.
56. Listen for bird songs during different weather to see when they sing more.
57. Use birdhouses with different colors to see which birds like most.
58. Use different bait to catch fish and see what works best.
59. Teach pets tricks with treats or praise to see which works better.
60. Use sunlight and lamps to see which animals like more.

## **Technology and Engineering Projects**

61. Drop phones in different cases to see which protects best.
62. Put stuff in front of Wi-Fi to see what blocks the signal.
63. Try different batteries to see which lasts longest in flashlights.

64. Put solar panels in sun and clouds to see what works better.
65. Use different things to build paper bridges and see which is strongest.
66. Try different propellers on toy helicopters and see which flies best.
67. Use magnets to see which picks up the most metal.
68. Try thick and thin wires to see which carries electricity best.
69. Use different items to block loud sounds and see what works best.
70. Put oils on toy parts to see which makes them move smoother.
71. Try different springs to see which bounces balls the highest.
72. Use regular and LED bulbs to see which uses less power.
73. Wrap eggs and drop them to see what keeps them from breaking.
74. Drop parachutes of different shapes to see which falls slowest.
75. Try wheels on different surfaces to see which rolls farthest.

## **Health and Medicine Projects**

76. Try different soaps to see which kills the most germs.
77. Use plates of different colors to see if food tastes better.
78. Check heartbeats before and after exercise to see the change.
79. Play music and test if it helps people remember better.
80. Try different sleeping positions and ask which feels best.
81. Use bright and soft lights to see if mood changes.
82. Drink water before tests and see if it helps you focus.
83. Chew gum while working to see if it helps concentration.
84. Try foods to see which keeps you full and energized longest.
85. Stretch before workouts to see if it helps with sore muscles.
86. Study with and without noise to see which helps more.

- 87. Do breathing exercises and see if they help you calm down.
- 88. Try vitamins to see which help with growth.
- 89. Watch funny videos and see if people feel happier.
- 90. Wash hands with hot and cold water to see what cleans best.

## **Chemistry and Materials Projects**

- 91. Put items in water and see which ones rust first.
- 92. Use different acids to see which dissolves eggshells fastest.
- 93. Try glues to see which sticks best.
- 94. Mix salt and sugar in water to see which melts quicker.
- 95. Heat things up to see which changes color.
- 96. Try mixing oils and water to see which ones work best.
- 97. Use different soaps to see which makes the biggest bubbles.
- 98. Mix baking soda with liquids and see what happens.
- 99. Put things in the sun to see which gets hot fastest.
- 100. Try magnets on metals to see which sticks strongest.
- 101. Make paper planes with different types of paper and fly them.
- 102. Wash dishes in hot and cold water to see what works best.
- 103. Drop things in water to see which floats or sinks.
- 104. Mix powders with water and see if they bubble or change.
- 105. Wash different fabrics and see which dries the fastest.

## **Earth and Space Projects**

- 106. Put wet and dry soil in the sun to see which one gets hot faster.
- 107. Look at different kinds of rocks and sort them by color or shape.
- 108. Put pebbles in water and shake to see which ones wear down.

109. Make a model volcano and test what makes the biggest eruption.
110. Try different types of sand to see which holds water best.
111. Use magnets to see if any space rocks (meteorites) are magnetic.
112. Look at moon shapes each night and draw what you see.
113. Try building a small earthquake-proof tower and shake it.
114. Put water, soil, and rocks in jars to see how they settle.
115. Make a mini tornado in a bottle and watch how it spins.
116. Use a telescope or binoculars to look at the moon or stars.
117. Try different filters to see which lets you see stars better.
118. Watch where the sun rises and sets over a few weeks.
119. See how fast a rock sinks in mud, sand, or water.
120. Use a compass to see how Earth's magnetic field points north.

### **Light and Color Projects**

121. Shine a flashlight through colored plastic and see what changes.
122. Mix colored lights to see what new colors you get.
123. Look at items in red, blue, or green light to see what they look like.
124. Use mirrors to bounce light around and make fun shapes.
125. Try different sunglasses to see which blocks the most sun.
126. Look at things through a drop of water to see if it makes them look bigger.
127. Use clear, cloudy, and colored glass to see how light changes.
128. Make a rainbow using a glass of water and a flashlight.
129. Test what happens when light goes through water and oil.
130. Use a prism to break light into colors.
131. Try drawing on black and white paper to see which looks brighter.

- 132. Shine light on shiny and dull things to see which reflects more.
- 133. Put glow-in-the-dark toys under different lights to see what works best.
- 134. Try different color lights on plants to see if they grow better.
- 135. See what happens when you mix food colors in water and oil.

## **Sound and Music Projects**

- 136. Make a paper cup telephone and test how far it works.
- 137. Use rubber bands to make sounds and see which stretch makes what note.
- 138. Drop coins in jars to hear which one is loudest.
- 139. Fill glasses with water to make a water xylophone.
- 140. Clap near a wall and listen for echoes.
- 141. Try listening with and without your hands over your ears.
- 142. Use cardboard tubes to make sound travel farther.
- 143. Drop marbles on wood and metal to hear different sounds.
- 144. Record how loud different toys or tools are.
- 145. Try different shapes of drums to see which sounds better.
- 146. Play high and low sounds for pets to see which they notice.
- 147. See which materials block out sound the best.
- 148. Try whistling through different size straws.
- 149. Record sounds from different rooms to see which are quietest.
- 150. Use forks, spoons, and cups to make a band and compare tones.

## **Simple Machines and Motion Projects**

- 151. Roll balls down ramps to see which goes farthest.
- 152. Build a pulley and see how easy it is to lift things.
- 153. Make a mini seesaw and test balance with toys.

154. Use wheels on blocks and see if they move faster.
155. Build a lever and try lifting different things.
156. Push and pull boxes to see which moves easier.
157. Make a marble maze to test speed and turns.
158. Test which shape of car rolls best down a ramp.
159. Use a toy fan to blow a paper boat and measure how far it goes.
160. Drop balls from different heights to see which bounces higher.
161. See if rough or smooth ramps change how fast things slide.
162. Make a catapult and see how far it can throw small things.
163. Roll things of different sizes to see which stops first.
164. Try moving things on ice and on carpet to compare.
165. Test how heavy things are with and without wheels.

## **Energy and Electricity Projects**

166. Rub a balloon on your hair to see if it sticks to walls.
167. Make a simple circuit with a battery and bulb.
168. Try using lemons or potatoes to power a small light.
169. Build a small windmill and see if it spins in a breeze.
170. Use a solar panel and test it in sun and shade.
171. Charge a flashlight with a hand crank and measure how long it lasts.
172. Use static electricity to pick up paper bits.
173. Try different wires to see which carries power best.
174. See if solar lights charge better in morning or afternoon sun.
175. Make a simple electromagnet and see what it picks up.
176. Try putting batteries in the wrong way and see what happens.



- 177. Use water and salt to make a tiny power source.
- 178. See if turning off lights really saves power (use a meter if you can).
- 179. Power a fan with a solar panel and block the sun to test it.
- 180. Light a bulb with different numbers of batteries.

## **Recycling and Environment Projects**

- 181. Bury paper, plastic, and food to see which breaks down faster.
- 182. Test which items float or sink in oil and water.
- 183. See if plants grow better in reused water.
- 184. Make recycled paper from old newspaper.
- 185. Build a simple water filter using sand and gravel.
- 186. Try different ways to keep a house cool without power.
- 187. Collect rainwater and test how clean it is.
- 188. Sort trash from home and see how much can be recycled.
- 189. Try cleaning up oil in water with cotton, sponges, and sand.
- 190. Use cloth and paper bags to test which holds more weight.
- 191. Make a compost bin and see how food scraps change.
- 192. See if turning off electronics at night saves energy.
- 193. Test which packaging keeps food fresh the longest.
- 194. Build a model wind turbine and measure the spin.
- 195. Water plants with tap, rain, and filtered water and compare.

## **Extra Fun and Creative Science Projects**

- 196. Make slime with different recipes and test stretchiness.
- 197. Build a volcano and try different “lava” mixtures.
- 198. Grow sugar or salt crystals in jars.

199. Make a cloud in a bottle.
200. Create invisible ink with lemon juice.
201. Build a hovercraft using a balloon and CD.
202. Try color-changing milk with soap and food coloring.
203. Grow mold on bread and watch it daily.
204. Make dancing raisins using soda.
205. Build a model rocket with a balloon.
206. Use vinegar and baking soda to inflate a balloon.
207. Mix cornstarch and water to make oobleck and play with it.
208. Make a paper airplane and test different wing shapes.
209. Freeze bubbles and see what happens.
210. Try homemade ice cream with salt and ice.
211. Build a parachute for an egg and test drops.
212. See if gummy bears grow in water overnight.
213. Make a lava lamp using oil and colored water.
214. Test which materials clean pennies best.
215. Use food coloring to see how water moves in a plant.