

Grade School Science Project Ideas

Students are introduced to the scientific method in grade school and learn how to propose a hypothesis. Grade school science projects tend to be quick to complete and should be fun for the student and the teacher or parent. Examples of suitable project ideas include:

- Determine whether insects are attracted to lights at night because of their heat or their light.
- Does the type of liquid (e.g., water, milk, cola) affect seed germination?
- Does the power setting of the microwave affect how many unpopped kernels are in popcorn?

Middle School Science Fair Ideas

Middle school is where kids can truly shine at the science fair! Kids should try to come up with their own project ideas, based on topics that interest them. Parents and teachers may still need to help with posters and presentations, but middle school students should have control of the project. Examples of middle school science fair ideas include:

- Examine food labels. How does the nutritional data for different brands of the same food (e.g., microwave popcorn) compare?
- Is laundry detergent effective if you use less than the recommended amount?
- How permanent are permanent markers? Are there chemicals that will remove the ink?
- Can a saturated solution of salt still dissolve sugar?
- Do green bags really preserve food longer?
- Are goldfish water chemicals really necessary?
- What shape of ice cube melts the slowest?

High School Science Fair Ideas

High school science fair projects can be about more than a grade. Winning a high school science fair can net some nice cash prizes, scholarships, and college/career opportunities. While it's fine for an elementary or middle school project to take hours or a weekend to complete, most high school projects run longer. High school projects typically identify and solve problems, offer new models, or describe inventions. Here are some sample project ideas:

- Which natural mosquito repellents are most effective?
- Which home hair color holds its color through the most washings?
- Do people who play car racing video games have more speeding tickets?
- Which high school sport is associated with the most injuries?
- What percentage of left-handed people use a computer mouse with their left hand?
- What season is worst for allergies and why?

(Always remember to use safety precautions and supervise kids around fires and chemicals, please.)

1. Create a rainbow of flames.



You can change the color of fire by adding chemicals found at your local grocery store—what a sight! This experiment is easy to set up, but of course requires safety precautions.

Learn more: [ThoughtCo](#)

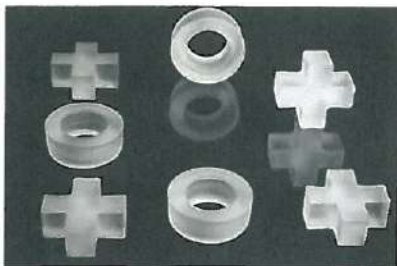
2. Guide a growing plant through a maze.



Prove that plants really do seek out the light by setting up a maze, simple or complex. This is a simple 8th grade science project with really cool results.

Learn more: [KiwiCo](#)

3. Teach a computer to play tic-tac-toe.



This intermediate Javascript coding project requires some very basic background programming knowledge. It's perfect for kids with an interest in all things computers.

Learn more: [Science Buddies](#)

4. Construct a Rube Goldberg machine.



Create a machine to complete a simple task in the most complicated fashion! This is a neat 8th grade science project, because it allows you to use a variety of physics concepts in a fun way. See an example in this [YouTube Video](#), and [learn more about Rube Goldberg machines here](#).

5. Block the sun's UV rays.



Use color-changing UV beads (readily available online) to test the protective power of medicine bottles, hats, clothing, and more. This is an 8th grade science experiment with nearly endless possibilities.

Learn more: [Steve Spangler Science](#)

6. Concoct and test your own shampoo.



Ever wonder what makes shampoo effective? In this experiment, you'll cook up your own recipes and try them out to see which ingredients work best.

Learn more: [Science Buddies](#)

7. Separate water into hydrogen and oxygen.



Use electrolysis to prove that water really is made up of hydrogen and oxygen. It's a simple concept, but one that never fails to amaze.

Learn more: [Navigating by Joy](#)

8. Get your laundry really clean.



Find out if all those laundry detergent commercials are really telling the truth with this 8th grade science experiment. Test their cleaning power on a variety of stains and fabrics, and analyze your results.

Learn more: [Steve Spangler Science](#)

9. Build an infinity mirror.



Experiment with optical illusions by creating a tunnel of lights that seems to stretch away into infinity. Learn about engineering and the physics of optics along the way.

Learn more: [Science Buddies](#)

10. Grow a carbon sugar snake.



Remember those little black pellets that fire up into long snakes from Fourth of July? This is the same concept, but much bigger! The simple chemical reaction of sugar and baking soda makes it happen. (As always, ensure kids are supervised around fire.)

Learn more: [KiwiCo](#)

11. Generate a Lichtenberg figure.



Lichtenberg figures capture the branching path of electricity as it travels through an object. You can make your own in a variety of ways, including burning it into wood or acrylic.

Learn more: [Science Notes](#)

12. Assemble a spring scale.



Apply Hooke's Law to find out if the stretching of a spring can be used to accurately measure the weight of objects. The materials are simple, but you'll need patience and physics to calibrate a spring and use it to test weights.

Learn more: [Science Buddies](#)

13. Brew up some root beer.



Who says science can't be delicious? Plus, any experiment where you get to use dry ice is always fun (take proper safety precautions, please). This yummy project teaches chemical reactions and of course requires a taste test.

Learn more: [Steve Spangler Science](#)

14. Test water quality.



A student water testing kit opens up limitless options for 8th grade science experiments. Test the water quality of local streams, swimming pools, or even your own tap.

Learn more: [The Homeschool Scientist](#)

15. Conduct fingerprint analysis.



Budding forensic scientists will love this idea. Learn to dust for prints and even try a technique called “fuming” for trickier surfaces. See if you can compare prints and make accurate matches.

Learn more: [Home Science Tools](#)

16. Extract bismuth from Pepto-Bismol.



This is the kind of project that really makes you feel like a scientist. Grinding tablets with a mortar and pestle, filtering in beakers, heating over a bunsen burner... kids will need supervision and some special materials, but their inner chemist will love it all.

Learn more: [Popular Science](#)

17. Make a solar desalinator.



Clean freshwater is a valuable commodity. Construct solar-powered desalination devices with readily available materials, and find the most effective desalination methods.

Learn more: [Science Buddies](#)

18. Keep your hands warm.



If you live in a chilly part of the world, chances are you've seen chemical hand-warmers for sale. In this 8th grade science experiment, you'll make your own hand-warmer by harnessing the power of oxidation.

Learn more: [Steve Spangler Science](#)

19. Explore symbiosis with nitrogen-fixing bacteria.



Many plants depend on nitrogen for growth, but how important is it? This science project compares the growth of pea plants with and without nitrogen-fixing bacteria.

Learn more: Education.com

20. Crash cars for science.



This is a great class project for teachers, but it's also excellent for an 8th grade science fair experiment. Build cars and crash-test them to learn the best methods of keeping passengers safe.

Learn more: [The Ardent Teacher](http://TheArdentTeacher.com)

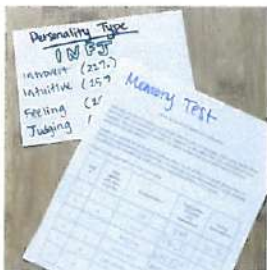
21. Power up homemade batteries.



Building batteries is a classic science experiment for any age. Make it into a project by trying different variables and exploring just how much power you can produce.

Learn more: [123 Homeschool 4 Me](http://123Homeschool4Me.com)

22. Examine the connection between personality and memory.



Do introverts have better memories than extroverts? This science project aims to find out. Round up some willing volunteers and administer the Meyers-Briggs personality test, then challenge your subjects with a memory test and compare the results.

Learn more: Education.com

23. Extract your own DNA.



DNA is the blueprint of life, and you'll be surprised at how easy it is to extract your own with a few simple supplies. Preserve it in alcohol in the freezer when you're done.

Learn more: Home Science Tools

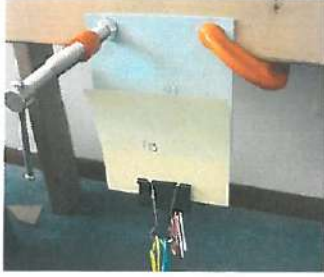
24. Fuel a film canister rocket.



Fire a film canister into the air using the chemical reactions of Alka-Seltzer. Once you've mastered the basic process, experiment with different strengths of solutions and sizes of container to see how high you can go.

Learn more: Steve Spangler Science

25. Discover the strength of interleaved paper.



Paper seems smooth and slides apart easily, right? This experiment challenges that notion by interleaving multiple pieces of paper and testing their strength. This is an easy project with fascinating results.

200 Science-Project Ideas That Will Wow Judges!

Name: _____ Date: _____

Read this list of 200 science-fair project ideas.
Circle all of the ones that sound interesting to you.

1. How does the temperature of a tennis ball affect the height of its bounce?
2. How does the air pressure of a soccer ball affect how far it travels when kicked?
3. Does a metal baseball bat vibrate more than a wooden one?
4. How does the weight of a bowling ball affect how many pins the ball knocks down?
5. Which increases your heart rate more: walking up and down real stairs or using a stair-master?
6. How does yoga affect your flexibility?
7. How does fast dancing affect your heart rate?
8. How does humidity affect the curliness of hair?
9. How does a shampoo's brand affect the strength of hair?
10. How does the type of material affect how long a shirt takes to dry?
11. Which nail polish best resists chipping?
12. How does the fat content of cheese affect its stretchiness?
13. How does the length of time that a soda bottle is open affect its fizziness?
14. How does the temperature of water affect the time it takes to freeze into ice cubes?
15. How will the time spent chewing bubble gum affect its bubbles' maximum size?
16. How will adding different flavors of Kool-Aid® to water affect the water's boiling point?
17. Which brand of popcorn leaves the fewest unpopped kernels?
18. Does the flavor of gelatin affect the amount of time it takes to set?
19. How does playing video games affect hand-eye coordination?
20. What is the effect of toothpaste brand on teeth-cleaning power?
21. What brand of paper towel is most absorbent?
22. What brand of trash bag can withstand the most weight before ripping?
23. How does a light bulb's wattage affect the amount of heat detected above a light?
24. Under what color light do plants grow best?
25. Which brand of mouthwash kills the most bacteria?
26. Which brand of breath mint lasts longest?
27. How does the amount of sugar in homemade ice cream affect how fast it freezes?
28. In a blind taste test, can you tell the difference between nonfat, low-fat, and whole milk?
29. When you pour soda out of a newly opened soda bottle, which produces more fizz: regular or diet soda?
30. How does brand affect ketchup's flow?
31. Given the same amount of water, how does pot size affect the amount of time it takes to boil water?
32. Where is the best place to store home-baked cookies to keep them fresh longest?
33. How does the amount of yeast affect how high bread rises?
34. Which cereal brand stays crunchy in milk the longest?
35. Which brand of chocolate bar melts fastest in the sun?
36. Which type of bread turns moldy first: store-bought or bakery bread?

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37. How does the type of container affect ice cream's melting time?
38. Which can support more weight: paper or plastic grocery bags?
39. Does the type of animal in a pet-store window affect the number of people who are attracted to the window?
40. Does the color of a terrarium affect a lizard's skin color?
41. Does the brand of kitty litter affect clumping?
42. Does listening to one type of music lower heart rate more than another type?
43. How old does chewed gum have to be before it stops sticking to shoes?
44. Which frozen dessert melts slowest: ice cream, frozen yogurt, or sorbet?
45. How does the tension in a violin's strings affect its pitch?
46. How does the size of a drum affect its pitch?
47. How does a person's age affect his or her flexibility?
48. How does a person's age affect his or her ability to see at night?
49. How does the amount of air in a bicycle's tires affect how long it takes the bike to brake?
50. How does the size of a bicycle's tires affect how far it travels given a specific amount of pedaling?
51. How does hair's curliness affect its strength?
52. How does color affect a person's mood?
53. How does the time of day affect your body's temperature?
54. How does the type of music that a person listens to while exercising affect how hard he or she works out?
55. Does one type of food fill you up faster than another?
56. Which grows faster: fingernails or toenails?
57. Does gender affect lung capacity?
58. If you are right-handed or left-handed, do you also prefer a certain foot?
59. Does the surface of a tennis court affect the height that a tennis ball bounces?
60. Does the time of day affect your flexibility?
61. How does air temperature affect your flexibility?
62. Does a no-name stain remover work just as well as a brand name?
63. Which is a better insulator: wool, cotton, or down feathers?
64. How do various ski waxes affect the amount of friction between the ski and the snow?
65. Does playing Sudoku puzzles improve your performance on other types of puzzles?
66. How does shutter speed affect the color of a photograph?
67. How can you speed up the ripening of tomatoes?
68. What effect does watering have on how fast a plant grows from a seed?
69. How does gravity affect the direction of a plant's growth?
70. Do all plants seek out light?
71. How does the weight of a paper airplane affect its ability to fly?
72. How does a parachute's material affect the speed at which it falls?
73. How does the anticipation of a tickle affect you?
74. How does the weather affect your mood?
75. Which type of soap removes more grease: dish soap, hand soap, or shampoo?
76. Which type of fruit is more acidic: lemons, oranges, or watermelon?
77. What type of ground layers limit erosion most: sand, gravel, or soil?
78. How does the speed of a river's current affect the size of the grains on the riverbed?
79. How does the type of music played in a store affect the number of purchases made by customers?
80. In what type of lighting does a plant grow best?
81. What difference do low-phosphorous fertilizers have on a lake's pollution levels compared with standard fertilizers?

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82. How does the type of seed in a birdfeeder affect the types of birds that the feeder attracts?
83. What types of flowers attract the highest number of butterflies?
84. Which brand of potato chips has the least grease?
85. How does the material of a bandage affect its ability to stick after getting wet?
86. How does the time of day affect levels of algae in a lake?
87. How does tire pressure affect a car's fuel efficiency?
88. How does the amount of air in a balloon rocket affect how far it flies?
89. How does the type of string used in a "can and string" phone affect the phone's ability to transmit sound?
90. Does one cell-phone carrier get better reception than other carriers?
91. Do "triple roll" toilet paper rolls really last three times as long as regular rolls?
92. Are rooms with carpeted floors noisier or quieter than rooms with wooden floors?
93. How does humidity affect how often a plant needs to be watered?
94. Can people tell the difference between music played on an MP3 player, CD player, tape player, and turntable?
95. How does temperature affect the growth of mold?
96. How does meditation affect your heart rate?
97. Which has a longer life: an LED or an incandescent light bulb?
98. Is the incidence of asthma in a region related to the area's level of air pollution?
99. How does the color of a shirt affect the amount of heat it absorbs?
100. How does the amount of daylight that enters your room affect how late you sleep?
101. How does the type of stuffing in a pillow affect its fluffiness?
102. How does the time of year affect the number of hours of daylight in a 24-hour period?
103. How does the magnification of binoculars affect how far you can see?
104. Do all chocolate candies have the same melting point?
105. Do different types of onions make your eyes tear up more than others?
106. Which is better at cleaning mold and mildew: vinegar or commercial cleaning agents?
107. Does maple syrup's "grade" affect its flow?
108. Do different brands of batteries last longer than others?
109. Which uses more water: a shower or a bath?
110. Which type of cup will keep a hot drink warm longer: paper, plastic, Styrofoam, or glass?
111. Do natural mosquito repellants keep more mosquitoes away than artificial repellants?
112. How do gas stations affect the soil around them?
113. Which cleans teeth more effectively: baking soda or toothpaste?
114. Does the length of a clock's pendulum affect its period?
115. Which holds hair in place for a longer period of time: gel or hairspray?
116. Does listening to music while studying affect your performance on a memory test?
117. Does a person's height affect his or her ability to successfully make a jump shot in basketball?
118. How much trash do you keep out of a landfill by recycling paper and plastics?
119. Which type of photos do people hold on to longer before making prints: digital or film?
120. Do mood rings accurately predict a person's emotions?
121. Is a person's favorite subject in school influenced by gender?

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122. Does the weight of a baseball bat affect how far the ball goes when it is hit?
123. Does the temperature of a hockey puck affect how far it will travel when struck by the stick?
124. Do girls spend more time talking on the phone with friends than boys?
125. How does the type of food dispensed in school vending machines affect the eating choices that kids make throughout the day?
126. Which type of fertilizer helps plants grow taller?
127. Which has a better chance of survival: grass that was planted as seed or sod?
128. Is there a correlation between gender and the number of push-ups that a person can do?
129. Do best friends have the same favorite color?
130. Who buys from the "sale" rack more often: kids or adults?
131. Are kids more likely to be influenced by ads that feature other kids or by ads that feature adults?
132. Does the amount of time a student spends watching TV affect his or her grades?
133. Does the length of a surfboard affect its stability?
134. Which stays fresher longer: organic or nonorganic fruit?
135. Does a person's age affect whether he or she goes to the Internet, radio, TV, or newspaper for news?
136. Which stains dentures more: coffee, soda, or grape juice?
137. How does the temperature of a pool's water affect the speed at which a swimmer swims?
138. Does the use of flippers help a person swim faster?
139. Do you wake up feeling more alert when you awaken to an alarm clock that buzzes, plays music, or plays nature sounds?
140. Does the size of a dog determine how high or low-pitched its bark is?
141. Does your cat prefer one brand of food over another?
142. Can blindfolded people tell the difference between bottled water and tap water?
143. Is there a relationship between people's age and the amount of time they can hula hoop?
144. Do objects float better in freshwater or in salt water?
145. How does a person's age affect reaction time?
146. How does caffeine affect people's heart rate?
147. Do some materials conduct heat more than others?
148. How does the roughness of sandpaper affect its ability to smooth various surfaces?
149. How does increasing the height of a ramp affect how far a ball rolls down the ramp?
150. How does the strength of a magnetic field vary with the magnet?
151. Can people identify their pet dog by the sound of its bark alone?
152. Do people who exercise regularly have a greater lung capacity?
153. Can people use their sense of hearing alone to tell apart a penny, nickel, dime, and quarter?
154. Do left-handed people prefer the same school subjects as right-handed people?
155. Does the type of liquid in a glass affect the pitch of the note that results when a person rubs the rim of the glass?
156. Does the length of a wind chime affect its pitch?
157. Do people who live in rural areas name constellations correctly more often than people who live in cities?
158. Does weather affect satellite-TV reception?
159. Do girls and boys talk about the same topics as each other when they hang out with their friends?
160. Does the length of a bat affect how far a baseball will travel?

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161. Does your dog prefer water directly from the faucet or tap water that's been refrigerated?
162. How often can people accurately tell if someone is happy, sad, or mad just by looking at the person's eyes?
163. How often can people correctly determine if a person is left-handed or right-handed just by looking at the person's handwriting?
164. What melts ice the fastest: sand, cat litter, or mineral rock salt?
165. Does temperature affect the growth rate of shoots on a potato?
166. Which type of container traps the most heat: a shoebox covered in aluminum foil, plastic wrap, or wax paper?
167. How does the shape of a boat's hull affect its speed?
168. How does water pressure vary with depth?
169. Which best helps prevent soil erosion on a slope: plants, rocks, or mulch?
170. Does one brand of antacid neutralize acids faster than another?
171. Do gym shoes have more bacteria than sandals?
172. Does sunlight fade the paper more in books or in magazines?
173. In which room of the house do plants grow the highest?
174. Which toothbrushes last longest: ones with natural or nylon bristles?
175. Which air freshener lasts longest?
176. Do mildew-resistant shower curtains really keep mildew away longer than regular shower curtains?
177. Does a person's weight vary throughout the day?
178. Do certain bicycle helmets hold up better after an impact than others?
179. Can you skate faster with in-line skates or roller skates?
180. Do thunderstorms happen more often in the afternoon than in the morning?
181. Does bread stay fresher longer when it is kept in the refrigerator or on the counter?
182. Which kind of gum keeps its flavor longer: sugar-free or regular?
183. Which lightens stains better: vinegar or lemon juice?
184. Which type of bread toasts fastest?
185. Do bigger lemons have more seeds than smaller ones?
186. Does squinting improve your vision?
187. Do fans really make you cooler or do they just make you feel like you're cooler?
188. Do taller people take longer strides than shorter people?
189. Can you judge depth as well using just one eye than using two?
190. Does your "handedness" have any relation to which eye is stronger?
191. Does exercise increase or decrease your energy level?
192. How does your sight affect your balance?
193. Which do people prefer: a booth or a table toward the middle of a restaurant?
194. Do plants inside a mall grow faster under artificial light or under a skylight?
195. Does listening to rock music make you eat faster than listening to classical music?
196. Does eye color affect how well a person sees?
197. Does toothpaste with whitener whiten teeth more than regular toothpaste?
198. Does washing your hands reduce the amount of bacteria on them more than not washing?
199. Does using conditioner leave your hair with fewer knots than not using conditioner?
200. Does hair take longer to dry when using a hair drier or when it dries naturally?

Now, reread all of the questions that you circled. Do these questions have anything in common? If so, what?

Look at your answer above. If the questions you circled have anything in common, you probably have a strong interest in that topic. You might want to think about doing a science-fair project on that topic.