2026/27 Science Fair Questions & Research Help

Adney, Benjamin	How does the color of the same juice affect how people think it tastes? (red, green, blue, yellow)
Anderson, Kassidy	Which filtration material results in the cleanest water on a clarity scale? (powdered carbon, granule carbon, or)
Baldwin, Charlie	Which cooking method makes the crispiest bacon? (microwave, stovetop, airfryer, oven)
Balesteri, Piper	What type of activator makes the stretchiest slime? (Contact solution, normal activator, borax, or liquid detergent)
de Mesa, Kai	What color of light makes a seed grow the tallest? (red, green, or white)
DeBernardo, Luca	How does the amount of yeast affect how tall my elephant toothpaste will expand?
Gaul, Logan	How does the surface affect how far a hockey puck can slide? (sand, tile, hardwood, synthetic ice)
Huntsman, Bailey	Which popcorn brand pops the most popcorn? (orville, kirkland, jolly time, or AMC)
Igno, Emma	How does the ratio of fabric glue to acetone affect the weight bearing capacity of a man made spider web? (ratios- 1:2, 2:1, 1:1)
Jacquard, Vivienne	Which type of water will make a raddish seed grow the tallest? (salt water, sugar water, or tap water)
Kott, Elijah	What surface will a tennis ball bounce the highest on when dropped from the same height? (court, grass, dirt, carpet, or sidewalk)
Kraft, Bowie	Which batteries keep a flashlight the brightest after one hour of continuous use? (energizer, duracell, amazon basics)
Larkin, Sasha	How does the length of the airplane wings affect how far a paper airplane can fly? (2 inch, 5 inch, 10 inch, or 15 inch)
McGrady, Cadence	Which wrapping material keeps ice frozen the longest? (aluminum foil, bubble wrap, parchment paper, or felt)

Mora, Maleah	Which material of squishy skin can stretch the farthest without breaking? (nylon, plastic wrap, or latex)
Nacnodovitz, Lily	What liquid will make a nail rust the most? (water, salt water, coke, diet coke, or milk)
Oliver, Jaidyn	Which bridge design is the strongest? (beam bridge, warren truss, or pratt truss)
Reed, Georgia	How does age affect how quickly a person can find a hidden image in an optical illusion? (ages 6-10, 15-25, 60+)
Reyes Mager, Liam	What material when wrapped around an egg will protect it from being dropped from the highest height? (cardboard, foam, bubble wrap,)
Rossi, Arlo	What surface will a skateboard roll the farthest on? (concrete sidewalk, asphalt road, grass, or gravel)
Scott, RaeLynn	Does the temperature of a magnet affect its strenght of picking up paper clips? (boiling, freezing, or room temp)
Silva, Scarlett	How will different liquids change the color of cabbage juice when mixed? (coke, lemon juice, eggwhites, baking soda)
Sutera, Brooklyn	What substance melts ice the fastest? (salt, sugar, or pepper)
Wiget-Rodriguez, Sophia	How does the type of sugar affect the size of crystal that will grow? (white sugar, brown sugar, coconut sugar, or powdered sugar)

A few additional suggestions for science fair students:

To help students write stronger research reports, I would encourage them to organize their research into three categories:

1. **Scientific Background:** What scientific concepts explain the topic? (For example, friction, photosynthesis, chemical reactions, or magnetism.)
2. **Variables and Factors:** What factors might affect the outcome of the experiment?
3. **Real-World Connections:** How is this science used in everyday life, nature, technology, or engineering?

1. How Does the Color of the Same Juice Affect How People Think It Tastes?

1. How does the human brain use sight, smell, and taste together to identify food?
2. What are taste buds, and how do they work?
3. What are the five basic tastes humans can recognize?
4. How can the color of food influence a person's expectations about its flavor?
5. Why do food companies use artificial food coloring?
6. What are natural food colorings, and where do they come from?
7. How does the brain process information from the eyes when eating?
8. Can two foods taste different to someone simply because they look different?
9. What is a blind taste test, and why is it useful in experiments?
10. How do people's past experiences with food influence what they expect something to taste like?
11. Why might people associate certain colors with specific flavors?
12. How does smell influence the way people experience taste?
13. What is sensory perception?
14. Have scientists discovered that food coloring can change people's opinions about flavor?
15. Why do restaurants and food companies pay attention to the appearance of food?

2. Which Filtration Material Results in the Cleanest Water on a Clarity Scale?

1. What is water filtration?
2. Why is it important to remove dirt and other particles from water?
3. What is activated carbon, and how does it work as a filter?
4. What is the difference between powdered activated carbon and granular activated carbon?
5. How does sand help filter water?
6. How does gravel help filter water?
7. What is the difference between physical filtration and chemical filtration?
8. What types of particles can water filters remove?
9. How do water treatment plants clean water before it reaches homes?
10. What is sediment, and how does it get into water?
11. Why might water look clear but still contain harmful substances?
12. What is turbidity, and how is it measured?
13. How do scientists measure the clarity of water?
14. What are some natural ways water is filtered in the environment?
15. Why is clean drinking water important for human health?

3. Which Cooking Method Makes the Crispiest Bacon?

1. What happens to bacon when it is heated?
2. Why does bacon become crispy when cooked?
3. What is the difference between frying, baking, and microwaving?
4. How does heat transfer work when cooking food?
5. What is the difference between conduction, convection, and radiation?
6. How does the amount of fat in bacon affect its crispiness?
7. Why does bacon release grease while cooking?
8. How does moisture affect the texture of cooked bacon?
9. What is the Maillard reaction, and how does it affect cooked food?
10. How does cooking temperature affect the texture of bacon?
11. Why does bacon sometimes cook unevenly?
12. How does an air fryer circulate hot air around food?
13. What happens to food when it is cooked in a microwave?
14. Why do some cooking methods make food crispier than others?
15. How can scientists measure the crispiness of food?

4. What Type of Activator Makes the Stretchiest Slime?

1. What is slime made of?
2. What is a polymer?
3. What are some examples of polymers found in everyday life?
4. How does glue help create slime?
5. What is a slime activator?
6. How does borax change the properties of glue?
7. What is the difference between a chemical reaction and a physical change?
8. What role does contact lens solution play in making slime?
9. How does baking soda help slime form when used with contact solution?
10. Why does slime stretch instead of breaking immediately?
11. What makes one slime recipe stretchier than another?
12. How does the amount of activator affect the consistency of slime?
13. What happens when too much activator is added to slime?
14. How are the molecules in slime connected to one another?
15. How do scientists measure the elasticity and stretchiness of a material?

5. What Color of Light Makes a Seed Grow the Tallest?

1. What is photosynthesis?
2. Why do plants need light to grow?
3. What is chlorophyll, and what does it do?
4. What are the different colors of light?
5. What is the visible light spectrum?
6. How do plants use red light during photosynthesis?
7. How do plants use blue light during photosynthesis?
8. Why might green light affect plants differently than red or blue light?
9. What is the difference between sunlight and artificial light?
10. What is a wavelength, and how does it relate to light color?
11. How does light affect the direction a plant grows?
12. What other factors besides light affect plant growth?
13. Why do some plants grow taller when they do not receive enough light?
14. What is phototropism?
15. Why do scientists study how different wavelengths of light affect plants?

6. How Does the Amount of Yeast Affect How Tall Elephant Toothpaste Expands?

1. What is yeast?
2. What is hydrogen peroxide?
3. What happens when hydrogen peroxide breaks down?
4. What is a catalyst?
5. How does yeast act as a catalyst in elephant toothpaste?
6. What is oxygen gas, and how is it produced in this reaction?
7. Why does soap create bubbles in elephant toothpaste?
8. What causes the foam to expand and rise?
9. How does the amount of yeast affect the speed of a chemical reaction?
10. What happens when a chemical reaction produces gas?
11. Why does elephant toothpaste sometimes become warm?
12. What is an enzyme?
13. What is catalase, and how does it help break down hydrogen peroxide?
14. What other factors can affect the height of elephant toothpaste?
15. How do scientists measure the speed and size of a chemical reaction?

7. How Does the Surface Affect How Far a Hockey Puck Can Slide?

1. What is friction?
2. How does friction affect the movement of objects?
3. Why does a hockey puck slide easily across ice?
4. What is the difference between static friction and kinetic friction?
5. How does the roughness of a surface affect friction?
6. What is inertia?
7. How does Newton's First Law of Motion explain why a puck keeps moving?
8. Why does a hockey puck eventually stop sliding?
9. How does the weight of an object affect its movement across different surfaces?
10. What is the difference between synthetic ice and real ice?
11. How does temperature affect the friction between a puck and a surface?
12. Why do hockey players use smooth, hard surfaces?
13. How does friction create heat?
14. How do engineers design surfaces to reduce friction?
15. How can scientists measure the amount of friction between two objects?

8. Which Popcorn Brand Pops the Most Popcorn?

1. What makes a popcorn kernel pop?
2. What is inside an unpopped popcorn kernel?
3. Why does popcorn contain moisture inside its shell?
4. What happens to the water inside a kernel when it is heated?
5. What is the pericarp, and what does it do?
6. Why do some popcorn kernels fail to pop?
7. What is the difference between butterfly popcorn and mushroom popcorn?
8. How does the size of a kernel affect how it pops?
9. Does the amount of moisture inside a kernel affect its ability to pop?
10. How does heating temperature affect popcorn?
11. Why does popcorn expand when it pops?
12. What makes one popcorn kernel pop more successfully than another?
13. How do popcorn companies prepare kernels before packaging them?
14. What is the difference between popcorn and other types of corn?
15. How do scientists determine the percentage of kernels that successfully pop?

9. How Does the Ratio of Fabric Glue to Acetone Affect the Weight-Bearing Capacity of a Man-Made Spider Web?

1. What are polymers, and how are they used to make synthetic materials?
2. What ingredients are commonly found in fabric glue?
3. What is acetone, and what are its common uses?
4. How does acetone interact with different types of glue?
5. What makes spider silk so strong?
6. How do real spiders produce silk?
7. Why is spider silk both strong and flexible?
8. What is tensile strength?
9. What does elasticity mean when describing a material?
10. How does the ratio of two ingredients affect the properties of a mixture?
11. What is the difference between strength and flexibility?
12. Why are scientists interested in creating artificial spider silk?
13. How do engineers test how much weight a material can hold?
14. What are some everyday materials designed to be strong but lightweight?
15. How can the structure of a spider web help it support weight?

10. Which Type of Water Will Make a Radish Seed Grow the Tallest?

1. What do seeds need in order to germinate?
2. What is germination?
3. How does water help a seed begin growing?
4. What happens when a seed absorbs water?
5. How does salt affect the ability of a seed to absorb water?
6. What is osmosis?
7. How does sugar water affect the movement of water into a seed?
8. Why do plants need minerals and nutrients?
9. What is the difference between freshwater and saltwater?
10. Why can too much salt be harmful to plants?
11. How does water quality affect plant growth?
12. What is a radish seed's life cycle?
13. What other factors affect how tall a radish plant grows?
14. Why do farmers pay attention to the salt levels in soil?
15. How do scientists measure the growth of seedlings?

11. What Surface Will a Tennis Ball Bounce the Highest On When Dropped from the Same Height?

1. What causes a tennis ball to bounce when it hits the ground?
2. What is elastic potential energy?
3. What happens to energy when a ball hits a surface?
4. What is the difference between elastic and inelastic collisions?
5. How does the hardness of a surface affect how high a ball bounces?
6. Why does a tennis ball bounce differently on grass than on concrete?
7. What is kinetic energy?
8. How does gravity affect the movement of a tennis ball?
9. Why does a ball lose some of its energy every time it bounces?
10. How does the air pressure inside a tennis ball affect its bounce?
11. What materials are tennis balls made from?
12. Why are tennis courts made from different materials?
13. How does the texture of a surface affect a ball's bounce?
14. What is the coefficient of restitution?
15. How do scientists measure the bounce height of an object?

12. Which Batteries Keep a Flashlight the Brightest After One Hour of Continuous Use?

1. How do batteries produce electricity?
2. What are the main parts of a battery?
3. What is the difference between alkaline and rechargeable batteries?
4. How do batteries store chemical energy?
5. What happens inside a battery when it powers a flashlight?
6. What is voltage, and how does it affect electrical devices?
7. What is current, and how is it measured?
8. What is the difference between battery capacity and battery voltage?
9. Why do batteries eventually lose their power?
10. How does temperature affect battery performance?
11. What is the difference between name-brand and generic batteries?
12. How does the type of battery affect the brightness of an LED flashlight?
13. What is an LED, and how does it produce light?
14. Why do some batteries last longer than others?
15. How do scientists measure the brightness of a light?

13. How Does the Length of an Airplane Wing Affect How Far a Paper Airplane Can Fly?

1. What are the four main forces that affect an airplane's flight?
2. What is lift, and how does it help an airplane fly?
3. What is drag, and how does it slow an airplane down?
4. How does an airplane wing create lift?
5. What is aerodynamics?
6. How does the length of a wing affect lift?
7. What is the difference between a short, wide wing and a long, narrow wing?
8. How does the weight of a paper airplane affect its flight?
9. What is gravity, and how does it affect a paper airplane?
10. How does the shape of an airplane wing affect its performance?
11. What is the center of gravity, and why is it important for flight?
12. Why do real airplanes have different wing shapes?
13. How does air resistance affect the distance a paper airplane travels?
14. What is the difference between gliding and powered flight?
15. How do engineers test different airplane wing designs?

14. Which Wrapping Material Keeps Ice Frozen the Longest?

1. What is heat, and how does it move from one object to another?
2. What is thermal energy?
3. What is insulation?
4. How does aluminum foil affect the transfer of heat?
5. Why is bubble wrap sometimes used for insulation?
6. How does felt help keep objects warm or cold?
7. What is the difference between a conductor and an insulator?
8. Why does ice melt when it is exposed to warm air?
9. What is the melting point of water?
10. How does the thickness of an insulating material affect its performance?
11. What is thermal conductivity?
12. Why do people use insulated coolers to keep food cold?
13. How does the color of a material affect how much heat it absorbs?
14. What is the difference between conduction, convection, and radiation?
15. How do scientists test which materials are the best insulators?

15. Which Material of Squishy Skin Can Stretch the Farthest Without Breaking?

1. What is elasticity?
2. What makes a material stretchy?
3. What are polymers?
4. What is the difference between natural and synthetic materials?
5. What is latex, and where does it come from?
6. What is nylon, and what is it commonly used for?
7. What is plastic wrap made from?
8. How do the molecules in stretchy materials respond when pulled?
9. What is tensile strength?
10. What is the difference between flexibility and elasticity?
11. Why do some materials return to their original shape after being stretched?
12. What causes a material to tear or break?
13. How does the thickness of a material affect how far it can stretch?
14. What are some everyday products made from stretchy materials?
15. How do scientists test the strength and stretchiness of materials?

16. What Liquid Will Make a Nail Rust the Most?

1. What is rust?
2. What causes iron to rust?
3. What is oxidation?
4. Why does iron react with oxygen and water?
5. How does saltwater affect the speed of rusting?
6. Why can salt make metal rust faster?
7. What ingredients are found in Coca-Cola?
8. How are acids different from bases?
9. How does the acidity of a liquid affect metal?
10. What is the pH scale?
11. How does milk interact with metal?
12. Why does rust form on some metals but not others?
13. What are some ways people prevent metal from rusting?
14. How does rust affect the strength of metal objects?
15. Where do we see rusting happen in everyday life?

17. Which Bridge Design Is the Strongest?

1. What are the three main types of bridges?
2. What is a beam bridge?
3. What is a truss bridge?
4. What is the difference between a Warren truss and a Pratt truss?
5. What is compression, and how does it affect a bridge?
6. What is tension, and how does it affect a bridge?
7. How do triangles help make bridges stronger?
8. Why are some bridges made from steel instead of wood?
9. What is a load, and how does it affect a bridge?
10. How do engineers calculate how much weight a bridge can hold?
11. Why do bridges need support structures?
12. What is the difference between a suspension bridge and a truss bridge?
13. How does the length of a bridge affect its strength?
14. How do engineers test bridges before people use them?
15. What are some famous bridges around the world, and what makes their designs special?

18. How Does Age Affect How Quickly a Person Can Find a Hidden Image in an Optical Illusion?

1. What is an optical illusion?
2. How do optical illusions trick the human brain?
3. How do the eyes send information to the brain?
4. What is visual perception?
5. How does the brain process images?
6. Why do some people see hidden images faster than others?
7. How does attention affect a person's ability to notice details?
8. What is pattern recognition?
9. How does the brain recognize shapes and objects?
10. How does age affect eyesight?
11. How does the brain change as people grow older?
12. What is reaction time?
13. How do scientists measure reaction time?
14. Why might children and adults interpret the same optical illusion differently?
15. What are some famous optical illusions, and why do they work?

19. What Material Wrapped Around an Egg Will Protect It from Being Dropped from the Highest Height?

1. What is force, and how does it affect an object during a fall?
2. What is gravity?
3. What happens to an egg when it hits the ground?
4. What is impact force?
5. How does cushioning help protect fragile objects?
6. Why do soft materials help absorb the energy of an impact?
7. What is the difference between compression and impact?
8. How does bubble wrap protect objects?
9. Why is foam commonly used in packaging?
10. How does cardboard help protect fragile objects?
11. What is Newton's First Law of Motion?
12. What is the relationship between falling height and impact speed?
13. How does the thickness of protective material affect how well it works?
14. How do companies design packaging to protect items during shipping?
15. How do engineers test materials to determine which ones provide the best protection?

20. What Surface Will a Skateboard Roll the Farthest On?

1. What is friction, and how does it affect a skateboard?
2. Why does a skateboard eventually stop rolling?
3. What is inertia?
4. How does Newton's First Law of Motion explain the movement of a skateboard?
5. How does the roughness of a surface affect how far a skateboard rolls?
6. Why does a skateboard roll more easily on smooth concrete than on grass?
7. What is rolling resistance?
8. How do skateboard wheels affect how far a skateboard can travel?
9. What materials are skateboard wheels made from?
10. How does the size of a skateboard wheel affect its movement?
11. What is kinetic energy?
12. How does the weight of a skateboard affect its movement?
13. How does a skateboard lose energy as it rolls?
14. Why are skateparks usually made from smooth concrete?
15. How do scientists measure friction and rolling resistance?

21. Does the Temperature of a Magnet Affect Its Strength of Picking Up Paper Clips?

1. What is magnetism?
2. How do magnets attract certain metals?
3. What are magnetic fields?
4. What are the north and south poles of a magnet?
5. What materials are attracted to magnets?
6. Why are iron and steel attracted to magnets?
7. How does temperature affect the strength of a magnet?
8. What happens to the particles inside a magnet when it gets warmer?
9. What is a permanent magnet?
10. What is the difference between a permanent magnet and an electromagnet?
11. What is the Curie temperature?
12. Why can extremely high temperatures cause a magnet to lose its magnetism?
13. How does freezing affect the properties of certain materials?
14. How do scientists measure the strength of a magnet?
15. How are magnets used in everyday technology?

22. How Will Different Liquids Change the Color of Cabbage Juice When Mixed?

1. What is an acid?
2. What is a base?
3. What is the pH scale?
4. What does it mean for a liquid to be neutral?
5. Why does red cabbage juice change color when mixed with different substances?
6. What is an indicator?
7. What are anthocyanins, and where are they found in nature?
8. Why do acids and bases cause different color changes?
9. What color does red cabbage juice turn when mixed with an acid?
10. What color does red cabbage juice turn when mixed with a base?
11. How does lemon juice affect the pH of a mixture?
12. Why is baking soda considered a base?
13. What makes Coca-Cola acidic?
14. How do scientists use indicators to identify unknown substances?
15. What are some everyday products that can be tested using red cabbage juice?

23. What Substance Melts Ice the Fastest? (Salt, Sugar, or Pepper)

1. What is the freezing point of water?

2. What happens to ice when it absorbs heat?

3. What is the difference between melting and freezing?

4. What is thermal energy, and how does it affect ice?

5. How does salt affect the melting point of ice?

6. Why do people spread salt on roads and sidewalks during winter?

7. What is freezing point depression?

8. Does sugar affect the melting point of ice in the same way that salt does?

9. What happens when pepper is added to ice?

10. Why do different substances interact with ice differently?

11. What is a chemical property, and how can it affect how substances interact?

12. How does the amount of a substance added to ice affect how quickly it melts?

13. What is the difference between a substance dissolving in water and melting ice?

14. How do scientists measure the rate at which ice melts?

15. What are some other substances that can be used to melt ice, and how do they work?

24. How Does the Type of Sugar Affect the Size of Crystals That Will Grow?

1. What is a crystal?
2. How do crystals form?
3. What is crystallization?
4. What happens when sugar dissolves in water?
5. What is a saturated solution?
6. What happens when a solution becomes supersaturated?
7. How does temperature affect how much sugar can dissolve in water?
8. Why do sugar crystals grow as water evaporates?
9. What is the difference between white sugar and brown sugar?
10. How is coconut sugar made?
11. How is powdered sugar different from granulated sugar?
12. How do different types of sugar differ in their chemical composition?
13. What causes some crystals to grow larger than others?
14. How does the speed of evaporation affect crystal growth?
15. How do scientists measure the size and shape of crystals?