

Science Project Ideas

Anything can be a science project ... observe it, measure it, compare it!

Entomology: Insects and invertebrates are just starting to increase their population size in the spring. Count the number of animals or the number of types of animals in two nearly similar locations. Why are there more invertebrates in some locations than in others? What patterns can you figure out? What does it tell you about what particular animals need to live? Measure the size of insects kept under different conditions (be kind to your captives and let them go at the end of the project). Which brand of cookie attracts more ants? Can you catch more bugs with clear water versus colored water?

Aquatic Ecology / Oceanography: Measure water quality in streams in different areas? Compare the stream water quality to your tap water? (Inexpensive water quality monitoring kits can be found at pet stores. These kits are rarely sensitive to pick up small differences so pick things to compare that are dramatically different). Head to the beach and count crabs to see how their distribution changes with the tide or measure sea anemones in different kinds of tide pools. Do streams run faster in some places than others (throw in an orange and measure the time it takes to travel 100m)? Are streams faster under bridges?

Microbiology: Does mold grow faster in the fridge or in the cupboard? If you culture your bathroom and the kitchen and try to grow mold, which area will have more? (You might be surprised!). Do your hands have more bacteria (you will have to culture them) after you wash your hands in one way versus another? How many friends can you get to repeat the experiment? Record all the results to find the pattern. You can make sterile culture plates (agar substitute) in the microwave and you can use Q-tips, which are usually packed sterile, to study all kinds of things.

Human Physiology: Measure stuff about yourself! Compare your heart rate or your breathing rate under different conditions (be safe!) to understand how your body work. You can measure things about lots of different people's bodies. Is there a difference between the heart rates of kids who like science versus kids who hate science? Can kids on a soccer team dribble the ball further than kids who haven't ever taken soccer? Do your teeth (after they have fallen out of your mouth) rot faster in a glass of milk or a glass of soda?

Zoology: Are whiskers on cats longer than whiskers on dogs? Does your cat prefer one kind of cat food to the other? Do all your neighbors' cats also prefer that food? Do your fish swim faster when the water is warmer versus colder? Do crickets (available at most pet stores) sing more in the dark or the light? Train a rat or mouse in a maze and compare it's time to that of an untrained animal or the same animal before training. Remember to be kind to any study subjects!

Aeronautics: Which type of paper airplane flies farthest? If you make that airplane out of a different kind of paper, will it fly further, longer, loopier? How could you measure flight loopiness? Is there a difference in how eggs survive if you wrap them in different materials and drop out the window? Do different shapes of kits crash more than other shapes?

Physics: Is there a difference in strength of your favorite paper towel brand versus a cheaper one? Is there a difference in the strength of different magnets? In the strength of the same magnet when it is cold or hot? Do different colors of light heat up a material differently?

Sociology: Create a survey and collect data about your friends or teachers? Do people like pizza or spaghetti better? Is there a difference in favorite food between teachers and students? Watch how people act and record it. Is there a difference between the moms and dads as to whether they drop off their kids at the drop-off circle or whether they walk their kids in? Are more kindergarteners (in a particular class) or 5th graders on time every day? Are kids noisier (how would you measure that?) in the morning or the afternoon? Be careful not to draw differences that might hurt people's feelings.

Botany: Count leaf buds on trees in different soils or count birds on days with different weather or in different locations. Measure the tree heights in sun versus shady areas or in parks versus forests or in your back yard versus the park. Put seeds in baggies and measure root growth after they sprout. Are the roots different lengths if the baggies are kept in different conditions? How do different fertilizers or types of light affect plant growth? Grow starts for your garden under different conditions to find the best conditions. Compare branching patterns of trees grown under different conditions.

1st – 5th Grade Science Project Ideas (Continued)

Chemistry: What happens to pasta when it is boiled in different ways? How could you measure pasta stickiness and compare different boiling techniques? How do different mixtures of cornstarch and water react to the microwave or to boiling? Make sure that you can measure something about what happens so that you can describe the results. How do things boil or freeze differently with and without salt? Does Jell-O freeze faster or slower than water?

Astronomy: How does the sun angle change over the course of the day? What can you see through a telescope on different nights? How does that change over time? Can you invent a telescope or a star viewer? Compare your invention to a store-bought version if you already have one. Compare the colors of light made by different stars or the number of stars visible in different locations?

Geology: Can you find more rocks in one kind of location versus another? Do some kinds of rocks get shinier in a tumbler? How do different chemicals react with different rocks? How can you measure rock hardness? Is there a difference in hardness when rocks are different temperatures? What about between different types of rocks? Can you find fossils in one kind of rock more easily than in another?

Probability/ Statistics: Roll two different kinds of dice and compare the distribution of outcomes. Compare the results of a computer program that picks random numbers between 1 and 6 to the results of a dice throw? Create a spinning wheel that has twice the probability of one outcome as the other. What are the odds that a car at drop off has more than 1 kid inside? Does that differ on different days of the week?

Climatology: Make a homemade barometer or wind gauge and measure conditions at school versus your house? Compare the weather predictions of two different radio stations and find out how similar they are? Compare the weather predictions to what really happens. Make a rain gauge or measure air temperature to compare climate in two places. How much rain gets through conifer versus deciduous trees?