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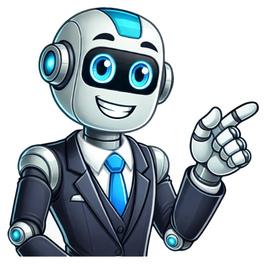

In our Science Grade 4 Lessons, students develop their scientific understanding by exploring concepts in greater depth and using what they learn in useful applications. Our courses and worksheets meet the educational criteria set out by curricula used internationally. Among the subjects learned in Grade 4 are photosynthesis, food chains, human digestion, solids, liquids and gases, sound and vibrations, basic machines, and the solar system, as well as others. Using vivid diagrams and real life contexts, along with interactive tasks that clarify tough concepts, the lessons offer a direct and appealing presentation. Besides supporting scientific knowledge, these materials reinforce the acquisition of abilities such as formulating hypotheses, planning experiments, writing conclusions, and presenting data. The material assist learners in thinking critically and practicing independent learning, whether they are working at home or in a classroom setting. Access each lesson link above to explore any area of science you want to learn more about. When your child clicks through the lessons, they build upon their abilities as a young scientist. STEM Activity Build a Paper Roller Coaster STEM Activity STEM Activity Featured STEM Activity Build a Pizza Box Solar Oven STEM Activity STEM Activity STEM Activity Secret Messages With Invisible Ink! STEM Activity Build a Popsicle Stick Catapult STEM Activity Make an Alka-Seltzer Powered Lava Lamp STEM Activity Design and Launch Bottle Rockets STEM Activity Page 2 Paper Airplanes: Why Flaps and Folds Matter STEM Activity STEM Activity STEM Activity Featured STEM Activity STEM Activity Build the Best Paper Bridge STEM Activity STEM Activity How Much Weight Can Aluminum Foil Boats Float? STEM Activity Build a Rubber Band-Powered Car STEM Activity Build a Paper Airplane Launcher STEM Activity Page 3 STEM Activity STEM Activity STEM Activity STEM Activity STEM Activity STEM Activity STEM Activity STEM Activity STEM Activity STEM Activity STEM Activity Page 4 Erupting Diet Coke with Mentos STEM Activity STEM Activity Make a Cotton Ball Launcher STEM Activity Featured STEM Activity STEM Activity Explore Glow-in-the-Dark Water! STEM Activity STEM Activity Measure Up with a Homemade Thermometer STEM Activity STEM Activity Build a Mini LED Lightsaber STEM Activity Make Your Own Seismograph STEM Activity Page 5 How to Make a Homopolar Motor STEM Activity How Big Are the Planets in Our Solar System? STEM Activity STEM Activity Featured STEM Activity Junkbots: Robots from Recycled Materials STEM Activity Make a Miniature Water Cycle Model STEM Activity STEM Activity STEM Activity Make a Whirlybird from Paper STEM Activity Popsicle Stick Chain Reaction STEM Activity How Tails Help a Kite to Fly STEM Activity Page 6 Making Homemade Bath Bombs STEM Activity Build a Bristlebot, a Tiny Toothbrush Robot STEM Activity STEM Activity Featured STEM Activity Launching Homemade Baking Soda Rockets STEM Activity STEM Activity Make Marbled Cards Using Science! STEM Activity STEM Activity STEM Activity STEM Activity Make Your Drawings Float! STEM Activity Page 7 Protect Your 'Eggstronaut': Build an Egg-Drop Lander STEM Activity STEM Activity Make Your Own Stethoscope STEM Activity Featured STEM Activity Model the Rock Cycle with Crayons STEM Activity Investigate Alien Genetics STEM Activity STEM Activity Build a Rubber Band Paddle Boat STEM Activity Model the Distances between Planets in our Solar System STEM Activity STEM Activity Page 8 Test Your Foods for Starch STEM Activity Build a Bird Feeder to Study Birds STEM Activity Build a Marble Roller Coaster STEM Activity Featured STEM Activity Generate Electricity with a Lemon Battery STEM Activity Build a Solar Updraft Tower STEM Activity STEM Activity How to Grow the Best Crystals STEM Activity STEM Activity STEM Activity Oobleck: A Recipe for a Mesmerizing Mixture STEM Activity Page 9 Puzzle Fun with a Perimeter Magic Triangle STEM Activity Are You Left or Right Brained? STEM Activity STEM Activity Featured STEM Activity STEM Activity STEM Activity Make Tie-Dye T-shirts with Permanent Markers STEM Activity STEM Activity STEM Activity Can You Hide in Plain Sight? STEM Activity Flying Helicopters on Mars STEM Activity Page 10 Suck It Up! How Water Moves Through Plants STEM Activity Build a Gumdrop Geodesic Dome STEM Activity STEM Activity Featured STEM Activity STEM Activity Make a Rubber Band Guitar STEM Activity The First Cartoon: Make Your Own Thaumatrope! STEM Activity Build an Archimedes Screw STEM Activity Make a Self-Starting Siphon STEM Activity Build a Two-Stage Balloon Rocket STEM Activity STEM Activity Page 11 DIY Mini Drone: Arduino Altitude Control STEM Activity STEM Activity STEM Activity Featured STEM Activity STEM Activity STEM Activity STEM Activity Color-changing Cabbage Chemistry STEM Activity How Well Do You Wash Your Hands? 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STEM Activity STEM Activity STEM Activity Circus-Trick Science: How to Balance Anything STEM Activity Design a Cell Phone Stand STEM Activity Page 14 Distorted Images in Curved Mirrors STEM Activity Duplicate Your Drawings with a Machine STEM Activity Exploring Mummification with Hot Dogs STEM Activity Featured STEM Activity STEM Activity How do Self-Driving Cars Know What to Do? STEM Activity Light Pollution and the Stars STEM Activity STEM Activity STEM Activity Afterimages: The Colorful Tricks Eyes Play STEM Activity Colorful Patterns in Melting Ice STEM Activity Page 15 Create a Painting with Genetically Modified Bacteria STEM Activity How Do Viruses React To Soap? STEM Activity How to Harvest Water from Fog STEM Activity Featured STEM Activity Make a Hygrometer to Measure Humidity STEM Activity Make a Sunprint Using Objects from Nature! STEM Activity Make an Awesome Paper Lantern STEM Activity STEM Activity Robot, Make Me a Sandwich! STEM Activity Small, Tiny, Invisible: How Big Is a Virus? STEM Activity The Trick to Beating a Carnival Game STEM Activity Page 16 Use Chemistry to Lift Ice Cubes STEM Activity STEM Activity Build Your Own Sports Equipment STEM Activity Featured STEM Activity DIY Mini Drone: Altitude Control Circuit STEM Activity Drone Control with an Analog Joystick STEM Activity Explore How Lung Infection Influences Breathing STEM Activity STEM Activity Imagine Ways that Artificial Intelligence Could Change the World STEM Activity STEM Activity Mars Rover Obstacle Course STEM Activity Page 17 STEM Activity Squishy Circuits: Light Up Your Play Doh Creations! STEM Activity Use a Drop of Water as Magnifying Glass STEM Activity Featured STEM Activity STEM Activity Circular Reasoning: Finding Pi STEM Activity Fruits Gone Bad? Discover Enzymatic Browning STEM Activity Have a Cricket Tell You the Temperature! STEM Activity STEM Activity How Far Can Your Sneeze Go? STEM Activity Page 18 Model How Herd Immunity Works STEM Activity Visualize Gravity with Marbles STEM Activity 3D Print with Icing: No 3D Printer Required! STEM Activity Featured STEM Activity STEM Activity Best Wand for Big Bubbles STEM Activity STEM Activity STEM Activity STEM Activity STEM Activity Design and 3D Print Your Own Fabric STEM Activity Page 19 Explore the Wet Sand Effect STEM Activity STEM Activity How Biodiverse is Your Backyard? STEM Activity Featured STEM Activity STEM Activity Milk Curdling with Enzymes! STEM Activity The Aerodynamics of Flying a Frisbee STEM Activity The Impossible Arrow Illusion STEM Activity Theme Park Science with Jell-O Loop-De-Loops STEM Activity Weaving a Wearable Touch Sensor STEM Activity Page 20 STEM Activity STEM Activity A Sweet Earthquake Shake on Landfill STEM Activity Featured STEM Activity Build a Bathtub Toy Raft Powered by Surface Tension STEM Activity STEM Activity Candy Waterfalls: Can Candy Flow Like Water? STEM Activity Explore Biodiversity Using a Homemade Bug Vacuum! STEM Activity STEM Activity Gingerbread House STEM Challenge STEM Activity STEM Activity Page 21 How Antibiotic Resistant Bacteria Take Over STEM Activity How Fast Can You Get It Done? STEM Activity How Strong are Eggshells? STEM Activity Featured STEM Activity Hula Hooping with a Rubber Band STEM Activity Is the Egg Raw or Cooked? That is the Question! STEM Activity Making Everyday Objects Out of Mushrooms: Environmentally Friendly Design STEM Activity Physics Secrets for Hula Hooping STEM Activity Program Your Own COVID-19 or Flu Simulator with Scratch STEM Activity STEM Activity STEM Activity Page 22 Soil Science: Study Microorganisms in Winogradsky Columns STEM Activity STEM Activity Teach a Computer to Recognize Road Signs STEM Activity Featured STEM Activity STEM Activity STEM Activity STEM Activity Build a Differential from K'Nex STEM Activity Build a Water Sprinkler Toy STEM Activity Candy Lightning: A Flashy Activity STEM Activity Page 23 STEM Activity STEM Activity Featured STEM Activity DIY Mini Drone: Motion Control STEM Activity STEM Activity Program Drone Steering with an Arduino STEM Activity Slippery Slopes and the Angle of Repose STEM Activity Stargazing for Satellites STEM Activity The Wagon Wheel Effect Optical Illusion STEM Activity Algae String Mizuhiki Knots STEM Activity Page 24 Comparing Cranberry Condiments STEM Activity Does Wet Hair Float or Cling? STEM Activity Dye Eggs Using Silk Ties for Egg-cellent Colors STEM Activity Featured STEM Activity How Empty Is an Empty Bottle? STEM Activity Lights, Camera, (Capillary) Action! STEM Activity Why Won't it Mix? Discover the Brazil Nut Effect STEM Activity You wont be billed unless you keep your account open past your 14-day free trial (June 12, 2025). Cancel anytime in 1-click on the manage account page before the trial ends and you won't be charged. Otherwise you will pay just $10 CAD/month for the service as long as your account is open. Cancel anytime in the manage account page in 1-click and you won't be charged. Otherwise you will pay $10 CAD/month for the service as long as your account is open. AnimalsFind more animals printables here to use with your students.Human BodyCheck out some of our human body resources and printables for 4th grade science.Earth Features & EventsHere is a bunch of printable PDFs about Earth and its makeup.States of MatterAccess printable fourth grade science resources about the states of matter on this page. The big ideas in Fourth Grade Science include exploring the sciences within the framework of the following topics: Organisms and Their Environments (patterns of behavior and changes in the environment); Astronomy (Earth, Sun, Moon and planets); Weather (water cycle, clouds, and severe weather); and Properties of Light and Electricity (reflection, refraction, and series and parallel circuits).Earth - Inside and OutLet's look at the Earth from the inside out...The Earth is made up three main layers called crust, mantle, and core. Read more...iWorksheets: 5Study Guides: 1Vocabulary: 9Earth's WatersDid you know that three quarters (3/4) of Earth is covered by water? Freshwater is water containing only a very little amount of salt. Oceans are made of salt water. Ninety-seven percent (97%) of the Earths water is saltwater. Throughout the water cycle, water can be solid, liquid, and a gas. Read more...iWorksheets: 3Study Guides: 1Vocabulary: 2Fossils and extinct animalsMany animals have become extinct over millions of years. Extinct means no longer living on Earth. Animas that are extinct include dinosaurs, saber-toothed tigers, and dodo birds. Read more...iWorksheets: 3Study Guides: 1Vocabulary: 4Our Solar system and beyondWhat Can Be Found in the Solar System? A planet is a large body that revolves around the Sun. Asteroids, comets and meteors are made of pieces of rock and ice. Asteroids are small pieces of rock which orbit around the Sun. Comets are made of ice and rock. The tail of a comet is made of vaporized gases and dust that flow behind them as they fly through space at a VERY fast pace! Read more...iWorksheets: 3Study Guides: 1Vocabulary: 3Rocks and mineralsFreeWhat is in a Rock? Rocks are made up of many tiny pieces of minerals. What are Minerals? Minerals are natural, nonliving crystals. They come in many sizes, shapes, and colors. Types of Rocks: Sedimentary Rocks, Igneous Rocks, Metamorphic Rocks. The Rock Cycle. Read more...iWorksheets: 5Study Guides: 1Vocabulary: 4Ecosystems and changes in ecosystemsWhat is an ecosystem? An ecosystem is the living and nonliving components of an environment and the way they interact with each other and their environment. There are several different ecosystems on the Earth. Read more...iWorksheets: 3Study Guides: 1Vocabulary: 3Food webs/food chainsWe all need energy. Every living organism on Earth needs energy to live, including plants, animals and us! The main energy source for all living things on Earth is the Sun. Read more...iWorksheets: 5Study Guides: 1Vocabulary: 3Electricity and magnetismElectricity is the flow of electrical charge. Atoms are made of three different particles, of which some have a positive charge, some have a negative charge, and some have no charge at all. Static Electricity is the imbalance of positive or negative charges between objects. If two objects have opposite charges, theyll pull toward each other. Read more...iWorksheets: 5Study Guides: 1Vocabulary: 2Force, motion and energyMotion is the process of an object changing place or position. A force is a push or pull upon an object. Speed refers to the rate an object changes position. To accelerate means to go faster; decelerate means to slow down. Read more...iWorksheets: 5Study Guides: 1Vocabulary: 3Light and SoundLight is a form of energy that travels in waves. A reflection occurs when light rays bounce off a surface, such as when you see your reflection in a mirror. Absorption is when an object takes in light wave. Refraction is when light bends moving from one medium to another. Sound is a type of energy that travels in waves that is caused by vibrations. Vibrations are movements made rapidly back and forth. Read more...iWorksheets: 3Study Guides: 1Vocabulary: 3MatterMatter is ALL Around Us! Matter is anything that takes up space and has mass. Matter is made up of atoms. Atoms are the basic building blocks of matter andmake up all objects. Matter change states from solid, liquid, or gas. Read more...iWorksheets: 4Study Guides: 1Vocabulary: 2Animal Growth and ReproductionA life cycle is the stages of development an organism goes through starting from an egg to growing into an adult. Living organisms each have their own unique way of reproducing, giving birth, growing, and developing. Read more...iWorksheets: 5Study Guides: 1Vocabulary: 5Cells- The building blocks of living thingsFreeCells are building blocks of life. All living things are made of cells. A unicellular organism is made up of only one cell while multicellular organisms are made up of only cells. Read more...iWorksheets: 6Study Guides: 1Vocabulary: 3Classifying organismsScientific classification is the process of grouping living organisms into certain categories based on their characteristics, traits, and appearance. The order of scientific classification is kingdom, phylum, class, order, family, genus, and species. Each time we move to a different classification category, the groups getsmaller and more specific. Read more...iWorksheets: 3Study Guides: 1Vocabulary: 4Introduction to animalsAnimals have particular body parts and structures to help them survive in their Earth environment. For instance, animals have certain body parts such as legs or wings that help them move, and mouths or trunks or beaks that help them drink water. Read more...iWorksheets: 3Study Guides: 1Vocabulary: 4Invertebrates - Animals without BackbonesAnimals are classified into groups so that scientists around the world can study them easier. Scientists classify animals into two major groups, vertebrates and invertebrates. Read more...iWorksheets: 5Study Guides: 1Vocabulary: 5Organ systemsYour body is made up of many organs and systems that all work together to keep your body running properly: The Skeletal System, The Muscular System, The Circulatory System, The Respiratory System, The Digestive System, The Nervous System, The Excretory System. Read more...iWorksheets: 3Study Guides: 1Vocabulary: 5Plant growth and reproductionProcess of Reproduction. Fertilization, Seeds. Lesson Checkpoints: What is one reason a plant has nectar? What do mosses and ferns produce instead of seeds? What is the female organ of a flower called? Read more...iWorksheets: 3Study Guides: 1Vocabulary: 2Plant Structure and functionPlants are living organisms made up of cells. Plants need sunlight and water to live and grow healthy. A plant has different parts that are all important in keeping the plant alive and healthy: Roots, Stem, Leaves. A plants roots collect water and minerals from soil for the rest of the plant. The main job of a plants stem is to carry water and minerals from the roots to the rest of the plant. Read more...iWorksheets: 3Study Guides: 1Vocabulary: 4Vertebrates - Animals with BackbonesScientists classify animals into two categories depending on if the animal has a backbone or not. As you know, invertebrates are animals that do NOT have a backbone and vertebrates are animals that DO have a backbone. Vertebrates are divided by scientists into five classes: fish, amphibians, reptiles, birds, and mammals. Read more...iWorksheets: 5Study Guides: 1Vocabulary: 4Did you Know... 4th gradeDid you know? There are over 600 named muscles in the human body. Your HEART is considered a muscle, a cardiac muscle. The largest bone in your body is your femur, which is your thigh bone. If you make a mark on the trunk of a tree, it will remain the same distance from the ground! Read more...iWorksheets: 3Study Guides: 1Hands-on Lab Skills/Science InquiryWhen you conduct an investigation, you may make predictions, interpret your findings, draw conclusions, and justify your conclusions. When you conduct an experiment, you should collect data to help justify your conclusions. During an investigation, you may formulate and justify your predictions based on cause and effect relationships. A cause makes something else happen. An effect is what happens because of the cause. Read more...iWorksheets: 3Study Guides: 1Math in ScienceWhether you are measuring, calculating, creating graphs and charts, or using numbers in any way thats using your math skills. During many science investigations you may have to measure the length, width, height, or weight of different objects. You also may need to measure the temperature of the air or different liquids when completing a scientific investigation as well. Read more...iWorksheets: 3Study Guides: 1Science in our worldHave you ever seen a meteor shower? Meteors are small fragments of debris from space that enter the Earth's atmosphere at extremely high speed. They then turn into a vapor r leaving a streak of light that disappears quickly. You hear on the radio that a high air pressure system will be moving in tomorrow, which means there is a very good chance of clear skies. Read more...iWorksheets: 3Study Guides: 1Vocabulary: 1Weather and ClimateMany factors affect the weather such as the sun, atmosphere, temperature, water, and air pressure. When air moves from an area of high pressure to a place with low pressure, WIND is created. The movement and interaction of air masses cause most weather conditions. Climate: The word climate refers to the typical weather throughout the year in the same area. Read more...iWorksheets: 5Study Guides: 1Vocabulary: 4 Nothing gets kids more excited for science than hands-on experiments! Watch your 4th grade science students eyes light up when they try some of these activities. Youll find physics, biology, engineering, chemistry, and more. These projects are easy to set up and really help drive the learning home. Get ready for some science fun! To help you find the right 4th grade science projects and activities, weve rated them all based on difficulty and materials: Difficulty: Easy: Low or no-prep experiments you can do pretty much any time Medium: These take a little more setup or a longer time to complete Advanced: Experiments like these take a fairly big commitment of time or effort Materials: Basic: Simple items you probably already have around the house Medium: Items that you might not already have but are easy to get your hands on Advanced: These require specialized or more expensive supplies to complete Jump to: Plus, fill out the form on this page to grab your free printable bundle of science fair award certificates to honor your students efforts! There are more than 40 award categories included plus a customizable blank certificate for you to create your own awards. These 4th grade science experiments also work well as science fair projects. Try changing up the variables to turn it into a real experiment, then form a hypothesis and find out what happens. Learning Resources Difficulty: Easy / Materials: Medium A soap bubble you can hold in your hand? Its true! A little glycerin makes the soap bubble layers stronger, so you can even toss them gently from person to person. Learn more: Unpoppable Bubbles ExperimentPlaydough to Plato Difficulty: Easy / Materials: Medium No list of 4th grade science projects would be complete without crystals! Kids of all ages love growing crystals, making this an ideal way to learn about supersaturated solutions. The classic experiment gets a new twist when you have kids shape pipe cleaners into their own names first. Learn more: Crystal Letters Difficulty: Medium / Materials: Medium Your students will truly feel like scientists when they perform this classic experiment. Theyll prep the dishes with agar, swab different surfaces, and see what bacteria they grow. Its gross science, but its also easy and impressive. Difficulty: Easy / Materials: Medium Heres a cool experiment to include in your unit on oceans. Build a miniature coastline, then see how wave action erodes the shore. Learn more: Erosion ExperimentSTEAM Powered Family Difficulty: Easy / Materials: Basic Early chemistry experiments with acids and bases are always a lot of fun. This one uses the natural acids of lemon juice and adds a little food coloring to up the wow factor. Learn more: Lemon VolcanoThe Science Kiddo Difficulty: Easy / Materials: Basic Adding items like salt or sugar to water changes its density, as does the temperature itself. Turn this into a 4th grade science fair project by experimenting with different solutions and forming hypotheses about the results. Learn more: Saltwater Density Difficulty: Medium / Materials: Basic Colorful, simple, and impressive: Its the trifecta of 4th grade science experiments! Wow your students by layering colored sugar water as you learn about density, adhesion, and cohesion. Difficulty: Medium / Materials: Basic Plastic seems incredibly modern, but people have been making casein plastic from milk for centuries. In this 4th grade science project, students experiment to create the formula for the best milk plastic. Theyll be amazed at the results!Teaching Science Difficulty: Medium / Materials: Basic The ground under our feet may feel solid, but an earthquake changes that pretty quickly. Use Jell-O to simulate the Earths crust, then see if you can build an earthquake-proof structure for a practical and fascinating 4th grade science fair project. Learn more: Earthquake SimulationAround the Kampfire Teaching Difficulty: Easy / Materials: Medium Find out if Sharpie markers are really permanent with this 4th grade science project that uses the scientific method to explore solutes and solvents. Learn more: Sharpie Solubility Difficulty: Easy / Materials: Medium Watch this video with your students first. Then, apply the rigors of the scientific method to mood rings! Find out what makes mood rings change color, then see if they really reflect a persons mood.I Love 2 Teach Difficulty: Easy / Materials: Basic Kids will really get into this project, indulging their creativity as they invent a plant or animal thats never been seen before. Theyll need to be able to explain the biology behind it all, though, making this an in-depth project you can tailor to any class. Learn more: Create an Animal & Create a PlantMystery Science Difficulty: Easy / Materials: Basic Yup, its gross so kids will love it! Seal food items in a plastic bag and experiment to see what factors affect their decomposition, helped along by a heaping dose of mold. Learn more: Decomposition Difficulty: Medium / Materials: Medium With just a few supplies including balloons and a plastic bottle, you can make an impressive working model of human lungs. This makes a very cool 4th grade science fair project. Difficulty: Easy / Materials: Medium They hear it from their parents all the time, but this experiment will prove to your students once and for all what can happen to their teeth when exposed to different drinks such as soda and milk. This is one of those classic 4th grade science fair projects every kid should try.She Loves Science Difficulty: Easy / Materials: Basic This is such a simple (and fun) 4th grade science fair project. Select three different cereals, put them in three separate bowls, and then crush them into a dust. Then use a large magnet to determine if any of the cereals are magnetic. The most magnetic contains the most iron! Be sure to hypothesize which one has the most iron before starting so you can test it. Learn more: Iron in Cereal Science Fair Project Difficulty: Medium / Materials: Medium This 4th grade science fair project is easy enough to reproduce and the results may surprise you. Try out different methods of ripening fruit and hypothesize which will cause the quickest ripening. Difficulty: Medium / Materials: Medium Make a homemade thermos using a glass bottle, a plastic water bottle, aluminum foil, and tape. Then test out how it compares to a stainless-steel thermos at keeping water hot over several hours. Record your observations about the conditions of the bottle and the temperature of the water. Difficulty: Medium / Materials: Medium This video isnt specific to a science fair project, but it does briefly explain why certain pigments affect drying times. Start with a number of different oil paint colors and record what ingredients have gone into the different pigments. Next, hypothesize which will dry quickest to slowest and why. Finally, test your theory! Difficulty: Medium / Materials: Medium This is such a fun science fair project, but be forewarned if youre squeamish around bugs! Gather different forms of sugars and sweeteners and then lay them out near an ant pile. Record what you think will happen and then check back in and see how it compares to what actually happened! Difficulty: Medium / Materials: Medium This 4th grade science fair project is a fun twist on growing plants under varying conditions. Be sure to be consistent with how loud and how often you play the music for one of the groups. Youll also want to take photos each day and have someone whos tech savvy create a time-lapse video. Difficulty: Medium / Materials: Medium A solar oven, also known as a solar cooker, utilizes the energy from sunlight to cook food. It works on the principle of converting solar radiation into heat energy. So how does it operate? Solar ovens are typically designed with reflective surfaces, such as mirrors or aluminum foil, which help to concentrate sunlight onto a central cooking area. These surfaces trap and focus sunlight, increasing the intensity of heat and cooking the items inside. Try it: Solar Oven Science Project (Guide + Printable Reflection Sheet) For students who love to tinker, STEM challenges can spark incredible 4th grade science fair projects. Here are some of our favorites for this age group. Difficulty: Easy / Materials: Basic Divide kids into groups and provide them each with a dinosaur, some large Popsicle sticks, and a bunch of binder clips. See who can build the best cage for their dino in a predetermined amount of time. Difficulty: Medium / Materials: Basic This is a relatively simple 4th grade science experiment that kids can complete to test how fast the wind is blowing. Difficulty: Medium / Materials: Medium Kaleidoscopes produce mesmerizing whirls of colors and shapes, but they can also teach valuable lessons. Kids will learn about reflection and refraction and maybe even a bit about geometry. Difficulty: Easy / Materials: Basic This is a simple way to teach students about optical illusions. First, challenge them to build a triangle out of LEGO bricks, and then see if they can make something that just looks like a triangle. Be sure to take photos to demonstrate how at just the right angle, they can trick even themselves! Difficulty: Medium / Materials: Basic Turn an engineering lesson into a musical one! Create homemade harmonicas using everyday materials to learn about sound vibrations and pitch. Difficulty: Easy / Materials: Medium If you have fans of Star Wars in your class, they will love this STEM project. All youll need is an LED, coin battery, a straw, and some tape. We cant think of a better way to teach about circuits than by creating your own mini lightsaber! Difficulty: Easy / Materials: Basic STEM challenges are always a hit with kids. We love this one, which only requires basic supplies like drinking straws.Research Parent Difficulty: Medium / Materials: Medium Who knew electricity could be so adorable? Explore the science behind batteries and motors by creating a simple wigglebot. Experiment with weights to throw the motor off balance and create fun designs. Learn more: Homemade WigglebotMystery Science Difficulty: Easy / Materials: Medium Youll only need a few supplies to guide your students in building their own LED flashlights. Theyll learn how electricity travels and the way circuits work. The slideshow available through the link makes this lesson a breeze for teachers too. Learn more: DIY Flashlight Difficulty: Easy / Materials: Medium Its not exactly the same model the military uses, but this simple hovercraft is a lot easier to build. An old CD and a balloon help demonstrate air pressure and friction in this fun 4th grade science experiment.The STEM Laboratory Difficulty: Medium / Materials: Medium No projector in your classroom yet? No problem! Have your students help you construct one for your smartphone using a cardboard box and large magnifying glass. Theyll learn about convex lenses and how the brain processes images too. Learn more: DIY Smartphone Projector123 Homeschool 4 Me Difficulty: Medium / Materials: Medium The science of machines never fails to fascinate kids. In this experiment, theyll design their own pulley system to make it easier to lift an object. Learn more: DIY Pulley Difficulty: Medium / Materials: Basic Engineering activities make for amazing hands-on learning. Challenge your 4th grade students to build an elevator that can safely lift a certain amount of weight.Science Sparks Difficulty: Medium / Materials: Basic Explore the science of seismology and learn how scientists study earthquakes and their effects. This model seismometer is easy to build and fun to experiment with. Learn more: Model Seismometer Difficulty: Medium / Materials: Basic Heres one more classic to add to our list of 4th grade science experiments: the egg drop! The great thing about this project is that kids can do it at any age, with different materials and heights to mix it up. Hit the link below to get an egg drop project designed just for 4th graders. Learn more: Egg Drop Challenge Ideas (Guide + Printable Reflection Sheet) Difficulty: Medium / Materials: Medium Who doesnt love balloon rockets?! Your students will have a blast(off) displaying Newtons third law of motion while learning about physics. Difficulty: Medium / Materials: Medium This experiment works through a chemical reaction that results from a catalyst (potassium iodide, aka yeast) being introduced into a mixture of hydrogen peroxide and dish soap. The hydrogen peroxide is decomposed into water and oxygen and the catalyst speeds up the reaction, forcing the oxygen into the soap bubbles. The resulting effect is the substance quickly pouring up and out of the container. Try it: Elephant Toothpaste Experiment (Guide + Printable Reflection Sheet) Many 4th grade science standards include units on energy and motion. These energy science activities offer cool hands-on ways to spice up your classroom lessons. Frugal Fun for Boys and Girls Difficulty: Easy / Materials: Basic This experiment is a bit of a thinker: What will happen when one moving marble hits several stationary marbles sitting in a row? Flick the first marble and find out! Learn more: Marble Energy Transfer Difficulty: Easy / Materials: Basic Place a tennis ball on top of a basketball and bounce them together to see how energy transfers from one object to another. This one is very easy, and kids will love seeing how high they can get the balls to bounce!The Science Penguin Difficulty: Easy / Materials: Basic Emphasize the fact that energy is all around us in one form or another with this easy, free printable energy science activity. For a more advanced version, help students identify each kind of energy (kinetic, stored, heat, etc.) they find. Learn more: Energy Scavenger Hunt Difficulty: Medium / Materials: Basic Heat rises, and its interaction with cooler air creates convection currents. Find out how we can put convection to work for us with this 4th grade science craft project.What I Have Learned Difficulty: Easy / Materials: Basic Heres a quick and easy way to show wave action in a no-mess way. You dont need to add a little ship to the bottle, but it does make it more fun! Learn more: Waves in a Bottle Difficulty: Medium / Materials: Medium Turn this one into a class cooperative activity, or try it as a science fair project idea. Either way, its an incredibly fascinating way to demonstrate the energy science of waves. Difficulty: Easy / Materials: Medium A Slinky is more than just a toyits also a terrific science manipulative! Use it to see waves in motion, both longitudinal and transverse.Teach Beside Me Difficulty: Easy / Materials: Medium Youll need a looooooooong string of beads for this experiment. Make your own by taping dollar-store strings together, or buy a long bead garland. Pile them in a cup and get the beads going; its fascinating to watch inertia and gravity at work. Learn more: Gravity Beads ExperimentKidsActivities.com Difficulty: Easy / Materials: Medium Glue together marbles in a variety of pyramidal patterns to form tops, then form hypotheses about which will spin best. Afterwards, kids will have fun new toys to play with! Learn more: Marble Tops Difficulty: Easy / Materials: Medium Newtons second law, concerning acceleration, force, and mass, can be a little hard to understand. This easy 4th grade science demo makes it easier to visualize. Difficulty: Easy / Materials: Basic Create a tornado using just a few magnets and a cup of water. Its not just cool either, as it teaches a valuable lesson on centripetal force. Difficulty: Medium / Materials: Medium This project can be done at home or as part of a group in class. Youll need to purchase some supplies including wheels, dowels, and magnets. Its a great lesson on propulsion. Difficulty: Medium / Materials: Medium Provide your students with Popsicle sticks, elastics, paper clips, and more to see if they can build the fastest zip-line racer in the class. This is sure to be a hit with 4th graders! Use these cool science experiments to encourage a love of science, at home or in the classroom! Ashleighs Education Journey Difficulty: Easy / Materials: Basic Fourth grade science students already know that magnets attract metal objects. In this experiment, theyll measure to see how close a magnet needs to be to an object for the attraction to work. Mix things up with different sizes of magnets and objects of various weights. Learn more: Magnet MeasurementsRonyes Tech Difficulty: Easy / Materials: Basic This seems more like a magic trick, but we promise its science! Make colors seem to appear and disappear, change numbers into letters, and more. Learn more: Light Refraction Difficulty: Easy / Materials: Basic This is another one of those mind-blowing science demos that kids will want to try over and over again. Draw on a shallow bowl or plate with dry-erase markers, then slowly add water. The marker (which is insoluble in water) will float to the top!Team Cartwright Difficulty: Easy / Materials: Basic Prove that sunscreen really does provide protection from harmful UV rays. Turn this into a full-blown experiment by trying different SPFs or comparing it to other creams or lotions without SPF. Learn more: Sunscreen PaintingRhythms of Play Difficulty: Medium / Materials: Basic Choose a sunny day and grab some sidewalk chalkyour students are about to become sundials! Theyll practice measuring skills and learn about the movement of the sun across the sky. Learn more: Human SundialSarahs STEM Stuff Difficulty: Easy / Materials: Medium If youre learning about mineral resources, this quick hands-on activity is an interesting way to explore the effects of mining. Kids have two minutes to find as many chocolate chips as they can in a cookie. Will they smash it up and destroy it entirely? Pick them out one by one? This experiment can lead to intriguing discussions. Learn more: Mining for Chocolate ChipswikiHow Difficulty: Easy / Materials: Medium Use licorice sticks, four different-colored candies or fruits, and toothpicks to build an edible strand of DNA. Learn about chemical bonds and the helix shape, then eat your creation! Learn more: Edible DNA ModelSuper Teacher Blog Difficulty: Easy / Materials: Medium Digging in the dirt is fun, but its even more fun when you can eat the dirt when youre finished! Create edible soil-layer models, complete with gummy worms, for a simple earth science project. (Find more edible science projects here.) Learn more: Edible Soil LayersBuggy and Buddy Difficulty: Easy / Materials: Basic Experiment with simple chemical reactions as you turn pennies green using vinegar. (Dont forget to tell students that the Statue of Liberty is green for this very same reason!) Learn more: Penny ReactionsHojos Teaching Adventures Difficulty: Easy / Materials: Medium Seeing Boyles law (which relates pressure and volume of gasses) in action makes it a little easier to understand and remember. This simple 4th grade science experiment uses marshmallows to make a great visual. Learn more: Boyles LawLife Over Cs Difficulty: Easy / Materials: Basic Learning about oceanography? Demonstrate how ocean currents form using warm and cold water (and a few plastic sea creatures for extra fun!). Learn more: Ocean CurrentsThe Owl Teacher Difficulty: Easy / Materials: Medium This is a neat Earth Day activity. Discuss the differences between renewable and non-renewable resources, then have your class form companies to mine non-renewable resources. As they compete, theyll see how quickly the resources are used. Its a great tie-in to energy conservation discussions. Learn more: Non-Renewable ResourcesAlmost Supermom Difficulty: Easy / Materials: Medium Use simple kitchen supplies and candy to create a jar full of blood that includes plasma, platelets, red blood cells, and white blood cells. (You can even snack on the blood cells along the way!) Learn more: Blood Model Difficulty: Easy / Materials: Medium Learn about diffusion in the sweetest way! Grab a bag of Skittles for this quick and easy 4th grade science project.Cool Science Experiments Headquarters Difficulty: Easy / Materials: Medium Your students will ooh and aah at the result of this exploratory way to show phosphors in action with a black light, different types of water, and a highlighter. The results of this experiment might surprise both you and your students! Learn more: Glowing Water Experiment Difficulty: Medium / Materials: Medium Break the class into small groups and then have them work together to piece together the various parts of the rocket. It might be helpful to have the shapes pre-cut. This 4th grade science project is best done outside. Learn more: Bottle Rocket Experiment (Guide + Printable Reflection Sheet)Teaching With Jennifer Findley Have students make predictions about what will happen to apple slices when immersed in different liquids, then put those predictions to the test. Have them record their observations. Learn more:Apple Oxidation Difficulty: Easy / Materials: Medium This experiment is similar to others on our list about density but utilizes just one glass. Begin by pouring syrup into the bottom of a glass and then adding water and finally cooking oil. This alone will amaze your students as the liquids separate due to their density. Finally, try dropping items of different weights into the glass. Difficulty: Easy / Materials: Basic This is such a simple and fun way to teach kids about the human heart. All youll need is a glass, a red balloon, red food coloring, water, and a straw. Difficulty: Easy / Materials: Medium Slime is obviously a favorite science experiment for kids, but the addition of iron filings really takes this up a notch. Get some magnets and let kids experiment with the magnetism. Difficulty: Medium / Materials: Basic This one might take some time, so it could be assigned as an at-home project. Have them complete their own river bed while completing a unit on geography and topography. Difficulty: Easy / Materials: Basic Turning milk into cheese using just vinegar is a brilliant way to teach young students about chemistry and chemical reactions. Difficulty: Easy / Materials: Basic This experiment is a simple way to demonstrate solubility. The positive and negative parts of the water molecules are drawn to the positive and negative parts of the sugar molecules, thus resulting in the absorption. If youre organizing a science fair, make sure to grab our free printable bundle of award certificates with more than 40 categories along with a customizable blank certificate so you can create your own awards.

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