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| --- | --- | --- | --- | --- |
| Make a boat that can really float. How can you modify your design so that it would be a fun bath toy? | [Fold and fly](https://www.google.com/url?q=https://www.google.com/url?q%3Dhttps://www.foldnfly.com/%2523/1-1-1-1-1-1-1-1-2%26amp;sa%3DD%26amp;ust%3D1584379810377000&sa=D&ust=1584379810391000&usg=AFQjCNHZN7CkFRLAD4Hm_7KbyiYIYAMblQ) different styles of paper airplanes. How can the [science of flight](https://www.google.com/url?q=https://www.google.com/url?q%3Dhttps://www.youtube.com/watch?v%253DAGzOOM0Pz98%26amp;sa%3DD%26amp;ust%3D1584379810378000&sa=D&ust=1584379810391000&usg=AFQjCNFqRpCvG90ujzsiyZqTFU_A7aqQHg) help you design a better plane? | Look closely at various kitchen tools. How do you think they work? How could [they be improved](https://www.google.com/url?q=https://www.google.com/url?q%3Dhttps://www.youtube.com/watch?v%253Dj3_pojVmNcs%26amp;sa%3DD%26amp;ust%3D1584379810378000&sa=D&ust=1584379810391000&usg=AFQjCNFypoGeDhjsMGeuFy3-pgPcXo1yTw)? | Transform a room of your house into a castle! What features do you think are most important in [real castle designs](https://www.google.com/url?q=https://www.google.com/url?q%3Dhttps://www.youtube.com/watch?v%253DY5mb2Zcw6mc%26amp;sa%3DD%26amp;ust%3D1584379810378000&sa=D&ust=1584379810391000&usg=AFQjCNFkXddCKhJSkPR3_wn06QBlX-n7Pg)? | Create the [ultimate creative rolling car](https://www.google.com/url?q=https://www.google.com/url?q%3Dhttps://www.youtube.com/watch?v%253D-RK77vppFgQ%26amp;sa%3DD%26amp;ust%3D1584379810379000&sa=D&ust=1584379810391000&usg=AFQjCNE0fJuj_jgwk648kf2uZc008ompjg) that can go down a ramp. How many different ideas can you try? |
| Create a gap that is about 12 inches across. Use different materials to create a simple bridge. How can you determine which bridge is the strongest? | Do batteries really power the world? Go on a scavenger hunt to find things powered by batteries. What kind of batteries can you find? | Transform a sheet of paper into a fan. How many different designs can you come up with? How else can you [transform paper](https://www.google.com/url?q=https://www.google.com/url?q%3Dhttps://www.youtube.com/watch?v%253DLy3hMBD4h5E%26amp;sa%3DD%26amp;ust%3D1584379810380000&sa=D&ust=1584379810391000&usg=AFQjCNHaUJqVtMXDlxYhtPom5llzPznBRA)? | Louis Braille wanted to [make reading easier for other blind people](https://www.google.com/url?q=https://www.google.com/url?q%3Dhttps://www.youtube.com/watch?v%253Do9BOQ6IpTSE%26amp;sa%3DD%26amp;ust%3D1584379810380000&sa=D&ust=1584379810392000&usg=AFQjCNHqVm67xB7v2v2sS8UAb6nnUbVggA) so he created a code of raised dots. Can you write a message [in Braille](https://www.google.com/url?q=https://www.google.com/url?q%3Dhttp://www.brailleauthority.org/learn/braillebasic.pdf%26amp;sa%3DD%26amp;ust%3D1584379810380000&sa=D&ust=1584379810392000&usg=AFQjCNEEmmg3UCq-O54bC8tZxhvw_hyd_g)? | Watch a movie about sports. How would you describe the different forms of motion? What needs to happen to move *fast*? |
| [Discover how LEGO bricks are made](https://www.google.com/url?q=https://www.google.com/url?q%3Dhttps://www.youtube.com/watch?v%253DC3oiy9eekzk%26amp;sa%3DD%26amp;ust%3D1584379810381000&sa=D&ust=1584379810392000&usg=AFQjCNHdnDn7xsQeBDPDcv-T7bK19JBGGw). Can you use *your*LEGO to make one really big LEGO brick? | Plan and make [a model playground](https://www.google.com/url?q=https://www.google.com/url?q%3Dhttps://www.youtube.com/watch?v%253DZUw8CH6Mxj0%26amp;sa%3DD%26amp;ust%3D1584379810381000&sa=D&ust=1584379810392000&usg=AFQjCNHaXsdHd17tmxDTeUIy-1NLF0AH8w). Who will you make a model playground for? | FREE SPACE | Build a car or house entirely out of edible materials. Consider having [an edible car race](https://www.google.com/url?q=https://www.google.com/url?q%3Dhttps://www.youtube.com/watch?v%253D70Hic_038ZA%26amp;sa%3DD%26amp;ust%3D1584379810382000&sa=D&ust=1584379810392000&usg=AFQjCNGvFBwVxHTdKOXKMZO1ZPKwVDAOaw) | Design and build a pair of scissors that can cut through dough. What can you use for the blades? |
| Experiment with freezing different mixtures of water and salt. What do you notice about the amount of salt and the time it takes to freeze? | Build a pendulum by tying a weight on a string. What do you notice about the swing when you change the length? How can you use this as a timer? | Did you know that windshield wipers were invented by [Mary Anderson](https://www.google.com/url?q=https://www.google.com/url?q%3Dhttps://www.youtube.com/watch?v%253D7mugNKlcano%26amp;sa%3DD%26amp;ust%3D1584379810383000&sa=D&ust=1584379810392000&usg=AFQjCNGBSb-z5bbcyFMDBCb8lnl2yCx00g)? Experiment with making a model windshield wiper. What would you invent for cars? | Design a town square for[the heart of a healthy community](https://www.google.com/url?q=https://www.google.com/url?q%3Dhttps://www.youtube.com/watch?v%253DHy4QjmKzF1c%26amp;sa%3DD%26amp;ust%3D1584379810383000&sa=D&ust=1584379810392000&usg=AFQjCNGl24vdurhuYMDQjJJSDdeS45jxAg). What makes a community healthy and strong? | Make a building with multiple floors. What do you need to do to ensure that the building is stable? Can you install [an elevator](https://www.google.com/url?q=https://www.google.com/url?q%3Dhttps://www.youtube.com/watch?v%253DsSjJjKcoNRk%26amp;sa%3DD%26amp;ust%3D1584379810384000&sa=D&ust=1584379810392000&usg=AFQjCNHSrExswNtN2VE4XCEoJ_mPemPMjg)? |
| Take apart a click-to-write pen to see if you can [get a closer look at the mechanisms](https://www.google.com/url?q=https://www.google.com/url?q%3Dhttps://www.youtube.com/watch?v%253DZv5Qa2kGL04%26amp;sa%3DD%26amp;ust%3D1584379810384000&sa=D&ust=1584379810393000&usg=AFQjCNGGRVe21o8HYTvZi6lgqXInoNaxqw) that make it work. | Grab three balls, go outside, and [simulate a supernova](https://www.google.com/url?q=https://www.google.com/url?q%3Dhttps://www.youtube.com/watch?v%253D2UHS883_P60%26amp;sa%3DD%26amp;ust%3D1584379810385000&sa=D&ust=1584379810393000&usg=AFQjCNEI0ch6GqGeNKPrWkydeycM0d9EkA). What do you notice about the maximum height? | Find six things that are held together with screws. Pick one and use a screwdriver to [look inside](https://www.google.com/url?q=https://www.google.com/url?q%3Dhttps://www.youtube.com/watch?v%253DN8JpePwvuHw%26amp;sa%3DD%26amp;ust%3D1584379810385000&sa=D&ust=1584379810393000&usg=AFQjCNGXw0dbXRP3-PvAk0JxweJfkeZc5g). | Create a tool that helps you measure 6 feet accurately. What makes measuring this distance challenging? | Using *only* paper or index cards, design a tall tower that can support an object. What object will you try to support? |