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Download Article Level-up your science game with these wind-powered DIY cars Download Article Making a balloon car is a fun craft project and educational science experiment that can be done with kids. This activity can be used to help teach kids how wind energy can be used to propel an object, as well as other principles in physics like momentum, force, friction, and speed. It's also a great lesson in recycling and how to re-purpose waste items into fun toys. You'll only need a few simple materials: some sort of base, straws, skewers, tape, and a balloon. 1Clean out a plastic bottle. You can use a water bottle or a soda bottle. Remove the cap and peel off the label. Clean the bottle out and let it dry.[1]The best size is a small water bottle.Make sure it's thoroughly rinsed it out and clean, especially if youre using a soda or juice bottle. 2Cut two pieces of straws the width as your bottle. Measure across the bottom of your bottle. Cut two pieces of straw down to that measurement. Use only the smooth part of the straw, not the bendy. These will hold the axles and wheels.[2] Advertisement 3Tape the straws to the side of the bottle. Tape the first straw about 1 inch (2.54 centimeters) from the bottle. Tape the other straw about 1 inch (2.54 centimeters) below the domed part. Make sure that the straws are straight and parallel to each other. If they are crooked, your car won't go straight.[3]If your bottle has ribs, use those as a guide.Use strong, sturdy tape, such as duct tape.4Cut two skewers down to make the axels. Cut the pointy ends off of the skewers first. Next, cut them down so that they are 1 inch (2.54 centimeters) wider than your bottle. They need to be long enough so that they can slide into the straws and hold the wheels.[4]5Slide the skewers into the straws. You should have about inch (1.27 centimeters) sticking out of each end of each straw. You will be sliding the wheels onto the skewers next.6Make some wheels. Get four bottle caps. Draw an X on top of each one to find the center. Use a nail and hammer to punch a hole into the middle of each X.[5]You can also trace four circles onto a sheet of cardboard, then cut them out.You can also use buttons instead of bottle caps. Don't poke holes in them and make sure that they are the same size.If you're scared to use a nail and hammer, stuff a small piece of sponge into each bottle cap.7Attach the wheels. Slide the wheels over the ends of the skewers. Make sure that the inside of the bottle cap is facing out. Don't press the wheels too close to the bottle, or they will get stuck. If the wheels are too loose, secure them with a drop of glue or clay.[6]If you are using buttons, simply hot glue them to the end of each skewer.If you stuffed the inside of the bottle caps with a sponge, simply slide them onto the skewers.8Poke an X-shape on the side of the bottle, just below the dome. Set the "car" down so that it is sitting on top of its wheels. Find a spot on top of the car just below the bottle's dome. Use a craft blade to poke two slits in an X-shape. This will allow you to attach your car's "engine."9Tape a balloon over the end of a straw. Tuck a straw about 12 inches (30 centimeters) into a balloon. Wrap a piece of tape around the end of the balloon in a tight spiral. Make sure that the tape goes over the mouth of the balloon and onto the straw. Also, make sure that there are no gaps. You want an airtight seal.Insert the straw bendy-side-first into the balloon.10Feed the straw through the bottle. Slide the other end of the straw into the X you just made. Keep pushing the straw through the hole until it comes out of the bottle's mouth. You want about 1 inch (2.54 centimeters) of straw sticking out of the bottle's mouth.[7] If it is too long, cut it down.The straw should bend naturally at its bendy part inside the bottle.11Use the car. Blow some air into the balloon through the straw. Pinch the straw so that the air doesn't come out. Place the car down on a flat, smooth surface. Let go of the straw. Watch the car go, go, go![8]Fill the balloon by blowing through the straw opening at the end of the bottle.Put your finger over the end of the straw once you're done filling the balloon.When youre ready, let go of the straw and watch the car go. Advertisement 1Get a small juice box. You can also use a small pint-sized milk carton as well. If you want a fancier car, you can paint the juice box with acrylic paint, or cover it with duct tape, fabric, etc.[9]Make sure that the carton is clean and dry.2Cut two straws that are the same width as your juice box. Your juice box will have a front, back, and two side panels. Cut the straws so that they are the same width as the front of back panels.[10]Make sure that you are cutting the smooth part of the straw. Do not include the bendy part.3Tape the straws to the front of the box. Set the box down so that the front is facing you. Lay the straws down on top, about inch (1.27 centimeters) away from the top and bottom edges. Secure the straws to the box with a strip of tape. These will hold the axles and wheels in place.Make sure that the straws are straight. If they are crooked, your car won't go straight.Use strong tape, such as duct tape.4Cut two skewers down to make the axles. Cut the pointy ends off of the skewers first. Next, cut the skewers down so that they are about 1 inch (2.54 centimeters) wider than your box and straws.If you don't have any skewers, you can use lollipop sticks instead. Make sure that they can slide into the straws easily.5Slide the skewers into the straws. You should have about inch (1.27 centimeters) sticking out of each end. You will be mounting the wheels onto the ends of these next.6Attach some wheels. Fill four bottle caps with clay or pieces of sponge. Press them onto the skewers. Do not let the clay part touch the straws. You can also secure them with hot glue instead.[11]If you don't have any bottle caps, you can use buttons instead. You can also cut circles out of cardboard. Make sure that they are all the same size.7Tape a balloon over the end of a straw. Slide a straw about 2 inches (5 centimeters) into a balloon. Wrap a piece of tape over the mouth of the balloon. Extend the tape over the end of the balloon and onto the straw. Make sure that there are no gaps.[12]8Tape the straw to the juice box. Center the balloon and straw on top of the juice box. Part of the balloon will be hanging over the end of the juice box. Part of the straw will be sticking out over the other end. Make sure that the straw is straight, then place a piece of tape over the straw to hold it in place.[13]Use sturdy tape, such as duct tape.If the straw is too long, cut it down. You want only about 1 to 2 inches (2.54 to 5.08 centimeters) sticking out over the edge of the box.9Get your car rolling. Blow into the straw to inflate the balloon. Pinch the straw shut. Place the balloon on a flat, smooth surface. Let the straw go, and watch the car zoom![14]Blow up the balloon.Don't tie the end; rather, just hold it closed with your hand.When you're ready, let go of the balloon end and watch your car go! Advertisement 1Cut a 3 by 6-inch (7.62 by 15.24 centimeter) rectangle out of cardboard. Use a pen and ruler to draw the rectangle first. Cut the rectangle out with a pair of scissors or a craft blade.You can also use foam core. It is the same thing you use for presentation boards.For a fancy car, paint the cardboard with acrylic paint or cover it with duct tape. Let the paint dry before moving on.2Cut two 3-inch (7.62 centimeter) pieces from a straw. Do not include the bendy part of the straw. Use only the smooth, straight part. These will hold the wheels and axles in place.3Tape the straws to the cardboard. Lay the straws across the cardboard widthwise, -inch (1.27-centimeter) from each narrow end. Make sure that the straws are straight and parallel to the ends of the cardboard. If they are crooked, your car won't go straight. Secure the straws to the cardboard with tape.[15]Use sturdy tape, such as duct tape. This way, the straws won't wiggle loose.Make sure that the tape covers the entire length of each straw.4Cut two 4-inch (10.16-centimeter) pieces from a wooden skewer. Cut the pointy ends off of the wooden skewer first. Next, cut the wooden skewer down to 4 inches (10.16 centimeters). You will need two such pieces. These will make the axles for your car's wheels.If scissors aren't tough enough for the job, try wire cutters.If you can't find any wooden skewers, use lollipop sticks instead. Make sure that they roll around easily in the straws.5Slide the skewers into the straws. You should have about inch (1.27 centimeters) sticking out of each end. The wheels will go onto the skewers next. This will allow the axles to rotate freely inside the straws and allow your car to move.6Make the wheels. Use bottle caps or large coins to trace four circles onto a sheet of cardboard. Cut the circles out using a pair of scissors or a craft blade. Make the circles as even as you can.You can also use bottle caps instead of cardboard.7Attach the wheels to the skewers. Poke a hole in the center of each wheel. Slide the wheels onto the ends of the skewers. Make sure that they don't touch the cardboard, or they may get stuck. If the wheels are loose, place a drop of glue or clay on the end of the skewers. Don't worry, this won't stop the wheels from turning.If you used cardboard or foam core, you should be able to make the holes using a pen, pencil, or a skewer.If you used bottle caps, you will need to punch the hole using a nail and hammer. Ask an adult to help you.8Tuck a straw into a balloon and tape it in place. Slide a straw into a balloon by 2 inches (5.08 centimeters). Wrap some tape in a tight spiral around the end of the balloon. Extend the tape over the edge so that it covers part of the straw. Make sure that there are no gaps. You want an airtight seal.[16]Use regular balloon, not a water balloon, noodle, heart, alien, worm, etc.9Tape the straw to the top of your car. Turn the car so that it is standing on its wheels. Place the straw and balloon on top, each facing a narrow end. Make sure that the straw is straight. The balloon should be resting on top of the cardboard and the straw hanging over one of the ends. Tape the straw securely to the cardboard.[17]It's okay if the straw is hanging over the edge of the car. If it is touching the ground, trim it down.Don't let the balloon hang over the edge. If you do, it will bump against the ground and stop your car from moving.10Use the car. Blow some air into the balloon through the straw. Pinch the straw shut so that the air doesn't escape. Place the car on a smooth, flat surface. Let go of the straw and watch the car go![18]The straw is the back of the car. The balloon is the front.If the balloon is not holding air, there may be a gap. Wrap some more tape around the end of the balloon.If the balloon still is not holding any air, it might have a hole in it. Get a new balloon. Advertisement Add New Question Question Which of these methods work the best? The water bottle one. This is because it has the best aerodynamic shape than the other two. It will also go faster and farther. Question Why isn't my car moving forward? Try putting it on slippery surfaces like tiles and use rubber wheels. Avoid making your car too heavy. The lighter it is, the more easily it can move. Question What type of balloons work the best? Balloons that hold helium are thicker and can hold more air than ones meant for oxygen. Look for balloons specifically labeled for helium. See more answers Ask a Question Advertisement Thanks Thanks Thanks Show More Tips The advice in this section is based on the lived experiences of wikiHow readers like you. If you have a helpful tip youd like to share on wikiHow, please submit it in the field below. Decorating your balloon car with paint, duct tape, stickers or other embellishments can make the project more fun and interesting. You may also get better grades if you incorporate creativity into assigned balloon car designs. Ensure that the wheels don't rub against the body to prevent friction while moving. You'll also want to position the balloon so that it hovers just above the ground when placed on a surface. Any dragging can slow things down. Test that the bottle caps slide easily along the skewer axles before securing them as wheels. Its key that they spin freely. If too loose the wheels might slip off, but if too tight they wont roll smoothly. Opt for smooth surfaces like tile and short nap carpet to allow your balloon car to glide the farthest without extra friction weighing it down. The slicker the race track, the further its likely to go. Leave clearance around the balloon so that the wheels or body don't obstruct it once inflated. Without room to expand, the balloon cant propel the car forward. Taping a straw vertically to the back of your car will help guide it straight ahead like a rudder as it zooms along. Advertisement CardboardScissorsWooden skewersStrawsBalloonTapeDrink boxScissorsWooden skewersStrawsTape4 bottle capsModeling clay, hot glue, etc.Water bottleScissorsWooden skewersStrawsBottle caps, buttons, cardboard, etc.BalloonTape This article was reviewed by Amy Guerrero. Amy Guerrero is an Arts and Crafts Specialist and the Owner of Sunshine Craft Co., a crafting studio based in Phoenix, Arizona. Amy specializes in macrame, DIY crafting, and teaching fiber arts. She offers monthly in-person and online workshops along with having developed a range of DIY craft kits for at-home projects. Amy holds a BS in Industrial Design from Philadelphia University. She worked as a graphic designer before starting her own business. Sunshine Craft Co. is a creative hub that offers a wide range of workshops, tools, and resources for any craft project to inspire creativity and community engagement. This article has been viewed 1,184,862 times. Co-authors: 173 Updated: April 18, 2025 Views:1,184,862 Categories: Featured Articles | Balloon Crafts PrintSend fan mail to authors Thanks to all authors for creating a page that has been read 1,184,862 times. "So one day I joined this activity and had trouble; I looked at this and found it very helpful." Share your story Its so easy to make a balloon car that really moves! This simple STEM project teaches kids about physics in a fun and interactive way. See concepts like kinetic energy and Newtons laws of motion in action! (Read more on those below.)Use simple materials, like a water bottle and bottle caps, to create a balloon powered car that moves on its own! Its SO FUN to race the cars and to see how far theyll go!This post contains affiliate links. If you use these links to buy something we may earn a small commission which helps us run this website. Use a recycled water bottle and paper straws to make a balloon powered car! Its such a fun STEM project for kids of all ages! Gather your supplies and materials. Cut one of the straws in half. Cut both skewers (starting from the pointy end) to be a bit longer than the straw halves.If you have really sharp scissors you can cut right through the skewers. Otherwise, cut through as much as you can and then snap the skewers off. Make a hole in the center of the bottle caps using a small screwdriver.To do this, place the cap top up on a cutting board and push the screwdriver down into the center of the cap. Then pick up the cap and wiggle the screw driver all the way through until the hole is just large enough for the skewer to fit snugly into. Add a cap to the pointy end of the skewer, top first, and push it to the other side.It should be a snug fit, but you can add some hot glue inside the cap to keep it in place if necessary. Then add a straw half onto the skewer. Place a second bottle cap on the skewer, opposite to how the first cap was added, so both tops of the caps are pointing out.Repeat with the other caps, skewer, and straw half to make a second axle with wheels. Cut off the pointy end of the skewer so no one gets hurt. You can also trim the other end of the skewer if it sticks out too much. (We left between 1/4 and 1/2 inch outside the caps.) Tape the straws to one side of a plastic water bottle, a couple inches in from each end. Make sure that the straws are perpendicular to the bottle so that the wheels roll in the right direction.You can use patterned washi tape to help decorate your car, or simply use regular tape to attach the straws. Place the bottle with the wheels down and put the second paper straw into the bottles mouth, on an angle so it hits the top of the car/bottle. Hold the straw so that an inch is outside the mouth of the bottle. Then mark an inch below where the straw hits the inside of the bottle. (You can either make an actual mark with a marker, or just keep your finger on the spot like we did.) Remove the straw and use a craft knife (or scissors) to cut an X shape where you marked on top of the bottle. Slide a balloon onto the second straw and secure it to the end with a small elastic. Push the straw in through the X cut on the bottle, until the end of the straw comes out the mouth of the bottle. (There should be about 1 inch coming out the mouth of the bottle and 1 inch coming out the top of the bottle on the balloon end.) Now put your mouth on the straw end thats sticking out of the bottle mouth. Blow into the straw, which will in turn blow up the balloon.The elastic should keep the balloon in place and secure on the straw as it blows up, but if it leaks air you may need to adjust the elastic on the balloon or glue the balloon to the straw.Now put your finger on the end of the straw to hold in the air, and then let it go to watch the balloon car drive away! Your balloon car is complete! Helpful Tips:Make sure the the wheels of the car spin smoothly this is the key to making the car work!After racing the balloon car over and over, the paper straw may become soggy where your lips have been. Simply replace the straw with a new one and your balloon car is as good as new!How does a balloon car work?A balloon powered car is a simple machine, involving wheels (bottle caps) and an axle (the skewers). When you blow into the straw, air goes into the balloon and inflates it, creating potential energy. When you let go of the straw, the air in the balloon is released, and it becomes kinetic energy (energy from motion), and the car begins to move!Normally when you let go of a balloon it flies all over the place, but the straw funnels the balloons energy in a specific direction, allowing the car to move in a straight line!What Newtons law is shown in a balloon car?You can actually see all of Newtons laws of motion represented in the balloon car!Newtons 1st law says that an object in motion remains in motion until an outside force stops it. This is shown in the balloon car, because the balloon car keeps moving until friction stops it.You can also see Newtons 2nd law (force equals mass times acceleration). Basically, the heavier an object is, the more force it will take for the object to accelerate (or move forward). The balloon car accelerates at a speed determined by the cars mass (weight) and according to how much thrust the balloon gives it. (If you inflate the balloon more, the car will go further.)Finally, Newtons 3rd law of motion states that for every action there is an equal and opposite reaction. When you blow up a balloon, the rubber expands, which increases the pressure inside it.Then when you let the air out of the balloon, the rubber contracts, and the air gets pushed out backwards. This is a reaction force that pushes the balloon forward, demonstrating Newtons 3rd law.What can I do with a balloon powered car?There are a lot of fun things you can do with your balloon car:Measure the distance your balloon car travels (does it go further when the balloon is inflated more?)Make two balloon cars and race them to see which goes the furthest (are the cars made of different materials? why does one go further?)Add weight to the balloon car (tape a coin on the top) and see what difference it makesHow to make balloon car go faster?The lighter your balloon car is, the faster it will go. Try using different materials to make the balloon car to see what works the best!You can also minimize drag to make your balloon powered car go faster. Does the front of your car have any flat areas on it? A water bottle works well for this project because it has a curved shape that moves through the air more easily.Friction is also an important factor, because it makes the balloon car slower. Make sure your wheels turn well, and arent wobbly, or else they may slow down the car.Finally, you can improve the air speed as it releases from the balloon. First make sure that the balloon is airtight on the straw. Second, experiment with different straw diameters. Does a larger straw make the car go faster?Why are my balloon cars driving crooked?Your balloon car will drive crooked if the axles (skewers) are not facing perfectly forward. To make the balloon car drive straight, the straws holding the skewers must be parallel to one another and totally perpendicular to the water bottle.The axles will definitely start wobbling after the balloon car has crashed a few times. Try re-taping the straws to the bottom of the bottle with new tape, or even using hot glue to keep them in place.How else can I make a balloon powered car?You can use different objects to make your balloon car or put the car together in a different way. Try some of the following:Use a piece of cardboard, a juice box, or a paper roll as the body of the carGlue the straws to the bottom of the balloon car. Does this reduce the friction and increase the speed?Attach a helium balloon to your car instead of a regular party balloon. It holds more air, so does this make the car faster or make it travel a longer distance?Use old CDs or buttons as the wheels of the balloon carRe-purpose recycling objects to make a super fun balloon car. Creating your own car out of every day items is such a fun STEM activity!Heres even more STEM ideas:Balloon RocketPopsicle Stick CatapultHow to Make a Lava LampTornado in a JarOur bookLow-Mess Crafts for Kids is loaded with 72 fun and simple craft ideas for kids! The projects are fun, easy and most importantly low-mess, so the clean up is simple! 40+ DIY Car Games for Kids Love to cook, bake, craft, create? Download Article Level-up your science game with these wind-powered DIY cars Download Article Making a balloon car is a fun craft project and educational science experiment that can be done with kids. This activity can be used to help teach kids how wind energy can be used to propel an object, as well as other principles in physics like momentum, force, friction, and speed. It's also a great lesson in recycling and how to re-purpose waste items into fun toys. 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Use bottle caps or large coins to trace four circles onto a sheet of cardboard. Cut the circles out using a pair of scissors or a craft blade. Make the circles as even as you can.You can also use bottle caps instead of cardboard.7Attach the wheels to the skewers. Poke a hole in the center of each wheel. Slide the wheels onto the ends of the skewers. Make sure that they don't touch the cardboard, or they may get stuck. If the wheels are loose, place a drop of glue or clay on the end of the skewers. Don't worry, this won't stop the wheels from turning.If you used cardboard or foam core, you should be able to make the holes using a pen, pencil, or a skewer.If you used bottle caps, you will need to punch the hole using a nail and hammer. Ask an adult to help you.8Tuck a straw into a balloon and tape it in place. Slide a straw into a balloon by 2 inches (5.08 centimeters). Wrap some tape in a tight spiral around the end of the balloon. Extend the tape over the edge so that it covers part of the straw. Make sure that there are no gaps. You want an airtight seal.[16]Use regular balloon, not a water balloon, noodle, heart, alien, worm, etc.9Tape the straw to the top of your car. Turn the car so that it is standing on its wheels. Place the straw and balloon on top, each facing a narrow end. Make sure that the straw is straight. The balloon should be resting on top of the cardboard and the straw hanging over one of the ends. Tape the straw securely to the cardboard.[17]It's okay if the straw is hanging over the edge of the car. If it is touching the ground, trim it down.Don't let the balloon hang over the edge. If you do, it will bump against the ground and stop your car from moving.10Use the car. Blow some air into the balloon through the straw. Pinch the straw shut so that the air doesn't escape. Place the car on a smooth, flat surface. Let go of the straw and watch the car go![18]The straw is the back of the car. The balloon is the front.If the balloon is not holding air, there may be a gap. Wrap some more tape around the end of the balloon.If the balloon still is not holding any air, it might have a hole in it. Get a new balloon. Advertisement Add New Question Question Which of these methods work the best? The water bottle one. This is because it has the best aerodynamic shape than the other two. It will also go faster and farther. Question Why isn't my car moving forward? Try putting it on slippery surfaces like tiles and use rubber wheels. Avoid making your car too heavy. The lighter it is, the more easily it can move. Question What type of balloons work the best? Balloons that hold helium are thicker and can hold more air than ones meant for oxygen. Look for balloons specifically labeled for helium. See more answers Ask a Question Advertisement Thanks Thanks Thanks Show More Tips The advice in this section is based on the lived experiences of wikiHow readers like you. If you have a helpful tip youd like to share on wikiHow, please submit it in the field below. Decorating your balloon car with paint, duct tape, stickers or other embellishments can make the project more fun and interesting. You may also get better grades if you incorporate creativity into assigned balloon car designs. Ensure that the wheels don't rub against the body to prevent friction while moving. You'll also want to position the balloon so that it hovers just above the ground when placed on a surface. Any dragging can slow things down. Test that the bottle caps slide easily along the skewer axles before securing them as wheels. Its key that they spin freely. If too loose the wheels might slip off, but if too tight they wont roll smoothly. Opt for smooth surfaces like tile and short nap carpet to allow your balloon car to glide the farthest without extra friction weighing it down. The slicker the race track, the further its likely to go. Leave clearance around the balloon so that the wheels or body don't obstruct it once inflated. Without room to expand, the balloon cant propel the car forward. Taping a straw vertically to the back of your car will help guide it straight ahead like a rudder as it zooms along. Advertisement CardboardScissorsWooden skewersStrawsBalloonTapeDrink boxScissorsWooden skewersStrawsTape4 bottle capsModeling clay, hot glue, etc.Water bottleScissorsWooden skewersStrawsBottle caps, buttons, cardboard, etc.BalloonTape This article was reviewed by Amy Guerrero. Amy Guerrero is an Arts and Crafts Specialist and the Owner of Sunshine Craft Co., a crafting studio based in Phoenix, Arizona. Amy specializes in macrame, DIY crafting, and teaching fiber arts. She offers monthly in-person and online workshops along with having developed a range of DIY craft kits for at-home projects. Amy holds a BS in Industrial Design from Philadelphia University. She worked as a graphic designer before starting her own business. Sunshine Craft Co. is a creative hub that offers a wide range of workshops, tools, and resources for any craft project to inspire creativity and community engagement. This article has been viewed 1,184,862 times. Co-authors: 173 Updated: April 18, 2025 Views:1,184,862 Categories: Featured Articles | Balloon Crafts PrintSend fan mail to authors Thanks to all authors for creating a page that has been read 1,184,862 times. "So one day I joined this activity and had trouble; I looked at this and found it very helpful." Share your story Its so easy to make a balloon car that really moves! This simple STEM project teaches kids about physics in a fun and interactive way. See concepts like kinetic energy and Newtons laws of motion in action! (Read more on those below.)Use simple materials, like a water bottle and bottle caps, to create a balloon powered car that moves on its own! Its SO FUN to race the cars and to see how far theyll go!This post contains affiliate links. If you use these links to buy something we may earn a small commission which helps us run this website. Use a recycled water bottle and paper straws to make a balloon powered car! Its such a fun STEM project for kids of all ages! Gather your supplies and materials. Cut one of the straws in half. Cut both skewers (starting from the pointy end) to be a bit longer than the straw halves.If you have really sharp scissors you can cut right through the skewers. Otherwise, cut through as much as you can and then snap the skewers off. Make a hole in the center of the bottle caps using a small screwdriver.To do this, place the cap top up on a cutting board and push the screwdriver down into the center of the cap. Then pick up the cap and wiggle the screw driver all the way through until the hole is just large enough for the skewer to fit snugly into. Add a cap to the pointy end of the skewer, top first, and push it to the other side.It should be a snug fit, but you can add some hot glue inside the cap to keep it in place if necessary. Then add a straw half onto the skewer. Place a second bottle cap on the skewer, opposite to how the first cap was added, so both tops of the caps are pointing out.Repeat with the other caps, skewer, and straw half to make a second axle with wheels. Cut off the pointy end of the skewer so no one gets hurt. You can also trim the other end of the skewer if it sticks out too much. (We left between 1/4 and 1/2 inch outside the caps.) Tape the straws to one side of a plastic water bottle, a couple inches in from each end. Make sure that the straws are perpendicular to the bottle so that the wheels roll in the right direction.You can use patterned washi tape to help decorate your car, or simply use regular tape to attach the straws. Place the bottle with the wheels down and put the second paper straw into the bottles mouth, on an angle so it hits the top of the car/bottle. Hold the straw so that an inch is outside the mouth of the bottle. Then mark an inch below where the straw hits the inside of the bottle. (You can either make an actual mark with a marker, or just keep your finger on the spot like we did.) Remove the straw and use a craft knife (or scissors) to cut an X shape where you marked on top of the bottle. Slide a balloon onto the second straw and secure it to the end with a small elastic. Push the straw in through the X cut on the bottle, until the end of the straw comes out the mouth of the bottle. (There should be about 1 inch coming out the mouth of the bottle and 1 inch coming out the top of the bottle on the balloon end.) Now put your mouth on the straw end thats sticking out of the bottle mouth. Blow into the straw, which will in turn blow up the balloon.The elastic should keep the balloon in place and secure on the straw as it blows up, but if it leaks air you may need to adjust the elastic on the balloon or glue the balloon to the straw.Now put your finger on the end of the straw to hold in the air, and then let it go to watch the balloon car drive away! Your balloon car is complete! Helpful Tips:Make sure the the wheels of the car spin smoothly this is the key to making the car work!After racing the balloon car over and over, the paper straw may become soggy where your lips have been. Simply replace the straw with a new one and your balloon car is as good as new!How does a balloon car work?A balloon powered car is a simple machine, involving wheels (bottle caps) and an axle (the skewers). When you blow into the straw, air goes into the balloon and inflates it, creating potential energy. When you let go of the straw, the air in the balloon is released, and it becomes kinetic energy (energy from motion), and the car begins to move!Normally when you let go of a balloon it flies all over the place, but the straw funnels the balloons energy in a specific direction, allowing the car to move in a straight line!What Newtons law is shown in a balloon car?You can actually see all of Newtons laws of motion represented in the balloon car!Newtons 1st law says that an object in motion remains in motion until an outside force stops it. This is shown in the balloon car, because the balloon car keeps moving until friction stops it.You can also see Newtons 2nd law (force equals mass times acceleration). Basically, the heavier an object is, the more force it will take for the object to accelerate (or move forward). The balloon car accelerates at a speed determined by the cars mass (weight) and according to how much thrust the balloon gives it. (If you inflate the balloon more, the car will go further.)Finally, Newtons 3rd law of motion states that for every action there is an equal and opposite reaction. When you blow up a balloon, the rubber expands, which increases the pressure inside it.Then when you let the air out of the balloon, the rubber contracts, and the air gets pushed out backwards. This is a reaction force that pushes the balloon forward, demonstrating Newtons 3rd law.What can I do with a balloon powered car?There are a lot of fun things you can do with your balloon car:Measure the distance your balloon car travels (does it go further when the balloon is inflated more?)Make two balloon cars and race them to see which goes the furthest (are the cars made of different materials? why does one go further?)Add weight to the balloon car (tape a coin on the top) and see what difference it makesHow to make balloon car go faster?The lighter your balloon car is, the faster it will go. Try using different materials to make the balloon car to see what works the best!You can also minimize drag to make your balloon powered car go faster. Does the front of your car have any flat areas on it? A water bottle works well for this project because it has a curved shape that moves through the air more easily.Friction is also an important factor, because it makes the balloon car slower. Make sure your wheels turn well, and arent wobbly, or else they may slow down the car.Finally, you can improve the air speed as it releases from the balloon. First make sure that the balloon is airtight on the straw. Second, experiment with different straw diameters. Does a larger straw make the car go faster?Why are my balloon cars driving crooked?Your balloon car will drive crooked if the axles (skewers) are not facing perfectly forward. To make the balloon car drive straight, the straws holding the skewers must be parallel to one another and totally perpendicular to the water bottle.The axles will definitely start wobbling after the balloon car has crashed a few times. Try re-taping the straws to the bottom of the bottle with new tape, or even using hot glue to keep them in place.How else can I make a balloon powered car?You can use different objects to make your balloon car or put the car together in a different way. Try some of the following:Use a piece of cardboard, a juice box, or a paper roll as the body of the carGlue the straws to the bottom of the balloon car. Does this reduce the friction and increase the speed?Attach a helium balloon to your car instead of a regular party balloon. It holds more air, so does this make the car faster or make it travel a longer distance?Use old CDs or buttons as the wheels of the balloon carRe-purpose recycling objects to make a super fun balloon car. Creating your own car out of every day items is such a fun STEM activity!Heres even more STEM ideas:Balloon RocketPopsicle Stick CatapultHow to Make a Lava LampTornado in a JarOur bookLow-Mess Crafts for Kids is loaded with 72 fun and simple craft ideas for kids! The projects are fun, easy and most importantly low-mess, so the clean up is simple! 40+ DIY Car Games for Kids Love to cook, bake, craft, create?

How to make a car with a balloon.