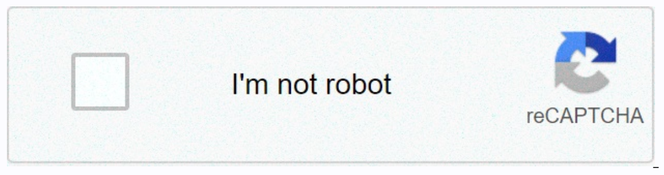

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Conclusion for balloon powered car

Conclusion Our car was slightly below average compared to the rest of the class. The average total distance reached 7,011 meters, and our car reached 6.14 meters. It also had a slower average speed of 1.38 m/s instead of 1,688 m/s. However, we had an above average time of up to 5 meters. Turning Spinner reached 5 meters in 4.45 seconds, while the average is 3.822 seconds. We probably would have made a smaller car if we could do the project again. If it were smaller, it would be easier, which would reduce friction and therefore reduce backward power. The most important advice is to remember that no matter how pointless, nothing seems to work better than trial and error. A good way to start is for each member of the group to bring as much potential material as they can find and then build multiple designs with these materials. After that, it's pretty easy to figure out what works and what doesn't work. THe SheLL Schade Segel Nicole Barett Science, per.3 Car Project Package sections in this package are: Pre-construction brainstorming materials and procedures Problems and technical difficulties Data collection / Testing Procedures Results and Graphics Experiment Pictures Conclusion Pre-construction brainstorming Tested questions: What design of a car in a hot air balloon will travel 5 meters fastest? What is the design of the car in the balloon will travel the farthest? Independent variable: The shape of the car materializes dependent variables: distance controlled variables: balloons Things that can increase the reverse force Of solving these problems Air resistance against the front of the car cut a hole at the top so that the air passes through the friction to get the wheels to move choking, and faster. uneven forces make the car a balanced drag make sure nothing is too heavy for the car under-pressure make sure the car isn't too light Things that can increase forward force Explain how your design will increase forward forces Put one balloon inside another balloon With two balloons that are deflation at the same time, it will cause more air to be pushed out quickly, increasing forward force. Smaller car won't be too heavy so balloons can't push its forward balloon strike more air force will push the car faster and further more straw air will push out of the straw faster, What thicker wheel wheels Wheels will have the right amount of friction List of all the materials you will need to bring to build the car: bottle 1.gatorade 2.tape 3.bottle caps 4.scissors 5.CDs 6.straws 7.sticks 8.balloons Which part of the car will be used for: 1.body 2. used to connect things together 3.wheels 4. used for cutting things 5.wheels 6.axel 7.axel 8.power for car Materials and procedures materials, used to design your car (Also include tools you used) 1.sticks 2. box wire 3.gatorade cover 4.drill 5.tape 6.hot glue gun 8.straws . Why did you decide to use this material? 1.axel 2.body car 3.wheels 4.used to drill holes 5.used to tie things together 6.glue things together 7.used to power car 8.axel and where the balloon releases aerial procedures - Written directions, to make a Diagram Machine – Draw, describe, and/or insert an image of what you did in this step (label if necessary) STEP 1 first we collected all the necessary materials. Our materials were:*bottle*straws*sticks*balloon STEP 2 put the wheels on the stick STEP 3 put the stick in thatch STEP 4 stick it to the car STEP 5 place the balloon around the straw STEP 6 place the straw and balloon on the CAR STEP 7 then blow it up and watch it go.. Problems and technical difficulties Describe the problem. You can also use drawings. Explain how you solved this problem. The #1: the wheels were falling all the time we placed gum around the sticks so they wouldn't fall off.. Problem #2: Car will not move We fixed the wheels so they will rotate the problem #3: The air did not pass through the car, so the car went slowly We cut the entire back of the car with experiment data table: Data of your car Time (seconds) Data timer 1 data Timer Data Master Timer data Average time distance (meters) 0 0 0 0 0 1.89 1 3.40 2 4.52 3 6.33 4 8.97 5 Distance vs. time table distance vs. Graph time (seconds) Position (meters) 0 0 1.89 1 3.40 2 4.52 3 6.33 4 8.97 5 Range is the object of acceleration, slowing or moving at a constant speed? Does the slope increase, decrease or constant? 0 - 1 meter acceleration increase 1 - 2 meters acceleration increase 2 - 3 meters acceleration increase 3 - 4 meters acceleration increase 4 - 5 meters acceleration Finding your car's speed: Counter 0: D = T = S = From 0 - 1 meter: D = T=S= From 1 - 2 meters: D = T = S = From 2 - 3 meters: D = T = S = From 3 - 4 meters: D = T = S = From 4 - 5 meters D = T = Speed vs. speed of the time table against. Timeline (seconds) Speed (m/s) 0 0 Accelerate distance range, Decline, or No acceleration of positive, negative or zero tilt? 0 - 1 meter 1 - 2 meters 2 - 3 meters 3 - 4 meters 4 - 5 meters Average speed of the car from 0 to 5 meters: Total distance = Total time = Average speed = Table of class data: Group Name Car Time up to 5 meters (sec) Average speed (m/s) Total distance (m) 1AB Rolling Kansas (D=12m) 6.23.80 5 meters 1CD zipper 5.27.95 5 meters 2AB Project inVertigo n/a .27 1 meter 1 meter2CD The Whistler n/a n/a0 meters 3AB Beagle Mobile n/a .64 3 meters 3CD Panda Express n/a n/a0 meters 4AB Casidilla n/a .57 2 meters 4CD Shelly n/a n/a 0 meters 5AB City Year 1.02 5 метр县в 5CD Баттерс н/д/а 0 метр县в 6AB Пузир машина n/a n/a 0 метр县в 6CD Сендвч н/д/а 0 0 7AB Pineapple Express n/a .44 4 meters 7CD Green Monster n/a .54 2 meters 8AB Tin Man n/a .84 4 meters 8CD Olga (D=11.4m) 2.87 1.74 5 meters Middle class Average 17.1175 6.274 31.5 . Experiment Photos Experiment Settings / Track Top View Side View Front view 45 degrees View Conclusion Does the car really not work . the car was made of random stuff and could have been made durable. if I could change anything about the car I would, made the wheels stronger. that it should have greater forward power. One thing I recommend is that you should start as soon as possible, think clearly, and take your steps before you make your car. Bring Science HomeOn the Shine of Scientific ActivityPeres your (balloon) engines! Find out how you can power an air-to-air game machine and a bit of physics knowledge. Then challenge the second one to the race! Credit: George Retseck Advertising Key Concepts Physics Kinetic Energy Potential Energy Saving Newton's Energy Laws Movement Introduction Turn a pile of garbage into a machine to play - and watch it! In this exercise you will learn some concepts of physics and use recycled materials to create a car for a game that moves the balloon. You can even find a friend, build two cars and race them against each other. Whose car will go fastest? The background may not seem like it was originally, but a simple balloon car is loaded with physics and engineering concepts! When you inflate the balloon, it stores potential energy in the form of stretched rubber and compressed air inside. When you release a balloon, that energy turns into kinetic energy - motion energy - when the balloon increases around the room. Some energy is also converted to heat through friction. Under the Energy Conservation Act, the total amount of energy is stored. Energy never disappears - it just changes to a different shape. Another way to think about balloon movement is to use Newton's third movement law: For every action, there is an equal and opposite reaction. When you inflate the balloon and then release the nozzle, rubber contracts and pushes the air out of the nozzle. This means that there must be an equal and opposite reaction - the air pushes back on the rubber, pushing the balloon forward. This principle is used in real rockets and jets that remove a high-speed flow of gases from the back of their engines, pushing the vehicle forward. In this project you will use this principle to build a car for the symil that moves forward with the flow of air, fleeing the balloon when it is deflationary. The car also contains a simple car: wheel and rear. This invention has been around for so long, we do it for granted--- and many of us drive wheeled vehicles every day. You will see, however, Your wheel and bridge to spin smoothly is a critical part of getting your car balloon to work! Materials Materials Materials Bottle Four plastic bottle caps Wooden skewer Two straws Balloon Ribbon Scissors or a sharp knife (Have adult use or control the use of this tool.) Adult training assistant Cut one of the straws in half. Scotch are both pieces of straw to one side of the water bottle. Cut the wooden skewer in half and push each piece through one of the straws. They will form your bridges. (Have help for adults.) Do not use scissors to bag a +-shaped hole right in the center of each plastic bottle cover. Press each lid of the bottle to the ends of the wooden skewers. They will form your wheels. Procedure Put your car on a flat surface and give it a good boost. Make sure the car rolls easily and coasts a little before you stop. If your car is stuck or doesn't roll smoothly make sure: your bridges are parallel to each other; a hole in each hat of the bottle in the center; and straws are securely pressed against the water bottle and do not snar. You can add a little glue if the tape is not enough. Scotch neck balloon around one end of the other straw. Wrap the tape very tightly so that the connection is sealed. Cut out a small hole at the top of the water bottle, just big enough to push the straw through. Push the free end of the straw through the hole and out of the bottle's mouth. Use the tape to fasten the straw to the bottle. Prod through a straw to inflate the balloon, then place your finger over the tip of the straw to trap the air. What do you think will happen when you put the car down and let go of your finger? Place the machine on a flat surface and release your finger. What's going on? See what adjustments you can make to make the car go further. What happens if you inflate the balloon more? What happens if you adjust the direction to which the straw is directed? Does it work best if the straw is directed straight back? Optional: There are many different ways to build a balloon car. Turn this into an engineering design project and try to build your car with different materials. For example: What happens if you use a cardboard box instead of a plastic body bottle? What happens if you use straws of different diameters? What about the different materials for wheels and bridges? Get some friends and try to build different cars and race them against each other. What materials work best? Observations and results When you inflate the balloon and release it, it accidentally zips around the room. When you shoot the balloon to the straw and attach it to the body of your car, however, you can control the direction of the air escape. When the end of the straw is pointed back, the air pushes your car forward, as described by Newton's third law of motion. Your design will be the most effective, straw is directed straight back, not down or to the side. The more you inflate the balloon, the more potential energy it stores, which in turn turns into more kinetic energy, energy, to the energy conservation law, so the car will go faster. You may find that your car doesn't work perfectly on the first attempt, especially if its bridges are not parallel or the wheels are wobbly. Too much friction can cause the wheels to get stuck and the balloon won't be powerful enough to push the car forward. Check your car to make sure the wheels spin freely and, when you give it a boost, the car rolls easily. If not, you may need to make some adjustments to the design. You should also make sure that no air escapes the balloon where it presses against the straw, and re-scotch it more tightly if necessary. Read more to explore balloon powered car challenge, from science buddy Newton laws of movement, from Physics4Kids under pressure: Launching a balloon rocket, from scientific American science activities to all ages!, from science buddies This activity has brought you in partnership with Science Buddy Law & Permissions Scientific American Space &; Physics is a roundup of the most important stories about the universe and beyondSubscribe Now! Ngo!