

Which wheels are faster?

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Acknowledgements

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Purpose

The purpose of my investigation is to find which size wheels on a skateboard will make me go the fastest.

Hypothesis

I think the bigger wheels will go down the ramp faster than the smaller wheels because the bigger ones are more dense and heavier than the smaller wheels.

By the early 1950's, some surfers had the idea to transfer the feeling of riding waves onto the streets. These dudes were nicknamed "asphalt surfers". The two states to first develop a kind of skateboard in the early 1950's were California and Hawaii. These early skateboards were shorter surfboards with wheels made out of metal without bearings.

In the late 1950's, skateboarding had its first peak. The U.S. economy boomed and this also affected the toy industry. During that time, the toy industry became aware of the board with wheels. In 1959, Roller Derby released the first official skateboard with some new technical developments. The skateboard was much easier to manipulate and handle. For this reason, skateboarders were able to develop new tricks and maneuvers. (History of Skateboarding, 2020)

In 1963, the first skateboard contest was held in Hermosa Beach, California. Skateboarding was not just cruising anymore. Skateboarders showed their skills in different disciplines like slalom or freestyle and companies started to assemble a team to sponsor the riders. As the popularity of skateboarding began to expand, the first skateboarding magazine "The Quarterly Skateboarder" was published in 1964.(History of Skateboarding, 2020)

A next big step was the further development of the shape of the boards. Larry Stevenson invented the "kicktail", and with it came a lot more possibilities to ride a skateboard. Change is the only constant element, and so it came to a point where skateboarding changed everything. (History of Skateboarding, 2020)

The invention of urethane wheels by Frank Nasworthy in 1972 allowed skateboarding to come back. Nasworthy started the Cadillac Wheels business, and it was possible to ride better, quicker and more easily with the new stuff. There was a true high point in a number of

skateboard styles such as freestyle, downhill and slalom. New magazines came out about this sport in 1975, including "Skateboarder Magazine". (History of Skateboarding, 2020)

Lots of new tricks were improved by all the different riders with their unique skills. Skateboarding hardware continued to be further developed: shapes changed and boards changed. Rodney Mullen was one of the first riders to move the Ollie through the streets for various tricks and spread a new form of skateboarding. Street skateboarding evolved and became very popular alongside other fun sporting activities such as BMX or inline skating.(History of Skateboarding, 2020)

The "Thrasher Magazine" was launched in 1981, and this magazine has been associated with street skateboarding, the core scene, punk rock and the "Skate And Kill" lifestyle slogan since then. Another well-known magazine, the 'Transworld Skateboarding Magazine', was established in 1983. A few smaller ones were formed next to these magazines and more skate shops were opened. The popularity of skateboarding has continued to grow because of this. (History of Skateboarding, 2020)

Titus Dittmann was instrumental In the growth of skateboarding in Germany. He imported skate-related goods from the United States and arranged competitions and various skateboarding events. In the 1980's, the Münster Monster Mastership became one of the main international tournaments for skateboarding. For that reason, skateboarding in Germany has become more and more popular. From the mid-1980s onwards, as a professional skateboarder, it was possible to earn good money and the skateboard industry boomed. (History of Skateboarding, 2020)

A skateboard is a small piece of wood in the shape of a surfboard with four wheels attached. One person rides the skateboard, with his feet directing the movement. Although some people use skateboards as short-distance transport, most are used for stunts. Skateboards are made up of three components: the deck (the actual board), the truck (a metal part that normally holds the wheels to the deck), and the wheels. The typical skateboard deck is around 81.3 cm (32 in) long, 8 in (81.3 cm) long. (Petruoso, 2020)

The first thing to do to narrow down the search for skateboard wheels is to determine what is the best wheel size for the board. The majority of skateboard wheels start at about 49 mm and go up to about 60 mm. Most wheels will be the longboard-style wheels until the size passes the 60 mm mark. Smaller wheels are lightweight, accelerate easily and are closer to the ground, making them usually better for technology. (Petruoso, 2020)

The most common method used today in making skateboard wheels uses two polyurethane components that are heated and blended together in a certain proportion in metering machines. At elevated temperatures, high-quality polyurethane wheels are mixed together (lower quality wheels are mixed at room temperature) and a liquid is produced. The liquid mixture is poured through a mixing chamber into aluminum molds (if the urethane is high quality, it is heated again) and allowed to harden into a solid. The difference in a high quality wheel versus lower quality as well as the size and weight of the wheel determine the overall acceleration and control of the board. Professional skaters use high quality wheels. Recreational skaters use mid to lower quality wheels mainly due to pricing. (Understanding skateboard wheels, 2020)

Materials

Skateboard

One set of skateboard wheels - 54 mm

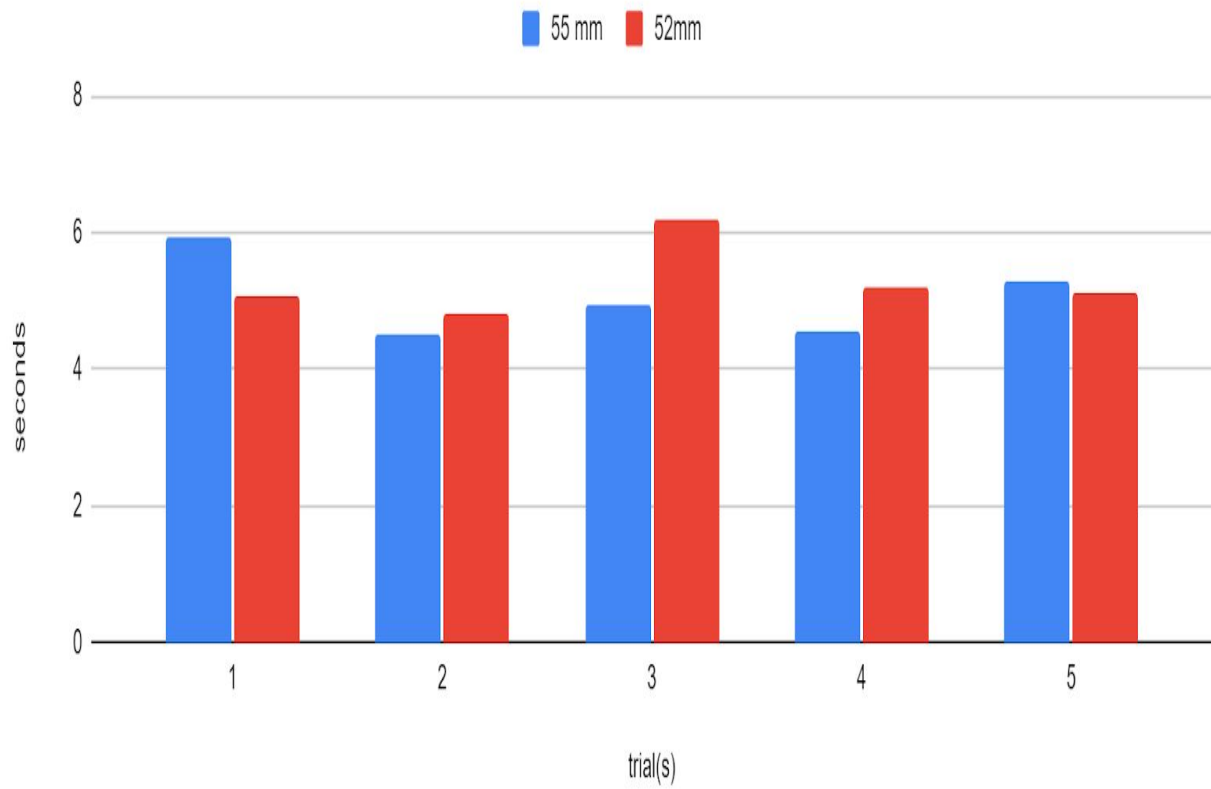
One set of skateboard wheels - 52 mm

Timer and person to operate timer and record times

Procedure

First I went to a skateboard shop and purchased 52mm wheels. I then went to Kaste Park, made sure the ramps were safe and clear and measured the distance between two ramps which was 35 feet. Then I went down the ramp 5 times each with the different sized wheels (52mm and 55mm). I used the same skateboard every time and changed the wheels in between. My parents timed me and then wrote it down on a paper where I recorded the data.

55 mm and 52mm wheels



I found that the bigger skateboard wheels, 55 mm, are faster than the smaller wheels at 52 mm.

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