Skateboard Science Webquest

This webquest is designed to help you gain a better understanding of the physics behind skateboarding. You need to complete the series of activities outlined below and answer any questions on this sheet. Go to [http://www.exploratorium.edu/skateboarding/index.html](http://www.exploratorium.edu/skateboarding/index.html) or if the page fails to load, go to [www.google.com](http://www.google.com) and type in the key words “skateboard science”. Select the first option from the list of websites that have been generated for you. You know you are on the correct website when it looks like the image below:

![Correct website image]

Scroll down and click on “what is a skateboard?”

1. A board has three main parts. What are they? ____________________________

2. Modern skateboards are made from traditionally how many piles of sugar maple veneers?_________________________________________

3. How many skateboards are done in one press? ___________________________

4. Why is maple wood considered the best material to make the boards from? ___________________________

5. What are skaters talking about when they refer to the “concave”? ________________

6. Complete this sentence:
   This curvature both ______________ the board and gives the rider more ______________ of the board.

Scroll to the top of the page and click on the menu item that says “Trick Science”
7. When skateboarding first began, what was the primary goal? ________________________________

Make sure you click on the “Asphalt Acrobatics” video

Scroll down the page and click on the blue writing at the bottom “Jumping: The Ollie”

8. When was the Ollie first invented? ________________________________________________

9. What does the Ollie technique allow skaters to do? ________________________________

____________________________________________________________________________________

10. Complete this sentence:

...To get the skateboard to jump _______, the skater pushes _______ on the board.

Make sure you click on the “Physics of the Ollie” video

11. What are the three forces acting on the skater before he performs the Ollie? ________________________________

____________________________________________________________________________________

12. Why does the skater crouch down? ____________________________________________

Scroll down the page and click on the blue writing at the bottom “Mid-Air Maneuvers”

13. What is a frontside 180? ______________________________________________________

14. What is the law of conservation of angular momentum? ________________________

____________________________________________________________________________________

Scroll down the page and click on the blue writing at the bottom “Pumping for Speed”

15. How does a skater in a half pipe or bowl generate more speed? _________

16. Pumping on a skateboard is closely related to pumping on what piece of playground equipment? ________________________________

17. As you move into the bottom the arc what force makes it harder than normal for you raise yourself? ________________________________

Make sure you click on the “Skating the Bowl” video

Scroll to the top of the page and click on the menu item that says “Equipment”. From the drop-down menu select the subheading “Wheels”.


18. What materials were the earliest skateboard wheels made from? 

19. What was one major disadvantage of having wheels made from this material? 

20. By the 1960’s what were wheels made from? 

21. What decade did the urethane wheel come into existence? 

22. Give two reasons why urethane was considered to be an excellent material to make wheels from. 

23. How could adding colours to the wheels, weaken them? 

Scroll down the page and click on the blue writing at the bottom “Bearings: A Smooth Ride Inside”

24. What is one disadvantage of having exposed ball bearings on the wheels of your skateboard? 

25. How big are the wheels necessary for street skating? 

Scroll down the page and click on the blue writing at the bottom “So What the heck is a “truck”, anyway?”

26. What is a truck? 

27. How do you steer to the right on a skateboard? 

28. Complete this sentence: 
   *Tightening the kingpin nut makes the board more _______, but makes it much _______ to turn. _______ it, and the board becomes _______, but much _______ to turn.* 

Scroll down the page and click on the blue writing at the bottom “In the end, the ride’s the thing”

29. Complete the sentence: 
   *When it comes to the crux of designing skateboards, all the___________ in the world won’t make any___________ if the board doesn’t_________ right under the_________ of the skater.* 

END OF WEBQUEST