

Treasure Hunt with Science of Cycling

<http://www.exploratorium.edu/cycling/>

1. If the "Ordinary" bicycle was so dangerous, why do you think people continued to ride them?

2. Can you explain the difference between tangential and radial spokes? On the back of this paper, draw a diagram to illustrate the differences.

3. Why would the pneumatic (or air-filled) rubber tire make such a difference with the comfort of bicycling?

4. Can you name three facts that show how gears and chain drives made bicycling easier and safer?

- a) _____
- b) _____
- c) _____

5. Explain why you would rather have either a bicycle made out of thin-walled steel tubing or made out of thick-walled aluminum tubing.

6. This tutorial lists five kinds of braking systems used with bicycles: plunge, coaster, caliper, drum, and disc. What kind of brake does your bicycle have? What problems or advantages have you found with this kind of brake?

7. Calculate the minimum stopping distance of a bicyclist on this page:

<http://www.exploratorium.edu/cycling/brakes2.html>. Without changing your speed, check to see how long it takes to brake on dry concrete, wet surface, sand, and ice. Record your answers.

_____ Dry Concrete _____ Wet Surface _____ Sand _____ Ice