
Design Challenge

Distracted Driving

The Bridge Riddle

[Bridge Riddle Video](#)

The Bridge Riddle

- ❖ At most 2 at a time (must have lamp with them) can cross
- ❖ Can be alone in the dark on either side
- ❖ 17 minutes total
- ❖ You = 1 minute
- ❖ Lab Assistant = 2 minutes
- ❖ Janitor = 5 minutes
- ❖ Professor = 10 minutes
- ❖ NO TRICKS!!!!

What's my rule?

- ❖ Propose a set of three numbers to determine my rule.
- ❖ I'll reply "Yes" or "No"
- ❖ What is the rule?

<https://youtu.be/vKA4w2O61Xo>

What's my rule?

2

4

8

<https://youtu.be/vKA4w2O61Xo>

Video 1

Video 2

Design Challenge: Distracted Driving

- ❖ Cell phones are one of the most common distractions for drivers. Drivers engaged in text messaging on a cellular phone are 23 times more likely to be involved in a crash or near crash event compared with non-distracted drivers. (Virginia Tech Transportation Institute, 2010)
- ❖ 84% of distracted-driving-related fatalities in the US were tied to the general classification of carelessness or inattentiveness (National Highway Traffic Safety Administration, 2009)
- ❖ 80% of collisions and 65% of near crashes have some form of driver inattention as contributing factors (National Highway Traffic Safety Administration, 2010)
- ❖ Distracted drivers are 3 times more likely to be in a crash than attentive drivers (Alberta Transportation, 2011)
- ❖ Driver distraction is a factor in about 4 million motor vehicle crashes in North America each year
- ❖ Children are four times more distracting than adults as passengers, and infants are eight times more distracting than adults as passengers
- ❖ Economic losses caused by traffic collision-related health care costs and lost productivity are at least \$10 billion annually. That's about 1% of Canada's GDP! (Government of Canada)
- ❖ In 2010, distracted driving was a contributing factor in 104 collision fatalities in British Columbia (RCMP)
- ❖ International research shows that 20% to 30% of all collisions involve driver distraction (Alberta Transportation, 2011)

<http://distracteddriving.caa.ca/education/index.php>

Design Challenge: Scenario

- ❖ The school year has just begun and there are lots of children on the street.
- ❖ A driver using a mobile phone while driving has injured a child
- ❖ There is a large public outcry over the situation with lots of media coverage

Design Challenge: Scenario

- ❖ **Mayor:** You feel the burden of the situation and want to help address the issue to prevent any further casualties in your city.
- ❖ **Car Manufacturer:** You are getting a lot of bad publicity as the media is showing your vehicle brand associated with the tragedy.
- ❖ **Mobile Phone Manufacturer:** It has been made public that your device was the one being used. Additionally there has been a lot of social pressure against using yours and similar devices in these situations and social settings.
- ❖ **Entrepreneur:** You have been touched by the situation and feel the need to come up with a solution.