Chapter 14:   The Nature of Speed
Section 14.4 (pgs. 264 - 265)

Distance Travelled During Reaction Time

<Question> Why are speed limits different for different roads?

- windy or steep roads or type of road
- zones of traffic
- weather conditions

- Driver reaction time does NOT really change at different velocities

- Distance travelled during the reaction time DOES change

Example

If Pat has a reaction time of 0.15 minutes, how far does his car go before he even hits the brakes, if he is travelling at:

a) 60 km/h?

$$t = \frac{0.15 \, min}{60 \frac{min}{h}}$$

$$= 0.0025 \, h$$

$$v = 60 \frac{km}{h}$$

$$\boxed{d = vt}$$

$$d = 60 \frac{km}{h} (0.0025h)$$

$$= 0.15 km \quad \times 1000$$

$$= 150m$$

b) 100 km/h?

$$d = vt$$

$$= 100 \frac{km}{h} (0.0025h) = 0.25 km$$

$$= 250m$$

Example (Try This! page 264)

Suppose your reaction time is around 0.25 seconds. Calculate the number of metres your vehicle travelling at 100 km/h will go in those 0.25 seconds before you even hit the brakes. (1 km = 1000 m, 1 h = 3600 s)

$$t = 0.25 s$$

$$V = 100 \frac{km}{h} \div 3.6$$

$$= 27.\overline{7} \frac{km}{h}$$

$$d = vt$$

$$= 27.\overline{7} \frac{km}{h} (0.25 s)$$

$$= 6.925 m$$

Braking Distance: the distance that a vehicle travels after the driver applies the brakes

Stopping distance: includes the distance travelled during reaction time PLUS the braking distance.

Reaction Time + Braking Distance

ie) Yellow Lights are set to last different lengths of time to compensate for seeing the light, reacting AND stopping before the red light.

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Following Distance: distance with which to safely follow another vehicle and stop in time (at that   speed).

- No matter how fast your reaction time, vehicles still require a certain time to stop.

- Following too closely is against the law (tailgating).

To Do

- CYU(p265)#1-4
- Do Sec 1+2 of Module Booklet
- Chapter 13 & 14 Vocab