

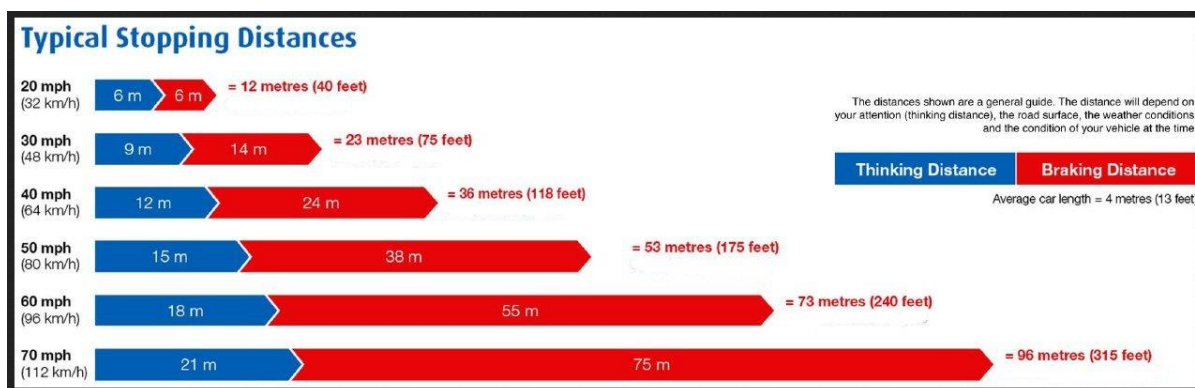
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ANSWERS

In this activity we will be looking at stopping distances for cars and lorries.

First see what the highway code says about stopping distances.



The table says an average car length is 4m. Is this correct? Here are the lengths of 10 cars. Find the mean length and the median length.

Ford Fiesta 3950mm

Ford Focus 4358mm

Fiat Bravo 4336mm

Renault Megane 4295mm

Vauxhall Astra 4419mm

Volkswagon Golf 4225mm

Skoda Rapid 4483mm

Smart Forfour 3495mm

Rover Streetwise 3980mm

Rolls Royce Silver Shaddow 5181mm

Mean= 4272.2mm

Median= 4315.5mm

Rolls Royce



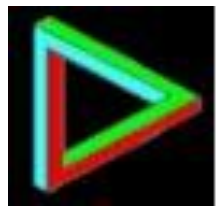
Ford Fiesta



Vauxhall Astra



Do you think the Highway Code is right to say the average length of a car is 4m? **Yes**



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If the Rolls Royce was removed from the sample what difference would it make to the averages?

Mean= $37541/9 = 4171\text{mm}$

Median = 4295mm

1m=39.37 inches. 12 inches =1 foot. How long is 4m in feet? Round your answer to 1 decimal place.

157.48 inches = 13.123333 feet 13.1feet

Is the Highway Code correct to say 4m =13 feet? Yes

Look at the graph from the Highway Code.

Stopping distance = thinking distance (blue) + braking distance (red).

What is the stopping distance at 20mph. 12m

How many car lengths is this? 3

Measure 12 m in the room or corridor to see how long this is. It is about the same length as a bus.

What is the stopping distance at 30mph? 23m

How many bus lengths is this approximately? 2

How many car lengths is this? 6

What is the total stopping distance at 40mph? 36m

How many car lengths is this? 9 car lengths

How much longer is this than the stopping distance at 20mph? 3 times

What is the stopping distance at 70mph? 96 metres

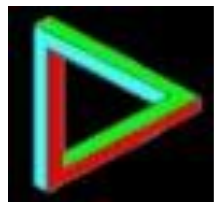
How many car lengths is this? 24 car lengths

How many bus lengths? 8

How much further is this than at 20mph? 8 times

Fill in the table

Speed mph	Thinking Distance m	Braking Distance m	Stopping Distance m	Car lengths
20	6	6	12	3
30	9	14	23	6
40	12	24	36	9
50	15	38	53	13
60	18	55	73	18
70	21	75	96	24

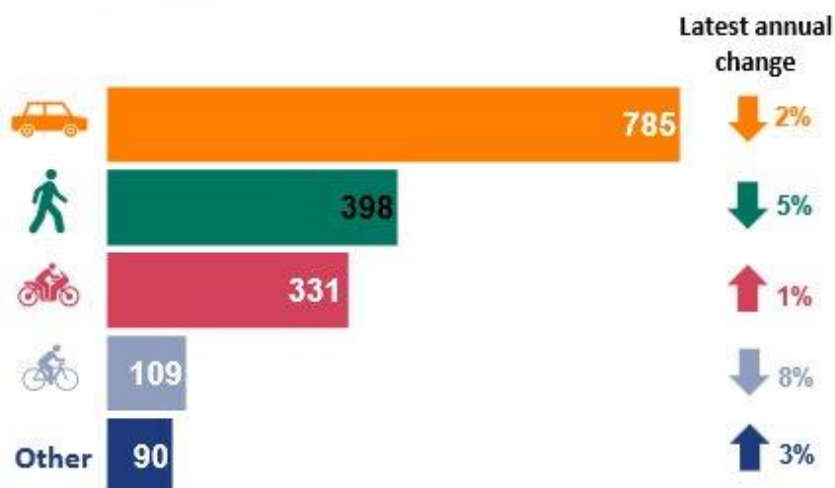


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This graph is from the Department of Transport 2013 Reported road casualties Great Britain

In 2013, 785 fatalities were car occupants (46 per cent of all fatalities) ...



**Other consists mainly of goods vehicle and bus and coach occupants*

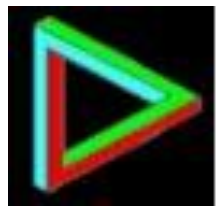
How many casualties were there altogether in 2013?

1713

Fill in the table to find the percentages of each type of casualty. Round the percentages to one decimal place.

Type of fatality	Number	Percentage
Car	785	45.8
Pedestrian	398	23.2
Motor Cyclist	331	19.3
Cyclist	109	6.3
Other	90	5.2
Total	1713	

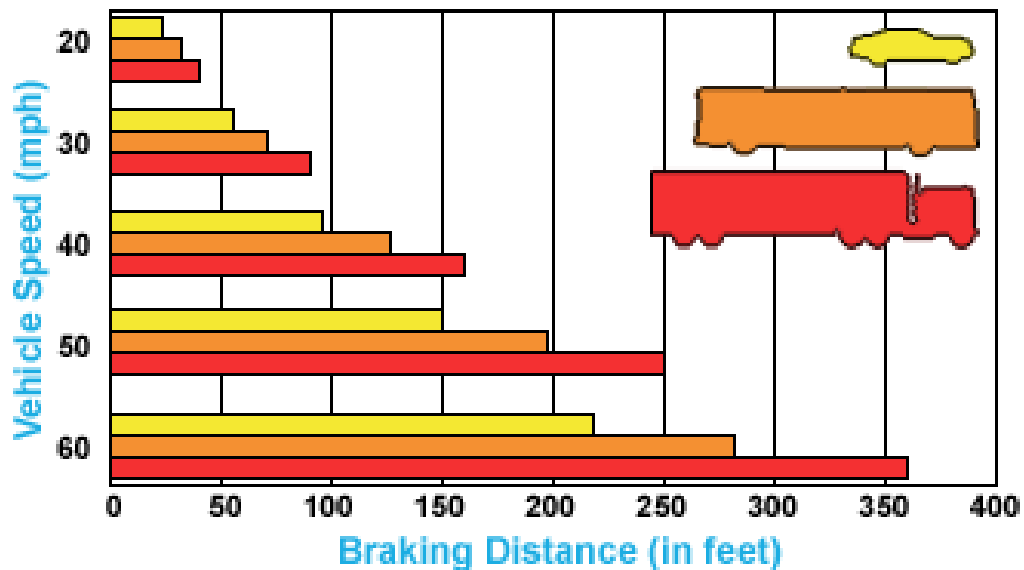
Which types of fatality increased between 2012 and 2013? Motor Cyclist. Other and Motor Cyclist



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RELATIVE STOPPING DISTANCES for passenger cars, buses, and large trucks



This bar chart compares the stopping distances of cars, buses and lorries.

If a lorry is travelling at 60mph what is its stopping distance?

360 feet (accept between 355-365)

How many metres is that? (Give your answer to the nearest metre.) $360 \times 12 / 39.37$
 $=109.72\text{m}=110\text{m}$ (accept anything between 107 and 111m.)

Which of these is this the same as?

- A. The length of the Men's Olympic hurdles race. **(correct)**
- B. The length of 3 buses. **(no this is only 36m)**
- C. The length of 20 cars. **(No this is only 60m)**
- D. The width of a football pitch. **(No this is between 45 and 90m)**

How much greater is the stopping distance at 60mph for a lorry compared to a car?

360-220=140 feet

This is about the same as a stopping distance for a bus at **40** mph.

When you are driving keep to the speed limits! Don't let this happen to you.

