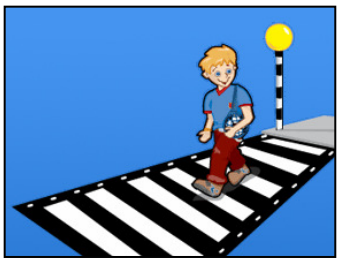
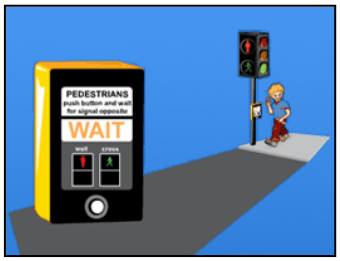
CROSSING THE ROAD





Outside your school do you have a safe place to cross the road?

Write a sentence saying how you cross the road outside your school.

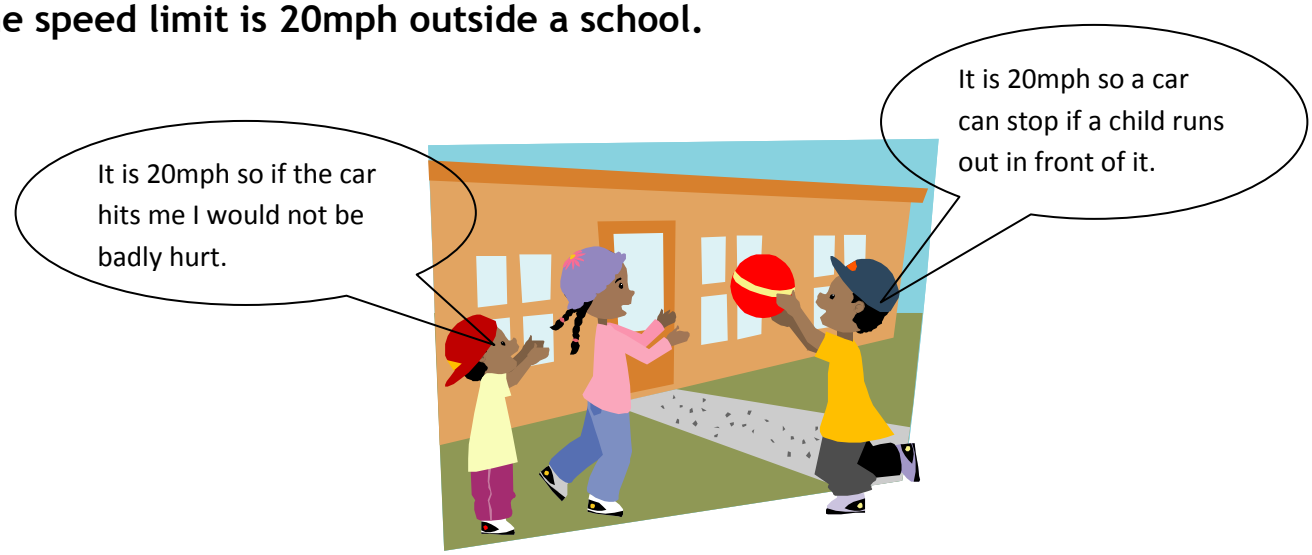
Sometimes there is no crossing to help you cross the road safely and you need to cross the road. How are you going to do this?

Look at the road shown in the picture below and write down where you would cross the road.

Try this activity.

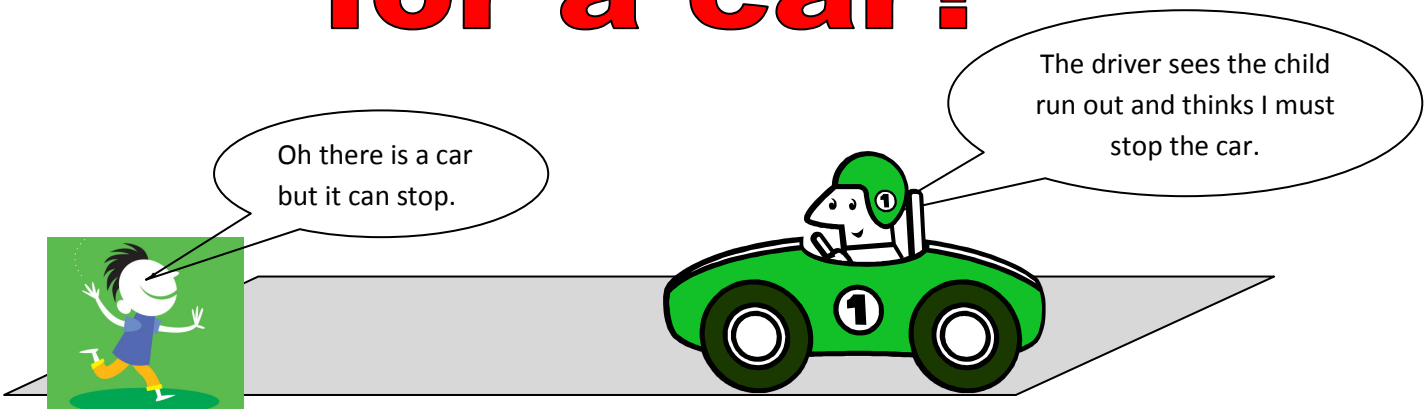
http://www.dft.gov.uk/think/education/early-years-and-primary/media/traffic_coming/

The speed limit is 20mph outside a school.



What do you think?

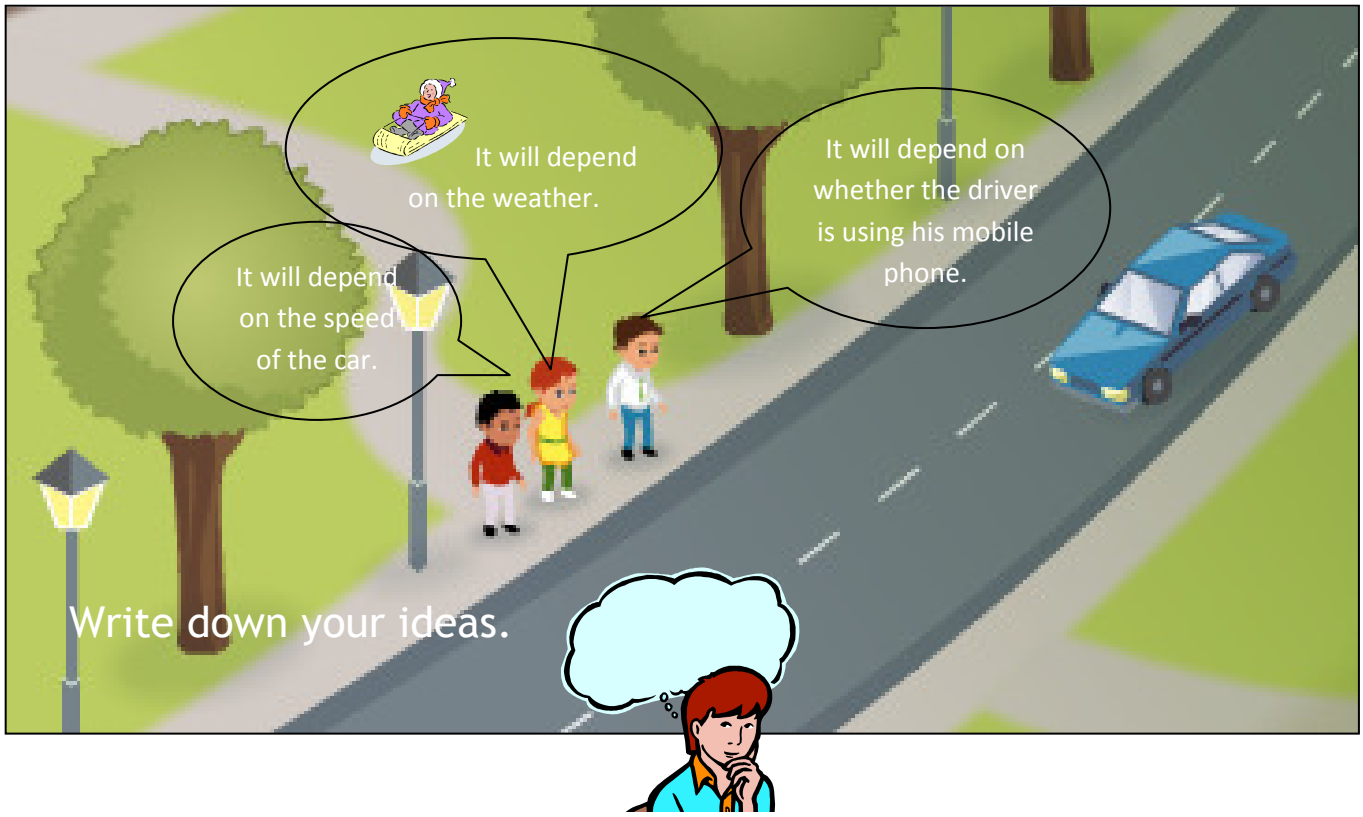
What is the stopping distance for a car?



Will the car be able to stop?

You are going to find out the stopping distance for a car.

What do you think the stopping distance will depend on?



Thinking distance

The thinking distance = speed of the car x the reaction time of the driver.

Will the thinking distance change as the speed of the car changes?

Braking distance

The braking distance is the distance a car travels once the brakes have been applied until the car stops.

Stopping distance

Can you think how you could work out the stopping distance?

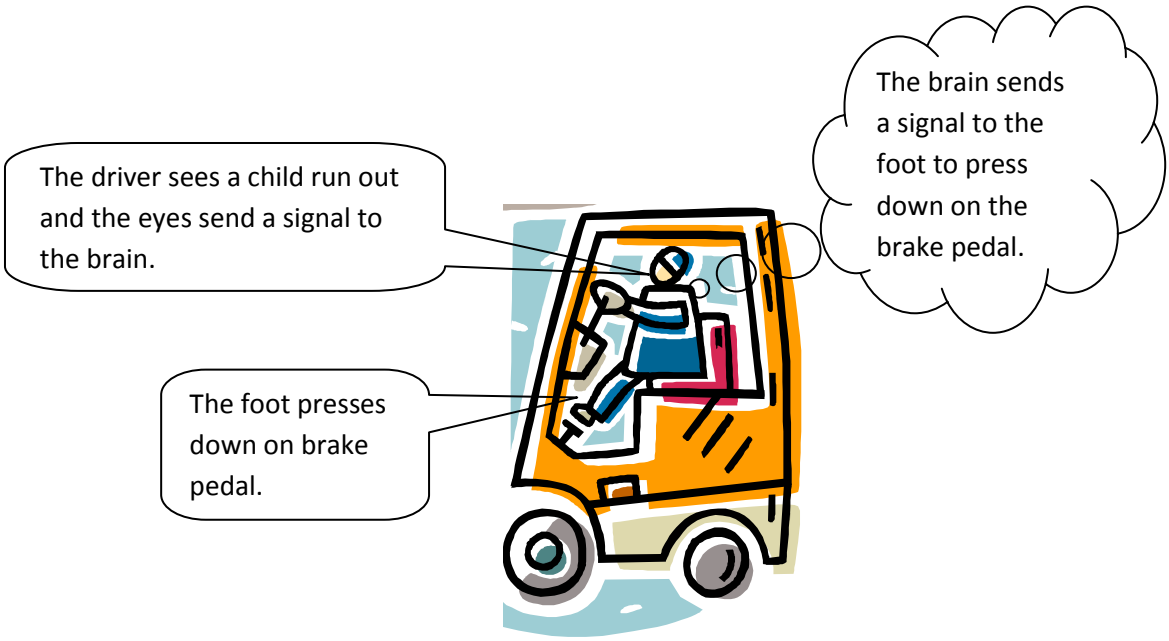
Stopping distance = _____

You are going to use the box your teacher gives you to work out the stopping distances for a car travelling at;
20mph,30mph,40mph,50mph,60mph and 70mph.

You are also going to find out what your reaction time is.

Do you think your reaction time will change if you are not concentrating? How will it change? Write a sentence saying how your reaction time will change and why you think it changes.

What is your reaction time?



The time it takes from the driver seeing the child to the foot pressing down on the brake pedal is called the reaction time.

Apparatus

- The Road Safety Reaction Timer unit,
- a sheet of paper and
- a pencil.

Method

- You are going to measure your reaction time using the apparatus provided.
- You will need to repeat your results to check they are reliable.
- You are also going to record the thinking distances and the stopping distances for the different car speeds.
- You will need to copy tables shown below before starting your experiment.

Results

Reaction time

Try	Reaction time. (milliseconds)	Reaction time when talking. (milliseconds)	Reaction time when using a mobile phone. (milliseconds)
1			
2			
3			
Average			

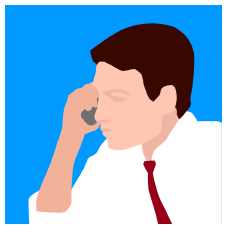
Do the following with one reaction time

Speed (mph)	Thinking distance (m)	Braking distance (m)	Stopping distance (m)
20			
30			
40			
50			
60			
70			

Using your Road Safety Reaction Timer

- Select a speed,
- press start button,
- when the light comes on and the buzzer sounds,
- press the stop button.
- Write your first try reaction time result in your table.
- Write down the thinking distance and the braking distance.
- Repeat this two more times so you have three results.
- Find your average reaction time.
- Does the thinking distance change? If it does you will need to find its average value.
- Does the braking distance change? If it does you will need to find its average value.
- Press the start button then start talking in your group.

- When the horn sounds and the light comes on press the stop button.
- Write down your reaction time when talking.
- Press the start button then start talking on a mobile phone.



- When the horn sounds and the light comes on press the stop button.
- Write down your reaction time when talking on a mobile phone.

Displaying your results

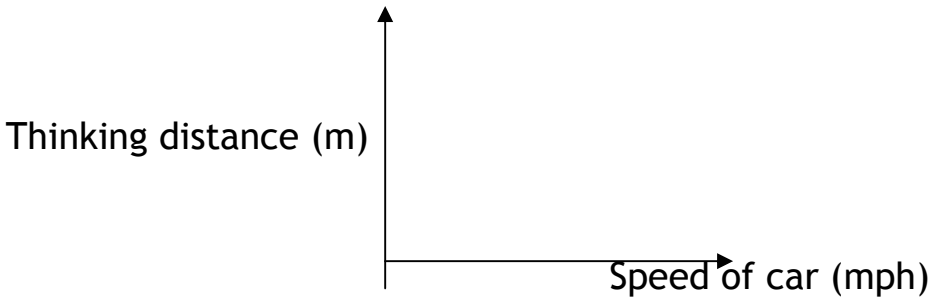
Make a class bar graph showing everyone's reaction time. Do they vary much?

Does your reaction time increase if you are using a mobile phone?

What advice would you give to a driver about using a mobile phone?

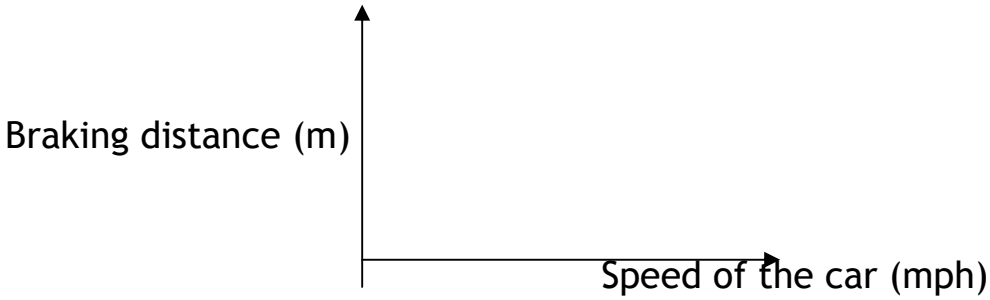
Make a poster that will give your advice to a driver.

Plot a graph of the thinking distance against the speed of the car.



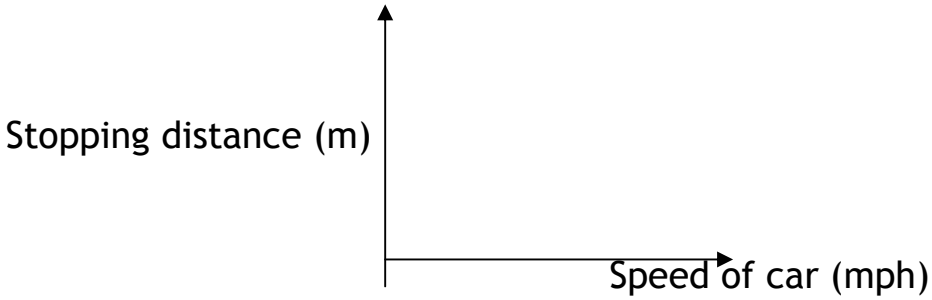
How does the thinking distance change as the speed of the car increases? Write down what you can say looking at your graph.

Plot a graph of the braking distance against the speed of the car.



How does the braking distance change as the speed of the car increases? Write down what you can say looking at your graph.

Plot a graph of the stopping distance against the speed of the car.



How does the stopping distance change as the speed of the car increases? Write down what you can say looking at your graph.

Measuring out stopping distances

In your group go and measure out the stopping distance for 20mph, 30mph, 40mph, 50mph, 60mph and 70mph in the play ground or in your school corridor, as instructed by your teacher, and place markers so you can see the distances clearly.

Why do you think there is a speed limit of 20mph in housing estates?

Write down your reason in your jotter.

How far apart should cars be when travelling at 70mph? Can you make a poster that will make people aware how big this distance is?