

Lockerbie Academy

Learning @ Home

Activities – S1-3



Year group

S1

S2

S3

Subject/Teacher

S2 Physics (all classes) Physics & Road Safety

Online activities

Work through the Speed Powerpoint that will be on TEAMS and on <https://www.mrsphysics.co.uk/bge/transport-2018/>

Check the work on TEAMS and www.mrsphysics.co.uk/bge We will set an online ASSESSMENT at the end of APRIL.

IN addition try some of the RESEARCH TASKS below

Do NOT complete the AIR BAG practical until the FULL RISK ASSESSMENT has been uploaded.

By the Easter Holidays" you should have covered

Road Safety and Road Signs

Average Speed

Instantaneous speed

Reaction Time

Thinking Distance, Braking Distance and Stopping distance

Alternative activities

Research Tasks- Take a note for your SALs Booklets

Welcome to the Lockerbie Academy Additional Work Sheet. Hopefully you'll be working your way through the power point on TRANSPORT 1 -SPEED, which I am in the middle of updating

There are plenty of speed distance time calculations you can do and I'll add work on calculators.

Why don't you make some suggestions about where Physics and Road Safety meet?

Choose 1 or more of the following 8 tasks to complete. Don't complete the practical until I've uploaded the full risk assessment.

1. Road Safety Statistics

Are you bored already and need something to get your teeth into?

<https://roadtraffic.dft.gov.uk/custom-downloads/road-accidents>

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/848485/road-casualties-year-ending-june-2019.pdf

Why don't you select a group of road users, years, speed limits, type of road users, country, Region and research to see if you can find out some of the following

- a) On which roads do most road deaths occur?
- b) Which group of road user have the highest death toll?
- c) Which part of Great Britain has the highest injuries and why?
- d) Why are most deaths on roads with speed limits of 21-30 mph?
- e) Are there differences between male and female drivers? Are there enough details for you to say who is a safer driver?

Ask yourself some questions to answer

Make sure you try to show your results in a table, graph or pie chart. Why not have a play with EXCEL? I'll try to update the Excel for 2016 a.s.a.p. but I've other things to do first.

2. Road Signs

How about trying to learn your road signs?

<https://highwaycodetest.co.uk/road-traffic-signs/>

If you can't face doing 157 questions try some of these tests.

<https://www.driving-school-beckenham.co.uk/mocktheory5.html>

<https://theorypass.co.uk/road-traffic-signs-2/>

3. Reaction Time When Driving

If you are doing this task you'll need to graph your results. Do your reactions improve as you play the game? Can you get the scores of your friends and plot data from you and your friends. Do older students have better reactions?

<https://www.justpark.com/creative/reaction-time-test/>

<https://www.humanbenchmark.com/dashboard/reactiontime>

4. SPEED SURVEY

Activities

There are many reasons and excuses for speeding (such as "I was late", "everyone else does it" and "I enjoy driving fast").

In a pair:

- Make a list of all the reasons you can think of
- Create a questionnaire (example opposite)
- Ask people you know who drive (parents, their friends, teachers, etc) to complete the questionnaire
- Keep the questionnaires anonymous, but record whether the respondents are male or female and their age
- Collate all the responses together.

Speeding Questionnaire

Produce a report analysing the results and identifying the most common reasons for speeding and any differences between men and women and between age groups.



Respondent 1	Male	Female	Age	
Reason for Speeding	Never	Sometimes	Often	Always
Late				
Other drivers speeding				
I think it's safe to speed				

Discussion Points In small groups:

- Brainstorm the best ways of raising awareness about the dangers of speeding.
- What methods would you use e.g. TV adverts, posters, something else?
- Where would you target publicity? (locations/events)



Activities

Design an awareness raising campaign to include a leaflet, poster and press release.

Who do you think are the key target groups? Think about age, sex, and also social activities. Also take into consideration those locations and times where speeding is more common. Decide whether to cover all drivers or a specific group (does your decision change the method you would use, your target group or where you would locate the campaign?)

Think about campaigns used by other groups and try to make yours effective for your target audience. Run your campaign either in school or in your local community, make sure that you establish a way to evaluate the success of the campaign. Set a time limit for the campaign, this could be a couple of days or a week or more. You will need to

draw up a plan of action to ensure the smooth running of the campaign and source all the materials that you need to set it up. Have you ever been a passenger in a car and been concerned that the driver is going too fast? Look at www.brag.org.uk to see how one group of young people have dealt with this issue.



Take it further...

Did you know?

In 2004 a survey of vehicle speeds in Britain:

- 53% of car drivers exceeded the speed limit on 30 mph roads in built-up areas
- On 40 mph roads, 27% of car drivers exceeded the speed limit
- On motorways, 56% of car drivers exceeded the speed limit
- On dual carriageways in non-built up areas, 49% of car drivers exceed the speed limit
- 48% of motorcyclists exceed the speed limit on 30 mph roads in built up areas.

Activities

In the future, cars may not be able to exceed the speed limit. Using the Useful Links section, find out about Intelligent Speed Adaptation (ISA). Organise a class debate. Have one or two people to speak for and against the motion "This class calls for all cars to be fitted with technology to stop them exceeding the speed limit". Think about the advantages and disadvantages of taking the control away from the driver. What is best for society?

5. DRIVER ALERTNESS / PERCEPTION

Will you be an alert driver? Can you spot and react to the hazards. Write a report about what you found out.

<https://www.driving-test-success.com/theory-test-alertness/theory-test-alertness.htm>

<https://www.theory-test-online.co.uk/free-hazard-perception-test-demo.htm>

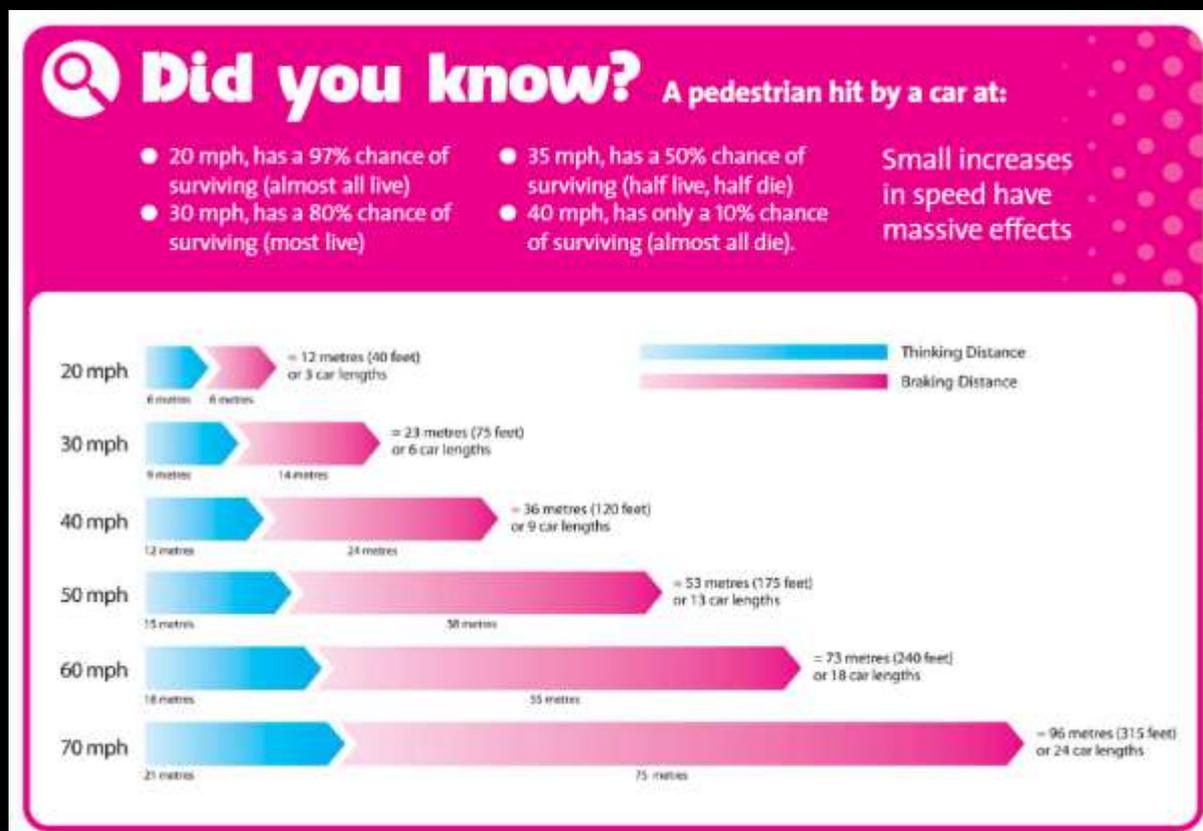
<https://highwaycodetest.co.uk/alertness/>

<https://www.youtube.com/watch?v=Rtd0cYgaNcE>

https://www.youtube.com/watch?v=FdV_akxUnEM

<https://www.youtube.com/watch?v=eGn6bzkhGac>

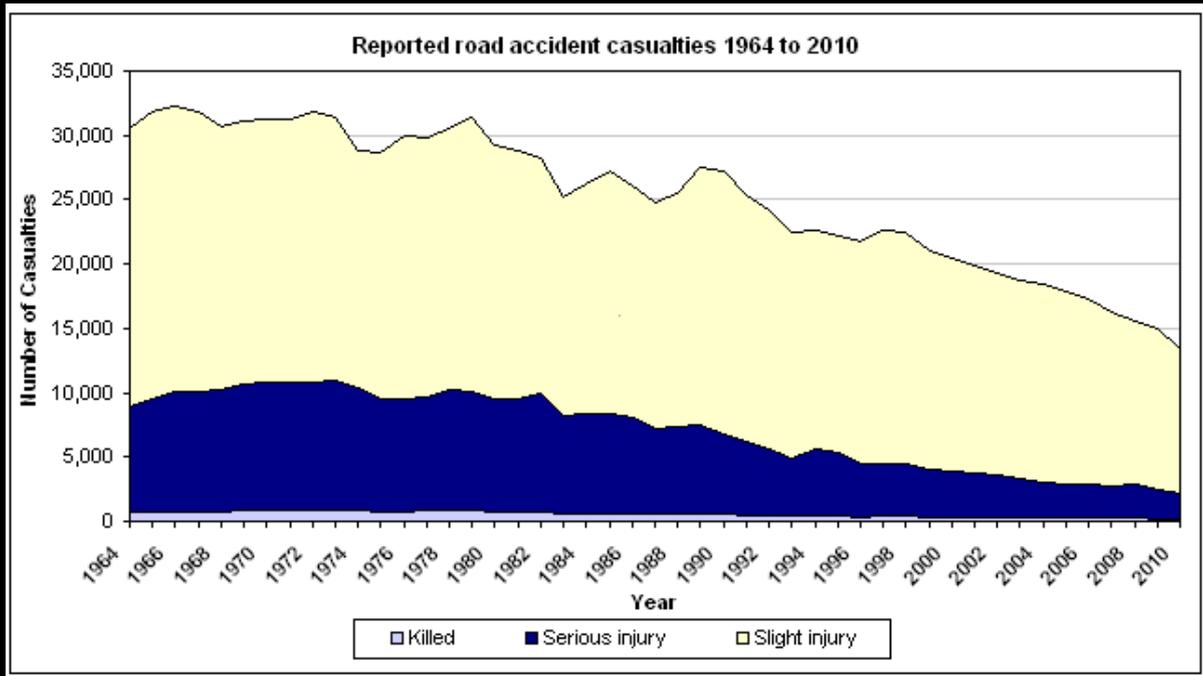
6. Practice Excel



Can you plot this data in EXCEL in a graph? Make it a stacked graph. Search online for a better diagram.

7. Road Safety Analysis

Look at the road statistics below. State what you can see in the data and can you give reasons for the massive changes since 1964 in the numbers of road deaths, injuries and severe injuries.



8. AIR BAG PRACTICAL

If you have this material in the house you might want to try this, but you ought to wear goggles and you **MUST** check with an adult before completing. You'll need a tray underneath as this could make rather a big mess.

<http://sciencenetlinks.com/lessons/its-a-crash-test-dummy/>