**Formula 1 lesson ideas**

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| Hook ideas | Are you faster than a formula 1 car? | What makes a great F1 circuit? | First or last? What’s the difference?Fast in practice, fast in qualifying? | Do all the wheels turn at the same rate? |
| Settling Activity | Formula 1 – the basics, qualifying / race day | What shapes or parts of shapes can you see in these F1 circuits? | What is the smallest amount of time that we can measure? | Discuss Hook! |
| Starter | Discussion of speed, where is it used commonly? Important or not?  | Discussion of the reason for the different size curves etc, how does this affect an F1 race? Variety is the key. | Time question.  | Circumference of a circle, recap question |
| Main 1 | Video clip of fastest lap timee.g.<http://www.youtube.com/watch?v=T2FMl0aPyZc> questions – what maths do you see? what speed? Fastest? Slowest? Range of speed? Average speed? Distance of track? Convert from km/h to mph. convert km/h to m/s.(could lead to conversions and conversion graphs) | Show clip of a lap.e.g.<http://www.youtube.com/watch?v=T2FMl0aPyZc> Draw a distance / time graph for the lap or part of the lap.Questions: how can we calculate speed from a distance / time graph? Where is the greatest acceleration? How do we know? | Show clip of qualifyinge.g. <http://www.bbc.co.uk/sport/0/formula1/22496245> Ordering decimals, how quick is 2 seconds faster? Range of times? How much is a  | Use live data from the F1 site:<http://www.formula1.com/live_timing/> This has graphs and all manner of other exciting stuff. Would only work linked in with other F1 stuff.Note: you need to register on the website to use this facility |
| Main 2 | Take class outside.Time students to run 100m, calculate their speed.Track is a 300m circuit, could do a relay? | Design own circuit with matching distance / time graph. Groups / pairs / individuals | Scatter graph comparing practice and qualifying times. Correlation? LOBF. Estimation using LOBFOr using data on this link<http://www.bbc.co.uk/sport/formula1/2013/results> Scatter graph comparing lap times with finishing times. | Driving wheel maths:<http://www1.skysports.com/watch/video/sports/formula-1/8706122/f1-uncovered-the-steering-wheel> Leading onto discussion of the differential, in other words the left and right wheels rotate at different ratesTake outside (could use the wheelie measurers) to demo why this is a useful engineering idea. |
| Plenary15 mins | Compare the speeds of car and person.Could use an olympic runner, family car as comparison. | Judge who has designed the best circuit. | Are there other F1 variables we can compare | Would this be a useful idea on family cars? What other sort of vehicles? |