



# LESSON PLAN

Date:	Subject: Grip		Topic: BSKC		PoS Ref: Unit P2	Teacher:									
Sequence of session in scheme of work:	<b>Focus of the session:</b> To enable students to investigate and analyse the factors that affect the ability of a tyre to grip a surface														
<b>Expectations (Learning Outcomes):</b>  <table border="1" data-bbox="107 632 1469 1150"> <thead> <tr> <th data-bbox="107 632 394 671">Group Level</th> <th data-bbox="394 632 1158 671">Expectations</th> <th data-bbox="1158 632 1469 671">AT/Minimum</th> </tr> </thead> <tbody> <tr> <td data-bbox="107 671 394 927">All</td> <td data-bbox="394 671 1158 927">           Can design and carry out experiments to find factors that affect the ability of rubber to create friction with a surface            Identify key factors that affect friction between two surfaces            Suggest other factors that could limit the ability of a tyre to grip tarmac         </td> <td data-bbox="1158 671 1469 927">           C            C            C         </td> </tr> <tr> <td data-bbox="107 927 394 1150">Most</td> <td data-bbox="394 927 1158 1150">           Identify that friction is different between stationary and moving objects            Can analyse the data collected to identify high friction and low friction situations         </td> <td data-bbox="1158 927 1469 1150">           B            B            B         </td> </tr> </tbody> </table>				Group Level	Expectations	AT/Minimum	All	Can design and carry out experiments to find factors that affect the ability of rubber to create friction with a surface Identify key factors that affect friction between two surfaces Suggest other factors that could limit the ability of a tyre to grip tarmac	C C C	Most	Identify that friction is different between stationary and moving objects Can analyse the data collected to identify high friction and low friction situations	B B B	<b>Equipment/resources needed:</b>  Rubber blocks Different surfaces Newton meters Marbles Sandpaper Water Oil		
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<b>Skills to be developed:</b> Investigation, measuring, taking data; interpreting data				<b>Assessment:</b> Ability to apply knowledge and understanding to new situations from Experimental write up and plenary/ homework sheet											
<b>Differentiation:</b> By objective; investigation planning sheets; plenary/ homework sheet				<b>Cross Curriculum Development (Literacy, Numeracy, Citizenship):</b> Numeracy, data calculations; teamwork											

Lesson 1	Teaching and learning activity	Learning Outcomes	Individual/ SEN
<p><b>Starter</b></p> <p><b>Core</b></p>	<p>Show an on-line video of F1 cars skidding off in the wet over the years – what were the differences between the cars?</p> <p>Collation of ideas on board – aerodynamics/ circuit conditions/ drivers? What was the same? – The conditions and lack of grip. If technology has improved so quickly how come we still skid?</p> <p>Introduce theme and objectives – “What influences the level of grip available between a tyre and the road” – Q/A responses on board How can we find out?</p> <p>Introduce equipment – safety considerations. Remind of the need for multiple measurements to ensure accuracy and the need of accurate reading and recording.</p> <p>Working in teams of 3 – 10 minutes to design your experiment. What are you going to do and how does that help you answer the question?</p> <p>Experiment design check</p> <p>Students to carry out experiments and collect data</p> <p>Extension for early completers – Why can't you use slick tyres on the road? Why are rally tyres different to circuit tyres?</p> <p>Clear away equipment</p> <p>Draw together student conclusions</p>	<p>Thinking starter to get students to think further than the obvious</p> <p>Understanding of the problem being set – production of controlled, effective investigation</p> <p>Identification of limitations on grip including surface type, movement, lubricants, loose surface etc</p> <p>Understanding of how tyres work, and the need for high</p>	<p>Starter support sheet explaining top speed and to help record observations</p> <p>Experiment design support sheet</p> <p>Data collection sheet</p>