



Primary Engineer Apprentice Level 1 and 2

Years P1, P2 and P3

Primary Engineer Apprentice Level 1 – P1 pupils	
Apprentice Level 1 is targeted at year 1 pupils with an emphasis on the making. The children are to design a vehicle that will travel down a ramp in a straight line over as long a distance as possible.	
Design:	
Design ideas	5
Plan (final design)	10
Talk about their own and others peoples work.	5
Total marks available for Design	20
Making:	
Use of tools and materials	10
Quality of finished model	20
Distance travelled & Straight Line	30
Distance Bonus	5
Total marks available for Making:	65
Total marks available	85

Primary Engineer Apprentice Level 2 - P2 and P3 pupils	
Apprentice Level 2 is targeted at year 2 and 3 pupils to design a vehicle to safely carry a toy in a vehicle down a ramp and over a distance in as straight a line as possible.	
Design:	
Research	5
Design ideas	8
Final drawings	10
Evaluation and recording changes	12
Safety feature	5
Total marks available for Design	40
Making:	
Materials used	15
Quality of finished model	30
Distance travelled & Straight line	30
Distance Bonus	5
Carrying the toy safely	10
Total marks available for Making:	90
Total marks available	130



Challenge Brief:

Primary Engineer Apprentice Level 1 and 2

Level 1 (P1)	Level 2 (P2 and P3)
Working in pairs, children are to design and make a wheeled vehicle based on vehicles observed in their local community or from other sources.	Working in pairs, children are to design and make a wheeled vehicle to carry a toy safely whilst the vehicle travels down a ramp and over a distance. The toy should not be permanently fixed to the vehicle.
Level 1 and 2: The vehicles dimensions must not to exceed 340mm in length and 220mm in width. The vehicles must have been made by the pupils.	
Vehicle Performance	
Each vehicle will run down a ramp (inclined surface) to determine how far it will travel along the floor of a classroom or hall on leaving the ramp. Competitors will locate their vehicle at the top of the ramp before releasing it to run down the ramp.	
The ramp will be 122cm long and 50cm wide. It will be raised to a height of 500mm at one end with the other end resting on the floor, the height can be set at 100mm intervals if the user prefers a lower level. There will be a line marked down the centre of the ramp from top to bottom, this line will continue along the room floor. Vehicles are expected to run down this line and continue in a straight line until they stop.	
Each vehicle should be designed and built using traditional primary school recycled materials plus, card, lolly stick and/or stripwood. Finished vehicles should be personalised through decoration.	
Marking - Design and Making	
Marks will be awarded for Level 1:	Marks will be awarded for Level 2:
Design: Design ideas, final design, talking about their own and others work	Design: research, design ideas, final drawings, evaluations and recording changes.
Making: use of tools and materials, quality of the finished model, distance travelled, closeness to travelling in a straight line.	Making: materials used, quality of finished model, distance travelled, closeness to travelling in a straight line, carrying the toy safely.
Judging	
Presentation: pupils will be invited to discuss their model with the judges.	
At all levels of competition the judge's decisions are final. At each stage of the competition (primary, secondary and regional), pupils are allowed to take their entry back to school to evaluate and develop their designing and making. Pupils must provide evidence for judges of their developmental work –this should be all the pupils own work.	