Marking criteria

Section: Working models Division: Primary (4 – 6) VELS: Level 3, progressing to level 4

Student name: ……..

Links to VELS progression points	CRITERION	High 3	Medium 2	Low 1	NS 0
Knowledge & understanding: VELS 3.25, 3.5, 3.75 - knowledge/understanding of the components of systems (eg. organs of digestive system, layers within & surrounding the Earth, organisms in food chain, lenses in periscope, solar/lunar eclipses) - understanding of how a system &/or its components adapt to change (eg. effect of predators on a food chain, construction & modification of a solar BBQ for improved efficiency)	**Written explanation – type of model** Describe whether your model is a scale model or an information model		Includes description of whether the model is a scale model or an information model, if scale model states the scale used	Includes description of whether the model is a scale model or an information model	Not done
	Written explanation – scientific principles & working Explain model clearly and accurately in terms of science behind it, how it works and the design process	Clear, concise and accurate explanation of scientific principle/concept and workings of the model in own words showing thorough understanding of the science involved.	Clear and concise explanation of scientific principle/concept and workings of the model in own words showing good understanding of the science involved.	Basic explanation of scientific principle/concept and workings of the model mostly in own words showing some understanding of the science involved.	Not done
	Written explanation – model construction details Describe how you built the model, problems encountered and how they were solved.	Detailed explanation of how model was built, problems encountered and how they were solved.	Clear explanation of how model was built, problems encountered and how they were solved.	Basic explanation of how model was built; may not include problems encountered and how they were solved.	Not done
Science at work: VELS 3.25, 3.5, 3.75 - construction of a simple model, following teacher directions that illustrates a scientific concept - with teacher guidance, design & construction of a simple model that illustrates a scientific concept - design & construction of a simple model, including annotations, that illustrates understanding of a scientific concept	**Scientific concept** Model is appropriate to the concept being illustrated	Model highly suited to scientific concept(s) being illustrated, demonstrates and educates viewer about the concept(s) very well.	Model appropriate and clear, accurately demonstrates and educates viewer about one or two concept(s).	Inappropriate model for concept(s), does not illustrate or teach viewers much about the scientific concept(s) or includes too many concepts and is unclear.	Not done
	Construction effort Show that you have put effort into making the model.		A working model, well constructed, shows lots of effort, easy to operate	Poorly constructed, shows little effort, hard to operate, perhaps not working properly.	Not done
	Originality and creativity Model must be original with creative presentation	Very imaginative and original, showing resourcefulness in the parts used	Demonstrates some originality, imagination and resourcefulness in the parts used	Little originality and/or creativity demonstrated	Not done

Knowledge & understanding: VELS 3.25, 3.5, 3.75 - knowledge/understanding of the components of systems (eg. organs of digestive system, layers within & surrounding the Earth, organisms in food chain, lenses in periscope, solar/lunar eclipses) - understanding of how a system &/or its components adapt to change (eg. effect of predators on a food chain, construction & modification of a solar BBQ for improved efficiency)	**Verbal presentation** Present and discuss your model with judges.	Very good understanding of science behind model, recognizes limitations of model, offers several ideas for improvement	Adequate understanding of science behind model, recognizes some limitations of model, offers some ideas for improvement	Limited understanding of science behind model, and/or doesn't recognize limitations of model and/or can't offer ideas for improvement	Not done
Science at work: VELS 3.25, 3.5, 3.75 - construction of a simple model, following teacher directions that illustrates a scientific concept - with teacher guidance, design & construction of a simple model that illustrates a scientific concept - design & construction of a simple model, including annotations, that illustrates understanding of a scientific concept	**Appropriateness of scale model** Model is to scale and scientific principles are clearly demonstrated by the model	Model is to scale, well constructed and all principles clearly demonstrated.	Model is to scale and scientific principles well demonstrated.	Model is to scale but science principles weakly demonstrated	Not done
	Model must be safe to operate Model is safe to operate in a crowded area	Safe to operate in a crowded area, includes appropriate safety features; dangerous substances or items not used			

STS-specific & not directly related to VELS progression points

CRITERION	High 3	Medium 2	Low 1	NS 0
Written explanation – length Maximum length of four A4 pages		Within the maximum length		Not done
Size and weight of model Model must be smaller than 0.5m x o.5m x 0.5m and weigh less than 15 kg		Model is correct size and weight		Not done
Technical skill in construction Model is well constructed with high degree of skill	Model is very well constructed and shows high degree of skill	Model is sturdy and craftsmanship is good	Technical skill is demonstrated but craftsmanship is poor.	Not done
Ease of use Model is simple and easy to use	Simple, easy to use with little instruction required	Works with only minor coaxing and brief instruction	Difficult to use even with instructions	Not done
Working model Model is a working model		Model is a working model		Not done
Photo of model A photo of the model is supplied			Photo of model is supplied	Not done

Total score = ___ / 40