

Tick one:		INFORMATION MODEL <input type="checkbox"/>	SCALE MODEL <input type="checkbox"/>				
MODEL		Excellent	Very Good	Good – Satisfactory	Needs Improvement	Not Shown	Sub-total
1	WORKING MODEL?	YES (Interactive)			NO (Static)		Y / N
2	SIZE Meets the size criteria?	YES or EXEMPTION			NO		Y / E / N
3a	Scale Model Appropriateness	10 – 9	8 – 7	6 – 5	4 – 3 – 2	1 – 0	/10
		The model is/or nearly to scale. The model clearly illustrates the scientific principles chosen. Any exceptions are clearly explained. Research evident of the existing device.	The model is mostly to scale. The model illustrates the scientific principles chosen. Some attempt to explain any exceptions. Some research of the existing device is evident.	The model is somewhat to scale. The model illustrates some of the scientific principles chosen. Some attempt to explain any exceptions. Limited research of the existing device.	The model is somewhat to scale. The model is not appropriate to illustrate the scientific principles chosen. Little attempt to explain any exceptions. Limited to no research of the existing device.	The model is not to scale and is not appropriate for illustrating the scientific principles chosen. No attempt to explain any exceptions. No research of the existing device.	
3b	Information Model Originality	In depth research evident of science. Original, creative and innovative idea in the construction format. Individual approach to presentation of scientific principles.	Some research evident of the science. An original idea, but could be more creative and innovative in the construction format and presentation of scientific principles.	Limited research evident of the science. An original idea, but could be more creative and innovative in the construction format and presentation of scientific principles.	Limited research evident of the science. A common idea that lacks a creative and innovative approach to the construction format and presentation of scientific principles.	Limited to no research evident of the science for the model. A common idea or kit with only little original input from the student.	/10
Or	4	Construction	10 – 9	8 – 7	6 – 5	4 – 3 – 2	
			Model demonstrates a high degree of skill in its construction and complexity in its design. It is sturdy and well presented in its craftsmanship with attention to detail.	Model is sturdy and well constructed with some degree of complexity in its design. Presentation is fair.	Model is reasonably sturdy with a simple design, but the craftsmanship could be improved.	Model is somewhat fragile and is poorly constructed in areas. Some attention to detail in its presentation.	Model is fragile and is poorly constructed. Little attention to detail in its presentation.
5	Parts and Materials	7 – 6	5 – 4	3 – 2	1 – 0		/7
		Resourcefulness of parts used. Innovative use of materials with a high degree of consideration of materials in design regarding application & affordability.	Some consideration of appropriate materials in design application. Affordability is somewhat considered.	Insufficient regard for appropriate materials in design.	Very little consideration for parts and materials used or model is constructed from kits without original input.		
6	Ease of use	3		2		1 – 0	
		Model works well and is easy to use.		Model works with minor coaxing.		Model does not work or is difficult to use.	
SUBTOTAL							/30
7	Introduction	3		2		1 – 0	
		Clearly identifies model as either Scale or Information, what the model represents and the ideas behind building it.		A fair attempt to describe the model.		A limited or no description of the model provided.	
8	Instructions	2		1 – 0		/2	
		Clear and easy to use operating instructions.		Operating instructions provided, but are difficult to follow. Or no instructions at all.			
9	Design brief Methods of design and redesign with annotated notes on the applied science.	10 – 9	8 – 7	6 – 5	4 – 3 – 2	1 – 0	/10
		Includes annotated diagrams of the design(s) and redesign of the model with evident use of scientific principles. Extensive safety considerations with a Risk Assessment Form. (a) in the construction of the device (b) in the use of the device	Includes some annotated diagrams of the design, some scientific principles applied. A very good range of safety considerations with a Risk Assessment Form. (a) in the construction of the device (b) in the use of the device	A satisfactory attempt to design the model, with limited annotations. A good range of safety considerations with a Risk Assessment Form. (a) in the construction of the device (b) in the use of the device	A rough design of the model, with limited annotations. Limited safety considerations with or without a Risk Assessment Form. (a) in the construction of the device (b) in the use of the device	Limited to no design of the model or consideration of safety	
10a	Discussion A. Context Scientific Principle/Theory in the	10 – 9	8 – 7	6 – 5	4 – 3 – 2	1 – 0	/10
		Discusses the scientific principle/theories in the	Discusses the scientific principle/theories in the	Discusses the scientific principle/theories in the application	Discusses the scientific principle/theories in the	Discusses the scientific principle/theories in the application	

	<p>application of the device (Purpose & Scientific issue/problem the device solves or Theory demonstrated) Topics covered might include but not limited to: ocean pollution, how solar power works, perpetual motion, magnetism, bird migration, circulatory system, etc.</p> <ul style="list-style-type: none"> • detailed explanation and justification of the problem/need for their device • detailed explanation of the scientific context/purpose using references to scientific articles to discuss and justify the application of their device/project • comprehensive description and justification of the parts and components to be used in their project with reference to their design brief • discusses a set of questions that checks the success of their device/project at the design, planning and production stages to an excellent standard. 	application and/or purpose of the device in depth and to exceptional standards.	application and/or purpose of the device to very high standards.	and/or purpose of the device from satisfactory to good standard.	application and/or purpose of the device from Below average to Average standard.	and/or purpose of the device poorly or not at all.	
10b	<p>B. Device Structure Scientific Principle demonstrated in the physical device constructed (Engineering and Science) E.g. circuitry, levers, gears, programming etc. Discussion Context Assessment Includes:</p> <ul style="list-style-type: none"> • statement of the principle • how it applies to the device • detailed and comprehensive calculations and/or coding involved • excellent use of correct unit and conversions as necessary <p>justification for the device with detailed explanation</p>	The scientific principle(s) demonstrated in the physical device is clearly and completely discussed to exceptional standards.	The scientific principle(s) demonstrated in the physical device is clearly discussed from very good to an excellent standard.	The scientific principle(s) demonstrated in the physical device is discussed from satisfactory to good standard.	The scientific principle(s) demonstrated in the physical device is discussed from Below average to Average standard.	The scientific principle(s) demonstrated in the physical device is poorly discussed or not at all.	/10

10c	C. Discussion & Conclusion Design and other considerations. Assessment includes:	Discussion of the design considerations, limitations of the device/model, potential improvements Includes: <ul style="list-style-type: none"> detailed research of at least 3 similar or existing devices that inspired this project research and selection of materials and components safety considerations prototyping and final production Problems encountered and how they were overcome Discussion of the limitations or the success of the design, planning and production with reference to questions set in part A recommendation of potential improvements with further research or expert advice 	Discussion of the design considerations, limitations of the device/model, potential improvements Includes: <ul style="list-style-type: none"> detailed research of at least 1 or more similar or existing devices that inspired this project some research of selected materials and components safety considerations good discussion of prototyping and final production several problems encountered and how they were overcome Discussion of the limitations or the success of the design and/or planning and/or production with reference to questions set in part A recommendation of potential improvements 	Discussion of the design considerations, limitations of the device/model, potential improvements Includes: <ul style="list-style-type: none"> satisfactory research of at 1 or more similar or existing devices that inspired this project brief research and selection of materials and components satisfactory safety considerations attempted to discuss prototyping and final production some problems encountered and how they were overcome brief discussion of the limitations or the success of the design and/or planning and/or production with reference to questions set in part A brief recommendation of potential improvements 	Discussion of the design considerations, limitations of the device/model, potential improvements Includes: <ul style="list-style-type: none"> some research of similar or existing devices that inspired this project limited or no research and selection of materials and components brief safety considerations attempted or no discussion of prototyping and final production brief or cursory discussion of problems encountered and how they were overcome cursory or no discussion of the limitations or the success of the design or planning or production with reference to questions set in part A limited or no recommendation of potential improvements 	Limited or no discussion of the design consideration, limitations of the device/model, potential improvements	/10
11	Acknowledgements	2 Clearly and accurately acknowledges all assistance provided. Indicates type of assistance and proportion (%) of project.	1 Acknowledgement provided but does not include either type or proportion or both.	0 No acknowledgement of assistance provided.			/12
12	References	3 Clearly and accurately list sources in alphabetical order using correct referencing techniques including page numbers, date & time accessed. Any citations with the report are correctly and accurately included.	2 – 1 References and citations included but may not be comprehensive or accurately presented.	0 No references or citations included.			/13
13	Presentation & Guidelines Word limit excludes log book.	5 – 4 – 3 Neat and clear presentation. Report is within 1000 word limit. Photo attached.	2 – 1 A fair presentation, missing photo and/or report well over 1000 word limit.	0 No report.			/15
SUBTOTAL							/55
ORAL PRESENTATION		Excellent	Very Good	Good – Satisfactory	Needs Improvement	Not Shown	Sub-total
14	Verbal Explanation Demonstration of evidence for student work and understanding. Use the video and/or student explanations on Judging Day to base your score.	10 – 9 The student appears to have an excellent understanding of scientific principles. Problems in the design process are clearly identified and addressed.	8 – 7 The student appears to have a good understanding of scientific principles but is not clear in all aspects. Problems in the design process are identified and discussed.	6 – 5 The student appears to have a fair understanding of scientific principles but is not clear in all aspects. Some problems in the design process are identified.	4 – 3 – 2 The student does not appear clear on the scientific principle. The design process is hardly identified.	1 – 0 The student appears to have little idea of the scientific principle and does not address the design process.	/10
SUBTOTAL							/10
TOTAL							/95