



# Boorowa Central School

*Excellence through Respect, Responsibility and Participation*

## Assessment Task Notification

All tasks should be clearly outlined in the notice and give information pertaining to the nature of the task, the outcomes being assessed and the marking schedule giving individual component weightings.

<b>Teacher: Mr A Corcoran</b>	<b>Course: Stage 5 STEM</b>
<b>Task and Number: Catapult and Bridge</b>	<b>Task Weighting: 20%</b>
<b>Date Issued: 6<sup>th</sup> March 2020</b>	<b>Date Due: 20<sup>th</sup> March 2020</b>
<b>Syllabus component:</b>  Stem Fundamentals	
<b>Syllabus outcomes being assessed:</b> The Student: 5.1.1 Develops ideas and explores solutions to STEM based problems 5.1.2 Demonstrates initiative, entrepreneurship, resilience and cognitive flexibility through the completion of practical STEM based activities 5.5.1 Applies a range of communication techniques in the presentation of research and design solutions 5.6.2 Works individually or in teams to solve problems in contexts	
<b>Description of task:</b>  The task is split into two parts Part One- Bridge (50% of task marks) The submission of your completed google Docs work from the term in a neat and logical manner.  Part Two- Catapult (50% of task marks)  In groups of up to three, you are to plan, construct and test a miniature catapult. It will undergo a series of tests to sturdiness and care taken in building	
<b>Submission of Task requirements:</b>  <b>Portfolio to be handed in for inspection and marking</b>	

**Note:** If a student is absent for an assessment task or fails to submit a task when it is due, then a medical certificate or other acceptable explanation must be presented on the first day the student returns to school or a zero mark is awarded.



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## Assessment Task - Marking Criteria Catapult

CATEGORY	4	3	2	1
<b>Knowledge, including calculations of mechanical advantage</b>	Explanations by all group members indicate a clear and accurate understanding of scientific principles underlying the construction and modifications.	Explanations by all group members indicate a relatively accurate understanding of scientific principles underlying the construction and modifications.	Explanations by most group members indicate relatively accurate understanding of scientific principles underlying the construction and modifications.	Explanations by several members of the group do not illustrate much understanding of scientific principles underlying the construction and modifications.
<b>Plan</b>	Plan is neat with clear measurements and labeling for all components.	Plan is neat with clear measurements and labeling for most components.	Plan provides clear measurements and labeling for most components.	Plan does not show measurements clearly or is otherwise inadequately labeled.
<b>Construction - Care Taken</b>	Great care taken in construction process so that the structure is neat, attractive and follows plans accurately.	Construction was careful and accurate for the most part, but 1-2 details could have been refined for a more attractive product.	Construction accurately followed the plans, but 3-4 details could have been refined for a more attractive product.	Construction appears careless or haphazard. Many details need refinement for a strong or attractive product.
<b>Sturdiness</b>	Structure functions extraordinarily well, holding up under atypical stresses.	Structure functions well, holding up under typical stresses.	Structure functions pretty well, but deteriorates under typical stresses.	Fatal flaws in function with complete failure under typical stresses.
<b>Distance</b>	Missile travels more than 5 meters.	Missile travels 4.0 - 4.9 meters.	Missile travels 3.0 - 3.9 meters.	Missile travels less than 3.0 meters.
<b>Accuracy</b>	Missile hits all targets.	Missile misses one target.	Missile misses two targets.	Missile misses more than two targets.
<b>Construction - Materials</b>	Appropriate materials were selected and creatively modified in ways that made them even better.	Appropriate materials were selected and there was an attempt at creative modification to make them even better.	Appropriate materials were selected.	Inappropriate materials were selected and contributed to a product that performed poorly.
<b>Timeliness and overall effort</b>	The project was completed on time, and all group members used class time appropriately.	The project was not completed on time, or one group member did not use class time appropriately.	The project was completed on time, but one group member did not use class time appropriately.	The project was not completed on time, and/or two group members did not use class time appropriately.
<b>Score</b>				_____



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## Bridge

	Mark 0-1	Marks 2-4	Marks 5-7	Marks 8-10
<b>Appearance</b>	<p><b>Level 1</b></p> <p>Not aesthetically pleasing (shapes, patterns, colour, etc.)</p> <p>Work is sloppy throughout.</p> <p>Design is unattractive and/or plain.</p>	<p><b>Level 2</b></p> <p>Limited aesthetics (shapes, patterns, colour, etc.)</p> <p>Design and use of glue is messy at times.</p> <p>Some visual appeal.</p> <p>glue use..messy</p>	<p><b>Level 3</b></p> <p>Overall, an attractive bridge (shapes, patterns, colour, etc.)</p> <p>Tidy work most of the time.</p> <p>Visually appealing.</p>	<p><b>Level 4</b></p> <p>Extremely aesthetic in design (shapes, patterns, colour, etc.)</p> <p>All construction is clean and attractive.</p> <p>Visually appealing.</p>
<b>Structure</b>	<p><b>Level 1</b></p> <p>Bridge with no real design.</p> <p>Does not span a gap of 20 centimeters (unstable or incomplete).</p> <p>Did not maximize use of materials.</p>	<p><b>Level 2</b></p> <p>Bridge with limited creative design.</p> <p>Spans a gap of 25 centimeters, but remains unstable or incomplete in some way.</p> <p>Limited use of materials.</p>	<p><b>Level 3</b></p> <p>Bridge designed with good creativity.</p> <p>Spans a gap of 30 centimeters, is complete and stable.</p> <p>Good use of materials.</p>	<p><b>Level 4</b></p> <p>Bridge designed with excellent creativity.</p> <p>Spans a gap of 30+ centimeters is complete and stable.</p> <p>Excellent use of materials.</p>
<b>Teamwork</b>	<p><b>Level 1</b></p> <p>Partners ..no team work.. one person ran the show!</p> <p>No respect shown.</p>	<p><b>Level 2</b></p> <p>Partners ..some team work.</p> <p>Some respect shown.</p>	<p><b>Level 3</b></p> <p>Partners were working together, but occasionally distracted from their project in some way.</p> <p>Respect was observed most of the time.</p>	<p><b>Level 4</b></p> <p>Each person was actively involved in the building process. All partners were treated with respect.</p>
<b>Blueprint</b> - sketch - prewriting description - post building reflection	<p><b>Level 1</b></p> <p>Bridge design does not match the design of the blueprint and changes were not explained.</p>	<p><b>Level 2</b></p> <p>Bridge design somewhat matches the design of the blueprint.</p> <p>If any changes were made during building, they were explained a little upon reflection.</p>	<p><b>Level 3</b></p> <p>Bridge blueprint mostly matches the design of the finished product.</p> <p>If any changes were made during building, they were sufficiently explained upon reflection.</p>	<p><b>Level 4</b></p> <p>Bridge blueprint matches the design of the finished product.</p> <p>If any changes were made during building, they were thoroughly explained upon reflection.</p>
			<b>Total</b>	