

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Task: Modelling a Damped Pendulum Rubric

BLM 8-11

Categories	Level 1	Level 2	Level 3	Level 4
<b>Knowledge and Understanding</b> <ul style="list-style-type: none"> <li>creates a periodic function using the initial amplitude and period</li> <li>adds an appropriate vertical displacement</li> </ul>	<ul style="list-style-type: none"> <li>demonstrates limited understanding of periodic functions, making major errors in finding appropriate amplitude, period and vertical displacements</li> </ul>	<ul style="list-style-type: none"> <li>demonstrates some understanding of periodic functions, making some minor errors in finding appropriate amplitude, period and vertical displacements</li> </ul>	<ul style="list-style-type: none"> <li>demonstrates considerable understanding of periodic functions, making only a few minor errors in finding appropriate amplitude, period and vertical displacements</li> </ul>	<ul style="list-style-type: none"> <li>demonstrates thorough understanding of periodic functions, finding appropriate amplitude, period and vertical displacements</li> </ul>
<b>Thinking/Inquiry/Problem Solving</b> <ul style="list-style-type: none"> <li>prepares a plan to solve the problem</li> <li>carries out the plan</li> </ul>	<ul style="list-style-type: none"> <li>needs extensive assistance to begin organizing a plan and needs clearly laid out steps to follow</li> </ul>	<ul style="list-style-type: none"> <li>needs some assistance to begin organizing a plan and needs some steps to follow</li> </ul>	<ul style="list-style-type: none"> <li>needs minimal assistance to organize and implement an effective strategy</li> </ul>	<ul style="list-style-type: none"> <li>needs no assistance to organize and implement an effective strategy</li> </ul>
<b>Communication</b> <ul style="list-style-type: none"> <li>correctly uses mathematical language</li> <li>clearly explains and fully justifies solution</li> </ul>	<ul style="list-style-type: none"> <li>maintains the correct language in some of the solution</li> <li>does not clearly explain or justify solution</li> </ul>	<ul style="list-style-type: none"> <li>maintains the correct language throughout most of the solution</li> <li>explains and justifies solution somewhat</li> </ul>	<ul style="list-style-type: none"> <li>maintains the correct language throughout the solution</li> <li>explains and justifies solution fully</li> </ul>	<ul style="list-style-type: none"> <li>maintains the correct language throughout the solution</li> <li>explains, justifies and shows insight into the complexities of the solution</li> </ul>
<b>Application</b> <ul style="list-style-type: none"> <li>compares the graph with other functions studied</li> <li>models the damped effect by multiplying by an appropriate exponential function</li> <li>relates the shape of the graph to physical factors</li> </ul>	<ul style="list-style-type: none"> <li>interprets the information ineffectually, by making unrealistic comparisons, needing extensive assistance to model the damped effect and not relating the model to physical factors</li> </ul>	<ul style="list-style-type: none"> <li>interprets the information somewhat effectually, by making a few comparisons, needing some assistance to model the damped effect and relating the model to one physical factor</li> </ul>	<ul style="list-style-type: none"> <li>interprets the information with considerable effectiveness, by making realistic comparisons, needing minimal assistance to model the damped effect and relating the model to a few physical factors</li> </ul>	<ul style="list-style-type: none"> <li>interprets the information with a high degree of effectiveness, by making realistic comparisons, adequately modeling the damped effect and relating the model to many physical factors</li> </ul>