

Catapult



The Assignment





An essential feature of medieval warfare was siege weapons. These include the siege tower, covered ladders, and the catapult, perhaps the most fearsome weapon of them all. From a safe distance, beyond the range of the archers in the castle, the catapult could fling rocks high into the air so that they crashed down onto the walls causing them to crumble. The catapults could also be used to throw burning bales of straw to set the wooden and thatched buildings in the castle grounds on fire. There were several different types of catapults. Some used large blocks of stone as a counter weight to cause a long arm to fling rocks onto and over the castle walls. Others used the energy stored in twisted rope for the same effect.

Your task is to design and build a realistic catapult that can throw small rocks as far and accurate as possible.

Problem Solving Activity: _____

Name(s): _____

Date: _____

GOALS	 BRONZE	 SILVER	 GOLD	 PLATINUM
<p>Design Brief:</p> <p>Understand the problem, develop prototypes to solve it, test those prototypes and revise your design to make it better.</p>	<ul style="list-style-type: none"> • Our design met the goals or criteria defined by the activity. <input type="checkbox"/>	<ul style="list-style-type: none"> • We met Bronze • We tested our prototype multiple times. • We made at least one improvement. <input type="checkbox"/>	<ul style="list-style-type: none"> • We met Silver • We made at least two improvements. <input type="checkbox"/>	<ul style="list-style-type: none"> • We met Gold • We tested at least two different designs. • We picked the best design, tested it, and made several improvements. <input type="checkbox"/>
<p>Creativity:</p> <p>Come up with inventive and creative solutions to problems. Consider multiple solutions.</p>	<ul style="list-style-type: none"> • We started the activity and have at least one possible solution that looks reasonable. <input type="checkbox"/>	<ul style="list-style-type: none"> • We brainstormed two to three ideas. • We built a working model to solve the problem. <input type="checkbox"/>	<ul style="list-style-type: none"> • We brainstormed more than three ideas. • We built an effective model to solve the problem. <input type="checkbox"/>	<ul style="list-style-type: none"> • We brainstormed many ideas. • We built and tested prototypes for at least two ideas. • We built an original and effective model that solves the problem. <input type="checkbox"/>
<p>Collaboration:</p> <p>Work is shared effectively and the team encourages and helps each other.</p>	<ul style="list-style-type: none"> • We sometimes worked together well but some team members did more work than others or we needed help from the teacher to resolve some disagreements. <input type="checkbox"/>	<ul style="list-style-type: none"> • We generally worked together well, providing help and support to each other. • The work was shared fairly evenly among the group members. <input type="checkbox"/>	<ul style="list-style-type: none"> • We worked together well, providing help and support to each other. • The work tasks were shared evenly. • We addressed issues that arose. <input type="checkbox"/>	<ul style="list-style-type: none"> • We worked together unusually well, overcoming unexpected obstacles by working together as a team. • We actively helped and supported each other. • We addressed issues that arose with honest, constructive feedback. <input type="checkbox"/>
<p>Notes:</p>				