

Making an Elevator Part 1- Assessment of Learning Rubric

Level	1	2	3	4
Tower Project	The tower will not work to pull up an elevator.	The tower is unstable but can be used by providing support	The tower is well built but may need some minor modifications before it can be used to pull up an elevator.	The tower is well built and can support the weight of an elevator. It is tall enough and stands on its own.
Pulley Elevator	The elevator and pulley system did not fully work.	The elevator works and was used to test several pulley designs.	The elevator is well built and most pulley designs were tested and worked well. A good understanding of pulleys is displayed through the work.	The elevator is well built. Each pulley design was tested and worked fully. Great understanding of advantages a pulley provides.
Playing with and making gears	Was able to try out basic function of gear simulator. Cut out gears may not work to conduct experiments.	Experimented with some of the gear systems and cut out functional gears.	Experimented with most gear systems. Cut out mostly accurate gears. A good understanding of gear systems is displayed through the work.	Experimented with every gear system, including the bike. Cut out accurate gears. Great understanding of how gears work.
Gears Elevator	Was able to partially turn the gears and set them up to move the elevator.	Was able to turn gears. Was able to move the elevator using gears, but was not able to fully raise it.	Was able to turn gears. Was able to pull up elevator using gears, though it may not have gone smoothly. Advantage of arrangement of gears may not be clear.	Was able to turn gears in every configuration. Was able to pull up elevator using gears and understands which arrangement of gears works best.

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Pulleys and Gears Elevator	Was not able to get the pulleys and gears system to work together.	Was able to set up most of the system but was not able to clearly demonstrate the benefits of pulleys and gears working together.	Was able to combine pulleys and gears to construct an elevator. Does not work well enough to fully see the benefits of combining the systems.	Was able to combine pulleys and gears to construct an elevator taking advantage of both systems. Understands how the advantages/disadvantages of both systems can be traded off to create the best overall system.
Overall Quality	The quality of the work was not sufficient to perform most tasks.	The quality of the work was good enough to get most experiments to work. A bit more focus may have yielded even better results.	Most of the work was done accurately and with enough detail to get it working well. Worked hard for most of the unit.	All the work was done as accurately as possible and with attention to detail. Worked hard throughout the unit.
Overall Understanding	Does not yet understand how pulleys and gears can be used gain a mechanical advantage.	Has a basic understanding of how pulleys and gears work.	Has a good understanding of pulleys and gears and what some of their advantages are.	Has a great understanding of how pulleys and gears work and what their advantages and disadvantages are.