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| **What will we be learning?****Work, Energy & Power**Metronome with solid fill | **Why this? Why now?**Previous Learning Forces, Energy, Stopping Distances, MotionFuture Learning Newtons Laws of Motion and Momentum, Electric and Gravitational Fields.Enquiry ProcessesIdentify Variables, Collect Data, Present Data, Analyse Patterns, Manipulate Equations, Draw Conclusions, Justify opinions and conclusions.  | **Key Words:**Average speedInstantaneous speedVelocityScalarVectorDisplacementAccelerationStopping distanceThinking distanceBraking distance |
| **What will we learn?*** How to calculate the work done by a force and that this is equivalent to the transfer of energy.
* W=FxcosQ for the work done by a force
* The principle of the conservation of energy and transfer of energy.
* Exchanges between gravitational potential energy and kinetic energy.
* Power =W/t and P=Fv
* Efficiency = useful output energy / total input energy x100%

**Misconceptions in this topic*** If velocity doubles, kinetic energy doubles.
* An object at rest has no energy
* Friction is energy.
* Gravitational energy is the only type of potential energy.
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| **What opportunities are there for wider study?**Careers - Engineer, Architect, Construction, Civil Engineering, Aviation, Automotive Engineer, Car mechanic, Production Engineer, Radio and Television Engineer, Sound and Acoustic Engineer, Defence Specialist.STE(A)M – For details of courses and opportunities look at:<https://highcliffe.sharepoint.com/sites/LearnSTEM> |
| **How will I be assessed?**End of Topic Assessment, AS Paper Assessment |