Physical Science: Force and Motion, and Work and Energy
FINAL EXAM STUDY GUIDE

STANDARD	***MAIN IDEAS***	***DETAILS – descriptions, definitions, examples, pictures, etc.***
☐ 7.1.2 Describe and give examples of how energy can be transferred from place to place and transformed from one form to another through radiation, convection and conduction.	☐ What are and what happens with types of energy transfer (moved from place to place)?– radiation, conduction and convection ☐ Describe what energy transformation is.	
☐ 7.1.4 Recognize and provide evidence how light, sound and other waves have energy and how they interact with different materials.	☐ Heat and light waves ☐ Reflection	
☐ 7.1.5 Describe and investigate how forces between objects can act at a distance, such as magnetic, electrical or gravitational forces, or by means of direct contact between objects.	☐ Find the change in time. ☐ Find the distance. ☐ Gravity ☐ Friction – what is it and how it effects something in motion	
☐ 7.1.6 Explain that forces have magnitude and direction and those forces can be added to determine the net force acting on an object.	☐ Velocity ☐ Net force	
☐ 7.1.7 Demonstrate and describe how an object's speed or direction of motion changes when a force acts upon it. Demonstrate and describe that an object's speed and direction of motion remain unchanged if the net force acting upon it is zero.	☐ Find the speed. ☐ Manipulate or change around the speed equation to solve for different variables. ☐ Describe motion.	

STANDARD	*MAIN IDEAS*	*DETAILS – descriptions, definitions, examples, pictures, etc.*
☐ 7.1.1 Explain that when energy is transferred from one system to another, the total quantity of energy does not change.	☐ What are different energy types? ☐ What is the "Law of Conservation of Energy"?	
☐ 7.4.1 Understand that energy is the capacity to do work.	☐ Define energy. ☐ Define work. ☐ Calculate and compare work done.	
☐ 7.4.2 Explain that energy can be used to do work using many processes, for example generation of electricity by harnessing wind energy.	☐ Energy transformations – how different types of energy are used to create electricity.	
☐ 7.4.3 Explain that power is the rate that energy is converted from one form to another.	☐ Calculate and compare power.	

h) Analyze data, using appropriate mathematical manipulation as required, and use it to identify patterns and make inferences based on these patterns.	☐ Analyze data using equations	
k) Communicate findings using graphs, charts, maps and models through oral and written reports	☐ Use graphs to analyze data and commutate data… ➔ use a speed graph to figure out which "thing" went the fastest	