

Curriculum Map - Science - Grade 8

Month	Content	Skills	Assessment
September	<ul style="list-style-type: none"> • Scientific method • Measurement • Metric System • States of matter 	<ul style="list-style-type: none"> • Describe steps of Scientific Method. • Apply Scientific Method to set up a lab. • Formulate a laboratory exercise. • Note taking • Differentiate between English & Metric measurements. • Note taking • Define parts of the Metric System. • Apply metric measurements. • Calculate areas, volumes, & densities. • Note taking • Describe 3 states of matter. • Note taking 	<ul style="list-style-type: none"> • Tests & quizzes • Worksheets - length, area, volume, triple beam balance • Note taking • Create a laboratory exercise using Scientific Method. • Note taking • Create & complete a lab on finding density. • Demonstrate knowledge of states of matter & molecular motion. • Note taking
October	<ul style="list-style-type: none"> • Changes of state • Kinetic-Molecular Theory • Elements & the Periodic Table 	<ul style="list-style-type: none"> • Summarize the steps needed to change the state of matter. • Create a change of state diagram. • Note taking • Explain change of state using Kinetic-Molecular Theory. • Note taking • Describe the location of the types of elements on the Periodic Table. • Name the symbol of 40 selected elements. • Define four types of elements. • Note taking 	<ul style="list-style-type: none"> • Tests & quizzes • Create & explain the “Crushed Can” experiment. • Note taking • Create & explain a “Change of State Diagram”

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October (continued)	<ul style="list-style-type: none"> • Atomic structure 	<ul style="list-style-type: none"> • Describe the structure of an atom - proton, neutron, & electron. • Note taking 	<ul style="list-style-type: none"> • Note taking
November	<ul style="list-style-type: none"> • Atomic structure & the Periodic Table • Physical properties - physical changes • Chemical properties - chemical changes • Compounds 	<ul style="list-style-type: none"> • Organize & locate elements on the Periodic Table according to atomic structure. • Define metal, non-metal, metalloid, inert gas by structure & location. • Arrange elements by group & period according to structure. • Note taking • Define & list physical properties. • Note taking • Define chemical properties according to atomic structure. • Note taking • Define compound, molecule, atom, element. • Note taking 	<ul style="list-style-type: none"> • Tests & quizzes • Completion of blank periodic tables • Note taking

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December	<ul style="list-style-type: none"> • Compounds • Formula • Chemical reactions • Conservation of matter 	<ul style="list-style-type: none"> • Illustrate the formation of compounds by exchanging electrons. • Demonstrate the formation of a compound. • Note taking • Understand the creation of ionic charges. • Note taking • Define & complete 4 types of chemical reactions. • Balance chemical reactions. • Note taking • Note taking 	<ul style="list-style-type: none"> • Note taking
January	<ul style="list-style-type: none"> • Acids, bases, & salts • Solutions, suspensions, & colloids 	<ul style="list-style-type: none"> • Define acids, bases, & salts. • Explain neutralization • Define dissociation • Complete lab exercise "Acid-base indicators". • Note taking • Contrast & compare solutions & suspensions. • Define colloid. • Note taking 	<ul style="list-style-type: none"> • Tests & quizzes. • Completion of lab exercise • Notebook • Note taking

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February	<ul style="list-style-type: none"> • Motion • Frames of reference • Distance vs. displacement • Vectors • Velocity • Acceleration 	<ul style="list-style-type: none"> • Define motion. • Note taking • Demonstrate & analyze observations from two different frames of reference. • Note taking • Compare & contrast distance & displacement. • Note taking • Define vectors. • Explain & demonstrate vector addition. • Note taking • Demonstrate the ability to solve problems dealing with velocity. $V = d/t$ • Note taking • Demonstrate the ability to solve problems dealing with acceleration. $A = v(f) - V(i) / t$ • Note taking 	<ul style="list-style-type: none"> • Tests & quizzes • Note taking • Creation of a distance / time graph • Creation of a velocity / time graph • Note taking • Completion of the “bowling ball” lab activity • Note taking

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April	<ul style="list-style-type: none"> • Freely falling objects • Planetary motion • Newton's Law of Gravity • Gravity • Waves 	<ul style="list-style-type: none"> • Define freely falling object. • Define projectile motion. • Demonstrate understanding of projectile motion. • Analyze the motions of orbiting objects. • Note taking • Summarize Kepler's Laws of Planetary Motions. • Illustrate the Solar System. • Note taking • Quote Newton's Law of Universal Gravitational Attraction. • Note taking • Analyze the effect of mass & distance on gravity. • Note taking • Define & illustrate amplitude, crest, trough, wavelength, & frequency. • Define transverse wave. • Define compression wave. • Calculate using speed - freq. x wavelength. • Define & illustrate reflection, refraction, interference, & polarization. • Summarize the electromagnetic spectrum. • Note taking 	<ul style="list-style-type: none"> • Tests & quizzes • Note taking • Complete pirate cannonball diagram. • Worksheets • Note taking • Note taking • Note taking • Note taking

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May	<ul style="list-style-type: none"> • Light • Uses of light • Sound • Energy production 	<ul style="list-style-type: none"> • Define photon • Explain & illustrate the production of photons. • Note taking • Analyze & illustrate the electromagnetic spectrum. • Compare & contrast light vs. laser. • Demonstrate & diagram reflections from concave & convex mirrors. • Demonstrate & diagram refractions from concave & convex lenses. • Describe the workings of the eye. • Note taking • Define pitch. • Demonstrate doppler effect. • Describe sonar. • Note taking • Describe & illustrate the production of electricity. • Discuss the concept of conservation of energy. • Describe $E = mc^2$. • Note taking 	<ul style="list-style-type: none"> • Tests & quizzes • Note taking • Lab exercises