



**Course: Science 9**

**Teacher: Amir Farrokh**

**Unit: Physics - Chemistry**

**Date: April-May**

**Duration: About 5 weeks**

**Description:** Students in grade 7 get to know a glance of electricity and circuits and in grade 9, the main focus is on deepening the concept as well as formulating the process and helping students predict the outcomes, observe what actually happens in (virtual) laboratory and compare the theoretical and experimental results. The students will also learn various ways of connecting resistors in circuits and should start asking themselves about: Why do other lamps go out in a series circuit when a light bulb burns out? Why does the same thing not apply to parallel circuits?

|            | Big Ideas  | Essential Questions   |
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| Understand | <p>The electron arrangement of atoms impacts their chemical nature</p> <p>Electric current is the flow of electric charge.</p> | <p>Why do electrons flow in a circuit?</p> <p>How does increasing current impact your safety?</p> |

|    | Core Competencies  |  |
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| Do | <p><i>Creative Thinking; (3) Critical Thinking; (4) Personal Awareness and Responsibility (6) Social Responsibility.</i></p> | <ul style="list-style-type: none"> <li>● <b>Reasoning and logic</b><br/><i>Demonstrate fluent and strategic thinking</i></li> <li>● <b>Estimate reasonably</b><br/><i>Demonstrate understanding of the possible outcomes and not accepting any numbers out of range</i></li> <li>● <b>Apply</b><br/><i>Use the physical knowledge to solve real-life questions</i></li> </ul> <p><i>Through class discussions, independent work and self-reflection, students will have the opportunity to reinforce the following First Peoples Principles of Learning:</i></p> <ul style="list-style-type: none"> <li>● <i>Learning ultimately supports the well-being of the self, the family, the community, the land, the spirits and the ancestors.</i></li> <li>● <i>Learning is holistic, reflexive, reflective, experimental, and relational (focused on connectedness, on reciprocal relationships, and a sense of place).</i></li> <li>● <i>Learning is embedded in memory, history, and story.</i></li> <li>● <i>Learning involves patience</i></li> </ul> |
|    | <b>Curricular Competencies</b>   |  |

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|  | Formulate multiple hypotheses and predict multiple outcomes | <i>Using virtual labs and applications or websites like Gizmos which help students see the effect of any change on the system in a real time manner</i> |
|--|---|---|

| <b>Curricular Content</b> |   |  |
|---------------------------|---|--|
| <b>Know</b>               | <p>element properties as organised in the periodic table</p> <p>The arrangement of electrons determines the compounds formed by elements</p> <p>circuits — must be complete for electrons to flow</p> <p>voltage, current, and resistance</p> | <p><i>Which activities, projects, exercises or discussions will teach this Curricular Content?</i></p> <ol style="list-style-type: none"> <li>1. <i>Class discussion about how the periodic table was discovered in the first place and how it has still been developing</i></li> <li>2. <i>Discussions of the Fundamental of Kirchhoff theory</i></li> <li>3. <i>Consider worked examples and analyse steps</i></li> <li>4. <i>Discussion of the basis of the conservation of energy</i></li> <li>5. <i>Discussion of the similarities of the concepts of voltage and energy</i></li> </ol> |

| <b>Unit Assessment</b>  |   |   |
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| <p>For Learning:</p> <ol style="list-style-type: none"> <li>1. Whiteboard work</li> <li>2. Check for specific questions from</li> </ol> | <p>As Learning:</p> <ol style="list-style-type: none"> <li>1. Self-Assessment using Google Forms</li> </ol> | <p>Of Learning:</p> <ol style="list-style-type: none"> <li>1. Test</li> </ol> |

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| homework<br>3. Participation in video conference |  |  |
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| <b>Required Resources</b>  |
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| <i>McGraw Hill Science 9 textbook</i><br><i>Youtube videos</i><br><i>Gizmos website</i><br><i>Video conferencing</i> |