

## SRPSD Grade 7 Science Rubrics

### Life Science: Interactions within Ecosystems (IE)

**IE7.1** Relate key aspects of Indigenous knowledge to their understanding of ecosystems.

<b>Beginning (1)</b>	<b>Approaching (2)</b>	<b>Proficiency (3)</b>	<b>Mastery (4)</b>
I am able to gather information about traditional Indigenous practices. a)	I can explain the importance of Indigenous practices. b)	I can compare my understanding of Indigenous knowledge to my local ecosystem and describe how this knowledge has been shared over time. c) d)	I can apply my understanding of Indigenous knowledge to explain sustainability and its' importance in today's society.

**IE7.2** Observe, illustrate, and analyze living organisms within local ecosystems as part of interconnected food webs, populations, and communities.

<b>Beginning (1)</b>	<b>Approaching (2)</b>	<b>Proficiency (3)</b>	<b>Mastery (4)</b>
I can define and identify biotic and abiotic components. a) b) e)	I can classify organisms in a variety of ecosystems. i) k)	I can interpret interconnectedness within an ecosystem by showing interactions between abiotic and biotic components and by constructing food chains and food webs. g) j)	I can apply my knowledge to explain why Canadian environmental organizations are important to protecting living organisms. l)

**IE7.3** Evaluate biogeochemical cycles (water, carbon, and nitrogen) as representations of energy flow and the cycling of matter through ecosystems.

<b>Beginning (1)</b>	<b>Approaching (2)</b>	<b>Proficiency (3)</b>	<b>Mastery (4)</b>
I can identify the biogeochemical cycles and the role of decomposers. d)	I can explain and illustrate the water, carbon and nitrogen cycles. b)	I can explain and evaluate how energy flows through ecosystems in each cycle. a) h) i)	I can apply my knowledge of biogeochemical cycles to explain how new technologies impact the cycles. j)

**IE7.4** Analyze how ecosystems change in response to natural and human influences, and propose actions to reduce the impact of human behaviour on a specific ecosystem.

<b>Beginning (1)</b>	<b>Approaching (2)</b>	<b>Proficiency (3)</b>	<b>Mastery (4)</b>
I can propose ecological questions about everyday problems. b) d)	I can explain ecological succession. a)	I can analyze how ecosystems respond to changes and propose a course of action to reduce the impact on an ecosystem. f) g)	I can apply my knowledge of succession to predict long term changes <b>or</b> I can explain how a variety of activities both locally and globally can affect many ecosystems. c) h)

## SRPSD Grade 7 Science Rubrics

### Physical Science: Mixtures and Solutions (MS)

**MS7.1** Distinguish between pure substances and mixtures (mechanical mixtures and solutions) using the particle model of matter.

<b>Beginning (1)</b>	<b>Approaching (2)</b>	<b>Proficiency (3)</b>	<b>Mastery (4)</b>
I can identify the characteristics of pure substances, mechanical mixtures and solutions. b)	I can classify and create mechanical mixtures and solutions and state the particle model of matter. c) d) f) g)	I can use the particle model of matter to compare/contrast between pure substances and mixtures. h)	I can analyze the usefulness of the particle model of matter and evaluate the strengths and limitations. i)

**MS7.2** Investigate methods of separating the components of mechanical mixtures and solutions, and analyze the impact of industrial and agricultural applications of those methods.

<b>Beginning (1)</b>	<b>Approaching (2)</b>	<b>Proficiency (3)</b>	<b>Mastery (4)</b>
I can describe common household technologies used to separate mixtures or solutions. c)	I can describe methods of separation including mechanical sorting, filtration, evaporation, distillation, magnetism, and chromatography. a) b)	I can explain strengths and limitations of separation methods and analyze the impact of industrial and agricultural applications. e) h) i)	I can design, create or evaluate a prototype used for separating mixtures or solutions. d) j) k)

**MS7.3** Investigate the properties and applications of solutions, including solubility and concentration.

<b>Beginning (1)</b>	<b>Approaching (2)</b>	<b>Proficiency (3)</b>	<b>Mastery (4)</b>
I can identify solutes and solvent within a solution. a)	I can use the particle model to describe solubility. b)	I can describe the factors that affect solubility and concentration of solutions and identify everyday uses. c) e) g)	I can predict and analyze the solubility of a solute or the effects of technology in my world. h) i) j)

### Physical Science: Heat and Temperature (HT)

**HT7.1** Assess the impact of past and current heating and cooling technologies related to food, clothing, and shelter on self, society, and the environment.

<b>Beginning (1)</b>	<b>Approaching (2)</b>	<b>Proficiency (3)</b>	<b>Mastery (4)</b>
I can identify the difference between heating and cooling technologies.	I can demonstrate that different materials will prevent heat loss or gain. a) d) e)	I understand how past and present heating and cooling technologies impact my society. c)	I can evaluate a prototype that will provide a solution to problem related to heating or cooling. f) g) h)

**HT7.2** Explain how understanding differences between states of matter and the effect of heat on changes in state provide evidence for the particle theory.

<b>Beginning (1)</b>	<b>Approaching (2)</b>	<b>Proficiency (3)</b>	<b>Mastery (4)</b>
I can describe and provide examples of the 3 states of matter. a) b)	I can explain the difference between heat and temperature using the states of matter. d)	I can explain how heat affects states of matter and provides evidence for the particle theory g)	I can apply my knowledge of states of matter to argue for or against the particle theory. h)

## SRPSD Grade 7 Science Rubrics

**HT7.3** Investigate principles and applications of heat transfer via the processes of conduction, convection, and radiation.

<b>Beginning (1)</b>	<b>Approaching (2)</b>	<b>Proficiency (3)</b>	<b>Mastery (4)</b>
I can identify examples of conduction, convection, and radiation in natural and human constructed environments. a)	I can model how heat is transferred through conduction and convection. b) c)	I can explain the applications of conduction, convection, and radiation. e)	I can explain the impacts on society of conduction, convection, and radiation. d)

### Earth and Space Science: Earth's Crust and Resources (EC)

**EC7.1** Analyze societal and environmental impacts of historical and current catastrophic geological events, and scientific understanding of movements and forces within Earth's crust.

<b>Beginning (1)</b>	<b>Approaching (2)</b>	<b>Proficiency (3)</b>	<b>Mastery (4)</b>
I understand what the Earth is made of and how continents move and change form. a) c)	I understand how the shifts in Earth's crust create mountains and valleys, volcanoes, earthquakes and the tools we use to measure them. d) h)	I am aware of where geological events have happened in the past and may happen in the future and where they may occur. f) i)	I understand the impact geological events have on my life and how to minimize the harmful outcomes of these events. e) i)

**EC7.2** Identify locations and processes used to extract Earth's geological resources and examine the impacts of those locations and processes on society and the environment.

<b>Beginning (1)</b>	<b>Approaching (2)</b>	<b>Proficiency (3)</b>	<b>Mastery (4)</b>
I understand the places in Saskatchewan where valuable rocks and minerals are mined. d)	I understand the difference between rocks and minerals and how we sort them. b) c)	I understand the methods and tools used in Saskatchewan to mine valuable minerals and how to select the location of a mine. e) f) g)	I understand the positive and negative impacts of mining in my community and environment. a) i)

**EC7.3** Investigate the characteristics and formation of the surface geology of Saskatchewan, including soil, and identify correlations between surface geology and past, present, and possible future land uses.

<b>Beginning (1)</b>	<b>Approaching (2)</b>	<b>Proficiency (3)</b>	<b>Mastery (4)</b>
I understand the three major types of rock and how they are formed. a)	I understand the process of erosion and how it has a role in the formation of different soil types. e) f) h)	I understand the rock cycle and its role in making different types of soil and how we use these different soils to help in our daily lives. c) i) j) k)	I understand how land usage impacts my community and environment. l)