

**SCIENCE AND TECHNOLOGY – *Understanding Earth and Space Systems***

**Grade 1**

1. assess the impact of daily and seasonal changes on living things, including humans.

**Grade 2**

1. assess ways in which the actions of humans have an impact on the quality of air and water, and ways in which the quality of air and water has an impact on living things.

**Grade 3**

1. assess the impact of soils on society and the environment, and of society and the environment on soils.

**Grade 4**

1. assess the social and environmental impacts of human uses of rocks and minerals.

*[Name]* understands many ways in which we use rocks and minerals in our society, and how some of these materials are precious to us. This was demonstrated in *[specific task, such as a research project on a precious stone or mineral]*.

**Grade 5**

1. analyse the immediate and long-term effects of energy and resource use on society and the environment, and evaluate options for conserving energy and resources.

**Grade 6**

1. assess the impact of space exploration on society and the environment.

*[Name]* understands and can assess the impact of space exploration on society (such as how satellites can create “space junk”).

*[Name]* continues to learn about space exploration and how it has impacted society. Further studying or reading on this subject would help *[Name]* develop a deeper understanding of these events.

**Grade 7**

1. assess the costs and benefits of technologies that reduce heat loss or heat-related impacts on the environment.

*[Name]* chose to investigate the issue of *[specific topic, such as insulated clothing, building insulation, green roofs, energy-efficient buildings]*; *[he/she]* assessed the environmental benefits of this technology.

<p><b>Grade 8</b> 1. assess the impact of human activities and technologies on the sustainability of water resources.</p>	<p><i>[Name]</i> chose to investigate the issue of <i>[specific topic]</i>. This allowed <i>[him/her]</i> to assess some of the impacts that human activity and technologies have on the sustainability of water resources.</p>	
<p><b>Grade 1</b> 2. investigate daily and seasonal changes.</p> <p><b>Grade 2</b> 2. investigate the characteristics of air and water and the visible/invisible effects of and changes to air and/or water in the environment.</p> <p><b>Grade 3</b> 2. investigate the composition and characteristics of different soils.</p>		
<p><b>Grade 4</b> 2. investigate, test, and compare the physical properties of rocks and minerals.</p> <p><b>Grade 5</b> 2. investigate energy transformation and conservation.</p> <p><b>Grade 6</b> 2. investigate characteristics of the systems of which the earth is a part and the relationship between the earth, the sun, and the moon.</p>	<p>Using Mohs' scale of hardness, <i>[Name]</i> can identify rocks and minerals that are hard (like a diamond) or soft (like Talc).</p> <p><i>[Name]</i> is able to identify the planets in the solar system and the relationship between the sun, earth and moon.</p>	<p><i>[Name]</i> is encouraged to study the planets of the solar system and how the earth, moon and sun rotate.</p>
<p><b>Grade 7</b> 2. investigate ways in which heat changes substances, and describe how heat is transferred.</p> <p><b>Grade 8</b> 2. investigate factors that affect local water quality.</p>	<p><i>[Name]</i> <i>[specific task, such as played the part of a large sporting store owner who had to choose what materials were best suited for a series of products, such as a wet suit]</i>. Choices were explained describing how heat loss would be minimized.</p> <p><i>[Name]</i> investigated factors affecting the water quality of <i>[specific location, such as Barrie, Windsor, Timmons]</i>. <i>[He/she]</i> measured the level of pH and chlorine content</p>	

	<p>oin the water at school and at home and suggested reasons for some differences (e.g., some people have a water treatment system at home such as a reverse osmosis system).</p>	
<p><b>Grade 1</b> 3. demonstrate an understanding of what daily and seasonal changes are and of how these changes affect living things.</p> <p><b>Grade 2</b> 3. demonstrate an understanding of the ways in which air and water are used by living things to help them meet their basic needs.</p> <p><b>Grade 3</b> 3. demonstrate an understanding of the composition of soils, the types of soils, and the relationship between soils and other living things.</p>	<p><i>[Name]</i> is able to discuss daily changes of night and day, and how the weather changes during the seasons.</p>	
<p><b>Grade 4</b> 3. demonstrate an understanding of the physical properties of rocks and minerals.</p> <p><b>Grade 5</b> 3. demonstrate an understanding of the various forms and sources of energy and the ways in which energy can be transformed and conserved.</p> <p><b>Grade 6</b> 3. demonstrate an understanding of components of the systems of which the earth is a part, and explain the phenomena that result from the movement of different bodies in space.</p>		
<p><b>Grade 7</b> 3. demonstrate an understanding of heat as a form of energy that is associated with the movement of particles and is essential to many processes within the earth's systems.</p>	<p><i>[Name]</i> used the particle theory to compare how heat affects the motion of particles in a solid, a liquid, and a gas. <i>[He/she]</i> described various forms of heat (e.g., radiation and conduction) and the results of these (e.g.,</p>	

<p><b>Grade 8</b> 3. demonstrate an understanding of the characteristics of the earth's water systems and the influence of water systems on a specific region.</p>	<p>radiation from the sun warms the earth then the earth cools by radiating heat back to space. Greenhouse gasses absorb some of this heat and radiate some of the heat back to the earth).</p> <p>Though class discussions, daily assignments and reports completed throughout this unit, <i>[Name]</i> showed <i>[his/her]</i> understanding of the earth's water systems and how these water systems influence our region and other regions.</p>	
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