

FOUR DIRECTIONS LEARNING ACTIVITIES

Elder Nation	Stephen Augustine
Lesson Plan Grade Level	Mi'kmaq
Time Required	Junior (Grades 1-6)
Subject Strand Links	3 days
	<ul style="list-style-type: none"> • Language Arts • Dramatic Arts • Visual arts • Healthy Living • Geography • Science
Traditional Teachings	Mi'kmaq Creation Story
Teacher Summary	<p>The Mi'kmaq Creation Story describes how life began for all things. This process occurred in seven stages or levels of creation and is described as follows:</p> <p>Level 1: The sky represents the Giver of Life, Gisoolg, who creates everything. Creation is a mystery that contains everything and is within everything. It is regarded with awe and reflected in all aspects of life, seen and unseen.</p> <p>Level 2: The Sun creates life and gives us our Shadows. The shadows reflect the identities, characteristics and spirits of <u>ancestors</u>. The Shadows are the joining of earth, matter, and the blood of human life. The Sun connects the spirit world to the physical world and is represented by the centre direction.</p> <p>Level 3: The third level of Creation is on the surface of Mother Earth. In the Mi'kmaq language, several words are directly related to the word for "Earth." For example, the word for the skin of a drum and the word for the Mi'kmaq people are related to each other and to the Mi'kmaq word for Mother Earth. The beat of a drum is the <u>heartbeat</u> of Mother Earth. The surface skin of Mother Earth gives rise to life, including people, and this is reflected in the word <i>Oosgitjinoo</i> which means "the person who has peeled himself off the surface of the Earth and is standing erect." <i>Oosgitjinoo</i> is a word used to refer to the Mi'kmaq people.</p> <p>Level 4: The first man, Glooscap, is created from a bolt of lightning. The bolt hits the Earth and his body is created on the Earth's surface. He is lying with his head in the direction of the rising sun and his feet are facing the setting sun. His arms are outstretched to the north and south. When the lightning meets with the elements of the Earth that made up Glooscap's body, a life force is created. When lightning hits a second</p>

time, Glooscap develops fingers and toes, and seven sacred parts to his head (two eyes, two ears, two nostrils and a mouth) appear. At the third bolt of lightning, Glooscap is freed from the surface of the Earth to walk and move about.

Glooscap gives thanks to Mother Earth and Grandfather Sun for his creation, and pays his respects to the **South**, the **West**, the **North** and the **East** directions. Once returning to the east where he was created, Glooscap is visited by an eagle that tells him he will soon be joined by his family to help him understand his place in this world. The eagle drops a feather, which Glooscap catches. This feather gives him strength and serves as a symbol of connection between his people and the Giver of Life, Grandfather Sun and Mother Earth.

Level 5: Glooscap meets his **Grandmother**, who is born from a rock. She teaches him to respect her wisdom and knowledge about the stars, the wind, the seasons and the tides, the characteristics and the behaviour of the plants and animals, and how to make food, clothing and shelter. For their sustenance, Glooscap takes the life of a **marten**, asking *permission* of the animal first, and giving thanks to the Giver of Life, Grandfather Sun and Mother Earth afterwards. Then, using the seven sparks from the bolts of lightning that created Glooscap, and seven pieces of dry wood, cousin **Whirlwind** is invited to create the Great Spirit **Fire**. Grandmother and Glooscap then feast to celebrate Grandmother's arrival into the world.

Level 6: Glooscap meets a young man who says he is Glooscap's nephew, a creation of Whirlwind, who passed through the ocean in the direction of the rising sun, causing foam to form and blow ashore. This foam has rolled in sand and picked up rocks and wood and feathers, eventually resting on sweet grass. With the help of the Giver of Life, Grandfather Sun and Mother Earth, the **nephew** was created. The nephew offers vision to the future and comes as a gift of the ancestors. Nephew is also a responsibility for Glooscap to guide, since the young turn to the old for direction in life. And just as Glooscap took the life of the marten for survival, the nephew calls upon the fish to give up their lives. Glooscap gives thanks, apologizing for taking the shadows of the fish and for taking elements of Mother Earth for their own survival. Again they feast, and continue to learn from Grandmother.

Level 7: Glooscap's **mother** appears, coming first as a leaf on a tree that falls to the ground and collects dew. The Giver of Life, Grandfather Sun and Mother Earth have made Glooscap's mother from this dew to bring gifts to her children. These gifts include the colours of the world, understanding and love, so that her children will know how to share and care for one another. Glooscap has his nephew gather food for a feast to celebrate the creation of Glooscap's mother. Glooscap provides leadership, respecting the teachings of the elders, the vision and strength of the young people, the gifts of the ancestors, and the teachings on how to rely on each other and to respect and care for one another. In this way, they live a

	good life.
Learner Objectives	<p>Knowledge/Understanding:</p> <ul style="list-style-type: none"> • To understand creation from a Mi'kmaq perspective • To reflect, deconstruct and evaluate the Mi'kmaq Creation Story <p>Inquiry/Values:</p> <ul style="list-style-type: none"> • To provide theoretical aspects of the creative process to role playing • To explore characters and issues drawn from the Mi'kmaq Creation Story • To appreciate the importance of physical fitness and health <p>Skills/Applications:</p> <ul style="list-style-type: none"> • To develop proficiency in listening, speaking, writing, questioning and negotiating • To experience first hand the roles of performer, audience, and playwright • To use non-verbal communication to portray character and define relationships amongst characters • To create art pieces that reflect emotion and mood
Suggested Teaching Strategies	<ol style="list-style-type: none"> 1. Generate a discussion on where the first people came from. Introduce the concept that people have different ideas on where humans come from. The Mi'kmaq, for instance, have a story about Creation. One of their Elders, Stephen Augustine, has traditional teachings to share about the Mi'kmaq story of Creation. 2. View www.fourdirectionteachings.com together as a class to hear the <i>Mi'kmaq Creation Story</i> and teachings of Stephen Augustine. 3. <ol style="list-style-type: none"> a) Individually or in pairs, have students listen to Stephen's teaching, "The First Level of Creation." Discuss seasons and other concepts of <u>cycles</u> (e.g. life and death, the calendar, weather patterns, etc.) On a piece of flipchart paper, have the students make illustrations and/or list how cycles are important to life and to the creation story. b) Listen to "The Second Level of Creation," and lead a discussion about shadows and how they are cast. Take a walk outside with your students and have them notice their shadows. With chalk, have the students work in small groups or pairs to outline their shadows. Have them pose in different ways. Have them notice how stretched out they are at certain times of the day and how short they are at other times. Ask the students if they can figure out any patterns related to time of day and shadow length. For indoor activities, have the students create silhouette drawings of their bodies or profiles. Make shadow puppets using the Mi'kmaq Creation Story characters. c) Listen to "The Third Level of Creation," and discuss the importance that Mother Earth has for everyone. Ask the students what they can do as a class to show kindness and respect towards the Earth. Suggest that the students plan a clean up day once or twice a month of the school yard, or if

possible to participate in a gardening project. This will allow the students some extra time to spend outside. Other ways to get outside and learning are to plan a walk to a nearby park or trail area, or even around the block. Have the students notice any small and interesting plants; try to identify different tree species in your area by using a species key.

Since the heartbeat of Mother Earth is the drumbeat, schedule a visit from a First Nations drummer. If a professional drummer is not available, bring in some drums to the class and teach about beat, rhythm and coordination. Have students build simple drums by using simple materials.

d) Listen to “The Fourth Level of Creation,” and discuss how the senses are important for us. Have students understand about the importance of hearing by taking them outside to listen to as many sounds as possible. Have the students write down in a list all of the kinds of sounds that they can hear. Have them categorize which sounds they find calming, annoying, loud, high-pitched, natural, and human-made. Ask the students if trees make sounds. Do different trees make different sounds? Do trees make specific sounds right before it rains? Have the students create their own sound effects to emphasize specific situations/scenarios, e.g. wind, traffic jam, train. Let the students know that listening is extremely important to the Creation Story.

e) Listen to “The Fifth Level of Creation,” and discuss rocks and minerals. Grandmother was born from a rock, which is part of Mother Earth. Teach the students about different types of rock (metamorphic, sedimentary and igneous). Visit some areas where the students can gather small rocks and stones to make a small rock garden. Students can learn about fossils and how mildly acidic rainfall affects certain types of rock (limestone). Let the students look at rocks and minerals more closely with magnifying lenses.

f) Listen to “The Sixth Level of Creation,” and discuss the importance of good physical fitness and health. Have the students perform fitness tests with kits provided by the Heart and Stroke Foundation of Canada. These kits have short jumping ropes and double dutch lengths. Jumping rope and creating other types of games are fun ways to promote physical fitness. Plan a full or half day of fun physical activities (e.g. winter or summer obstacle courses, sled races, race relays, three-legged races.)

g) Listen to “The Seventh Level of Creation,” and discuss the colour wheel. Teach the primary colours and how to make secondary colours by mixing the primary colours. Make a large collaborative art piece which focuses on colour as the main element of the piece. Divide the students into major colour groups and have each group design and paint images and symbols that can be associated with their colour, e.g. yellow sun, birds, flowers. Collage the pieces together to create a classroom collaborative art piece. The students will be reminded of the association of Glooscap’s mother’s gift of colour to the

world.

3. In groups, have students review the seven levels of creation as told by Stephen Augustine. The directions are very important to the creation of Glooscap. Ask the students if they can point out the four directions. Play a game with the students: block out the curtains/windows and have students move to the parts of the room that they believe that direction to be in. If you call out “East!” the students should move to where they believe East is located. Do not give them any hints but the students can assist each other if you permit. Make it an elimination game where students who are not in the Eastern direction are eliminated and need to sit on the ground or in the middle of the class. The remaining students can continue to play. Call out “North!” and the first three students to get there can continue to play and everyone else is eliminated. Call out any other direction and have a single winner. You can play this type of game outside or blindfolded and have the students use their other senses to guide them in choosing the correct direction e.g. sound cues, traffic, school yard noises, etc. In winter, the students can map out the route that Glooscap took on his earlier journeys. The students can start out in the East and then walk towards the west, tracking their steps in the snow. The student then walks to the South and then North to finally meet up to the east again. What design/shape is in the snow? Have the students compare these shapes with images that were etched into the cliffs of Kejimikujik National Park, located in Southwestern Nova Scotia. These images are called *petroglyphs*.
4. Discuss the meaning of the Mi’kmaq Creation Story. Why do the Mi’kmaq use the terms “Mother Earth” and “Grandfather Sun?” How was Glooscap created? Why did Glooscap ask permission to kill the animals? What did Glooscap do after killing the animals? Why did he do this? What did Grandmother teach him? What did Glooscap learn from his mother?
5. As a class, make a master chart of all the ideas on the characters of the story, their looks, and their words. Develop a script to tell the story from beginning to end and act it out in a drama production. Assign characters to play the roles of Glooscap, Grandfather Sun, The Giver of Life, Grandmother, Mother Earth, Whirlwind, and Glooscap’s mother and nephew. Play a drum to represent the heartbeat of Mother Earth and/or play a Mi’kmaq song (see links below). Invite parents to see the final production.

Optional Exercises:

- The Mi’kmaq have many stories about Glooscap. If possible, invite a Mi’kmaq elder to the class to tell more stories about Glooscap, his twin brother, etc.

	<ul style="list-style-type: none"> • Reflect on the Mi'kmaq Creation Story in journals. Explain what it says about how people should treat animals and plants and why. • Make a petroglyph class mural using finger paints, charcoal, and pastels. The students can model their images from the ones seen in Kejimikujik National Park. Add other elements such as handprints, animal prints, animal images, etc.
Vocabulary	<ul style="list-style-type: none"> • Creation • Level • Permission • Petroglyph
Materials Required	<ul style="list-style-type: none"> • Flipchart • Costume materials • Drum • Paper • Paints, pastels, charcoal • Magnifying glasses • Physical fitness kits, jumping ropes
Evaluation	<ol style="list-style-type: none"> 1. Teacher evaluation of charts for completion and accuracy 2. Teacher evaluation of script development participation 3. Peer evaluation of role-playing creativity 4. Student observation checklist 5. Physical fitness heart rate chart 6. Anecdotal records

Elder	Stephen Augustine
Nation	Mi'kmaq
Lesson Plan Grade Level	Intermediate (Grades 7-9)
Time Required	2 - 3 hours
Subject Strand Links	<ul style="list-style-type: none"> • Biology • Chemistry • English • Art • Philosophy • Healthy Living and Sexuality
Traditional Teachings	Mi'kmaq Creation Story
Student Summary	<p>The Mi'kmaq Creation Story describes how life began for all things. This process occurred in seven stages or levels of creation and is described as follows:</p> <p>Level 1: The sky represents the Giver of Life, Gisoolg, who creates everything. Creation is a mystery that contains everything and is within everything. It is regarded with awe and reflected in all aspects of life, seen and unseen.</p> <p>Level 2: The Sun creates life and gives us our Shadows. The shadows reflect the identities, characteristics and spirits of <u>ancestors</u>. The Shadows are the joining of earth, matter, and the blood of human life. The Sun connects the spirit world to the physical world and is represented by the centre direction.</p> <p>Level 3: The third level of Creation is on the surface of Mother Earth. In the Mi'kmaq language, several words are directly related to the word for "Earth." For example, the word for the skin of a drum and the word for the Mi'kmaq people are related to each other and to the Mi'kmaq word for Mother Earth. The beat of a drum is the <u>heartbeat</u> of Mother Earth. The surface skin of Mother Earth gives rise to life, including people, and this is reflected in the word <i>Oosgitjinoo</i> which means "the person who has peeled himself off the surface of the Earth and is standing erect." <i>Oosgitjinoo</i> is a word used to refer to the Mi'kmaq people.</p> <p>Level 4: The first man, Glooscap, is created from a bolt of lightning. The bolt hits the Earth and his body is created on the Earth's surface. He is lying with his head in the direction of the rising sun and his feet are facing the setting sun. His arms are outstretched to the north and south. When the lightning meets with the elements of the Earth that make up Glooscap's body, a life force is created. When</p>

lightning hits a second time, Glooscap develops fingers and toes, and seven sacred parts to his head (two eyes, two ears, two nostrils and a mouth) appear. At the third bolt of lightning, Glooscap is freed from the surface of the Earth to walk and move about.

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	<p>ancestors, and the teachings on how to rely on each other and to respect and care for one another. In this way, they live a good life.</p>
<p>Learner Objectives</p>	<p>Knowledge/Understanding:</p> <ul style="list-style-type: none"> • To understand creation from a traditional Mi'kmaq perspective • To reflect, deconstruct and evaluate the Mi'kmaq Creation Story from a scientific perspective, an artistic perspective, and a philosophical perspective. • To identify the roles of the elements, humans and animals in maintaining balance in the <i>ecosystem</i> • To understand the formation of a human zygote into an embryo and finally into a fetus as a result of sexual reproduction <p>Inquiry/Values:</p> <ul style="list-style-type: none"> • To develop insight as to the circle of life through the generations • To identify the gifts of the young and the old in teaching and learning • To determine through investigations the factors that contribute to the transfer of energy in the body • To identify aspects of healthy living and respect for one's own body <p>Skills/Applications :</p> <ul style="list-style-type: none"> • To formulate operational definitions of the vocabulary terms • To develop proficiency in listening, speaking, writing, questioning and negotiating • To apply an aesthetic analysis to the Creation Story to interpret images of a theme
<p>Strategy</p>	<ol style="list-style-type: none"> 1. Begin discussion with a question: "What is life?" Brainstorm answers on board. Add the question, "Where and how did life begin?" Brainstorm thoughts. Ask the students to list off the basic requirements for being alive: what are the characteristics of life? Introduce the concepts of 'animate' and 'inanimate'. While animate things are normally recognized as being living creatures as defined by science, there are other beings, such as rocks, that are also recognized as being 'animate' according First Nations people. Rocks do not qualify as being living beings according to the scientific definition of life. However, many scientists now feel that the Earth is animate, or a living being. Ask the students if they feel that the Earth is a living being. Watch <i>The Sacred Balance</i> series from the <i>Nature of Things</i> television series. This excellent video series highlights the contributions and influences that <i>Indigenous</i> peoples from across the world have made to the fields of science. 2. Ask the students about how people <u>create</u> in their everyday life. What things do people

create? Some expected answers can be: food, meals, art, crafts, written works, and clothing. People emulate creation when they create another person through sexual reproduction. Students should be taught about healthy living and sexuality through means such as open discussions about relationships, expectations, peer pressure and pregnancy. Students can view an excellent PBS video about sexual reproduction and the stages of pregnancy called *The Miracle of Life*. Depending on the comfort level of the instructor, students should openly ask questions about sex and sexuality, either in a sharing circle, open forum or anonymously on paper. These anonymous requests can be answered (or not) by the instructor in class.

3. Introduce Stephen Augustine, Mi'kmaq elder from the Maritimes, and the Mi'kmaq Creation Story. View www.fourdirectionteachings.com together as a class to:

- a) Hear the "Mi'kmaq Creation Story"

- b) Listen to Stephen Augustine's teachings, "The First Level of Creation," "The Second Level of Creation," "The Third Level of Creation," "The Fourth Level of Creation," "The Fifth Level of Creation," "The Sixth Level of Creation," and "The Seventh Level of Creation."

4. The groups will explore the Mi'kmaq Creation Story from their own perspectives simultaneously. Brainstorm ways in which we *create*, or assist in its development, and write these ideas on the black board or flipchart paper. People create gardens when they plant seeds and care for the development of the germinated plants. People create with images when they produce works of art. People transform basic food items into wonderful, nurturing meals when they cook with love.

Little Creations: Projects to involve students in the creative process

- a) Create a Native plant garden for the school yard. Research which plants, trees, bushes, shrubs, ferns, grasses and flowers are indigenous to your geographic area and climate zone. Find seed exchange programs to acquire a collection of these Native plants. Plan an area to prepare for your school garden. Is it shady or is there full sun? These factors will affect which plants you choose. Students should be aware that this type of project needs time to develop, as with any creative work. Students can research the plants chosen for their medicinal and traditional histories, if applicable. Students can witness the process of seed germination and monitor germination rate with graphs and charts. The instructor

should use this opportunity to teach about plant reproduction (sexual and asexual), as well as about general plant anatomy. This type of project needs to be an ongoing one, with successive groups of students participating in the garden's maintenance and upkeep. Native plant gardens will attract wildlife in a short time. Students can look forward to seeing different birds and butterflies to their schoolyard.

b) The students can create a mural of the *Mi'kmaq Creation Story*. This is a collaborative art project in which the students will contribute aspects to the final art piece. The instructor can order large rolls of paper and give out sections to groups of students to work on. The individual sections can be collated together to form the basis of the creation told in image form. The instructor can suggest style formats, e.g. *petroglyph*-style images, charcoal and pastels or paints. Divide the class into seven groups of 3-5 students, depending on class size, and each group will illustrate a particular *level of creation*. Display your final piece in your classroom, school hallway, library, or auditorium. Have the students prepare to retell the Creation story, using the mural as a visual aid.

c) Have a feast day celebration in which the students all provide something to the meal. Recall how **Marten** gave up his life so that Glooscap and Grandmother could eat. Recall how Glooscap honoured his Mother with a feast of fruits, nuts and plant foods. Invite an Aboriginal drummer to teach about Honour Songs and about the Drum. Invite a local Native Elder and teach the students about how Elders are honoured at feasts: Elders are always served before others. Ask your Elder to teach about how to honour the spirits and the ancestors with food. Note: Always present a **gift of tobacco** to an Elder and if the Elder accepts the gift, ask the question in a humble and honest way.

Additional Discussion Topics:

- Explain the relevance of the Mi'kmaq creation story to the Mi'kmaq people. What knowledge does this story provide in terms of living "a very nice and very happy life", as Augustine says?
- How does the knowledge gained from this story impact on our understanding of our ecosystem? To what extent is the relationship between Glooscap and the sea, sweet grass, and the wind a symbiotic one (mutually advantageous)?
- In what ways is Glooscap responsible for the nephew? What is the significance of their relationship? What universal truths are there in Glooscap's relationships with his family members? Explain how these connections help us to conceive of higher realities by representing the relationships of all families in all societies and in every generation.

	<p>Optional Exercises:</p> <ul style="list-style-type: none"> • Conduct a tree or garden planting project. Seek the help of community organizations (see link below) for direction. • Illustrate the steps involved in cellular respiration and photosynthesis in flowcharts, identifying all parts and processes clearly. • Demonstrate photosynthesis through an experiment using plants, sunlight, and sunlight filters and sunscreen lotions. • Contact a local First Nation to identify an environmental representative to present to the school. • Tour a wetland or conservation area. • Research the definitions of the terms in the vocabulary
Vocabulary	<ul style="list-style-type: none"> • Mother Earth • Sustenance • Ecosystem • Indigenous • Petroglyph
Materials Required	<ul style="list-style-type: none"> • Flipchart paper • Mural paper • Charcoals, pastels and paints • Native plant seeds • Gardening materials
Evaluation	<ul style="list-style-type: none"> • Pencil and paper quiz about the stages in human development and sexual reproduction • Labeling exercise about plant anatomy and sexual/asexual reproduction • Graphing exercise for germination rates of differing plant species. Plant growth data recording and data graphing.

Elder Nation Lesson Plan Grade Level	Stephen Augustine Mi'maq Senior (Grades 10-12)
Time Required	2 - 3 hours
Subject Strand Links	<ul style="list-style-type: none"> • Biology • Chemistry • Earth and Space Science • Philosophy
Key Concepts	<ul style="list-style-type: none"> • Mi'kmaq Creation Story
Student Summary	<p>The origin of life has perplexed people for centuries. "Where did we come from?" is a question that continues to be debated by scientists and theologians alike. Scientific views try to <i>explain the processes</i> contained within life and life's changes over time, i.e. graduated and punctuated <i>evolution</i>, natural selection, mutations, <i>cellular respiration</i>, and <i>photosynthesis</i>. When it comes to trying to explain any sort of creative process, science can not support its ideas validly and can only serve to describe the moments that occur after the creative process has begun. Science has many empty spaces where biological processes are not clearly understood at all: these gaps in the knowledge are considered mysteries. Many of these scientific mysteries involve creation processes e.g. the beginning of the universe, cellular division and fertilization. In many First Nations cultures, the name for the Creator can be translated into meaning "the Mystery" or "the Great Mystery." According to the <i>Mi'kmaq Creation Story</i>, the first actions of creation are a mystery.</p> <p>Once life is established, it is sustained by several cellular processes. One of the most important cellular processes comes from the green plants. They are the only life forms that manufacture their own food and in doing so, they create a by-product that is necessary for our atmosphere and survival. This process is called photosynthesis and begins when light strikes the plant's leaves. Cells in the plant's leaves contain chlorophyll which interacts with sunlight to split the water in the plant into its basic components. Carbon dioxide enters the leaf through holes and combines with the stored energy in the cells through a chemical reaction to produce a simple sugar. The sugar is then transported through tubes in the leaf to the roots, stems and fruits of the plants. Some of the sugar is used immediately by the plant for energy; some is stored as starch; and some is built into a more complex substance, like plant tissue or cellulose. Fortunately for us, plants often produce more food than they need, which they store in stems, roots, seeds or fruit. We can obtain this energy directly by eating the plant itself or its products, like carrots, rice or potatoes. Photosynthesis is the first step in the food chain which</p>

connects all living things. Every creature on earth depends to some degree on green plants.

The oxygen that is released by the process of photosynthesis is an essential exchange for all living things which is why forests, for instance, have been called the "lungs of the earth" because animals inhale oxygen and exhale carbon dioxide in the process of breathing, and plants take in carbon dioxide and give off oxygen in the process of photosynthesis (KTCA Twin Cities Public Television). This 'give and take' is what creates a **symbiotic** relationship between plants and animals and/or humans. To understand symbiotic relationships more clearly, view the *Sacred Balance* video/DVD series. See how trees, river systems, salmon, black bears of British Columbia work together through complex systems of behaviour and chemical decomposition to sustain a healthy rain forest.

Cellular respiration is an almost universal process by which *organisms* utilize the sugars in their food to produce enough energy to perform all the necessary actions of living creatures. Cellular respiration is carried out by every cell in both plants and animals and is essential for daily living. It does not occur at any set time and, at the same point in time. Neighboring cells may be involved in different stages of cellular respiration.

The Mi'kmaq Creation Story

The Mi'kmaq Creation Story describes how life began for all things. This process occurred in seven stages or levels of creation and is described as follows:

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Level 2: The Sun creates life and gives us our Shadows. The shadows reflect the identities, characteristics and spirits of ancestors. The Shadows are the joining of earth, matter, and the blood of human life. The Sun connects the spirit world to the physical world and is represented by the centre direction.

Level 3: The third level of Creation is on the surface of **Mother Earth**. In the Mi'kmaq language, several words are directly related to the word for "Earth." For example, the word for the skin of a drum and the word for the Mi'kmaq people are related to each other and to the Mi'kmaq word for Mother Earth. The beat of a drum is the heartbeat of Mother Earth. The surface skin of Mother Earth gives rise to life, including people, and this is reflected in the word *Oosgitjinoo* which means "the person who has

peeled himself off the surface of the Earth and is standing erect.” *Oosgitjinoo* is a word used to refer to the Mi’kmaq people.

Level 4: The first man, **Glooscap**, is created from a bolt of lightning. The bolt hits the Earth and his body is created on the Earth’s surface. He is lying with his head in the direction of the rising sun and his feet are facing the setting sun. His arms are outstretched to the north and south. When the lightning meets with the elements of the Earth that make up Glooscap’s body, a life force is created. When lightning hits a second time, Glooscap develops fingers and toes, and seven sacred parts to his head (two eyes, two ears, two nostrils and a mouth) appear. At the third bolt of lightning, Glooscap is freed from the surface of the Earth to walk and move about.

Glooscap gives thanks to Mother Earth and Grandfather Sun for his creation, and pays his respects to the **South**, the **West**, the **North** and the **East** directions. Once returning to the east where he was created, Glooscap is visited by an eagle that tells him he will soon be joined by his family to help him understand his place in this world. The eagle drops a feather, which Glooscap catches. This feather gives him strength and serves as a symbol of connection between his people and the Giver of Life, Grandfather Sun and Mother Earth.

Level 5: Glooscap meets his **Grandmother**, who is born from a rock. She teaches him to respect her wisdom and knowledge about the stars, the wind, the seasons and the tides, the characteristics and the behaviour of the plants and animals, and how to make food, clothing and shelter. For their *sustenance*, Glooscap takes the life of a **marten**, asking *permission* of the animal first, and giving thanks to the Giver of Life, Grandfather Sun and Mother Earth afterwards. Then, using the seven sparks from the bolts of lightning that created Glooscap, and seven pieces of dry wood, cousin **Whirlwind** is invited to create the Great Spirit **Fire**. Grandmother and Glooscap then feast to celebrate Grandmother’s arrival into the world.

Level 6: Glooscap meets a young man who says he is Glooscap’s nephew, a creation of Whirlwind, who passed through the ocean in the direction of the rising sun, causing foam to form and blow ashore. This foam has rolled in sand and picked up rocks and wood and feathers, eventually resting on sweet grass. With the help of the Giver of Life, Grandfather Sun and Mother Earth, the **nephew** was created. The nephew offers vision to the future and comes as a gift of the ancestors. Nephew is also a responsibility for Glooscap to guide, since the young turn to the old for direction in life. And just as Glooscap took the life of the marten for survival, the nephew calls upon the fish to give up their lives. Glooscap gives thanks, apologizing for taking the shadows of the fish and for taking elements of Mother

	<p>Earth for their own survival. Again they feast, and continue to learn from Grandmother.</p> <p>Level 7: Glooscap's mother appears, coming first as a <u>leaf</u> on a tree that falls to the ground and collects dew. The Giver of Life, Grandfather Sun and Mother Earth have made Glooscap's mother from this dew to bring gifts to her children. These gifts include the colours of the world, understanding and love, so that her children will know how to share and care for one another. Glooscap has his nephew gather food for a feast to celebrate the creation of Glooscap's mother. Glooscap provides leadership, respecting the teachings of the elders, the vision and strength of the young people, the gifts of the ancestors, and the teachings on how to rely on each other and to respect and care for one another. In this way, they live a good life.</p>
<p>Learner Objectives</p>	<p>Knowledge/Understanding:</p> <ul style="list-style-type: none"> • To understand the origin of energy flow through living systems on planet earth through photosynthesis and cellular respiration • To understand that the carbon cycle is Nature's recycling system • To demonstrate how structures and functions of cells, tissues, organs, and body systems relate to each other • To gain insight into the food chain, starting with plants and followed by animals, as made possible through photosynthesis • To understand symbiotic relationships • To understand creation from a traditional Mi'kmaq perspective <p>Inquiry/Values:</p> <ul style="list-style-type: none"> • To reflect on the relationship between human needs and the physical environment. • To recognize the opportunities and limitations presented by geographical contexts • To appreciate the environmental processes on which humans rely for their continued existence • To identify the roles that oxygen and carbon dioxide play in sustaining our ecosystem • To develop insight as to the symbiotic relationship between natural elements, plants and humans <p>Skills/Applications :</p> <ul style="list-style-type: none"> • To apply basic science process skills (observing, classifying, measuring, communicating, predicting, and inferring) • To formulate operational definitions of the vocabulary terms • To develop proficiency in listening, speaking, writing, questioning and negotiating
<p>Strategy</p>	<ol style="list-style-type: none"> 1. Have students stand with their backs to a wall. Ask them to lean against the wall as they slowly slide down the wall until their legs are 45 degree angles at the knees. See how long they can hold this position. Who lasted the longest? What did this it feel like to

hold oneself in this position?

2. Discuss what happens to the muscles in the legs when they are strained like they were. The cells cannot produce the oxygen they need so chemical processes take place in the body's metabolism which we feel as pain. This scientific exercise demonstrates cellular respiration, which is how the cells in the body breathe and rejuvenate. Energy is transferred to the cells through oxygen which explains why we need oxygen for our survival.
3. Now compare cellular respiration to photosynthesis. Discover what happens if you change the patterns of a plant's light source. Pick a shrub, tree or houseplant that you can use for an experiment. Using the cardboard or aluminum foil, cut out some geometrical shapes like a circle, square or triangle. Make sure your shapes are big enough to make a patch that will cover nearly half of the plant leaf.
4. Paperclip each shape on a different leaf. If you use a house plant, place it near a south, west or east window where it will get plenty of sunlight. Make notes about the weather each day and add them to your observations.
5. After four days, remove the shapes from the leaves and observe each of the leaves that had a shape covering it. Compare the areas on the leaf that were covered with the shape to other parts of the leaf. What has happened to the leaves? Describe the effects that the lack of sunshine has on leaves. What has or hasn't happened in the different parts of the leaf? What is the best environment for a house plant? Why? Where have you seen effects like these in nature? Where would you expect to find fewer plants outside because of a lack of sunlight?
6. Discuss the transfer of energy in cellular respiration compared to that of photosynthesis. What are the active agents to precipitate these processes? What happens to cells when they lack oxygen? What happens to plants denied light? This explains why we need sunlight for our survival.
7. Now having scientifically demonstrated the transfer of energy through respiration and light to sustain life, introduce broad theological perspectives on the creation of life itself as explained by a traditional Mi'kmaq elder, Stephen Augustine.
8. View www.fourdirectionteachings.com together as a class to: a) Read "Mi'kmaq Creation

Story” (PDF) and b) Listen to Stephen’s teaching, “The First Level of Creation,” “The Second Level of Creation,” “The Third Level of Creation,” “The Fourth Level of Creation,” “The Fifth Level of Creation,” “The Sixth Level of Creation,” and “The Seventh Level of Creation.”

9. In groups review the seven levels of creation as told by Stephen Augustine. Discuss the process by which energy is transferred to Glooscap, charging him with life. How do the bolts of lightning compare to photosynthesis? How does the wind generated by Whirlwind relate to the concept of cellular respiration?

10. In groups relate the reaction of elements in cellular respiration as understood by scientists to the moment of creation when lightning struck Glooscap. Identify the chemical processes by which energy was transferred in this story. How does this coming to life relate to cellular respiration?

11. Wrap up with a reading of the Student Summary above and a selection of discussion topics and/or optional exercises below.

Discussion Topics:

- Explain the relevance of the Mi’kmaq creation story to the Mi’kmaq people in terms of understanding our ecosystem. How is their understanding of our ecosystem impacted by the knowledge gained from this story? To what extent is the relationship between Glooscap and the sea, sweet grass, and the wind a symbiotic one (mutually advantageous)?
- Understanding global interdependence begins with an understanding of global dependence. Discuss the modification of Earth’s surface to meet human needs and how when successful, the relationship between people and the physical environment is adaptive whereas when the modifications are excessive the relationship is maladaptive.
- Identify the themes in the Mi’kmaq Creation Story.
- How is this traditional teaching in fact relevant and not incompatible with scientific perspectives of energy and energy transference?

Optional Exercises:

- Research creation stories from other cultures and religions. Present findings through visuals such as photographs, drawings, maps and diagrams. Identify those elements similar between

	<p>the stories. What conclusions do you have about man's understanding of creation?</p> <ul style="list-style-type: none"> • Research the meaning of the terms in the vocabulary • Reflect in a journal how everyone is like Glooscap. Identify the commonalities in terms of relationships, needs and wants. Compare these to our responsibilities. How do you reconcile your responsibilities with your needs and wants? • Present the circle of life theme from the Mi'kmaq Creation Story non-verbally. Incorporate movement, song, dance, artistry, sculpture, video, photography, etc. to convey the creation of life and the interconnectivity of all living beings.
Vocabulary	<ul style="list-style-type: none"> • Organism • Evolution • Cellular • Respiration • Photosynthesis
Materials Required	<ul style="list-style-type: none"> • Cardboard • Aluminum foil • Paperclips
Evaluation	<ol style="list-style-type: none"> 1. Give an oral presentation 2. Take a written short-answer form of test