

South Slave Divisional Education Council

MATH GRADE 7

CURRICULUM PACKAGE

June 2012

*Creating
Futures*



2012

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BLOOM'S REVISED TAXONOMY



Creating

Generating new ideas, products, or ways of viewing things
Designing, constructing, planning, producing, inventing.



Evaluating

Justifying a decision or course of action

Checking, hypothesising, critiquing, experimenting, judging



Analysing

Breaking information into parts to explore understandings and relationships

Comparing, organising, deconstructing, interrogating, finding

Applying

Using information in another familiar situation

Implementing, carrying out, using, executing



Understanding

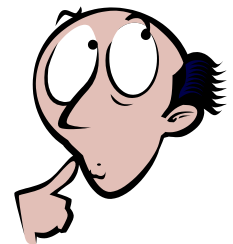
Explaining ideas or concepts

Interpreting, summarising, paraphrasing, classifying, explaining

Remembering

Recalling information

Recognising, listing, describing, retrieving, naming, finding



BLOOM'S REVISED TAXONOMY **COGNITIVE** DOMAIN: VERB LIST

REMEMBERING	UNDERSTANDING	APPLYING	ANALYZING	EVALUATING	CREATING
Cite	Add	Acquire	Analyze	Abstract	Appraise
Define	Approximate	Adapt	Audit	Animate	Assess
Describe	Articulate	Allocate	Blueprint	Arrange	Compare
Draw	Associate	Alphabetize	Breadboard	Assemble	Conclude
Enumerate	Characterize	Apply	Break down	Budget	Construct
Identify	Clarify	Ascertain	Characterize	Categorize	Contrast
Index	Classify	Assign	Classify	Check	Counsel
Indicate	Compare	Attain	Compare	Code	Criticize
Label	Compute	Avoid	Confirm	Combine	Critique
List	Contrast	Back up	Contrast	Compile	Defend
Match	Convert	Calculate	Correlate	Compose	Determine
Meet	Defend	Capture	Deconstruct	Construct	Design
Name	Describe	Carry out	Detect	Cope	Discriminate
Outline	Detail	Change	Diagnose	Correspond	Estimate
Point	Differentiate	Classify	Diagram	Create	Evaluate
Quote	Discuss	Complete	Differentiate	Critique	Explain
Read	Distinguish	Compute	Discriminate	Cultivate	Grade
Recall	Elaborate	Construct	Dissect	Debug	Hire
Recite	Estimate	Customize	Distinguish	Depict	Interpret
Recognize	Example	Demonstrate	Document	Design	Invent
Record	Explain	Depreciate	Ensure	Develop	Judge
Repeat	Express	Derive	Examine	Devise	Justify
Reproduce	Extend	Determine	Explain	Dictate	Measure
Review	Extrapolate	Diminish	Explore	Enhance	Plan
Select	Factor	Discover	Figure out	Experiment	Predict
State	Generalize	Draw	File	Explain	Prescribe
Study	Give	Employ	Find	Facilitate	Produce
Tabulate	Infer	Examine	Group	Format	Rank
Trace	Interact	Exercise	Identify	Formulate	Rate
Write	Interpolate	Execute	Illustrate	Generalize	Recommend
	Interpret	Explore	Infer	Generate	Release
	Observe	Expose	Interrupt	Handle	Select
	Paraphrase	Express	Inventory	Hypothesize	Summarize
	Picture graphically	Factor	Investigate	Import	Support
	Predict	Figure	Layout	Improve	Test
	Review	Graph	Manage	Incorporate	Validate
	Rewrite	Handle	Maximize	Integrate	Verify
	Subtract	Illustrate	Minimize	Interface	
	Summarize	Implement	Optimize	Join	
	Translate	Interconvert	Order	Judge	
	Visualize	Investigate	Organize	Lecture	
		Manipulate	Outline	Model	
		Modify	Point out	Modify	
		Operate	Prioritize	Network	

BLOOM'S REVISED TAXONOMY **COGNITIVE** DOMAIN: VERB LIST

REMEMBERING	UNDERSTANDING	APPLYING	ANALYZING	EVALUATING	CREATING
		Personalize	Proofread	Organize	
		Plot	Query	Outline	
		Practice	Relate	Overhaul	
		Predict	Select	Plan	
		Prepare	Separate	Portray	
		Price	Size p	Prepare	
		Process	Subdivide	Prescribe	
		Produce	Train	Produce	
		Project	Transform	Program	
		Provide		Rearrange	
		Relate		Reconstruct	
		Round off		Relate	
		Sequence		Reorganize	
		Show		Revise	
		Simulate		Rewrite	
		Sketch		Specify	
		Solve		Summarize	
		Subscribe		Write	
		Tabulate			
		Transcribe			
		Translate			
		Use			

BLOOM'S REVISED TAXONOMY **AFFECTIVE** DOMAIN: VERB LIST

Receiving	Responding	Valuing	Organization	Internalizing
Ask	Accept responsibility	Associate with	Adhere to	Act
Choose	Answer	Assume responsibility	After	Change behavior
Follow	Assist	Believe in	Arrange	Develop behaviour code
Give	Comply	Be convinced	Classify	Develop philosophy
Hold	Conform	Complete	Combine	Influence
Select	Enjoy	Describe	Defend	Judge problem/issue
Show interest	Greet	Differentiate	Establish	Listen
	Help	Have faith in	Form judgments	Propose
	Obey	Initiate	Identify with	Qualify
	Perform	Invite	Integrate	Question
	Practice	Join	Organize	Serve
	Present	Justify	Weigh alternatives	Show mature attitude
	Report	Participate		Solve
	Select	Propose		Verify
	Tell	Select		
		Share		
		Subscribe to		
		Work		

BLOOM'S REVISED TAXONOMY QUESTIONING FRAMEWORK

	BLOOM'S REVISED ORDER	ACTIONS	EXAMPLES FOR: INTENTIONAL QUESTIONING-PROMPTING FOR HIGHER LEVEL/ORDER THINKING	
HIGHER-ORDER THINKING	<p><u>Creating</u></p> <p>(Putting together ideas or elements to develop an original idea or engage in creative thinking).</p>	Designing Constructing Planning Producing Inventing Devising Making	<ul style="list-style-type: none"> • What would you do differently next time? • Why? • What could you do next? Why? 	<ul style="list-style-type: none"> • What would you do differently next time? • Why? • What could you do next? Why?
	<p><u>Evaluating</u></p> <p>(Judging the value of ideas, materials and methods by developing and applying standards and criteria).</p>	Checking Hypothesising Critiquing Experimenting Judging Testing Detecting Monitoring	What do you think is really good about what you are: <ul style="list-style-type: none"> • Building • Exploring • Cooking • Serving • Making • Inventing • Planning 	Look at what you are _____, <ul style="list-style-type: none"> • What do you think could be a problem with the way it is made? • Why do you think that? • What do you think will work really well? • Explain why you think so
	<p><u>Analyzing</u></p> <p>(Breaking information down into its component elements).</p>	Comparing Organising Deconstructing Attributing Outlining Structuring Integrating	<ul style="list-style-type: none"> • Do you see anything that is the same/different from _____? • How could you put this together in a different way? What would happen? 	<ul style="list-style-type: none"> • How would your _____ change if you didn't have _____? • What could you use instead? • Why do you think it would work?
LOWER-ORDER THINKING	<p><u>Applying</u></p> <p>(Using strategies, concepts, principles and theories in new situations).</p>	Implementing Carrying out Using Executing	What other uses does _____ have? <ul style="list-style-type: none"> • New Context • Different Purpose • Combine new context & new purpose 	What if you wanted to use what you are (making/cooking etc.) for a new/different purpose. What would you: <ul style="list-style-type: none"> • Add? • Remove? • Change?
	<p><u>Understanding</u></p> <p>(Understanding of given information).</p>	Interpreting Exemplifying Summarising Inferring Paraphrasing Classifying Comparing Explaining	What is important about what you are: <ul style="list-style-type: none"> • Building • Exploring • Cooking • Serving • Making • Inventing • Planning 	<ul style="list-style-type: none"> • Explain how this (item/ingredient/part/amount etc.) is important to what you are doing.
	<p><u>Remembering</u></p> <p>(Recall or recognition of specific information).</p>	Recognising Listing Describing Identifying Retrieving Naming Locating Finding	Describe what you are: <ul style="list-style-type: none"> • Building • Exploring • Cooking • Serving • Making • Inventing • Planning 	Tell me what you are using to: <ul style="list-style-type: none"> • Cook • Build • Investigate • Serve • Examine • Fix • Copy

DENE KEDE

DENE KEDE, the culture-based curriculum of the NWT, serves as the heart of the NWT Curriculum. DENE KEDE was developed under the guidance of Dene elders and shares, through its teachings, the knowledge, skills, and values of the Dene. These cultural understandings serve as the underpinnings for all learning in all content areas and it is expected that the teachings and knowledge contained within DENE KEDE shall be woven into all lessons. In this manner our students will become more capable, more successful and better able to *walk in two worlds*.

DENE KEDE GRADE 7

Passage to Womanhood

Outcomes	Achievement Indicators – Measurable outcomes
<i>It is expected that students will:</i>	<i>The following set of indicators may be used to assess student achievement for each related specific learning outcome. Students who have fully met the specific learning outcomes are able to:</i>
Major Cultural Understanding: With the onset of menstruation, girls were often put through special "rites of passage".	
Describe/discuss the rites of passage for girls and what they consisted of	<ul style="list-style-type: none"> • Once menstruation began for a girl, she would be separated from others, especially from men and boys. • Most Dene tribes practiced rites of passage where, once the girl began her menstruation, she would be set out in a shelter to live alone in the bush, away from her family. • The time spent away from others varied from a few weeks to a few months. • During this time, the girl was given challenges. The challenges, which were different from tribe to tribe, included meagre food and water, the tying of fingers together and being left alone for long periods of time to survive on her own.
Major Cultural Understanding: In times past, the Dene believed that young people gained spiritual power as they became adolescents.	
Provide ways in which spirituality was experienced by adolescents	<ul style="list-style-type: none"> • Adolescent girls and boys were seen to be ready to receive spiritual powers and were prepared for that. • Girls who had begun menstruating were seen to have powers that could negatively affect the power of men, especially their hunting activities. • During adolescence, boys often experienced dreams which gave them an understanding of their own personal medicine powers. • During adolescence, girls could also receive messages about their medicine powers. • Though it was at this age that people began having spiritual experiences, not all young people were able to have them. It was believed that special powers were given only to those who were especially good.
Major Cultural Understanding: The purpose of the rites of passage was to make it known to the girl and the community that the girl had come into the age of womanhood.	
Identify and discuss the purpose of the rites	<ul style="list-style-type: none"> • During this time, the girl would receive counselling and training from her mother, aunts and women Elders. • She would be told about how to care for her things and how to behave around others, now that she had the special powers that came to women who were menstruating. There were rules such as keeping your things organized and together, not walking over the legs of men or their hunting equipment, and not talking to men. • The challenges were meant to develop and test her stamina, strength, courage, resourcefulness and other character traits needed to be an adult woman, upon whom others could depend. • She learned the homemaking and caretaking skills which were considered crucial to the well-being of families.

DENE KEDE GRADE 7

Passage to Womanhood

Outcomes	Achievement Indicators – Measurable outcomes
<i>It is expected that students will:</i>	<i>The following set of indicators may be used to assess student achievement for each related specific learning outcome. Students who have fully met the specific learning outcomes are able to:</i>
Identify and discuss the purpose of the rites (continued)	<ul style="list-style-type: none"> • It was believed that how a young person dealt with this time was an indication of how he or she would be in the future. This was the time when young men and women acquired new characters. • For this reason, the young women were strictly controlled and carefully scrutinized, not only during their time alone, but also when they returned to their families and until they were wed.
Major Cultural Understanding: Adolescence was a time of intense training for adulthood.	
Clarify and discuss the kind of training that the young women would receive	<ul style="list-style-type: none"> • Preparing hides for various uses • Sewing functional hide clothing that was warm, long-lasting and beautiful • Preparing food - butchering, cleaning, drying, cooking meat and fish, and gathering edible roots and berries • Packing loads and travelling, finding their way on the land and setting camp • Caring for young children • Hunting and snaring small game
Major Cultural Understanding: The basic traditional Dene methods and values of dealing with adolescents can be useful in preparing young girls to become women, even today.	
Explain how and why rites of passage can be a useful experience to young women today	<ul style="list-style-type: none"> • Rites of passage provide a time to learn about and reflect on what it means to be a woman: <ul style="list-style-type: none"> ○ Experiencing bodily changes ○ Dealing with feelings of fear and inadequacy ○ Developing attitudes of courage, patience, humility and determination ○ Developing a new role and learning new responsibilities ○ Becoming aware of her choices as she develops. • Having the attention and guidance of caring adult women during this time can help young women to deal with issues concerning their development. • The rites can be an opportunity for girls to focus on how their bodies and roles are changing. They are away from other people and distractions of the community.
Major Cultural Understanding: To know and understand about past ways and to experience them, even in a small way, helps one to feel a part of one's culture.	
Explain how these experiences will create a sense of identity for a woman	<ul style="list-style-type: none"> • To actually experience something that was experienced by our Dene women ancestors may help one to accept the value of the way things were done in the past. • Such an experience may help young girls to understand the feelings of the Elders. • Knowing about one's culture and understanding it enables young people to choose the things they feel are important to carry on with as Dene.

DENE KEDE GRADE 7

Fish Camp

Outcomes	Achievement Indicators – Measurable outcomes
<i>It is expected that students will:</i>	<i>The following set of indicators may be used to assess student achievement for each related specific learning outcome. Students who have fully met the specific learning outcomes are able to:</i>
Major Cultural Understanding: Fishing locations	
<i>Note: Teachers should research and provide information specific to the fish camps used by the community.</i>	
Learn the specific information regarding fishing locations.	<ul style="list-style-type: none"> • Fish species that are caught in the area • Seasonal uses of fishing areas by community • Familiarity with maps and finding popular fishing sites • Distance from the community • Route landmarks and Dene names • Lakes, rivers, creeks and spiritual sites along the way • Dangerous areas by season • Historical land use information
Major Cultural Understanding: Fishing knowledge and skills	
Describe locations of various species and skills needed for successful fishing of these	<ul style="list-style-type: none"> • Life cycles, including spawning habits • Where fish tend to be found; different times of the day & seasons • How best to catch fish, based on knowledge of their habits • Fishing techniques: net with and without a canoe, rod, • Poling, fish dam
Major Cultural Understanding: Required equipment and supplies	
Identify and describe what is needed for equipment and supplies	<ul style="list-style-type: none"> • Fishing equipment • Camping equipment • Supplies and personal effects
Major Cultural Understanding: Canoe maintenance and handling	
Describe/demonstrate good canoe maintenance and handling	<ul style="list-style-type: none"> • Mixing gas • Starting an outboard • Dealing with flooding and spark plugs • Maneuvering in a storm • Dealing with overturned canoes • Using life vests • Maneuvering while net setting • Landing a canoe
Major Cultural Understanding: Handling fish	
Describe and demonstrate proper handling of fish	<ul style="list-style-type: none"> • Removing from a net • Cleaning and preparing • Making drying racks • Making dryfish and split fish • Making fish caches or stages in the fall
Major Cultural Understanding: Camping skills and attitudes	
Identify and demonstrate correct camping and skills and attitudes	<ul style="list-style-type: none"> • Tent location: near wood and water • Spruce bough floor • Campfire: location, finding wood and starting fire quickly • Cooking and washing facilities • Bed rolls and personal hygiene areas • Movement within the tent • Rules for eating • Doing chores and doing one's share • Finding ways to be helpful

DENE KEDE GRADE 7

Fish Camp

Outcomes	Achievement Indicators – Measurable outcomes
<i>It is expected that students will:</i>	<i>The following set of indicators may be used to assess student achievement for each related specific learning outcome. Students who have fully met the specific learning outcomes are able to:</i>
Major Cultural Understanding: Dene laws and spirituality	
Explain the Dene laws and their relationship to fishing	<ul style="list-style-type: none"> • The need to listen to and obey instructors and Elders • Honouring the water, land and fire • Handling fish and equipment with respect • Sharing with the community
Major Cultural Understanding :Land safety and survival	
Demonstrate and explain land safety and its relationship to survival	<ul style="list-style-type: none"> • Caring for dangerous or hazardous items: guns, fuel, axes, etc. • Water safety • Starting a fire in the rain • First aid for burns, cuts and broken bones • Bear hazards • Appropriate dress • Buddy system • Distress calls • Staying in one place when lost • Temporary shelters • Using smoke for repellent • Drinking water safety: boiling and moving water • Direction and orientation • Fishing with wires and hooks
Major Cultural Understanding: Economic value of fishing	
Identify and discuss the economical value of fishing	<ul style="list-style-type: none"> • Nutritional value compared to store bought foods • Comparing cost of local fish to imported meats
Oral Tradition	
Major Cultural Understanding: The Dene have used the oral tradition as a way of passing knowledge from one generation to the next	
<i>Note: Teachers should research and provide information specific to the fish camps used by the community.</i>	
Describe ways that illustrate that the oral tradition is about communication and culture	<ul style="list-style-type: none"> • Without a body of knowledge, there is no culture. Knowledge must be passed from generation to generation in order for a culture to continue. • In the oral tradition, knowledge is passed from person to person orally, rather than in written form. • The knowledge that is passed down can include information, facts, wisdom, beliefs, customs and moral teachings. • Elders were usually the ones to pass on the oral knowledge. Therefore they became known as the teachers of the Dene culture. • Knowledge was often presented in the form of stories and legends. • The oral tradition requires very good listening and memory skills.

DENE KEDE GRADE 7

Oral Tradition

Outcomes	Achievement Indicators – Measurable outcomes
<i>It is expected that students will:</i>	<i>The following set of indicators may be used to assess student achievement for each related specific learning outcome. Students who have fully met the specific learning outcomes are able to:</i>
Major Cultural Understanding: The oral tradition has enabled the Dene culture to continue.	
Describe how the Dene oral tradition has many cultural purposes	<ul style="list-style-type: none"> • It is used to teach skills and knowledge concerning survival. • It is a way of teaching morals, beliefs and customs. • It can be used to counsel & guide individuals in their life decisions. • It is a form of entertainment. • It is a way to pay tribute to the Creator, the land or to certain individuals.
Major Cultural Understanding: Legends are the most important part of the Dene oral tradition	
Identify the reasons that make legends so important to the Dene	<ul style="list-style-type: none"> • They are very old stories which have come down from the first people. • With some variations, they are basically the same story told generation after generation. They are what generations of Dene have in common and what binds them together. • They contain Dene historical information. • They provide gentle moral guidance. • They are rich with Dene beliefs, explanations about life and customs. • They are a good source of entertainment. • They are rich in language.
Major Cultural Understanding: There are Dene customs that are followed when learning from an Elder.	
Describe how the Dene customs and learning from an Elder are related	<ul style="list-style-type: none"> • Stories from Elders are given in exchange for a gift. Local customs vary and should be followed. • In the presence of Elders, good listening skills are essential. • In the presence of Elders, respectful behaviour is required. • Local customs vary and should be followed.
Major Cultural Understanding: The youth of today have a crucial role to play in preserving the oral knowledge of the Dene.	
Express how the role that must be played by the youth of today, is crucial to preserve the oral Dene knowledge	<ul style="list-style-type: none"> • They must develop good listening and memory skills so they can pass on the knowledge of the Dene. • They must spend time on the land and with Elders in order to hear and understand their words.
My People, My Identity	
Major Cultural Understanding: The Dene are a family made up of First Nations tribes in the Mackenzie Valley who have similar languages, cultures, histories and perspectives on life.	
<i>Note: Teachers should research and provide information specific to the fish camps used by the community.</i>	
Identify the tribes belonging to the Dene family	<ul style="list-style-type: none"> • Chipewyan • Dogrib • Gwich'in • North Slavey • South Slavey
Describe ways in which the Dene groups are a family	<ul style="list-style-type: none"> • They share similar beliefs, values and a basic perspective on life. • They all speak variations of the Athapaskan language. • They were the first people to inhabit and live in the Mackenzie valley and delta. • They all had similar patterns of life and land use (see resource 2).

DENE KEDE GRADE 7

My People, My Identity

Outcomes	Achievement Indicators – Measurable outcomes
<i>It is expected that students will:</i>	<i>The following set of indicators may be used to assess student achievement for each related specific learning outcome. Students who have fully met the specific learning outcomes are able to:</i>
Major Cultural Understanding: As a Dene, I must know my family identity.	
Clarify why I must know my family identity	<ul style="list-style-type: none"> • I will know who I am related to so I can have a place to belong and will know how I fit into a larger family. • It will allow me to know my tribal and band identity(s).
Major Cultural Understanding: The Dene tribe to which I belong has its own distinct language, culture and history.	
Describe ways that my tribe is distinct	<ul style="list-style-type: none"> • We have our own territory and trails for hunting. • Our distinct territory causes us to have our own patterns of life and land use (see Resources 2 to 6). • We have our own dialect and sub-dialects of the Athapaskan language. • Since the time of contact with the non-Dene, we have our own history and resulting effects on our traditional way of life.
Major Cultural Understanding: The relationship between Dene tribes has varied historically	
Identify the different relationships that Dene Tribes had with each other	<ul style="list-style-type: none"> • Bands of Dene who moved around in order to survive travelled freely into neighbouring tribal territories. There were no marked boundaries, but people were aware of who tended to live in a certain territory. • When bands of people from different tribes would meet each other while travelling the land, initial contact was with some apprehension and caution. Past experiences taught that such contact was not always free of conflict. Often, the bands would exchange gifts (which was seen as trade by Europeans) as a symbol of goodwill. • Bands of people who were considered friendly were treated with feasts, drum dancing and games. • Relationships between some of the tribes were historically filled with conflict in the form of abductions, war parties and violent chance encounters. This was particularly true for a period of time between the Yellowknives (a band of Chipewyan people) and the Dogrib. • Though each tribe negotiates its own land claim, we still feel we are a part of a bigger identity - the nation of Dene people.
Major Cultural Understanding: My Dene identity can be strengthened by learning the history of my people	
Describe ways in which I can strengthen my Dene identity	<ul style="list-style-type: none"> • Learn what tribes are in the Dene family and what makes them a family • Find out my family, band and tribal identity • Learn the story of my tribe and band • Learn and live the values held by my people • Learn, practice and use the language of my people
Major Cultural Understanding: The values of my people remain to guide us in our lives and to provide us with a sense of identity.	
Identify Dene values that can be used to guide our lives and to give us a sense of identity in various contexts	<ul style="list-style-type: none"> • Values which guide us in the way we interact with one another: • We value coming together to celebrate our unity or to support one another in troubled times.

DENE KEDE GRADE 7

My People, My Identity

Outcomes	Achievement Indicators – Measurable outcomes
<i>It is expected that students will:</i>	<i>The following set of indicators may be used to assess student achievement for each related specific learning outcome. Students who have fully met the specific learning outcomes are able to:</i>
Identify Dene values that can be used to guide our lives and to give us a sense of identity in various contexts (Continued)	<ul style="list-style-type: none"> • We value participating in group efforts which benefit the whole community • We value our birthright - the right to belong to a group by virtue of our birth parents. • We value education through our Elders, learning not simply about the past, but valuing the wisdom of age and experience. • We value caring for and sharing with one another. • We value the right of one another to make our own decisions. • We value the talents and strengths that individuals bring to our people as a whole. • We value the friendships which help to make us complete. <p>Values which guide us as individuals:</p> <ul style="list-style-type: none"> • We value becoming capable and able to support others in need. • We value being humble. • We value being non-interfering and mindful of our own affairs. <p>Values which guide our relationship with the land:</p> <ul style="list-style-type: none"> • We honour and care for the land because it is our spiritual source and because it sustains us. • We value our Dene laws, which were given to help us in our relationship with the land. • We value our time on the land because it is the heart of our culture. • We value the Dene skills and knowledge for living on the land.
Developing Dene Skills	
Major Cultural Understanding: Basic Dene skills have enabled the Dene to survive as a people.	
Describe skills that are basic to the Dene culture	<ul style="list-style-type: none"> • Enable Dene people to enjoy, support and work with one another • Enable the Dene to live from the land and be healthy in body • Provide strength of spirit
Major Cultural Understanding: Basic Dene skills are valuable for the young Dene of today.	
Identify valuable basic Dene skills and describe in relation to how they help current young Dene people	<ul style="list-style-type: none"> • Enjoy, use and protect the land • Make a living • Create a healthy family and community • Become healthy in mind, body and spirit • Carry on the culture of the Dene
Major Cultural Understanding: Certain attitudes are helpful in learning and developing basic Dene skills	
Describe the attitudes required for development of basic Dene skills are and how they are helpful	<ul style="list-style-type: none"> • Willingness to take risks and to try something, even though the results may not be perfect • Willingness to persevere at practicing and not become frustrated • Willingness to choose to practice and learn, rather than to engage in self-destructive Or wasteful activities • Attentiveness while listening and watching
Major Cultural Understanding: Talented and capable Dene have found certain techniques useful for learning skills and developing talents. •	
The techniques used by talented and capable Dene include	<ul style="list-style-type: none"> • Setting small goals for oneself• • Imagining what the finished product will look like • Promising small rewards for oneself along the way as one makes progress • Reminding oneself that perfection only comes with practice • Reminding oneself of why one wants to develop the skill • Finding people with the particular skills you wish to learn (often a parent or a relative) and being attentive at listening and watching them

MATH GRADE 7

Strand: Number Develop number sense

Outcomes	Achievement Indicators – Measurable outcomes
<i>It is expected that students will:</i>	<i>The following set of indicators may be used to assess student achievement for each related specific learning outcome. Students who have fully met the specific learning outcomes are able to:</i>
1. Determine and explain why a number is divisible by 2, 3, 4, 5, 6, 8, 9 or 10, and why a number cannot be divided by 0. (C,R)	<ul style="list-style-type: none"> • Determine if a given number is divisible by 2, 3, 4, 5, 6, 8, 9 or 10 and explain why. • Sort a given set of numbers based upon their divisibility using organizers, such as Venn and Carroll diagrams. • Determine the factors of a given number using the divisibility rules. • Explain, using an example, why numbers cannot be divided by 0.
2. Demonstrate an understanding of the addition, subtraction, multiplication and division of decimals (for more than 1-digit divisors or 2-digit multipliers, the use of technology is expected) to solve problems. (ME, PS, T)	<ul style="list-style-type: none"> • Solve a given problem involving the addition of two or more decimal numbers. • Solve a given problem involving the subtraction of decimal numbers. • Solve a given problem involving the multiplication of decimal numbers. • Solve a given problem involving the multiplication or division of decimal numbers with 2-digit multipliers or 1-digit divisors (whole numbers or decimals) without the use of technology. • Solve a given problem involving the multiplication or division of decimal numbers with more than a 2-digit multiplier or 1-digit divisor (whole number or decimal), with the use of technology. • Place the decimal in a sum or difference using front-end estimation, e.g., for $4.5 + 0.73 + 256.458$, think $4 + 256$, so the sum is greater than 260. • Place the decimal in a product using front-end estimation, e.g., for $\\$12.33 \times 2.4$, think $\\$12 \times 2$, so the product is greater than $\\$24$. • Place the decimal in a quotient using front-end estimation, e.g., for $51.50 \text{ m} \div 2.1$, think $50 \text{ m} \div 2$, so the quotient is approximately 25 m. • Check the reasonableness of solutions using estimation. • Solve a given problem that involves operations on decimals (limited to thousandths) taking into consideration the order of operations.
3. Solve problems involving percents from 1% to 100%. (C,CN,PS,R,T)	<ul style="list-style-type: none"> • Express a given percent as a decimal or fraction. • Solve a given problem that involves finding a percent. • Determine the answer to a given percent problem where the answer requires rounding and explain why an approximate answer is needed, e.g., total cost including taxes.
4. Demonstrate an understanding of the relationship between positive repeating decimals and positive fractions, and positive terminating decimals and positive fractions. (C, CN, R, T)	<ul style="list-style-type: none"> • Predict the decimal representation of a given fraction using patterns, e.g., $\frac{1}{11} = \overline{0.09}$, $\frac{2}{11} = \overline{0.18}$, $\frac{3}{11} = ? \dots$ • Match a given set of fractions to their decimal representations. • Sort a given set of fractions as repeating or terminating decimals. • Express a given fraction as a terminating or repeating decimal. • Express a given repeating decimal as a fraction. • Express a given terminating decimal as a fraction. • Provide an example where the decimal representation of a fraction is an approximation of its exact value.

MATH GRADE 7

Strand: Number Develop number sense

Outcomes	Achievement Indicators – Measurable outcomes
<i>It is expected that students will:</i>	<i>The following set of indicators may be used to assess student achievement for each related specific learning outcome. Students who have fully met the specific learning outcomes are able to:</i>
5. Demonstrate an understanding of adding and subtracting positive fractions and mixed numbers, with like and unlike denominators, concretely, pictorially and symbolically (limited to positive sums and differences). [C, CN, ME, PS, R, V]	<ul style="list-style-type: none"> • Model addition and subtraction of a given positive fraction or a given mixed number using concrete representations, and record symbolically. • Determine the sum of two given positive fractions or mixed numbers with like denominators. • Determine the difference of two given positive fractions or mixed numbers with like denominators. • Determine a common denominator for a given set of positive fractions or mixed numbers. • Determine the sum of two given positive fractions or mixed numbers with unlike denominators. • Determine the difference of two given positive fractions or mixed numbers with unlike denominators. • Simplify a given positive fraction or mixed number by identifying the common factor between the numerator and denominator. • Simplify the solution to a given problem involving the sum or difference of two positive fractions or mixed numbers. • Solve a given problem involving the addition or subtraction of positive fractions or mixed numbers and determine if the solution is reasonable.
6. Demonstrate an understanding of addition and subtraction of integers, concretely, pictorially and symbolically. [C, CN, PS, R, V]	<ul style="list-style-type: none"> • Explain, using concrete materials such as integer tiles and diagrams, that the sum of opposite integers is zero. • Illustrate, using a number line, the results of adding or subtracting negative and positive integers, e.g., a move in one direction followed by an equivalent move in the opposite direction results in no net change in position. • Add two given integers using concrete materials or pictorial representations and record the process symbolically. • Subtract two given integers using concrete materials or pictorial representations and record the process symbolically. • Solve a given problem involving the addition and subtraction of integers.
7. Compare and order positive fractions, positive decimals (to thousandths) and whole numbers by using: <ul style="list-style-type: none"> • benchmarks • place value • equivalent fractions and/or decimals. [CN, R, V] 	<ul style="list-style-type: none"> • Order the numbers of a given set that includes positive fractions, positive decimals and/or whole numbers in ascending or descending order, and verify the result using a variety of strategies. • Identify a number that would be between two given numbers in an ordered sequence or on a number line. • Identify incorrectly placed numbers in an ordered sequence or on a number line. • Position fractions with like and unlike denominators from a given set on a number line and explain strategies used to determine order. • Order the numbers of a given set by placing them on a number line that contains benchmarks, such as 0 and 1 or 0 and 5. • Position a given set of positive fractions, including mixed numbers and improper fractions, on a number line and explain strategies used to determine position.

MATH GRADE 7

Strand: Patterns and Relations (Patterns)

General Outcome: Use patterns to describe the world and solve problems.

Outcomes	Achievement Indicators – Measurable outcomes
<i>It is expected that students will:</i>	<i>The following set of indicators may be used to assess student achievement for each related specific learning outcome. Students who have fully met the specific learning outcomes are able to:</i>
1. Demonstrate an understanding of oral and written patterns and their equivalent linear relations. [C, CN, R]	<ul style="list-style-type: none"> • Formulate a linear relation to represent the relationship in a given oral or written pattern. • Provide a context for a given linear relation that represents a pattern. • Represent a pattern in the environment using a linear relation.
2. Create a table of values from a linear relation, graph the table of values, and analyze the graph to draw conclusions and solve problems. [C, CN, R, V]	<ul style="list-style-type: none"> • Create a table of values for a given linear relation by substituting values for the variable. • Create a table of values using a linear relation and graph the table of values (limited to discrete elements). • Sketch the graph from a table of values created for a given linear relation and describe the patterns found in the graph to draw conclusions, e.g., graph the relationship between n and $2n + 3$. • Describe the relationship shown on a graph using everyday language in spoken or written form to solve problems. • Match a given set of linear relations to a given set of graphs. • Match a given set of graphs to a given set of linear relations
3. Demonstrate an understanding of preservation of equality by: <ul style="list-style-type: none"> • modeling preservation of equality, concretely, pictorially and symbolically • applying preservation of equality to solve equations. [C, CN, PS, R, V] 	<ul style="list-style-type: none"> • Model the preservation of equality for each of the four operations using concrete materials or using pictorial representations, explain the process orally and record it symbolically. • Solve a given problem by applying preservation of equality.
4. Explain the difference between an expression and an equation. [C, CN]	<ul style="list-style-type: none"> • Identify and provide an example of a constant term, a numerical coefficient and a variable in an expression and an equation. • Explain what a variable is and how it is used in a given expression. • Provide an example of an expression and an equation, and explain how they are similar and different.
5. Evaluate an expression given the value of the variable(s). [CN, R]	<ul style="list-style-type: none"> • Substitute a value for an unknown in a given expression and evaluate the expression.
6. Model and solve problems that can be represented by one-step linear equations of the form $x + a = b$, concretely, pictorially and symbolically, where a and b are integers. [CN, PS, R, V]	<ul style="list-style-type: none"> • Represent a given problem with a linear equation and solve the equation using concrete models, e.g., counters, integer tiles. • Draw a visual representation of the steps required to solve a given linear equation. • Solve a given problem using a linear equation. • Verify the solution to a given linear equation using concrete materials and diagrams. • Substitute a possible solution for the variable in a given linear equation into the original linear equation to verify the equality.

MATH GRADE 7

Strand: Patterns and Relations (Patterns)

General Outcome: Use patterns to describe the world and solve problems.

Outcomes	Achievement Indicators – Measurable outcomes
<i>It is expected that students will:</i>	<i>The following set of indicators may be used to assess student achievement for each related specific learning outcome. Students who have fully met the specific learning outcomes are able to:</i>
7. Model and solve problems that can be represented by linear equations of the form: <ul style="list-style-type: none"> • $ax + b = c$ • $ax = b$ • $\frac{x}{a} = b, a \neq 0$ concretely, pictorially and symbolically, where a, b and c are whole numbers. [CN, PS, R, V]	<ul style="list-style-type: none"> • Model a given problem with a linear equation and solve the equation using concrete models, e.g., counters, integer tiles. • Draw a visual representation of the steps used to solve a given linear equation. • Solve a given problem using a linear equation and record the process. • Verify the solution to a given linear equation using concrete materials and diagrams. • Substitute a possible solution for the variable in a given linear equation into the original linear equation to verify the equality.

Strand: Shape and Space (Measurement)

General Outcome: Use direct or indirect measurement to solve problems.

1. Demonstrate an understanding of circles by: <ul style="list-style-type: none"> • describing the relationships among radius, diameter and circumference of circles • relating circumference to pi • determining the sum of the central angles • constructing circles with a given radius or diameter • solving problems involving the radii, diameters and circumferences of circles. [C, CN, R, V]	<ul style="list-style-type: none"> • Illustrate and explain that the diameter is twice the radius in a given circle. • Illustrate and explain that the circumference is approximately three times the diameter in a given circle. • Explain that, for all circles, pi is the ratio of the circumference to the diameter ($\frac{C}{d}$), and its value is approximately 3.14. • Explain, using an illustration, that the sum of the central angles of a circle is 360°. • Draw a circle with a given radius or diameter with and without a compass. • Solve a given contextual problem involving circles.
2. Develop and apply a formula for determining the area of: <ul style="list-style-type: none"> • triangles • parallelograms • circles. [CN, PS, R, V]	<ul style="list-style-type: none"> • Illustrate and explain how the area of a rectangle can be used to determine the area of a triangle. • Generalize a rule to create a formula for determining the area of triangles. • Illustrate and explain how the area of a rectangle can be used to determine the area of a parallelogram. • Generalize a rule to create a formula for determining the area of parallelograms. • Illustrate and explain how to estimate the area of a circle without the use of a formula. • Apply a formula for determining the area of a given circle. • Solve a given problem involving the area of triangles, parallelograms and/or circles.
3. Perform geometric constructions, including: <ul style="list-style-type: none"> • perpendicular line segments • parallel line segments • perpendicular bisectors • angle bisectors. [CN, R, V] 	<ul style="list-style-type: none"> • Describe examples of parallel line segments, perpendicular line segments, perpendicular bisectors and angle bisectors in the environment. • Identify line segments on a given diagram that are parallel or perpendicular. • Draw a line segment perpendicular to another line segment and explain why they are perpendicular. • Draw a line segment parallel to another line segment and explain why they are parallel. • Draw the bisector of a given angle using more than one method and verify that the resulting angles are equal. • Draw the perpendicular bisector of a line segment using more than one method and verify the construction.

MATH GRADE 7

Strand: Shape and Space (Transformations)

General Outcome: Describe and analyze position and motion of objects and shapes

Outcomes	Achievement Indicators – Measurable outcomes
<i>It is expected that students will:</i>	<i>The following set of indicators may be used to assess student achievement for each related specific learning outcome. Students who have fully met the specific learning outcomes are able to:</i>
4. Identify and plot points in the four quadrants of a Cartesian plane using integral ordered pairs. [C, CN, V]	<ul style="list-style-type: none"> • Label the axes of a four quadrant Cartesian plane and identify the origin. • Identify the location of a given point in any quadrant of a Cartesian plane using an integral ordered pair. • Plot the point corresponding to a given integral ordered pair on a Cartesian plane with units of 1, 2, 5 or 10 on its axes. • Draw shapes and designs, using given integral ordered pairs, in a Cartesian plane. • Create shapes and designs, and identify the points used to produce the shapes and designs in any quadrant of a Cartesian plane.
5. Perform and describe transformations (translations, rotations or reflections) of a 2-D shape in all four quadrants of a Cartesian plane (limited to integral number vertices). [CN, PS, T, V]	<p>(It is intended that the original shape and its image have vertices with integral coordinates.)</p> <ul style="list-style-type: none"> • Identify the coordinates of the vertices of a given 2-D shape on a Cartesian plane. • Describe the horizontal and vertical movement required to move from a given point to another point on a Cartesian plane. • Describe the positional change of the vertices of a given 2-D shape to the corresponding vertices of its image as a result of a transformation or successive transformations on a Cartesian plane. • Determine the distance between points along horizontal and vertical lines in a Cartesian plane. • Perform a transformation or consecutive transformations on a given 2-D shape and identify coordinates of the vertices of the image. • Describe the positional change of the vertices of a 2-D shape to the corresponding vertices of its image as a result of a transformation or a combination of successive transformations. • Describe the image resulting from the transformation of a given 2-D shape on a Cartesian plane by identifying the coordinates of the vertices of the image.

Strand: Statistics and Probability (Data Analysis)

General Outcome: Collect, display and analyze data to solve problems.

1. Demonstrate an understanding of central tendency and range by: <ul style="list-style-type: none"> • determining the measures of central tendency (mean, median, mode) and range • determining the most appropriate measures of central tendency to report findings. [C, PS, R, T] 	<ul style="list-style-type: none"> • Determine mean, median and mode for a given set of data, and explain why these values may be the same or different. • Determine the range of given sets of data. • Provide a context in which the mean, median or mode is the most appropriate measure of central tendency to use when reporting findings. • Solve a given problem involving the measures of central tendency.
2. Determine the effect on the mean, median and mode when an outlier is included in a data set. [C, CN, PS, R]	<ul style="list-style-type: none"> • Analyze a given set of data to identify any outliers. • Explain the effect of outliers on the measures of central tendency for a given data set. • Identify outliers in a given set of data and justify whether or not they are to be included in the reporting of the measures of central tendency. • Provide examples of situations in which outliers would and would not be used in reporting the measures of central tendency.

MATH GRADE 7

Strand: Statistics and Probability (Data Analysis)

General Outcome: Collect, display and analyze data to solve problems.

Outcomes	Achievement Indicators – Measurable outcomes
<i>It is expected that students will:</i>	<i>The following set of indicators may be used to assess student achievement for each related specific learning outcome. Students who have fully met the specific learning outcomes are able to:</i>
3. Construct, label and interpret circle graphs to solve problems. [C, CN, PS, R, T, V]	<ul style="list-style-type: none"> • Identify common attributes of circle graphs, such as: <ul style="list-style-type: none"> ○ title, label or legend ○ the sum of the central angles is 360° ○ the data is reported as a percent of the total and the sum of the percents is equal to 100%. • Create and label a circle graph, with and without technology, to display a given set of data. • Find and compare circle graphs in a variety of print and electronic media, such as newspapers, magazines and the Internet. • Translate percentages displayed in a circle graph into quantities to solve a given problem. • Interpret a given circle graph to answer questions.
Strand: Statistics and Probability (Chance and Understanding)	
General Outcome: Use experimental or theoretical probabilities to represent and solve problems involving uncertainty.	
4. Express probabilities as ratios, fractions and percents. [C, CN, R, V, T]	<ul style="list-style-type: none"> • Determine the probability of a given outcome occurring for a given probability experiment, and express it as a ratio, fraction and percent. • Provide an example of an event with a probability of 0 or 0% (impossible) and an event with a probability of 1 or 100% certain).
5. Identify the sample space (where the combined sample space has 36 or fewer elements) for a probability experiment involving two independent events. [C, ME, PS]	<ul style="list-style-type: none"> • Provide an example of two independent events, such as: <ul style="list-style-type: none"> ○ spinning a four section spinner and an eight-sided die ○ tossing a coin and rolling a twelve-sided die ○ tossing two coins ○ rolling two dice and explain why they are independent. • Identify the sample space (all possible outcomes) for each of two independent events using a tree diagram, table or another graphic organizer. • Describe the image resulting from the transformation of a given 2-D shape on a Cartesian plane by identifying the coordinates of the vertices of the image. • Identify the sample space (all possible outcomes) for each of two independent events using a tree diagram, table or another graphic organizer
6. Conduct a probability experiment to compare the theoretical probability (determined using a tree diagram, table or another graphic organizer) and experimental probability of two independent events. [C, PS, R, T]	<ul style="list-style-type: none"> • Determine the theoretical probability of a given outcome involving two independent events. • Conduct a probability experiment for an outcome involving two independent events, with and without technology, to compare the experimental probability to the theoretical probability. • Solve a given probability problem involving two independent events.

**AAT MATH GRADE 9
TEST BLUEPRINT**

Multiple Choice (MC) and Numerical Response (NR)			
Item Type	Number of Items	Number of Marks	Percentage of Test
MC	40	40	80%
NR	10	10	20%
TOTAL	50	50	100%
Content Domain of Test			
Strand		Percentage of Items on Test	
Number		25 – 35%	
Patterns and Relations		30 - 40%	
Shape and Space		15– 25%	
Statistics and Probability		10 – 20%	
Cognitive Domain of Test			
Complexity Level		Percentage of Items on Test	
Low		30 – 40%	
Moderate		40 – 50%	
High		15 – 25%	