

The Learning Team

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WHAT?



HOW?

(The difference between **what** is taught and **how** it's taught.)

EDITOR'S NOTE

Teachers bring the curriculum to life



Lisa Everitt
Editor
The Learning Team

Prior to becoming a staff officer at the Alberta Teachers' Association, I was a high school mathematics teacher. And, as a teacher, part of my job was to understand the curriculum and decide how to teach its content. Depending on the material, I sometimes chose to deliver a traditional lecture; other times I would initiate a student-led discussion or have my students engage in peer-to-peer instruction.

People who aren't immersed in the daily workings of the education system are often unaware of the distinction between what is taught (curriculum) and how it's taught (pedagogy), as well as the fact that the responsibility for each of these aspects lies with a different entity.

In Alberta, as is common in jurisdictions with a public education system that employs professional teachers, the government establishes the curriculum (also referred to as programs of study), which outlines what is to be taught in Alberta schools in each grade and subject.

Alberta Education has recently released new draft curriculum for kindergarten to Grade 4. The curriculum documents for each subject contain a range of guiding statements and questions, as well as specific learning outcomes.

An example of a learning outcome, taken from English language arts, is "Students apply oral communication skills when participating in discussions."

These learning outcomes are the main elements that teachers focus on, because they specify what students must learn.

The provincial government sets the K-12 school curriculum, which lists specific learning outcomes that must be taught. However, the government doesn't mandate how the outcomes are taught. Creating lesson plans to address learning outcomes is part of every teacher's professional responsibility.

To be clear, although the government does identify very specific outcomes within the curriculum, it has absolutely no involvement in deciding how these outcomes are taught. This responsibility lies with individual teachers. The Alberta Teachers' Association has many resources and workshops aimed at helping teachers improve their practice, but even the Association itself does not tell its members how to teach. *This responsibility lies with individual teachers.*

To address the learning outcomes contained in the curriculum, teachers formulate lesson plans that are tailored to their students' aptitudes and learning styles. This aspect of teaching encompasses a large part of a teacher's training and ongoing professional development. Figuratively speaking, teachers possess vast tool boxes that are full of teaching techniques. They are constantly assessing and adjusting their practice and are always on the hunt for new ideas. Ideally, when delivering curriculum, a teacher finds a way to bring it to life.

Alberta will begin implementing its brand new K-4 curriculum in 2019. In this issue of *The Learning Team*, we feature an article from Alberta Education that explains how and why the new program of studies was developed. The rest of the issue provides a glimpse at how teachers might bring the new curriculum to life. This is the essence of teaching, and I'm excited to share it with you.

Lisa Everitt is an executive staff officer with the Alberta Teachers' Association.

HOW WOULD A TEACHER

PERSONAL CONNECTIONS TO LAND AND PLACE?

SOCIAL STUDIES | GRADE 1

What?

The following learning outcome is one of six contained in the draft social studies curriculum for Grade 1.

LEARNING OUTCOME

Students illustrate personal connections to land and place.

How?

Following the work of the Truth and Reconciliation Commission, action has been taken to infuse the K-12 curriculum with Indigenous history, ways of knowing and culture. An extension of this progress is movement towards weaving Indigenous approaches like

land-based learning into teaching practice.

It's long been a common practice to address social studies learning outcomes through in-class discussions and hands-on research projects. The following examples combine this "traditional" western approach

with a traditional Indigenous approach.

Examples provided by Shannon Loutitt and Crystal Clark, consultants with the ATA's Walking Together program, and Melissa Purcell, an Indigenous education specialist with the Alberta Teachers' Association.

EXAMPLE 1

Engage in a medicine walk on the land in consultation with a local Elder, Knowledge Keeper or Cultural Advisor to learn about the medicinal properties of traditional plants (i.e. sage, sweetgrass, etc.), including preparation and storage.



Students from Grouard Northland School and Atikameg School learn how to identify plants for medicinal purposes during a medicine walk with Jason Bigcharles, an outdoor education/Cree culture specialist.

EXAMPLE 2

Invite a local Elder, Knowledge Keeper, or Cultural Advisor to share stories related to the local landscape and have students respond by orally sharing their own stories of connection to the land.

EXAMPLE 3

Have students investigate place names within their local area to learn about the significance and meaning in relation to Indigenous peoples, cultures, languages and histories.

LEARNING OFF THE LAND

Interest in land-based learning is growing throughout the province as it provides for richer learning than sitting in a classroom, says Melissa Purcell, an Indigenous education specialist with the Alberta Teachers' Association.

"It's different than watching that science experiment or other learning activity that happens at the front of the classroom. It's engaging in the learning on the land alongside Elders, Knowledge Keepers and Cultural Advisors, and becoming connected to the learning."

For centuries Indigenous peoples have passed their knowledge orally from generation to generation, an approach that is still highly valued.

"The learning varies depending on which area of our land the students are learning from and who they're learning alongside with," Purcell says.

New curriculum is current and relevant

Alberta Education

Old science fiction movies present an interesting look at the future. Often, these movies show how people adapted, in various ways, for life in the 21st century.

What we can take away from these films is that the world that students live in today will look much different tomorrow. Students will work in industries and technologies that we haven't discovered yet, using skills that may just be emerging today. Their quality of life will be impacted by the availability of any number of resources like water, food and shelter and their ability to find meaningful employment.

Our ever-changing future demands a modernized curriculum that prepares students for success at home and work. In June 2016, Education Minister David Eggen announced the development of future kindergarten to Grade 12 curriculum, simultaneously in English and French, in six subject areas: arts, language arts

Alberta's future curriculum provides students with a world-class education that prepares them to make positive choices for themselves, their families and their community.

(English, French, Français), mathematics, social studies, sciences and wellness. This is the first time in Alberta's history that curriculum has been approached in this way. In the past, curriculum was developed one subject at a time.

Our future curriculum is being developed in three interconnected and continuous phases: shaping, developing and implementing. Our work takes into consideration up-to-date research on teaching and learning, innovative ideas and practices from other high-performing national and international education systems, and previous work with our education stakeholders. Our work to modernize curriculum also provides opportunities to look at the way in which curriculum is designed and developed. In the future, curriculum

will be updated more frequently so that it remains current and relevant to students' needs.

Taking a cross-subject approach allows us to make sure that curriculum works as a complete package and that subjects will complement each other. For example, students will be able to develop financial literacy within any number of subjects like math, wellness and social studies. This provides students with more opportunities to revisit concepts and content across grades and subjects to develop the skills, strategies and processes that they need to be successful. Future curriculum will also allow students to develop literacy, numeracy and competencies like critical thinking, problem solving and collaboration in each subject and grade.

FIND OUT MORE: We invite you to find out more by visiting us online at www.alberta.ca/curriculum. You can also view the current draft kindergarten to Grade 4 curriculum within our newest parent-friendly resource at www.new.learnalberta.ca.

TEACHER TEACH...

ADDITIVE THINKING STRATEGIES?

MATH | GRADE 3

Math examples and explanations provided by:

Tancy Whitehouse,
math coach learning
leader and teacher, Cecil
Swanson and Pineridge
schools, Calgary;

Sandy Berg,
learning services co-
ordinator, Chinook's
Edge School
Division, Penhold;

Alicia Burdess,
Grade 9 math
teacher, St. John
Paul II High School,
Grande Prairie.

These teachers also serve on the executive of the ATA's math council.

What?

The following learning outcome is one of 13 contained in the draft math curriculum for Grade 3.

LEARNING OUTCOME

Students represent and solve problems using additive thinking strategies.

How?

There are many ways a teacher could address this outcome. Here are three examples.

WHAT IS THIS REALLY ASKING?

Additive thinking is

- the capacity to work flexibly with the concepts, strategies and representations of addition and subtraction in a wide range of contexts (ie. mathematical reasoning);
- going beyond memorization of basic arithmetic skills; and
- the means to communicate additive understanding effectively in a variety of ways, such as words, diagrams, symbolic expressions and written algorithms.

SOURCE: ALBERTA REGIONAL CONSORTIA

If you can compose and decompose numbers, you have that ability to tackle new things, find different solutions or use different strategies.”

—Tancy Whitehouse, math teacher

Calgary math teacher Tancy Whitehouse says her school has a written plan that outlines a logical order for addressing learning outcomes. Teachers typically don't address learning outcomes in isolation, since many of them overlap. Whitehouse keeps a copy of the program of studies and checks off learning outcomes as she addresses them. She often returns to outcomes that she previously covered to reinforce the students' understanding.

Whitehouse says she exposes students to various strategies for solving problems. Students often stick to one or two strategies that they're comfortable with. “We try to encourage them to keep looking for an efficient method because not all strategies are equal, or they don't always work in all situations.”

EXAMPLE 1

Have the students engage in “math talks.”

The teacher writes questions on the whiteboard or electronic board. Each time the teacher reveals a new problem, students mentally solve it and indicate that they've done so with a thumbs up. When most students have an answer, the teacher invites them to share their answer out loud. She writes the answers on the board. Students then have a chance to share how they arrived at their answers and defend their thinking.

ADDITIVE THINKING IN ACTION

19 + 8 is the same as 20 + 7
78 + 13 is the same as 80 + 11
Use doubles: 6 + 6 is always 12 ... makes it easier to add 6 + 7
Make 10s: knowing that 6 + 4 = 10 makes it easier to add 6 + 5

EXAMPLE 2

Group problem solving

Students work on math problems together: talking, drawing, developing and sharing strategies.

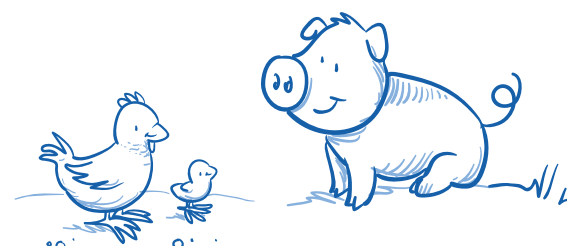
Research shows

Research by Peter Liljedahl of Simon Fraser University suggests that group work in math is most productive when students are placed in random groupings and perform their work on non-permanent, vertical surfaces.

FARMER FIONA HAS PIGS AND CHICKENS. SHE COUNTED 34 EYES AND 46 FEET. HOW MANY CHICKENS DOES SHE HAVE?

Strategies that students may use: draw pictures, create a chart, trial and error.

What's your strategy?



EXAMPLE 3

Explore numbers with base 10 blocks

Base 10 blocks are a “manipulative” that enable students to develop conceptual understanding of composing and decomposing numbers as well as regrouping. A set contains four different types of block: units, rods, flats and cubes. When combining these blocks, students see what a number looks like and understand its value. The blocks also help students understand addition, subtraction, multiplication, division, volume, perimeter and area.

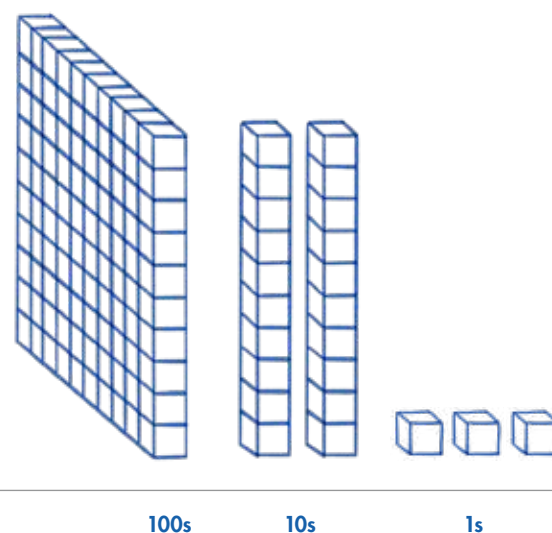
Manipul-what-ives?

Manipulatives are physical objects that students engage with to perceive mathematical concepts.

HOW MANY WAYS CAN YOU REPRESENT THE NUMBER 123 USING BASE 10 BLOCKS?

123 can be represented by:

100s	10s	1s
1	2	3
0	12	3
0	0	123
1	1	13



Additive thinking in action with base 10 blocks

WHO'S RESPONSIBLE?

WHAT? / HOW?

Government sets the curriculum.

Teachers decide how to teach the curriculum.

DID YOU KNOW?

Alberta's new draft K–4 curriculum is available online at www.new.learnalberta.ca.

Program of study is the official wording used to refer to Alberta's school curriculum.

HOW WOULD A TEACHER TEACH...

WORDS AND WORD UNITS?

ENGLISH LANGUAGE ARTS | GRADE 2

What?

The following learning outcome is one of 16 contained in the draft English language arts curriculum for Grade 2.

LEARNING OUTCOME

Students demonstrate knowledge of words and word units in the construction and expression of meaning.

WHAT IS THIS REALLY ASKING?

This learning outcome encourages students to understand how words are formed and how they are used to create different meanings. Examples of understanding words and word units could include

- contractions (can't, don't),
- compound words (somewhere, snowman),
- grammar,
- spelling,

- building vocabulary,
- synonyms (beautiful/stunning),
- antonyms (hot/cold),
- adjectives/adverbs,
- idioms (It is raining cats and dogs!),
- onomatopoeia (boom! splat! croak) and
- alliteration (misty mountain morning).

How?

Teachers will integrate this outcome throughout the entire language arts program. Some activities might include the following:

Examples provided by David Snaterse, Grade 2 teacher, Davidson Creek Elementary, Sherwood Park, and Andrea Berg, executive staff officer, Alberta Teachers' Association.

EXAMPLE 1

Card sort

Students are given cards with different words to sort into different categories of blends and sounds. For example, categories could include "sh" words or words with a long A vowel sound.



EXAMPLE 2

Spicy words

The teacher shares a simple sentence with no adjectives and asks the students to use their "Frank's Hot Sauce" to spice it up with describing words!

For example, using the sentence "We were walking along the mountain," the teacher could ask the students to use their five senses to find words to describe what they see, hear and feel as they imagine walking along the mountain. The revised sentence might be "We were hiking along the rocky mountain trail as the ravens crowed in our ears and the wind whispered at our backs."

"We were hiking along the rocky mountain trail as the ravens crowed in our ears and the wind whispered at our backs."

EXAMPLE 3

Word wall

The class adds 10 new words a week to the classroom "word wall." Students record the words and their definitions in their personal dictionaries to reference as needed. Students are encouraged to incorporate these new words in their own writing.



The word wall in David Snaterse's Grade 2 classroom at Davidson Creek Elementary School in Sherwood Park.

SUPPLIED

CURRICULUM

A set of documents outlining **what** must be taught in each subject and grade.

PEDAGOGY

The art, science or profession of **how** to teach.

Teachers spend about a quarter of their time on planning and administration.

— ALBERTA TEACHER WORKLOAD STUDY, 2015