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Curriculum Planning & Assessment Resource

Mathematics
Grade 3

Alberta Regional Professional Development Consortia
Dedicated to the provision of professional learning opportunities at the local, regional and provincial levels

Curriculum Planning & Assessment Resource
Mathematics
Grade 3 Time

About This Document

This Curriculum Planning & Assessment Resource is intended to be a collection of sample activities, assessments, and resources that teachers may wish to use as they develop their unit plans. This document is not intended to be a sequential list of activities. Rather, the intent is that teachers choose from this resource what is appropriate for their context, and sequence it in their planning.

The sample activities, assessments and resources included in this document have undergone an initial review to determine appropriateness and alignment to the curriculum. However, it is expected that teachers use their professional judgment in selecting activities, assessments and resources that are appropriate for their context.

While every attempt has been made to provide credit and receive permissions, some errors or omissions may have occurred. Please contact info@arpdc.ab.ca to report any error or omissions.

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Important Links

New Learn Alberta Progressions
- Competency Progressions
- Numeracy Progressions
- Literacy Progressions

Recorded Video:
- How to Read these Curriculum Planning & Assessment Resources

Planners and Concept Maps
- K-3 Math Planners
- 4-6 Math Planners (under development)
- Assessment Planners (under development)
- K-3 Math Action Verbs and 4-6 Math Verb Resources

Curriculum Progressions
- Skills and Procedures Progression K-3 (under development)
- Concept Progressions (under development)

Interactive Numbered Outcomes Document with Skills

Acknowledgements

Thank you to all the teachers, numeracy specialists, and technical expertise from Alberta school divisions and ARPDC who collaborated to develop, review, and revise these planning and assessment documents to support curriculum implementation.

Grade 3 - Time 1

Organizing Idea

Time: Duration is described and quantified by time.

Guiding Question

How can duration be communicated?

Learning Outcome

3T1 Students tell time using clocks.

Summative Assessment(s) - Transfer *(In Progress)*

Summative assessments can include the following.

- *Understanding/making sense of a novel context from the real world using one or more concepts (eg. “How are place value and money related?).*
- *Understanding/making sense of a novel context using one or more understandings (eg.Students use money to model the conversion of base 10 values and relate them to base 10 block’).*
- *Being able to describe* why *(linking concepts) something is true, a result, or what might be an extension using learned concepts and understandings.*
- *Apply learning (create products; undertake projects; taking action such as creating a campaign) in a novel context or taking action using the understanding(s).*
- *Construct arguments by taking a position and verifying/proving it with known understandings.*

Summative Assessment(s)

[*understanding surface vs deep vs transfer*]

3T1 - Telling Time Summative **Students Telling Time Using Clocks Summative (English)** **3T1 Indique l’heure en utilisant des horloges (French) Sommative (French)**

Click to jump!

KUSP 3T1

Literature Connections

KUSP 3T1

Assumable Curriculum / Prerequisite Knowledge / Vocabulary

Understanding of days, weeks, months, duration of time without counting minutes or hours, cycles

Student Language | Essential vocabulary & concepts

- **Unit of time:** A standard way of measuring duration; the basic unit of time is the second
- **A.M.:** The first 12-hour cycle in a 24-hour day
- **P.M.:** The second 12-hour cycle in a 24-hour day

I Know Statements | Metacognition

- I know there are 60 seconds in one minute, 60 minutes in one hour and 24 hours in one day.
- I know time can be shown on analog and digital clocks.
- I know time can be shown using 12-hour and 24-hour cycles.

Nelson Pre-Assessments

Pre-Assessments 2 & 3: Finding Each Students Pathway
Grade 2: The Calendar - p.41
Grade 3:
Using Calendars - p.34

***Nelson Leaps and Bounds* Pages will be referenced in the PreAssessments answer Key for follow-up for emerging learners.**

I Can Statements | Skills

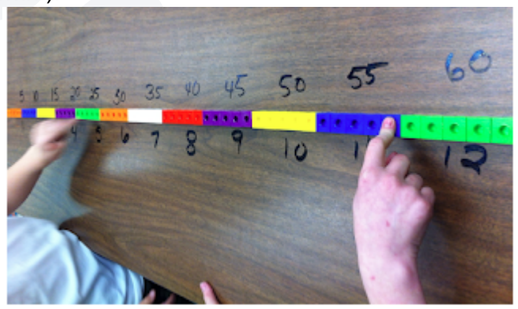
- I can investigate the relationship between seconds, minutes, and hours on an analog clock.
- I can tell time on analog and digital clocks.
- I can express the time of day using a.m. and p.m.
- I can express the time of day using the 24-hour cycle.

Learning Recovery

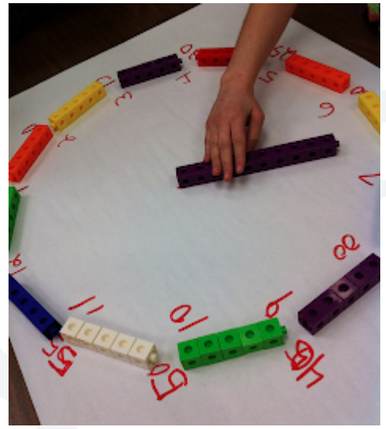
- Review skip-counting by 5s to 60 to help with reading time. Use a Hundred Chart to help.
- Use Mathology Grade 2: Measurement Math Every Day: Card 3A, Hula Hoop Clock for those who need support telling time to the quarter-hour on an analogue clock.
- For students struggling to tell time to the hour and half-hour, use Mathology Grade 2: Measurement Intervention Activity 6, Telling Time. Alternatively, the activity could be adapted to tell time to the nearest 5 minutes.
- Charlotte's Clock - supportive approach to teaching telling time.(Learning Difficulties.(2005) Special Children. *Charlotte's Clock*

Enhancement

- Brainstorm a list of non-standard and standard units that can be used to measure the passage of time. Have students use a sand timer and a stopwatch to measure how long it takes to do different activities.
- **3T1 Time Keeping Devices - Extension Activity** (research)
- Review how other cultures measure time (i.e., connect to the social studies curriculum).
- Introduce problems involving elapsed time (e.g., Jenny wakes up at 8:00 and finishes getting ready at 8:15. How much time has elapsed?)

Learning Outcome	3T1 Students tell time using clocks.				
Knowledge	**Understanding**	**Skills & Procedures**	**Achievement Indicators**	**Illustrative Examples**	**Assessments (Explainer)**
Clocks relate seconds to minutes and hours according to a base-60 system. The basic unit of time is the second. One second is 1/60 of a minute. One minute is 1/60 of an hour. Analog and digital clocks represent time of day. Time of day can be expressed as a duration relative to 12:00 in two 12-hour cycles. Time of day can be expressed as a duration relative to 0:00 in one 24-hour cycle in some contexts, including French-language contexts.	Clocks are standard measuring tools used to communicate time.	Investigate relationships between seconds, minutes, and hours using an analog clock.	**Investigate** the number of seconds to minutes, the number of minutes to hours, and the number of hours in a day. ***Note:*** *Experience the relationship of seconds to a minute before minutes to hours.*	Do the following over a series of tasks/days: 1. Relate different actions that take one second.  2. Relate a one-second action to a minute (repeated 60 times).  3. Create a linear number line to model a base 60. Relate each block or bead to one minute and color series to 5 minutes. Practice skip counting by 5s.  	[3T1.a Communicating Duration] - **PreAssessment** [3T1.a What are all these arms?] - **Deep** **Top Marks** [Teaching Clock] [Estimating time - 1 minute] - **K5 Learning - surface** [Estimating Time - 1 hour] - **K5 Learning - surface** [Estimating Time] - **Minutes, Hours, Days - K5 Learning - surface** Express one second as a **unit fraction** of one minute. Express one minute as a **unit fraction** of one hour.

4. Take the linear base 60 model and create a circle to connect to an analog clock. Reinforce telling of time is cyclical.

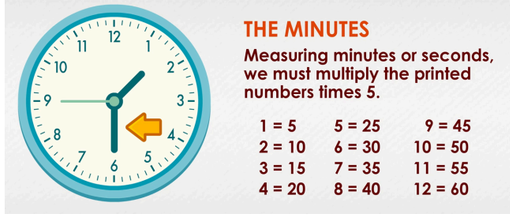


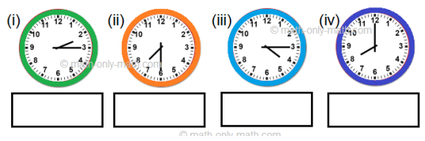
5. Introduce the minute hand. Practice representing minutes on the clock. Challenge students to think about representing 68 minutes…leading into the introduction of the shorter hour hand.

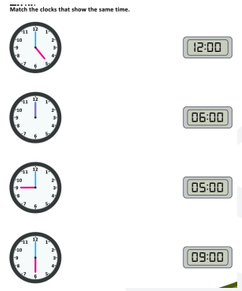
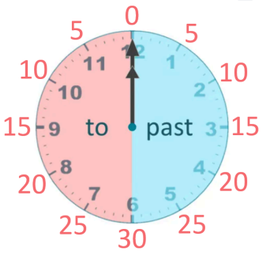
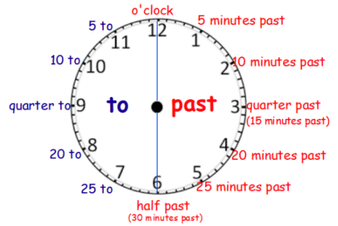
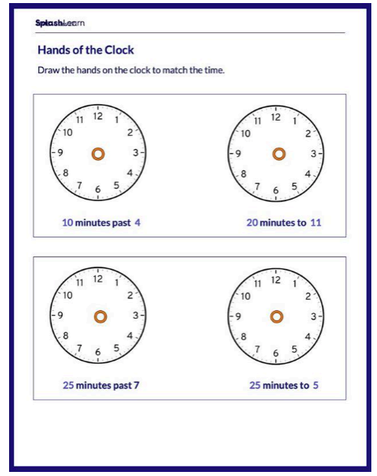
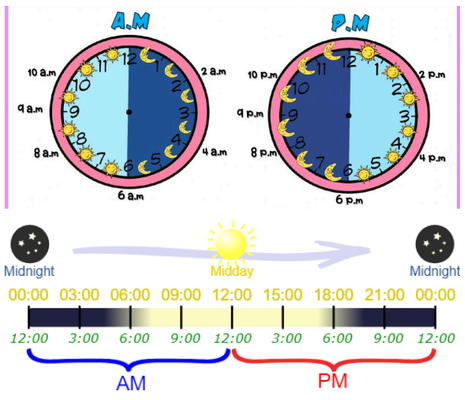
Do the following problems:

1. How many seconds does 2 minutes have?
2. How many 15 seconds are in 1 minute?
3. How many 60 minutes are in 1 hour?
4. How many hours are in half a day?
5. How many hours are in 1 day?

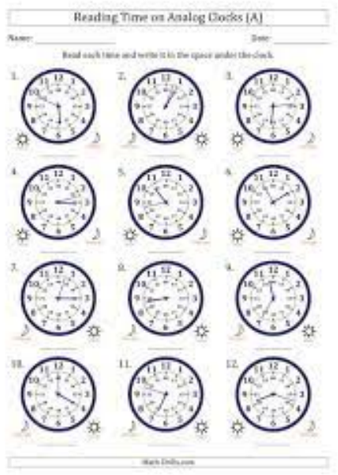
Use skip counting by 5 to the numbers on a clock.



				  **Amazon.ca–Learning Clocks for Kids**	
		Tell time using analog and digital clocks.	**Read** the time on digital and analog clocks.	 	[Telling Time](#) **- surface - K5 Learning** [What Time Is It?](#) **- Deep by WordWall**

					
		Relate minutes past the hour to minutes until the next hour.	**Connect** minutes past the hour to minutes to the hour.	Using scenarios grade 3s are familiar with determine minutes past the hour vs minutes to the hour.   Determine the number of minutes to the hour for increments of 5 minutes, 15 minutes, 30 minutes based on a chosen time. **Examples:** A. 11:30 is 30 minutes past 11:00, 30 minutes until 12:00 (lunch) B. 2:15 is 15 minutes past 2:00, 45 minutes to 3:00 (dismissal) C. 5:45 is 15 minutes to 6:00 (supper time) D. Note: Quarter hours are covered in Grade 4	 Draw Hands of the Clock - **Splash Learn - surface**
		Describe time of day as a.m. or p.m. relative to 12-hour cycles of day and night.	**Tell** time of day using a.m. or p.m.		a.m./p.m.? - **K5 Learning - Surface** 3T1.c Morning or Night? - **Deep**

				Circle the correct option. 1. You can see twinkling stars at night. AM / PM 2. Amelie went to market in the evening. AM / PM 3. Henry went to play in the park in the evening. AM / PM 4. When do most people go to work? AM / PM 5. Michael goes to sleep every night. AM / PM 6. We must always eat a healthy breakfast. AM / PM **12-hour and 24-hour Clocks** **12-hour Clock** The 12-hour clock system displays time for a 12-hour period, which is half of the 24-hour day. • Time from midnight to noon is represented by the abbreviation "a.m." • Time from noon to midnight is represented by the abbreviation "p.m." **a.m.** is from *ante meridiem*, which means before midday. **p.m.** is from *post meridiem*, which means after midday. Most analog clocks are 12-hour clocks. The time on this analog clock reads 6:13, but that could be a.m. (morning) or p.m. (evening). Knowledge and Employability Studio Shape and Space: Measurement: Mathematics Time: ©Alberta Education, Alberta, Canada (www.LearnAlberta.ca)	
	Express time of day in relation to one 24-hour cycle.	**Read** time using a 24-hour cycle.	**24-hour Clock** The 24-hour clock system shows time for a 24-hour period of time. On the 24-hour clock, the first 12 hours of the day are numbered 1 to 12. The next hour is 13. The next hour is 14, and so on. The military uses the 24-hour clock system to avoid confusion in determining if a given time is **a.m.** or **p.m.** For this reason, the 24-hour clock is often referred to as **military time**. **12-hour clock** **24-hour clock** 7:00 a.m. 07:00 Seven hundred hours or "O" (*oh*) seven hundred 11:00 a.m. 11:00 Eleven hundred hours 12:00 a.m. 12:00 Twelve hundred hours 1:00 p.m. 13:00 Thirteen hundred hours 2:00 p.m. 14:00 Fourteen hundred hours ↓ ↓ ↓ 11:00 p.m. 23:00 Twenty-three hundred hours **Note: a.m.** and **p.m.** symbols are not needed with a 24-hour clock. Some analog timepieces have the 24-hour clock numbers printed in an inner circle on the clock face. Many digital timepieces allow you to select the 12-hour or 24-hour clock system by the press of a button. Knowledge and Employability Studio Shape and Space: Measurement: Mathematics Time: ©Alberta Education, Alberta, Canada (www.LearnAlberta.ca) **12-hour and 24-hour Clocks** 1/5	Converting Time from a 12 hour clock to 24 hour clock - Surface - Math Salamander.com **3T1.d Expressing Time - Deep** **The following Tasks are provided free through Brainingcamp. You can obtain a free 2 month access for you and your students to try them out.** **Broken Clocks - Deep - *Brainingcamp*** **All Aboard - Deep - *Brainingcamp***

				  Questions 1-3 provide good examples: **Reading the 24 hour clock**	

Resources

Mathology

ARPDC Math Little Books for Alberta Curriculum
Mathology Free Resources on New Learn Alberta

Mathology Activities
Mathology Grade 3: Measurement Unit 3, Time and Temperature: Activity 9 (focus on relationships among seconds, minutes, hours), Activity 10

Mathology Interactive Tools:
- Analog and Digital Clocks
- Timer, a good tool for relating seconds to minutes

Math UP

AB_Time
- Lesson 1: Relating Seconds, Minutes, and Hours
- Lesson 2: Using a Clock
- Lesson 3: The 24-Hour Clock

Math Makes Sense or Math Focus

Math Focus 3 - Chapter 10 - Lessons 1 & 2
Math Makes Sense 3 - Unit 3 Pages 132 - 144
Math Makes Sense 4 - pages 139 - 141, 142 - 145

NCETM (teacher guides and resources)

Time - NCETM Unit 1 - Week 11 (year 4 Curriculum Map)
Interactive Teaching Clock - both analog and digital
Time blog - Teaching Telling Time - A Non-Standard Approach

Websites/Other

12-Hour and 24-Hour Clocks, from Alberta Education (www.LearnAlberta.ca)

Note: examine the concepts, not the embedded links from the magazines below.

NCETM Primary Magazine Summer Issue #13 - Time & Clocks
Guided Professional dialogue for teachers p14-16 (NCETM Primary Magazine Issue #16, Charlotte's Clock article - referenced in **Learning Recovery** section above)

Gizmos New Learn Alberta (Teacher Login Required)

ExploreLearning Gizmos Site:
Elapsed Time

For access to additional resources, request a Gizmos account alberta@explorelearning.com

Indigenous Lesson Plans and Resources

Mathematics through Aboriginal Storytelling: Small Number and the Kit Foxes, from Math Catcher, Simon Fraser University. Story includes ways in which Indigenous people measure time.

Problem Solving

In development.

Click to jump!

KUSP 3T1

Literature Connections

Literature Connections

Title	Author	Format (Picture Book, Novel, Non-fiction, other)	Publisher	ISBN	Notes
I.Q. Its Time	Mary-ann Fraser	Picture Book	Walker Childrens (Nov. 1 2005)	0802789781, 978-0802789785	Addresses all areas of the KUSPs
Get Up and Go!	Stuart J. Murphy	Picture Book	HarperCollins (Aug. 1 1996)	006446704X, 978-0064467049	Connects time to real world experiences
A Second is a Hiccup	Hazel Hutchings	Picture Book	Arthur a Levine (March 1 2007)	0439831067, 978-0439831062	Connects to real world experiences
Cluck O' Clock	Kes Gray	Picture Book	Holiday House (Sept. 1 2003)	082341809X, 978-0823418091	Fun, humorous tale of a chicken's day through time
It's About Time (MathStart)	Stuart J. Murphy	Picture Book	HarperCollins; Illustrated edition (March 1 2005)	9780060557690, 978-0060557690	Time using an analog clock
It's About Time	Pascale Estellon	Picture Book (Epic)	Owlkids; Illustrated edition (Sept. 15 2018)	1771473428, 978-1771473422	Represents various ways of thinking about time