



SD33 K–8 Numeracy Guide: Teaching, Assessing, and Strengthening Mathematical Learning





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The Chilliwack School District is committed to supporting high-quality, equitable numeracy instruction for all learners. This document brings together key district and provincial resources to help educators design meaningful learning experiences, assess student growth, and build strong mathematical communities in their classrooms. Grounded in the BC Mathematics Curriculum and aligned with the Coast Metro Consortium’s learning foundations, this guide is intended to serve as a practical, user-friendly reference for educators across grades K–7.

Within these pages, teachers will find tools and frameworks that support the development of mathematical comprehension, computational fluency, and the mathematical habits of mind that help students become confident, flexible thinkers. The document highlights assessment practices—including the use of SNAP, fact fluency assessments, observations, conversations, products, and class profiles—that support responsive, evidence-based instruction. It also provides examples of high-yield instructional routines such as Number Talks, Collaborative Problem Solving (i.e. vertical surfaces), Math Workshop/Stations, manipulatives, and literacy connections that support meaningful learning experiences.

By offering sample schedules, planning tools, recommended routines, and links to curated district resources, this guide aims to empower educators as they design engaging, and developmentally appropriate math experiences. **Our collective goal is to ensure that every student feels confident, capable, and ready to use mathematics to explore, understand, and engage with the world around them.**





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Building Math Communities

NUMERACY GOALS

Overall, the goal is for students to become flexible, confident thinkers who can use math to explore, understand, and engage with the world around them. When a math community is being built in the classroom, several important ideas are kept in mind. Educators strive to create spaces where strong math habits are developed, a positive attitude toward learning is encouraged, and confidence in students' abilities is supported. Perseverance is shown when challenges arise, risks are taken by trying new strategies, and creative and critical thinking is applied to problems. Solid math knowledge and strong math skills are built together through a variety of learning experiences, tasks, and problem-solving opportunities.



Curricular Competencies

Mathematical comprehension is developed through the curricular competencies:

- Reasoning and Analyzing
- Understanding and Solving
- Communicating and Representing
- Connecting & Reflecting

See specific grade level curricular competencies on the [BC Curriculum website](https://www2.gov.bc.ca/gov2/education/curriculum_framework/curriculum_framework.html)

Computational Fluency

Computational fluency is the ability to work with numbers accurately, efficiently, and flexibly.

- Understand what numbers mean and how they relate to each other
- Choose strategies that make sense for the problem
- Use mental math, estimation, and written methods when appropriate
- Adjust or change strategies as needed

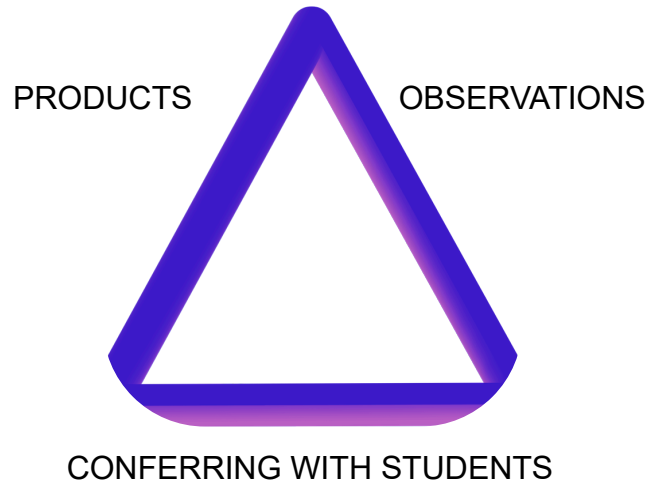




Assessment of Numeracy

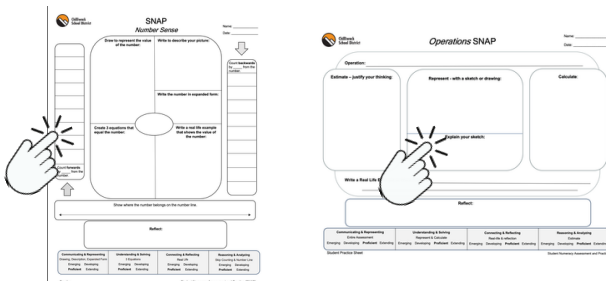
Assessing Math Competencies

In the Chilliwack School District, educators use a variety of sources to assess student learning. Triangulation of evidence is the art of using observation, product and conversations to assess the success and next learning steps for the student. Assessment of learning is more reliable when the educator is able to use multiple sources of evidence from different modes of learning. District and classroom assessments can be used as tools to gather evidence across all three points of the triangle. opportunities.



SNAP Assessment

SNAP is a student-friendly assessment and practice tool that enhances any balanced math program. The templates and rubrics are simple, straightforward and provide a clear snapshot of learning evidence. The SNAP can inform the learning process and provide educators with information to design whole class and small group learning plans.



Number Fact Fluency Assessment

The Number Fact Fluency Assessments help teachers to understand where students are in their learning, support their growth, and ensure they are ready for the next learning progression.

Foundational Fact Sets – these are facts that students need to have fluency within order apply strategies for more complicated facts, known as the Derived Fact Strategies

Strategy	Questions from the Assessment	What to do if this is an area that needs further instruction
+/-, 0, 1, 2	A (5 + 2), G (2 + 7), K (6 + 1), Q (1 + 8)	These facts are closely related to counting. Intentional teaching of understanding one more and one less, can be done through dot images, 10 frames, and stories connected to real life.
Doubles	F (3 + 3), I (8 + 8), N (9 + 9)	Doubles are foundational to more challenging facts like 7 + 8 and 5 + 7. Learning doubles through story problems and looking at matching pairs of 10 frames or on a rekenreks provide a visual anchor for students to rely on if they can't automatically recall the sum.
Combos to 10	P (4 + 6), R (7 + 3)	Looking at the different combinations of numbers that add to 10 is a foundational fact because it will be used for more complicated facts like 8 + 5 later on. Using 10 frames with double sided counters or rekenreks will provide a hands-on experience and a visual that students can rely on to determine an answer if they are not able to recall it automatically.
10 + ____	C (6 + 10), J (10 + 4)	Understanding the concept of 10 and some more builds an understanding of the teen numbers and will be critical for a few of the Derived Fact Strategies. Use story problems and visuals such as 10 frames and rekenreks to provide a connection to the idea of 10 plus some more.





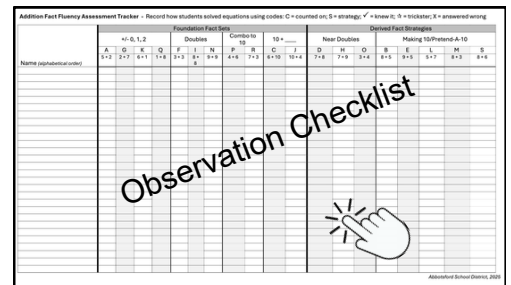
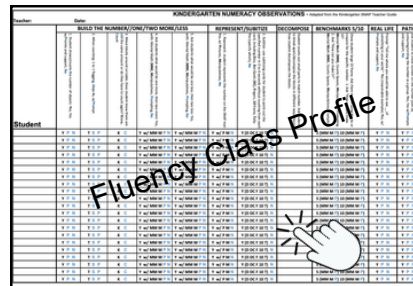
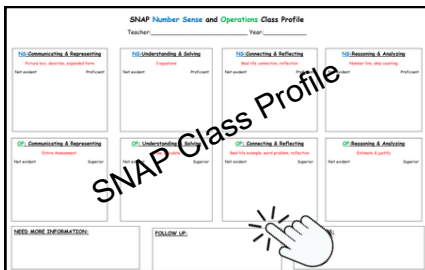
Data Driven Decisions

CLASS PROFILES

Class profiles can be developed with evidence from SNAP, Number Fact Fluency Assessment, Observational Checklists, class observations and even student conferences. Along with fluency assessments, competency assessments, observations, and student conferences, teachers might also include student confidence and willingness to take risks; participating in group work and math discussions; their vocabulary and/or need for supports (sentence starters, visuals, organizers); learning styles; and accommodations required.

Including these elements in class profiles will provide teachers a deeper understanding of each learner and help to design more targeted, equitable, and effective numeracy instruction.

Click for Sample Profiles



Next Steps...

1. Consult Coast Metro learning foundations to ensure students have these concepts consolidated.

- [Kindergarten link](#)
- [Grade 1 link](#)

2. Consult Coast Metro grade level learning progressions to plan for instruction.

- [Kindergarten link](#)
- [Grade 1 link](#)

Number Sense Foundations:

Children may bring experience with card and dice games that have begun their development of subitizing during their early years at home or in preschool learning environments. The following concepts and competencies are foundational in supporting understanding of subitizing:

- Number names for 1-6
- Recognizing familiar dot patterns such as found on dice and dominoes
- Visualizing and holding mental images

Progression:

- Young children develop an understanding that "any quantity" of something can be described with a number name
- Children learn the number names and assign them to small quantities such as 1, 2, or 3
- Children are able to instantly recognize small quantities or items (either objects or regular dot patterns) as 1, 2 or 3 without having to count them (perceptual subitizing).
- Students begin to be able to subitize quantities such as 4, 5 and 6 especially with experience with the regular dot patterns found on dice and dominoes. They may be mentally seeing a quantity in parts to help them subitize.
- Students are able to subitize irregular or unfamiliar dot patterns.





POWER HOUR

Giving students about 60 minutes of math each day helps them build confidence, perseverance, and a solid understanding of key concepts. Students need regular opportunities to practice and make sense of their learning. How this time looks will naturally vary by grade level—Kindergarten teachers weave math into the day in developmentally appropriate ways, while older grades may use a more structured math block with several learning experiences.

For example:



Kindergarten- 2

Morning Opening: Number Talk

Carpet Time: Interactive Read Aloud

After Recess: Collaborative Problem Solving

Afternoon: Math Stations



Grades 3-8

Connect/Warm-Up- Number Talk

Math Lesson- explicit instruction of math competency; goal visible to students

Transform and Explore: students have opportunity to practice and apply to real life scenario. Option for independent or small group work.

Reflect: Did students reach their goal?
Next steps.





HIGH YIELD ROUTINES

The following are the instructional routines that support high quality instruction. Classroom teachers are encouraged to design learning experiences that support **mathematical habits of mind**. According to the [BC Ministry of Education Childcare](#), Students who have developed mathematical habits of mind exhibit expertise in:

- persevering and using mathematics to solve problems in everyday life
- recognizing that there are multiple ways to solve a problem
- demonstrating respect for diversity in approaches to solving problems
- choosing and using appropriate strategies and tools
- pursuing accuracy in problem solving
- play and place-based mathematical experiences and applications



Number Talks

A Number Talk is a short, structured conversation focused on mental math and flexible thinking about numbers.



Collaborative Problem-Solving

Collaborative Problem-Solving is an instructional approach where students work together to solve meaningful mathematical problems by sharing ideas, comparing strategies and building on each other's think.



Multiple Strategies for Computation

Teaching multiple strategies for math computation means helping students learn more than one way to solve operations. Please see [Computation Posters](#) for more information.



Math Workshop/Stations

Math Workshop/Stations is an opportunity to practice the skills taught in explicit lessons and build understanding. Math Workshop/Stations give students choice and agency in how they engage with math.



Interactive Read Alouds and Literacy Connections

Read alouds in math lessons are powerful instructional practices to connect mathematical thinking with language, reasoning, and real-world contexts. It helps students make meaning, see math as a story, and deepen both conceptual understanding and engagement.



Manipulatives/Concrete Materials

Using manipulatives/concrete materials in math lessons help students build real understanding of mathematical ideas before moving to pictorial and symbolic stages. Manipulatives make invisible concepts visible, tactile, and meaningful. Please see [recommended manipulatives](#) for classrooms and schools.





IMPORTANT LINKS



Year At A Glance

As part of the collection of educational resources coordinated by the Coast Metro Consortium, a '[Year At A Glance](#)' is provided for grades K-7.



Computation Strategies

Our Curriculum Helping Teachers have created posters to illustrate a variety of [Computation Strategies](#) (addition, subtraction, multiplication, division).



Week At A Glance

The Coast Metro Consortium have created sample '[Week At A Glance](#)' documents for grades K-7. These samples illustrate how teachers can plan throughout the week for whole class, small group and individual practice. ([sample for Grade 5](#))



Instructional Routines

Common instructional routines can be used across grades to build coherence, support curricular competencies, engage students in mathematical discourse, and teach key content. The Coast Metro Consortium provides a collection of [high-yield routines designed for K-7 classrooms](#).



Suggested Timeline

No plan, no purpose... Term planning provides a roadmap for how math learning will unfold. It ensures instruction is intentional, coherent, and responsive to student needs. The Coast Metro website provides sample [Term Planning](#) for elementary/middle school classrooms.



Proficiency/Achievement Indicators

Gathering evidence of student learning *during* instruction helps teachers make real-time decisions that improve student understanding. Formative and summative assessment informs how students approach a problem, what strategies they use, and where misconceptions lie. Recommended assessments:

[BC Learning Progressions](#)

[SNAP](#)

[Coast Metro](#) resources



Computational Fluency

Computational fluency is the ability to solve computations accurately, efficiently, and flexibly. It goes far beyond memorizing steps and includes understanding numbers and choosing strategies that make sense. Understanding the [fact fluency progressions](#) is essential for effective, responsive math instruction.



Mathematical Comprehension

Mathematical comprehension refers to a student's ability to make sense of mathematical ideas. It's the understanding behind the math—the '[reasoning and analyzing](#)', the '[understanding and solving](#)' and the '[connect and reflecting](#)'.

