Alt+Shift Professional Learning Opportunity Practice Profiles: Foundations of Math (FoM)

Practice profiles outline the key components for successful implementation. They highlight evidence-based practices and describe the essential activities that support each component.

Practice profiles help teams and individuals assess their current practices, identify areas for growth, and set goals. They can improve consistency among educators, track progress, and guide system improvements.

The table below defines the headings in the practice profile and lists common terms you may find in each section.

Use in Practice Headings	Operational Definition
Expected Use	Educators apply required skills across various settings, use them consistently and independently, and continuously grow in their role.
Developmental Use	Educators apply required skills inconsistently within limited settings and may need additional support. They may benefit from a targeted coaching plan to improve and meet expectations.
Unacceptable Use	Educators rarely or never use required skills in any context. If performance falls into the unacceptable range, issues may stem from the overall implementation infrastructure, such as staff selection, training, program management, or data use for improvement.

Adapted from the Active Implementation Hub: Tool: Practice Profile Planning Template module - https://implementation.fpg.unc.edu/resource/practice-profile-planning-tool

How to Use Practice Profiles to Support Implementation

- Read the practice profile.
- Reflect on current practice. Consider where your actions align with the profile and where they differ.
- Ask questions and reflect on observations.
- Avoid drawing conclusions from a single moment. One walkthrough or observation may not capture the full picture.
- If 'Expected Use' practices are not being observed, explore the available supports, resources, and professional learning opportunities. Assess readiness and skills before planning next steps.
- Avoid using this tool for formal evaluations so that the focus can remain on current reality and growth.

Glossary

IEP – An individualized education program (IEP) is a written document for students with disabilities between the ages of 3 and 26 that outlines the student's educational needs and goals and any programs and services the intermediate school district (ISD) and/or its member district will provide to help the student make educational progress.

Components of Number Sense (CONS) – Eight key concepts at the core of mathematics that we engage with when doing math. They should be at the center of mathematical discussions. They include magnitude and quantity, numeration, equality, base ten, form of a number, proportional reasoning, algebraic and geometric thinking.

Conceptual Understanding – A strong, connected understanding of math where individuals grasp why a concept works, not just how to do the steps.

Number Sense – A broad concept that includes a deep understanding of the number system, with special emphasis on the relationships between numbers and operations, and the development, among others, of flexible mental calculation, numerical estimation and quantitative reasoning.

Procedural Fluency – Ability to use steps or methods correctly, quickly, and in different situations.

Prototype for Lesson Construction – A framework for instruction where learners first focus on building relationships between quantities and mathematical structures, and then connect to symbols.

Reasoning – The process of thinking about something in a logical way

Representations – Ways to show or make sense of numbers, their values, and how they relate to each other. Examples include using visuals (drawings, number lines), hands-on tools (counters, tiles), real-life or made-up situations, symbols (like numbers and letters), or words and explanations.

Essential Component #1: Educators apply components of number sense within lessons and activities to support learners' mathematical understanding.		
Expected Use in Practice	**Developmental Use in Practice**	**Unacceptable Use in Practice**
Discusses all components of number sense consistently and accurately in every lesson.	Discusses some components of number sense inconsistently, but attempts to do so in every lesson.	Components of number sense are rarely or inaccurately discussed.
Models the use of multiple components of number sense consistently and accurately in every lesson.	Models the use of some components of number sense inconsistently, but attempts to do so in every lesson.	Components of number sense are rarely or inaccurately modeled.

Essential Component #2: Educators continuously build their own mathematical content knowledge.		
Expected Use in Practice	**Developmental Use in Practice**	**Unacceptable Use in Practice**
Regularly self-assesses to identify when they do not have deep content knowledge of the material they are teaching.	Occasionally self-assesses to identify when they do not have deep content knowledge of the material they are teaching.	Does not self-assess their content knowledge related to the material they are teaching.
Consistently seeks information to build personal understanding before teaching the content.	Inconsistently seeks information needed to teach material with understanding.	Teaches lessons with minimal to no understanding of the content or avoids teaching content because they lack understanding.

Essential Component #3: Educators use and connect all three elements of the prototype for lesson construction (quantity, mathematical structure, symbols) when teaching a math lesson.		
Expected Use in Practice	**Developmental Use in Practice**	**Unacceptable Use in Practice**
Consistently explains clear connections between quantity, mathematical structure, and symbols during lessons.	Attempts to explain connections but they may be unclear, incomplete or inconsistent during lessons.	Does not make connections, e.g., focusing only on procedures or only on exploring with manipulatives.
Consistently models clear connections between quantity, mathematical structure, and symbols during lessons, e.g., manipulatives, drawings, diagrams, demonstrations, etc.	Attempts to model connections but they may be unclear, incomplete or inconsistent during lessons.	Does not model connections, e.g., relies solely on worked examples or states a connection without illustrating it.

Essential Component #4: Educators use accurate mathematical language during instruction.		
Expected Use in Practice	**Developmental Use in Practice**	**Unacceptable Use in Practice**
Always and exclusively uses accurate mathematical language (e.g., "numerator" instead of "top number").	Generally uses accurate mathematical language but occasionally relies on inaccurate or imprecise terms.	Frequently uses inaccurate or imprecise language.
Consistently encourages and supports learners' use of mathematically correct language.	Corrects learners' mathematically incorrect language, but does not always detect inaccuracy or does not yet believe it to be important.	No attempt to consider the accuracy of learners' mathematical language. Rarely or never corrects learners' inaccurate math language.

FoM Practice Profile – Discussion and Reflection Guide

This guide is designed to help teams and individuals reflect on, clarify, and deepen their understanding of the Foundations of Math Practice Profile. It can be used during team meetings, PD sessions, self-reflection, or coaching conversations to support implementation and system improvement.

Step 1: Grounding in Purpose

Facilitator Prompt: "Let's reflect on how our instruction supports or limits learners' mathematical understanding. Try to be honest, curious, and collaborative; focus on systems and practices, not on individual people."

Starter Question: "What comes to mind when you think about the way we teach math in our current settings?"

Step 2: Reflect on Each Essential Component

Essential Component #1 - Applies components of number sense within lessons and activities to support learners' mathematical understanding.

- When and how do we intentionally highlight the components of number sense in our lessons?
- What are opportunities we might be missing?

Essential Component # 2 - Continuously builds one's own content knowledge.

- How do we know when we don't fully understand the math we're teaching?
- What are our habits or systems for deepening our own understanding of math concepts before teaching them?

Essential Component # 3 - Uses and connects all three elements of the prototype for lesson construction (quantity, mathematical structure, symbols) when teaching a math lesson.

- Which of these three elements do we tend to focus on? Which do we overlook?
- How are we modeling these connections for learners using visuals, manipulatives, or demonstrations?

Essential Component # 4 - Uses accurate mathematical language during instruction.

- What impact might inaccurate mathematical language have on learners' understanding?
- How do we respond to learners' use of mathematical language. Do we reinforce, correct, or overlook inaccuracies?

Step 3: Identify Strengths and Gaps

Use the table below to guide reflection and discussion. It can be recreated on chart paper, in a shared doc, or another format. The goal is to reflect on current practices and identify action areas.

Component	Strengths	Observations	Next Steps
Components of Number Sense			
Content Knowledge			
Prototype for Lesson Construction			
Accurate Language			

Step 4: Wrap-up & Final Reflection

- What is one insight you're taking away from today?
- What's one thing you will try, change, or advocate for?