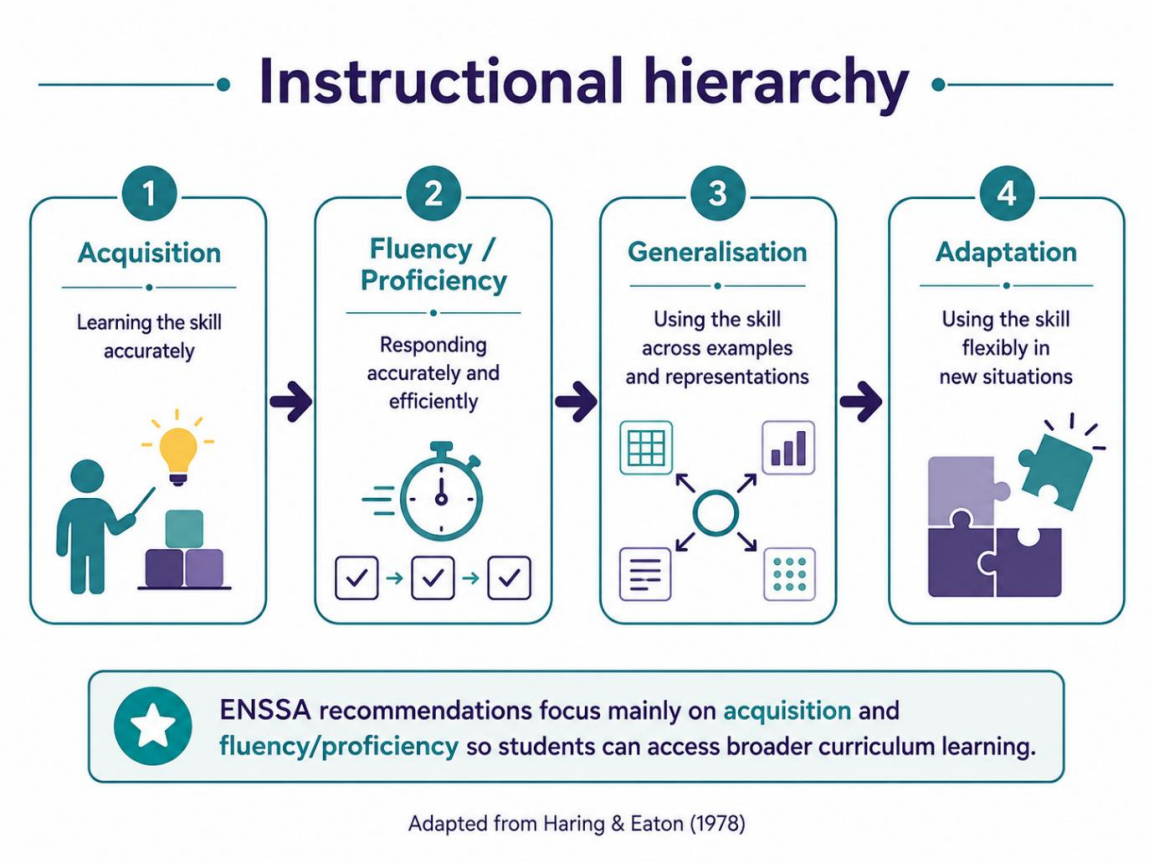
Making ENSSA Recommendations Work: the Instructional Hierarchy in Action

The instructional hierarchy is a useful way to think about how students develop academic skills. It describes four broad stages of learning: **acquisition**, **fluency or proficiency**, **generalisation**, and **adaptation**.

Students do not all need the same kind of support. When students are learning a new skill, they need clear modelling, carefully chosen representations, guided practice, feedback and correction. When students are accurate but slow or effortful, they need frequent opportunities to practise so the skill becomes easier and more fluent. When students are fluent, they need opportunities to maintain the skill and apply it across different examples, representations, contexts and problem types.

ENSSA is designed primarily as a **screening tool**. Its purpose is to help schools identify students who may be experiencing difficulty with early number sense and to support timely instructional decisions. For this reason, the ENSSA teaching recommendations focus mainly on strengthening **acquisition** and **fluency/proficiency**, so that students have the foundational skills needed to benefit from broader classroom mathematics instruction.



The four stages of the instructional hierarchy

The instructional hierarchy is commonly traced to Haring and Eaton's work on systematic instructional procedures.

1. Acquisition

At the acquisition stage, students are learning what a skill means and how to respond accurately. They may be unsure, slow, inconsistent, or inaccurate.

The main instructional goal is **accuracy and understanding**.

Students at this stage benefit from:

- explicit teacher modelling
- worked examples and think-alouds
- carefully chosen concrete and visual representations
- guided practice with a high level of support
- immediate feedback and correction

- smaller instructional steps
- opportunities to explain what they are doing

In early numeracy, acquisition might involve learning to count a set accurately, match a quantity to a numeral, identify the missing part of a whole, compare two numbers, locate a number on a number track, or use a strategy such as make-ten for addition.

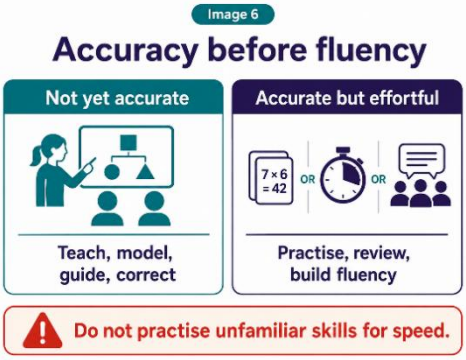
2. Fluency or proficiency

At the fluency or proficiency stage, students can perform the skill accurately, but their response may still be slow, effortful or inconsistent.

The main instructional goal is **efficiency while maintaining accuracy**.

Students at this stage benefit from:

- frequent practice with a small set of already-taught examples
- many opportunities to respond
- choral response, mini-whiteboards, partner rehearsal or response cards
- brief review routines
- cumulative review
- personal-best practice where appropriate
- feedback that protects accuracy



Fluency practice should not be used to teach unfamiliar skills. Students should not practise a fact, number sequence, comparison or procedure for speed until they can complete it accurately. If students become fast but inaccurate, return to modelling, guided practice, correction and a smaller set of examples.

In early numeracy, fluency might involve quickly recognising familiar quantities, identifying numbers before and after, comparing known number ranges, recalling small number combinations, or solving a small set of taught addition and subtraction facts more efficiently.

3. Generalisation

At the generalisation stage, students can perform the skill accurately and fluently in taught formats, but may not yet use it across different examples, representations, contexts or task types.

The main instructional goal is **using the skill across a wider range of situations**.

Students at this stage benefit from:

- varied examples
- different representations
- mixed practice
- opportunities to explain and justify thinking
- links between related skills
- problem-solving contexts
- teacher prompts that help students notice when a skill is useful

In early numeracy, generalisation might involve using part-whole knowledge in addition and subtraction, comparing numbers represented in different ways, applying number sequence knowledge to missing-number tasks and hundreds charts, or using known facts within word problems.

4. Adaptation

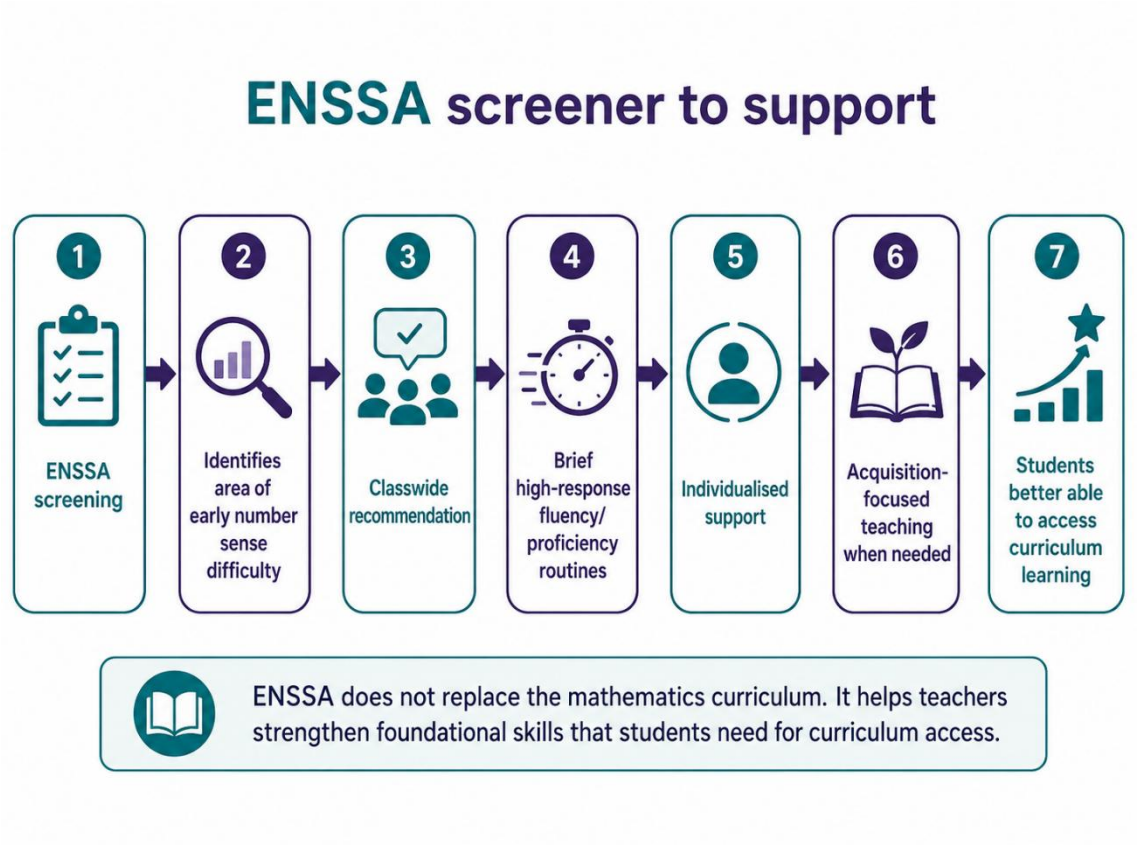
At the adaptation stage, students can use the skill flexibly and independently in new or more complex situations.

The main instructional goal is **flexible application**.

Students at this stage benefit from:

- rich mathematical tasks
- word problems
- open-ended questions
- unfamiliar examples
- opportunities to choose strategies
- reasoning and explanation
- connections to new mathematical ideas

In early numeracy, adaptation might involve choosing an efficient strategy for a new calculation, using number magnitude to check whether an answer is reasonable, applying place-value understanding to a new problem, or combining several number skills in a single task.



How the instructional hierarchy applies to ENSSA recommendations

ENSSA teaching recommendations are designed to support schools after screening. They are not intended to replace the regular mathematics curriculum. Instead, they help teachers decide which foundational number skills may need additional classwide or individualised support.

Because ENSSA is a screener, the recommendations focus mainly on the stages most relevant to students experiencing early difficulty: **acquisition** and **fluency/proficiency**.

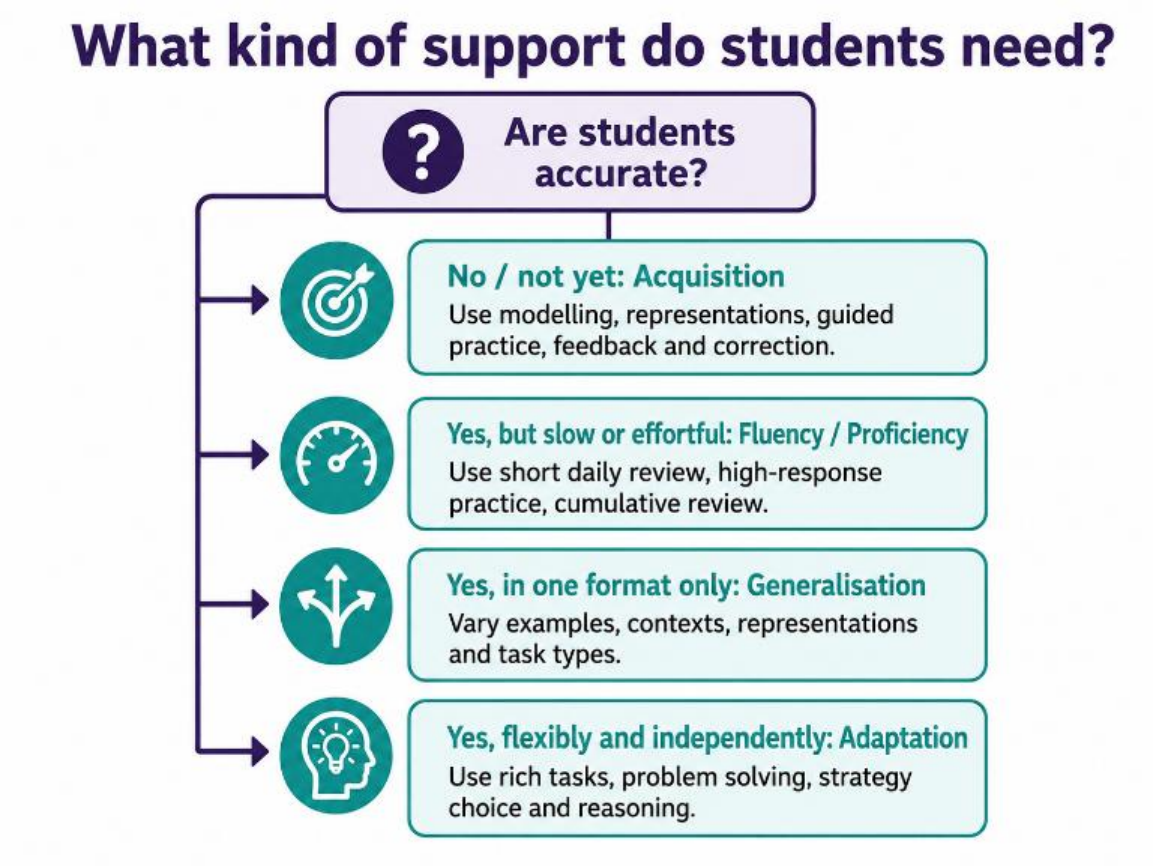
Making ENSSA Recommendations Work: the Instructional Hierarchy in Action

For **classwide recommendations**, the focus is often on the **fluency or proficiency stage**. If many students in a class are performing below expectation in a specific area, they may benefit from short, focused, high-response routines that increase accuracy, confidence, efficiency and automaticity with already-taught skills.

For **more individualised support**, including what schools may describe as Tier 2 or Tier 3 intervention, students may need a stronger focus on the **acquisition stage**. This means returning to explicit modelling, carefully chosen representations, guided practice, immediate feedback, correction and smaller instructional steps. Once students are accurate and independent, instruction should then move deliberately towards fluency-building practice.

ENSSA recommendations do not deal extensively with the later stages of **generalisation** and **adaptation**. These stages are usually supported through regular, curriculum-aligned classroom mathematics instruction, where students apply number knowledge across problem types, contexts, representations and more complex tasks.

The goal of ENSSA-aligned support is to help at-risk students build the accuracy and fluency they need so they can benefit more fully from those broader classroom learning experiences.



A simple decision guide for teachers

If students are inaccurate or unsure

They are likely still in the **acquisition** stage for this skill.

Use:

- explicit instruction
- teacher modelling
- worked examples
- concrete and visual representations
- guided practice
- immediate feedback and correction
- smaller number ranges or smaller fact sets

If students are accurate but slow or effortful

They are likely in the **fluency/proficiency** stage for this skill.

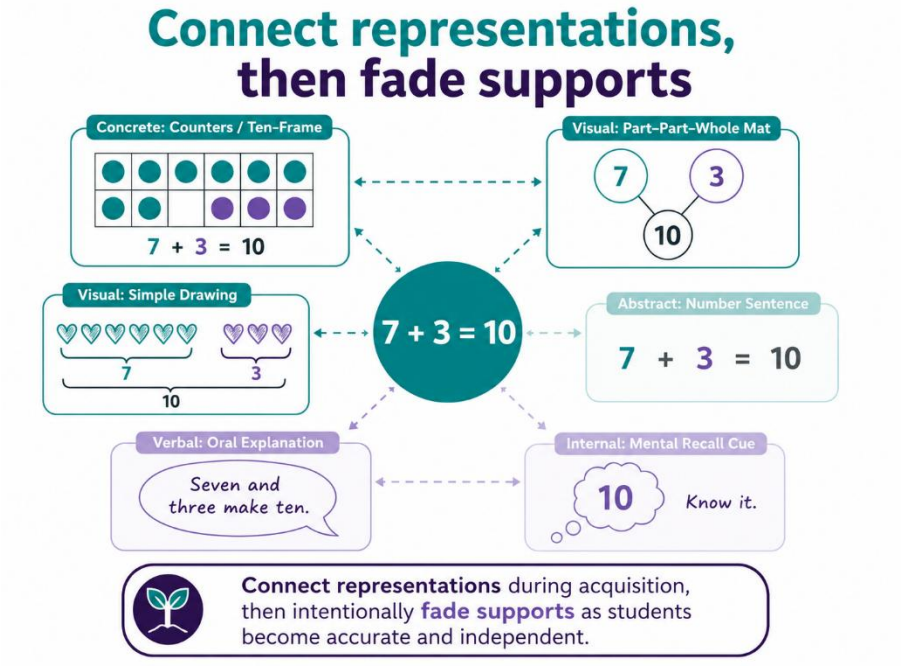
Use:

- short daily review
- high-response routines
- repeated practice with known examples
- cumulative review
- personal-best timing where appropriate

Do not move too quickly to timed practice.	• audio-paced or choral practice where appropriate Keep the focus on accuracy plus efficiency.
If students are accurate and fluent in one format but not others They may need more support with **generalisation**. Use: • varied examples • different representations • mixed practice • partner explanation • reasoning prompts • problem-solving tasks Help students see when and where the skill applies.	**If students can use the skill flexibly in new situations** They are moving towards **adaptation**. Use: • richer tasks • unfamiliar problems • strategy choice • mathematical reasoning • connections to other areas of the curriculum Continue to include review so foundational skills remain available.

Concrete and visual representations across the hierarchy

Concrete and visual representations are especially appropriate during the **acquisition stage**, when students are first learning what a concept or procedure means and how to respond accurately. At this stage, materials help make the mathematics visible and support teacher modelling, guided practice, feedback and correction.



As students become accurate and independent, concrete and visual supports should be intentionally faded. This does not mean removing representations altogether. It means reducing reliance on them so students can respond more efficiently using drawings, numerals, equations, oral explanations and mental strategies.

Students often benefit from seeing the same mathematical idea in more than one form at the same time. For example, a teacher might connect a quantity of counters, a ten-frame, the spoken number word, the written numeral and a matching number sentence. This helps students understand that different representations can show the same number relationship.

The aim is for students to understand the relationship well enough to use numerals and mental responses efficiently, while still being able to return to a representation when they need to explain, check or correct their thinking.

What this looks like across ENSSA recommendation areas

Counting, Quantifying and Number Recognition

At the acquisition stage, students may need explicit teaching in counting, subitising, matching quantities to numerals, and recognising structured patterns.

At the fluency/proficiency stage, students practise recognising familiar quantities, patterns and numerals more efficiently.

Students may need support to move from counting every item to recognising small quantities and useful groups within a larger amount.

Decomposing Numbers

At the acquisition stage, students learn that a whole number can be made from smaller parts. They may use counters, fingers, dot patterns, five-frames, ten-frames or part-part-whole mats.

At the fluency/proficiency stage, students begin to recognise small number combinations more efficiently and rely less on counting-by-ones.

This supports later addition and subtraction because students understand parts and wholes.

Number Sequence

At the acquisition stage, students learn the ordered number sequence and the meaning of before, after, between, one more and one less.

At the fluency/proficiency stage, students practise identifying numbers before, after and between more efficiently across taught number ranges.

Students may need visible supports such as number tracks, number paths, number lists, number cards or hundreds charts before moving to numeral-only responses.

Magnitude Comparison

At the acquisition stage, students learn to compare numbers and explain which number is more, less or the same.

At the fluency/proficiency stage, students practise comparing numerals more efficiently using brief, high-response routines.

Representations such as counters, number tracks, number paths, ten-frames, Base-10 materials and hundreds charts should be used to prove or explain comparisons, not to replace numeral comparison.

Magnitude Estimation

At the acquisition stage, students need many experiences connecting quantities, numerals, order, position, distance and relative size.

At the fluency/proficiency stage, students practise locating, comparing and explaining number positions more efficiently across familiar linear representations.

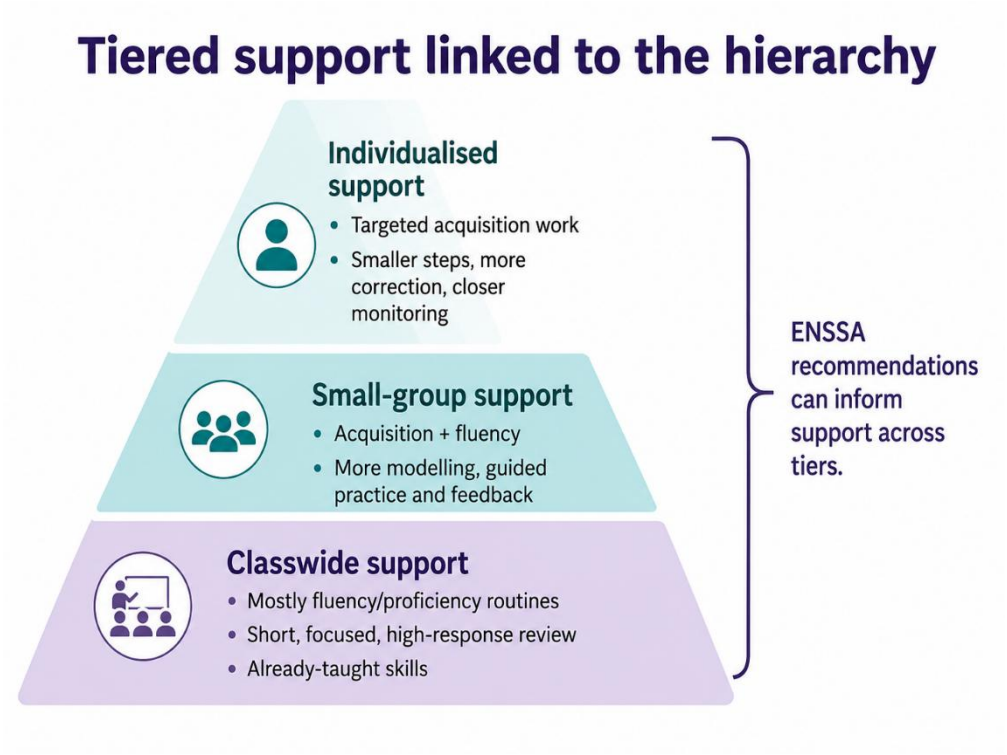
Magnitude estimation should not be reduced to practising the ENSSA number line task. Students need broader experiences with linear magnitude, including cube trains, bead strings, number tracks, number paths, open number lines and bounded number lines.

Addition and Subtraction

At the acquisition stage, students learn strategies and relationships that support accurate addition and subtraction. This may include part-part-whole reasoning, counting on, counting back, counting up to find the difference, doubles, near doubles, make-ten, fact families and early tens-and-ones reasoning.

At the fluency/proficiency stage, students practise small sets of already-taught facts so they can solve and recall them more efficiently.

Fluency practice should only be used when students can already solve the fact set accurately. If students are fast but inaccurate, return to explicit modelling, guided practice, correction and a smaller fact set.



Using ENSSA recommendations in a tiered support model

ENSSA recommendations can support decision-making within a multi-tiered system of support.

Classwide support

When ENSSA indicates a classwide need in a subskill area, teachers can use the relevant recommendation sheet to provide short, focused routines for the whole class or a large group.

Classwide support often focuses on:

- strengthening already-taught foundational skills
- increasing opportunities to respond
- building fluency and confidence
- using brief daily review
- revisiting key number ranges or representations
- preparing students to access regular curriculum instruction more successfully

Small-group or individualised support

Some students may need more intensive support than classwide routines can provide. These students may still be in the acquisition stage for particular skills.

Small-group or individualised support often requires:

- clearer modelling
- more concrete and visual support
- smaller instructional steps
- more guided practice
- immediate correction after each response
- more careful monitoring of accuracy
- slower movement into fluency practice

Progressing from acquisition to fluency

Teachers should look for evidence that students can respond accurately and independently before increasing speed, reducing supports or moving to cumulative review.

Useful questions include:

- Can the student explain or show the skill accurately?
- Can the student respond correctly without heavy prompting?
- Does the student understand the representation being used?
- Can the student complete several examples accurately?
- Is the student ready for repeated practice, or do they still need modelling and correction?

Key messages for teachers

- ENSSA is a screener. Its recommendations are designed to help teachers respond to areas of early number sense difficulty.
- The instructional hierarchy helps teachers decide whether students need teaching, practice, review or extension.
- Acquisition comes before fluency. Students need to understand and respond accurately before they practise for speed or automaticity.
- Concrete and visual materials are especially useful during acquisition, but should be intentionally faded as students become accurate and independent.
- Fluency routines should use skills students have already been taught.
- If students are fast but inaccurate, return to modelling, feedback and a smaller set of examples.
- Generalisation and adaptation are usually supported through broader curriculum-aligned mathematics instruction.
- The goal of ENSSA-aligned support is to help at-risk students build the accuracy and fluency they need to participate more successfully in regular mathematics learning.

Key reference:

Haring, N. G., & Eaton, M. D. (1978). *Systematic instructional procedures: An instructional hierarchy.* In N. G. Haring, T. C. Lovitt, M. D. Eaton, & C. L. Hansen (Eds.), *The fourth R: Research in the classroom* (pp. 23–40). Columbus, OH: Charles E. Merrill.