

Math

PRE-ASSESSMENT 8

Finding Each
Student's Pathway



**SAMPLE
MATERIAL
INSIDE**

FINDING EACH STUDENT'S PATHWAY

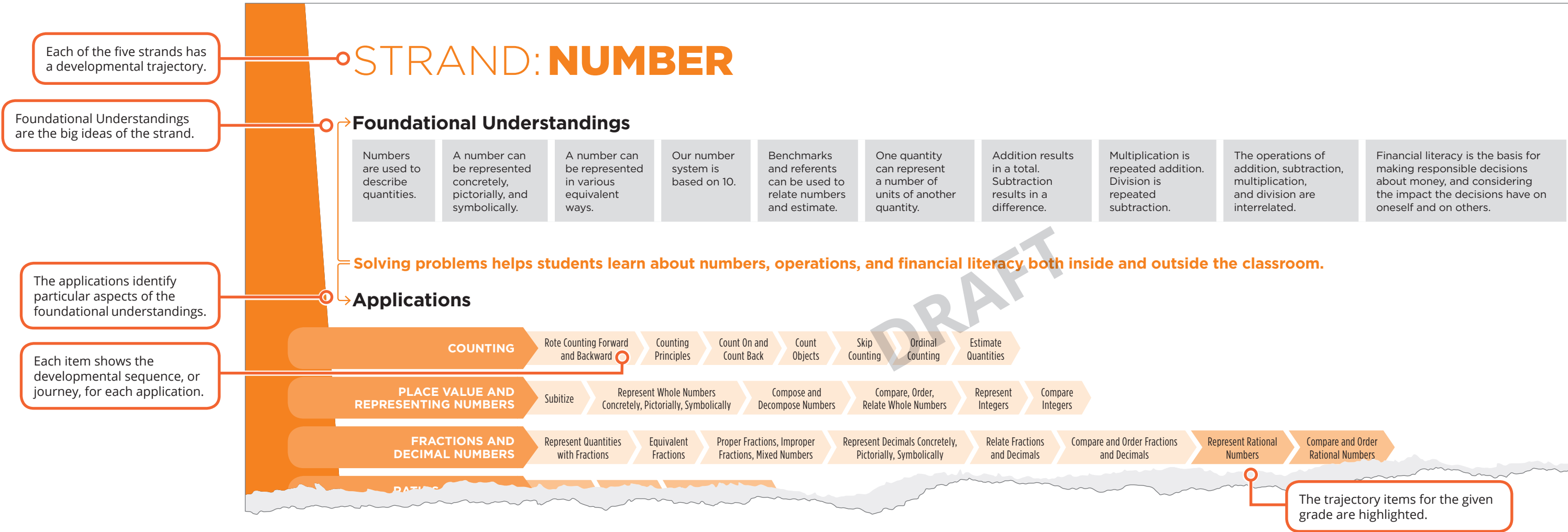
Math Pre-Assessment is a uniquely designed resource to help educators understand and customize each student's math education. The resource is developed by a team of expert math educators and backed by research. *Math Pre-Assessment* enables educators to compare a student's math understanding to their curriculum, identify gaps in understanding and ensure each student is ready for new curriculum material all with this easy to use assessment tool.

Each pre-assessment is created from a **DEVELOPMENTAL TRAJECTORY**. These developmental trajectories are research-supported pathways that students go through to understand mathematics concepts and skills as they move along a learning continuum.

Key Features

- Provides the developmental trajectories to give a whole picture of math development from grade 1–8.
- Assesses whether students have the procedural knowledge and conceptual understandings for the grade specific curriculum.
- Pre-assessments identify where a student is on the developmental trajectory.
- Includes next steps for instruction, gap closing or intervention.
- Tracking tools are provided to keep a record of student readiness.

Developmental Trajectory



Answering The Question:
“Are My Students Ready?”



Resource Overview Grades 1–8
Developmental Trajectories For each of the 5 Strands
Math Pre-Assessments For each item on the trajectory
Scoring Guide and Analysis Charts Provided for each pre-assessment
Online Teaching Centre Digital access

Initial question reaches back to prerequisite learning.

Assessment question focused on trajectory item.

Show What You Know questions provide opportunities for students to demonstrate their understanding.

Name _____ Date _____

Multiplying Fractions

MATERIALS

- fraction circles (optional)
- fraction strips (optional)

1. What multiplication sentence do the fraction strips show? Select all that apply.

A. $3 \times \frac{2}{3}$ B. 2×3 C. $\frac{2}{3} \times 3$ D. 3×3

2. Fill in the missing number. $2 \times \frac{1}{3} = \frac{\square}{3}$

3. Multiply. $\frac{1}{4} \times 3$

A. $\frac{4}{3}$ B. $\frac{2}{3}$ C. $\frac{3}{4}$ D. 3

4. Fill in the missing number. $\frac{2}{5} \times \frac{1}{3} = \frac{2}{\square}$

5. Multiply. $\frac{3}{5} \times \frac{3}{4}$

A. $\frac{6}{9}$ B. $\frac{9}{20}$ C. $\frac{3}{20}$ D. $\frac{3}{9}$

6. Multiply. $1\frac{2}{3} \times 2$ Select all that apply.

A. $3\frac{1}{3}$ B. $2\frac{2}{3}$ C. $3\frac{2}{3}$ D. $\frac{10}{3}$

Show What You Know

Use estimation to check if your answer is reasonable. Explain your estimation strategy.

Analysis Chart pages xx-xx

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ANALYSIS CHART

Identifies the Strand, the Application(s) and the item(s) for the application.

Identify the pre-assessment

Look at: Identify possible items on the trajectory to close gaps.

Answer provided.

Use of **Leaps and Bounds** recommended for deeper intervention

Student needs gap closing.

Contains the "Look Fors" and an explanation for why the question is included.

NUMBER

Multiplication

Multiply Fractions

Multiplication

Estimation Strategies for Multiplication

QUESTIONS	RATIONALE	SCORING	NEXT STEPS
1. What multiplication sentence do the fraction strips show? Select all that apply. A. $3 \times \frac{2}{3}$ B. 2×3 C. $\frac{2}{3} \times 3$ D. 3×3 A, C	Students match a model of multiplication of fractions to a multiplication sentence. Understanding representations of multiplication is important in the development of numeracy.	incorrect only one correct	Look at: • multiplication properties Provide experience: • using the commutative property of multiplication with whole numbers (e.g., $4 \times 3 = 4 \times 3$) For deeper intervention, go to <i>Leaps and Bounds</i> 5/6, pages 86–88.
2. Fill in the missing number. $2 \times \frac{1}{3} = \frac{(\quad)}{3}$ 2	Students multiply a whole number by the numerator of the unit fraction to find the missing numerator. Knowing that a whole number can be written as a fraction with a denominator of 1 helps to determine fraction products.	incorrect	Provide experience: • using repeated addition of fractions to model products
3. Multiply. $\frac{1}{4} \times 3$ A. $\frac{4}{3}$ B. $\frac{2}{3}$ C. $\frac{3}{4}$ D. 3 C	Students multiply a unit fraction by a whole number. Knowing that a whole number can be written as a fraction with a denominator of 1 helps to determine fraction products.	incorrect	Provide experience: • using repeated addition of fractions to model products
4. Fill in the missing number. $\frac{2}{5} \times \frac{1}{3} = \frac{2}{(\quad)}$ 15	Students multiply 2 proper fractions to find the missing denominator. Knowing a variety of strategies to multiply fractions helps students build conceptual knowledge and gives them more than one method to choose from when solving problems.	incorrect	Provide experience: • using a grid model or paper folding to show the denominator by counting the number of units in the grid or folded paper

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QUESTIONS

RATIONALE

SCORING

NEXT STEPS

5. Multiply. $\frac{3}{5} \times \frac{3}{4}$
A. $\frac{6}{9}$
B. $\frac{9}{20}$
C. $\frac{3}{20}$
D. $\frac{3}{9}$
B

Students multiply 2 proper fractions using any strategy. Knowing a variety of strategies for fraction multiplication leads to faster and more accurate computations.

incorrect

Provide experience:
• using a grid to model the fractions (e.g., $\frac{3}{5}$ along one side and $\frac{3}{4}$ along the other)

6. Multiply. $1\frac{2}{3} \times 2$
Select all that apply.
A. $1\frac{1}{3}$
B. $2\frac{2}{3}$
C. $3\frac{2}{3}$
D. $\frac{10}{3}$
A, D

Students multiply a mixed number by a whole number using any strategy and use estimation to check the reasonableness of their answer. Estimating is an effective strategy for checking answers.

incorrect
inadequate explanation
correct

Provide experience:
• using an area model to multiply a fraction by a whole number
Provide experience:
• discussing estimation strategies with a classmate
Provide experience:
• creating various types of problems involving multiplication of fractions, trading with a classmate, and solving
After the lesson that follows this pre-assessment, use Exit Ticket "Multiplying Fractions" to assess whether students can successfully multiply fractions.

Show What You Know
Use estimation to check if your answer is reasonable. Explain your estimation strategy.
For example, I know that $1 \times 2 = 2$; there are 3 thirds in 1 whole, so 4 thirds are a little more than 1. So, my answer should be a little more than $2 + 1 = 3$. My answer of $3\frac{2}{3}$ is reasonable.

MATH EXIT TICKETS
Grade 5
7 8

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Sample solution provided

Use Math Exit Tickets to check for understanding after the lesson.

Provide experience: suggestions for scaffolding understanding of concepts and skills identified in the question.

Recommended intervention.

Student has partial understanding and small gaps.

Student is ready to learn the trajectory item.

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Math Pre-Assessment Order Information

Title	ISBN
Math Pre-Assessment Grade 1	
Book + Online Teaching Centre (Ontario)	9780176830892
Book + Online Teaching Centre (WNCP)	9780176833497
Book + Online Teaching Centre (BC)	9780176833558
Math Pre-Assessment Grade 2	
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