

# How RWBB is helping students build MATH FACT FLUENCY



## What is Math Fact Fluency?

Math fact fluency is the ability to quickly recall addition, subtraction, multiplication, and division facts through conceptual learning, fact strategies, and mastery of basic facts. Fact fluency is crucial to student success in numeracy.

## Fact Fluency vs. Fact Automaticity

Fact fluency and fact automaticity are often used interchangeably; but they are not the same. Fluency in math is the ability to flexibly apply strategies in an efficient and accurate way. On the other hand, automaticity is being able to provide an automatic response (within three seconds).

**When a student is fluent, they are automatic; but when a student is automatic, they are not necessarily fluent. This is why memorization of facts without conceptual understanding is not the recommended path for learning math facts.**

## Three Components for Building Fact Fluency

### Conceptual learning

Students learn the meaning of the operations (+, -, x, ÷) so they truly understand them, and use manipulatives and models to support and demonstrate this understanding.

### Fact Strategies

Students learn operational strategies (e.g. counting-on, doubles, making ten), and how to recognize relationships and connections between operations. Students can explain what strategies they used and justify their choice.

### Mastery of Basic Math Facts

Students participate in daily, engaging activities, such as a variety of math games, to master recall of facts with automaticity (within three seconds).

## FLUENCY BENCHMARKS BY GRADE

Students work with facts and numbers beyond the benchmark levels, but are expected to have fluent recall of those indicated here.

### Grade 1

Recall of one more and one less, addition of numbers that add up to 5 and 10, doubles (up to  $5 + 5$ ), and related subtraction facts is expected by the end of Grade 1

### Grade 2

Recall of facts to 10, doubles to  $9 + 9$ , and related subtraction facts is expected by the end of Grade 2

### Grade 3

Recall of addition and related subtraction facts to 18 is expected by the end of Grade 3

### Grade 4

Recall of the multiplication and related division facts up to  $5 \times 5$  is expected by the end of Grade 4

## ASSESSING PROGRESS

Teachers observe students during authentic activities, interview them about their understanding and choice of strategies, and have them solve targeted sets of facts. Students are assessed on their **flexibility** in applying strategies, their **accuracy**, and their **efficiency**- choosing the best strategy to quickly arrive at the correct answer. Efficiency is associated with automaticity, or the ability to recall the fact in under three seconds.



## BUILDING FACT FLUENCY AT HOME

Practising math facts at home should be fun and arise from your everyday life. Look for ways to count, add, subtract, multiply or divide around the house, in the car, or when you're out for a walk! ex. "We have five plates on the table. How many will we need if I ask you to double that?" When they give you an answer, ask them to explain how they got it.

Playing card games like UNO, Skipbo, or Cribbage are fun ways to practice mental math. A quick internet search for "math fact games" will generate multiple ideas for games that can be played with a regular deck of cards or a pair of dice.

**Reach out to your child's teacher for game ideas, or with questions about how to support your child in building his/her fact fluency!**