

# DOOR 24<sup>®</sup> PLUS

## IMPLEMENTATION GUIDE



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# OVERVIEW

## What is Door 24 Plus?

Door 24 Plus is a mathematical fluency app that harnesses the power of game design to help develop students' skills in both fact fluency and computational fluency. As a complement to i-Ready® Instruction, Door 24 Plus provides targeted support for developing mathematical fluency and is part of the i-Ready mobile family of products. Within Door 24 Plus, students will have the chance to play one of two games depending on their level:

### SNARGG SPLATT develops fact fluency



### VICTOR FIXER develops computational fluency



## What kind of student will benefit from Door 24 Plus?

This educational game is targeted for students at Grades 1–8. Door 24 Plus contains lower-level content to support students who need help with basic fact fluency as well as upper-level content to help develop computational fluency, supporting students' abilities to think quantitatively and strategically.

## How does Door 24 Plus support blended learning?

Door 24 Plus is a component of the i-Ready Diagnostic & Instruction program—an award-winning online diagnostic and instruction solution. i-Ready provides personalized instruction based on a powerful adaptive diagnostic and is proven to predict student performance in reading and mathematics and improve student growth outcomes.

# GETTING STARTED

## How do i-Ready users log in?

- Tap “Yes” to answer the question “Are you an i-Ready student?” on the main login screen.
- Enter their username and password. (This is the same username and password that students use when they log in to the i-Ready website.)



### TIP

*Make sure that i-Ready students use their i-Ready credentials each time they log in. This way the app will track their progress accurately and serve up the appropriate content. You can quickly identify if students are playing under their own account by checking the user name that's displayed at the top of the game screens.*



## How do non-i-Ready users log in?

You can still use the Door 24 Plus app, even if your school has not yet purchased i-Ready!

- Tap “No” to answer the question “Are you an i-Ready student?” on the main login screen.
- Enter student’s first name, last name, and grade level. (This information will only be saved on this iPad® mobile device.)
- Once students have created an account, they will be able to access it by tapping their name in the “I have played before!” list.



### TIP

*Progress on the app cannot be transferred to another device if the student has not signed in using an i-Ready login. Students who don't have an i-Ready login should play on the same device in order to save all their progress.*



## How do students log out?

To log out, students tap on the pause button and select “Log Out.”



### TIP

*We recommend that all students (those with and without an i-Ready login) log out at the end of every session to prevent students from accidentally playing under the wrong accounts. Students will be automatically timed out after 30 minutes.*





# STUDENT PLACEMENT AND LEVELS IN DOOR 24 PLUS

## Why does Door 24 Plus start with a short assessment?

Door 24 Plus starts with a short fact fluency placement assessment to ensure that instruction and practice target each student's area of greatest need.

- For students with an i-Ready login, the placement assessment fine tunes the results of the i-Ready Diagnostic. It delivers a thorough inventory of whether each student is fluent with all the basic facts and ensures that any gaps are addressed in Snargg Splatt before the student moves to computational fluency practice in the Victor Fixer game.
- A student's entry for the fluency placement assessment is based on the student's Diagnostic score in the Number and Operations domain. This means that students who have a higher Diagnostic score will receive more challenging problems at first and the test will ramp up or down based on their results.
- For students without an i-Ready login, the assessment identifies missing skills and places students at the right level in Door 24 Plus to address those gaps and delivers personal growth in either fact fluency or computational fluency.
  - Students without an i-Ready login will enter the fluency placement assessment based on the grade level they entered on the login page.



### TIP

*Students can elect to take the placement assessment again if they feel like the placement is too low. This can happen if they are distracted during the assessment. Encourage your students to try their hardest to receive their true placement.*

## Why is there a typing task?

- In order to unlock Door 24 Plus, students must type numbers as they appear on screen as quickly as they can.
- The typing task records how quickly students are able to type the numbers and provides a baseline for that individual student's motor skills.



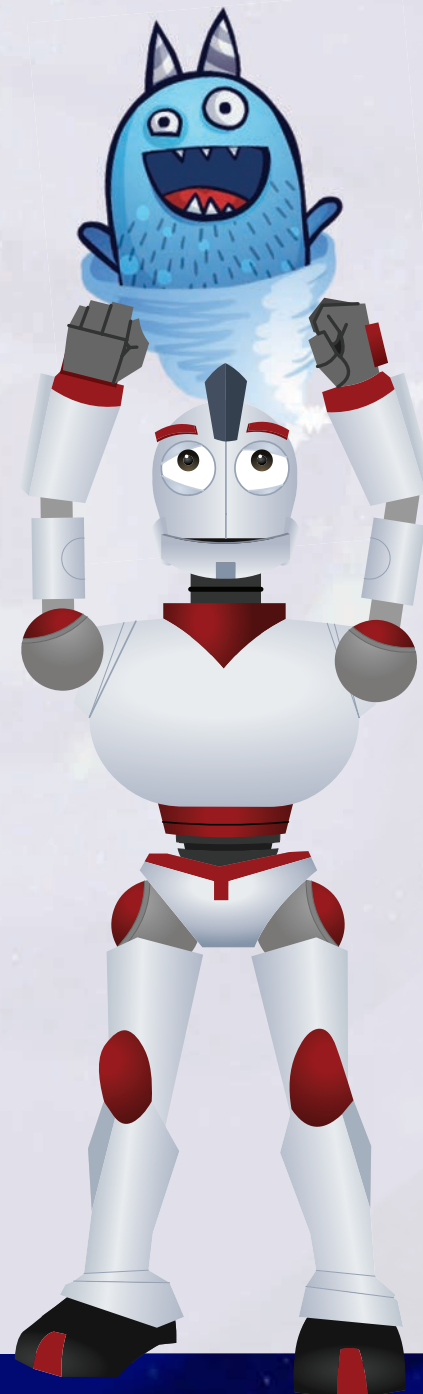
# STUDENT PLACEMENT AND LEVELS IN DOOR 24 PLUS (CONTINUED)

## When do students place into Snargg Splatt?

- If the assessment determines that students need practice with fact fluency, Door 24 Plus places them into the fact fluency game (Snargg Splatt).
- The placement assessment is a multi-stage adaptive assessment, which tests for fluency of basic math facts (based on the time it takes for them to recall the fact).
- The questions in the placement assessment will ramp up or down in difficulty based on student performance in order to pinpoint which facts they are already fluent with and which ones they need more work on.
- The placement assessment is designed to place a student at the earliest point of struggle, so the length of time will differ for each student. The assessment should only take a few minutes.
- Based on the assessment, Snargg Splatt targets the specific facts where students first started to struggle.

## When do students place into Victor Fixer?

- If the assessment determines that students have mastered fact fluency, the app places them into the computational fluency game (Victor Fixer).
- For students with an i-Ready login, their placement in Victor Fixer will be based on their current i-Ready Diagnostic score for the Number and Operations domain.
- For students without an i-Ready login, their placement in Victor Fixer will be based on their current grade level they entered during the login process.



# HOW TO PLAY SNARGG SPLATT

## What is the game?

When students are placed into the fact fluency game, Door 24 Plus opens upon a crazy world of Snarggles playing their favorite game—Snargg Splatt! To join in on the fun, students will need to work fast to complete math facts and throw balls of Splatt at the game board before time runs out!

## How does Snargg Splatt build fact fluency?

Snargg Splatt builds fact fluency by giving students repeated exposure to basic math facts in a specific sequence.

- Students focus on small sets of facts at a time, practicing them repeatedly in a fun game environment.
- Fluency for a particular fact is defined by the ability for the student to be able to automatically recall that fact within one second. The time it takes for them to type in their answer is taken into account so that their recall time can be isolated.
- The facts they are fluent with are integrated in a spiral review in order to keep these facts fresh as well.
- When students begin to struggle with facts, they are sent to the Review section to go over the facts again.

## How do students win the game?

The goal is for students to fill up the entire game board before the 4-minute game timer runs out. During the game, students will have the opportunity to hit bonus items that will reward them with either points or extra squares on the grid. Once students fill the entire board, they will activate Bonus Time! During Bonus Time, cupcakes will appear on the board and students can accumulate bonus points. Points will be tallied and students' high scores will be tracked on their dashboard.

## What content do students practice in the game?

- Addition facts from 0 to 20
- Subtraction facts from 0 to 20
- Multiplication facts from 1 to 144
- Division facts from 1 to 144





# HOW TO PLAY SNARGG SPLATT (CONTINUED)

## Can students play the game with a friend?

Students playing Snargg Splatt can play with a friend during the main game play. Since the second player will also need to log in using his or her credentials, the content in the game will automatically adjust to each player's level.

- For students with an i-Ready login, this will be based on their data, regardless of the device they last logged into.
- For students without an i-Ready login, this will be based on the data saved on that particular device.

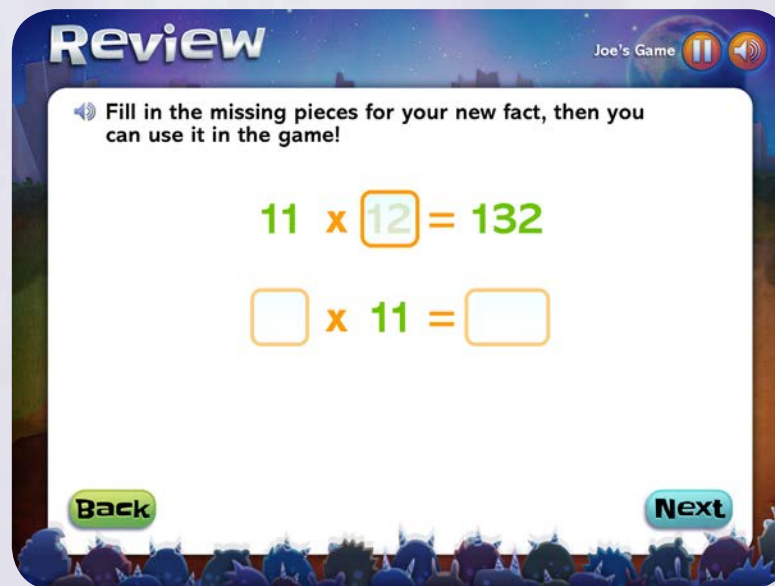
## What kind of instructional support does the game provide?

Each time students practice new facts, the ever-helpful Pepper Jackie offers a quick review.

- If students select “Ready,” they move on to play the game.
- Once in the game, if students struggle with the new facts, they exit the game and are sent to the Review.

### Each new fact review follows these steps.

- **Read Aloud** In the first stage of Review, students are shown their relevant facts and asked to read them aloud in order to cement them into memory. Every fact and direction line has audio support.
- **Visual Representation** When students tap the Show Me button, they will see a visual representation of their key facts. Ten frames are used for addition and subtraction, while arrays are used for multiplication and division. Students are asked to notice similarities and differences between fact groups in order to make connections between fact pairs.
- **Fill in the Blank** In the final stage of Review, students are asked to fill in missing parts of the fact sentence before moving on to use those facts in the game. The goal is to make sure that students are actively paying attention to the new facts before moving on.





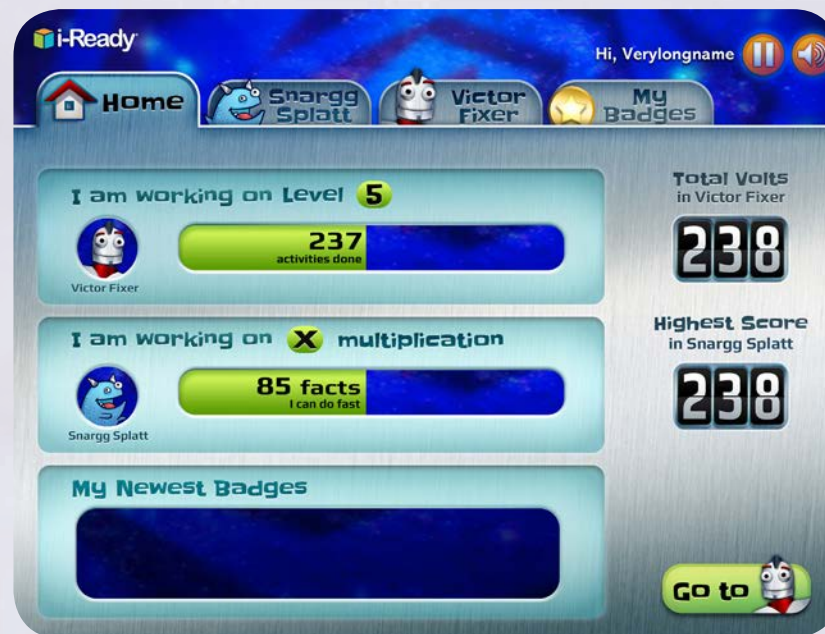
# HOW TO PLAY SNARGG SPLATT (CONTINUED)

## How can students see their progress in Snargg Splatt?

A dashboard shows progress after login. Look for the Home tab and the Snargg Splatt tab. Students can find the following information:

- Fact grids that show progress in each operation
- Highest score achieved in a game to date
- The total number of facts students can do fast
- A glimpse of the next badge to be achieved
- A button for easy entrance into their game

The My Badges tab shows students the badges they have earned to date as well as a view into the badges that they can earn in the future.



## TIP

*Discuss the dashboard for Snargg Splatt with your student. Look for the current operation they are working on, the facts they can do fast, and what facts they are working on next.*



# HOW TO PLAY VICTOR FIXER

## What is the game?

If students are placed into the computational fluency game, Door 24 Plus will open to reveal that our robot friend, Victor, has gone haywire and needs help. To help get Victor patched up, students will need to repair his circuits which all need to line up with the special number 24. Using problem-solving strategies, students energize Victor to get him up and running again.

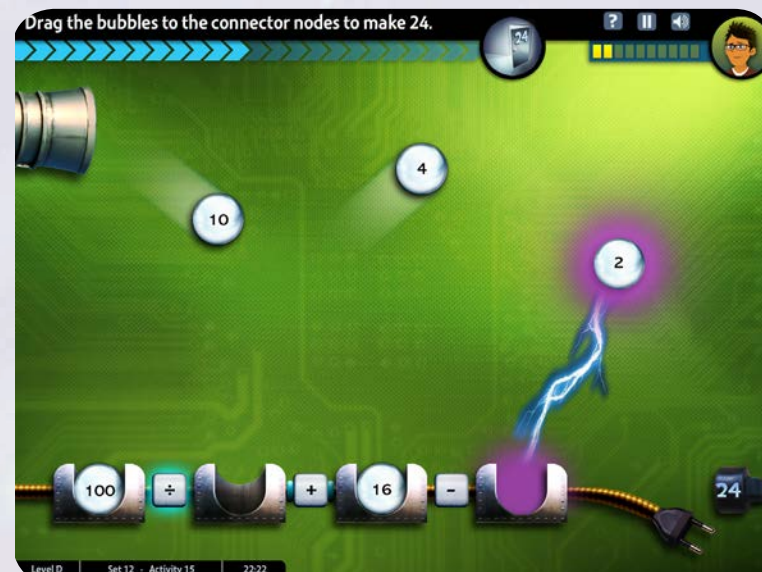
## How does Victor Fixer build computational fluency?

Victor Fixer addresses each of the three facets of computational fluency: accuracy, efficiency, and flexibility.

- **Accuracy:** Students use number facts, order of operations, and number relationships to create expressions that are equivalent to 24.
- **Efficiency:** Students learn to use strategies that are easily practiced, such as making tens, recognizing factors of 24, thinking of an expression as a single quantity, understanding relationships between operations, etc.
- **Flexibility:** The Bonus set in every level requires students to find as many expressions as possible that are equivalent to 24 given a particular number set. Students need to be flexible in choosing an appropriate strategy or strategies based on the problem at hand.

## How do students win the game?

- Number bubbles come out of the chute. In some activities, extra numbers serve as distractors.
- Students drag the numbers to the circuit to create an expression equivalent to 24.
- Once students solve the circuit, they connect the plug to submit their answer.
- At the end of each activity, students are awarded volts based on their performance.
- The number of volts is based on accuracy—the fewer tries it takes to complete the activity, the more volts students will get.



### TIP

*Encourage students to replay activities to increase their accuracy and get more volts.*



# HOW TO PLAY VICTOR FIXER (CONTINUED)



## What content do students practice?

Victor Fixer is designed to provide a structured progression of content across clusters of conceptually related target problems in order to develop computational fluency. See the chart at right for the major challenges in each set.

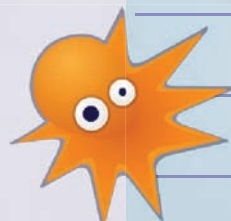
LEVEL	EASY	MEDIUM	HARD
3	Use 2 numbers to make 24 (+, −, ×, ÷).	Use 3 numbers.	Work with greater numbers.
4	Use 3 numbers to make 24 (+, −, ×).	Use 4 numbers and choose the operation.	Use division.
5	Use 3 or 4 numbers to make 24 (+, −, ×, ÷).	Choose the operation.	Use parentheses.
6	Use parentheses and choose the operation.	Use squares and cubes.	Work with more number combinations.
7	Use parentheses and choose the operation.	Use squares and cubes.	Use negative numbers.
8	Use parentheses and choose the operation.	Use squares, cubes, and negative numbers.	Use square roots.

## How does level selection work?

In Victor Fixer, there is content aligned with six grade levels ranging from Grade 3 to Grade 8.

- For students with an i-Ready login, placement in the game will be based on their Diagnostic score within the Number and Operations strand as identified on the Student Profile Report.
- For students without an i-Ready login, placement will be based on the grade level they entered when logging in on the iPad.

GRADE LEVEL	GAME LEVEL
3	C
4	D
5	E
6	F
7	G
8	H



# HOW TO PLAY VICTOR FIXER (CONTINUED)

## How do students select a set?

Once students are placed at the appropriate level in Victor Fixer, they will need to choose their set and activity.

- Each level has three sets that increase in difficulty (Easy, Medium, and Hard).
- Each level also includes a Bonus set that presents a unique challenge: finding all possible expressions that are equivalent to 24 given specified numbers.



### TIP

*Students will work with more confidence if they start at the Easy set and work their way up, while mixing in some Bonus activities.*

## How do students select an activity?

Within the Easy, Medium, and Hard sets, there are 32 activities that each increase in difficulty.

- Each activity is comprised of three “circuits,” and the score is based on students’ accuracy in solving those three circuits.
- The given number set for each circuit is algorithmically generated so students can replay any activity and see different circuits.
- The Bonus set has 16 activities since these activities take longer to complete.



### TIP

*The progression of activities is specifically designed to present challenges in increasing order of difficulty. As with the set selection, it is best if they move through the activities in order.*

## What kind of instructional support does the game provide?


Each activity in the Easy, Medium, and Hard sets includes a Math Review screen to support students. The Math Review screen reviews skills such as:

- Order of operations
- Adding and subtracting using negative numbers
- Multiplying with more than two factors



### TIP

*Sit down with struggling students and go over the Math Review screen together.*



**Remember:** Sometimes, you need to compute with more than one number. It's really important to compute in the right order!

**Order of Operations**  
First: Multiply or divide in order from left to right.  
Then: Add or subtract in order from left to right.

Here are some examples:

$\begin{array}{c} 10 + 7 \times 2 \\ \downarrow \quad \downarrow \\ 10 + 14 = 24 \end{array}$	$\begin{array}{c} 14 + 20 \div 2 \\ \downarrow \quad \downarrow \\ 14 + 10 = 24 \end{array}$
$\begin{array}{c} 36 - 24 \div 2 \\ \downarrow \quad \downarrow \\ 36 - 12 = 24 \end{array}$	$\begin{array}{c} 36 - 6 \times 2 \\ \downarrow \quad \downarrow \\ 36 - 12 = 24 \end{array}$

**OK, Got it!**



# HOW TO PLAY VICTOR FIXER (CONTINUED)

## How can students see their progress in Victor Fixer?

A dashboard shows progress after login. Look for the Home tab and the Victor Fixer tab. Students can find the following information:

- Level indicators to show progress at the grade level
  - Green level: Level student should be working on now
  - Gold level: Completed/Tested out level
  - White level: Level student has not yet progressed to
- Progress indicators for all sets (Easy, Medium, Hard, and Bonus)
- The total number of volts students have earned in the game
- A glimpse of the next badge to be achieved
- A button for easy entrance into their game

The My Badges tab shows students the badges they have earned to date as well as a view into the badges that they can earn in the future.



## TIP

*A dashboard shows progress after login. Discuss the dashboard for Victor Fixer with students. Talk about the current grade level they are working on, the number of activities completed, the total number of volts, and the latest badges earned.*

# CLASSROOM MANAGEMENT

## What are some concepts and skills that Door 24 Plus addresses?

A wide variety of concepts and skills are addressed across the levels of Door 24 Plus.

### Fact Fluency (Snargg Splatt)

- Fluency with addition facts from 0 to 20
- Fluency with subtraction facts from 0 to 20
- Fluency with multiplication facts from 0 to 144
- Fluency with division facts from 1 to 144

### Computational Fluency (Victor Fixer)

- Apply number sense and algebraic thinking
- Represent numbers in multiple ways
- Understand the concept of equivalency
- Apply concepts of factors and multiples
- Use parentheses in numerical expressions
- Apply the order of operations
- Create and evaluate numerical expressions
- Add, subtract, multiply, and divide with negative numbers
- Evaluate square roots and cube roots
- Understand and apply properties of integer exponents

## How do I use Door 24 Plus for differentiated instruction?

You can use Door 24 Plus with a range of math levels and grade levels.

- Snargg Splatt addresses content standards in grades 1–3. Note that students in grades 4–8 may also need to work on fact fluency.
- Victor Fixer addresses content standards in grades 3–8.
- Make Door 24 Plus part of the classroom activity center. Install it on an iPad mobile device and have students take turns using it as part of their center time.
- Assign Door 24 Plus for individual or small-group practice. Students working on fact fluency can partner up to play Snargg Splatt together.
- Assign Door 24 Plus as homework.
- Users of i-Ready can use the Overall Math Performance level or Number and Operations level in the Student Profile report to identify the best level to begin the program.





# CLASSROOM MANAGEMENT

## (CONTINUED)

### How can students switch between Snargg Splatt and Victor Fixer games?

For times when you would like all students to play the same game—as a center rotation, for example—you can have them switch to either Snargg Splatt or Victor Fixer by selecting the other game's name under the pause menu.



### How can students change levels in Victor Fixer?

Students may decide a particular level is too easy or too hard. It is easy to change levels by going back to the Choose a Level screen. Students can also change the set type by going to the Choose a Set screen, and change the activity by going to the Choose an Activity screen.



# CLASSROOM MANAGEMENT (CONTINUED)

## How can I use Door 24 Plus within my classroom schedule?

Students can use the game in short bursts or longer sessions as time permits—whatever works best in your classroom. Students can also play Door 24 Plus independently outside of class time.

### Planning Suggestions

SNARGG SPLATT

#### Practice



10 min.  
/day

#### Build fact fluency.

- Have students work on their targeted facts by playing at least 3 games each day.

#### Practice and Partner Discussion



20 min.  
/day

#### Focus on vocabulary development and writing.

- Have students partner up to play the 2-player version of the game and play at least 3 games together each day.

VICTOR FIXER

#### Practice



10 min.  
/day

#### Build computational fluency.

- Have students start on Activity 1 in the Easy set in the appropriate level and then work sequentially through the activities.
- Encourage students to play activities in the Challenge set to build problem-solving skills and perseverance.

#### Practice and Partner Discussion



20 min.  
/day

#### Build computational fluency and discuss strategies.

- Have students start on Activity 1 in the Easy set in the appropriate level and then work sequentially through the activities.
- Encourage students to play activities in the Challenge set to build problem-solving skills and perseverance.
- Have students look at activities in the Challenge set with a partner and share strategies for approaching each problem.

#### Practice and Whole-Class Discussion



30 min.  
/day

#### Build computational fluency and discuss strategies.

- Have students start on Activity 1 in the Easy set in the appropriate level and then work sequentially through the activities.
- Encourage students to play activities in the Challenge set to build problem-solving skills and perseverance.
- Have students look at activities in the Challenge set with a partner and share strategies for approaching each problem.
- Bring students together and discuss the problems with the whole class or a small group. Highlight patterns and common strategies.



# RESEARCH

## How does Door 24 Plus support students' mathematical development?

Math standards propose a balanced approach to mathematics and stress the goals of conceptual understanding, fluency, and application. Door 24 Plus focuses on establishing a foundation based on fact fluency and then building computational fluency by providing practice that requires students to solve problems using basic facts, number sense, and algebraic thinking.

## What is fact fluency?

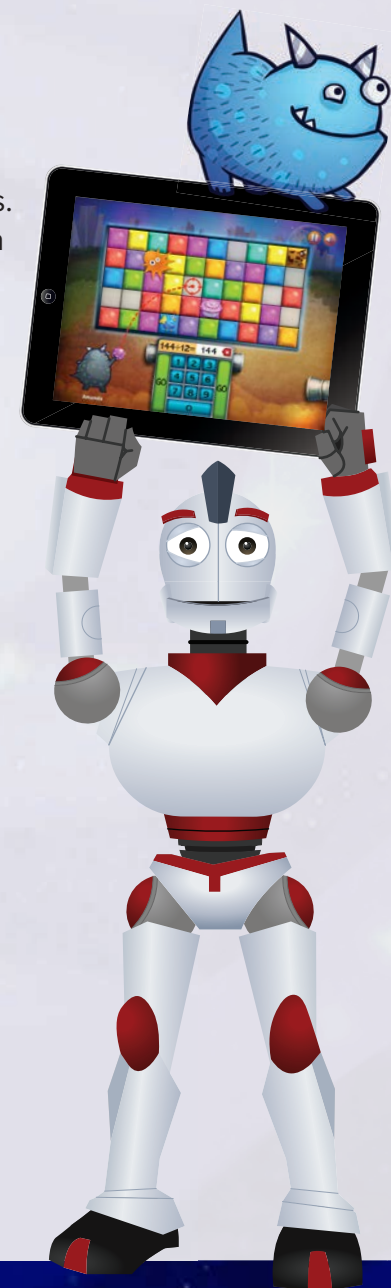
Fact fluency is the ability to quickly and accurately recall basic math facts without having to do calculations. In Snargg Splatt, the speed of recall is defined as the time it takes for students to submit an answer once a math fact is presented. If students are able to do this accurately within one second over an extended period of time, the fact is marked as fluent.

## Why is fact fluency important?

Being able to automatically recall facts will help students free up working memory and allow them to concentrate on more challenging math tasks. For example, spending time counting on fingers to work out an addition or subtraction problem can be an impediment to working on higher-level math skills. Additionally, by having math fact fluency, students will be more confident, which can lead to greater gains later on.

## What is computational fluency?

Computational fluency is more than just memorizing facts and procedures. It includes an understanding of the structure of the base-ten number system—knowledge of number relationships, including basic facts, and an understanding of the meaning of operations and their relationships to each other.



# RESEARCH (CONTINUED)

## How is computational fluency different from basic fact fluency?

Basic fact fluency is the retrieval of facts from 0–9 or 0–12 for the four basic mathematical operations with accuracy and automaticity. When building fact fluency, speed is an indication that students have moved these facts to their long-term memory. Although a familiarity with number operations and the quick and accurate recall of basic math facts is a foundation for computational fluency, computational fluency is much more than just moving facts to long-term memory. Playing against the clock can help students reach automaticity with basic facts, but computational fluency requires problem solving and perseverance.

The Principles and Standards for School Mathematics (NCTM, 2000) states: “Students exhibit computational fluency when they demonstrate flexibility in the computational methods they choose, understand and can explain these methods, and produce accurate answers efficiently.”

There are three facets of computational fluency: accuracy, efficiency, and flexibility.

- Accuracy depends on the knowledge of basic number facts and number relationships, including applying the order of operations.
- Efficiency implies that students do not use overly complicated ways to solve a problem, but instead employ strategies that they can easily carry out.
- Flexibility requires the understanding that there is often more than one approach to solving a particular problem. Students need to recognize that one strategy may be more appropriate than another, depending on the problem at hand.

## Why is computational fluency important?

Many students struggle with solving complex problems because the computations required to do the problems consume too much of their cognitive processing power. Computational fluency supports problem solving and frees working memory to allow students to engage in higher-order thinking. It develops the foundational skills needed to deepen students’ understanding of mathematical content.

The ability to solve new and unfamiliar problems requires not only mastery of facts and procedures, but also mastery of the ways that mathematically proficient individuals think. Door 24 Plus is designed to help develop the habits of mind that support a disposition that leads students to think, “I can puzzle this out.”

- Victor Fixer provides problems that students might not know how to solve at first and allows students to explore and figure out where to start.
- As students move through sets and levels of Victor Fixer, they use strategies and number relationships to create hundreds of expressions equivalent to 24.
- Victor Fixer provides sets of practice that help children develop a sense for structure. One set, for example, focuses on recognizing sums of 10 that then allow students to quickly create an expression equivalent to 24.



# CONTACT US

Go online at [www.i-Ready.com](http://www.i-Ready.com)



## Contact Customer Service at 800-225-0248

Monday – Thursday 8:30 a.m. – 7:00 p.m. EST

Friday 8:30 a.m. – 5:00 p.m. EST

## Contact Tech Support

Email: [i-Readysupport@cainc.com](mailto:i-Readysupport@cainc.com)

Phone: 800-225-0248

Monday – Thursday 8:30 a.m. – 7:00 p.m. EST

Friday 8:30 a.m. – 5:00 p.m. EST

