



Math-MATE

Mathematics Accessibility Through EdTech

A platform by the Learning Disabilities Association of Newfoundland and Labrador (LDANL)

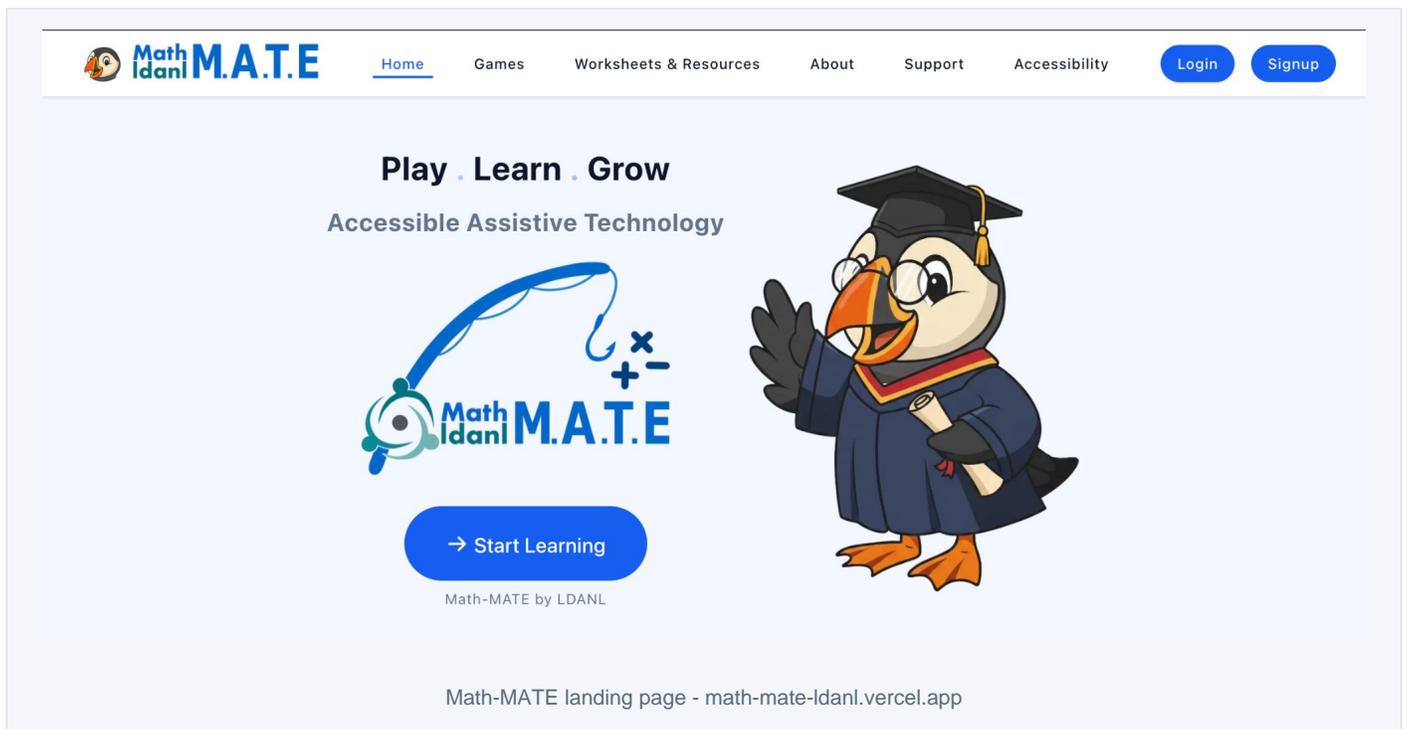
math-mate-ldanl.vercel.app

Guardian / Tutor

Tutors, parents, or caregivers who manage child accounts and view progress reports.

Child

Young learners who play math games on their personal dashboard.



Game-based K-2 math learning

Guardian-led progress tracking

Built for learning disabilities

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1. Getting Started

Math-MATE is a curriculum-aligned mathematics platform for K-2 learners built for children with learning disabilities and those in rural or remote communities in Newfoundland and Labrador.

Visit: <https://math-mate-ldanl.vercel.app>

The Two Roles

Role	Who They Are	Login Method
Guardian / Tutor	Tutors, parents, or caregivers. They create child accounts, view progress reports, and configure game settings for children. Called 'Guardian' in the platform.	Email + Password
Child	Young learners who play math games on their personal dashboard. No email address needed.	Username + 4-digit PIN

NOTE

Guardians create their own account, then add children from their dashboard. Children never need an email address, just a username and PIN.

2. Signing Up

Guardian accounts are created at the Sign Up page. Child accounts are added from the dashboard, not through the signup page.

Sign Up: <https://math-mate-ldanl.vercel.app/auth/signup>

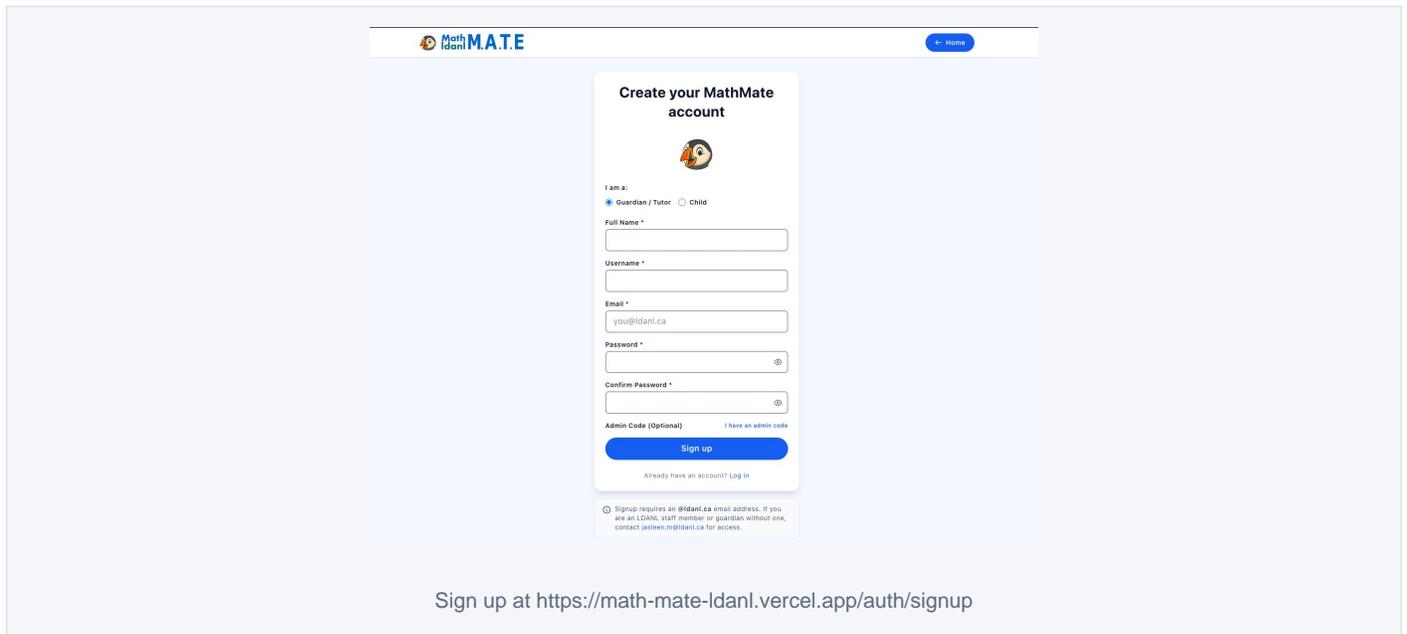
Create a Guardian Account

- 1 Go to <https://math-mate-ldanl.vercel.app/auth/signup> and fill in: Full Name, Username, Email (@ldanl.ca), Password, and Confirm Password.
- 2 Click Sign Up. A green card confirms that a verification email has been sent.
- 3 Open your inbox and click the confirmation link. A brief loading screen appears while your account is verified.
- 4 You are redirected to the Login page with a green banner: 'Email confirmed successfully! You can now log in.'
- 5 Log in with your email and password to access the Guardian Dashboard.

Didn't Receive the Email?

- 1 Check your spam or junk folder first.
- 2 Try logging in - an amber alert will appear with a 'Resend confirmation email' button.
- 3 Click Resend. A green message confirms the new email was sent.
- 4 If rate-limited, wait a few minutes before trying again.

Sign Up Page



3. Logging In

The login page handles both guardians and children in one interface. A role selector at the top lets you switch. Guardian / Tutor is selected by default.

Login: <https://math-mate-ldanl.vercel.app/auth/login>

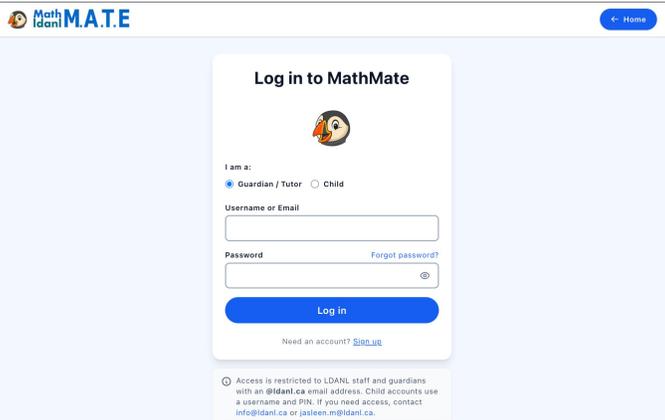
Login Comparison

	Guardian / Tutor	Child
Role selector	Default, selected automatically	Select 'Child' (second option)
Identifier	Email address (or username)	Username
Credential	Password	4-digit PIN
Redirects to	https://math-mate-ldanl.vercel.app/guardian/dashboard	https://math-mate-ldanl.vercel.app/child/dashboard
Reset access	Click 'Forgot Password' on the login page to receive a reset link by email.	Guardian views or resets the child's PIN via 'View PIN' on their card.

TIP

TIP: Forgot a child's PIN? Click 'View PIN' on their card in the Guardian Dashboard. A confirmation prompt appears before revealing it.

Login Page



Log in at <https://math-mate-ldanl.vercel.app/auth/login>

4. Guardian Dashboard

After logging in, guardians land on the Guardian Dashboard - the control centre for managing children, tracking activity, and accessing all platform tools.

<https://math-mate-ldanl.vercel.app/guardian/dashboard>

Overview Cards

Card	What It Shows
Children	Total children with names listed, e.g., 'Emma, Jack' or '+ 2 more'
Sessions This Week	Total game sessions played across all children this week
Time This Week	Total time played across all children this week, shown as hours and minutes when over 60 min

Child Profile Cards

Each child has a card showing their name, grade badge, total sessions, time played (as hours and minutes when over 60 min), and last game played. Four actions are available on every card:

Action	What It Does
View Profile	Opens the child's full progress page with sessions, accuracy, and game history
View PIN	Reveals the child's 4-digit PIN after a security confirmation prompt
Edit Profile	Update the child's name, grade, age, or PIN
Delete Child	Permanently removes the child account, requires confirmation

- Search children by name using the search bar at the top of the section.
- Sort cards by Recently Added, By Name, or By Grade.

5. Adding a Child

Click Add Child on the Guardian Dashboard (or 'Add Your First Child' if none exist yet). A form modal will appear.

Form Fields

Field	Required	Details
Child Name	Yes	Display name used on the dashboard and in reports
Grade	Yes	K, 1, 2, or Other
Username	Yes	Must be unique, the child uses this to log in
Age	No	Optional
PIN	Yes	4-digit numeric code for child login
Confirm PIN	Yes	Re-enter PIN to confirm they match

Click Create. A confirmation screen shows the child's username and PIN, share these with the child. Click Done to return to the dashboard.

IMPORTANT

Write down the child's username and PIN right after creation. You can always retrieve the PIN later via 'View PIN' on their card.

6. Child Dashboard

At the Child Dashboard, the child sees a welcoming, pressure-free space with no timers, no rankings, just encouragement and games.

<https://math-mate-ldanl.vercel.app/child/dashboard>

Element	Description
Greeting	Personalised 'Hi [Username]!' with an encouraging message based on play history.
Stats Banner	A blue banner showing total plays and weekly activity, motivates continued play.
Game Settings	Configure visual and audio preferences for Kelly games: theme preset, contrast, saturation, accent strength, audio cues, and reduced motion. Settings are saved to the database and sync across all devices.
Games	Three category thumbnail cards: Jessie's Counting, Kelly's Addition, and Kelly's Subtraction. Each card shows a scene image, tagline, and game count. Clicking a card opens the Category Intro Page.

Encouraging Messages

- First visit: "Let's play your first game!"
- Returning: "You've played X times, Y this week. Keep it up!"

7. Playing Games

Games are organised into three category cards on the dashboard. Each category has its own intro page listing all games before play begins.

How to Start a Game

- 1 From the dashboard, click one of the three category cards (Jessie's Counting, Kelly's Addition, or Kelly's Subtraction).
- 2 The Category Intro Page appears showing the character, skills covered, and all games grouped by Train, Learn, and Practice, each with thumbnail images and descriptions.
- 3 Click any game card in the Train, Learn, or Practice section.
- 4 A splash screen appears, click 'Start Playing' to begin. Session timing starts here.
- 5 Press F for fullscreen, Esc to exit. A 'Need a break?' banner links to the Fun Break Room at any time.

Key Points

- No timers, rankings, or leaderboards, completely pressure-free.
- Learn games are free exploration, no scoring or session tracking.
- Train and Practice games record accuracy and session data.
- Session timing only starts when the child clicks 'Start Playing'.
- Text-to-speech reads game titles, descriptions, and character stories aloud. Works on hover (desktop), Tab focus (keyboard), and tap (touch devices).
- Sessions where the child opened a game but answered no questions are automatically hidden from history and progress counts.

8. Game Categories and Types

Math-MATE includes **21 games** across three categories and three learning types.

Categories

Category	Focus	Games
Jessie's Counting	Counting for early learners, features Jessie	3
Kelly's Addition	Addition practice, features Kelly	9
Kelly's Subtraction	Subtraction practice, features Kelly	9

Game Types

Type	Description	Tracked ?
Learn	Free exploration, no right or wrong, just discovery. Great for introducing a new concept.	No
Train	The game demonstrates how to solve a problem, then the child tries. Friendly feedback is included.	Yes
Practice	The child applies what they have learned by answering questions.	Yes

Game Settings

Access Game Settings from the category intro page or child dashboard. Settings are saved per child to the database and sync automatically across all devices.

Setting	Description	Default
Theme Preset	Visual theme for Kelly games: Adult, ASD, or ID/LD	Adult
Contrast	Adjusts contrast level of game visuals (80-120%)	100%
Theme Saturation	Controls colour saturation of the game theme (70-110%)	100%
Accent Strength	Sets intensity of accent colours in the game (0-100%)	50%
Audio Cues	Reads prompts and feedback aloud inside supported games	Enabled
Reduced Motion	Softens movement and animation pacing where supported	Disabled

- Audio cues are enabled by default so children hear spoken feedback from the start.
- Settings configured on any Kelly category page apply to all Kelly games - they share the same settings.
- A guardian can configure settings from the Guardian Play View and the child will see them on any device.

- The 'Start Playing' button waits until settings are loaded before enabling.
- Click 'Reset to defaults' in the modal to restore all settings to their original values.

9. Worksheets and Resources

Math-MATE includes interactive worksheets designed for K-2 students. Worksheets are **publicly accessible**, no login required.

Worksheets: <https://math-mate-ldanl.vercel.app/worksheets>

Available Worksheets

Worksheet	Level	Description
Matching Game (1-5)	Beginner	Match numbers in the range 1 to 5
Matching Game (1-10)	Intermediate	Match numbers in the range 1 to 10
Matching Game (1-15)	Advanced	Match numbers in the range 1 to 15
Matching Game (1-20)	Expert	Match numbers in the range 1 to 20

Filtering and Using a Worksheet

- Filter by Category (e.g., Matching) or by Level (Beginner to Expert).
- Active filters appear as tags, click X to remove one, or 'Clear all' to reset.
- Click 'Open Worksheet' to open the interactive activity in a viewer.
- Use the Print button to print, or Open in New Tab for a full browser view.
- Use the back button at the top-left to return to the worksheets list.

NOTE

Coming Soon: Additional worksheet categories for Addition and Subtraction and Shapes and Patterns are planned.

10. Fun Break Room

The Fun Break Room is a collection of casual mini-games giving children a relaxing break between study sessions. **No scores, sessions, or progress are saved here.**

Fun Break Room: <https://math-mate-ldanl.vercel.app/fun-break>

How to Access

- Click the 'Need a break?' banner at the bottom of any game or category page.
- Navigate directly to <https://math-mate-ldanl.vercel.app/fun-break>.
- Requires being logged in as a child or guardian.

Available Mini-Games

Game	Description
Shape Memory Match	Match 2D and 3D shapes on boards from 3x3 to 5x5. Train memory and learn geometry.
Math Bingo	Solve math problems and mark your bingo board. Get five in a row to win!
Counting Race	Race to the finish by counting forward or backward. Pick a character and skip count to win.
Bubble Pop	Pop as many bubbles as possible before 30 seconds run out.
Color Simon	Watch a colour sequence light up, then repeat it. How far can you go?

NOTE

Fun Break games are completely casual, no scores or sessions are recorded. When a guardian plays on behalf of a child, the 'Back' link returns to the child's play dashboard, not the guardian dashboard. Professor Puffin appears in the Fun Break Room as a friendly guide.

11. Progress Tracking

Train and Practice sessions are automatically recorded. The primary metric is **accuracy**, focusing on understanding rather than speed. Sessions where the child opened a game but answered no questions are automatically excluded.

What Gets Tracked

Metric	Description
Accuracy	Percentage of correct answers with ratio, e.g. 83% (10/12) meaning 10 correct out of 12 total attempts. This is the main progress metric.
Best Accuracy	Highest accuracy the child has ever achieved for that game
Sessions Played	How many times the child has played each game, excluding sessions with no questions answered
Score	Correct answers shown in green and incorrect in red, e.g. 10 / 2 means 10 correct and 2 incorrect
Duration	Time spent in each session

How to Read Scores and Accuracy

Display	What It Means
Score: 10 / 4	The child got 10 questions right and 4 wrong (shown in green / red)
Accuracy: 71% (10/14)	10 out of 14 total questions answered correctly, which is 71% accuracy
Accuracy colour	Green = 80% or above. Amber = 50-79%. Red = below 50%
Dash (-)	The game recorded activity but no individual question scores, can happen in some training activities

Each game card shows a **progress bar** with overall accuracy, best accuracy, sessions played, and correct/incorrect counts. Games not yet played show 'Not played yet'.

12. Reports and Progress Views

Guardians have a full suite of tools to review a child's progress, from high-level summaries to session-by-session detail and downloadable PDF reports.

Child Detail Page - Summary Cards

Card	What It Shows
Total Sessions	All-time game sessions played by this child, excluding sessions with no questions answered
Time Played	Total play time shown as hours and minutes, e.g. '15 hr 6 min', with a 'this week' count
Games Played	Number of different games the child has tried

Game Progress Section

A collapsible list grouped by game. Each game shows sessions, best accuracy, and a paginated session table (10 per page) with:

- Date and Start Time
- Score, correct in green and incorrect in red
- Accuracy, colour-coded percentage with ratio, e.g. 71% (10/14)
- Duration of the session
- Type, Train (orange badge) or Practice (blue badge)

Session History Table

- Paginated, 10 sessions per page.
- Filterable by date range, by game (multi-select), and by type (Train / Practice).
- Columns: Date, Start Time, Game, Score, Accuracy with ratio, Duration, Type.
- Sessions with no questions answered are automatically hidden.
- Individual sessions can be deleted with confirmation.

Download PDF Report

- 1 Go to a child's detail page and click Download Report.
- 2 A PDF is generated on-demand containing: child profile (name, grade, age, guardian name), overall stats, and a per-game breakdown. Each game starts on a new page with a dark blue header, session count, best/average accuracy, total time, and a colour-coded session table showing Date, Time, Score, Accuracy with ratio, Type, and Duration.

Tutor Guide

When a guardian opens a game page while playing on behalf of a child, a **Tutor Guide** bar appears below the game title. Click it to expand.

- The guide is a PDF document embedded in the page with an option to download.
- It explains how the game works, what skills it targets, and how to support the child.
- If no guide is available yet, a 'coming soon' placeholder is shown.
- Only guardians see the Tutor Guide. Children do not see it.

Guardian Play View

Navigate to Guardian Dashboard, then Child Profile, then Play Game. This mirrors the child's dashboard exactly, same category cards, same progress bars, same game flow. Sessions here are tracked under the child's profile.

- Preview games before the child plays them.
- Play alongside their child and see exactly what the child sees.
- Configure game settings (theme, contrast, audio cues) on behalf of the child. Changes sync to the child's account immediately.

13. Accessibility Features

Math-MATE meets **WCAG 2.2 Level AA** and is specifically designed for children with learning disabilities.

Feature	How It Helps
Text-to-Speech	Hover, Tab-focus, or tap any game title, description, character story, or skill list to hear it read aloud at 0.9x speed. Works on desktop, keyboard navigation, and touch devices. Full coverage on all category intro page text elements.
Atkinson Hyperlegible Font	Designed for low vision and dyslexia. No italic, thin, or light weights used anywhere on the platform.
High Contrast Colours	All text and interactive elements meet WCAG AA contrast ratios.
Keyboard Navigation	Tab to every element, Enter or Space to activate. Visible focus rings throughout. Modals close with Escape.
Reduced Motion	Animations are skipped automatically when 'Reduce Motion' is enabled in device settings. Also configurable per child via Game Settings.
Screen Reader Support	Semantic HTML, descriptive alt text, ARIA labels, and aria-live regions for dynamic announcements.
Pressure-Free Design	No timers, rankings, or leaderboards anywhere. Encouraging messages throughout. Fun Break Room accessible during any game.

Quick Reference

Everything a guardian or tutor needs at a glance.

Task	URL or Location
Sign up as a guardian	https://math-mate-ldanl.vercel.app/auth/signup
Log in	https://math-mate-ldanl.vercel.app/auth/login
Guardian dashboard	https://math-mate-ldanl.vercel.app/guardian/dashboard
Child dashboard	https://math-mate-ldanl.vercel.app/child/dashboard
Browse worksheets (no login needed)	https://math-mate-ldanl.vercel.app/worksheets
Visit Fun Break Room	https://math-mate-ldanl.vercel.app/fun-break
Add a child	Guardian Dashboard, click Add Child
View or retrieve child's PIN	Guardian Dashboard, Child card, View PIN
Play a game	Dashboard, Category card, Category intro, Game card, Start Playing
Configure game settings	Category intro page, Game Settings button (syncs across devices)
View child progress	Guardian Dashboard, Child card, View Profile
Download a PDF report	Child detail page, Download Report button
Use guardian play view	Guardian Dashboard, Child Profile, Play Game
View tutor guide	Game page, Tutor Guide bar (guardians only)

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