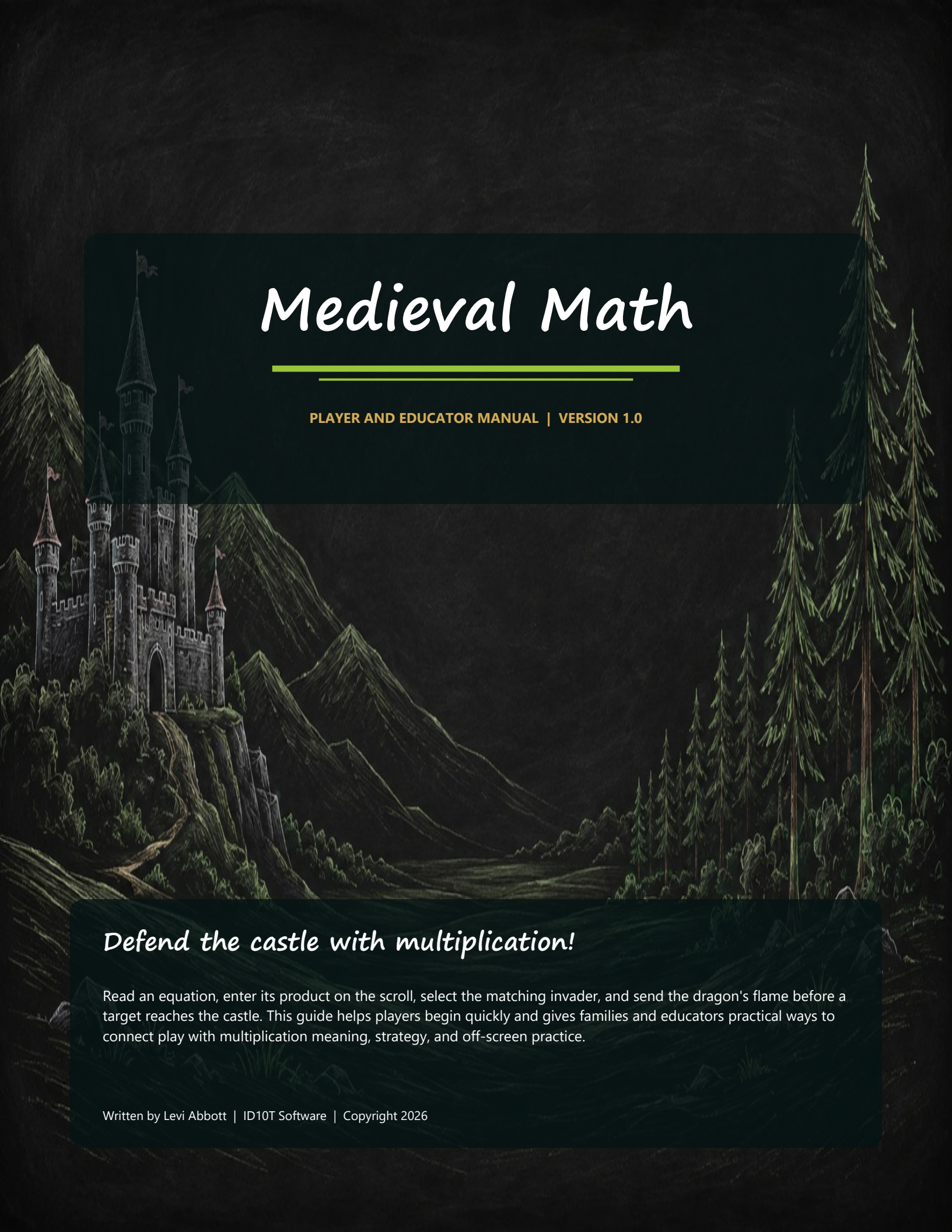


The background of the cover is a dark, atmospheric illustration of a medieval landscape. On the left, a large, multi-towered castle with flags sits atop a rocky cliff. In the center, a range of jagged mountains stretches across the horizon. On the right, a dense forest of tall, thin evergreen trees stands. The overall color palette is dark, with muted greens, greys, and browns, accented by the white text and a yellow-green horizontal line.

Medieval Math

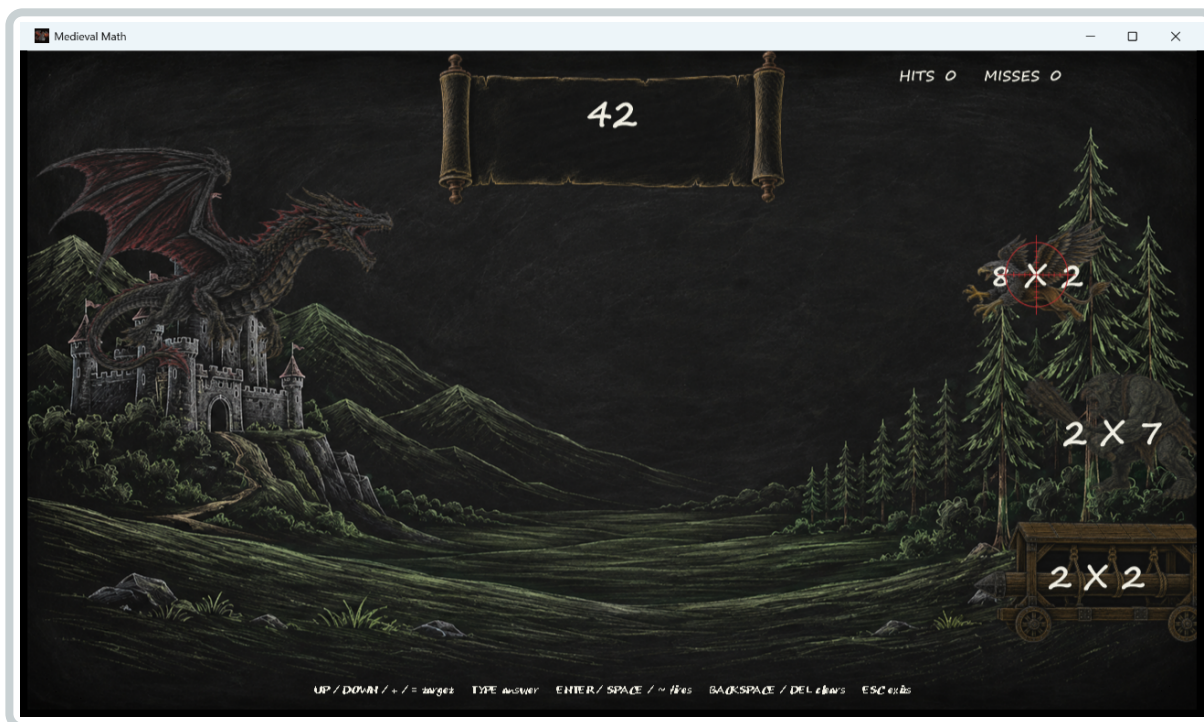
PLAYER AND EDUCATOR MANUAL | VERSION 1.0

Defend the castle with multiplication!

Read an equation, enter its product on the scroll, select the matching invader, and send the dragon's flame before a target reaches the castle. This guide helps players begin quickly and gives families and educators practical ways to connect play with multiplication meaning, strategy, and off-screen practice.

Quick Start

Solve the selected invader's multiplication fact, type the product, and fire before any target reaches the castle boundary.



The current battlefield and revised keyboard legend.

Essential controls



1

Read

Find the equation on the target marked by the reticle.

2

Solve

Work out the product using a known fact or strategy.

3

Enter

Type the full product; up to two digits appear on the scroll.

4

Fire

Press Enter or Space. A correct target disappears; a miss remains.

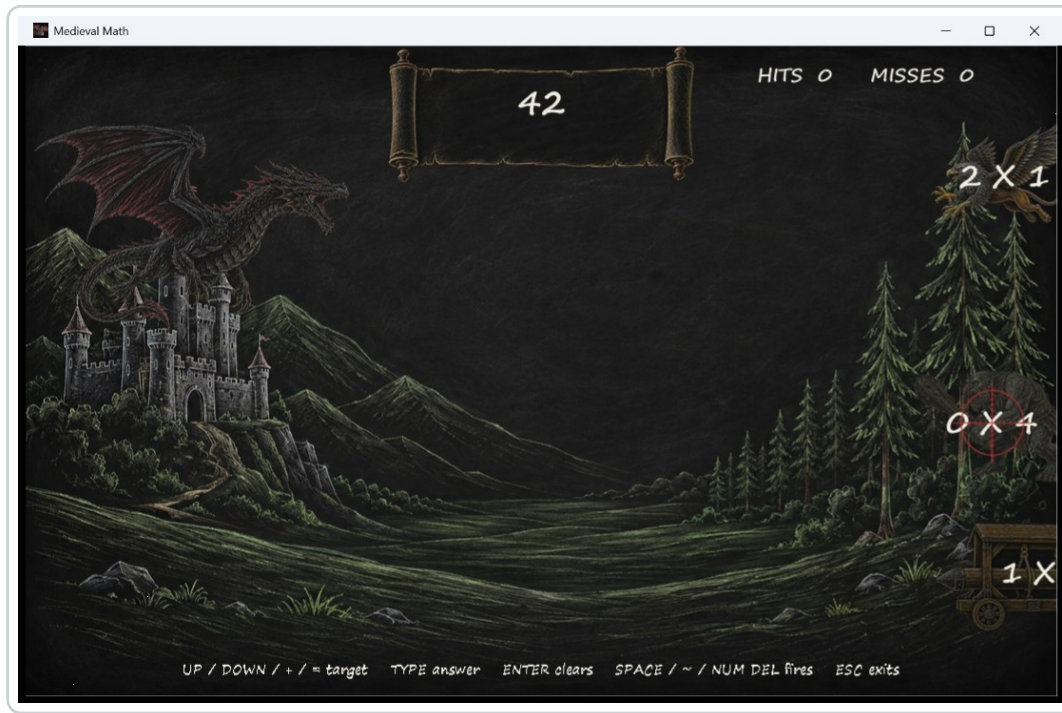


Opening screen shortcuts

The splash remains for about 2.8 seconds. Press any key to begin sooner. Press W during that screen to open the worksheet generator instead. Press Esc at any time to exit.

Battlefield Tour

Every essential game event is visible. Sound adds atmosphere and feedback, but it is not required to understand the action.



1

Dragon

Hovers above the castle and sends each flame.

2

Answer scroll

Shows the one- or two-digit number you type.

3

Enemy lanes

Griffin, troll, and siege engine travel right to left.

4

Target reticle

Marks the sprite that the next flame will test.

5

Equations

Each target shows digit $\times$ digit with factors 0–9.

6

Score

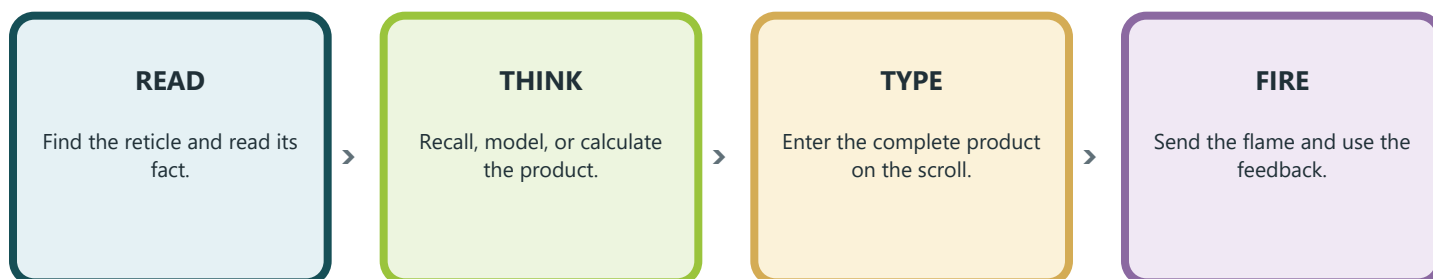
HITS and MISSES summarize the current game.

Read the whole target

The flame checks only the selected sprite. First notice the red reticle, then read that target's equation. For example, 6×7 asks for six groups of seven, so the product entered on the scroll is 42.

How to Play

A wrong answer leaves the equation available for another try. A correct answer removes that target and sends a new equation into the same lane.



Correct hit

The flame reaches the selected target. The target disappears, HITS increases by one, a positive tone sounds, and a new sprite of the same type enters from the right with a new equation.

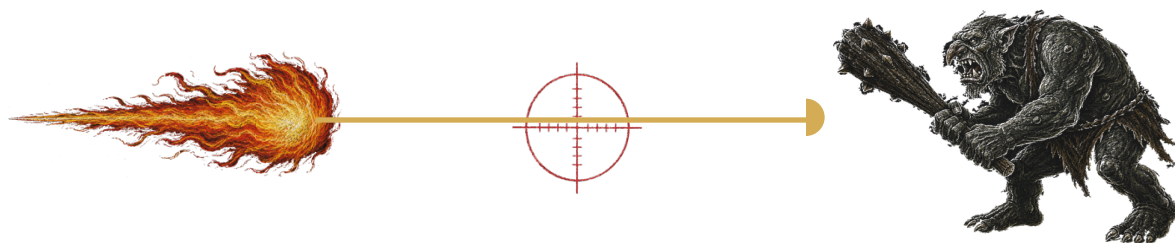


Miss or empty answer

A brief negative tone sounds, MISSES increases by one, and the selected target remains. The input clears so the player can reconsider and try again.

Target order and fair equations

Up and Down cycle only through targets already visible. No two visible sprites display the same ordered equation. Reversed facts—such as 3×7 and 7×3 —may both appear because they are different ordered equations and can reinforce the commutative property.



Useful rhythm

Pause long enough to solve, enter the entire product, then fire. The purpose is thoughtful multiplication practice—not frantic key pressing.

Controls and Answer Entry

Main-keyboard digits and the numeric keypad both work. Holding a firing key does not create repeated flames.

0-9

Enter digits

Type a product up to 99.

UP

Previous target

Move the reticle upward.

DOWN

Next target

Move the reticle downward.

ENTER

Fire

Primary firing key.

SPACE

Fire

Alternate firing key.

BACKSPACE / DEL

Clear

Erase the answer on the scroll.

ESC

Quit

Close the application at any time.

Equivalent keys

+

=

Cycle to the next target - same direction as Down.

~

Fire - same action as Enter or Space.

NUM . / DEL

Clear - same action as Backspace or Delete.

Keypad Enter fires. Keypad Decimal/Delete clears with Num Lock either on or off.

When a key does nothing

A second flame cannot begin while one is already traveling. Up, Down, +, and = do not retarget during a shot. Targets not yet visible are skipped.

Answer entry rules

The game accepts one- or two-digit entries from 0 through 99. Because both factors range from 0 to 9, every correct product is between 0 and 81. Backspace or Delete clears manually; after a flame reaches its target, the answer clears automatically whether the result is correct or incorrect.

Movement and Game Over

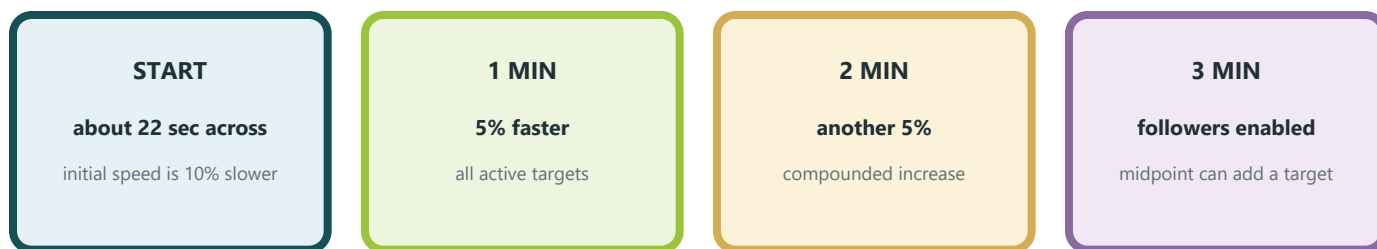
The pace grows with elapsed time, not with the player's score. Speed is a game rule—not a measure of intelligence or mathematical worth.

Opening sequence



The griffin, troll, and siege engine enter in a randomized order, one second apart.

Speed timeline



After three minutes

When a target crosses halfway across the window, it can generate one additional sprite of the same type in that lane. Each sprite can do this only once, and the follower receives an equation different from every visible target.



Castle boundary

The game ends when the left edge of any target reaches a line five percent of the window width from the left side. The final screen reports correct hits and misses.

Starting again

On the game-over screen, press Enter to begin a fresh game or Esc to exit. A game has no fixed duration; a player or supervising adult may choose a reasonable stopping point and exit earlier.

An Optional Number-Row Challenge

Standard controls are arrows, Enter or Space to fire, and Backspace or Delete to clear. The extra number-row keys are optional touch-typing practice.



The number keys used for products sit between two optional action keys: the `` / ~` key immediately left of 1 fires, while the `= / +` key at the right cycles downward through targets.

1

Type the product

Reach from the home row to the correct number-row fingers.

2

Choose the target

Tap `=` without Shift (or `+` with Shift) to cycle downward.

3

Fire

Tap ``` without Shift (or `~` with Shift), then return to the home row.

Accuracy and comfort come first

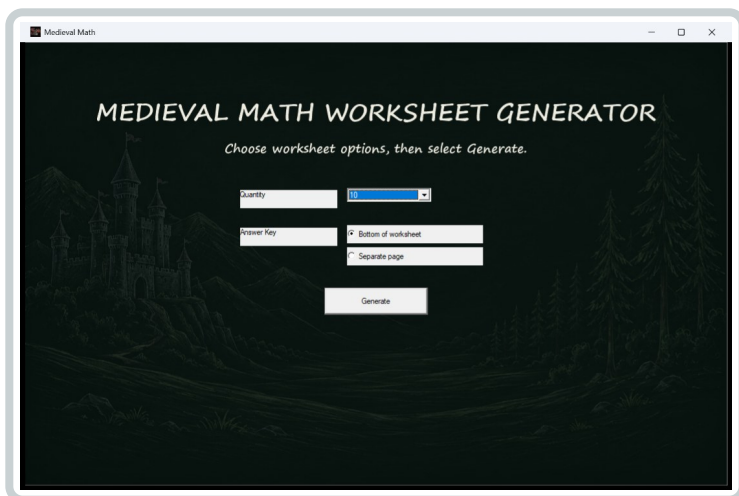
This layout can reinforce previously taught reaches and finger returns while the player practices multiplication. It is not a typing test or prerequisite. If the reaches are unfamiliar or uncomfortable - or if the learner wants to focus only on mathematics - use Up, Down, Enter or Space, and Backspace or Delete.

Numeric keypad option

Keypad `+` cycles downward. Keypad Enter fires. Keypad Decimal/Delete clears.

Printable Practice—Without the Clock

Press W during the splash screen to open the worksheet generator instead of gameplay. Background music does not begin in worksheet mode.



Worksheet options in Medieval Math

Choose options

Quantity: 10, 15, 20, 25, or 30.

Answer key: compact solutions at the bottom (default), or a separate clean answer page.

Generate and save

Select Generate, choose a name and location in the standard Windows Save dialog, and save the PDF. The app closes after a successful save; canceling returns to the generator.

How worksheets are built

Each US Letter page has NAME and DATE lines, numbered facts, answer spaces, and game sprites in the outside margins. Ordered facts do not repeat, though reversed pairs may both appear.

NAME: _____ DATE: _____

Medieval Math

1.) $3 \times 2 =$ _____	11.) $1 \times 9 =$ _____	21.) $8 \times 2 =$ _____
2.) $4 \times 4 =$ _____	12.) $3 \times 3 =$ _____	22.) $2 \times 6 =$ _____
3.) $2 \times 9 =$ _____	13.) $5 \times 7 =$ _____	23.) $0 \times 2 =$ _____
4.) $2 \times 0 =$ _____	14.) $5 \times 3 =$ _____	24.) $0 \times 0 =$ _____
5.) $4 \times 5 =$ _____	15.) $9 \times 1 =$ _____	25.) $6 \times 1 =$ _____
6.) $3 \times 9 =$ _____	16.) $3 \times 7 =$ _____	26.) $7 \times 6 =$ _____
7.) $3 \times 5 =$ _____	17.) $0 \times 1 =$ _____	27.) $8 \times 9 =$ _____
8.) $1 \times 6 =$ _____	18.) $2 \times 4 =$ _____	28.) $5 \times 0 =$ _____
9.) $8 \times 3 =$ _____	19.) $7 \times 2 =$ _____	29.) $7 \times 0 =$ _____
10.) $6 \times 0 =$ _____	20.) $5 \times 8 =$ _____	30.) $0 \times 5 =$ _____

Answer Key

1.) 6 2.) 16 3.) 18 4.) 0 5.) 20 6.) 27 7.) 15 8.) 0 9.) 24 10.) 0 11.) 9 12.) 6 13.) 35 14.) 15 15.) 9 16.) 21
17.) 0 18.) 6 19.) 14 20.) 40 21.) 16 22.) 12 23.) 0 24.) 0 25.) 6 26.) 42 27.) 72 28.) 0 29.) 0 30.) 0

A 30-problem worksheet generated by the game

Multiplication Practice With Meaning

Medieval Math turns repeated symbolic practice into a clear defend-the-castle objective. It supports practice; it does not replace instruction, diagnosis, or hands-on mathematics.

Meaning

Interpret $\times$ as equal groups; notice multiplication by zero and one.

Facts

Recall or calculate products with factors from 0 through 9.

Strategy

Skip count, double, decompose, use a nearby fact, and check with division.

Structure

Notice commutative pairs such as 4×6 and 6×4 .

Fluency supported by understanding

Remembering familiar products can free attention for later work, but quick answers are not the whole of multiplication. Pair the game with equal groups, arrays, repeated addition, area models, number-line jumps, and real situations. Ask a learner to show why a fact is true—not only to say it quickly.

Immediate, neutral feedback

A correct response removes a target and plays a positive sound. An incorrect response leaves the equation in place, clears the answer, and permits another try. A miss is information about one decision, not a judgment about effort, intelligence, or future potential.

Scores are conversation starters—not grades

The final hit and miss totals describe one play session. Medieval Math has not been designed or validated as a standardized or diagnostic assessment. It cannot establish mastery, identify a disability, predict school performance, or replace the judgment of a qualified educator.

Play, Talk, and Extend

A caring adult, sibling, classmate, or peer can turn a short game into a richer mathematical conversation. Ask with curiosity and allow time to think.

Questions that invite explanation

-  How did you figure out that product?
-  Can you use a fact you already know?
-  What happens when one factor is zero?
-  Would reversing the factors change the product?
-  Can you picture rows and columns?
-  How could you check the answer?

After the screen

-  Recreate one remembered equation.
-  Build an array with counters.
-  Draw equal groups or an area model.
-  Write a related division fact.
-  Invent a short story problem.
-  Explain two ways to solve it.

Notice strategies, not speed

A learner may skip count, use repeated addition, double, break a factor apart, use a nearby known fact, or recognize a commutative pair. For example, 7×6 can be found as 5×6 plus 2×6 . Each strategy offers useful information about current understanding.

Responsive and Inclusive Use

Learners vary in prior experience, language, motor access, vision, hearing, attention, keyboard familiarity, and comfort with moving targets.

1

Offer another path

If movement, sound, keyboard entry, or time pressure interferes with reasoning, use the worksheet, untimed cards, arrays, objects, or drawings.

2

Play collaboratively

One person can calculate while another targets and fires. Swap roles, or pause afterward to rebuild a fact together.

3

Treat speed as a mechanic

The one-minute increases and three-minute followers are game rules—not measures of intelligence. Stop or restart whenever useful.

4

Keep technology bounded

One thoughtful game can be enough. Balance screen practice with conversation, movement, books, creative play, outdoor time, and hands-on work.

5

Do not diagnose from a score

Hits and misses cannot establish mastery, identify a learning disability, or replace a qualified educator's judgment.

A successful session does not need to be a long session.

Choose a stopping point that protects curiosity, comfort, and productive mathematical thinking.

Technical Notes and Credits

A compact native Windows multiplication game with embedded artwork, music, sound feedback, and printable worksheets.

Display

Resizable or maximized window. Artwork, lanes, boundary, movement, and flame path scale with the client area.

Audio

A quietly mixed MIDI arrangement of Mars, the Bringer of War loops during gameplay, with synthesized positive and negative tones.

Worksheets

US Letter PDFs are generated inside the native application; no Office, PDF printer, .NET, or separately installed PDF library is required.

Math range

Both factors are digits 0–9. Correct products range from 0 through 81; input accepts up to 99.

At-a-glance splash option

W

Worksheet Generator — available only while the opening splash screen is visible.

Medieval Math

VERSION 1.0

Written and independently developed by Levi Abbott

Published by the imaginary and possibly fictitious ID10T Software

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Use this manual with the learner—not as a script. Observe, listen, invite explanation, and choose the next representation or challenge from what the player is showing you.



Game artwork and screenshots reproduced from Medieval Math. | Manual prepared for players, families, and educators.