

EI-8490
Grades 1+
Ages 6+

MathShark™

Guide for Teachers and Parents



CARING FOR MATHSHARK

Battery Installation

1. Open the battery compartment door by carefully loosening the screw with a screwdriver.
2. Install two fresh AA alkaline batteries, following the illustration inside the battery compartment.
 - Batteries must be installed with the correct polarity.
 - Only batteries of the same or equivalent type are to be used.
 - Alkaline batteries are preferable.
 - Do not mix old and new batteries.
 - Do not mix different types of batteries: alkaline, standard (carbon zinc), or rechargeable (nickel-cadmium) batteries.
 - Do not use rechargeable batteries.
 - The supply terminals must not be short-circuited.
 - Non rechargeable batteries are not to be recharged.
 - Remove exhausted batteries from the unit.
3. Close the compartment door and tighten the screw.
4. To prevent battery corrosion, it is recommended the batteries be removed from the unit if it is not in use for two weeks.

Cleaning

Clean with a damp or dry cloth. Do not immerse MathShark in water. Do not spray any liquid or water on MathShark.

MathShark™

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NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Connect the equipment into a different outlet from the receiver.
- Increase the separation between the equipment and receiver.
- Consult the dealer or an experienced radio/TV technician for help.

NOTE: The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

MathShark™

Guide for Teachers and Parents

Congratulations! You have chosen MathShark, the calculator and electronic game that improves math skills.

As a **CALCULATOR**, MathShark performs arithmetic calculations for home or school. As a **LEARNING** tool, MathShark provides hundreds of drill games, enabling students to sharpen their mental math skills—math performed mentally rather than on paper—from memorization to estimation to mental computation.

MathShark **LEARNING** is a progressive sequence of problems in seven skills: addition, subtraction, multiplication, division, decimals, fractions, and percents. There are thousands of problems! Self-directed and self-motivating, MathShark gives players the confidence to use mathematics in everyday activities.

MathShark users of all ages and skill levels find that these features help them sharpen math skills at their own individual pace:

Repeated drill Each SKILL has eight sequential levels. At each level, there are ten or more game sets—ten problems per game. At the end of each game, the player can choose to replay that game to improve timing, go to the next game on that level, or change to another level or another skill.

Immediate feedback Different tones and lights tell the player whether the answer is correct or incorrect. Incorrect answers are immediately corrected on the screen.

No-fail game format Incorrect answers are recycled into the game and repeated. Game play continues until all problems are answered correctly.

Self-assessment At the end of each game, a player's elapsed time is shown on the screen. The player can try to improve that time by repeating the game.

Why is MathShark an Important Learning Tool?

Mathematics skills are useful throughout our lives. Teaching strategies may change, yet most educators agree that acquiring mathematics skills means learning to:

- apply math skills outside the classroom
- develop problem-solving techniques
- inquire, analyze, and reason mathematically
- communicate mathematically

MathShark's fast, continuous drill games and instant feedback give students the basic tools they need to reason and problem-solve accurately and effectively—inside and outside the classroom.

SUGGESTIONS FOR USE

MathShark can be useful in many ways. Some suggestions for incorporating MathShark in the home or classroom are listed below:

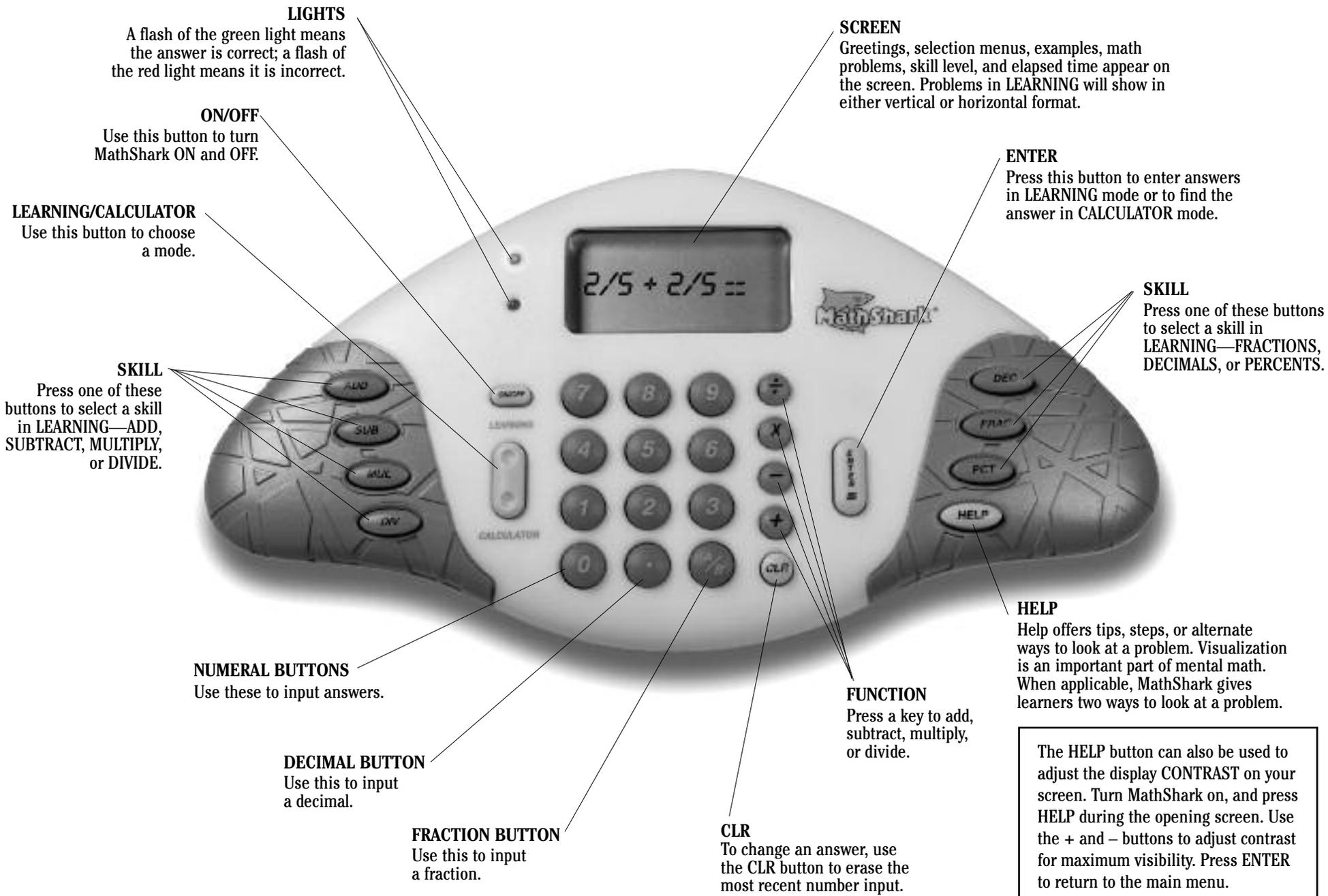
In the Home

- Have children spend 15-30 minutes on MathShark drill games as part of their homework schedule. The ASSESSMENT chart on pages 10-11 can help parents and children keep track of skills review or mastery.
- Make MathShark a traveling companion—MathShark can fit in a backpack and travel by car, train, bus, or plane.
- Encourage players to keep track of their scores (on the ASSESSMENT chart or another piece of paper) and try to improve their times.
- Challenge family members to a friendly MathShark competition. Players choose a SKILL and a LEVEL and see who gets the best time.
- Substitute MathShark for TV and see what happens!

In the Classroom

- Use MathShark as an individual skill builder. Five or ten minutes with MathShark turns “free time” into a productive learning experience.
- Make MathShark a permanent feature in any Math Learning Center.
- Use MathShark for cooperative learning. Pair students and have them take turns drilling basic math facts or specific skills and keeping a record of their times.
- Use the MathShark ASSESSMENT chart on pages 10-11 to track students' progress.
- Encourage students to track their own progress by comparing their times for the first game they play at each level with games played after using the drills practice.

MathShark's Special Features



LIGHTS

A flash of the green light means the answer is correct; a flash of the red light means it is incorrect.

ON/OFF

Use this button to turn MathShark ON and OFF.

LEARNING/CALCULATOR

Use this button to choose a mode.

SKILL

Press one of these buttons to select a skill in LEARNING—ADD, SUBTRACT, MULTIPLY, or DIVIDE.

NUMERAL BUTTONS

Use these to input answers.

DECIMAL BUTTON

Use this to input a decimal.

FRACTION BUTTON

Use this to input a fraction.

CLR

To change an answer, use the CLR button to erase the most recent number input.

SCREEN

Greetings, selection menus, examples, math problems, skill level, and elapsed time appear on the screen. Problems in LEARNING will show in either vertical or horizontal format.

ENTER

Press this button to enter answers in LEARNING mode or to find the answer in CALCULATOR mode.

SKILL

Press one of these buttons to select a skill in LEARNING—FRACTIONS, DECIMALS, or PERCENTS.

HELP

Help offers tips, steps, or alternate ways to look at a problem. Visualization is an important part of mental math. When applicable, MathShark gives learners two ways to look at a problem.

The HELP button can also be used to adjust the display CONTRAST on your screen. Turn MathShark on, and press HELP during the opening screen. Use the + and - buttons to adjust contrast for maximum visibility. Press ENTER to return to the main menu.

HOW TO USE MATHSHARK

MathShark is two fully functional learning tools in one! Press ON to start MathShark. It will come on in LEARNING mode unless you press CALCULATOR.

For CALCULATOR

1. Press CALCULATOR.
2. Input the first number.
3. Press a function key (+ - x ÷).
4. Input the next number.
5. Press ENTER and the answer will show.
6. Continue the process for a multiple step problem.
7. Press CALCULATOR or CLR to begin a new problem.

For LEARNING

1. Press LEARNING if you are in CALCULATOR mode.
2. Select SOUNDS ON or OFF. To silence MathShark's tones, press CLR at this menu. To hear them, press ENTER and proceed.
3. Choose one of seven skills: ADD, SUBTRACT, MULTIPLY, DIVIDE, FRACTIONS, DECIMALS, PERCENTS.
4. Choose a LEVEL from 1 to 8.

ADD, SUBTRACT, MULTIPLY, and DIVIDE begin by drilling basic facts:

Level 1—drills facts for a specific number in sequential order, for example: $1 + 1$, $2 + 1$, $3 + 1$

Level 2—drills facts for a specific number in random order, for example: $4 + 2$, $8 + 2$, $3 + 2$

At Level 1 or Level 2, player chooses NUMBER TO DRILL.

For example: To drill basic multiplication facts for 6, choose MULTIPLY, LEVEL 1, DRILL NUMBER 6.

Level 3—mixes the number facts drilled in random order, for example: $5 + 1$, $6 + 4$, $2 + 9$

Levels 4–8—provide programmed math problems in a skill area in progressive sequence. (See examples in *Content by Skill Levels*.)

ADD, SUBTRACT, MULTIPLY on Level 8, and DIVIDE on Levels 7 and 8—introduce pre-algebra skills by having players find the missing number in a math problem.

DECIMALS, FRACTIONS, and PERCENTS on Levels 1–8—provide skills practice in increasing difficulty.

5. After choosing SKILL and LEVEL, screen displays EXAMPLES.
6. Press ENTER to start a game, or CLR to choose a different SKILL or LEVEL.
7. First problem appears. Input an answer, then press ENTER. To enter a fraction, use the A/B button. To enter a decimal, use the \odot button.
The HELP button offers a visual clue. The HELP screen might display the problem in another way or provide a hint to getting the correct answer. After using the HELP screen, press HELP again (or CLR or ENTER) to return to the problem screen and ENTER an answer.
8. If the answer is correct, the green light flashes and the correct answer tone plays.
9. If the answer is incorrect, the red light flashes and the incorrect answer beep plays. The correct answer flashes and the problem recycles into the game. Play continues until all 10 problems are answered correctly (even if it takes 50 tries!).
10. At the end of each game, the screen displays a congratulatory message and the elapsed time.
11. Make one of these selections:

- advance to the NEXT game, press +.*
- repeat the SAME game, press ENTER.
- CHANGE skills by returning to the main menu, press CLR. To change levels, press CLR, choose a SKILL, then choose a LEVEL. (To change SKILL during a game, press LEARNING to return to the main menu.)

* In ADD, SUBTRACT, MULTIPLY, and DIVIDE on Levels 1 and 2, MathShark will advance to the next LEVEL after the highest drill number is completed. All other levels and skills will repeat continuously until CLR is chosen from the end-of-game menu.

To conserve batteries, MathShark is set to “go to sleep” after 300 seconds, or five minutes. Pressing any button will “wake up” MathShark. When player completes a game after waking up MathShark, the elapsed time at the end will say 300 SECS, the maximum time.

MathShark Content by Skill Levels

The MathShark Skills Scope and Sequence Chart on pages 20–21 gives an overall look at content in each skill and on each level.

The following pages provide a definition of the content for each skill and level, plus some example problems. You may want to use the examples to **introduce** a new or difficult concept. You might also want to make a reproducible sheet of problems for **practice** or for **assessment**.

For teacher assessment, use the reproducible ASSESSMENT chart on pages 10–11 to keep track of each player’s mastery. Students or parents can use the chart to keep track of individual achievements.

ADD

Level 1

Basic addition facts 0–9
in sequential order.
Player selects number to drill.

$$\begin{array}{r} 1 \\ + 4 \\ \hline \end{array} \quad \begin{array}{r} 2 \\ + 4 \\ \hline \end{array}$$

Level 2

Basic addition facts 0–9
in non-sequential order.
Player selects number to drill.

$$\begin{array}{r} 4 + 2 = \\ 7 + 2 = \end{array} \quad \begin{array}{r} 1 \\ + 2 \\ \hline \end{array} \quad \begin{array}{r} 8 \\ + 2 \\ \hline \end{array}$$

Level 3

Basic addition facts 0–9
in non-sequential order.
Drill numbers are randomly mixed.

$$\begin{array}{r} 3 + 5 = \\ 5 + 1 = \end{array} \quad \begin{array}{r} 7 \\ + 2 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ + 9 \\ \hline \end{array}$$

Level 4

Add 2-digit addends to 1-digit
addends without regrouping.

$$\begin{array}{r} 23 + 4 = \\ 90 + 5 = \end{array} \quad \begin{array}{r} 18 \\ + 1 \\ \hline \end{array} \quad \begin{array}{r} 72 \\ + 7 \\ \hline \end{array}$$

Level 5

Add 2-digit addends to 2-digit
addends without regrouping.

$$\begin{array}{r} 51 + 34 = \\ 11 + 11 = \end{array} \quad \begin{array}{r} 37 \\ + 12 \\ \hline \end{array} \quad \begin{array}{r} 24 \\ + 34 \\ \hline \end{array}$$

Level 6

Add three 1-digit addends.

$$3 + 5 + 4 = \quad 7 + 1 + 3 =$$

You may want to offer one of these suggestions for mental reminders in adding three numbers:

- always add the *first* two numbers, then add the sum to the third.
- always add the *easier* two numbers, then add the sum to the third.

Level 7

Add 2-digit addends to either
a 1-digit addend or another
2-digit addend with regrouping.

$$\begin{array}{r} 45 + 36 = \\ 28 + 9 = \end{array} \quad \begin{array}{r} 53 \\ + 8 \\ \hline \end{array} \quad \begin{array}{r} 72 \\ + 39 \\ \hline \end{array}$$



Remind players to determine the answer “mentally” and enter the complete answer from left to right.

Level 8

Introduces the pre-algebra
concept of finding the missing
addend (shown as ?).

$$\begin{array}{r} 2 + ? = 9 \\ ? + 70 = 80 \end{array}$$

To find the missing addend, subtract the known addend from the sum.

Name: _____

ASSESSMENT

	ADD	SUBTRACT	MULTIPLY	DIVIDE	DECIMALS	FRACTIONS	PERCENTS
Level 1							
Level 2							
Level 3							
Level 4							
Level 5							
Level 6							
Level 7							
Level 8							

SUBTRACT

Level 1

Basic subtraction facts 0–9 in sequential order. Player selects number to drill.

$$\begin{array}{r} 5 \\ - 2 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ - 2 \\ \hline \end{array}$$

Level 2

Basic subtraction facts 0–9 in non-sequential order. Player selects number to drill.

$$\begin{array}{r} 16 - 8 = \\ 13 - 8 = \end{array} \quad \begin{array}{r} 10 \\ - 8 \\ \hline \end{array} \quad \begin{array}{r} 8 \\ - 8 \\ \hline \end{array}$$

Level 3

Basic subtraction facts 0–9 in non-sequential order. Drill numbers are randomly mixed.

$$\begin{array}{r} 5 - 3 = \\ 9 - 2 = \end{array} \quad \begin{array}{r} 7 \\ - 5 \\ \hline \end{array} \quad \begin{array}{r} 8 \\ - 4 \\ \hline \end{array}$$

Level 4

Subtract 1-digit numbers from 2-digit numbers without regrouping.

$$\begin{array}{r} 25 - 4 = \\ 67 - 6 = \end{array} \quad \begin{array}{r} 98 \\ - 7 \\ \hline \end{array} \quad \begin{array}{r} 55 \\ - 1 \\ \hline \end{array}$$

Level 5

Subtract 2-digit numbers from 2- and 3-digit numbers without regrouping.

$$\begin{array}{r} 654 - 13 = \\ 837 - 26 = \end{array} \quad \begin{array}{r} 364 \\ - 123 \\ \hline \end{array} \quad \begin{array}{r} 97 \\ - 26 \\ \hline \end{array}$$



Remind players to determine the answer “mentally” and enter the complete answer from left to right.

Level 6

Subtract 1-digit numbers from 2-digit numbers with regrouping.

$$\begin{array}{r} 43 - 9 = \\ 75 - 7 = \end{array} \quad \begin{array}{r} 42 \\ - 7 \\ \hline \end{array} \quad \begin{array}{r} 71 \\ - 8 \\ \hline \end{array}$$

Level 7

Subtract 2-digit numbers from 2-digit and 3-digit numbers with regrouping.

$$\begin{array}{r} 92 - 58 = \\ 78 - 39 = \end{array} \quad \begin{array}{r} 170 \\ - 27 \\ \hline \end{array} \quad \begin{array}{r} 141 \\ - 16 \\ \hline \end{array}$$

Level 8

Introduces the pre-algebra concept of finding the missing number in subtraction problems.

$$\begin{array}{r} 79 - ? = 23 \\ ? - 71 = 28 \end{array}$$

Subtract to find the missing *subtrahend*.
Add to find the missing *minuend*.

MULTIPLY

Level 1

Basic multiplication facts 1–12 in sequential order. Player selects number to drill.

$$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ \times 5 \\ \hline \end{array}$$

Level 2

Basic multiplication facts 1–12 in non-sequential order. Player selects number to drill.

$$\begin{array}{r} 2 \times 5 = \\ 6 \times 5 = \end{array} \quad \begin{array}{r} 8 \\ \times 5 \\ \hline \end{array} \quad \begin{array}{r} 0 \\ \times 5 \\ \hline \end{array}$$

Level 3

Basic multiplication facts 1–12 in non-sequential order. Drill numbers are randomly mixed and include multiplication by numbers through 12.

$$\begin{array}{r} 5 \times 3 = \\ 9 \times 2 = \end{array} \quad \begin{array}{r} 4 \\ \times 3 \\ \hline \end{array} \quad \begin{array}{r} 12 \\ \times 7 \\ \hline \end{array}$$

Level 4

Multiply 2-digit numbers by 1-digit numbers without regrouping.

$$\begin{array}{r} 23 \times 3 = \\ 32 \times 2 = \end{array} \quad \begin{array}{r} 21 \\ \times 5 \\ \hline \end{array} \quad \begin{array}{r} 19 \\ \times 1 \\ \hline \end{array}$$

Level 5

Multiply 1-digit or 2-digit numbers by a number ending in one or two zeros.

$$\begin{array}{r} 100 \times 4 = \\ 12 \times 30 = \end{array} \quad \begin{array}{r} 300 \\ \times 5 \\ \hline \end{array} \quad \begin{array}{r} 900 \\ \times 10 \\ \hline \end{array}$$

Level 6

Multiply three 1-digit factors.

$$5 \times 6 \times 2 = \quad 3 \times 5 \times 4 =$$

You may want to offer one of these suggestions for mental reminders in multiplying three factors:

- multiply the *first* two factors, then multiply the product by the third.
- multiply the *easier* two factors, then multiply the product by the third.

DIVIDE

Level 7

Multiply 2-digit numbers by 1-digit numbers with regrouping.

$$47 \times 3 = \quad 62 \quad 25$$

$$58 \times 2 = \quad \underline{x \ 6} \quad \underline{x \ 7}$$



You might want to encourage players to use their estimating skills at this level. Estimation is a valuable tool in mental math.

Remind players to enter the complete answer from left to right.

Level 8

Introduces the pre-algebra concept of finding the missing factor (shown as ?) in multiplication.

$$33 \times ? = 132$$

$$? \times 47 = 94$$

To find the missing factor, divide the product by the known factor.

Level 1

Basic division facts 1–12 in sequential order. Player selects number to drill.

$$2 \div 2 = \quad 4 \div 2 =$$

Level 2

Basic division facts 1–12 in non-sequential order. Player selects number to drill.

$$9 \div 3 = \quad 15 \div 3 =$$

Level 3

Basic division facts 1–12 in non-sequential order. Drill numbers are randomly mixed and include divisors through 12.

$$108 \div 12 = \quad 18 \div 2 =$$

Level 4

Divide numbers ending in zero by 10 or numbers ending in two zeros by 100.

$$560 \div 10 = \quad 200 \div 100 =$$

Level 5

3-digit numbers divided by 1-digit numbers without regrouping.

$$364 \div 4 = \quad 339 \div 3 =$$

Level 6

2-digit numbers divided by 1-digit numbers with regrouping.

$$78 \div 3 = \quad 80 \div 5 =$$

Level 7

Introduces the pre-algebra concept of finding the missing divisor (shown as ?).

$$60 \div ? = 3 \quad 48 \div ? = 6$$

Level 8

Introduces the pre-algebra concept of finding the missing dividend (shown as ?).

$$? \div 4 = 6 \quad ? \div 2 = 32$$

To find the missing dividend, multiply the two factors.

DECIMALS

Before beginning work in the DECIMALS skills, make sure player knows how to use the \odot button to enter a decimal: enter the whole number, press the \odot button, then enter the decimal numbers.

Level 1
 Add tenths. $0.2 + 0.3 =$ $0.4 + 0.6 =$

Level 2
 Subtract tenths. $0.3 - 0.1 =$ $0.8 - 0.6 =$

Level 3
 Add hundredths. $0.10 + 0.01 =$ $0.20 + 0.12 =$



Remind players to determine the answer "mentally" and enter the complete answer.

Level 4
 Subtract hundredths. $0.28 - 0.14 =$ $0.34 - 0.22 =$

Level 5
 Add decimals greater than 1. $1.13 + 0.42 =$ $3.34 + 0.13 =$

Level 6
 Subtract decimals greater than 1. $4.24 - 0.12 =$ $8.83 - 7.70 =$

Level 7
 Multiply with decimals. $2 \times 0.2 =$ $0.10 \times 0.10 =$

Level 8
 Divide with decimals. $0.25 \div 5 =$ $0.28 \div 0.07 =$

FRACTIONS

Before beginning work in the FRACTIONS skills, make sure player knows how to use the A/B button to enter a fraction: enter the numerator, press the A/B button, then enter the denominator.

Level 1
 Simplify fractions. Once players have learned to simplify fractions in LEVEL 1, all answers for LEVELS 2-8 must be simplified. $\frac{4}{16} =$ $\frac{90}{100} =$

Level 2
 Add fractions with like denominators, answers not over 1. $\frac{1}{8} + \frac{2}{8} =$ $\frac{1}{3}$ $\frac{1}{9}$
 $\frac{1}{6} + \frac{4}{6} =$ $\frac{1}{3}$ $\frac{1}{9}$



As FRACTIONS levels advance, remind players to use this 3-step process:
 1. Input their answer as a fraction, but do not press ENTER.
 2. Look at the fraction and ask: "Can it be simplified?"
 3. If the answer is "yes," players can use CLR to erase their answer and input it again in simplified form.

Level 3
 Subtract fractions with like denominators. $\frac{3}{4} - \frac{2}{4} =$ $\frac{5}{9}$ $\frac{5}{6}$
 $\frac{3}{7} - \frac{1}{7} =$ $\frac{4}{9}$ $\frac{3}{6}$

Level 4
 Add fractions with unlike denominators. $\frac{1}{3} + \frac{3}{6} =$ $\frac{1}{2}$ $\frac{1}{6}$
 $\frac{3}{5} + \frac{1}{10} =$ $\frac{1}{4}$ $\frac{2}{3}$

To add and subtract unlike fractions, rename the fractions as equivalent fractions with common denominators.

PERCENTS

Level 5

Subtract fractions with unlike denominators.

$$\frac{1}{3} - \frac{1}{6} =$$

$$\frac{3}{5} - \frac{1}{10} =$$

Level 6

Multiply fractions with unlike denominators.

$$\frac{1}{2} \times \frac{2}{3} =$$

$$\frac{5}{8} \times \frac{2}{3} =$$

$$\frac{1}{5} \times \frac{1}{10} =$$

$$\frac{5}{8} \times \frac{1}{4} =$$

$$\frac{2}{3} \times \frac{1}{6} =$$

To multiply unlike fractions: first multiply the numerators (top numerals in the fraction); then multiply the denominators (bottom numerals in the fraction), and simplify.

Level 7

Multiply fractions and whole numbers.

$$\frac{3}{4} \times 4 =$$

$$5 \times \frac{1}{5} =$$

To multiply a fraction by a whole number, write the whole number as a fraction: $4 = \frac{4}{1}$. Then, as in Level 6, first multiply the two numerators, then the denominators.

Level 8

Divide fractions and whole numbers.

$$\frac{3}{4} \div \frac{1}{8} =$$

$$4 \div \frac{1}{2} =$$

To divide fractions, invert the second number (the divisor), then multiply.

Level 1

Write percents as equivalent fractions.

$$24\% =$$

$$13\% =$$

Level 2

Write percents as equivalent decimals.

$$76\% =$$

$$99\% =$$

Level 3

Find 1% or 10% of whole numbers.

$$10\% \text{ of } 25 =$$

$$1\% \text{ of } 100 =$$

Level 4

Find 25%, 50%, or 100% of whole numbers.

$$25\% \text{ of } 200 =$$

$$50\% \text{ of } 150 =$$

Level 5

Find 5%, 20%, or 75% of whole numbers.

$$5\% \text{ of } 200 =$$

$$75\% \text{ of } 400 =$$

Level 6

Find percentages ending in zero (excluding 10%, 20%, and 50%) of whole numbers with zero after the first numeral.

$$40\% \text{ of } 40 =$$

$$90\% \text{ of } 600 =$$

Level 7

Complete the math sentence by finding the missing number.

$$? \% \text{ of } 100 = 50$$

$$? \% \text{ of } 100 = 25$$

Level 8

Complete the math sentence by finding the missing number.

$$100\% \text{ of } ? = 234$$

$$25\% \text{ of } ? = 4$$

Math Shark™

Skills Scope and Sequence Chart

	ADD	SUBTRACT	MULTIPLY	DIVIDE	DECIMALS	FRACTIONS	PERCENTS
Level 1	Basic facts, selected number, sequential	Basic facts, selected number, sequential	Basic facts, selected number, sequential	Basic facts, selected number, sequential	ADD tenths	Simplify fractions	Write equivalent fractions
Level 2	Basic facts, selected number, non-sequential	Basic facts, selected number, non-sequential	Basic facts, selected number, non-sequential	Basic facts, selected number, non-sequential	SUBTRACT tenths	ADD fractions with like denominators	Write equivalent decimals
Level 3	Basic random facts, non-sequential	Basic random facts, non-sequential	Basic random facts, non-sequential	Basic random facts, non-sequential	ADD hundredths	SUBTRACT fractions with like denominators	Identify 1% or 10% of whole numbers
Level 4	2-digits plus 1-digit, no regrouping	2-digits minus 1-digit, no regrouping	2-digits by 1-digit, no regrouping	Dividing with zeros	SUBTRACT hundredths	ADD fractions with unlike denominators	Identify 25%, 50%, or 100% of whole numbers
Level 5	2-digits plus 2-digits, no regrouping	2-digits or 3-digits minus 2-digits, no regrouping	1-digit or 2-digits by factors with zero	3-digits divided by 1-digit, no regrouping	ADD decimals greater than 1	SUBTRACT fractions with unlike denominators	Identify 5%, 20%, or 75% of whole numbers
Level 6	Three 1-digit addends	2-digits minus 1-digit, with regrouping	Three 1-digit factors	2-digits divided by 1-digit, with regrouping	SUBTRACT decimals greater than 1	MULTIPLY fractions with unlike denominators	Find percents in numbers ending with zeros
Level 7	2-digits plus 1-digit and 2-digits plus 2-digits, with regrouping	2-digits or 3-digits minus 2-digits, with regrouping	2-digits by 1-digit, with regrouping	Find the missing divisor	MULTIPLY with decimals	MULTIPLY fractions and whole numbers	Find the missing percentage
Level 8	Find the missing addend	Find the missing subtrahend or minuend	Find the missing factor	Find the missing dividend	DIVIDE with decimals	DIVIDE fractions and whole numbers	Find the missing number

