

TOOLS FOR SUCCESS

An Oral Math Facts Program

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Sample—Multiplication

Printed in Canada

Knowledge of basic math facts is an important factor for success in mathematics. Often students who are experiencing difficulty in mathematics are students who have not mastered the basic math facts at a speed and accuracy rate that allows them to complete calculations efficiently and accurately. Students who are dependent on counting on their fingers or on the use of multiplication charts often lose track of the flow in multi-step problem solving.

The focus of *Tools for Success: An Oral Math Facts Program*[®] is on specific explicit direct instruction strategies and repeated practice for learning basic math facts that teachers and parents can use to increase student success in mathematics. The explicit direct instruction strategies provided in this program offer a carefully planned sequence of basic fact instruction, generalizable strategies, procedures for practice, review, mastery, correction procedures, and student support materials. This basic fact program is non-age specific and may be used each year to “tune-up” students’ basic fact skills as they review and learn more about computation.

An increase in student attentiveness during instruction is dependent on the length of a teacher’s explanation or demonstration. Instructional procedures should be brief, concise, and use consistent language to facilitate the active involvement of the learners. Presentations should be structured in a manner that allow students to respond frequently.

Specific rules and strategies should be taught to the students in whole class lessons before they practice the memorization of the facts. This math facts program is based on the premise that the students conceptually understand the basic operations and have a strategy for figuring out the answer if they cannot recall it (e.g., the times 1 rule; the times 0 rule; count bys; and series saying). A number of strategies for each operation is provided later in this teacher guide.

Tools for Success: An Oral Math Facts Program[®] requires that students reach mastery of a specific set of facts before moving to the next level of the program. The criteria for mastery is a minimum of 28 facts answered correctly per minute on the oral portion of the program. Blackline masters for written test sheets are provided on pages 16 to 18 of this Teacher Guide. Written tests are administered after a student has mastered Level Z of any operation. The criteria for mastery on these sheets is 25 facts per minute (primary students) or 30 facts per minute (older students).

A 15 minute daily routine of oral math fact drill offers students consistent practice that is efficient, interesting, and motivating with a minimum amount of marking required of the teacher. The use of instructional assistants, parents, peer tutors, older students, and other volunteers builds partnerships that are beneficial to all concerned.

Repeated trials of the approach found in this oral math facts program have found that there is a direct relationship between oral fluency with the basic facts and the ability to write the answers to the facts. Written tests (found on pages 16 to 18 of this guide) are used after students have completed Level Z in a particular operation to develop and document written fluency at the desired rate. These written tests should be administered and scored by the classroom teacher or an instructional assistant.

Student practice books may be sent home as a home support program. The “new facts” boxes and rule boxes give parents easy access to what new facts a student is learning. Students who receive additional oral home practice will progress more quickly through the levels. It is important to make it clear to student and parents that **student practice books are for oral practice only. They are not to be written in.**

Program Components

- Teacher Guide with blackline masters for Individual Student Progress Chart– Multiplication, placement tests, written mastery tests home/school communication notes, and a certificate of achievement.
- Reusable student practice books—one book for each student.

Getting Ready to Start

Placement of Students

All students should be placement tested before they receive instruction. (See Placement Tests in this guide on pages 12 and 13.) Students can be placement tested in whole class, small group, or one to one settings. The placement test has been designed to place students at a level in the program where they will experience success.

Procedure for administering the placement test for multiplication:

1. (Explain to students that they will be completing a test that will help you, as the classroom teacher, know what math facts they need to learn and practice.)
2. Give each student a copy of the placement test. Have students fill in the name and date lines at the top of the page.
3. Students are instructed to work sequentially on only one row at a time. Students are not to skip problems.) **You will complete one row of problems. Do not skip any problems. If you don't know an answer, stop and figure it out before you continue on in the row. When you get to the end of the row, put your pencil down and look up at me.** (Each new row will start a new part of the test. Students are not to go back and work on a row once that portion of the test has been completed.)
4. (Once students are ready, say:) **Get ready. Go.** (Start the stopwatch. Allow the students 30 seconds to work the problems in the first row. After 30 seconds say:) **Stop. Pencils down.** (This procedure is then repeated for each of the rows.)

Scoring the Placement Test for Multiplication:

If a student makes more than 3 errors in a row, they are to be placed as follows:

Row 1	Level A
Row 2	Level D
Row 3	Level G
Row 4	Level J
Row 5	Level M
Row 6	Level P
Row 7	Level S
Row 8	Level V
Row 9	Level Y

If a student completes all of the rows in the test with 3 errors or less they should be placement tested for the next operation.

Setting up the Record Keeping System

The record keeping system provided is designed to assist the teacher in monitoring student progress. (See Blackline Master of Student Progress Chart–Multiplication on page 14 of this Teacher Guide).

A file folder should be prepared to keep copies of Student Progress Charts and Intervention Logs.

Completing the Student Progress Chart–Multiplication and the Intervention Log

Information on the Student Progress Chart–Multiplication is to be completed before the program begins. Placement information should be recorded on the chart if the student does not begin with Level A of an operation.

Achievement of individual students (number of facts answered correctly) is to be written on the chart after each practice session by the student or checker.

Student progress should be consistently monitored for accuracy by the classroom teacher. It is important to set realistic goals for students.

Space is provided on the chart for 6 practice sessions before specific remedial intervention by the classroom teacher or intervention teacher happens. Intervention can include one-on-one or small group instruction for up to three days on the new facts that are presenting the difficulty. What interventions were used for remediation should be recorded on the intervention log by the teacher. The intervention log should be for the teacher's information only. It should not be given to student checkers. (See blackline master page 14 in this guide)

A checkout by the teacher, an instructional assistant, or adult volunteer should be given to the student for each of the 3 days. If at the end of 3 days, the student still cannot meet the specified criteria, the problem may be that the student is not firm on previously tested facts. The teacher should move the student back

2 or 3 levels and then move the student forward through the levels again.

The time goals may be modified for students with special needs. Some students are unable to process information, speak, or write at a rapid rate. The expected time can be modified in 15 second increments for these students. (E.g., 1 min 15 sec; 1 min 30 sec). Only students with very exceptional needs may require more than 1 min 30 sec.

Assigning Partners

Assign each student a partner who is near their level and who is on the same operation. It is best to assign partners for an extended period of time (e.g., for the week, for the month). Students should practice the daily routine to make sure that it is well-established before practice sessions begin. Emphasize the importance of the checker role. Remind students that when they are the checker, they are a peer tutor for their partner.

Monitoring Practice Sessions

It is important to circulate around the classroom as students are practicing, checking to make sure that all students are working cooperatively. Having both students track with their finger will provide you with immediate feedback about both students being on the same problem. If students are not being conscientious about checking their partner, you may wish to have small group or one-on-one practice sessions where you work with these students to better establish the routine.

Modeling The Daily Routine

Preparation:

Time: 15 minutes

Each student needs:

- a copy of the Student Practice Book. **THESE BOOKS ARE NOT CONSUMABLES AND SHOULD NOT BE WRITTEN IN. THEY ARE FOR ORAL PRACTICE ONLY.**
- a Student Progress Chart–Multiplication with the heading information filled in and the level where each student is to start circled.
- a pencil for recording on the Student Progress Chart–Multiplication.

You will need:

- a stopwatch or other timer.
- a file folder for the students' Student Progress Charts and Intervention Logs.
- an overhead transparency or Smart Board file of the Student Progress Chart–Multiplication with the heading filled in for yourself. Circle level D on the chart.

(Introduce students to the fact practice routine that will be followed in your classroom. Make sure that all students clearly understand the routine before actual practice sessions that will be recorded begin.)

Today, you will begin a Multiplication math facts program. Knowing your math facts will help you work faster and more accurately when you have more difficult math problems to solve.

(Give each student a copy of the Student Practice Book.) **These are math facts practice books. You will practice from this book each day with your partner. You will not write in this book. Will you write in the practice book? No.** (Show students how the book has two sides—the question book and the answer book.)

(Display the overhead transparency or Smart Board file of the Student Progress Chart– Multiplication. Review the information that is on the heading with the students. Have students look at their individual charts to see that you have filled in the information for them. Have them identify their starting level.)

This is your Student Progress Chart– Multiplication. This is where you will keep track of your progress each day.

I'm going to show you the routine we will use for math fact practice and how to complete the Student Progress Chart– Multiplication. (This modeling process should be presented to students until they clearly understand the routine that will be followed.)

(Display the overhead transparency or Smart Board file of the demonstration Student Progress Chart– Multiplication.) **When I took the placement test for multiplication, it told me that I placed in Level D.** (Point to the circled D.)

(Select a student to be your partner. Model the practice procedure with this student.) **___ and I are math fact partners. Today, I will be the student first and ___ will be the checker.** (Model each partner having the correct side of the practice book.)

First, we will practice the new facts for 30 seconds. We are trying to memorize the new facts. When we memorize we just remember the answer. I will say the problem and the answer for each problem in the New Facts box. I will have 30 seconds for this practice.

If I don't know an answer, my partner will tell me the correct answer. Both my partner and I will track under each problem as I say it. This will help the teacher know that we are both on the same problem.

2x2=4; 3x2=6; 4x2= (Pause for about 5 seconds.) **I didn't say the answer right away, so my partner needs to tell me the answer.** (Your partner should say the answer.)

I say the problem and the answer again and then continue my practice of the new facts. 4x2=8; 5x2=10. (Keep saying the problems and the answers until 30 seconds has passed.)

Now, I am ready to do the practice part that is at the top of the page. I will say each problem and the answer. I will have one and a half minutes for this practice.

What will my partner do if I don't know an answer? Tell you the answer. What will my partner do if I say an incorrect answer? Tell you the correct answer.

What will both of us do so that the teacher knows that we are both on the same problem? Track.

5x2=10; 2x2=4; 5x4=20; 5x3=10. (Your partner should stop you and say the correct answer.) **5x3=15; 5x5=25; 4x2=8.** (Continue this procedure for one and a half minutes making sure to make some errors.)

The mastery criterion for the oral test is 28-30 correct answers per minute.
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Now, I'm ready to take the test. This time I will only say the answers. I have one minute for this test. If I make an error or don't know the answer, my partner will say the problem and the correct answer. I must then say the problem and the correct answer before I continue on with the test. (Partners can keep track of errors in a number of ways. They can put one finger up for each error that is made on the hand that is not being used for tracking. Students can make a tally for each error on a small piece of scrap paper. Students can keep a count in their minds. Problems that are not answered within the one minute time limit are counted as errors.)

What will my partner do if I make an error or don't know the answer? They will say the problem and the correct answer. Then, what will I do? You will say the problem and the correct answer before you continue on with the test.

8; 5; 1; 4; 1. (Your partner should stop you; then, say the problem and the correct answer.) **2x1=2; 6; 10; 3; 6...** (Continue this procedure for one minute making 3 more errors.)

My partner now tells me how many problems I had correct. How many problems did I have correct? 26. (Write 26 in the correct space on the overhead transparency of the Student Progress Chart–Multiplication. Explain to the students that each day they will fill in their own chart.)

Repeat the process with your student partner.)

You are now ready to begin the Multiplication Math Facts program. (Assign each student a partner and have them sit close together so that they can hear each other. Direct students to look at their Student Progress Charts to find out what level they are to start at. Follow the procedure that was modeled. You may need to model the procedure for 3 days to make sure students clearly understand the routine.

It is not necessary for students to have their names on the student books because they are to be used for oral practice only. The students will not write in them.

Use the overhead transparency or Smart Board file to show students that once they have reached the rate of 28-30 facts per minute during the paired practice, they color in the box with the letter and move on to the next level the following day.

Once the routine is established, it should be followed consistently for each day of the program.)

Moving to the Next Level

Once a student has reached the rate of 28-30 facts per minute on the oral test for a level, they should raise their hand. You can then direct the student to color in the box for that level on the Student Progress Chart–Multiplication. The student moves to the next level during the next practice session.

It is important to circulate around the classroom during the oral test to make sure the checker is doing their job conscientiously. If you observe checkers who are not completing their task accurately, it is important to have the pair redo the test under your direction at a later time. Be sure to visit the work area of these students more frequently as you circulate to monitor.

Reaching Written Mastery

Once a student has reached the rate of 28-30 facts per minute on Level Z on the oral tests, they are ready to take the written test. This test should be given by the classroom teacher or by an instructional assistant.

Three forms of a written test for each operation can be found as blackline masters on pages 16 to 18 of this guide.

The mastery criterion for the written answers is 25 facts per minute for primary students and 30 facts per minute for older students.

Procedure for Administering the Written Tests

1. (The student is given Form A of the Mastery Test. The student is to work the problems sequentially and not skip around on the page.) **This is the mastery test for Multiplication** (or whatever operation is being tested). **You will write the answers to the problems starting with the first problem and working them in order. Do not skip any problems. If you do not know the answer, stop and use one of the strategies that you have learned to figure out the answer. Problems that are skipped will count as errors.**
2. **Pencil up. Get Ready. Go.** (Start the stopwatch. Allow student(s) one minute to work.) **Stop. Pencil down.**
3. (Collect the sheet from the student(s) who have taken the test. The teacher or instructional assistant should mark the test. Incorrect answers should be circled and corrected by the student before the next form of the test is administered. Students should not be allowed to take the test home to practice.
4. If a student meets the specified criteria, they should receive a reward certificate (Black line master can be found on page 20 of this guide.) and be placement tested for the next operation.

5. If a student does not meet the specified criteria, they should take Form B of the test the following day. If the criteria is not met the second time, Form C should be administered the following day. Students should be allowed 6 attempts to pass the test. Each form can be administered twice. If a student does not pass after 6 attempts, they should re-do the oral practice for all levels Q to Z of that operation. The time and expected rate can be modified for students with special needs. This should be indicated on that student's Individual Educational Plan.
6. Record the student's testing information on the Student Progress Sheet and retain for your records.

TEACHING STRATEGIES SUMMARY CHART FOR MULTIPLICATION

Level	New Facts	Strategies	Level	New Facts	Strategies
A	2x1, 3x1, 4x1, ...9x1	Number x1 Rule Series Saying	N	4x2, 4x3, 4x4, 4x5	Review number x0 and 0x Number Rules Count by 4s Series Saying
B	1x1, 1x2, 1x3, ...1x9	Review x1 Rule 1x Number Rule	O	2x9, 3x9, 4x9, 5x9	Count by 9s Series Saying
C	5x2, 5x3, 5x4, 5x2	Count by 5s Series Saying	P	2x4, 3x4, 4x4, 5x4	Count by 4s Series Saying
D	2x2, 3x2, 4x2, 5x2	Count by 2s	Q	9x6, 9x7, 9x8, 9x9	Count by 9s Series Saying
E	2x5, 3x5, 4x5, 5x5	Count by 5s Series Saying	R	4x6, 4x7, 4x8, 4x9	Review Number x1, 1x, x0, and 0x Number Rules Count by 4s Series Saying
F	2x2, 2x3, 2x4, 2x5	Count by 2s Series Saying	S	6x9, 7x9, 8x9, 9x9	Count by 9s Series Saying
G	5x6, 5x7, 5x8, 5x9	Review x1 and 1x Rules Count by 5s Series Saying	T	6x4, 7x4, 8x4, 9x4	Count by 4s Series Saying
H	2x6, 2x7, 2x8, 2x9	Count by 2s Series Saying	U	3x6, 3x7, 3x8, 3x9	Review Number x1, 1x, x0, and 0x Number Rules Count by 3s Series Saying
I	6x5, 7x5, 8x5, 9x5	Count by 5s Series Saying	V	6x6, 6x7, 6x8, 6x9	Memorize These Facts Count by 9s Series Saying
J	6x2, 7x2, 8x2, 9x2	Count by 2s	W	6x3, 7x3, 8x3, 9x3	Count by 3s Series Saying
K	2x0, 3x0, 4x0, ...9x0	Number x0 Rule	X	7x6, 8x6, 9x6, 3x3	Memorize These Facts Count by 9s and 3s
L	0x2, 0x3, 0x4, ...0x9	Review Number x0 Rule 0x Number Rule	Y	7x7, 8x7, 9x7	Memorize These Facts Count by 9s Series Saying
M	9x2, 9x3, 9x4,	Series Saying Count by 9s	Z	7x8, 8x8, 9x8	Review Number x1, 1x, x0, and 0x Number Rules Memorize These Facts Count by 9s Series Saying

Multiplication Placement Test Part One

Name: _____ Date: _____ Placement: _____

9 7 4 5 6 1 1 1 1 1 5 5 5 5 5
x1 x1 x1 x1 x1 x3 x5 x7 x6 x9 x3 x2 x4 x5 x3

2 5 4 3 4 5 3 2 4 2 2 2 2 2 2
x2 x2 x2 x2 x2 x5 x5 x5 x5 x5 x2 x4 x3 x5 x4

5 5 5 5 5 2 2 2 2 7 7 9 8 6 8
x7 x8 x6 x9 x8 x6 x9 x8 x7 x1 x5 x5 x5 x5 x5 x5

9 6 8 7 8 5 2 4 3 5 7 9 6 8 6
x2 x2 x2 x2 x2 x0 x0 x0 x0 x0 x0 x0 x0 x0 x0 x0

9 9 9 9 9 4 4 4 4 4 5 3 2 4 5
x2 x4 x5 x3 x4 x4 x3 x5 x2 x3 x9 x9 x9 x9 x9 x9

Multiplication Placement Test Part Two

Name: _____ Date: _____ Placement: _____

5 3 4 2 3 9 9 9 9 9 4 4 4 4 4
x4 x4 x4 x4 x4 x9 x8 x7 x6 x7 x7 x6 x8 x9 x6

8 7 6 9 6 8 7 6 9 8 3 3 3 3 3
x9 x9 x9 x9 x9 x4 x4 x4 x4 x4 x7 x6 x9 x6 x8

6 6 6 6 6 6 8 7 9 8 7 8 3 9 8
x6 x8 x7 x9 x7 x3 x3 x3 x3 x3 x6 x6 x3 x6 x6

9 7 8 9 7 7 9 8 7 9
x7 x7 x7 x7 x7 x8 x8 x8 x8 x8

STUDENT PROGRESS CHART–MULTIPLICATION

Name: _____ Grade: _____

Date started: _____ Date completed: _____

Number of Facts expected per minute for mastery: _____ Time allowed: _____

Comments: _____

Level	P1	P2	P3	P4	P5	P6	Intervention Starting Date	P7	P8	Mastery
Z										Z
Y										Y
X										X
W										W
V										V
U										U
T										T
S										S
R										R
Q										Q
P										P
O										O
N										N
M										M
L										L
K										K
J										J
I										I
H										H
G										G
F										F
E										E
D										D
C										C
B										B
A										A

Written Mastery Test Attempts: 1 2 3 4 5 6

Date Mastery Achieved: _____

Mastery Test for Multiplication Form A

Name: _____ Date: _____ Score _____ (Items Attempted _____ – Items Incorrect _____ – Items Skipped _____)

$\begin{array}{r} 6 \\ \times 7 \end{array}$	$\begin{array}{r} 6 \\ \times 8 \end{array}$	$\begin{array}{r} 8 \\ \times 9 \end{array}$	$\begin{array}{r} 9 \\ \times 1 \end{array}$	$\begin{array}{r} 3 \\ \times 5 \end{array}$	$\begin{array}{r} 5 \\ \times 4 \end{array}$	$\begin{array}{r} 9 \\ \times 5 \end{array}$	$\begin{array}{r} 3 \\ \times 8 \end{array}$	$\begin{array}{r} 1 \\ \times 0 \end{array}$	$\begin{array}{r} 0 \\ \times 5 \end{array}$	$\begin{array}{r} 9 \\ \times 4 \end{array}$	$\begin{array}{r} 1 \\ \times 4 \end{array}$	$\begin{array}{r} 5 \\ \times 8 \end{array}$	$\begin{array}{r} 2 \\ \times 5 \end{array}$	$\begin{array}{r} 8 \\ \times 6 \end{array}$
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$\begin{array}{r} 2 \\ \times 2 \end{array}$	$\begin{array}{r} 7 \\ \times 2 \end{array}$	$\begin{array}{r} 6 \\ \times 9 \end{array}$	$\begin{array}{r} 8 \\ \times 5 \end{array}$	$\begin{array}{r} 3 \\ \times 7 \end{array}$	$\begin{array}{r} 8 \\ \times 2 \end{array}$	$\begin{array}{r} 7 \\ \times 5 \end{array}$	$\begin{array}{r} 9 \\ \times 8 \end{array}$	$\begin{array}{r} 1 \\ \times 1 \end{array}$	$\begin{array}{r} 2 \\ \times 9 \end{array}$	$\begin{array}{r} 4 \\ \times 4 \end{array}$	$\begin{array}{r} 8 \\ \times 4 \end{array}$	$\begin{array}{r} 0 \\ \times 7 \end{array}$	$\begin{array}{r} 0 \\ \times 1 \end{array}$	$\begin{array}{r} 7 \\ \times 7 \end{array}$
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$\begin{array}{r} 8 \\ \times 0 \end{array}$	$\begin{array}{r} 7 \\ \times 7 \end{array}$	$\begin{array}{r} 3 \\ \times 1 \end{array}$	$\begin{array}{r} 4 \\ \times 1 \end{array}$	$\begin{array}{r} 5 \\ \times 6 \end{array}$	$\begin{array}{r} 3 \\ \times 9 \end{array}$	$\begin{array}{r} 0 \\ \times 2 \end{array}$	$\begin{array}{r} 4 \\ \times 2 \end{array}$	$\begin{array}{r} 1 \\ \times 5 \end{array}$	$\begin{array}{r} 5 \\ \times 1 \end{array}$	$\begin{array}{r} 5 \\ \times 9 \end{array}$	$\begin{array}{r} 2 \\ \times 1 \end{array}$	$\begin{array}{r} 4 \\ \times 8 \end{array}$	$\begin{array}{r} 6 \\ \times 5 \end{array}$	$\begin{array}{r} 9 \\ \times 0 \end{array}$
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$\begin{array}{r} 9 \\ \times 9 \end{array}$	$\begin{array}{r} 8 \\ \times 3 \end{array}$	$\begin{array}{r} 7 \\ \times 9 \end{array}$	$\begin{array}{r} 6 \\ \times 0 \end{array}$	$\begin{array}{r} 2 \\ \times 0 \end{array}$	$\begin{array}{r} 1 \\ \times 6 \end{array}$	$\begin{array}{r} 7 \\ \times 3 \end{array}$	$\begin{array}{r} 0 \\ \times 4 \end{array}$	$\begin{array}{r} 6 \\ \times 4 \end{array}$	$\begin{array}{r} 7 \\ \times 0 \end{array}$	$\begin{array}{r} 3 \\ \times 3 \end{array}$	$\begin{array}{r} 0 \\ \times 3 \end{array}$	$\begin{array}{r} 9 \\ \times 2 \end{array}$	$\begin{array}{r} 4 \\ \times 5 \end{array}$	$\begin{array}{r} 4 \\ \times 0 \end{array}$
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$\begin{array}{r} 1 \\ \times 8 \end{array}$	$\begin{array}{r} 6 \\ \times 3 \end{array}$	$\begin{array}{r} 7 \\ \times 8 \end{array}$	$\begin{array}{r} 2 \\ \times 6 \end{array}$	$\begin{array}{r} 8 \\ \times 6 \end{array}$	$\begin{array}{r} 3 \\ \times 0 \end{array}$	$\begin{array}{r} 3 \\ \times 6 \end{array}$	$\begin{array}{r} 8 \\ \times 7 \end{array}$	$\begin{array}{r} 0 \\ \times 6 \end{array}$	$\begin{array}{r} 7 \\ \times 6 \end{array}$	$\begin{array}{r} 4 \\ \times 7 \end{array}$	$\begin{array}{r} 1 \\ \times 9 \end{array}$	$\begin{array}{r} 4 \\ \times 6 \end{array}$	$\begin{array}{r} 8 \\ \times 8 \end{array}$	$\begin{array}{r} 9 \\ \times 7 \end{array}$
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$\begin{array}{r} 6 \\ \times 6 \end{array}$	$\begin{array}{r} 9 \\ \times 6 \end{array}$	$\begin{array}{r} 0 \\ \times 8 \end{array}$	$\begin{array}{r} 6 \\ \times 2 \end{array}$	$\begin{array}{r} 1 \\ \times 7 \end{array}$	$\begin{array}{r} 4 \\ \times 9 \end{array}$	$\begin{array}{r} 5 \\ \times 5 \end{array}$	$\begin{array}{r} 5 \\ \times 2 \end{array}$	$\begin{array}{r} 0 \\ \times 9 \end{array}$	$\begin{array}{r} 2 \\ \times 8 \end{array}$	$\begin{array}{r} 5 \\ \times 0 \end{array}$	$\begin{array}{r} 5 \\ \times 7 \end{array}$	$\begin{array}{r} 3 \\ \times 2 \end{array}$	$\begin{array}{r} 5 \\ \times 3 \end{array}$	$\begin{array}{r} 8 \\ \times 1 \end{array}$
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$\begin{array}{r} 9 \\ \times 3 \end{array}$	$\begin{array}{r} 0 \\ \times 0 \end{array}$	$\begin{array}{r} 2 \\ \times 3 \end{array}$	$\begin{array}{r} 1 \\ \times 2 \end{array}$	$\begin{array}{r} 7 \\ \times 1 \end{array}$	$\begin{array}{r} 4 \\ \times 3 \end{array}$	$\begin{array}{r} 2 \\ \times 4 \end{array}$	$\begin{array}{r} 3 \\ \times 4 \end{array}$	$\begin{array}{r} 6 \\ \times 1 \end{array}$	$\begin{array}{r} 1 \\ \times 3 \end{array}$
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New Facts

$\begin{array}{r} 4 \\ \underline{\times 6} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 7} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 8} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 9} \end{array}$
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Multiplication Worksheet R

$\begin{array}{r} 4 \\ \underline{\times 7} \end{array}$	$\begin{array}{r} 9 \\ \underline{\times 6} \end{array}$	$\begin{array}{r} 3 \\ \underline{\times 4} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 6} \end{array}$	$\begin{array}{r} 2 \\ \underline{\times 4} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 9} \end{array}$	$\begin{array}{r} 9 \\ \underline{\times 8} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 8} \end{array}$	$\begin{array}{r} 9 \\ \underline{\times 9} \end{array}$
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$\begin{array}{r} 9 \\ \underline{\times 8} \end{array}$	$\begin{array}{r} 9 \\ \underline{\times 9} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 8} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 4} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 9} \end{array}$	$\begin{array}{r} 9 \\ \underline{\times 7} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 6} \end{array}$	$\begin{array}{r} 9 \\ \underline{\times 6} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 7} \end{array}$
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$\begin{array}{r} 5 \\ \underline{\times 4} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 6} \end{array}$	$\begin{array}{r} 5 \\ \underline{\times 4} \end{array}$	$\begin{array}{r} 9 \\ \underline{\times 6} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 4} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 7} \end{array}$	$\begin{array}{r} 9 \\ \underline{\times 7} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 9} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 8} \end{array}$
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$\begin{array}{r} 4 \\ \underline{\times 9} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 7} \end{array}$	$\begin{array}{r} 9 \\ \underline{\times 8} \end{array}$	$\begin{array}{r} 2 \\ \underline{\times 4} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 8} \end{array}$	$\begin{array}{r} 9 \\ \underline{\times 7} \end{array}$	$\begin{array}{r} 3 \\ \underline{\times 4} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 6} \end{array}$	$\begin{array}{r} 9 \\ \underline{\times 9} \end{array}$
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Test R

$\begin{array}{r} 4 \\ \underline{\times 8} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 3} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 6} \end{array}$	$\begin{array}{r} 2 \\ \underline{\times 4} \end{array}$	$\begin{array}{r} 9 \\ \underline{\times 6} \end{array}$	$\begin{array}{r} 5 \\ \underline{\times 0} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 7} \end{array}$	$\begin{array}{r} 5 \\ \underline{\times 4} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 9} \end{array}$
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$\begin{array}{r} 2 \\ \underline{\times 9} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 7} \end{array}$	$\begin{array}{r} 9 \\ \underline{\times 3} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 2} \end{array}$	$\begin{array}{r} 3 \\ \underline{\times 4} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 4} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 6} \end{array}$	$\begin{array}{r} 9 \\ \underline{\times 2} \end{array}$	$\begin{array}{r} 3 \\ \underline{\times 9} \end{array}$
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$\begin{array}{r} 4 \\ \underline{\times 5} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 4} \end{array}$	$\begin{array}{r} 9 \\ \underline{\times 7} \end{array}$	$\begin{array}{r} 0 \\ \underline{\times 8} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 8} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 9} \end{array}$	$\begin{array}{r} 9 \\ \underline{\times 6} \end{array}$	$\begin{array}{r} 4 \\ \underline{\times 9} \end{array}$	$\begin{array}{r} 9 \\ \underline{\times 9} \end{array}$
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$\begin{array}{r} 9 \\ \underline{\times 5} \end{array}$	$\begin{array}{r} 9 \\ \underline{\times 8} \end{array}$	$\begin{array}{r} 5 \\ \underline{\times 9} \end{array}$
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