

Multiplication Facts in Seven Days

by Dr. Carl H. Seltzer

| x | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|----|----|----|----|----|----|----|----|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 2 | 0 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 |
| 3 | 0 | 3 | 6 | 9 | 12 | 15 | 18 | 21 | 24 | 27 |
| 4 | 0 | 4 | 8 | 12 | 16 | 20 | 24 | 28 | 32 | 36 |
| 5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 |
| 6 | 0 | 6 | 12 | 18 | 24 | 30 | 36 | 42 | 48 | 54 |
| 7 | 0 | 7 | 14 | 21 | 28 | 35 | 42 | 49 | 56 | 63 |
| 8 | 0 | 8 | 16 | 24 | 32 | 40 | 48 | 56 | 64 | 72 |
| 9 | 0 | 9 | 18 | 27 | 36 | 45 | 54 | 63 | 72 | 81 |

Day 5, Learn the Fours

$$4 \times 5 = 20$$

$$4 \times 6 = 24$$

$$4 \times 7 = 28$$

$$4 \times 8 = 32$$

$$4 \times 9 = 36$$

Do **Lesson 5** and send home **Letter E**. Review squares, twos, fives and threes.

2. $3 \times 3 =$

3. $4 \times 4 =$

4. $5 \times 5 =$

5. $6 \times 6 =$

6. $7 \times 7 =$

7. $8 \times 8 =$

8. $9 \times 9 =$

9. $8 \times 8 =$

10. $7 \times 7 =$

11. $6 \times 6 =$

12. $5 \times 5 =$

13. $4 \times 4 =$

14. $3 \times 3 =$

Multiplication Facts in Seven Days

Foreword

Students need certain facts at their disposal when doing mathematics, such as the addition facts to 20 and multiplication facts. Research shows that children's instant recall of these basic number facts will only progress from short-term memory (easily forgotten) to the long-term memory through constant practice and reinforcement.

Multiplication Facts in Seven Days offers an easy-to-follow systematic program to promote the learning of these essential number facts. Easily incorporated into any weekly program, teachers introduce the facts, which are then reinforced at home. Letters to parents are included in the book, which clearly state the facts to be practiced that day.

Strategies are included to help reduce the number of facts to be learned. Students will be happy to know that only thirty-six times tables need to be memorized to master all of the multiplication tables!

Multiplication Facts in Seven Days is an ideal mathematics support program, which allows students to achieve instant recall and understanding of number facts. Students will enjoy challenging both themselves and each other, as they work towards learning the set of number facts for each day.

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Multiplication Facts in Seven Days

Multiplication Table of Facts Table 3

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| x | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | | | | | | | | | | |
| 1 | | | | | | | | | | |
| 2 | | | | | | | | | | |
| 3 | | | | | | | | | | |
| 4 | | | | | | | | | | |
| 5 | | | | | | | | | | |
| 6 | | | | | | | | | | |
| 7 | | | | | | | | | | |
| 8 | | | | | | | | | | |
| 9 | | | | | | | | | | |

Multiplication Table of Facts Table 3

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| x | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | | | | | | | | | | |
| 1 | | | | | | | | | | |
| 2 | | | | | | | | | | |
| 3 | | | | | | | | | | |
| 4 | | | | | | | | | | |
| 5 | | | | | | | | | | |
| 6 | | | | | | | | | | |
| 7 | | | | | | | | | | |
| 8 | | | | | | | | | | |
| 9 | | | | | | | | | | |

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Students are introduced to the facts by completing a blank multiplication table. Patterns and rules are discussed.

Teacher notes clearly state the facts to be introduced and learned each day.

Multiplication Facts How to Use This Book

Day 1, Learn the Squares

$2 \times 2 = 4$ $6 \times 6 = 36$
 $3 \times 3 = 9$ $7 \times 7 = 49$
 $4 \times 4 = 16$ $8 \times 8 = 64$
 $5 \times 5 = 25$ $9 \times 9 = 81$

Why squares first? The answer is "we don't know," but for some reason the squares are easiest to learn. This encourages students because it builds confidence. I also like to solicit the parents' help and send **Letter A** (on page 19) to the parent or guardian. They will be eager to help and this saves classroom time normally used for more practice.

Use **Lesson 1** (on page 12) in class.

Day 2, Learn the Twos

Actually, there are only 7 facts to learn:

$2 \times 3 = 6$ $2 \times 7 = 14$
 $2 \times 4 = 8$ $2 \times 8 = 16$
 $2 \times 5 = 10$ $2 \times 9 = 18$
 $2 \times 6 = 12$

Why twos next? Two reasons:

1. They are easy to learn (probably because we frequently count by twos).
2. Again, this is an easy task that builds confidence.

Do **Lesson 2** (page 13) and send home **Letter B** (page 20). Review squares.

Day 3, Learn the Fives

$5 \times 6 = 30$
 $5 \times 7 = 35$
 $5 \times 8 = 40$
 $5 \times 9 = 45$

Again, we learn fives next because they are easily learned and there are only four.

Do **Lesson 3** (page 14) and send home **Letter C** (page 21). Review squares and twos.

Day 4, Learn the Threes

$3 \times 4 = 12$ $3 \times 7 = 21$
 $3 \times 5 = 15$ $3 \times 8 = 24$
 $3 \times 6 = 18$ $3 \times 9 = 27$

Do **Lesson 4** (page 15) and send home **Letter D** (page 22). Review squares, twos and fives.

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Multiplication Facts Lesson 3, Fives and Review

Complete the following. If you need help, find the answers in your table.

| | | |
|---|---|---|
| 1. $5 \times 6 =$ <input type="text"/> | 18. $2 \times 3 =$ <input type="text"/> | 35. $9 \times 9 =$ <input type="text"/> |
| 2. $5 \times 7 =$ <input type="text"/> | 19. $5 \times 8 =$ <input type="text"/> | 36. $5 \times 8 =$ <input type="text"/> |
| 3. $5 \times 8 =$ <input type="text"/> | 20. $2 \times 4 =$ <input type="text"/> | 37. $2 \times 3 =$ <input type="text"/> |
| 4. $5 \times 9 =$ <input type="text"/> | 21. $5 \times 9 =$ <input type="text"/> | 38. $8 \times 8 =$ <input type="text"/> |
| 5. $5 \times 8 =$ <input type="text"/> | 22. $2 \times 5 =$ <input type="text"/> | 39. $5 \times 7 =$ <input type="text"/> |
| 6. $5 \times 7 =$ <input type="text"/> | 23. $5 \times 7 =$ <input type="text"/> | 40. $2 \times 6 =$ <input type="text"/> |
| 7. $5 \times 6 =$ <input type="text"/> | 24. $2 \times 6 =$ <input type="text"/> | 41. $7 \times 7 =$ <input type="text"/> |
| 8. $5 \times 5 =$ <input type="text"/> | 25. $2 \times 3 =$ <input type="text"/> | 42. $5 \times 6 =$ <input type="text"/> |
| 9. $5 \times 6 =$ <input type="text"/> | 26. $2 \times 7 =$ <input type="text"/> | 43. $2 \times 7 =$ <input type="text"/> |
| 10. $6 \times 6 =$ <input type="text"/> | 27. $5 \times 6 =$ <input type="text"/> | 44. $6 \times 6 =$ <input type="text"/> |
| 11. $5 \times 7 =$ <input type="text"/> | 28. $2 \times 8 =$ <input type="text"/> | 45. $5 \times 9 =$ <input type="text"/> |
| 12. $7 \times 7 =$ <input type="text"/> | 29. $5 \times 7 =$ <input type="text"/> | 46. $2 \times 4 =$ <input type="text"/> |
| 13. $5 \times 8 =$ <input type="text"/> | 30. $2 \times 9 =$ <input type="text"/> | 47. $5 \times 5 =$ <input type="text"/> |
| 14. $8 \times 8 =$ <input type="text"/> | 31. $5 \times 8 =$ <input type="text"/> | 48. $2 \times 8 =$ <input type="text"/> |
| 15. $5 \times 9 =$ <input type="text"/> | 32. $2 \times 2 =$ <input type="text"/> | 49. $8 \times 8 =$ <input type="text"/> |
| 16. $9 \times 9 =$ <input type="text"/> | 33. $5 \times 9 =$ <input type="text"/> | 50. $2 \times 9 =$ <input type="text"/> |
| 17. $5 \times 6 =$ <input type="text"/> | 34. $2 \times 5 =$ <input type="text"/> | |

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Students complete an activity page that includes the new facts and reviews previously introduced facts.

Strategies are taught to help reduce the number of facts to be learned—students need only learn four new facts to master the four times table.

A corresponding letter is sent home with the students. Parents are involved in the practice and reinforcement stage of the program.

Multiplication Facts Letter D, Day 4

Dear parents,

This is the fourth day of our "Multiplication Facts in Seven Days." Please drill the following facts:

| | | |
|-------------------|-------------------|-------------------|
| $3 \times 4 = 12$ | $3 \times 6 = 18$ | $3 \times 8 = 24$ |
| $3 \times 5 = 15$ | $3 \times 7 = 21$ | $3 \times 9 = 27$ |

Review the following

| | | |
|-------------------|-------------------|-------------------|
| $2 \times 2 = 4$ | $2 \times 3 = 6$ | $5 \times 6 = 30$ |
| $3 \times 3 = 9$ | $2 \times 4 = 8$ | $5 \times 7 = 35$ |
| $4 \times 4 = 16$ | $2 \times 5 = 10$ | $5 \times 8 = 40$ |
| $5 \times 5 = 25$ | $2 \times 6 = 12$ | $5 \times 9 = 45$ |
| $6 \times 6 = 36$ | $2 \times 7 = 14$ | |
| $7 \times 7 = 49$ | $2 \times 8 = 16$ | |
| $8 \times 8 = 64$ | $2 \times 9 = 18$ | |
| $9 \times 9 = 81$ | | |

Thanks for your help.

Teacher _____

Extra notes _____

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Assessment

Multiplication Facts Final Test B

| | | |
|---|---|---|
| 1. $6 \times 6 =$ <input type="text"/> | 13. $9 \times 9 =$ <input type="text"/> | 25. $2 \times 9 =$ <input type="text"/> |
| 2. $2 \times 4 =$ <input type="text"/> | 14. $2 \times 6 =$ <input type="text"/> | 26. $3 \times 5 =$ <input type="text"/> |
| 3. $5 \times 6 =$ <input type="text"/> | 15. $3 \times 9 =$ <input type="text"/> | 27. $5 \times 5 =$ <input type="text"/> |
| 4. $3 \times 4 =$ <input type="text"/> | 16. $6 \times 8 =$ <input type="text"/> | 28. $2 \times 3 =$ <input type="text"/> |
| 5. $4 \times 6 =$ <input type="text"/> | 17. $8 \times 8 =$ <input type="text"/> | 29. $5 \times 7 =$ <input type="text"/> |
| 6. $3 \times 8 =$ <input type="text"/> | 18. $7 \times 9 =$ <input type="text"/> | 30. $4 \times 7 =$ <input type="text"/> |
| 7. $2 \times 2 =$ <input type="text"/> | 19. $8 \times 9 =$ <input type="text"/> | 31. $5 \times 9 =$ <input type="text"/> |
| 8. $5 \times 8 =$ <input type="text"/> | 20. $4 \times 5 =$ <input type="text"/> | 32. $4 \times 4 =$ <input type="text"/> |
| 9. $4 \times 8 =$ <input type="text"/> | 21. $3 \times 6 =$ <input type="text"/> | 33. $2 \times 5 =$ <input type="text"/> |
| 10. $6 \times 7 =$ <input type="text"/> | 22. $7 \times 7 =$ <input type="text"/> | 34. $4 \times 9 =$ <input type="text"/> |
| 11. $2 \times 8 =$ <input type="text"/> | 23. $2 \times 7 =$ <input type="text"/> | 35. $3 \times 3 =$ <input type="text"/> |
| 12. $7 \times 8 =$ <input type="text"/> | 24. $6 \times 9 =$ <input type="text"/> | 36. $3 \times 7 =$ <input type="text"/> |

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Students complete final assessment tasks to monitor the facts learned and to discover which facts require further practice. Tests can be given periodically to keep the facts fresh in the students' minds.

Once a student has mastered the facts, use a timer to record speed and accuracy. Challenge students to improve on their results each time a test is taken. Choose from the three multiplication tests included.

Multiplication Facts Final Test C

| | | |
|---|---|---|
| 1. $7 \times 6 =$ <input type="text"/> | 15. $9 \times 2 =$ <input type="text"/> | 29. $3 \times 3 =$ <input type="text"/> |
| 2. $2 \times 3 =$ <input type="text"/> | 16. $6 \times 6 =$ <input type="text"/> | 30. $4 \times 2 =$ <input type="text"/> |
| 3. $3 \times 7 =$ <input type="text"/> | 17. $7 \times 5 =$ <input type="text"/> | 31. $5 \times 3 =$ <input type="text"/> |
| 4. $5 \times 2 =$ <input type="text"/> | 18. $8 \times 6 =$ <input type="text"/> | 32. $6 \times 3 =$ <input type="text"/> |
| 5. $4 \times 3 =$ <input type="text"/> | 19. $4 \times 8 =$ <input type="text"/> | 33. $8 \times 2 =$ <input type="text"/> |
| 6. $2 \times 4 =$ <input type="text"/> | 20. $9 \times 8 =$ <input type="text"/> | 34. $6 \times 8 =$ <input type="text"/> |
| 7. $3 \times 2 =$ <input type="text"/> | 21. $9 \times 9 =$ <input type="text"/> | 35. $9 \times 4 =$ <input type="text"/> |
| 8. $6 \times 9 =$ <input type="text"/> | 22. $5 \times 8 =$ <input type="text"/> | 36. $2 \times 2 =$ <input type="text"/> |
| 9. $7 \times 4 =$ <input type="text"/> | 23. $7 \times 9 =$ <input type="text"/> | 37. $7 \times 3 =$ <input type="text"/> |
| 10. $8 \times 5 =$ <input type="text"/> | 24. $8 \times 6 =$ <input type="text"/> | 38. $9 \times 6 =$ <input type="text"/> |
| 11. $2 \times 5 =$ <input type="text"/> | 25. $7 \times 7 =$ <input type="text"/> | 39. $5 \times 5 =$ <input type="text"/> |
| 12. $3 \times 4 =$ <input type="text"/> | 26. $4 \times 9 =$ <input type="text"/> | 40. $3 \times 5 =$ <input type="text"/> |
| 13. $8 \times 8 =$ <input type="text"/> | 27. $7 \times 9 =$ <input type="text"/> | 41. $4 \times 6 =$ <input type="text"/> |
| 14. $3 \times 8 =$ <input type="text"/> | 28. $9 \times 4 =$ <input type="text"/> | 42. $4 \times 7 =$ <input type="text"/> |

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One of the most important skills students need is a mastery of the basic computational skills.

All people require the ability to mentally compute basic addition and multiplication facts quickly and accurately. It is also very important for students to understand all they can about addition and multiplication and how they relate. Students should use manipulatives to help them reinforce their understanding of the concepts.

This book does not purposely mean to address the use of manipulatives, but students need to experience the concepts involved prior to memorizing facts.

Firstly, I would like to distinguish between a fact and an algorithm.

*A **fact** is a piece of information that is accepted as true. In mathematics there are many facts that students are required to learn. Hopefully they will already have some understanding of the facts and what they mean. In mathematics, facts are usually memorized. Some examples of math facts are addition facts, multiplication facts and definitions.*

*An **algorithm** is a systematic method to solve a problem ... a rule. While algorithms use facts, there is a difference between the two.*

$9 \times 12 = 108$ is an algorithm involving the facts 9×2 and 9×1 (the 1 being in 10s place), yielding $18 + 90 = 108$.

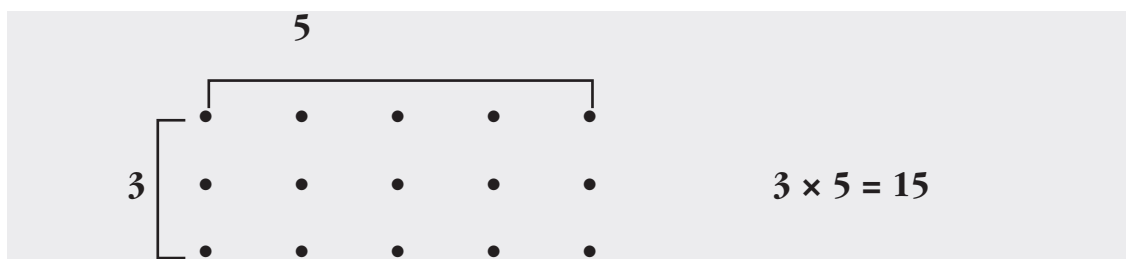
Therefore, it is never necessary to memorize 12×13 , etc., because this product is produced by an algorithm.

It is helpful for students to complete a blank addition or multiplication table themselves, providing them with a better understanding of how to read these tables (See Table 3, page 11).

| | | | | | | |
|----------|---|---|---|---|------------|--------|
| | + | 0 | 1 | 2 | 3 | Column |
| 0 | | | | | | ↓ |
| 1 Row | | | | | (1+3) 4 | |
| 2 | | | | | | |
| | | | | | | |

Students can use any method they wish to complete the table, but you may need to point out that where a column and a row intersect is where the sum or product is placed.

Younger students may use manipulatives such as Unifix® cubes, or counting on their fingers to find the sums or products. Older students may also use manipulatives or arrays to find sums or products. For example, an array of dots that is 3×5 would contain 15 dots.



Multiplication Facts

Lesson 1, Squares

Complete the following. If you need help, find the answers in your table.

1. $2 \times 2 =$

2. $3 \times 3 =$

3. $4 \times 4 =$

4. $5 \times 5 =$

5. $6 \times 6 =$

6. $7 \times 7 =$

7. $8 \times 8 =$

8. $9 \times 9 =$

9. $8 \times 8 =$

10. $7 \times 7 =$

11. $6 \times 6 =$

12. $5 \times 5 =$

13. $4 \times 4 =$

14. $3 \times 3 =$

15. $2 \times 2 =$

16. $2 \times 2 =$

17. $4 \times 4 =$

18. $6 \times 6 =$

19. $8 \times 8 =$

20. $3 \times 3 =$

21. $5 \times 5 =$

22. $7 \times 7 =$

23. $9 \times 9 =$

24. $2 \times 2 =$

25. $8 \times 8 =$

26. $9 \times 9 =$

27. $7 \times 7 =$

28. $3 \times 3 =$

29. $5 \times 5 =$

30. $6 \times 6 =$

31. $4 \times 4 =$

32. $6 \times 6 =$

33. $9 \times 9 =$

34. $5 \times 5 =$

35. $7 \times 7 =$

36. $8 \times 8 =$

37. $6 \times 6 =$

38. $4 \times 4 =$

39. $5 \times 5 =$

40. $7 \times 7 =$

41. $3 \times 3 =$

42. $7 \times 7 =$

43. $8 \times 8 =$

44. $4 \times 4 =$

45. $2 \times 2 =$

46. $9 \times 9 =$

47. $8 \times 8 =$

48. $3 \times 3 =$

49. $6 \times 6 =$

50. $9 \times 9 =$

Multiplication Facts

Lesson 2, Twos and Squares

Complete the following. If you need help, find the answers in your table.

1. $2 \times 3 =$

2. $2 \times 4 =$

3. $2 \times 5 =$

4. $2 \times 6 =$

5. $2 \times 7 =$

6. $2 \times 8 =$

7. $2 \times 9 =$

8. $2 \times 8 =$

9. $2 \times 7 =$

10. $2 \times 6 =$

11. $2 \times 5 =$

12. $2 \times 4 =$

13. $2 \times 3 =$

14. $2 \times 9 =$

15. $2 \times 3 =$

16. $2 \times 8 =$

17. $2 \times 4 =$

18. $2 \times 7 =$

19. $2 \times 6 =$

20. $2 \times 5 =$

21. $2 \times 2 =$

22. $2 \times 4 =$

23. $2 \times 6 =$

24. $2 \times 8 =$

25. $2 \times 3 =$

26. $2 \times 5 =$

27. $2 \times 7 =$

28. $2 \times 9 =$

29. $9 \times 9 =$

30. $7 \times 7 =$

31. $2 \times 2 =$

32. $8 \times 8 =$

33. $4 \times 4 =$

34. $9 \times 9 =$

35. $3 \times 3 =$

36. $6 \times 6 =$

37. $8 \times 8 =$

38. $6 \times 6 =$

39. $4 \times 4 =$

40. $5 \times 5 =$

41. $7 \times 7 =$

42. $2 \times 2 =$

43. $5 \times 5 =$

44. $3 \times 3 =$

45. $4 \times 4 =$

46. $6 \times 6 =$

47. $5 \times 5 =$

48. $7 \times 7 =$

49. $8 \times 8 =$

50. $9 \times 9 =$