

# Tennessee TCAP Grade 3 Math Puzzles and Brain Teasers

*Fun Math Games, Activities & Challenges*

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THINK! SOLVE! WIN!

# Grade 3 Math Puzzles & Brain Teasers!

## Welcome, Puzzle Champion!

This book is packed with **brain teasers, puzzles, and math games** for every Grade 3 topic!

Each chapter has fun puzzles that make you **think differently** about math. Try them all and see how many you can solve!

The more you puzzle, the sharper your brain gets!



## What's Inside?

 **Mystery Numbers**

 **Code Breakers**

 **Math Games**

 **Number Patterns**

 **Number Pyramids**

 **Logic Puzzles**

 **Brain Challengers**

 **Magic Squares**

**Difficulty Stars:**    ★ Warm-Up    ★★ Chal-  
                                 lenge    ★★★ Brain Buster!

# How to Use This Book

*Learn your puzzle types — then tackle them all!*

## How Each Chapter Works

Every chapter focuses on one math topic. Inside, you'll find 6–8 different puzzles that each test that skill in a **different and surprising way**. Start with Puzzle 1 (easiest) and work your way up to the Brain Busters!

## ★ Difficulty Stars

- |                    |              |                                                            |
|--------------------|--------------|------------------------------------------------------------|
| ★ <b>1 Star</b>    | Warm-Up      | Good for getting started — confidence boosters!            |
| ★★ <b>2 Stars</b>  | Challenge    | These take a bit more thinking. Give it your best shot!    |
| ★★★ <b>3 Stars</b> | Brain Buster | Extra tricky! It's okay if you need to try more than once. |

*Puzzle Types You'll See:*

 **Mystery Number**

Read the clues, figure out the secret number, and write it in the blank!

 **Logic Puzzle**

Use clues to figure out who has what. Think step by step and cross off what's impossible!

 **Number Pyramid**

Each brick equals the sum of the two bricks below it. Fill in all the missing bricks!

 **Magic Square**

Fill in the grid so every row, column, and diagonal adds to the same magic sum!

 **Brain Teaser**

A tricky problem that makes you think outside the box. Read carefully!

 **Equation Scramble**

Rearrange the scrambled tiles to make a correct math equation!

 **Target Number**

Use the given digits to hit the target number. How many ways can you find?

 **Math Game**

Play with a partner! Roll, draw, or flip to practice math in a fun way.

-  **Puzzle Champion Tips:** Read carefully before diving in. • Scratch paper is your best friend.
- Stuck? Check the Answer Key at the back.
  - Try again — every mistake is a clue!



# X<sup>1</sup> Math Symbols You Should Know X<sup>1</sup>

*You'll need these to crack the puzzles!*

| Symbol        | Name             | What It Means                                               |                   |
|---------------|------------------|-------------------------------------------------------------|-------------------|
| +             | Plus (Add)       | Put numbers together.                                       | $3 + 5 = 8$       |
| -             | Minus (Subtract) | Take away from a number.                                    | $9 - 4 = 5$       |
| ×             | Times (Multiply) | Add equal groups.                                           | $4 \times 3 = 12$ |
| ÷             | Divide           | Split into equal groups.                                    | $12 \div 3 = 4$   |
| =             | Equals           | Both sides are the same.                                    | $2 + 3 = 5$       |
| >             | Greater Than     | The left number is bigger.                                  | $7 > 3$           |
| <             | Less Than        | The left number is smaller.                                 | $2 < 9$           |
| $\frac{1}{2}$ | Fraction Bar     | Part of a whole. $\frac{1}{2}$ means 1 out of 2 equal parts |                   |

## Key Math Words for Puzzles

- **Sum** — the answer when you add
- **Difference** — the answer when you subtract
- **Product** — the answer when you multiply
- **Quotient** — the answer when you divide
- **Factor** — a number you multiply
- **Digit** — a single number symbol (0–9)
- **Place Value** — what a digit is worth
- **Even** — divisible by 2 (0, 2, 4, 6, 8)
- **Odd** — not divisible by 2 (1, 3, 5, 7, 9)
- **Expanded Form** — showing each digit's value
- **Fraction** — a part of a whole
- **Equivalent** — equal in value
- **Perimeter** — distance around a shape
- **Area** — space inside a shape

 *Place Value Chart*

| <i>Thousands</i> | <i>Hundreds</i> | <i>Tens</i> | <i>Ones</i> |
|------------------|-----------------|-------------|-------------|
| 1,000            | 100             | 10          | 1           |



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CHAPTER

1

## *Number Sense & Place Value*

### ★ *What's Inside* ★

|                                                           |          |
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| <b>1.1</b> <i>Place Value: Ones, Tens, Hundreds</i> ..... | <b>2</b> |
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## ★ 1.1 Place Value: Ones, Tens, Hundreds ★

### Place Value Puzzles

#### 🎯 Skills You'll Practice

- Identify the ones, tens, and hundreds places
- Know the value of each digit in a 3-digit number
- Write numbers in expanded form

### 🔍 Mystery Number! ?

Who Am I?



- 1 I am a 3-digit number.
- 2 My hundreds digit is 4.
- 3 My tens digit is double my ones digit.
- 4 My ones digit is 3.

What number am I? \_\_\_\_\_

Write me in expanded form: \_\_\_\_\_

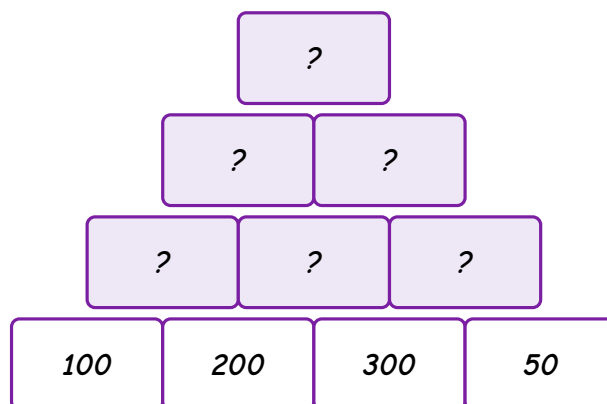


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 **Number Pyramid**

Each brick equals the **sum** of the two bricks below it. Fill in all the missing bricks!



 **Hint:** Start from the bottom! Add two neighbors to get the brick above.

 **Equation Scramble!**

Digit Scramble!



Use the digit cards below to build the numbers described. Each card can be used **only once** per number.



1. Build a 3-digit number where the **hundreds** digit is 5, and the number is **less than** 530.

My number: \_\_\_\_\_



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2. Build the **greatest** 3-digit number you can.

My number: \_\_\_\_\_

3. Build a 3-digit number where the tens digit is **double** the ones digit.

My number: \_\_\_\_\_

### Which Doesn't Belong?



Look at these numbers. One doesn't belong with the others. Circle it and explain why!

347

523

461

89

752

Which number doesn't belong? \_\_\_\_\_

Why? \_\_\_\_\_

### Mystery Number! ?

Tricky Number Detective!



1 I am a 3-digit number between 200 and 400.

2 My ones digit is 0.



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3 My tens digit plus my hundreds digit equals 10.

4 My tens digit is greater than 5.

What number am I? \_\_\_\_\_

How did you figure it out? \_\_\_\_\_

### Crack the Code!

Place Value Secret Code!



Solve each expanded form to find the number. Match the number to its letter to crack the secret word!

M  $400 + 20 + 8 =$  \_\_\_\_\_

A  $100 + 50 + 3 =$  \_\_\_\_\_

T  $600 + 70 + 1 =$  \_\_\_\_\_

H  $300 + 90 + 6 =$  \_\_\_\_\_

Now arrange the letters from **smallest** number to **largest** number.

 Secret Message:

\_\_\_\_\_

 **Hint:** First find each number. Then put them in order from least to greatest.



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### Brain Teaser!

Digit Swap!



Sam wrote the number **639**.

4. If you **swap** the hundreds digit and the ones digit, what new number do you get? \_\_\_\_\_
5. How much **more** is the new number than the original? \_\_\_\_\_
6. If you swap the tens and ones digits of 639 instead, what number do you get? \_\_\_\_\_
7. Which swap makes the **biggest** number? \_\_\_\_\_



### Logic Puzzle!

Place Value Detectives



Three friends each wrote a 3-digit number. Use the clues to figure out each person's number!

**Clues:**

- Mia's number has 7 in the hundreds place.
- Leo's number has a tens digit that equals 5.
- Ava's hundreds digit is less than Mia's hundreds digit.
- All three numbers use only the digits 2, 5, and 7 (each digit once per number).



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| Name | Number |
|------|--------|
| Mia  | _____  |
| Leo  | _____  |
| Ava  | _____  |

 *Hint: Start with what you know for sure. Mia's hundreds digit is 7.*

 **Puzzle Master!** 

You solved them all!



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CHAPTER

2

## *Multiplication & Division*

### ★ *What's Inside* ★

|                                        |   |
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|----------------------------------------|---|





## ★ 2.1 Understanding Multiplication ★

### 🧩 Multiplication Puzzles 🧩

#### 🎯 Skills You'll Practice

- Understand multiplication as equal groups
- Connect repeated addition to multiplication
- Use arrays to model multiplication

### 🔍 Mystery Number! ?

*The Missing Groups!*



- 1 I am the total number of objects.
- 2 There are 4 groups.
- 3 Each group has 3 objects.
- 4 You can find me with  $4 \times 3$ .

What number am I? \_\_\_\_\_

Write me as a repeated addition: \_\_\_\_\_



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## Crack the Code!

Groups Secret Word!



Solve each multiplication problem. Match the answer to its letter; then arrange the letters from **smallest** answer to **largest** to crack the secret word!

**S**  $3 \times 2 =$  \_\_\_\_\_

**T**  $2 \times 4 =$  \_\_\_\_\_

**A**  $5 \times 2 =$  \_\_\_\_\_

**R**  $4 \times 5 =$  \_\_\_\_\_

Arrange letters from **smallest** to **largest** answer:

 **Secret Message:**

\_\_\_\_\_



## Which Doesn't Belong?



Each circle shows a total made from equal groups. One total does **not** match its multiplication fact. Circle it and explain why!

6

10

15

11

20

The facts given are:  $2 \times 3$ ,  $2 \times 5$ ,  $3 \times 5$ ,  $3 \times 4$ ,  $4 \times 5$ .



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Which answer doesn't match? \_\_\_\_\_

Why? \_\_\_\_\_



### Groups and Totals



Fill in the missing values in the table!

| Number of Groups | Objects per Group | Total |
|------------------|-------------------|-------|
| 3                | 5                 | _____ |
| 4                | _____             | 16    |
| _____            | 3                 | 18    |
| 5                | 4                 | _____ |
| 7                | _____             | 14    |

 **Hint:** Use multiplication:  $\text{groups} \times \text{objects per group} = \text{total}$ .



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## ✂ Equation Scramble!

### Equation Scramble!



The tiles below make a multiplication equation and its matching repeated addition. Unscramble them to build **two** true sentences!

$$5 \times 3 = 15$$

$$5 + 5 + 5 = 15$$

1. Write the multiplication equation: \_\_\_\_\_
2. Write the repeated addition: \_\_\_\_\_
3. How many groups? \_\_\_\_\_ How many in each group? \_\_\_\_\_

## 💡 Brain Teaser! 🧠

### Array Detective!



Zara made a rectangular **array** with 24 stickers. She put them in rows with the same number of stickers in each row.

1. If she made 4 rows, how many stickers are in each row? \_\_\_\_\_
2. If she made 3 rows, how many stickers are in each row? \_\_\_\_\_
3. Can she make 5 equal rows with no stickers left over? \_\_\_\_\_
4. Find one MORE way to arrange 24 stickers in equal rows.



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\_\_\_\_\_ rows of \_\_\_\_\_



## Logic Puzzle!

Who Bought What?



Three friends each bought packs of something. Each pack has an **equal number** of items. Use the clues to figure out who bought what!

**Clues:**

- Leo bought 3 packs and got 15 items total.
- Mia got 8 items total from her packs.
- Marcus bought 5 packs and each pack had 2 items.
- Mia bought 2 packs.

| Name   | Packs | Items per Pack | Total |
|--------|-------|----------------|-------|
| Leo    | _____ | _____          | _____ |
| Mia    | _____ | _____          | _____ |
| Marcus | _____ | _____          | _____ |

 **Hint:** Start with what you know for sure and use multiplication to fill in the blanks.



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## Math Game!

Roll and Multiply!



- ✓ Two dice (or number cards 1–6)
- ✓ Paper and pencil for each player

**How to Play:**

1. Roll both dice. One die is the **number of groups**. The other die is the **number in each group**.
2. Write the multiplication equation and find the total.
3. The player with the **greater** total scores a point.
4. Play 10 rounds. Most points wins!

**Think About It:** You roll a 6 and a 4. Does it matter which one is the groups and which is the items per group? Why or why not? \_\_\_\_\_



**Puzzle Master!**



You solved them all!



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THANK YOU

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