1: Place Value Mastery

- **1. Indian Number System:**
- In the Indian system, numbers are grouped in periods of ones, thousands, lakhs, and crores. Each period has a specific number of places.
- Periods in the Indian system:
  - Ones period: Units, Tens, Hundreds
  - Thousands period: Thousands, Ten Thousands, Lakhs
  - Lakhs period: Ten Lakhs, Crores
- **Example:**
  - Number: 12,34,56,789
    - 12 Crores (12 x 10,000,000)
    - 34 Lakhs (34 x 100,000)
    - 56 Thousands (56 x 1,000)
    - 7 UNITS
- So, the number 12,34,56,789 is broken down as:
  - 12 Crores
  - 34 Lakhs
  - 56 Thousands
  - 789 Units

- 2. International Number System:
- In the International system, numbers are grouped into periods of ones, thousands, millions, and billions. Each period has three places.
- Periods in the International system:
  - Ones period: Units, Tens, Hundreds
  - Thousands period: Thousands, Ten Thousands, Hundred Thousands
  - Millions period: Millions, Ten Millions, Hundred Millions
  - Billions period: Billions, Ten Billions, Hundred Billions
- Example:
  - Number: 12,345,678,900
    - 12 Billions (12 x 1,000,000,000)
    - 345 Millions (345 x 1,000,000)
    - 678 Thousands (678 x 1,000)
    - 900 (900 units)
- So, the number 12,345,678,900 is broken down as:
  - 12 Billions
  - 345 Millions
  - 678 Thousands
  - 900 Units

- **Key Differences:**

1. **Grouping:**
    1. In the Indian system, commas are placed every two digits after the hundreds (starting from the right). Example: 1,23,45,678.
    2. In the International system, commas are placed every three digits after the hundreds. Example: 123,456,789.
2. **Names for Periods:**
    1. The Indian system uses terms like Lakhs (1,00,000) and Crores (1,00,00,000).
    2. The International system uses terms like Millions (1,000,000) and Billions (1,000,000,000).

- **WORKSHEETS:**
- **1. Number: 45,67,89,234**
  - **Indian System:**
    - Break the number into periods (crores, lakhs, thousands, units).
    - Write the number in words.
  - **International System:**
    - Break the number into periods (millions, thousands, units).
    - Write the number in words.
- **2. Number: 8,34,56,789**
  - **Indian System:**
    - Break the number into periods (crores, lakhs, thousands, units).
    - Write the number in words.
  - **International System:**
    - Break the number into periods (millions, thousands, units).
    - Write the number in words.

- **Place Value Examples**
- **1. Identifying Place Value of Digits**
- **Example 1:** What is the value of the underlined digit in 6,432,918?

  Answer: The underlined 3 is in the **ten thousand place**, so its value is **30,000**.
- **Example 2:** In the number 1,507,649, what is the value of the 5?

  Answer: The 5 is in the **hundred thousand place**, so its value is **500,000**.
- **Example 3:** What is the place value of the digit 7 in 87,654,321?

  Answer: The 7 is in the **ten million place**, so its value is **70,000,000**.

- 2. Writing Numbers in Expanded Form

- Example 1: Write 5,684,312 in expanded form.

  Answer:

  5,000,000+600,000+80,000+4,000+300+10+2

- Example 2: Write 3,251,490 in expanded form.

  Answer:

  3,000,000+200,000+50,000+1,000+400+90

- 3. Comparing Place Value

- Example 1: Which number is larger, 7,456,234 or 7,564,324?

  Answer: 7,564,324 is larger because in the ten thousands place, 6 is larger than 5.

- Example 2: Which number is smaller, 5,123,789 or 5,132,789?

  Answer: 5,123,789 is smaller because in the ten thousands place, 2 is smaller than 3.

- **Example 1:**
- Write the number 426.
- Question: What does each digit represent?
  - 4 → 400 (4 hundreds)
  - 2 → 20 (2 tens)
  - 6 → 6 (6 ones)
- **Example 2:**
- Decompose 523 into expanded form:
  - 500 + 20 + 3
- Practice Activity:
- Write the following numbers in expanded form: 238, 154, 607.

- **Example 3:**
- Write the number 8,371.
- Question: What does each digit represent?
  - 8 → 8,000 (8 thousands)
  - 3 → 300 (3 hundreds)
  - 7 → 70 (7 tens)
  - 1 → 1 (1 one)
- **Example 4:**
- Convert the expanded form 6,000 + 200 + 40 + 5 back into standard form:
  - Answer: 6,245
- Practice Activity:
- Identify the place value of the digit 5 in the following numbers:
  - 5,432 → 5,000
  - 1,523 → 500

Worksheet 1: Place Value Mastery

1.Write the following numbers in expanded form:

a. 8,706,241

b. 4,302,180

c. 9,005,320

2.Identify the digit in the following places:

- **Ten thousand place in 7,543,821.**
- **Hundred thousand place in 2,847,659.**
- **Millions place in 6,123,478.**

3.Write these numbers in standard form:

a. Eight million, four hundred fifty-six thousand, three hundred twenty-one.

b. Nine million, seventy-four thousand, eight.

c. Five million, sixty thousand, twelve.

4.Compare using <, >, or =:

a. 6,543,210 ___ 6,534,210

b. 4,987,654 ___ 5,000,000

c. 1,234,567 ___ 1,234,567

- **Place Value Worksheets**
- **Worksheet 1: Identifying Place Value**

1. What is the value of the underlined digit?

   a. 3,672,145 → The underlined digit is 7.

   b. 9,384,572 → The underlined digit is 8.

   c. 2,457,861 → The underlined digit is 4.

2. **Identify the place of the underlined digit in the following numbers:**

   a. 5,672,892 → The underlined digit is 6.

   b. 8,321,567 → The underlined digit is 2.

   c. 6,804,534 → The underlined digit is 4.

Worksheet 2: Expanded Form

1. **Write the following numbers in expanded form:**
   a. 6,932,741
   b. 1,758,493
   c. 4,106,572

2. Write the following expanded forms as numbers:
   a. 9,000,000 + 300,000 + 20,000 + 500 + 40 + 7
   b. 3,000,000 + 100,000 + 50,000 + 900 + 30 + 2
   c. 2,000,000 + 700,000 + 60,000 + 1,000 + 50 + 8

Worksheet 3: Comparing Numbers

1. Which number is larger?
   a. 6,923,510 or 6,932,510
   b. 8,745,601 or 8,754,601
   c. 5,329,182 or 5,392,182

2. Which number is smaller?
   a. 4,501,932 or 4,510,932
   b. 2,456,789 or 2,465,789
   c. 9,312,478 or 9,320,478

1. Ascending Order

- Definition: Arranging numbers from the smallest to the largest.
- Example:
  If the numbers are: 45, 12, 89, 3, 67,
  Arrange them in ascending order: 3, 12, 45, 67, 89.

2. Descending Order

- Definition: Arranging numbers from the largest to the smallest.
- Example:
  If the numbers are: 45, 12, 89, 3, 67,
  Arrange them in descending order: 89, 67, 45, 12, 3.

- **A. Arrange the Numbers in Ascending Order**
  - 34, 12, 78, 56, 9
  - 105, 67, 23, 89, 54
  - 14, 72, 3, 81, 29
  - 91, 27, 64, 11, 53
  - 6, 25, 41, 10, 33
- **B. Arrange the Numbers in Descending Order**
  - 23, 45, 11, 89, 37
  - 92, 71, 56, 34, 18
  - 13, 87, 42, 29, 65
  - 100, 75, 50, 25, 10
  - 7, 55, 39, 21, 68

- A. Identify and Arrange
- Circle the smallest number in the following sets and arrange the numbers in ascending order:

1. 19, 4, 87, 62, 32
2. 70, 8, 35, 54, 12
3. 49, 91, 24, 63, 15

- Circle the largest number in the following sets and arrange the numbers in descending order:

1. 27, 89, 34, 56, 12
2. 5, 98, 43, 67, 21
3. 75, 20, 61, 45, 9

- **B. Fill in the Missing Numbers**
- **Complete the sequences in ascending order:**
  - 5, ____, ____, 20, ____, 35
  - 11, ____, 23, ____, 35, ____
  - 2, 6, ____, 14, ____, ____
- **Complete the sequences in descending order:**
  - 50, ____, ____, 32, ____, 20
  - 90, ____, 70, ____, ____, 50
  - 45, ____, 35, ____, ____, 20

1A. Predecessor & Successor

- The predecessor of a number is the number that comes just before it, while the successor is the number that comes just after it.
- Example:
- If the number is 5, its:
  - Predecessor: 4
  - Successor: 6

- **Predecessor and Successor Worksheet**
- **Part 1: Fill in the blanks**

- The predecessor of 45 is _____.
- The successor of 78 is _____.
- The predecessor of 100 is _____.
- The successor of 999 is _____.
- The predecessor of 2000 is _____.
- The successor of 1 is _____.
- The predecessor of 123 is _____.
- The successor of 432 is _____.

- **True or False**
  - The successor of 10 is 9. (True / False)
  - The predecessor of 50 is 49. (True / False)
  - The successor of 999 is 1000. (True / False)
  - The predecessor of 1001 is 1000. (True / False)

- **Numbers with Missing Blanks**
  - _____ → 345 → 346
  - 899 → _____ → 901
  - _____ → 2,999 → 3,000
  - 4,998 → _____ → 5,000
  - _____ → 789 → 790

Word Problems

- A library has a total of 999 books, and one more is added. What is the total number of books now?
  - (Find the successor)
- A farmer planted 4,000 trees, but one was cut down. How many trees remain?
  - (Find the predecessor)
- Tina solved 499 math problems, and then solved one more. How many problems has she solved now?
  - (Find the successor)
- Rahul's score in a game was 1,000 points, but he lost one point in the next round. What is his new score?
  - (Find the predecessor)

2.Addition, Subtraction with large numbers:

- **Addition with Large Numbers**
- **Example 1:**
  Add the following numbers:
  6,278 + 4,521

  6,278

  + 4,521

  10,799

- **Example 2:**
  Add the following numbers:
  12,465 + 35,379

  12,465

  + 35,379

  47,844

- **Subtraction with Large Numbers**
- **Example 1:**
  Subtract:
  8,752 - 3,416

8,752

- 3,416

5,336

- **Example 2:**
  Subtract:
  15,823 - 4,287

15,823

- 4,287

11,536

- **Mixed Practice: Addition and Subtraction**
- **Example 1:**
  Add and then subtract:
  5,467 + 3,238 - 2,115

a) 5,467
+ 3,238

8,705

8,705
- 2,115

6,590

- **Example 2:**

  Add and then subtract:

  9,250 + 6,874 - 4,521

9,250

+ 6,874

16,124

16,124

- 4,521

11,603

- **Worksheet: Addition and Subtraction with Large Numbers**

1. **Add the following numbers:**

   a) 13,458 + 7,312 = _____

   b) 56,789 + 34,210 = _____

   c) 90,000 + 1,675 = _____

2. Subtract the following numbers:

   a) 25,836 - 12,948 = _____

   b) 58,672 - 23,482 = _____

   c) 100,000 - 7,514 = _____

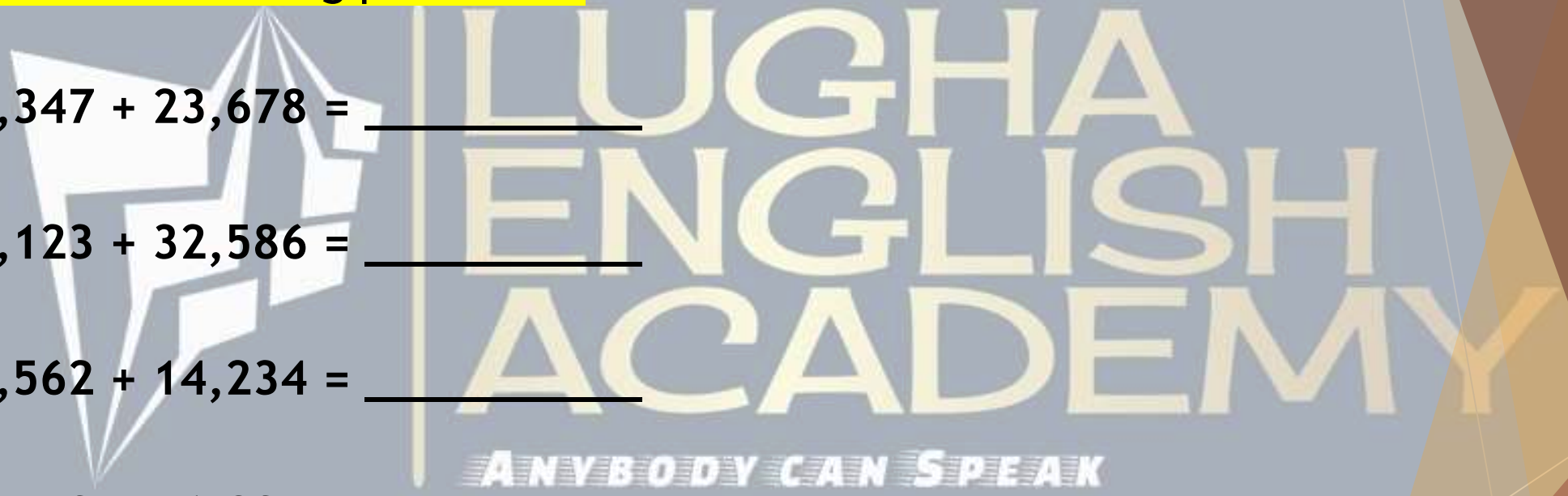
3. Mixed Operations:

   a) 7,542 + 13,986 - 4,212 = _____

   b) 32,517 - 16,289 + 5,470 = _____

   c) 8,632 + 5,921 - 2,034 = _____

- **Addition and Subtraction with Large Numbers - Worksheet**
- **Part A: Addition**
- Solve the following problems:



- **12,347 + 23,678 = _____**
- **45,123 + 32,586 = _____**
- **78,562 + 14,234 = _____**
- **89,473 + 56,821 = _____**
- **134,897 + 78,234 = _____**

- **Part B: Subtraction**
- Solve the following problems:

- **98,435 - 45,672 = _____**
- **76,892 - 32,589 = _____**
- **150,230 - 89,176 = _____**
- **200,000 - 123,456 = _____**
- **345,678 - 210,543 = _____**

- **Part C: Mixed Operations**

- **Solve the following problems:**

1. 25,673 + 14,234 - 9,876 = _____
2. 123,450 - 78,342 + 45,678 = _____
3. 89,234 + 56,321 - 34,567 = _____
4. 78,451 - 23,678 + 12,345 = _____
5. 150,000 + 34,567 - 89,123 = _____

- **Word Problems: Addition and Subtraction with Large Number:**

- A school library has 24,675 books. It received a donation of 8,432 books. How many books are in the library now?
  Answer: _____
- A delivery truck carried 12,568 packages in the morning and 9,324 packages in the afternoon. How many packages were delivered in total?
  Answer: _____
- A farmer harvested 45,672 kg of wheat this year and 38,459 kg last year. How much wheat did the farmer harvest over the two years?
  Answer: _____
- A factory produced 89,345 items in January, 56,873 in February, and 67,214 in March. What was the total production in these three months?
  Answer: _____
- A factory produced 56,234 units in January and 78,543 units in February. How many units were produced in total?
  Answer: _____
- A store sold 45,678 items in one month but had 98,765 in stock. How many items are left in stock?
  Answer: _____

3.MULTIPLICATION

- **What is Multiplication?**
- Multiplication is a way to find the total when you have equal groups of items. It's like adding the same number again and again, but faster and more efficient!
- **For example:**
- If you have 4 groups of 6 apples, instead of adding 6+6+6+6, you can multiply: 4×6=24.
- This tells you there are 24 apples in total.

- 1. Quick Warm-Up: Multiplication Table Race
- Objective: Refresh the basics of multiplication tables for quick recall.
- Examples (Solve Together in Class)

1. Basic Examples:
    1. 1234×12
    2. 4506×21
    3. 3412×10
2. Moderate Difficulty:
    1. 2875×34
    2. 4092×27
    3. 1346×18
3. Challenging Examples:
    1. 5623×45
    2. 9087×56

- **Solve the following problems:**
- 1235×12
- 2134×14
- 3210×10
- 4051×13
- 5789×15
- 2311×11
- 2675×21
- 3892×23
- 1423×18
- 5896×24

- **Solve the following problems:**

- 5637×34
- 7245×38
- 4876×46
- 6157×52
- 9283×41
- 7345×58

Solve the following:

3456 × 23

1298 × 35

2467 × 42

5678 × 18

4025 × 29

7834 × 47

9999 × 31

1230 × 56

6789 × 78

5043 × 67

- **Word Problems**
- **Read and solve the word problems:**

1. A company produces 2,465 items each day. How many items will they produce in 32 days?
2. A school sold 1,274 tickets for a concert each week for 36 weeks. How many tickets were sold in total?
3. A farmer harvests 1,235 apples every day. How many apples will he harvest in 45 days?
4. A printing press prints 3,659 pages per hour. How many pages will it print in 56 hours?
5. A store sells 2,487 pairs of shoes every month. How many pairs of shoes are sold in 25 months?

Real-Life Word Problems

- A school orders 1,245 notebooks for 32 classrooms. How many notebooks are there in total?
- A warehouse has 4,567 boxes, and each box contains 24 items. How many items are there in total?
- A factory produces 3,214 toys every month. If the factory runs for 28 months, how many toys are produced?
- A stadium has 2,345 seats in each row and 45 rows. How many seats are there in total?
- A company prints 3,876 flyers every day for 31 days. How many flyers are printed in total?

4.DIVISION

- **Key Terms in Division:**

1. **Dividend:** The number being divided.
2. **Divisor:** The number by which the dividend is divided.
3. **Quotient:** The result of the division.
4. **Remainder:** The amount left over if the dividend cannot be divided evenly.

- **Step-by-Step Examples**
- **1-Digit Divisors**

1. **Example: 256 ÷ 4**
    1. **Step 1: Divide 25 (first two digits) by 4. The result is 6. Write 6 above the 5.**
    2. **Step 2: Multiply 6 × 4 = 24. Write 24 below 25 and subtract. The result is 1.**
    3. **Step 3: Bring down the next digit (6). You now have 16.**
    4. **Step 4: Divide 16 by 4 = 4. Write 4 above the 6.**
    5. **Step 5: Multiply 4 × 4 = 16. Subtract. The remainder is 0.**
    6. **Answer: 64**

2-Digit Divisors

Example: 3,072 ÷ 12

- Step 1: Estimate how many times 12 fits into 30. It fits 2 times.
  Write 2 above the 0.
- Step 2: Multiply 2 × 12 = 24. Write 24 below 30 and subtract.
  The result is 6.
- Step 3: Bring down the next digit (7). You now have 67.
  Estimate how many times 12 fits into 67. It fits 5 times.
- Step 4: Multiply 5 × 12 = 60. Subtract. The remainder is 7.
- Step 5: Bring down the next digit (2). You now have 72. Divide
  72 by 12 = 6.
- Answer: 256

Example: 1,738 ÷ 2

- **Step 1: Divide 17 by 2. The result is 8. Write 8 above the 7.**
- **Step 2: Multiply 8 × 2 = 16. Write 16 below 17 and subtract. The result is 1.**
- **Step 3: Bring down the next digit (3). You now have 13.**
- **Step 4: Divide 13 by 2 = 6. Write 6 above the 3.**
- **Step 5: Multiply 6 × 2 = 12. Subtract. The remainder is 1.**
- **Step 6: Bring down the next digit (8). You now have 18. Divide 18 by 2 = 9.**

Answer: 869

Example: 9,408 ÷ 16

- **Step 1: Divide 94 by 16. It fits 5 times. Write 5 above the 4.**
- **Step 2: Multiply 5 × 16 = 80. Subtract. The result is 14.**
- **Step 3: Bring down the next digit (0). You now have 140.**

Divide 140 by 16 = 8.

- **Step 4: Multiply 8 × 16 = 128. Subtract. The remainder is 12.**
- **Step 5: Bring down the next digit (8). You now have 128.**

Divide 128 by 16 = 8.

Answer: 588

- **Part A: Divide by 1-Digit Numbers**
  - 732 ÷ 3
  - 5,412 ÷ 6
  - 8,904 ÷ 4
  - 1,368 ÷ 8
  - 2,759 ÷ 7
- **Part B: Divide by 2-Digit Numbers**
  - 6,432 ÷ 12
  - 4,816 ÷ 16
  - 7,245 ÷ 15
  - 9,648 ÷ 24
  - 5,292 ÷ 18

- **Worksheet 1: Basic Division**
- **Part A: Divide by 1-Digit Numbers**

1. 732 ÷ 3
2. 5,412 ÷ 6
3. 8,904 ÷ 4
4. 1,368 ÷ 8
5. 2,759 ÷ 7
6. 6,123 ÷ 9
7. 4,825 ÷ 5
8. 7,204 ÷ 2

- **Part B: Divide by 2-Digit Numbers**

- 6,432 ÷ 12
- 4,816 ÷ 16
- 7,245 ÷ 15
- 9,648 ÷ 24
- 5,292 ÷ 18
- 8,964 ÷ 21
- 3,456 ÷ 14
- 10,752 ÷ 32

Word Problems

- **Sharing Cookies**

  Sarah baked 24 cookies. She wants to share them equally with her 3 friends. How many cookies will each person get?

- **Dividing Books**

  There are 48 books in the library. The librarian wants to place them in 6 boxes. How many books will be in each box?

- **Team Divisions**

  A teacher has 56 students in her class. She wants to divide them into groups of 8. How many groups will she have?

- **Packing Apples**

  A farmer has 72 apples. He wants to pack them into boxes with 9 apples each. How many boxes does he need?

- **Sharing Pencils**

  There are 36 pencils and 4 students. If each student gets an equal number of pencils, how many pencils will each student receive?

Word Problems

1. A group of 1,275 students is being split into 15 classes. How many students will be in each class?
2. A factory produces 3,456 bottles of juice. These are packed into 24 boxes equally. How many bottles are in each box?
3. A total of 5,832 pencils are shared among 18 schools. How many pencils does each school get?
4. A bakery made 2,016 cookies and packed them equally into 32 boxes. How many cookies are in each box?
5. A farmer harvested 8,424 apples and wants to distribute them equally among 36 families. How many apples will each family get?
6. A library has 2,784 books arranged equally in 16 shelves. How many books are on each shelf?

LUGHA ENGLISH ACADEMY

ANYBODY CAN SPEAK

L.C.M

- **What is LCM?**
- LCM stands for Least Common Multiple.
- It is the smallest number that is a multiple of two or more numbers.
- **Steps to Find LCM:**
- Write the multiples of each number.
- Find the smallest number that appears in all the lists.
- **Example: Find the LCM of 3 and 4.**
- Multiples of 3: 3, 6, 9, 12, 15, ...
- Multiples of 4: 4, 8, 12, 16, ...
- Common multiples: 12, 24, ...
- LCM = 12 (the smallest common multiple).

- **Example 1: Find the LCM of 12 and 15**
- Write the numbers:

  12,15
- Start dividing by the smallest prime number:
  - Divide by 2: 12÷2=6 (but 15 remains as it is because it is not divisible by 2)

    Result: 6,15
  - Divide by 3: 6÷3=2 and 15÷3=5

    Result: 2,5
  - Divide by 5: 2,5÷5=1

    Result: 1,1
- Multiply the divisors:

  2×3×5=30
- **LCM = 30**

- **Example 2: Find the LCM of 18 and 24**
- Write the numbers:

  18,24
- Start dividing:
  - Divide by 2: 18÷2=9,24÷2=12

    Result: 9,12
  - Divide by 3: 9÷3=3,12÷3=4

    Result: 3,4
  - Divide by 2: 3,4÷2=2

    Result: 3,2
  - Divide by 3: 3÷3=1,2

    Result: 1,1
- Multiply the divisors:

  2×3×2×3=36
- LCM = 36

- **Finding the LCM (Pairs)**
- **Part 1: LCM of Pairs**

- 2 and 5: _____
- 6 and 9: _____
- 4 and 10: _____
- 8 and 12: _____
- 3 and 7: _____
- 9 and 12: _____
- 5 and 15: _____
- 7 and 11: _____

- **Find the LCM of the Following Sets of Three Numbers**

- 2,3 and 5: _____
- 4,6, and 8: _____
- 3,5 and 7: _____
- 6,9 and 12: _____
- 2,4 and 10: _____
- 5,6 and 15: _____
- 7,8 and 14: _____
- 9,12 and 18: _____
- 3,4 and 6: _____
- 6,10 and 15: _____

Word Problems

- Two clocks chime at intervals of 9 minutes and 12 minutes. After how many minutes will they chime together?

- A school bus stops every 8 minutes, and another stops every 12 minutes. If they both stop at the school gate now, after how many minutes will they stop together again?

- A festival organizer has two sets of fireworks: one that goes off every 7 seconds and another that goes off every 9 seconds. If they both go off now, how many seconds later will they go off together again?

- Three friends play a game at intervals of 4 minutes, 6 minutes, and 8 minutes. If they all start together, how many minutes will pass before they all meet again?

- A movie starts every 5 hours, a bus arrives every 8 hours, and a train arrives every 10 hours. If all three start at the same time, when will they all arrive together again?

- A baker bakes bread every 6 minutes, cookies every 9 minutes, and pies every 12 minutes. If they all start baking at the same time, when will all three items be done baking at the same time again?

H.C.F

What is HCF?

- HCF stands for Highest Common Factor.
- It is the largest number that divides two or more numbers without leaving a remainder.

Steps to Find HCF:

1. Write the factors of each number.
2. Find the largest number that appears in all the lists.

- **Example 1: Find the HCF of 36 and 60**

- Step 1: Divide the larger number by the smaller number.
- 60÷36=1 with a remainder of 24.
- Now, divide 36 by 24.
- Step 2: Divide 36 by the remainder (24).
- 36÷24=1 with a remainder of 12.
- Now, divide 24 by 12.
- Step 3: Divide 24 by the remainder (12).
- 24÷12=2 with a remainder of 0.
- Since the remainder is now 0, the last divisor is the HCF.
- HCF = 12

5.FRACTIONS-COMPARISION

- A fraction is a way to show parts of a whole or a group. It consists of two numbers:
  - Numerator (Top Number): This tells how many parts you have.
  - Denominator (Bottom Number): This tells how many equal parts the whole is divided into.
- For example, in the fraction 3/4:
  - 3 is the numerator (the parts you have).
  - 4 is the denominator (the total number of equal parts).
- Understanding Fractions with Examples:
  - 1/2 means one out of two equal parts. Imagine you have a chocolate bar and you divide it into 2 equal pieces. If you eat one, you have eaten 1/2 of the chocolate bar.
  - 3/5 means you have 3 parts out of 5 equal parts. For example, if you divide a pizza into 5 slices and eat 3 of them, you have eaten 3/5 of the pizza.

- **Simple Fractions:**
- **Proper Fraction:**
- The numerator is smaller than the denominator (e.g., 3/4).
- **Improper Fraction:**
- The numerator is bigger than or equal to the denominator (e.g., 5/4 or 4/4).
- **Mixed Number:**
- A whole number combined with a fraction (e.g., 1 1/2).

- **Example 1: Comparing Fractions with the Same Denominator**
- **Question:**
- **Compare 3/8 and 5/8**
- **Explanation:**
  - **Both fractions have the same denominator (8). This means they represent parts of the same whole.**
  - **To compare, simply look at the numerators.**
  - **5 is greater than 3, so 5/8 is larger than 3/8**
- **Answer:**
- **5/8>3/8**

- **Example 2: Comparing Fractions with Different Denominators**
- **Question:**
- **Compare 3/4 and 5/6**
- Explanation:
  - To compare fractions with different denominators, we need to make the denominators the same. This is called finding a common denominator.
  - The least common denominator (LCD) of 4 and 6 is 12.
  - Convert both fractions to have a denominator of 12:
    - 3/4 becomes 9/12(because 3×3=9 and 4×3=12).
    - 5/6 becomes 10/12(because 5×2=10 and 6×2=12).
  - Now, compare the numerators: 10 is greater than 9, so 5/6 is larger than 3/4.
- Answer:
- 5/6 > 3/4

- **Example 3: Comparing Fractions with Different Denominators (Simplifying the Process)**
- **Question:**
- **Compare 2/5 and 3/8.**
- **Explanation:**
  - **This time, instead of finding a common denominator, you can use cross-multiplication to compare.**
  - **Cross-multiply: 2×8=16 and 3×5=15.**
  - **Since 16 is greater than 15, 2/5 is greater than 3/8.**
- **Answer:**
- **2/5 > 3/8**

- **Example 4: Comparing Fractions Where One Is Less Than 1**
- **Question:**
- Compare ¾ and 5/8.
- **Explanation:**
  - First, convert the fractions to have the same denominator. The LCD of 4 and 8 is 8.
  - ¾ becomes 6/8(because 3×2=6 and 4×2=8).
  - Now, compare 6/8 and 5/8.
  - Since the numerators are 6 and 5, 6/8 is greater than 5/8.
- **Answer:**
- ¾ > 5/8

- **Worksheet 1:**
- **Comparing Fractions with the Same Denominator**

- 7/12 and 9/12
- 5/8 and 3/8
- 11/15 and 8/15
- 6/10 and 4/10
- ¼ and 3/4

- **Worksheet 2:**
- **Comparing Fractions with Different Denominators**

1. 3/5 and 4/7
2. 2/9 and 3/8
3. 5/6 and 7/9
4. ½ and 2/3
5. 7/10 and 6/9

- Worksheet 3:
- Comparing Fractions Using Visual Aids
  - 3/8 and 5/8
  - 2/6 and 5/6
  - 1/3 and 2/5
  - 4/9 and 5/9
  - 3/5 and 2/4

Worksheet 5: Word Problems Involving Fraction Comparison

- Sarah has 4/7 of a chocolate bar, and Jane has 5/7. Who has more chocolate?
- A cake recipe calls for ¾ cup of sugar, but Susan only has 2/3 cup. Does she have enough sugar?
- Mike is planning to spend 2/5 of his weekly allowance on candy, and John is spending 3/5 of his allowance. Who is spending more?
- A classroom has 5/8 of its seats filled, and another classroom has 7/8. Which classroom has more students?
- A gardener has 6/10 of a flower bed planted with roses, and 7/10 planted with daisies. Which flower bed has more flowers?

- **1. Identify the type of fraction:** For each of the following fractions, decide whether it is a **proper fraction**, **improper fraction**, or **mixed number.**

- **4/5 _____**
- **7/3 _____**
- **2 1/4 _____**
- **9/8 _____**
- **5/6 _____**
- **11/4 _____**
- **3 3/8 _____**
- **6/5 _____**
- **8/8 _____**
- **10/3 _____**

6. Adding, Subtracting, and Simplifying Fractions

- **Step-by-Step Guide: Adding and Subtracting Fractions**
- **1. Adding Fractions with the Same Denominator**
  - Example: 3/8 + 2/8
  - Step-by-step:
    - Since the denominators are the same (8), just add the numerators.
    - 3+2=5, so the result is 5/8.
- **2. Adding Fractions with Different Denominators**
  - Example: ¼ + 2/3
  - Step-by-step:
    - Find a common denominator. The least common denominator (LCD) of 4 and 3 is 12.
    - Convert both fractions: ¼ =3/12, 2/3=8/12
    - Now add the numerators: 3+8=11.
    - The result is 11/12.

- . Subtracting Fractions with the Same Denominator
  - Example: 7/10−3/10
  - Step-by-step:
    - Since the denominators are the same (10), just subtract the numerators.
    - 7−3=4, so the result is 4/10.
    - Simplify 4/10 by dividing both the numerator and denominator by 2.
    - The result is 2/5.
- 4. Subtracting Fractions with Different Denominators
  - Example: 5/6−1/4
  - Step-by-step:
    - Find a common denominator. The least common denominator (LCD) of 6 and 4 is 12.
    - Convert both fractions: 5/6=10/12,1/4=3/12
    - Now subtract the numerators: 10−3=7. The result is 7/12.

- **5. Simplifying Fractions**
- **Example: 6/9**
- Step-by-step:
  - Simplify by dividing both the numerator and the denominator by their greatest common divisor (GCD), which is 3.
  - 6/9=2/3.

Exercise 1: Adding Fractions

- 2/5+3/5
- 4//7+27
- 1/6+1/3
- 3/8+5/16(Hint: Find the LCD of 8 and 16)
- 7/12+51/2

Exercise 2: Subtracting Fractions

- 5/8−3/8
- 7/9−2/9
- 3/4−1/4
- 5/6−1/2(Hint: Find the LCD of 6 and 2)
- 7/10−2/5(Hint: Find the LCD of 10 and 5)

- **Exercise 3: Simplifying Fractions**

- 8/12
- 14/28
- 18/24
- 15/45
- 30/50
- 6/8
- 10/15
- 12/16
- 9/18
- 14/28