SECTION 1

MAKING SENSE WITH NUMBERS

NUMBERS FOR EVERYDAY LIFE

Real Number and Numeration System

INTRODUCTION

In this section, learners will explore and work with numbers up to 1 000 000, developing essential skills in reading, writing and comparing quantities using graph sheets and multi-base blocks. They will also learn about rounding numbers to the nearest tens, hundreds, thousands and tens of thousands. This will help learners build confidence in estimating values in real-life situations, such as budgeting or measuring distances. Understanding the distinction between even and odd numbers and identifying factors and multiples will equip learners with the tools to solve practical problems, from organising objects into groups to understanding patterns in nature. These concepts are foundational for higher mathematical reasoning and their applications are vital in everyday tasks, including managing household finances, planning events and making informed decisions. By learning these concepts, learners will build a strong numerical foundation, empowering them to be effective in the use of numbers for everyday life.

In this section, you will learn to;

1. *Read, write and compare modelled number quantities up to 1 000 000 using graph sheets and multi-base block.*
2. *Round (off, up, down) whole numbers up to 100 000 to the nearest tens, hundreds, thousands and tens of thousands.*
3. *Identify even and odd numbers between 1 and 100 as numbers that can be arrayed in twos array and those which cannot.*
4. *Identify factors and multiples of numbers and use the knowledge to solve problems.*

MODELLING AND COMPARING NUMBER QUANTITIES

Modelling Number Quantities

Modelling number quantities is a mathematical concept that helps learners visualise and understand numerical values and their relationships. Using tools like graph sheets, multi-base blocks, and token currency notes, learners can represent and manipulate large numbers in a concrete, hands-on manner. These tools provide a visual and tactile way to explore number quantities, making abstract concepts more accessible and easier to grasp.

Ways of Modelling Number Quantities

1. **Graph Sheets:** Graph sheets, with their grid-like structure, are used to visually represent numbers by plotting points or shading areas corresponding to specific values. This helps in understanding the relative size of numbers and can be particularly useful in comparing quantities.
2. **Multi-Base Blocks:** Multi-base blocks are physical manipulatives that represent different place values (units, tens, hundreds, etc.) in a number. By arranging and grouping these blocks, learners can build and deconstruct numbers, gaining a deeper understanding of place value and the composition of numbers.
3. **Token Currency Notes:** Token currency notes simulate real money and are used to model number quantities in a practical, real-world context. By using these notes, learners can practice counting, adding, and subtracting large sums, which helps reinforce the concept of number value and arithmetic operations.

Activity 1.1: Token Currency Exchange

Today, you'll be using token currency notes in different denominations, like 1, 5, 10, and 20. Your task is to exchange smaller amounts for larger ones or larger amounts for smaller ones.

For example, if you have ten GH¢1, you can exchange them for one GH¢10. You'll get to practise making these exchanges and see how different amounts can add up to the same total. Let's see how well you can manage your money!

How many pieces of the GH¢20 notes do I need to exchange for one GH¢200?

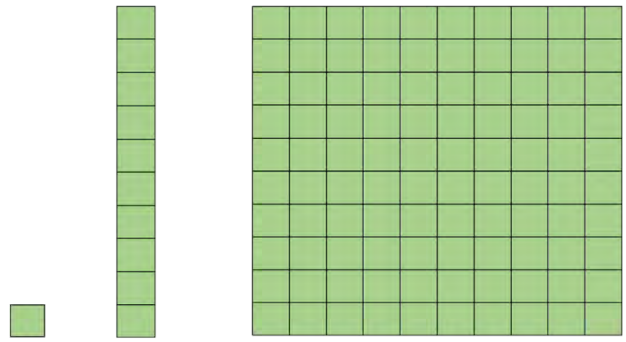
Complete the table

15 of the GH¢20 notes will exchange for…	
8 of the GH¢200 notes will exchange for…	
25 of the GH¢100 notes will exchange for…	
40 of the GH¢5 notes will exchange for…	
200 of the GH¢1 notes will exchange for…	
60 of the GH¢50 notes will exchange for…	

What have you learnt from this activity?

Representing numbers using graph sheets (up to 6 digits)

Study these boxes. We can represent quantities using a combination of these boxes.

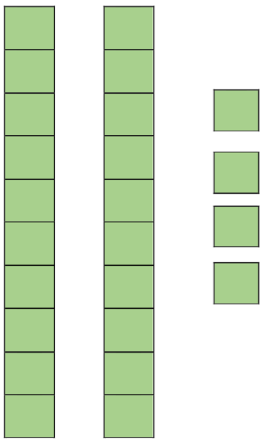


one ten hundred

Example 1.1:

Model the number 24

Solution

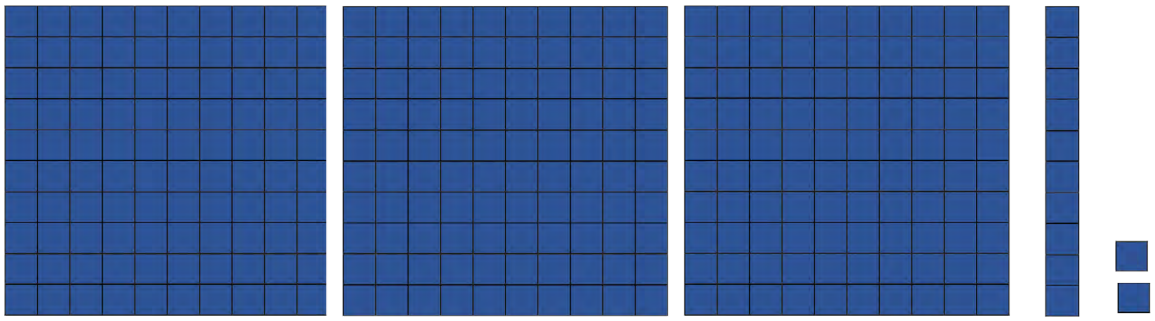


If you count the boxes carefully, you obtain 24. We can therefore say that we need 2 tens and 4 ones to make 24.

Example 1.2:

Model the number 342

Solution

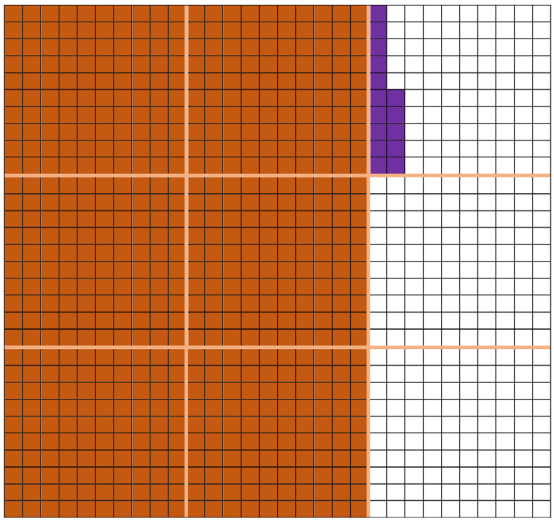


From the model, we have three of the hundreds, four of the tens and two ones. This, together makes 342.

Example 1.3:

Model the number 615

Solution



From the model, we have six of the hundreds, one of the tens and five ones. This, together makes 615.

Note this!

From our examples, we note that any time we write a figure, the first number from the right is the "ones", the next number is the "tens", the next is the "hundreds", the next is the "thousands", etc.

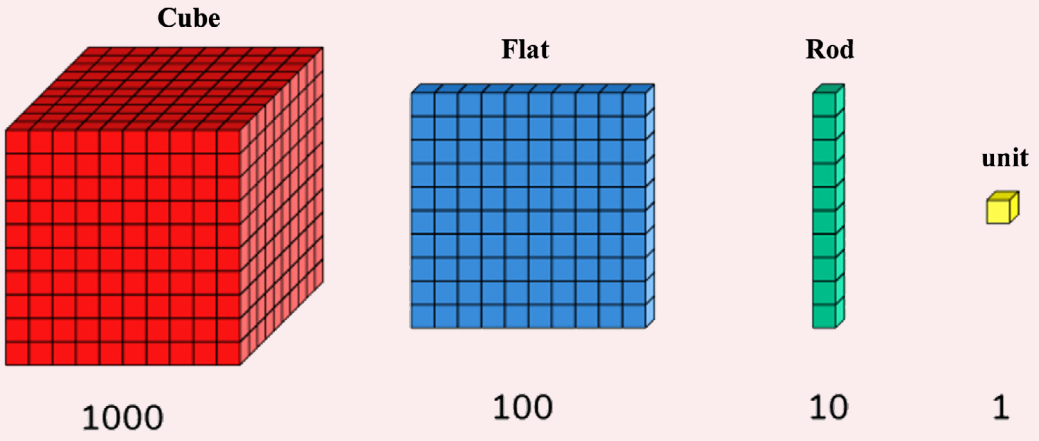
ACTIVITY 1.2: Model with Graphs

In this activity, you'll be using graph sheets to represent different numbers by colouring in squares. For example, if you're given the number 37, you'll colour in 37 squares on your graph paper.

Task: Model the following numbers using graph sheets.

1. 58
2. 145
3. 556
4. 660

Representing numbers using base 10 blocks (up to 6 digits)



Take a look at the blocks

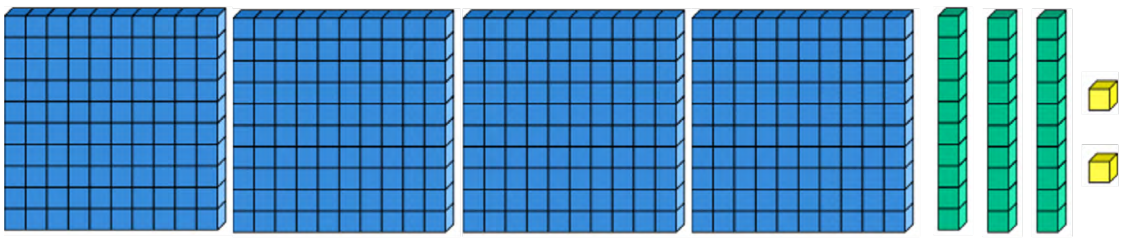
They are composed of units, rods (or longs), flats and cubes, each representing different values based on the decimal (base 10) system.

- **Units**: These are small cubes, each representing the number 1. They help to understand single digits.
- **Rods**: Each rod is made up of 10 units connected in a line and represents the number 10. They help in understanding the concept of tens.
- **Flats**: Flats are composed of 100 units arranged in a square, representing the number 100. They are used to illustrate the concept of hundreds.
- **Cubes**: A cube is made up of 1 000 units, arranged as a larger cube, and represents the number 1 000. They help visualise thousands.

Example 1.4:

Model the number 432

Solution

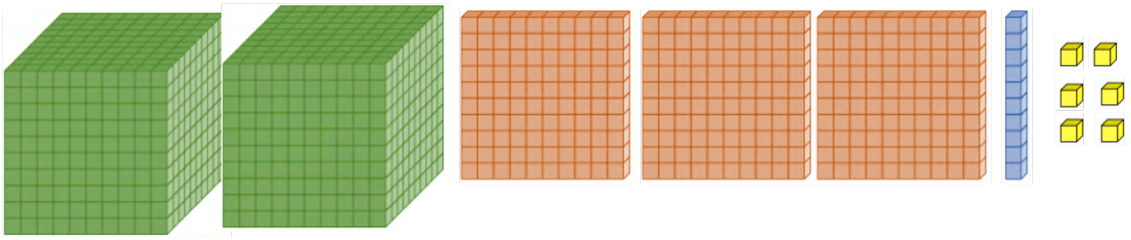


From the model, we have four of the hundreds, three of the tens and two ones. This, together makes 432.

Example 1.5:

Model the number 2 316

Solution



ACTIVITY 1.3: Pair Work

In this activity, you'll be using the base 10 blocks to represent different numbers by indicating how many units, longs, flats and cubes will be needed to represent a given number. For example, if you have seven units, five rods and one flat, what is the total number? The number is 157.

Task:

Find the total number in each of the following models

1. Six units, seven flats and four rods
2. Nine units, seven flats and two rods

Challenge

3. Eleven units, six flats and one rod
4. Fifteen units, twelve flats and five rods

Representing numbers using token currency (up to 6 digits)

We can use currency notes to model number quantities.

Example 1.6:

Model the number 840.

Solution

200 x 4 = 800

10 x 4 = 40

From the model, we have four of the GH¢200 notes, and four of the GH¢10. This, together makes 840.

Example 1.7:

Model the number 2 355.

Solution

200 x 10 = 2 000

100 x 3 = 300

50 x 1 = 50

5 x 1 = 5

From the model, we have ten of the GH¢200 notes which give 2000, three of the GH¢100 which gives 300, one of the GH¢50 which gives 50 and one of the GH¢5 which gives 5.

This, together makes 2 000 + 300 + 50 + 5 = **2 355**.

Activity 1.4 - Pair Work

In this activity, you'll be using currency notes to represent different numbers by indicating how many of the different Ghana cedi notes will be needed to represent a given number.

Task:

Model the following numbers by combining different Ghana cedi notes to represent the number.

1. 4 850

2. 5 655

Challenge

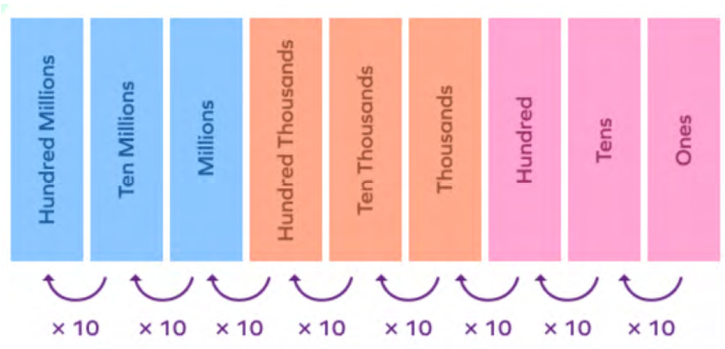
3. 20 452

4. 25 675

The Place Value Concept

Place value refers to the value of a digit in a number based on its position or place. It is the idea that each digit in a number has a specific value depending on its location, starting from the right: The value of each place increases by a factor of 10 as you move left. The order of place value of digits of a number of right to left is units(ones), tens, hundreds, thousands, ten thousand, a hundred thousand, and so on.

Place Value Chart



Each position in the chart represents a different power of 10, which determines the value of the digit in that position. As you move from right to left on the chart, the place value of each digit increases by a power of 10.

Here's how it works:

Units (Ones): The rightmost position represents the ones place, or 10^0, which is just 1. Any digit in this place represents its face value (e.g., 5 in the ones place equals 5).

Tens: The next position to the left is the tens place, or 10^1. Each digit here is worth 10 times the value of the digit in the ones place (e.g., 5 in the tens place equals 50).

Hundreds: Moving one place further left is the hundreds place, or 10^2. Each digit here represents 100 times the value of the digit in the ones place (e.g., 5 in the hundreds place equals 500).

Thousands: The next position is the thousands place, or 10^3, where each digit is worth 1 000 times the value of the digit in the ones place (e.g., 5 in the thousands place equals 5 000).

Ten Thousands: Moving further left, the ten thousands place, or 10^4, shows that each digit here represents 10 000 times the value of the ones place (e.g., 5 in the ten thousands place equals 50 000).

Hundred Thousands: The next position is the hundred thousands place, or 10^5, where each digit is worth 100 000 times the value of the ones place (e.g., 5 in the hundred thousands place equals 500 000).

Millions: The millions place, or 10^6, represents each digit as 1 000 000 times the value of the ones place (e.g., 5 in the millions place equals 5 000 000).

Writing and naming Larger Numbers using place value chart

Example 1.8:

1 000 000

Millions			Thousands			Hundreds	Tens	Ones
Hundred Million	Ten million	Million	Hundred Thousand	Ten Thousand	Thousand	Hundred	Tens	Ones
		1	0	0	0	0	0	0

Here are the place values for a number up to 1 000 000.

Example 1.9: 345 678

Millions			Thousands			Hundreds	Tens	Ones
Hundred Million	Ten million	Million	Hundred Thousand	Ten Thousand	Thousand	Hundred	Tens	Ones
			3	**4**	**5**	**6**	**7**	**8**

3 in the hundred thousand place = 3 × 100 000 = 300 000

4 in the ten thousands place = 4 × 10 000 = 40 000

5 in the thousands place = 5 × 1 000 = 5 000

6 in the hundreds place = 6 × 100 = 600

7 in the tens place = 7 × 10 = 70

8 in the ones place = 8 × 1 = 8

To further illustrate the place value, assist learners to write the number 345678 in its expanded form.

345 678 = 300 000 + 40 000 + 5 000 + 600 + 70 + 8

To represent this visually:

Place Value	Ten million	Million	Hundred Thousand	Ten Thousand	Thousand	Hundred	Tens	Ones
Digit			**3**	**4**	**5**	**6**	**7**	**8**
Value			300 000	40 000	5 000	600	70	**8**

Example 1.10:

Break down the number 789 012

Solution

7 in the hundred thousands place: 7 × 100 000 = 700 000

8 in the ten thousands place: $8 \times 10\,000 = 80\,000$

9 in the thousands place: $9 \times 1\,000 = 9\,000$

0 in the hundreds place: $0 \times 100 = 0$

1 in the tens place: $1 \times 10 = 10$

2 in the ones place: $2 \times 1 = 2$

Expanded form: 789 012

$$= 700\,000 + 80\,000 + 9{,}000 + 0 + 10 + 2$$

$$= \underset{\text{Thousands}}{\text{7 Hundred}} + \underset{\text{Thousands}}{\text{8 Ten}} + \underset{\text{Thousands}}{9} + \underset{\text{hundreds}}{0} + \underset{\text{tens}}{10} + 2 \text{ ones}$$

Writing given numbers in words and reading them

Example 1.11:

Write the number 345 678 in words and read it.

Step 1: Break Down the Number

- Separate the number into groups of three digits, starting from the right:
  - **345** (thousands)
  - **678** (units)

Step 2: Read the Thousands Group

- The first group, **345**, is in the thousands place.
- Read **345** as "three hundred forty-five."
- Since this is in the thousands group, add "thousand" after it.
- So, **345** is read as "three hundred forty-five thousand."

Step 3: Read the Units Group

- The next group, **678**, is in the units place.
- Read **678** as "six hundred and seventy-eight."

Step 4: Combine the Two Groups

- Put the readings together:
  - **345 678** is read as "three hundred forty-five thousand, six hundred and seventy-eight."

Complete Example:

- **Number**: 345 678
- **How to Read**: Three hundred forty-five thousand, six hundred and seventy-eight.

Example 1.12:

Write the number 2 345 678 in words and **read it.**

Solution

Step 1: *Break Down the Number*

- Separate the number into groups of three digits, starting from the right:
  - **2** (millions)
  - **345** (thousands)
  - **678** (units)

Step 2: *Read the Millions Group*

- The first group, **2**, is in the millions place.
- Read **2** as "two."
- Since this is in the millions group, add "million" after it.
- So, **2** is read as "two million."

Step 3: *Read the Thousands Group*

- The next group, **345**, is in the thousands place.
- Read **345** as "three hundred forty-five."
- Since this is in the thousands group, add "thousand" after it.
- So, **345** is read as "three hundred forty-five thousand."

Step 4: *Read the Units Group*

- The last group, **678**, is in the units place.
- Read **678** as "six hundred and seventy-eight."

Step 5: *Combine the Three Groups*

- Put the readings together:
  - **2 345 678** is read as "two million, three hundred forty-five thousand, six hundred and seventy-eight."

Activity5:- Individual/Pair/Group Work

Reading and Writing Numbers

Purpose: You will practise reading and writing numbers up to six digits by working together in groups.

Materials Needed:

- Index cards or small slips of paper
- Marker pens or pencils
- A large sheet of paper or a whiteboard

Instructions:

1. **Group Formation:** Form groups of 4-5 learners. Each group will work together to complete the activity.
2. **Create Number Cards:** On your index cards, each group will write down different numbers ranging from 100 000 to 999 999. Write one number on each card.
3. **Mix and Match:** Mix up the number cards and then exchange them with another group. Your task is to correctly read the numbers on the cards you received.
4. **Read Aloud:** Take turns in your group to read each number aloud. Make sure everyone in the group has a chance to practise.
5. **Write the Numbers:** After reading the numbers, write them down in words on the large sheet of paper or whiteboard. For example, if the number is 345 678, you will write "three hundred forty-five thousand, six hundred and seventy-eight."
6. **Check Your Work:** Once all groups have finished, compare your answers with the correct number readings. Discuss any differences and make corrections if necessary.
7. **Group Reflection:** As a group, discuss what you found easy or difficult about reading and writing the numbers. Share your thoughts with the class.

Comparing Number Quantities

When we compare number quantities, we determine how one number relates to another in terms of size. This comparison helps us understand which numbers are greater, smaller, or equal to others. Comparing numbers is a fundamental skill that is used in everyday life, from deciding which price is better to determining rankings in a competition. We use symbols like greater than (>), less than (<), or equal to (=), or simply arrange numbers in order, to show the relationships between numbers.

Compare the amounts of money in the two wallets. Can you tell which one contains higher amount of money?

From the two wallets, we can tell that although wallet B contains five different Ghana cedi notes, the total sum of the money is GH¢88. Therefore, the money is wallet A is more than that of wallet B.

Note this!

Whenever you are comparing numbers, the number with the highest number of digits is automatically the largest number. However, if the numbers have the same number of digits, you have to compare each digit starting from the left.

Example 1.13

At the 2024 BECE, a total of 569 095 candidates made up of 282 648 males and 286 447 females entered the school examination. Use the place value chart to compare the number of males and females and indicate which gender had the higher number sitting for the examination.

Solution

Let's write the numbers in the place value chart and compare

	100TH	10TH	TH	H	T	O
Female	2	8	6	4	4	7
Male	2	8	2	6	4	8

The numbers at the Hundred Thousands place is the same for both males and females. Also, both the males and females had the same number recorded for the Ten Thousands place. However, the number at the Thousands place for the females was more than that of the males. Therefore, we can conclude that more girls sat for the 2024 BECE than boys.

Therefore, 286 447 (female) > 282 648 (male)

Example 1.14

The population of Madagascar is *31 964 956* and that of Côte d'Ivoire is **31 934 230** as of Friday, August 9 2024, based on Worldometre elaboration of the latest United Nations data. Compare the two populations and state which country has a higher population.

Solution

Let's write the numbers in the place value chart and compare

	10M	M	100TH	10TH	TH	H	T	O
Madagascar	3	1	9	6	4	9	5	6
Côte d'Ivoire	3	1	9	3	4	2	3	0

From the place value chart, we realise that the numbers at the Ten Million, Million and Hundred Thousands places are the same for both Madagascar and Côte d'Ivoire. However, the numbers at the Ten Thousand place are different. That of Madagascar is 6 and that of Côte d'Ivoire is 3. Therefore, we can conclude that the population of Madagascar is more than that if Côte d'Ivoire as of Friday, August 9 2024, based on Worldometre elaboration of the latest United Nations data.

Therefore, 31 934 230 (Côte d'Ivoire) < 31 964 956 (Madagascar)

Example 1.15:

Compare the different currency combinations and state which is more.

Combination A

10

3

1

1

Combination B

10

3

5

5

From the two sets of combinations, we realise that although there are some different notes in the two combinations, the total amounts are the same. That is, each set has a total amount of **2 355.**

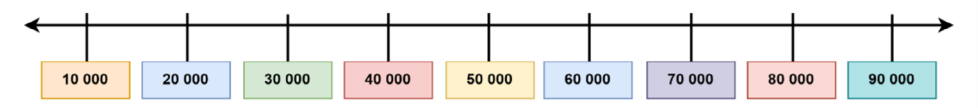
Therefore, 2 355 = 2 355.

Activity 6: Number Line Comparison (Individual/Pair/Group Work)

Objective: Compare and order numbers using a number line.

Materials Needed:

- Large number lines (for example number line with numbers written in 10 000s)
- Sets of number cards (with different 5- and 6-digit numbers)
- Sticky notes or markers
- Group worksheet for recording comparisons



40 000	25 000	33 000	85 000
64 000	12 500	41 800	99 999
72 045	38 000	14 700	170 000
400 000	552 000	780 500	900 000

Steps:

1. **Form Groups:** Break into small groups of 3-4 learners.
2. **Pick Numbers:** Each group selects 5 number cards from the set.
3. **Place on Number Line:** Use the large number line chart. Take turns placing the selected numbers on the number line in the correct position.
4. **Compare Numbers:** Once all numbers are placed, compare the numbers by discussing which are greater, smaller, or equal. Use sticky notes or markers to indicate comparisons directly on the number line (e.g., >, <, =).
5. **Order the Numbers:** Arrange the selected numbers from largest to smallest and then from smallest to largest on the group worksheet.
6. **Discussion:** After completing the activity, discuss why certain numbers are greater or smaller, and how placing them on the number line helps with understanding.
7. **Record Findings:** On the worksheet, write a brief explanation for the order of numbers and how comparisons were made.

Wrap-Up: Each group shares their number order and the rationale behind their comparisons with the class.

Note:

You could also perform this activity using the place value chart.

APPROXIMATIONS & ODD AND EVEN NUMBERS

Approximating And Rounding Numbers

Sometimes, only "near" values of numbers and measurements are needed. For example, it may be sufficient to give an amount of money as "nearly" Gh¢200 rather than its more correct amount of GH¢199.96. A "near" value of a number is usually called *approximate* value.

Measures of length, mass, time, area, population, money etc., should always be given to a reasonable degree of approximation, especially when they cannot be stated with exactness or precision. There are three main ways by which approximations may be done. That is by rounding to a nearest appropriate unit; a given number of decimal places; or a given number of significant figures.

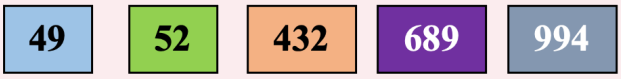
Before we go into the details, let's take a look at this reinforcement activity.

Activity 1.16: Estimation Challenge

Purpose: Strengthen estimation skills and prepare for rounding numbers to the nearest 10, 100, and 1,000.

Materials Needed:

- Number cards (random numbers between 1 and 999) e.g.



- Whiteboards and markers (or paper and pencils)
- Estimation chart (optional)

Steps:

1. **Form Pairs or Small Groups:** Divide into pairs or small groups to encourage collaboration.
2. **Pick a Number Card:** Each pair/group draws a number card from the set.
3. **Estimate Rounding Targets:**
    - Without rounding yet, discuss and estimate what the number would round to if rounded to the nearest 10, 100, and 1,000.

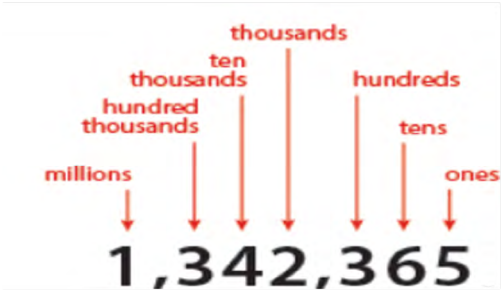
- Write down these estimates on the whiteboard or paper.

4. **Discuss Reasoning:** Share your estimates with your partner/group and explain why you think the number rounds to those specific values.
5. **Check with a Teacher:** After discussing, consult with the teacher to verify if the estimates are on the right track and understand the logic behind the correct rounding.
6. **Record Estimates:** Use an estimation chart to record your number and the estimated rounded values.
7. **Group Discussion:** Come together as a class and discuss common patterns noticed in estimating numbers. What makes a number likely to round up or down?

Wrap-Up: This activity will warm you up for the next concept on rounding, giving you a head start in understanding how numbers can be approximated to the nearest 10, 100 or 1000.

APPROXIMATING AND ROUNDING

Approximating and rounding numbers are methods used to simplify numbers to make them easier to work with, especially when exact precision is not necessary. Here's a detailed look at these concepts. Before we do that, I hope you remember your place value concept. Take a quick look at the illustration here;



Rounding to the Nearest Ten

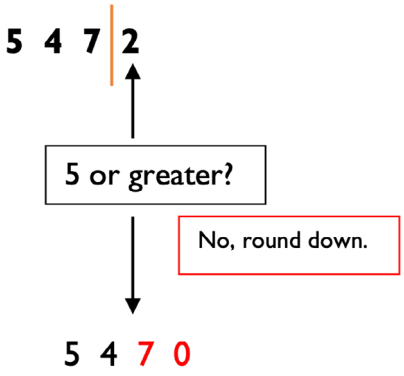
Rounding numbers to the nearest hundred involves looking at the tens place and determining if the number should be rounded up or remain the same. To round a number to the nearest hundred, if the number in the tens column is 5 or greater, we round the hundreds up by 1, if the tens number is less than 5 the hundreds number remains the same.

The basic rules are:

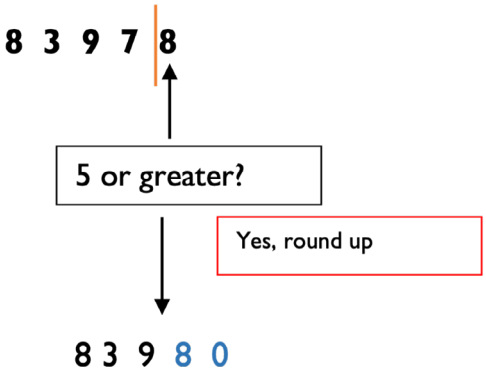
- If the digit in the tens place is 5 or greater, round the hundreds number up by 1.
- If the digit in the tens place is less than 5, the hundreds number remains the same.

More generally, change to zeros all the digits after the place you are rounding to. If rounding up, the digit in the place you are rounding to is increased by 1

1. Round 5 472 to the nearest ten



2. Round 83 978 to the nearest ten

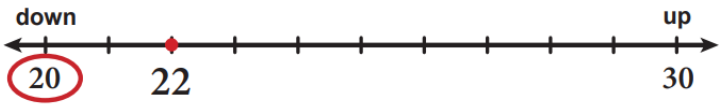


3. Round 24 693 to the nearest ten

When rounding 24 693 to the nearest ten, the number in the tens digit is considered; which is 9 in this instance, 3 is the number on the right of 9, which is smaller than 5, so the 9 digit is kept as it is, therefore there is no need to change the tens.

The final answer is 24 690.

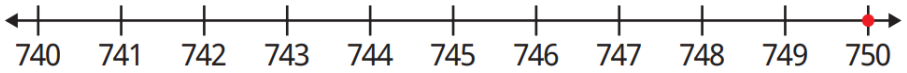
4. Round 22 to the nearest ten



The number in the ones digit is 2, which is less than 5, therefore we leave the tens alone and replace the ones with 0.

5. Use the number line to round 750 to the nearest ten.

   Draw a number line and locate 750.



The number close to the tens digit is 0, which is less than 5, hence we round down by maintaining the digit as it is.

Therefore, 750 to the nearest ten is still 750

Rounding to the Nearest Hundred

Rounding numbers to the nearest hundred involves looking at the tens place and determining if the number should be rounded up or remain the same. To round a number to the nearest hundred, if the number in the tens column is 5 or greater, we round the hundreds up by 1, if the tens number is less than 5 the hundreds number remains the same.

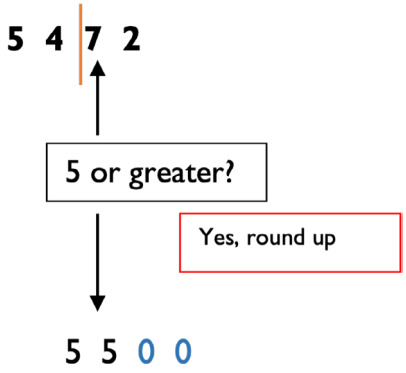
The basic rules are:

- If the digit in the tens place is 5 or greater, round the hundreds number up by 1.
- If the digit in the tens place is less than 5, the hundreds number remains the same.

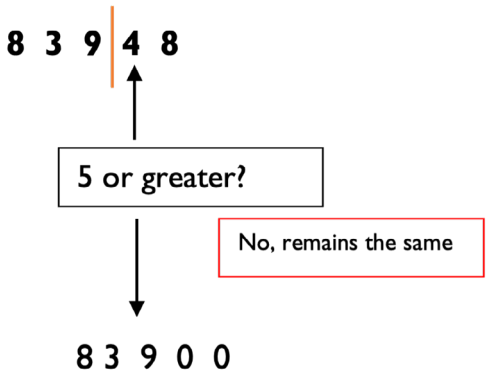
More generally, change to zeros all the digits after the place you are rounding to. If rounding up, the digit in the place you are rounding to is increased by 1

Examples

1. Round 5 472 to the nearest hundred.



2. Round 83 948 to the nearest hundred.

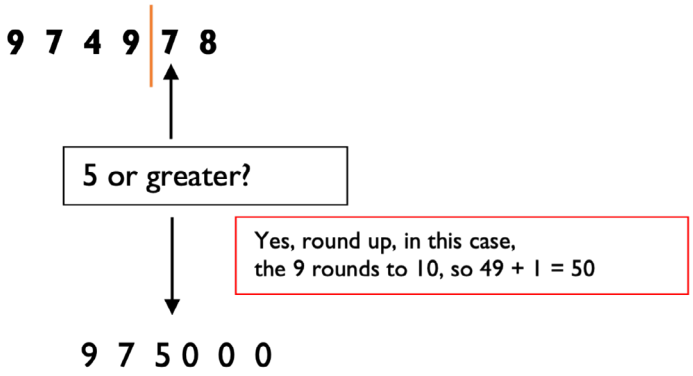


3. Round 24 693 to the nearest hundred.

When rounding 24 693 to the nearest hundred, the number in the tens column is considered. In this case, it is 9, which is greater than 5, so we round up by increasing the hundreds digit by 1 (from 6 to 7);

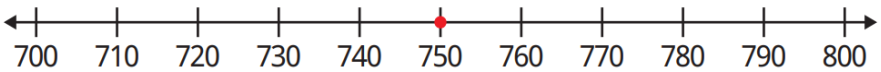
The final answer is 24 700.

4. Round 974 978 to the nearest hundred



5. Use the number line to round 750 to the nearest hundred.

Draw a number line and locate 750.



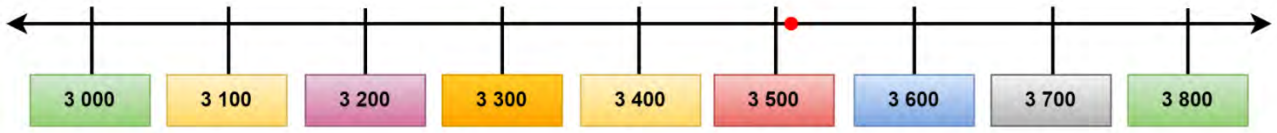
The number in the tens digit of 750 is greater than or equal to 5 therefore we round up by increasing the number in the hundreds digit by 1; so from 7 to 8 and replace the tens with 0.

Therefore, 750 to the nearest hundreds is 800.

Rounding to the Nearest Thousand

Use the number line to round the following to the nearest thousands.

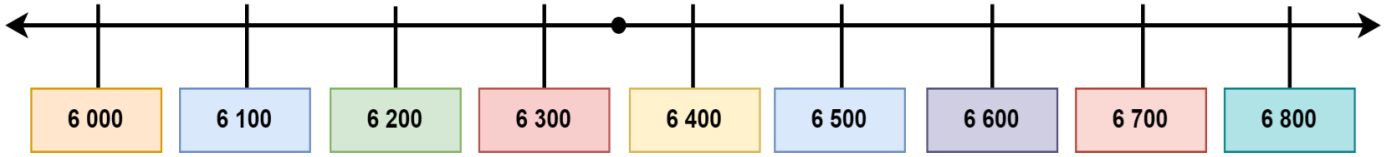
1. 3 518



The number in the hundreds digit of 3 518 is greater or equal to 5 therefore we round up by increasing the number in the thousands column from 3 to 4 and replace the following digits with 0.

Therefore, 3518 to the nearest hundreds in 4 000.

2. 6 344



The number in the hundreds digit of 6 344 is less than 5 therefore we maintain the number in the thousands digit; and replace the remaining numbers with 0.

Therefore, 6 344 to the nearest hundreds is rounded down to 6 000

Word Problems

Example 1.17

Sarah is planning to buy supplies for her school's art club. She needs to estimate the total cost to ensure she stays within budget. The prices of the items she wants to buy are as follows:

- Paint brushes: Gh¢87
- Sketchbooks: Gh¢264
- Paint sets: Gh¢1 243

Question: Round the price of each item to the nearest ten, hundred, and thousand to help Sarah quickly estimate her total cost.

Solution:

1. **Paint brushes (GH¢87):**
   - Nearest Ten: Gh¢90 (since 87 is closer to 90 than 80)
   - Nearest Hundred: Gh¢100 (since 87 is closer to 100 than 0)
   - Nearest Thousand: Gh¢0 (since 87 is less than 500, so it rounds down to 0)
2. **Sketchbooks (Gh¢264):**
   - Nearest Ten: Gh¢260 (since 264 is closer to 260 than 270)
   - Nearest Hundred: Gh¢300 (since 264 is closer to 300 than 200)
   - Nearest Thousand: Gh¢0 (since 264 is less than 500, so it rounds down to 0)
3. **Paint sets (Gh¢1 243):**
   - Nearest Ten: Gh¢1 240 (since 1 243 is closer to 1 240 than 1 250)
   - Nearest Hundred: Gh¢1 200 (since 1 243 is closer to 1 200 than 1 300)
   - Nearest Thousand: Gh¢1 000 (since 1 243 is closer to 1 000 than 2 000)

Estimated Total Cost if she buys one of each item**:**

- **Nearest Ten:** Gh¢90 + Gh¢260 + Gh¢1 240 = Gh¢1 590
- **Nearest Hundred:** Gh¢100 + Gh¢300 + Gh¢1 200 = Gh¢1 600
- **Nearest Thousand:** Gh¢0 + Gh¢0 + Gh¢1 000 = Gh¢1 000

Conclusion: By rounding to the nearest ten, hundred, or thousand, Sarah can quickly estimate that the total cost of the supplies will be between Gh¢1 000 and Gh¢1 600, depending on the level of precision she wants to use.

Activity7: "Rounding Relay" (Individual/Pair/Group Work)

Purpose: Practice rounding numbers to the nearest 10, 100, and 1 000 in a fun and interactive way.

Materials Needed:

- Number cards (with numbers between 1 and 999 999)
- Rounding mats or worksheets labeled "Nearest 10," "Nearest 100," and "Nearest 1 000"

- Markers or pencils
- Timer (optional)
- Whiteboard and markers

Instructions:

Form Small Groups: Divide into small groups of 3-4 learners. Each group will work together to complete the rounding relay.

Draw a Number Card: Each group will pick a number card from the deck. The number on the card will be the one they need to round.

Round to the Nearest 10:

- The first member of the group takes the number card and rounds it to the nearest 10.
- Write the rounded number on the "Nearest 10" section of the rounding mat or worksheet.
- Pass the card to the next group member.

Round to the Nearest 100:

- The second member of the group rounds the same number to the nearest 100.
- Write the rounded number on the "Nearest 100" section of the rounding mat or worksheet.
- Pass the card to the next group member.

Round to the Nearest 1000:

- The third member of the group rounds the same number to the nearest 1 000.
- Write the rounded number on the "Nearest 1 000" section of the rounding mat or worksheet.

Check and Discuss:

- Once all three rounding tasks are complete, compare the rounded numbers within the group.
- Discuss any differences in the rounding process and make sure everyone agrees on the correct rounded numbers.

Class Discussion:

- Groups can share their results with the class, explaining how they rounded the number to each place value.

Repeat the Activity:

- After the first round, shuffle the number cards and repeat the activity, allowing different group members to start each round.

Wrap-Up: This activity helps you understand the process of rounding to different place values while working collaboratively with your peers. It reinforces your ability to determine when to round up or down and gives you hands-on practice with real numbers.

UNDERSTANDING EVEN AND ODD NUMBERS

Numbers that can be divided by 2 without a remainder are called even numbers, meaning that they can be divided into two equal parts. Odd numbers are those numbers that cannot be divided into two equal parts.

Examples of odd numbers are 1, 3, 5, 7, 9, 11, 13, 15,…

Examples of even numbers are 2, 4, 6, 8, 10, 12, 14,…

Can you give more odd and even numbers? Before we continue, let's go through this reinforcement activity!

Reinforcement Activities

Purpose: You will practise identifying even and odd numbers by sorting a set of numbers into the correct categories.

Materials Needed:

- Number cards (with numbers from 1 to 100)
- Two large containers or baskets labeled "Even" and "Odd"
- Small counters or objects (optional)

Instructions:

Getting Ready:

- There are number cards placed in a pile in the centre of the table or floor.
- You will work in small groups and take turns picking a number card from the pile.

Sorting the Numbers:

- When it's your turn, pick a number card and decide if the number is even or odd.
- Once your group has decided, place the card in the correct container labelled "Even" or "Odd."

Reviewing Your Choices:

- After all the cards have been sorted, we will review the numbers together.
- Be ready to explain why you placed certain numbers in each container. If you're not sure, you can use the counters to help check your answer.

Challenge Yourself (Optional):

- For an extra challenge, try pairing up the even numbers and see if you notice any patterns (e.g., what do all even numbers end with?).
- You can also try to find out how many groups of 2 can be made with each even number.

What You Will Learn:

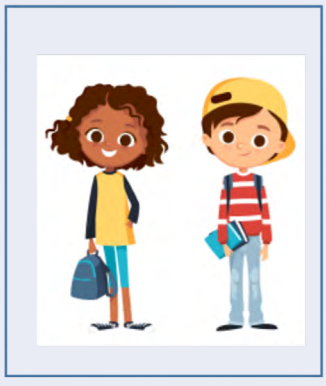
- By doing this activity, you will better understand that even numbers can be split into two equal groups, while odd numbers cannot.

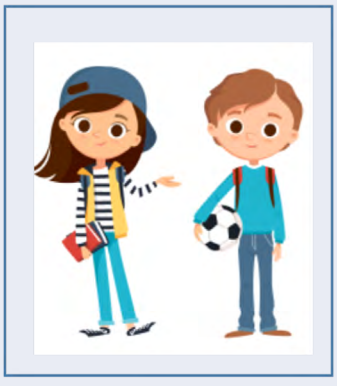
Even Numbers

Even numbers end with 0, 2, 4, 6 and 8.

Example 1.18:

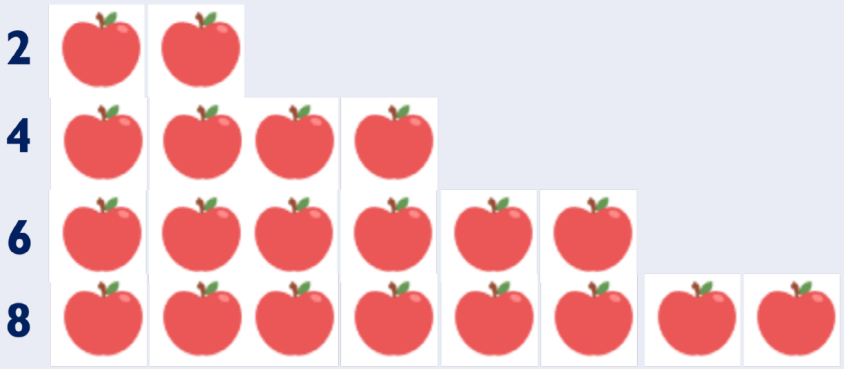
Count the number of children below and divide them into two teams.





Example 1.19

Take a look at the tomato pattern. Each next line increases by 2. So the numbers in the pattern are 2, 4, 6, and 8. All these numbers are even numbers.



Odd Numbers

Odd numbers are numbers that are not divisible by 2. When divided by 2, odd numbers leave a remainder of 1.

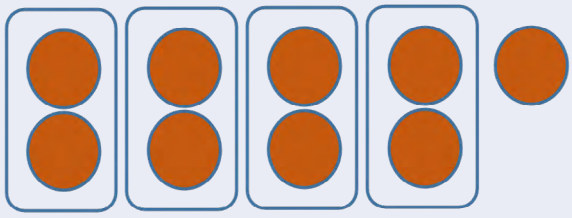
Odd numbers always end in 1, 3, 5, 7 or 9.

Comparing Odd and Even Numbers

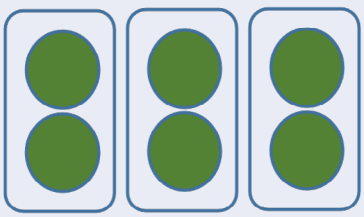
Example 1.20

Even	Odd
Numbers ending in	Numbers ending in
0, 2, 4, 6, 8	1, 3, 7, 5, 9

Example 1.21



Odd numbers always leave a remainder of 1 when put into groups of 2.



Even numbers always leave no remainder when put into groups of 2.

Identifying even and odd numbers for multi-digits.

1. **By considering the number at the "ones" place**

   In this approach, we look at the number in the "ones" place to check if the number is even or odd. All the numbers ending with 0, 2, 4, 6 and 8 are even numbers. For example, numbers such as 14, 26, 32, 40 and 88 are even numbers since they all end in the digits **0, 2, 4, 6, or 8**, otherwise, it is an odd number. That is, the number 13, 51, 95, 67, and 29 are all odd numbers.

Worked Example:

Determine whether the following numbers are even or odd using the concept of "ones" digit in a place value.

Solution

1. 248

Hundreds	Tens	Ones
2	**4**	**8**
Even Number		

The ones number is even, so the whole number is even.

2. 103

Hundreds	Tens	Ones
1	**0**	**3**
Odd number		

The ones number is odd, so the whole number is odd.

Activity8: Identifying Odd and Even Numbers Using a Number Line and Grouping

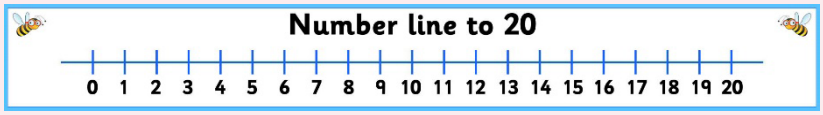
Purpose: You will use a number line and grouping strategy to identify and understand the difference between odd and even numbers.

Materials Needed:

- A large number line (from 1 to 20) drawn on the board or printed on paper
- Counters or small objects (like buttons, beads, or blocks)
- Blank paper and pencils

Instructions:

1. **Remembering your facts:**
   - **Even numbers** can be divided by 2 without any remainder. They end in 0, 2, 4, 6, or 8.
   - **Odd numbers** cannot be divided evenly by 2. They end in 1, 3, 5, 7, or 9.
2. **Using the Number Line:**
   - Look at the number line provided. Notice how the numbers are arranged from 1 to 20.



   - With your finger, point to the number 2. Notice that it is an even number because it is the second number on the line.
   - Now, move your finger to 3. Notice that it is an odd number because it comes right after an even number and cannot be evenly divided by 2.
3. **Jumping on the Number Line:**
   - Start at 0 and jump to 2, then 4, then 6, and so on. These are all even numbers.
   - Now, start at 1 and jump to 3, then 5, then 7, and so on. These are all odd numbers.
   - Notice the pattern: Even numbers are always two steps apart, and so are odd numbers.

4. Grouping Strategy:

- Take some counters or small objects.
- Pick any number from the number line, for example, 6. Try to group the counters into pairs (two in each group).
- If all the counters can be paired without any left over, the number is even.
- Now, pick a number like 7. Try to group the counters into pairs again.
- If one counter is left without a pair, the number is odd.

5. Practise with More Numbers:

- On your blank paper, write down some numbers between 1 and 20.
- Use the number line and the grouping strategy to decide whether each number is odd or even. Draw the pairs if needed.

6. Share and Discuss:

- Once you have finished, share your findings with your group or the class.
- Discuss any patterns you noticed on the number line or with the grouping strategy.

Properties of Even and Odd Numbers

Property of Addition

- Even number + Odd number = Odd number

  An even number plus an odd number equals an odd number.

  For example, 8 + 5 = 13; 6 + 7 = 13

- Even number + Even number = Even number

  Adding two even numbers results in an even number.

  For example, 8 + 4 = 12; 12 + 8 = 20

- **Odd number + Odd number = Even number**

  When adding two odd numbers, the result is an even number.

  For example, 3 + 5 = 8; 15 + 11 = 26

Take a look at the table

Operation (+)	Example
Even + Even = Even	**6 + 6 =12**
Even + Odd = Odd	**6 + 3 = 9**
Odd + Even = Odd	**3 + 6 = 9**
Odd + Odd = Even	**3 + 3 = 6**

Property of Subtraction

- **Even number – Odd number = Odd number**

  When you subtract an odd number from an even number, the result is an odd number.

  For example, 8 – 5 = 3; 32 – 6 = 26

- **Even number – Even number = Even number**

  Subtracting two even numbers results in an even number.

  For example, 16 – 10 = 6; 37 – 4 = 33

- **Odd number – Odd number = Even number**

  Subtracting two odd numbers results in an even number.

  For example, 13 – 5 = 8; 63 – 17 = 46

Operation (–)	Example
Even — Even = Even	**6 — 4 = 2**
Even — Odd = Odd	**6 — 3 = 3**
Odd — Even = Odd	**7 — 2 = 5**
Odd — Odd = Even	**7 — 5 = 2**

Property of Multiplication

- **Even number x Odd number = Even number**

  Multiplying an even number and an odd number (and vice versa) always results in an even number.

  For example, 5 × 6 = 30.

- **Even number × Even number = Even number**

  Multiplying an even number with an even number always results in an even number.

  For example, $6 \times 10 = 60$.

- **Odd number x Odd number = Odd number**

  Multiplying an odd number and an odd number always results in an odd number.

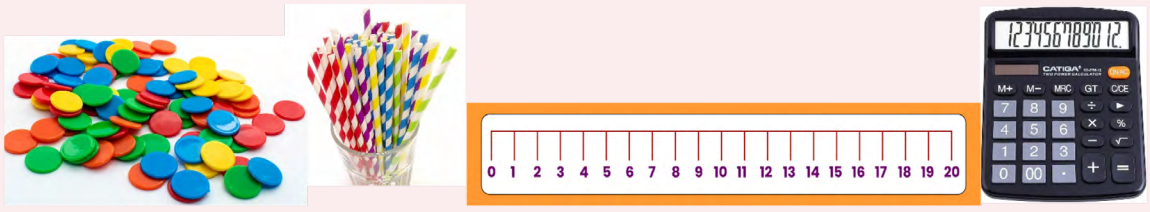
  For example, $13 \times 5 = 65$.

Operation (×)	Example
Even × Even = Even	4 × 2 = 8
Even × Odd = Even	4 × 3 = 12
Odd × Even = Even	3 × 4 = 12
Odd × Odd = Odd	3 × 3 = 9

Activity9

Instruction: Solve the following word problems. An example of the steps and how to use it has been done for you.

Materials you may use



Example Using These Steps

Problem: Sarah is organising a party and has 14 balloons. She wants to tie them in pairs and hang them around the room. Will she be able to pair all the balloons evenly without any left over? Is 14 an odd or even number?

Steps:

1. **Read the Problem carefully:**
   - Sarah has 14 balloons and wants to pair them.

2. **Identify the Numbers Involved:**
   - The number involved is 14.
3. **Determine What the Problem is Asking:**
   - The problem asks if 14 balloons can be paired evenly.
4. **Apply the Concept of Odd and Even Numbers:**
   - 14 is an even number because it can be divided by 2 with no remainder.
5. **Solve the Problem:**
   - Divide 14 by 2 to see if they can be paired: $14 \div 2 = 7$ pairs.
6. **Answer the Question:**
   - Sarah will be able to pair all 14 balloons evenly with no leftovers.
7. **Double-Check Your Work:**
   - 14 is even, and the calculation is correct.

Tasks:

1. Akwesi has 15 apples, and he wants to share them equally among his 5 friends. How many apples will each friend get? Is the number of apples each friend gets an odd or even number?
2. There are 9 learners in a group, and the teacher wants to divide them into pairs for a game. How many learners will be left without a partner? Is the number of learners in the group an odd or even number?
3. Adisa has 16 candies. She wants to divide them into two equal groups to share with her brother. How many candies will be in each group? Is the total number of candies odd or even?
4. In a classroom, there are 21 desks arranged in rows. Each row has 3 desks. If the teacher wants to arrange the desks in pairs, will there be any desks left without a pair? What does this tell you about the number 21, is it odd or even?

FACTORS AND MULTIPLES

Factors, Multiples and Highest Common Factor

The idea of factors and multiples is applied in our everyday activities. Imagine you're organising a party and need to arrange chairs and tables. You want to make sure each table has the same number of chairs without any leftover. If you have a certain number of chairs, you need to figure out how many tables you can set up so that the chairs are evenly distributed. This process is like finding the factors of a number—dividing a number into equal parts without anything left over. Similarly, if you need a certain number of snacks for each guest and you want to ensure every guest gets the same amount, you might consider multiples—how many total snacks you need if each guest gets a specific number

Before we learn more about factors and multiples, let's have fun with this reinforcement activity!

Reinforcement Activities

Purpose: To understand the concept of factors and multiples by dividing candies equally.

Materials Needed:

- A small bag of counters (or buttons, straws, or any small items)
- Paper and pencil



Instructions:

1. Group Formation: Divide yourselves into small groups of 3 or 4. Each group will receive a bag of counters/bundle of straws.
2. Counting Counters: Open the bag and count the total number of counters your group has. Write down the number on your paper.
3. Dividing Counters:
   - Try to divide the counters equally among all group members.
   - First, see if you can divide them equally between 2 people. If that works, write down how many each person gets.
   - Now, try to divide the counters equally among 3 people, then 4 people. Keep going until you can't divide them equally anymore.

- For each successful division, write down the number of counters each person would get and how many groups you made.

4. Discussion:
   - Share your results with the class.
   - Notice when you could divide the counters equally and when you couldn't.
   - Discuss why some numbers worked for dividing and others didn't.
5. Reflection:
   - Think about the numbers of people you could divide the counters among. These numbers are related to factors of your total number of counters.
   - Consider if you wanted to have the same amount of counters in multiple bags. How would you decide the number of counters to put in each bag? This relates to the idea of multiples.

Factors and Multiples

A **factor** is a number that divides into another number exactly, leaving no remainder. For example, 3 is a factor of 12 because 3 divides into 12 evenly ($12 \div 3 = 4$). On the other hand, a **multiple** is what you get when you multiply a number by an integer. For example, 20 is a multiple of 4 because $4 \times 5 = 20$. The **Highest Common Factor (HCF)** is the greatest number that is a factor of two or more numbers. For instance, if we look at the factors of 8 (1, 2, 4, 8) and 12 (1, 2, 3, 4, 6, 12), the highest number that appears in both lists is 4. So, 4 is the HCF of 8 and 12.

Finding Factors and HCF

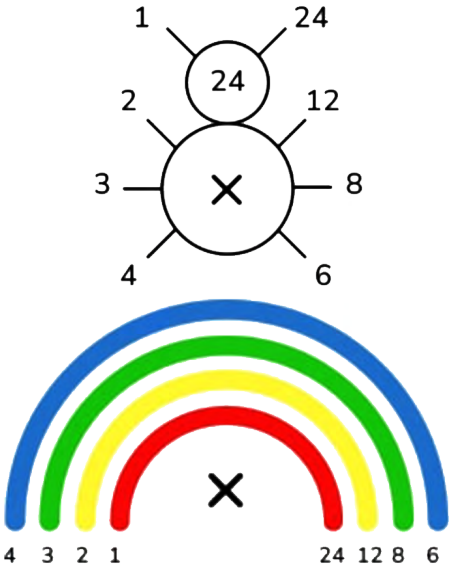
To find all the factors of a given number, start with 1 and systematically work through each number to see if it has a factor pair that will multiply to make the given number, until the factors end up repeating themselves.

Example 1.22 :

Find the factors of 24.

Solution

Using factor bugs and rainbow model the factors of 24 are;



From the bug, we realise that all the numbers on the left of our bug can divide into 24 without a remainder. Now, when these numbers divide into 24, the results are the corresponding numbers on the right. In the same way, if each of the numbers on the right divide into 24 there will be no remainder and the results of their division are the numbers on the left. Therefore, for each of the pair of numbers, their product is 24.

Again, from our rainbow, we can see that each of the colours matches two number. When the two numbers multiply, we obtain 24. Each of these numbers can divide into 24 with no remainder.

Therefore, we can conclude that the factors of 24 are 1, 2, 3, 4, 6, 8, 12 and 24.

Note this!

Factors of a number are the integers that can be multiplied together to produce that number.

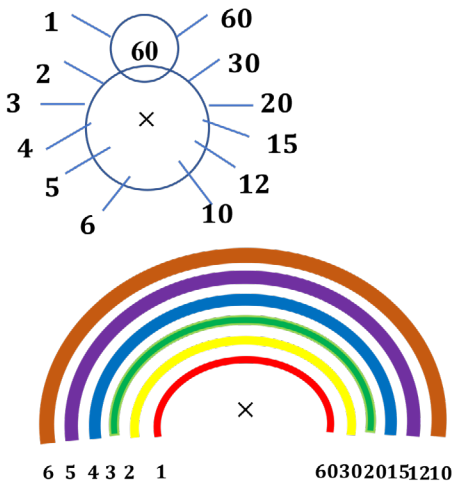
The factors of 12 are 1, 2, 3, 4, 6, and 12.

- $1 \times 12 = 12$
- $2 \times 6 = 12$
- $3 \times 4 = 12$

Example 1.23:

Find the factors of 60

Solution



Therefore, from both our bug and rainbow, the factors of 60 are 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, and 60.

Common Factor

Common factors are factors shared between two or more given numbers.

For example, 5 is a common factor of 5, 10 and 25 as it is a factor of all three numbers (note that 5, 10 and 25 are therefore all multiples of 5). 7 is a common factor of 14 and 21, as it fits exactly into both. Another example would be the common factors of 8 and 12 are 1, 2 and 4.

Highest Common Factor

Highest Common Factor (HCF) of two or more numbers is the greatest number that divides into the given numbers exactly. HCF is the acronym of Highest Common Factor. It is calculated for two or more numbers.

Method 1: Listing Factors

1. **List the Factors**:
   - For each of the given numbers, list all the factors. Factors are the numbers that divide the given number exactly without leaving a remainder.

2. **Identify the Common Factors**:
   - Compare the lists of factors and identify which numbers appear in both lists. These are the common factors.
3. **Select the Highest Common Factor**:
   - Among the common factors, choose the largest one. This is the HCF of the two numbers.

Example 1.24:

Find the HCF of 24 and 36 using this method.

1. **List the factors**:
   - Factors of 24: 1, 2, 3, 4, 6, 8, 12, 24
   - Factors of 36: 1, 2, 3, 4, 6, 9, 12, 18, 36
2. **Identify the common factors**:
   - Common factors of 24 and 36: 1, 2, 3, 4, 6, 12
3. **Select the highest common factor**:
   - The highest common factor is 12.

So, the HCF of 24 and 36 is 12.

Method 2: Division Method

1. **Step 1:** Take the larger of the two numbers and divide it by the smaller number.
2. **Step 2:** Write down the remainder.
3. **Step 3:** Now, take the divisor (the smaller number in the first division) and divide it by the remainder from Step 2.
4. **Step 4:** Continue this process of dividing the previous divisor by the remainder from the last division until the remainder is 0.
5. **Step 5:** The divisor when the remainder becomes 0 is the Highest Common Factor (HCF) of the two numbers.

Example: Find the HCF of 56 and 98 using the division method

1. **Step 1:** Divide 98 by 56.
   - $98 \div 56 = 1$ remainder 42
2. **Step 2:** Now, divide 56 by 42.
   - $56 \div 42 = 1$ remainder 14

3. **Step 3:** Next, divide 42 by 14.
   - 42 ÷ 14 = 3 remainder 0
4. **Step 4:** Since the remainder is now 0, the divisor at this stage (14) is the HCF of 56 and 98.

Multiples

A multiple of a number is the result when that number is multiplied by an integer. Compared to the factor examples above, whereas 4 is a factor of 8 and 12, 8 and 12 are multiples of 4. Other examples of multiples of 4 could be 4 (4 × 1), 36 (4 × 9) or 400 (4 × 100).

Multiples can also be described as numbers in a given times table – for example, 4, 8, 12 and 16 are all in the 4 times table; therefore, they are also all multiples of 4.

Multiples of 2: 2, 4, 6, 10, 12, 14, 16, 18, 20, 22, 24…

Multiples of 3: 3, 6, 9, 12, 15, 18, 21, 24…

Multiples of 6: 6, 12, 18, 24…

Multiples of 8: 8, 16, 24…

Common multiples

Common multiples are multiples shared between two or more given numbers. For example, 24 is a common multiple of 2, 3, 6 and 8 as it is a multiple of all four numbers (note that 2, 3, 6 and 8 are therefore all common factors of 24).

Multiples of 2: 2, 4, 6, 10, 12, 14, 16, 18, 20, 22, **24**

Multiples of 3: 3, 6, 9, 12, 15, 18, 21, **24**

Multiples of 4: 4, 8, 12, 16, 20, **24**

Multiples of 6: 6, 12, 18, **24**

Since 24 is a multiple of 2, 3, 4, 6 and 8, it is considered as a common multiple.

Lowest Common Multiple (LCM)

The LCM is the smallest multiple shared between two or more given numbers. For example, the lowest common multiple of 10 and 15 is 30 as it is the smallest multiple that both given numbers share (10 × 3 = 30 and 15 × 2 = 30).

Example 1.25:

Let us take two numbers, 3 and 4 and find their lowest common multiple.

Multiples of 3 = 3, 6, 9, 12, 15, 18, 21, 24…….

Multiples of 4 = 4, 8, 12, 16, 20, 24…..

Looking at the lists, the common multiples of 3 and 4 are 12, 24,……

The lowest common multiple is 12, because it is the smallest number.

Hence the L.C.M of 3 and 4 is 12.

Example 1.26:

Find the LCM of 8, 12 and 24

Solution

Multiples of 8 : 8, 16, **24**, 32, 40, 48…

Multiples of 12 : 12, **24**, 36, 48, …

Multiples of 24 : **24**, 48, 72, 96, …

Looking at the lists, the common multiples are 24, 48…

Hence the LCM of 8, 12 and 24 is **24.**

Activity10: Factors, Multiples, HCF, and LCM Relay

Purpose: Today, we're going to have a fun and competitive relay game to test your knowledge of factors, multiples, HCFs, and LCMs!

What You Need:

- Index cards or small pieces of paper
- Markers
- Whiteboard and markers
- Timer
- Small prizes (optional)

Instructions:

1. **Getting Ready:**
   - We'll divide the class into small teams of 3-4 learners.

- At the front of the room, there's a stack of cards with different tasks on them. These tasks will ask you to find factors, multiples, HCFs, or LCMs of certain numbers.

2. **How to Play:**
   - Each team will take turns sending one member to the front to pick a card.
   - When it's your turn, pick a card from the stack and read it out loud to the class.
   - You'll have 1 minute to solve the task on the card. If you solve it correctly, your team earns a point!
   - If you can't solve it in time, another team will have the chance to "steal" the point by solving it correctly.
3. **Explaining Your Answer:**
   - After you solve the problem, you'll need to explain your solution to the class. This will help everyone understand the answer, so be ready to share your thinking!
4. **Winning the Game:**
   - The team with the most points at the end of the game wins! There might even be a small prize for the winning team.
5. **Discussion Time:**
   - After the game, we'll have a quick discussion to talk about the different strategies you used to solve the problems. You can share any tips or tricks you found helpful.

Here are examples of tasks you will perform during the "Factors, Multiples, HCF, and LCM Relay":

1. Find all the factors of 36.
   (*Hint: Remember to list all the numbers that can divide exactly into 36.*)
2. List the first five multiples of 7.
   (*Hint: Start with 7 and keep adding 7 to find the next multiples.*)
3. Find the HCF (Highest Common Factor) of 24 and 32.
   (*Hint: List the factors of each number, then find the highest factor they share.*)

4. What is the LCM (Lowest Common Multiple) of 5 and 15?
   (*Hint: List the multiples of each number and find the smallest one they have in common*.)
5. Identify whether 45 is a multiple of 9.
   (*Hint: Divide 45 by 9. If there's no remainder, then 45 is a multiple of 9*.)
6. Find all the common factors of 18 and 24.
   (*Hint: List the factors of 18 and 24, then identify the ones they share*.)

REVIEW QUESTIONS

1. Model the following numbers using graph sheets.
   - i. 145
   - ii. 245
   - iii. 444
   - iv. 533
2. Model the following numbers using base 10 blocks.
   - i. 695
   - ii. 1249
3. Model the following numbers using the base 10 blocks.
   - i. 2544
   - ii. 5530
4. Model the following numbers using the Ghana cedis notes of your choice.
   - i. 442
   - ii. 533
5. Model 857 in two different ways by combining different Ghana cedi notes.
6. Write the following numbers in words and read them.
   - i. 6 789
   - ii. 34 545
   - iii. 122 245
   - iv. 3 345 675
   - v. 1 945 338
7. Compare the following numbers using the symbols $<$, $>$ or $=$.
   - i. 87 345
     87 435
   - ii. 360 345
     306 345

iii. 12 121 098
12 112 098

iv. 150 760 100
150 760 110

v. 102 897 232
102 897 232

vi. 76 598 198
76 489 198

Challenge

8. As a building engineer, your client, Larley, wants you to give the estimate for the number of building blocks it will require to complete one four-bedroom houses. If your approximate figure is 5 210 blocks, use multi-based blocks to model this figure.

9. Larley redrew an amount of GH¢151 260 from the bank to pay some workers on her building project. If the teller gave her a combination of Ghc200 notes, Ghc100 notes, Ghc 50 notes, and Ghc 2 notes, model to show a possible combination of these notes to represent the amount she received.

10. The population of India is **1 450 935 791** and that of China is **1 419 321 278** as of Friday, August 9 2024, based on Worldometre elaboration of the latest United Nations data. Compare the two populations and state which country has the larger population.

11. **Rounding to the Nearest 10:**

i. Round 34 to the nearest 10.

ii. Round 87 to the nearest 10.

iii. Round 122 to the nearest 10.

iv. Round 59 to the nearest 10.

v. Round 145 to the nearest 10.

12. **. Rounding to the Nearest 100:**
    - i. Round 267 to the nearest 100.
    - ii. Round 523 to the nearest 100.
    - iii. Round 840 to the nearest 100.
    - iv. Round 1 157 to the nearest 100.
    - v. Round 392 to the nearest 100.

13. **Rounding to the Nearest 1000:**
    - i. Round 4 589 to the nearest 1000.
    - ii. Round 7 345 to the nearest 1000.
    - iii. Round 2 672 to the nearest 1000.
    - iv. Round 9 134 to the nearest 1000.
    - v. Round 12 450 to the nearest 1000.

14. Sarah is at the market and wants to buy a pack of apples. The price is Gh¢47, but she only has a Gh¢50 note. She wonders if rounding the price to the nearest 10 will help her quickly estimate if she has enough money. What is the rounded price of the apples to the nearest 10?

15. A school is planning a field trip and needs to know how many learners are going. There are 396 learners signed up, but the school wants to give a rounded estimate to the bus company. What is the rounded number of learners to the nearest 100?

16. A company is reviewing its sales for the year. They sold 12 456 products in total and want to give a simplified number in their report. What is the rounded number of products sold to the nearest 1000?

17. Write the first even numbers up to 100.

Even Numbers up to 100				

18. Write the first odd numbers up to 100.

Odd Numbers up to 100				

19. Solve the following problems

i. Is 23 an odd or even number?

ii. Circle the even numbers in the following list: 15, 8, 22, 31, 44.

iii. Which of the following numbers is odd: 12, 27, 40, 56?

iv. Write down the next three even numbers after 36.

v. How many even numbers are there between 10 and 20?

vi. If you add two even numbers together, will the result be odd or even? Give an example.

vii. What is the smallest odd number greater than 50?

viii. Which number is even: 49, 58, 67, 75?

ix. If you have 17 apples, can you divide them into pairs with none left over? Is 17 odd or even?

20. Solve the following problems on factors.

- **i.** List all the factors of 24.
- **ii.** Find all the factors of 36.
- **iii.** What are the factors of 15?
- **iv.** List the factors of 60.

21. Solve the following problems on multiples.

- **i.** Write the first five multiples of 4.
- **ii.** List the first six multiples of 9.
- **iii.** What are the first four multiples of 12?
- **iv.** Find the first five multiples of 8.

22. Solve the following problems on HCF.

- **i.** Find the HCF of 18 and 24.
- **ii.** Determine the HCF of 14 and 28.
- **iii.** What is the HCF of 20 and 30?
- **iv.** Find the HCF of 12 and 16.

23. Solve the following problems on LCM.

- **i.** Find the LCM of 3 and 5.
- **ii.** Determine the LCM of 6 and 8.
- **iii.** What is the LCM of 10 and 15?
- **iv.** Find the LCM of 4 and 7.

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Ghana Education Service (GES)

List of Contributors

Name	Institution
Gideon Kwame Ahiadziefe	OLA SHS
Evelyn Adjei	St. Vincent College of Education, Yendi
Adablah Mensah	St. Paul's Senior High School and Minor Seminary
Juliana Opare	St. Paul's Senior High School and Minor Seminary