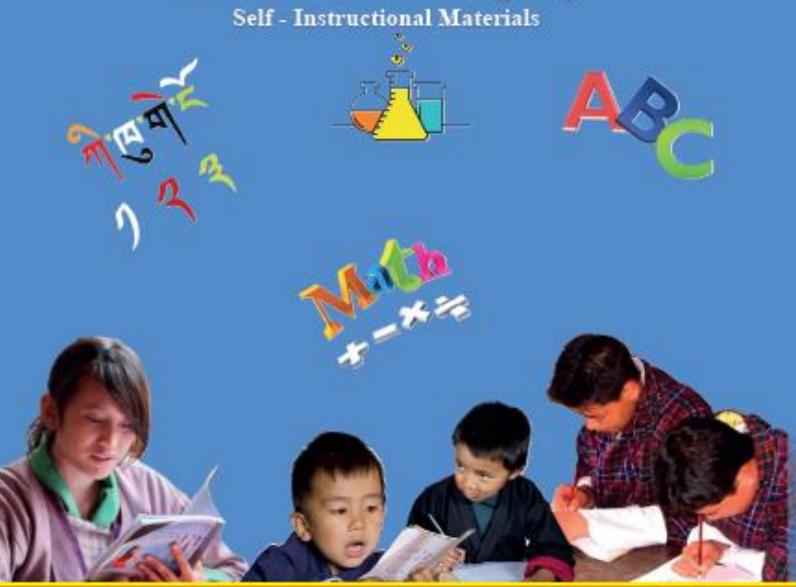




मु तर्वावया केटल मेलाल्यी ररकेर्श्चिय क्रिंब व्यक्तिक्या

Education in Emergency



गवसरेम या क्रिंगरेम या

Key Stage 2 CI - VI Vol. III

Self-Instructional Materials Key-stage II

Introduction.

The Self-Instructional Materials (SIMs) with the theme 'Reaching the Unreached' are developed primarily to facilitate education of the students living in remote places with either limited or no access to *BBS* and *Internet* for e-learning lessons. The learning activities in the SIMs packages are developed considering the class-levels and learning potentials of the students. The designs of the learning activities are intended technically to promote self-engagement and independent learning of the students at home.

Supporting Students in Using the Self-Instructional Materials

It is also acknowledged that the students of Primary Schools, especially students of classes Pre-Primary to III, and IV to VI may face certain challenges in using the SIMs. It is possible that certain instructions, content, and activities may be difficult to understand due to the student's limited acquaintance with the medium of instructions and certain concepts covered in the learning activities.

Therefore, it is imperative for family members and teachers staying in localities to provide necessary guidance to students at home. The support from the following individuals can be of great help in student's self-engagement and learning through the use of SIMs.

- **Parent:** can at least spare time to be with the child to monitor and motivate, if possible, help with the lessons.
- **Siblings**: elder siblings in higher classes may help younger ones.
- **Teachers**: individual teachers in and around the same vicinity may help students in their learning.
- **NFE Instructors**: may assist parents and students staying nearby.
- **Family friends**: educated family friends may help students living close to their houses.
- Student's friends: the student's friends in close neighbours can work together.

Our collaborations and joint efforts can make a difference in educating our children

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Lesson No: 1 Subject: English Class level: VI Time: 40 minutes

Learning Area: Grammar

Topic: Eight Parts of Speech

Learning Objectives



- Identify the eight parts of speech.
- Explain eight parts of speech.

Introduction

You have learned about the parts of speech in classes IV and V.



Think Time

What are the eight parts of speech?

There are eight parts of speech and they are

- 1. Noun
- 3. Adjective
- 5. Adverb
- 7. Preposition

- 2. Pronoun
- 4. Verb
- 6. Conjunction
- 8. Interjection

Now, let us look at each part of speech with examples.

1. Noun

A noun is a name of a person, a place, a thing or an idea. A noun is a subject of a sentence.

Examples: The **dog** is very smart.

Pema is a beautiful girl.

'Dog' and 'Pema' are examples of nouns. A 'dog' is a name of an animal and 'Pema' is a name of a person. They are both used as a subject of a sentence.



2. Pronoun

A pronoun is a word used in place of a noun. It takes the place of a noun. Instead of saying 'Monkeys like to eat bananas', you could say 'They like to eat bananas'. Here, the pronoun 'They' is used instead of noun 'monkeys'.

Examples:

Deki is a girl. **She** reads a lot of book. *If you talk about 'Deki'*, your talk will sound repetitive if you keep using 'Deki' over and over again. So, to avoid repetition, use 'She' (pronoun).

The children went for a picnic. **They** went nearby a river. *Here, the pronoun 'They'* is used instead of noun 'Children'.

Wangmo cooks food on Sunday. **She** also helps her mother in cleaning the house. *Here, the pronoun 'She'* is used instead of noun "Wangmo" in the second sentence.

Some of the pronouns: I, me, my, you, your, he, she, it, us, we, they, them, his, her, their, mine, our, etc.

3. Adjectives

An adjective is a word that describes a person, an animal or a thing. It tells us how a person looks like, how something looks like, and what it feels like to touch, taste or smell.



Tall and Short

Example: Dorji is a **tall** boy.

I saw a **beautiful** butterfly today.

Here, 'tall' describes the height of 'Dorji' and 'beautiful' describes how the butterfly appears or looks.

Some of the adjectives: happy, short, sad, tall, red, hairy, fat, green, sweet. etc.

4. Verb

A verb is a word that tells what someone or something does. It is an action word or word of being.

Example: Tashi **plays** football after school.

Pema writes stories.

Here, the word 'plays' tells about Tashi's action and 'write' tells about what Pema does.

Some of the verbs: sit, laugh, run, jump, sing, sleep, listen, learn, etc.



Source: Google image

5. Adverb

An adverb is a word that tells you how an action is performed. It can be added to a verb or adjective to modify its meaning. It usually answers the questions of when, where, how, why, under what conditions, or to what degree.

Many adverbs end in 'ly', but not always!

Examples: Tshomo sings **sweetly**.

Karma is running **fast**.

Pema visited the place yesterday.

quickly fast slowly carefully easily sweetly brightly beautifully today

Here, the word 'sweetly' describes how Tshomo sings. The word 'fast' describes how Karma is running. Similarly, the word 'vesterday' describes when Pema visited the place.

Preposition

A preposition is a word that shows position or direction. The mouse is **on** the box. Now, ask yourself, "Where is the mouse?" What is the preposition in this sentence? The mouse is **on** the box. *Here, the preposition is 'on'.* It shows where the mouse is.

Some of the prepositions: in, out, under, over, after, out, into, up, down, for, between, etc.



6. Conjunction

A conjunction is a word that joins words or group of words.

Examples:



We ate rice and drank *Suja* for breakfast.

Here we have joined 'We ate rice' and 'drank suja' for breakfast using a conjunction. The conjunction we have used is 'and'.

Photo source: Google image



I went to town yesterday. I forgot to buy a pen. These two sentences can be joined by the conjunction 'but'.

I went to town yesterday **but** forgot to buy a pen.

Some of the conjunctions: and, but, or, because, etc.

7. Interjection

An interjection is a word that expresses strong or sudden emotion. It expresses joy, fear, surprise, anger, etc. It is followed by an exclamation mark (!). It is capable of standing by itself. It is also used in the beginning of a sentence.

Example: *Hurray!* We won this match. *The sentence shows the excitement of the speaker.*



What! You failed! This sentence shows how surprised the speaker is.

Some of the interjections: Oh dear! My goodness! Wow! Ouch! Yes! No!



Instruction: Read the following sentences and identify what parts of speech are the words underlined.

Noun	Pronoun	Adjective	Verb	Adverb	Prepos	sition	Conjunction	Interjection
Sl. No	Sl. No Sentences				Parts of Speech			
1	The girls	The girls <u>carried</u> the bags.				Verb	1	
2	My goodr	My goodness! This is not good.						
3	They live	They lived <u>happily</u> in the end.						
4	Karma an	Karma and Pema wrote the essay today.						
5	This is a c	This is a dog.						
6	Ngawang	Ngawang is a student. She is from Thimphu.						
7	The cat sat <u>in front</u> of the box.							
8	Singye is	Singye is a <u>handsome</u> boy.						



Instruction: Read the rhyme given below about the eight parts of speech and you can sing it with any tune you know.

Every name is called a NOUN

As field and fountain, street and town.

In place of noun the PRONOUN stands, As he and she can clap their hands.

The ADJECTIVE describes a thing, As magic wand or bridal ring.

A VERB means action, something done, To read and write, to jump and run.

How things are done the ADVERBS tell, As quickly, slowly, badly, well.

The PREPOSITION shows relation, As in the street or at the station.

CONJUNCTIONS join, in many ways, Sentences, words, or phrase and phrase.

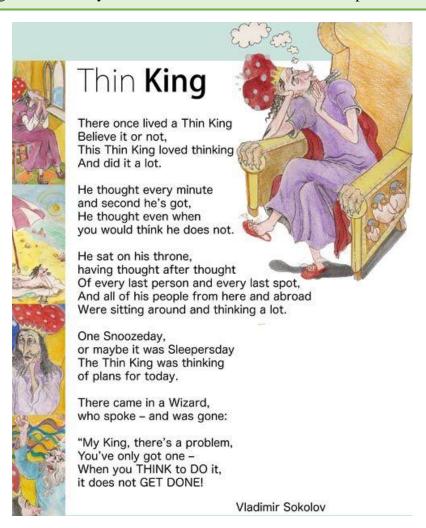
The INTERJECTION cries out, "Hark!

I need an exclamation mark!"

Source: www.pinterest.com



Instruction: Read the poem given below and identify as many parts of speech as you can. Copy the table given below in your notebook and write down the examples in it.



Source: www.pinterest.com

Noun	Pronoun	Verb	Adjective
Adverb	Conjunction	Preposition	Interjection

Summary

- There are eight parts of speech namely **noun**, **pronoun**, **adjective**, **verb**, **adverb**, **conjunction**, **preposition**, **and interjection**.
- A noun is a name of a thing, a pronoun is a word which is used instead of a noun, an
 adjective describes a noun or a pronoun, and a verb is an action word. An adverb
 describes an action, a conjunction is a joining word, preposition shows the position and
 direction, and an interjection expresses strong or sudden emotions.



Self-check for Learning

1. List down all the eight parts of speech.

interjection.

1. Noun, pronoun, adjective, verb, adverb, conjunction, preposition and

Self-check for Learning

Get done!			once, today, here	
Interjection	Preposition	Conjunction	Адуегр	
nidt	sat, came	µeʻ λoп	king, wizard	
Adjective	Verb	Pronoun	unoN	

Activity 3

Students will read and sing the rhyme.

Activity 2

8. Adjective	4. Conjunction
7. Preposition	3. Adverb
6. Pronoun	2. Interjection
nuoV. c	l. Verb

Activity 1

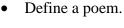


Lesson No: 2 Subject: English Class level: VI Time: 40 minutes

Learning Area: Reading

Topic: Poetry and its Characteristics

Learning Objectives





- Describe the difference between denotation and connotation.
- Identify the characteristics of a poem.

Introduction

Think of the poem 'No more Water' by Kenn Nesbitt that you have read in lesson one. What is the poem about? Did you read any other poems?



Think Time

What is a poem?

Now, let us see what a poem is.

A poem is created by putting words together in an interesting way to express the feelings and the emotions of a poet.

Why do you think people write poems?

People write poems to:

- give information.
- teach a moral lesson.
- talk about human conditions.
- express their feelings and emotions.

Content of the poem

Content (or the meaning): It is the things represented or the ideas in the poem.

The words in the poems have two basic meanings: one the dictionary meaning and other the hidden meaning. They are called Denotation and Connotation.



Denotation: The dictionary or literal meaning of a word. It is the surface or direct meaning of the words.

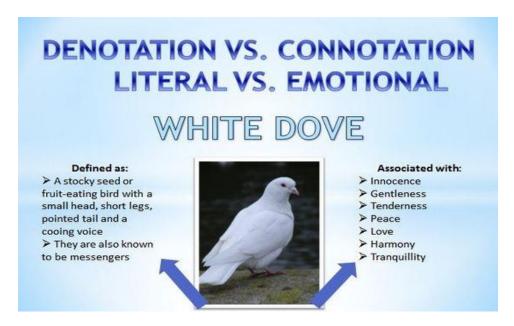
Connotation: The feelings or ideas attached to the words. The meanings of the words are hidden and are different from the dictionary meaning.



source: Google image

Example: "He's such a dog"

The denotation or the dictionary meaning of a 'dog' is a domestic animal but the dog can also give a connotation, an idea, or a feeling of shamelessness or an ugly face.



Source: https://www.pinterest.com.au/pin/291608144602449293/



	Colun Denot		Column B Connotation
i.	Skull	THE HEAD.	a. peace
ii.	White		b. justice
iii.	heart		c. danger
iv.	dove		d. pure
V.	weighing scale		e. love
			f. change

Structure of poems

Poems are different from stories or essays because they have special characteristics.

What is the structure of a poem?

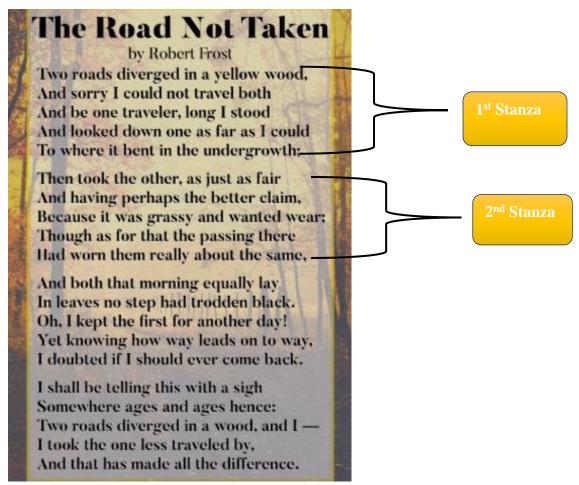
The structure of a poem refers to the way it is presented to the readers. This could include line Length, stanza format, rhyme, and rhythm.

1. Line length

Line length shows the reader how it should be read. Short lines are usually read faster, with more emotion. Longer lines slow down the pace of a poem. Choosing appropriate line breaks gives the reader a chance to take a natural breath.

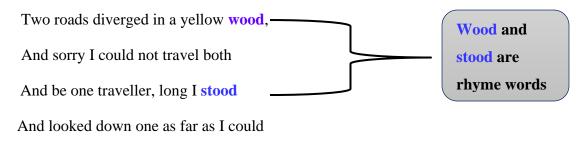
2. Stanzas

A stanza in a poem is like a paragraph in an essay. Stanza is a set of lines put together. Each stanza is separated by some blank space. Poems may contain any number of stanzas depending on the author's wishes and the structure in which the poet is writing.



3. Rhyming words

A rhyme is a repetition of similar sounding words at the end of lines in poems.



To where it bent in the undergrowth.

4. Rhythm

Rhythm is a regular, patterned repetition of **stressed and unstressed syllables** in a line. Rhythm is the **beat and pace** of a poem. Rhythm can help to make the meaning of words and ideas stronger in a poem.

For example:

The word "apple" has two syllables. —ap-ple- and the first syllable is pronounced more strongly than the second. That's why the word is pronounced "AP-ple" and not "ap-PLE".

my MOTH | er ATE | an AP | ple AND | my FATH | er ATE | a PEAR.

The pattern of one unstressed syllable and one stressed syllable has been repeated seven times. Rhythm and rhyme can give poetry a musical quality.

5. Mood

Mood is the feeling created by the poet for the reader. Some words that can describe the mood in the poem are angry, bored, joyful, excited, happy, irritated, sad, disappointed, etc.



Activity 2

Instruction: Read the poem given below and answer the questions that follow in your notebook.

September

By Helen Hunt Jackson

The golden-rod is yellow The corn is turning brown The trees in apple orchards With fruit are bending down.

The gentian's bluest fringes Are curling in the sun In dusty pods the milkweed Its hidden silk has spun.

The sedges flaunt their harvest In every meadow nook And asters by the brook-side Make asters in the brook.

From dewy lanes at morning the grapes' sweet odors rise At noon the roads all flutter With yellow butterflies.

By all these lovely tokens September days are here With summer's best of weather And autumn's best of cheer.

But none of all this beauty Which floods the earth and air Is unto me the secret Which makes September fair.

'T is a thing which I remember To name it thrills me yet One day of one September I never can forget.



Source: Google image



Source: Google image

Questions

- 1. How many stanzas does the poem have?
- 2. How many lines are there in each stanza?
- 3. Write down all the rhyming words.
- 4. What is the mood of the poem?

Summary

- A poem is words put together in an interesting way to express feelings and the emotions of a poet.
- The words in the poems have two basic meanings: one the dictionary meaning and other the hidden meaning. They are called 'Denotation' and 'Connotation'.
- Poems are different from stories or essays because they have special characteristics such as they are put in lines that make stanzas, have rhyme and rhythm.



Self-check for Learning

- 1. What is a poem?
- 2. What is the difference between denotation and connotation?
- 3. How are poems different from stories or essays?
- 3. Poems are different from stories or essays because they have special characteristics such as they are put in lines that make up stanzas, have rhyming words and rhythm.
 - emotions of a poet.

 2. Denotation is the dictionary or the literal meaning and connotation is the hidden
 - 1. A poem is words put together in an interesting way to express feelings and the

Self-check for learning

air-fair, remember- September 4. The mood in the poem is happy and cheerful.

meaning or feelings and ideas attached to the words.

- 3. Rhyming words are nook-book, brown-down, sun-spun, rise-butterflies, here-cheer,
 - 2. There are four lines in each stanza.
 - I. There are seven stanzas in the poem.

Activity 2

osinsuc .c	4. Peace	3. Love	9. rure	i. Danger
esitani Z	l eaged h	eno 1 E	baria C	1 Danger

Activity 1



Lesson No: 3 Subject: English Class level: VI Time: 40 minutes

Learning Area: Writing

Topic: Shape Poem

Learning Objectives



- Define a shape poem.
- Write a shape poem.

Introduction



Think Time

What do you think is a shape poem?

A shape poem is a poem that is shaped like the thing it describes. The shape adds to the meaning of the poem. To write a shape poem, it helps to start by writing down all the words that come to mind about the chosen topic. These words can then be used in the poem.

How to write a shape poem?

- You may choose an object to be the subject of your poem. It can be your favourite fruit, animal, people, or anything you like to write about.
- Draw a simple outline of its shape in your book or a paper.
- Write your poem normally. Try to describe the thing or how the thing makes you feel. The words will be fitted into your drawing, so don't make it too long. However, if you have more to write you can make your outline or the picture of the object bigger.
- You don't have to always look for rhyming words.
- Finally, erase the outline of your shape, so that it is just the words from your poem.



There are two ways of writing shape poems:

1. Poem on the outline of the shape

For example, if you wanted to write a poem about 'My Hand', you could write a short poem and make the words the outline of the hand.

Example: My Hand

Let us see what a shape poem about 'My Hand' might look like! First, we will figure out what to say about this handy hand.

My Hand

My hand reaches for you,

My hand takes your hand,

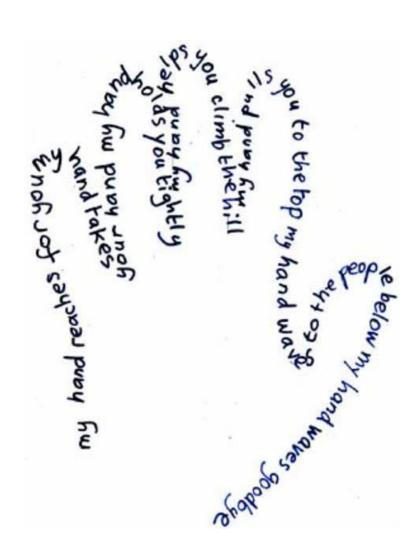
My hands holds you tightly,

My hand helps you climb the hill,

My hand pulls you to the top,

My hand wave to the people below,

My hand waves goodbye.





2. Poem within the shape

The poetry matches with the image of the thing you have written about. The words form the shape of the thing as a picture.

Example: The Kite

Let us see what a shape poem about a kite might look like! First, we will figure out what to say about this fun, windy-day object:

The Kite

I fly so high in the sky.

Brightly dyed,

I soar and glide.

The wind is my guide,

As I flutter and slide.

I entertain and enthral,

When I face a squall.

Although I'm small,

I'm visible to all.

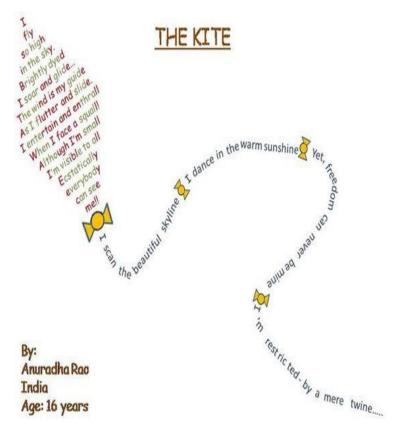
Ecstatically everybody can see me!

I scan the beautiful skyline.

I dance in the warm sunshine.

Yet, freedom can never be mine.

I'm restricted by a mere twine.



Source: www.pinterest.com



Instruction: Read the following lines of the two poems about the 'star' and a 'dog' and write the shape poems n your notebook.

Star

So bright and high.

Splendid light in the night sky.

You shine and sparkle, glow and twinkle.

You dot the dark with magic.

The moon adores you

like a mother admires her baby's smile

A Dog

A dog is the cleverest of all

Playfully chasing the ball

With eyes open wide

Its work is to guide

With many tricks

Gets hold of the sticks

It never bites

Unless it sees some fights

It is a man's best friend

Till the very end.



Activity 2

Instruction: Look at the image given below. What do you think is it? Read the shape poem and write down the lines in your notebook.

warm chewy gingerbread man, made in some oven while lying in a pan. people are waiting to eat his hand. why is it they will mostly nibble on his limbs? leaving him (if he could) pondering, wondering just what he'd done to them? this punishment is a bit harsh it seems only just for giving them oh, such tasty dreams. children all begging they want to taste too, be sure there's enough if it's the last thing that you do. cut them out fast, more are waiting although we try I'm pretty sure they're not going to last.



Summary

- A shape poem is a poem that is shaped like the thing it describes.
- The shape adds to the meaning of the poem.
- To write a shape poem, it helps to start by writing down all the words that come to mind about the chosen topic. These words can be used in the poem.



Self-check for Learning

- 1. Circle the correct answers.
 - i. What is a shape poem?
 - A A shape poem is a poem about a shape
 - B A shape poem is a poem about any object written in the shape of that object
 - C A shape poem is just a poem written in a shape, but not about anything in particular.
 - D A shape poem is a poem about the physical condition of a person.
 - ii. Which of the following statements about shape poems is correct?
 - A Shape poems have to rhyme.
 - B Shape poems must be serious.
 - C Shape poems can be colourful and decorative.
 - D Shape poems must be silly.
 - iii. If you wanted to write a shape poem in the shape of a triangle, which object would be the best to write about?
 - A A basketball
 - B A book
 - C A moon
 - D A volcano
- 2. Write a shape poem on one of your favourite things. You can first draw the outline of that thing and once you finish writing the lines you may erase that.

2. Student's own answers.

1. i. B ii. C iii. A

Self-check for Learning

Warm chewy gingerbread man...... (students will continue writing the remaining line)

Activity 2

Students make the shape poem.

Activity 1



Lesson No: 4 **Subject:** English Class level: VI Time: 40 minutes

Learning Area: Reading and Writing

Topic: Figures of Speech

Learning Objectives



- Define figure of speech.
- Identify the figure of speech.
- Create a poem using different figures of speech.

Introduction

You have learnt about figures of speech in class IV and V.



Think Time

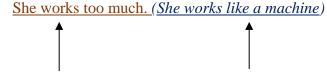
What is a figure of speech? Can you recollect some examples?

Let us revisit the figures of speech.

What is a figure of speech?

A figure of speech is a word or phrase that has a separate meaning from its literal definition. Authors often use a **figure of speech** in writing to make it beautiful. The figure of speech presents ordinary things in new or unusual ways. They communicate ideas that go beyond the words' usual, literal meaning.

Examples:



(Use of figure of speech) (Everyday usage of words)



- She is beautiful. She is as beautiful as a blooming flower. The comparison 'as beautiful as a blooming flower' creates a strong image or a picture of a beauty.
- The classroom is noisy. *The classroom is a zoo*. *Here 'the classroom'* is compared to 'a zoo' and the word 'zoo' describes how noisy the classroom is.

You have learned **simile**, **metaphor**, **onomatopoeia**, and **personification** in the lower classes. In this lesson, we will revisit them and learn about **hyperbole**.

1. Simile

A simile is a figure of speech that makes a comparison, showing similarities between two different things. A simile draws resemblance with the help of the words 'like' or 'as'.

Examples:

- Farmers are **working like ants.** *Here, farmers' work is compared with that of ants as both are hard working.*
- Her cheeks are **red like a rose.** Here, the colour of cheeks is compared to that of a rose as both are red.
- Penjor is **busy like a bee.** Here, Penjor's behaviour is compared to that of a bee as both are busy.



Source: www.pinterest.com

2. Metaphor

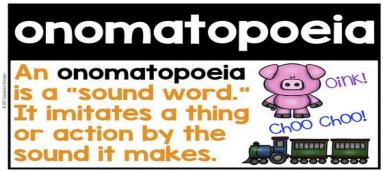
A metaphor is a figure of speech that is used to make a comparison between two things without using 'like' or 'as'.

Examples:

- Choden's voice is music to his ears. Here, Choden's voice is compared to that of a music as both are sweet to listen.
- My brother is a lion in the fight. Here, the brother is compared to a lion as both are strong and brave.

But there is no use of 'like' or 'as'.

3. Onomatopoeia



Onomatopoeia is pronounced as *on-uh-mat-uh-pee-uh*

Meow

Source: www.pinterest.com

Example:

- The cat *meowed* in the kitchen. 'Meow' is the sound made by a cat.
- The bees are *buzzing*. 'Buzz' is the sound made by bees.
- The water *splashed* on the floor. 'Splash' is the sound made by water.



4. Personification

A figure of speech that gives the qualities of a person to an animal, an object, or an idea.

Examples:

- My alarm clock yells at me to get out of bed every morning. Here, the human quality that is yell-'to shout' is given to the clock as the clock wakes us up with loud sound.
- The sun *smiled* down on them. Here, as the sun is shining bright and clear, the human quality that is *smile* is given to the sun to show the good thing.



- The flower *danced* in the gentle breeze. Here, as the flower moves when there is a gentle breeze, the human quality that is *dance* is given to the flower.
- The fire swallowed the entire forest. Here, the human quality that is to swallow 'to eat' is given to the fire as it burned down all the trees in the forest.

5. Hyperbole

A figure of speech that uses exaggeration to express strong emotion, to make a point, or to evoke humour.

Examples:

- I walked a million miles to get here. Here, the person may not have walked a million miles but wanted to emphasize on the distance he walked.
- I have told you to clean your room a hundred times.
- I have a **million things** to do today.
- He is running **faster than the wind**.
- My friend will kill me after knowing the truth.
- Next Friday is never going to arrive.
- I am drowning in my own tears.



Activity 1



Source: www.pinterest.com

Instruction: Copy the following sentences in your notebook and write what figure of speech is it.

- 1. My heart is like a singing bird.
- 2. Lightning danced across the sky.
- 3. That must have cost a billion dollars.
- 4. He has a heart of stone.
- 5. The flower nodded.
- 6. As wise as an owl.
- 7. The water splashed down the hill.
- 8. I have told you to stop a thousand times.
- 9. That kitchen knife will take a bite out of your hand if you don't handle it safely.



Ins	struction: Write an example for each figure of speech in the space provided.
1.	Simile:
2.	Metaphor:
3.	Onomatopoeia:
4.	Personification:
5.	Hyperbole:



Activity 3

Instruction: You can write a poem using at least two or three figures of speech in your notebook.

Summary

- A figure of speech is a word or phrase that has a separate meaning from its literal definition.
- The author often uses a figure of speech in writing to make it beautiful.
- The figure of speech presents ordinary things in new or unusual ways.
- **Simile** compares two things using 'like' or 'as'. **Metaphor** also compares two things but do not use 'like' or 'as'.
- **Onomatopoeia** is word that imitates sound and **personification** is giving human quality to an animal, an object, or an idea.
- **Hyperbole** is a word that exaggerate to express strong emotion.



Self-check for Learning

- 1. What is a figure of speech?
- 2. List down the types of figure of speech with an example each.

(Student's own examples)

- Hyperbole
- Personification
- onomatopoeia
 - Metaphor
 - Simile
- 5. Figures of speech are

definition.

1. A figure of speech is a word or phrase that has a separate meaning from its literal

Self-check Learning

Students own answers

Activity 3

Students own answers

Activity 2

	9. Personification	8. Hyperbole	7. Onomatopoeia	6. Simile
5. Personification	4. Metaphor	3. Hyperbole	2. Personification	olimile .1



Lesson No: 1 **Subject:** Mathematics **Class level:** VI **Time:** 40 minutes

Learning Area: Measurement

Topic: Area and Perimeter

Sub Topic: Area of Parallelogram and Triangle

Learning Objectives

• Find the area of parallelogram and triangle.



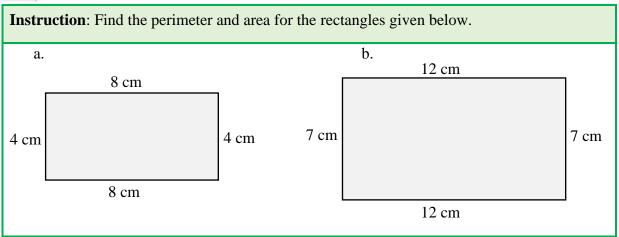
- Create different parallelograms and triangles with the same area.
- Calculate the area of composite shape.

Introduction

In class IV and V, you have learned about the area and perimeter of rectangles.



Activity 1



Area of Parallelogram

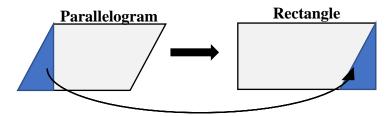
You know the formula to find the area of the rectangle.

Area of the rectangle =length x width

Because the length of a rectangle is its **base** and the width is its **height**, you can also write the formula as shown below:

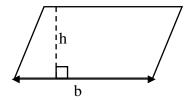
$$A = l \times w \rightarrow A = base \times height \rightarrow A = b \times h$$

You can use the rectangle formula, $A = b \times h$, to develop a formula for the area of a **parallelogram**.

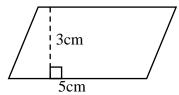


Because the bases, the heights, and the areas are the same, you can calculate the area of a parallelogram using the formula for the area of a rectangle:

 $Area of a parallelogram = b \times h$



You can measure the height of a parallelogram using any line segment that is perpendicular to the base and goes to the side that is opposite the base. Note that the height is *not* the slanted side length. Now, you can find the area of parallelogram similar to that of a rectangle.

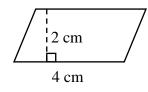


Area of parallelogram =
$$b x h$$

= $5 cm x 3 cm$
= $15 cm^2$

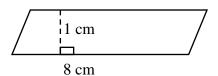
Parallelograms with the Same Area

Following parallelograms have the same area but their dimensions are different.



Area of parallelogram =
$$b \times h$$

= $4 \text{ cm} \times 2 \text{ cm}$
= 8 cm^2

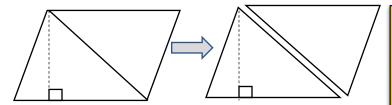


Area of parallelogram =
$$b x h$$

= $8 cm x 1 cm$
= $8 cm^2$

Area of Triangle

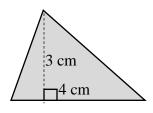
Now, you can use the parallelogram formula, $A = b \times h$, to develop a formula for the area of a triangle.



The area of triangle = $base \times height \div 2$

- The base of the parallelogram is the same as the base of the triangle.
- The height of the parallelogram is the same as the height of the triangle.
- The triangle is half the area of the parallelogram.

Now, let us use this formula to find the area of a triangle.

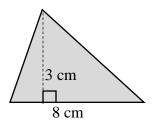


Area of a triangle =
$$\frac{b \times h}{2}$$

= $\frac{4 \text{ cm} \times 3 \text{ cm}}{2}$
= $\frac{12}{2}$ = $\frac{6 \text{ cm}^2}{2}$

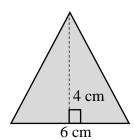
Triangles with the Same Area

The following triangles have the same area but their dimensions are different.



Area of triangle =
$$\frac{8 \text{ cm} \times 3 \text{ cm}}{2}$$

= $\frac{24}{2} = \underline{12 \text{ cm}^2}$



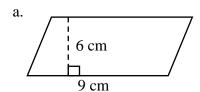
Area of triangle =
$$\frac{6 \text{ cm} \times 4 \text{ cm}}{2}$$

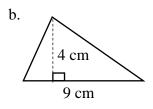
= $\frac{24}{2} = \underline{12 \text{ cm}^2}$



Activity 2

Instruction: Copy the shapes in your notebook and find their areas.







Self-check for Learning

Instruction: Write the answers to the following questions in your notebook.

1. Draw and find the area for the following.

a. Shape: Triangle

Base = 5 cm, Height = 6 cm

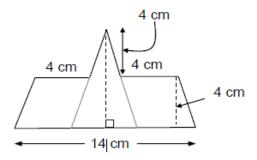
b. Shape: Parallelogram

Base= 6 cm, Height = 7 cm

2. Draw TWO different parallelograms with the area of $20\ cm^2$.

3. Draw TWO different triangles with the area of 32 cm².

4. Find the area of the following shape.



- 4. Area = 56 cm^2 .
- 3. Students can draw any triangles with an area of 32 cm².
- 2. Students can draw any parallelograms with an area of 20 cm^2 .
- 1. a. Area of triangle = 15 cm^2 . b. Area of parallelogram = 42 cm^2 .

Self-check for Learning

b. Area of triangle = 18 cm^2

a. Area of parallelogram = 54 cm^2

Activity 2

b. Perimeter = 38 cm, Area = 84 cm^2

a. Perimeter = 24 cm, Area = 32 cm²

Activity 1



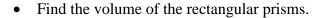
Lesson No: 2 **Subject:** Mathematics **Class level:** VI **Time:** 40 minutes

Learning Area: Measurement

Topic: Volume and Capacity

Sub Topic: Volume and capacity, Relation between volume and capacity

Learning Objectives





• Create different rectangular prisms with the same volume.

• Relate volume and capacity.

Introduction

The **volume** of a 3-D object tells how much space the object takes up. The more material it takes to build an object, the greater is its volume. An object or shape that has three dimensions as width, length, and height is called **three-dimensional** (**3-D**) shape. You have learned to find the volume of rectangular prisms in class V.



Think Time

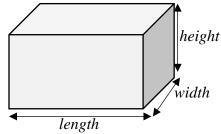
How do you find the volume of the rectangular prisms?

We multiply length, width, and height to find the volume of the rectangular prisms.

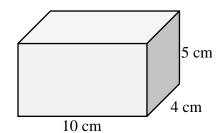
$$(V = l \times w \times h)$$

Volume of a Rectangular Prism

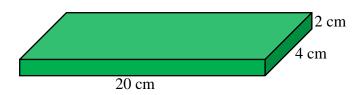
You can use various measurements to calculate the volume of a rectangular prism. You can use all three **dimensions** (l, w, and h).



Now, you will learn to find the volume of rectangular prisms using this formula.

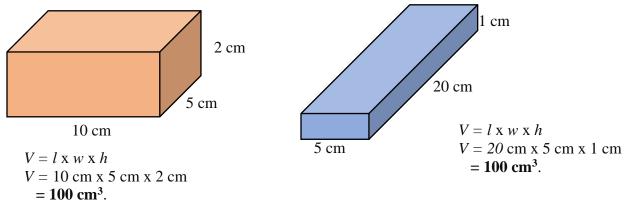


Volume = 1 x w x h
= 10 cm x 4 cm x 5 cm
= 40 cm² x 5 cm
=
$$200 \text{ cm}^3$$



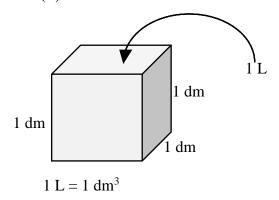
Creating different shape with the same volume

The following shapes are different yet they have the same volume.

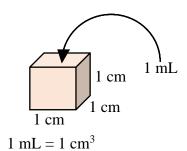


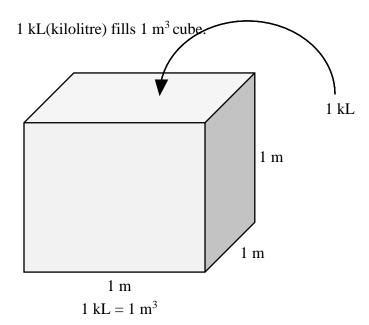
Relation between Volume and Capacity

A litre (L)is the amount that fills a cube that is 1 dm (decimetre) along each edge



Similarly, 1 mL (millilitre) fills 1 cm³ cube.





In short, the relation between volume and capacity is given below.

$$1 L = 1 dm^3$$

$$1 \text{ mL} = \text{cm}^3$$

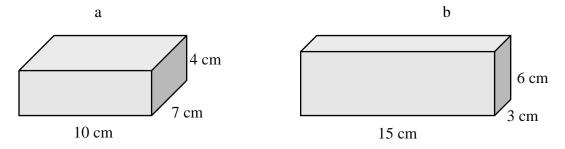
$$1 \text{ kL} = 1 \text{ m}^3$$

The units commonly used for volume are **cubic millimetres** (mm³), **cubic centimetres** (cm³), and **cubic metres** (m³).



Instruction: Copy the questions in your notebook and write the answers.

1. Find the volume for the following rectangular prisms.



2. Create THREE different rectangular prisms with a volume of 240 cm³.



Self-check for Learning

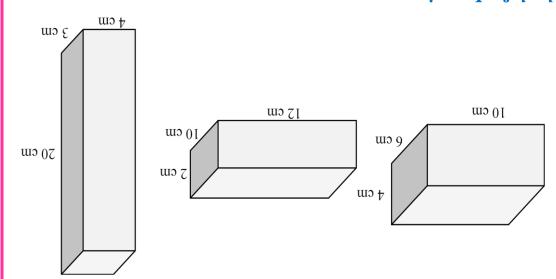
Instruction: Copy the questions and write the answers in your notebook.

- 1. Is it possible to build a rectangular prism with a volume of 20 cm³? If so, what are the dimensions?
- 2. Rectangular prism container holds about 1320 mL of water. Its length, width, and height are consecutive whole numbers. One of its dimensions is 10 cm. What are the dimensions of the prism?

2. Length = 10 cm, width = 11 cm, and height = 12 cma product of 20 is correct)

1. Yes. Length = 5 cm, width = 2 cm, and height = 2 cm (any three numbers that give

Self-check for Learning



b. Volume = 270 cm^3

7

1. a. Volume = 280 cm^3

Activity 1



Mathematics -Class VI

Lesson No: 3 **Subject:** Mathematics **Class level:** VI **Time:** 40 minutes

Learning Area: Data and Probability

Topic: Mean, Median, and Mode

Learning Objectives



- Calculate mean, median and mode for the given set of numbers.
- Compare mean, median and mode.

Introduction

You have learned about mean in class IV and V.



Think Time

What is a mean? How do you calculate mean?

The **mean** is a set of data or numbers that describes the whole set. It is a type of **average**.

Sometimes you have a set of data with many numbers and you want to describe it using just one number.



Activity 1

Instruction: Calculate the mean for the set of numbers given below.

- a. 2, 6, 12, 20
- b. 12, 16, 18, 21, 13
- c. 3, 5, 6, 8, 5, 4, 2, 7

Mean

The **mean** is calculated by adding all the pieces of data in a set and then sharing it equally among the pieces of data.

Let us find the mean for these set of number (1, 7, 3, 2, 4, 0, 4)

= 1 + 7 + 3 + 2 + 4 + 0 + 4 = 21 (First **add** all the numbers, total is 21)

= $21 \div 7 = 3$ (divide the total by number of data collected, that is 7)

The mean is 3 for this set of data

Median

The median is the "middle number" for a set of data. The number has to be arranged from least to greatest or greatest to least.

For example, let us use the above data set to find the median.

Firstly, arrange the numbers from 'least to greatest' or 'greatest to least.'

The **median** is **3** because it is in the middle.

Look at some more examples.

If a set of data has an **odd number** of data values, the median is the middle number.

For example, 0, 3, 5, 7, 9The median is **5.**If a set of data has an **even number** of data values, the median is the mean of the middle two numbers.

Median

1, 2, 4, 5

6 ÷ 2 = 3

Mode

The mode is the value that occurs most often. There can be one mode, more than one mode, or no mode in a set of data.

Example 1	Example 2	
Now let us find the mode of the given number.	The mode of 1, 3, 2, 3, 8, 2, 3	
(1, 7, 3, 2, 4, 0, 4)	The mode is 3 for the above set of data	
The mode is 4 for the above set of data values	values as there are three 3s in the set.	
as there are two 4s in the set.		
Example 3	Example 4	
Data values having more than one mode	Data values having no mode	
12, 15, 17, 12, 17, 19	13, 23, 35, 48, 10, 14	
The modes are 12 and 17 for the above set of	There is no mode for the given set of	
The modes are 12 and 17 for the above set of numbers.	There is no mode for the given set of numbers as all the numbers appear only	
	č	



Activity 2

Instruction: Copy the questions given below in your notebook and write the answer.

1. The following are the marks of Pema Seday in her block test.

	Class Test marks		
Sl. No	Subject	Score (10)	
1	English	8	
2	Dzongkha	7	
3	Mathematics	4	
4	Science	7	
5	Social Studies	9	

Find the mean, median, and mode of her marks.

Summary

The mean is a set of data or numbers that describes the **whole set**. It is a type of **average**. The **mean** is calculated by adding all the pieces of data in a set and then sharing it equally among the pieces of data.

The **median** is the "Middle number" for a set of data. The number has to be arranged from least to greatest or vice-versa.

The **mode** is the value that occurs most often. There can be one mode, more than one mode, or no mode in a set of data.



Self-check for Learning

Instruction: Copy the questions below and write the answers in your notebook.

- 1. Find mean, median, and mode for each. Which is greatest in each set of data below: the median, the mean, or the mode?
- a. 4, 5, 10, 2, 4
- b. 17, 23, 19, 21, 20, 20
- c. 8, 11, 2, 2, 2, 8, 2

```
Mean is the greatest.
     Mode = 2
                    Median = 2
                                      c. Mean = \delta
                              They are all same.
 Mode = 20
                 Median = 20
                                    b. Mean = 20
                            Mean is the greatest.
     4 = aboM
                    Median = 4
                                      1. a. Mean = 5
                        Self-check for Learning
                         Median = 7
       \Gamma = \text{aboM}
                                           V = nsaM
                                         Activity 2
c. Mean = \delta
                                    1. a. Mean = 10
                  b. Mean = 16
                                         Activity 1
```



Lesson No: 4 Subject: Mathematics Class level: VI Time: 40 minutes

Learning Area: Sorting and Patterning

Topic: SI Measurement **Sub Topic:** Units of Length, Mass and Capacity

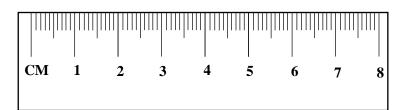
Learning Objectives



• Convert the units of length, mass and capacity to a reasonable unit.

Introduction

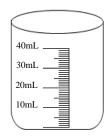
You have had some experiences with measurement concepts and skills such as measuring length, mass, capacity, time, and angle in your previous classes. The following are some of the objects we use to measure the different things.



A ruler: used to measure the length.



A beam balance: used to measure the mass of an object.



A measuring cylinder: used to measure the capacity of liquid.



Think Time

How many millimetres are there in 1 centimetre?

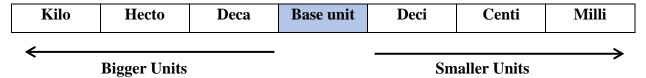
How many metres are there in 1km?

There are 10 mm (millimetres) in 1 cm (centimetre) and 1000 m (metres) in 1 km.

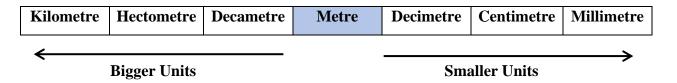


Metric Unit

Measuring is an important part of our everyday life. **Standard units** of measurement are used so that other people will understand. One reason we use the **metric system** of measurement is to make it easier to convert measurements from one unit to another.



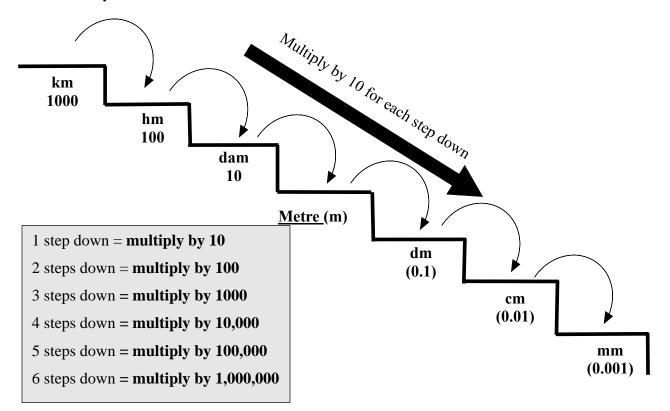
Units of Length



The chart below shows the prefixes for the basic metric units based on the **metre** along with the symbols normally used.

Prefixes	Unit	Abbreviation	
kilo	Kilometre	km	
heto	Hectometre	hm	
daca	Decametre	dam	
	Metre	m	
deci	Decimetre	dm	
centi	Centimetre	cm	
milli	Millimetre	mm	

The metric system made our work easier to deal with units.



Look at the following examples.

You need to move <u>two steps down</u> from 'hm' to 'm'. So multiply it by 100.

$$34 \times 100 = 3400$$

So,
$$34 \text{ hm} = 3400 \text{ m}$$

b.
$$140 \text{ m} = \underline{\hspace{1cm}} \text{mm}$$

Here, you need to <u>move down three steps</u> from '**m**' to '**mm**'. so, multiply it by 1000.

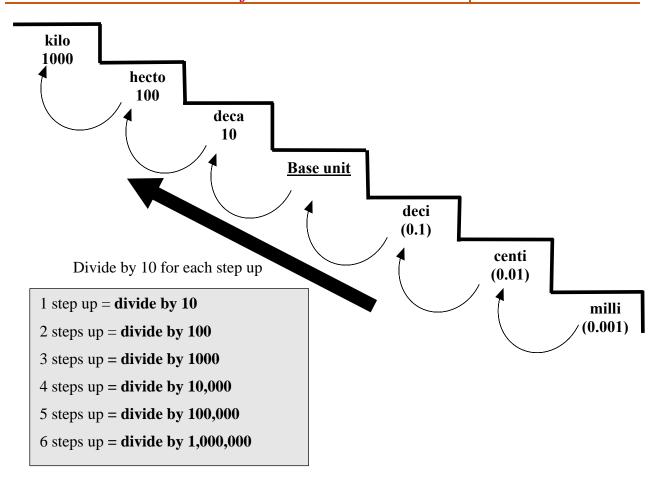
$$140 \ \underline{\text{x}} \ 1000 = 140,000$$

c.
$$25 \text{ dm} = \underline{\hspace{1cm}} \text{cm}$$

Multiply it by 10 because you need to move <u>down one step</u>.

$$25 \times 10 = 250$$

So,
$$25 \text{ dm} = 250 \text{ cm}$$



Look at the following examples.

a.
$$34 \text{ hm} = _{\text{}} \text{km}$$

You need to move <u>one steps up</u> from 'hm' to 'km'. So divide it by 10.

$$34 \div \underline{10} = 3.4$$

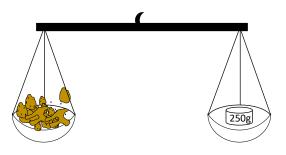
So,
$$34 \text{ hm} = 3.4 \text{ km}$$

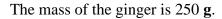
Here, you need to <u>move up two steps</u> from '**mm**' to '**dm**'. so, divide by 100.

So,
$$234 \text{ mm} = 2.34 \text{ dm}$$

Units of Mass

The units to measure mass are **kilogram** and **gram**. Kilogram (kg) is the unit used to measure the mass of bigger objects. Gram (g) is also a unit of mass but it measures smaller objects. We use 'kg' and 'g' in our day to day life.





Here is the relationship between \mathbf{kg} and \mathbf{g} .



The mass of the rice is 25 kg.

$$1 \text{kg} = 1000 \text{ g}$$

$$1 \text{g} = \frac{1}{1000} \text{ kg}$$

When you convert 'kg' to 'g', multiply by 1000.

a.
$$4.5 \text{ kg} = \underline{\hspace{1cm}} \text{g}$$
 $4.5 \text{ x } 1000 = 4500$
 $4.5 \text{ kg} = \underline{4500} \text{ g}$

b.
$$32 \text{ kg} = \underline{\hspace{1cm}} \text{g}$$

$$32 \text{ x } 1000 = 32,000$$

$$32 \text{ kg} = \underline{32,000} \text{ g}$$

c.
$$8 \text{ kg} = \underline{\hspace{1cm}} \text{g}$$
 $8 \text{ x } 1000 = 8000$
 $8 \text{ kg} = \underline{8000} \text{ g}$

When you convert 'g' to 'kg', divide by 1000

b.
$$250 \text{ g} = \text{kg}$$

 $250 \div 1000 = 0.25$
 $250 \text{ g} = \underline{0.25} \text{ kg}$

a.
$$4500 \text{ g} = \underline{\hspace{1cm}} \text{kg}$$

$$4500 \div 1000 = 4.5$$

$$4500 \text{ g} = \underline{4.5} \text{ kg}$$

c.
$$80 \text{ g} = ___ \text{kg}$$

 $80 \div 1000 = 0.08$
 $80 \text{ g} = \underline{0.08} \text{ kg}$

There are many units to measure the capacity. Here, you will learn two units namely; **litre** and millilitre. Litre (L) is the unit to measure the capacity of a larger amount and millilitre (mL) for the smaller amount.

We use 'L' and 'mL' in our day to day life.



This drinking glass has a capacity of about 300 mL.



1 litre of water.



KEY STAGE-II

A jug like this has a capacity of about 2 L.

Here is the relationship between L and mL.

$$1L = 1000 \text{ mL}$$

$$1mL = \frac{1}{1000} \text{ L}$$

When you convert 'L' to 'mL', multiply by 1000.

c.
$$250 L = ___ mL$$

 $250 \times 1000 = 250,000$
 $250 L = \underline{250,000} mL$

When you convert 'mL' to 'L', divide by 1000

a.
$$2500 \text{ mL} = ____ \text{L}$$

 $2500 \div 1000 = 2.5$
 $2500 \text{ mL} = \underline{2.5} \text{ L}$

b.
$$450 \text{ mL} = ____ \text{L}$$

 $450 \div 1000 = 0.45$
 $450 \text{ mL} = \underline{0.45} \text{ L}$

c.
$$10 \text{ mL} = ____ L$$

 $10 \div 1000 = 0.01$
 $10 \text{ mL} = \underline{0.01} L$



Instruction: Copy the questions in your notebook and write the answers.

- 1. Fill in each blank below with the appropriate measurement from the list to the right.
 - a. The distance between Paro and Thimphu is _____.
 - b. A book is about ____ long.
 - c. A tall person is about ____ tall.
 - d. A fingernail is about ____ thick.
 - e. A hand is about ____ wide.
 - f. The distance I can walk in 40 min is _____.
 - g. A new pencil is about ____ long.
 - h. A fingertip is about ____ wide.
- 2. Complete each.
 - a. $6 \text{ km} = _{\text{_____}} \text{ m}$
 - b. $7.5 L = ____ mL$
 - c. $667 \text{ kg} = \underline{\hspace{1cm}} \text{g}$
 - d. $50 \text{ dm} = \underline{\hspace{1cm}} \text{cm}$
 - e. 2400 m =____ km
 - f. $350 g = _{kg}$
 - g. $500 \text{ mL} = ___L$
 - h. 1.5 hm = ____dam
 - i. 5 mm =____ dm



10 cm

17 cm

3 km

2 mm

65 km

2 m

30 cm



Self-check for Learning

Instruction: Copy the questions in your notebook and write the answers.

- 1. A soap bar has a mass of 250 g. How many such soap bars would make 3 kg?
- 2. One litre of milk can fill exactly four identical (same) mugs.
 - a. What is the capacity of 2 mugs?
 - b. How many such mugs can 4 litres of milk fill?
- 3. Describe two amounts that you would measure in litres instead of in millilitres.

- 3. 5 littes of oil, 10 littes of water.
 - .sgum 91.d
- 2. a. The capacity of 1 mug is 500 mL.

So, 12 soap bars would make 3 kg.

$$3000 g = 3 kg$$

$$3000\xi = 21 \times 302$$
, os

$$3.0001 = 4 \times 3.02$$
 .1

Self-check for Learning

	e. 2.4 km	f. 0.35 kg	g. 0.5 L	mb $\gtrsim 0.0$ i msb $\lesssim 1$.d
.2	а. 6000 т	Jm 0027 .d	g 000,766 s	d. 500 cm
	e. 10 cm	f. 3 km	g. 17 cm	h. 1 cm
٠,	a. 65 km	b. 30 cm	w 7. o	mm 2 .b

Activity 1





Lesson No: 5 **Subject:** Mathematics **Class level:** VI **Time:** 40 minutes

Learning Area: Geometry

Topic: Quadrilaterals and Lines

Sub Topic: Quadrilaterals, Parallel Lines, Perpendicular Lines, Congruent Lines and Lines of

Symmetry.



- Identify quadrilaterals.
- Identify parallel lines, perpendicular lines, congruent lines and lines of symmetry in a shape.

Introduction

You have learned about polygons in class V.



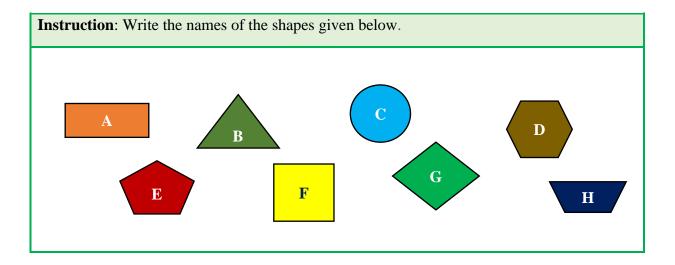
Think Time

What is a polygon? Name few polygons.

A polygon is a closed plane (or flat) shape made up of straight lines joined together.

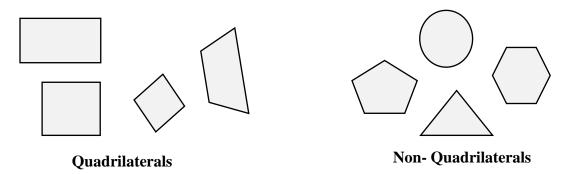


Activity 1

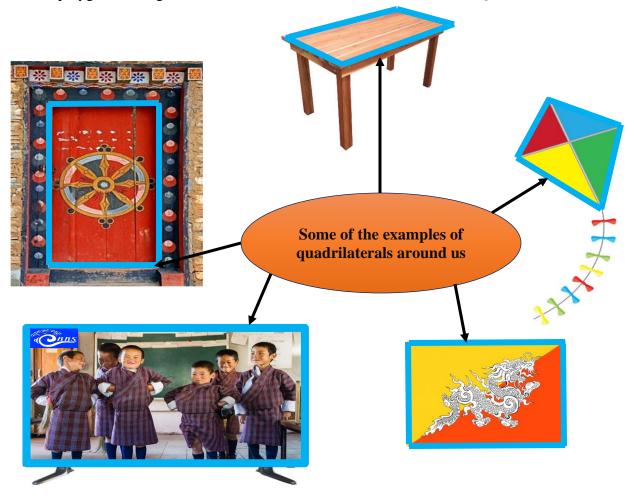


Quadrilaterals

If you look at the above shapes, some of the shapes have four sides. Some of the shapes have more than four sides. Some of the shapes have less than four sides.



All the polygons having four sides and four vertices/corners are called Quadrilaterals.

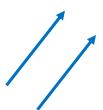


Source: Google image

Parallel Lines

The lines in a plane that goes in the **same direction**. They have **equal distance** between them and they will never meet.





Examples of parallel lines around us







Perpendicular Lines

Two lines that intersect or meet at a 90° angle is called a perpendicular lines.



Examples of perpendicular lines around us







Source: Google image

Congruent Lines

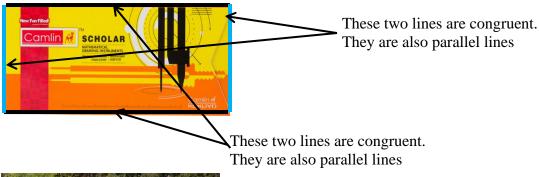
Line segments are congruent if they have the same length. However, they need not be parallel. They can be at any angle or orientation on the plane.

A

Line segments **A** and **B** are congruent because they have same length.

В

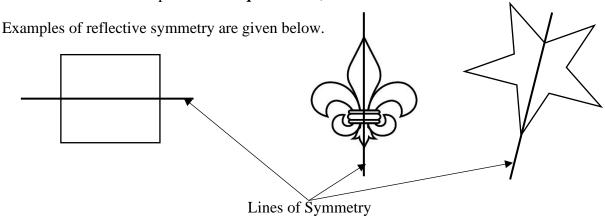
Examples of congruent lines around us



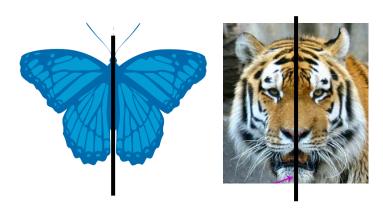


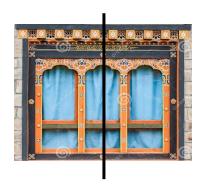
Line of Symmetry / Reflective Symmetry

Line that divides the shape into two equal halves, that each half is a reflection of the other.



Example of line of symmetry around us





Source: Google image



Instruction: Read the questions given below and answer them.

1. Name the quadrilaterals given below. Describe the parallel lines, perpendicular lines, congruent lines, and line of symmetry each shape has.

a

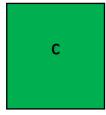
Name: Rectangle

No. of parallel lines: 2 pairs

No. of perpendicular lines: 2 pairs

No of congruent lines: 2 pairs

No. of lines of symmetry: 2





b

Summary

- All the polygons having **four sides** and four vertices/corners are called **Quadrilaterals**.
- **Parallel lines** are lines in a plane that goes in the **same** direction. They have **equal distance** between them and they never meet or intersect.
- Two lines that intersect or meet at a 90° angle is called **perpendicular lines**.
- **Congruent lines** are the line segments that are congruent or lines having the same length. However, they need not be parallel. They can be at any angle or orientation on the plane.
- Line that divides the shape into two equal half and each half is a reflection of the other is the **line of symmetry**.



Self-check for Learning

Instruction: Answer the following questions in your notebook

- 1. Describe examples of line segments at your home that are:
 - a) parallel
 - b) perpendicular
- 2. Draw a quadrilateral that has
 - a) One line of symmetry.
 - b) Two lines of symmetry.
- 3. Write the similarities and differences between square and rectangle based on the following attributes.
 - -Parallel lines
 - -Perpendicular lines
 - -Congruent lines
 - -Lines of symmetry



Activity 1

A - Rectangle

E – Pentagon

Activity 2

F – Square

B – Triangle

pairs

d. Name: Trapezoid

No. of perpendicular lines: 1 No. of perpendicular lines: 2 No. of parallel lines: I pair No. of parallel lines: 2 pairs c. Name: Square

G - Rhombus

ələri — D

No. of lines of symmetry: 4 No of congruent lines: 4

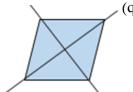
> 0 No. of perpendicular lines: No. of parallel lines: 2 pairs b. Name: Parallelogram

pairs No of congruent lines: 2

No. of lines of symmetry: 0

1. a) Opposite sides of a window, table, or door. Self-check for Learning

b) Window panes, the corner of a wall, table.



(a .2

3. Similarities: They are quadrilaterals. They have 2 pairs of perpendicular lines.

They have two pairs of parallel lines.

Differences: All the sides are congruent in square but in rectangle two opposite

Self-Instructional Material

sides are congruent. A square has 4 lines of symmetry but a rectangle has 2 lines of

symmetry.

KEY STAGE-II

No. of lines of symmetry: 0

H - Isosceles trapezoid

D - Hexagon

No of congruent lines: 0