



Master Lesson Plan

For

Mapping your way

Board	Standard	Subject	Chapter	Language	Reference Link	Creation Date
CBSE	STD V	Mathematics	Mapping your way	English	Mapping your way	2020-08

Disclaimer

- * Strictly not for Commercial use. *Provided on 'as is' basis with no warranties of any kind.
- * Content that falls in Public Domain or common Knowledge facts can be used freely.
- *Some of the contents are owned by the Third parties and are used in compliance with their licensing conditions. Any one infringing the Copyright of such Third parties will be doing so at their own risks and costs.
- * Content can be downloaded and used for Personal, educational and informational purposes only. Any attempt to remove, alter, circumvent or distort the data that is accessed is Illegal and strictly prohibited.

Mapping your way

1. MS_Objectives-Mapping your way

Notes to the Teacher:

This asset lays down the proposed plan for transacting this chapter. It states the asset objectives of the MLP. This asset is for teachers reference and need not be taught to the students.

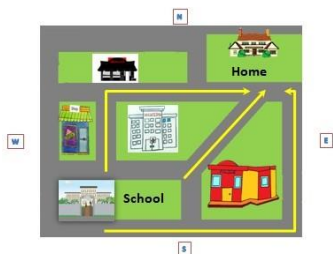
The students will be able to

- Identify mapping
- Recognise the routes
- Apply the knowledge of mapping, scales, directions etc.
- Recognise the uses of Mapping in daily life.
- Appreciate the adventure of Ancient sailors and Migrating birds.
- Identify neighbouring states of any state of India.
- Determine distance between two towns in a map.
- Explain Grid and its uses in maps.
- Use grids in art.
- Describe maps.
- Appreciate the importance of right action in life.

Time to teach	Asset Type	Theme	SubTheme
5 Minutes	Main Script	Co-ordinate Geometry	

2. IQ_Introduction to Mapping your way

1) How can you reach your home from school?



There are 3 ways -

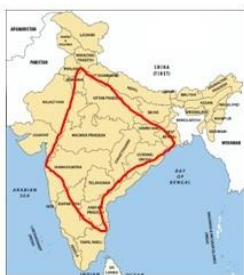
Solution:

- Move in the East direction. After reaching the Police station turn to North
- Move in the North direction. After the shop turn to East
- Move straight in the North - East direction

2) How do you come to know different places in India? How can you reach these places?

Solution: We can use Map of India

E.g. The four main cities of India New Delhi, Kolkata, Mumbai and Chennai are connected as follows:



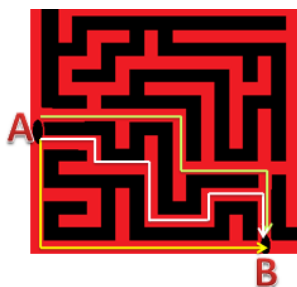
3) What will happen if there is no route/map?

- We would not get the correct location of places
- We would not know the ways to reach the places of our destination
- Across the country, we would not find the location and flow of rivers, mountain, cities, lines of states etc
- Across the world, we would not find ocean, continents, countries and the ways to find the various places

4) Can you find distance between two places without measurement?

No

5)



a) How many ways are there to reach from point “A” to point “B”

b) Find the easiest way

Source:

Town Layout:

Source Link: SSSVV Gallery (School)

Source Link: SSSVV Gallery (House)

Original Drawn, Leela, edited by Sathya, nit.venkat@gmail.com

Source Link: <https://pixabay.com/illustrations/city-buildings-gas-police-4898207/>

Original Drawn, Varshini, edited by Sathya, nit.venkat@gmail.com

Original contribution, SSSVV File

India Map:

Source Link: SSSVV Gallery (India Map)

Distance between two places:

Source Link: original

Time to teach	Asset Type	Theme	SubTheme
5 Minutes	Inquisitive Questions	Co-ordinate Geometry	

3. QA_Find the route

Note : A worksheet is attached. The teacher may print as many copies as needed before starting this asset.

1) Looking at the town layout, choose the correct option:



1) Anish is in a tearing hurry to go to the hospital to see his ailing grandmother from school.

Which route will be shortest and fastest for Anish?

- a) Route A
- b) Route F + K + B

2) Can you identify the road that Anish will cross on his way from the police station to the restaurant?

- a) Route F
- b) Route B

3) It is time to do prayer, Anish must reach the mosque by 6 PM, and can you help him and tell in which direction he should go from the shop?

a) East

b) West

4) Which of the routes written below meet at right angles?

a) Route H and A

b) Route L and D

Solutions:

1) Option a) Route A

2) Option b) Route B

3) Option b) West

4) Option b) Routes L and D

II) Looking at the India map, answer the following questions:



1) Which are the North most Union Territory of India?

2) If I want to go to Madhya Pradesh from Orissa which state do I have to cross? (Should be the shortest route)

Solutions:

1) Jammu & Kashmir, Ladak



2) Chhattisgarh



Source:

Town Layout

Original Drawn, Varshini, edited by Sathya, nit.venkat@gmail.com

Original Drawn, Leela, edited by Sathya, nit.venkat@gmail.com

Original contribution, SSSVV File

<https://pixabay.com/illustrations/city-buildings-gas-police-4898207/>

India Map

SSSVV File

Time to teach	Asset Type	Theme	SubTheme
10 Minutes	Assessments	Co-ordinate Geometry	Locating the position of an object/point in plane

4. MS_Different types of maps of a place

What is a map?

A map is a symbolic representation of all or part of the earth or some other body drawn on a flat surface

As human brain registers images faster than text, maps are better tools to explain any geographical location

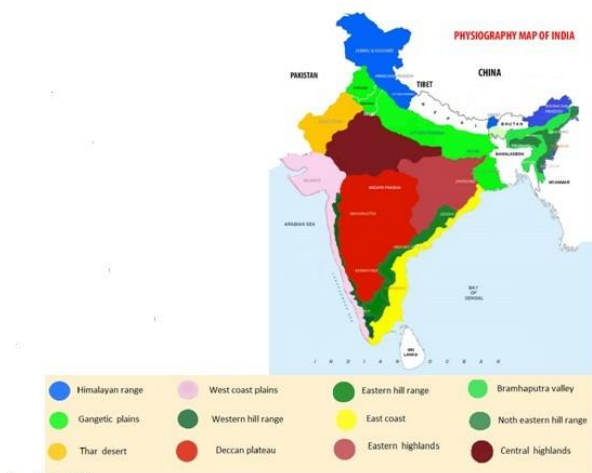
Different types of maps of a place:

Political maps:



It focuses only on the states and national boundaries of a place including the location of cities

Physical maps:

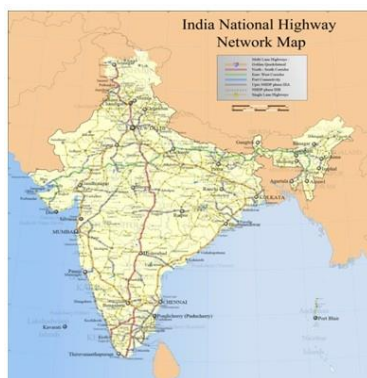


These maps mainly show land forms like deserts, mountains, plains, rivers and lakes

All bodies of water are marked on the map in one colour. The map shows whether they are rivers, lakes or larger bodies of water

Mountains, deserts and plains also have their own unique colour

Road maps:

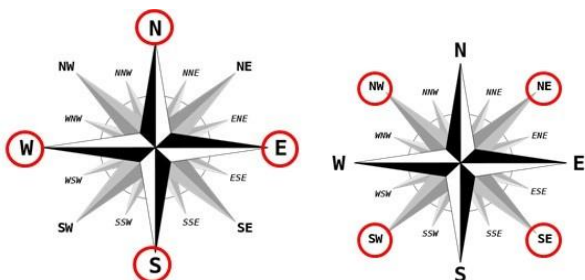


Is most widely used map. These maps show highways and roads in detail

Also it shows boundaries of states, city locations, railway stations, and airports

Some symbols used in road maps roads, railway track etc

Cardinal directions in maps:



There are four cardinal directions north, east, south, and west, denoted by their initials N, E, S, and W

The intermediate directions are northeast (NE), southeast (SE), southwest (SW), and northwest (NW)

A magnetic compass is used to determine the cardinal directions



In this device, the north pole of the magnetic needle points towards the geographic north pole of the earth and vice versa

Scale in mapping:

What is the scale in a mapping?

A map for a place includes essential landmarks and roads placed in perfect positions

It fits a large place into a drawing on a paper. We do it using definite proportions

Let us consider one example.

Suppose that you are planning to visit India–Gate with the map in your hand. The map includes roads and buildings as land marks.

When you refer the map, you understand that buildings are not as big as they are in reality



The buildings, roads and all other landmarks are reduced from their original size

They may be reduced even to $1/100$ size of their original size

This ratio of the size in a map to the real size is called scale

Every map defines its scale generally written in right top corner

Some examples of scales

On a full page,

- 1) The map of your school building can have the scale $1 \text{ cm} = 20 \text{ meters}$
- 2) The map of India can have the scale $1 \text{ cm} = 200 \text{ kilo meter}$
- 3) A city map can have the scale $1 \text{ cm} = 1 \text{ kilometre}$

Using scale of the map, we can find the distance between any two places in the map

E.g.

- 1) On a wall map of the World, the distance between the capitals of two countries is 14 cm

Scale of the map states that $1 \text{ cm} = 100 \text{ km}$. Find the actual distance between the capitals.



Scale $1 \text{ cm} = 100 \text{ km}$

Distance between the capitals in the map = 14 cm

Actual distance = $14 \times 100 = 1400 \text{ km}$

Source:**India maps:****SSSVVFile****Cardinal directions:****https://en.wikipedia.org/wiki/Cardinal_direction#Direction_versus_bearing****Compass:****https://en.wikipedia.org/wiki/Cardinal_direction#Direction_versus_bearing****Map VS Buildings:*****ORIGINAL, Mobile screenshot, sathya, nit.venkat@gmail.com******Original Click, Sathya, nit.venkat@gmail.com******Original Click, Sathya, nit.venkat@gmail.com*****World Map:****SSSVVFile**

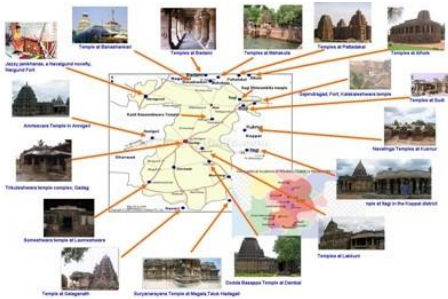
Time to teach	Asset Type	Theme	SubTheme
15 Minutes	Main Script	Co-ordinate Geometry	

5. DD_Mapping in daily life**Maps are important in our daily life as they represent real world on a much smaller scale.****Also complicated information is simplified using maps****The following are some of the examples of uses of maps in our day to day life:****GPS route maps:**

- GPS has become our travel guide
- GPS apps are available on mobile phones and car dashboards
- It even shows the side lanes off the road
- With GPS route map in hand, you never lose your way

Tourist maps:

- Tourist map is a guide to the traveler
- It helps to identify places of visit
- It helps to plan and visualize the tour in advance

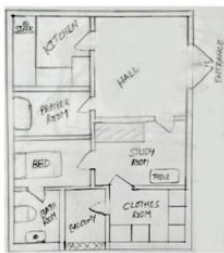


Using the tourist map of Gadag, answer the following questions

1. Can you identify the fort that is given along with Kalakaleswara Temple?
2. The red center dot in the map represents a temple. Can you name the temple?
3. Totally how many temples are depicted in this Gadag tour map?

Floor map of a house:

- Every new house is built on a plan designed by the architect
- This plan is nothing but the floor map of the house

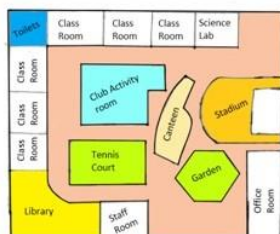


From the map of the house, find

1. Where does the clothes room lie?
 2. Totally how many rooms are given in the map of the house?
- Solution:** There are 7 rooms

Layout map of a school:

The layout of the school is displayed near the office block in the form of a visual map to help people access different places easily



From the map,

Locate the stadium, tennis court and library

Source:

GPS: CR Free –CC, <https://pixabay.com/en/gps-navigation-garmin-device-304842/>

Original Click, Sathya, nit.venkat@gmail.com

Gadag map: CR Free – CC, https://commons.wikimedia.org/wiki/File:Gadag_Region_Tourist_Map.JPG

Floor map of a house: Original drawn, Sathya, nit.venkat@gmail.com

Layout map of a school: Original drawn, Sathya, nit.venkat@gmail.com

Time to teach	Asset Type	Theme	SubTheme
10 Minutes	Day-to-day Relevance	Co-ordinate Geometry	Locating the position of an object/point in plane

6. IA_Route maps of ancient sailors and migrating birds

We use maps on our smart phones to navigate around our place.

But how did our ancestors move around in the world?



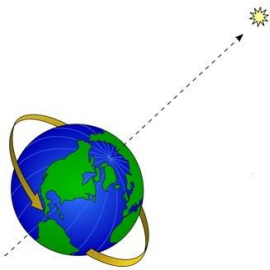
They too used maps but not like the ones we do.

The earliest known world map was found on clay slabs in the ancient city of Babylon around 600 BC.

How did the sailors travel in the sea before the invention of the compass or the GPS?



The Sun, Moon and Stars in the sky gave them the direction.



The most common star used by sailors for direction is the Polaris or North star. The star always points in the North direction.

Sailors used to measure the height of a star such as Polaris, above the horizon in the sky using their fingers.



Sailors in search of India:

Bartholomew Dias, a member of Portuguese royal family was the first European to find a route to India and reached Cape of Good Hope, southern tip of Africa.





Vasco da Gama, using the maps drawn by Indian and African merchants could reach India.

Columbus, who went in search of India, followed the map made out by German cartographer Henricus Martellus, and reached America.



Migration of birds:

It's interesting to know that, during migration, even birds use similar methods to find their way from one location to the next.



The migrating birds have some special chemicals in their brain which help them to identify Earth's magnetic field.

As they follow the same route every year, their sharp eyesight help them to map their journey using geographic features like rivers, coast lines, mountain ranges etc.



During the day, birds use the Sun and at night, Star positions and orientation of constellations (a group of stars forming a recognizable pattern) to navigate.

Source:

Clay slab: Source Link: https://en.wikipedia.org/wiki/Early_world_maps#/media/File:Baylonianmaps.JPG

Sailing: Source Link: <https://pixabay.com/photos/pirate-ship-sea-moon-fantasy-ocean-1719396/>

Polaris:Source Link: <https://pixabay.com/vectors/earth-north-star-north-navigation-23592/>

Horizon:Source Link: <https://pixabay.com/photos/sunrise-sky-sun-dawn-sunlight-615216/>

Africa: <https://pixabay.com/illustrations/africa-america-antarctica-art-asia-1356784/>

World Map:Source Link: Source Link: <https://pixabay.com/vectors/board-of-risk-risk-game-of-risk-4308773/>

Source Link: <https://pixabay.com/vectors/map-world-old-scroll-pirate-304779/>

Migrating Birds: <https://pixabay.com/photos/nature-animals-bird-migratory-bird-2746726/>

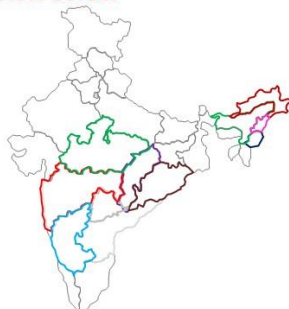
<https://pixabay.com/illustrations/wild-geese-migratory-birds-geese-589983/>

Time to teach	Asset Type	Theme	SubTheme
8 Minutes	Interesting Asides	Co-ordinate Geometry	

7. MS_Lines between states in a map

Lines between the states:

State Border



The lines between the states are called borders

These are the geographic boundaries of each state shown on the map

These lines show where one state ends and the next begins

But on the ground there are no such lines visible to us

When we reach the border of a particular state, we see the 'welcome' board of the neighbouring state and



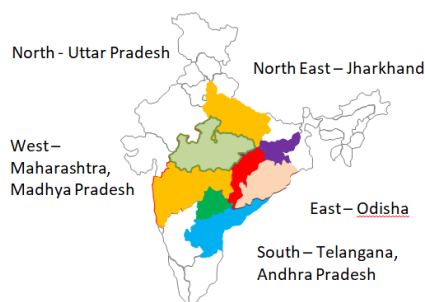
we need to pay the toll-tax at the border to enter the neighbouring state

The lines between states on the map give valuable information as follows

1) Neighbouring states:

Helps to identify neighbouring states of any state of India

E.g. neighbouring states of Chhattisgarh using map of India

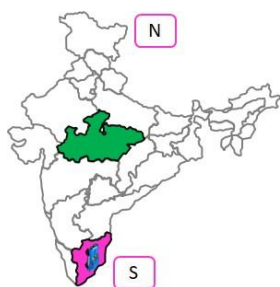


Chhattisgarh is surrounded by 7 states. It borders the states of Madhya Pradesh, Uttar Pradesh, Jharkhand, Maharashtra, Telangana, Andhra Pradesh and Odissa

2) Helps to identify the direction to travel across states.

E.g.

1) To reach Madhya Pradesh from Tamilnadu, travel towards North



2) To reach Gandhinagar in Gujarat from Kolkata in West Bengal move towards the west



Names of states encountered while on travelling are Jharkhand, Chhattisgarh and Madhya Pradesh

Source:

Border: *Original Click, Sathya, nit.venkat@gmail.com*

India Maps: SSSVV gallery edited by Sathyanarayana

Time to teach	Asset Type	Theme	SubTheme
5 Minutes	Main Script	Co-ordinate Geometry	

8. QA_Find the distance between towns

1) Use the map of India and match the following



1. Name the state at the southernmost part of India.

Himachal Pradesh

2. Name the state at the easternmost part of India.

Chhattisgarh

3. Which state is to the west of Odisha?

Arunachal Pradesh

4. Which state is to the east of Punjab

Tamil Nadu

Solution:

1. Tamil Nadu is the southernmost state of India.

2. Arunachal Pradesh lies in the easternmost part of India.

3. Chhattisgarh is on the west of Odisha.

4. Himachal Pradesh lies to the east of Punjab

2) The map scale of a map of India is 1 cm : 180 km.

a) If the distance between Mumbai and Delhi in the map is 6.3 cm, find the actual distance between the cities.

b) If the distance between Hassan and Bengaluru in the map of Karnataka is 0.9 cm, find the actual distance between Hassan and Bengaluru.

Solution:

a) The distance between the cities in the map is 6.3 cm.



The scale is 1 cm = 180 km

The actual distance = $6.3 \times 180 = 1134$ kms

b) The distance between Hassan and Bengaluru in the map is 0.9 cm.



The actual distance = $0.9 \times 180 = 162$ kms

Source:

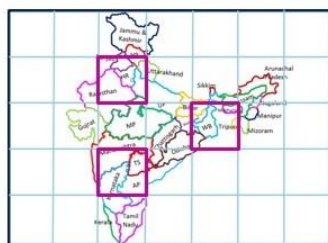
All images are from SSSVV gallery edited by Sathyanarayana

Time to teach	Asset Type	Theme	SubTheme
10 Minutes	Assessments	Co-ordinate Geometry	

9. MS_Grids

What is a grid in mapping? What are its uses?

On a map, Grid is a square. Grid system is obtained by creating a set of lines, North – South and East – West lines on the map using which, a specific point on the graph can be identified.



Grid system gives location OR address to each point on the map.



Examples of grids are Chess – board, grids on World – map formed by Longitudes and Latitudes.



In Chess board, the address or location of grids can be given.

In the world – map, location of country or place is identified through the grid formed by Latitude and Longitude.



Sources:

India Map: *Original SSSVV file, edited by Sathya, nit.venkat@gmail.com*

Chess: *Original Click, Sathya, nit.venkat@gmail.com*

World Map: *Original SSSVV file, edited by Sathya, nit.venkat@gmail.com*

Time to teach	Asset Type	Theme	SubTheme
5 Minutes	Main Script	Co-ordinate Geometry	Basic idea about Co-ordinate Basic idea about Co-ordinate

10. SA_Use of grids in art

Aim: Students will be able to use grids in art.

Type of the Activity: Individual

Setting of the activity: Indoor

Materials required: (for each student)

- A picture which is simple to draw
- Two drawing sheets, pencil, scale, eraser

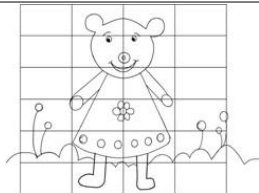
Procedure:

On the day of the activity, the teacher can give the following instructions to students.

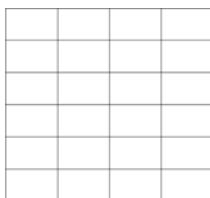
Step 1: Keep the picture ready.



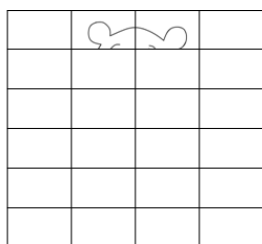
Step 2: Draw Grids on that Picture as shown beside.



Step 3: Now take a White paper and draw similar Grid as drawn on the Picture.

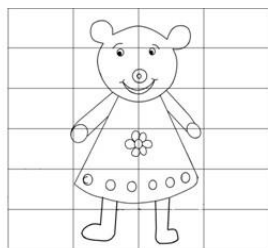


Step 4: Start drawing on the White Paper by referring to the grids on the Picture.



Be careful in referencing the Grids.

Step 5: This is how you develop the Picture.



Conclusion: Students use grids in drawing.

Source:

Picture: Original Drawn, Leela, edited by Sathya, nit.venkat@gmail.com

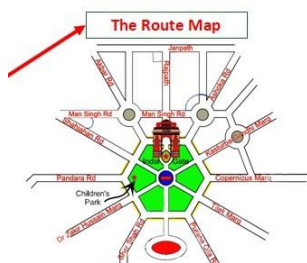
Time to teach	Asset Type	Theme	SubTheme
20 Minutes	Suggested Activity	Co-ordinate Geometry	Cartesian system(origin, ax and cartesian plane), Carte system(origin, axes, quadra plane)

11. MS_Reading maps

Map reading is an art of understanding the information portrayed on a map.

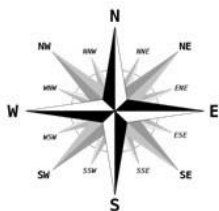
To do this, the reader should know some essential information presented by the map such as Orientation, scale, boundary of the map etc.

Title: Title of the map tells you at a glance what the map is about.



E.g. If the title is 'A road map of India' you can expect to see interstate highways, state highways, cities, lines between states etc.

Orientation: The map should have orientation or direction. Generally, the top of the page represents North direction.



Scale: It is not possible to draw a life sized map on a paper.

The buildings, roads and all other landmarks are reduced from their original size when you draw on a paper.

Scale of the map tells you the ratio of the size in a map to the real size.

Boundary lines: The boundary lines are important in a map.



Without boundary lines it is difficult to locate points and measure distances in a map.

Let us consider one example.

Ashi and her friends go to watch the Republic Day parade, with their teacher. They stand near India Gate.



They have a photograph of Rajpath and a newspaper showing the route map of the parade.

The Central Hexagon - If the children 'zoom in' to look more closely at one part of the map, the places and roads can be seen in larger size and they can see clearly as follows.



Road names, landmarks and directions in the map helps to locate the place correctly.

Source:

The route map: Original contribution

The direction: https://en.wikipedia.org/wiki/Cardinal_direction#Direction_versus_bearing

Boundary lines: <https://pixabay.com/vectors/map-antique-line-art-world-ocean-4709863/>

India Gate, Rastrapati Bhavan: *Original Click, Jagan, edited by Sathya, nit.venkat@gmail.com*

Hexagon:SSSVV Gallery (Map)

Time to teach	Asset Type	Theme	SubTheme
15 Minutes	Main Script	Co-ordinate Geometry	

12. VC_Think good, speak good, do good

We learnt that when we show a big area on paper, we have to reduce it by a fixed ratio everywhere, so that the relative distances and positions remain the same.

Then we can see exactly where we have come from, where we are going, and how far we are from our destination.

Our life is like a map.

- Our destination is to be a person who thinks good, speaks good, does good.
- All the things we do in life are like different places in the map.
- If we stay on the right road we will get to our destination more quickly. (eg: think good, speak good, do good)
- If we take a wrong turn we might lead ourselves further away from our destination. (e.g. getting angry, being jealous).

[As a follow-up activity, the teacher could draw a map of life on the blackboard and let the children put in the right and wrong markers for our destination.]

Just as we have to maintain correct measurements while creating a map, we need to maintain a correct behavior

at all stages of our lives and at all circumstances to make our life meaningful.

We need to think good, speak good and do only what is right. If all of us practice this from childhood we can make this world a happy & peaceful place to live in.

Let us learn a song today

Right Action Song (Audio file of the song is attached along with this document. The teacher may play it while singing this with the students)

Lyrics:

We have learned, we have learned

What the words right action say

We must do what we know is right

Every day and every night

Think of love, think of peace

Think of truth in all you do

Find these values in your heart

As each new day you do start

If you use these values true

Right is all that you can do

And happiness with all you'll share

Because with these they'll know you care

Time to teach	Value Type	Value Sub Type	Value Attribute
5 Minutes	Right Action		Songs

13. MS_Summary-Mapping your way

- The importance of Mapping is explained.
- The method of identifying places and routes in a map is explained.
- Different types of maps, scales and directions in a map are explained with examples.
- Uses of mappings in daily life are explained.
- The methods of travelling of our ancestors in the sea and migration of birds are explained.
- The method of finding the neighbouring states of a state and to identify the direction to travel across states are explained.
- The method of finding the distance between two places in a map, using the scale of the map is explained.
- Grid and its uses in a map are explained.

- **Application of grid in Art is demonstrated.**
- **The method of using a route map is explained.**
- **The importance of right action in life is explained.**

Time to teach	Asset Type	Theme	SubTheme
5 Minutes	Main Script	Co-ordinate Geometry	