



GOVERNMENT OF TAMIL NADU

**STANDARD FIVE**  
**MATHEMATICS**  
**SCIENCE**  
**SOCIAL SCIENCE**

**Term - III**

**Volume-2**

A publication under Free Textbook Programme of Government of Tamil Nadu

**Department of School Education**

**Untouchability is Inhuman and a Crime**

## Government of Tamil Nadu

First Edition - 2019

(Published under New syllabus in  
Trimester Pattern)

NOT FOR SALE

### Content Creation



State Council of Educational Research  
and Training

© SCERT 2019

### Printing & Publishing



Tamil NaduTextbook and Educational  
Services Corporation

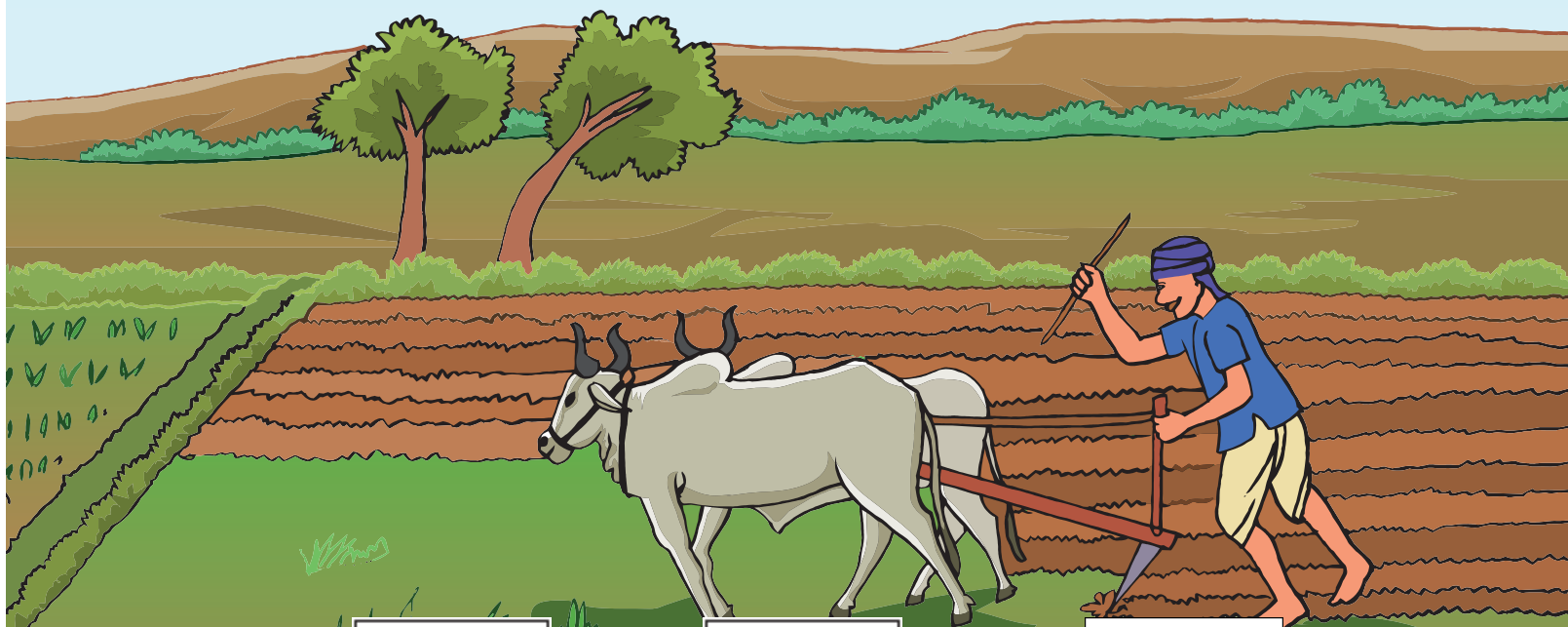
[www.textbooksonline.tn.nic.in](http://www.textbooksonline.tn.nic.in)

# SOCIAL SCIENCE



# CONTENTS

UNIT	TOPIC	PAGE No.	MONTH
1	Forts and Palaces	109	January, February
2	Agriculture	123	February, March
3	Educational Rights	137	March, April



E-Book



Evaluation



Digi Link



UNIT  
1

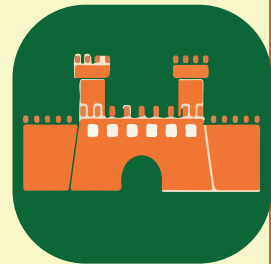
# Forts and Palaces



## Learning Objectives

Students will be able to:

- ❖ know the forts in Tamil Nadu.
- ❖ describe the palaces in Tamil Nadu.
- ❖ explain the history of forts and palaces in Tamil Nadu.



## Introduction

Tamil Nadu has been ruled by several empires especially by the **Chera, Chola, Pandya** and **Pallava rulers**.

Cholas, Pandyas and Nayakkars constructed magnificent forts and palaces in Tamil Nadu. The Dutch, the British and the French entered our country and they built forts to protect their territories.

## Fort



The architectural monuments are now preserved in the form of **palaces, forts** and **other historical sites** in Tamil Nadu. Today, only a few palaces and forts are in good condition. They are the prime attractions for tourists in Tamil Nadu.

### Vellore Fort

Vellore Fort is a 16th-century fort situated in Vellore, Tamil Nadu. It was built by the **Kings of Vijayanagara**.

Among the forts in Tamil Nadu, Vellore fort is considered to be one of the most invincible fort. It is surrounded by a deep and wide moat. The water of this moat was home to thousands of crocodile. It was feared by many raiders of the fort.

This fort is a good example of military architecture. It is studded with double fortifications. In 1799, Tipu Sultan's family was detained here by the British. The first rebellion against the British broke out at Vellore Fort in 1806.

## Vellore fort



C8I1P8

Inside the Vellore fort, there is a well-known temple called **Jalakanteswarar temple**, a church, a mosque, a museum and several government offices.



Vellore Fort has **five important Mahals**.  
They are:

- Hyder Mahal
- Tippu Mahal
- Begam Mahal
- Candy Mahal
- Badhusa Mahal



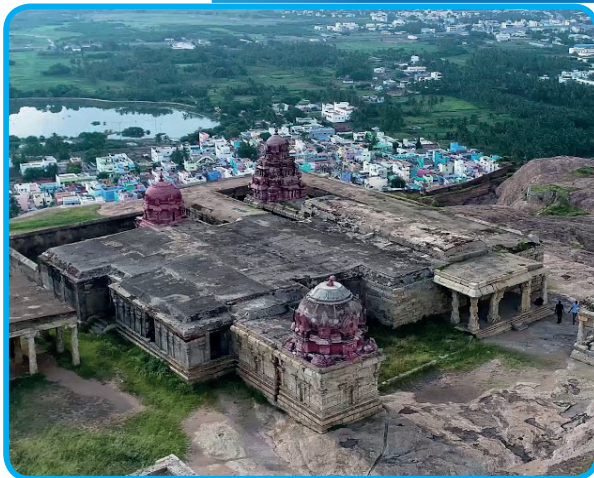
## Dindigul Fort

**Dindigul Fort** is a 17th-century hill fort situated in **Dindigul**, Tamil Nadu. It is also called **Dindigul Malai Kottai**. In the 18th century, the fort was passed on to the Kingdom of Mysore.

Dindigul Fort was built by the Nayakkars of Madurai, in order to defend their region from the invading Mysore army. Presently, the fort is maintained by the Archaeological Survey of India.

The fort was cemented with double walls to withstand heavy **artillery**.

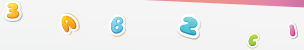
### Dindigul Fort



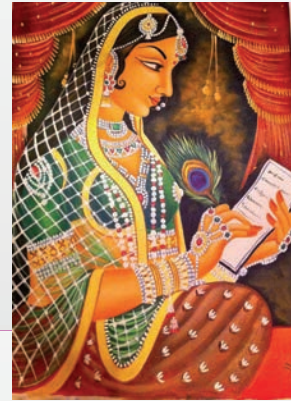




**ACTIVITY**  
Let us do



Name the following pictures.



\_\_\_\_\_

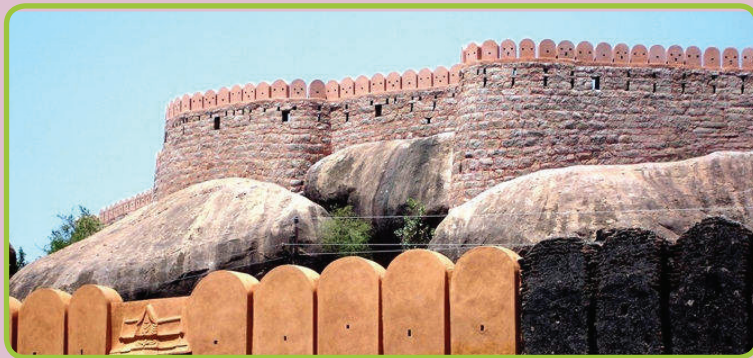
(King, Queen, Prince, Princess)

**Fort St. George** is the first fort built by the British in India. Fort St. George is located in **Chennai**. State Secretariat is functioning inside the fort.





- **Thirumayam Fort** is famous for its artistic work and architectural brilliance. It is located in Pudukottai, Tamil Nadu.
- **Thirumayam Fort** is popular for its large rock inscriptions.
- It is also known as **Oomayan Kottai**.



The magnificent **Sadras Fort** was built for commercial purposes by the **Dutch**. It is located in **Kanchipuram**.



## Gingee Fort



## Gingee Fort

**Gingee Fort** is another beautiful fort in Tamil Nadu. It is located at **Villupuram** district. Gingee fort is built across three hills. The fort walls are 13 km long and the three hills are connected by walls. It is built at a height of 800 feet and protected by a 80 feet wide moat.

It is a huge fort with many attractions like Kalyan Mahal, temples, Aanaikulam pond, granaries and a watch tower.

## Tharangambadi Fort



## Tharangambadi Fort

**Tharangambadi fort** is locally called Danish fort. It is located on the shores of Bay of Bengal in **Tharangambadi (Tranquebar)**, Tamil Nadu.

The fort is **trapezoidal** in shape with three rooms in the left wing. The central part of the fort has four domes. The central pillar of the hall holds the entire weight of the domes.

Tamil Nadu has great palaces in many places. Some are described here.

## Thirumalai Nayakkar Palace



The majestic **Thirumalai Nayakkar Palace** is a 17th century architecture of Nayakkar dynasty. It is one of the most popular palaces in South India. Thirumalai Nayakkar Palace is located in the city of **Madurai**. This is one of the tourist spots of Tamil Nadu.

Thirumalai Nayakkar Palace is widely known for its giant pillars. It has an **archaeological museum**. The major attraction of this palace is the **courtyard** and **the dancing hall**.

### Thirumalai Nayakkar Palace





**Tamukkam Palace** was the summer residence of the **Queen Rani Mangammal** of Nayak dynasty. It is located in **Madurai**.



**ACTIVITY**  
Let us do

Connect the following objects with their names.



**Bow and Arrow**   **Sword**   **Throne**   **Shield**   **Crown**

**Fernhills Palace** in **Ooty** served as the summer palace for the Kings of Mysore.



## Thanjavur Maratha Palace

Thanjavur Maratha Palace is popularly called **Thanjavur Aranmanai**.

Thanjavur Maratha palace was originally constructed by the rulers of **Thanjavur Nayakkar kingdom**. After the fall of the Thanjavur Nayakkar kingdom, it served as the official residence for **Thanjavur Maratha**.

Thanjavur Palace Complex is a tourist attraction which houses three separate venues: the **palace**, the **art gallery** and a **manuscript library (Saraswathi Mahal)**.

### Thanjavur Maratha Palace



**Saraswathi Mahal** is considered as one of the oldest historical libraries in India. Saraswathi Mahal also has a museum.



The library has more than a million manuscripts in languages like **Tamil, Sanskrit, Marathi, Telugu** and **Manipravalam**.

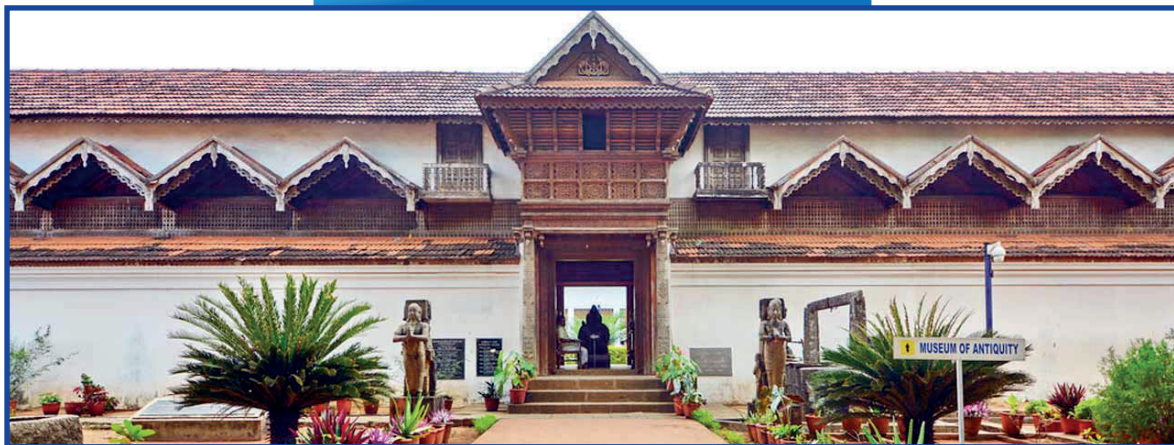
## Padmanabhapuram Palace

**Padmanabhapuram Palace** is a beautiful historical monument that is situated at **Padmanabhapuram, Kanyakumari District**. It is also known as Kalkulam Palace.

Padmanabhapuram Palace is a wooden palace which is built in Kerala style of architecture. It is a fine example of art and craftsmanship.

The Padmanabhapuram Palace was built by the ruler of Travancore. The palace has various sections like **Queen Mother Palace, Council Chamber, Southern Palace** and so on.

### Padmanabhapuram Palace



### Recap

- Palaces and forts are the prime attractions of Tamil Nadu tourism.
- Vellore fort is a fine example of military architecture.
- The major attraction of Thirumalai Nayakkar Palace is the courtyard and the dancing hall.

## Glossary

**Manuscript** : a document written by hand

**Moat** : A deep, wide ditch surrounding a fort

**Raiders** : Invaders



## EVALUATION

### I. Choose the correct answer.

1. \_\_\_\_\_ fort was built by Kings of Vijayanagar.

- a) Udayagiri      b) Vellore      c) Gingee

2. Thirumalai Nayakkar Palace is situated in \_\_\_\_\_.

- a) Salem      b) Thirumalai      c) Madurai

3. \_\_\_\_\_ Mahal is considered as one of the oldest historical libraries in India.

- a) Saraswathi      b) Lakshmi      c) Durga

4. Padmanabhapuram Palace is in \_\_\_\_\_.

- a) Ooty      b) Kanyakumari      c) Chennai

5. \_\_\_\_\_ fort is locally called Danish fort.

- a) Dindigul      b) Gingee      c) Tharangambadi





**II. Match the following.**

1	Gingee fort	Pudukottai
2	Danish fort	Chennai
3	Tammukkam Palace	Villupuram
4	Thirumayam fort	Madurai
5	Fort St. George	Tharangambadi

**III. True or False.**

1. Tamil Nadu has been ruled by many Rulers. Especially by the Chera, Chola, Pandya and Pallava rulers. ( )
2. Vellore Fort has five mahals. ( )
3. Dindigul Fort was built by the Nayaks of Madurai. ( )
4. Oomayan Kottai is the other name for Gingee fort. ( )
5. The Padmanabhapuram Palace was built by the ruler of Travancore. ( )


**IV. Answer the following.**

1. What are the prime attractions of Tamil Nadu tourism?
2. Write a short note on Tharangambadi fort.
3. Name some of the tourist attractions of Gingee fort.

4. Give a short note on Thirumalai Nayakkar Palace.
5. Who built the Thanjavur Maratha Palace?  
Write some of its tourist attractions.


**V. Answer in detail.**

1. Describe the structure of the Vellore fort.
2. Write about Dindigul fort.
3. Describe the architecture and various sections of Padmanabhapuram Palace.



**FUN WITH ACTIVITY**

# PROJECT



**Create a model of any fort or palace.**

# UNIT 2

# Agriculture



## Learning Objectives

Students will be able to:

- ❖ describe the features of agriculture.
- ❖ list and explain different types of farming and irrigation.
- ❖ name the various crops grown in Tamil Nadu.



F5K6H1

## Introduction

**Agriculture** is the art and science of preparing the soil for cultivation, growing crops and raising livestock. It has become a necessity for the humans. Agriculture led to the development of human civilisation.



India is an agricultural country. One-third of our nation's income comes from agriculture. Agricultural development contributes to the economy of our country.

## Farmers in India

A farmer is a person who cultivates crops and rears animals (poultry and other livestock). India is a land of farmers. It is called so because majority of Indians are directly or indirectly involved in agricultural activities. Agriculture is the backbone of our economy.



Farmers who cultivate in an area less than 1 hectare are called **micro farmers**.

## Types Of Farming

There are several types of farming.

- Subsistence farming
- Commercial farming
- Plantation farming
- Mixed farming



### Agricultural field



### Subsistence Farming

In subsistence farming, crops are cultivated and used only for own family consumption. Such type of farming is adopted by small and marginal farmers on fragmented land holdings. The cultivated crops are usually food crops. The method of this farming is generally **archaic**.



## Commercial farming

Unlike subsistence farming, here the crops are cultivated for commercial use and is sold in markets. This method of farming is done by using modern tools and techniques.



## Plantation Farming

Plantation Farming is done in an estate where a single cash crop is cultivated on a large scale. Examples: **Tea, Coffee and Rubber.**




## Mixed Farming


Mixed farming refers to the rearing of animals along with the cultivation. This type of farming is economical.







The Government has set up agencies like the **Food Corporation of India** to purchase the farm products directly from the farmers at reasonable rates.



**ACTIVITY**  
Let us do



Help the farmer to reach his field.



In order to eliminate the middlemen between farmers and consumers, the Government of Tamil Nadu introduced the new concept, namely **UZHAVAR SANTHAI**.

## Water Resource for Agriculture

There are no perennial rivers in Tamil Nadu. Tamil Nadu depends on Northeast and Southwest monsoon. Hence, agriculture in Tamil Nadu is dependent on ground water.

**Central Ground Water Board (CGWB)** monitors the level and nature of ground water.

## Irrigation

**Irrigation** is the supply of water to land or crops for the purpose of agricultural production.

## Types of Irrigation

- Well Irrigation
- Canal Irrigation
- Sprinkler Irrigation
- Drip Irrigation



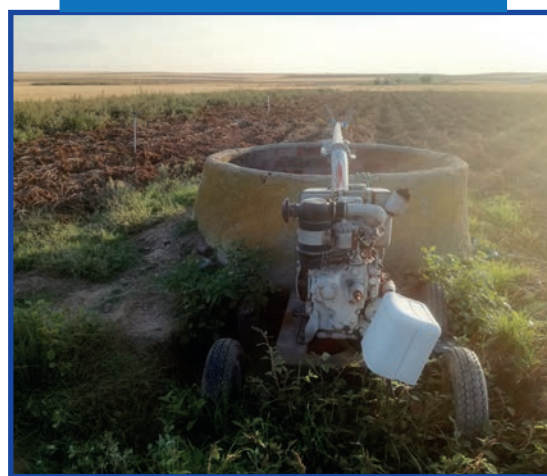
## Well Irrigation

**Well irrigation** has been practised in Tamil Nadu for many generations. It is a less expensive type of irrigation.

Archaic Well irrigation



Modern Well irrigation






## Canal Irrigation

**Canal irrigation** is the most important form of irrigation in India. Most of the North Indian canals are perennial. The main canal irrigated areas are in the northern plains of India such as **Uttar Pradesh, Punjab, Haryana, Rajasthan** and **Bihar**.


### Canal Irrigation



**Green revolution** is a process which brought an increase in crop production by using new varieties of seeds, pesticides and new agricultural techniques.



**Dr. M.S. Swaminathan** of Tamil Nadu is known as **Father of Green Revolution** in India.



## Sprinkler Irrigation

**Sprinkler irrigation** is similar to natural rainfall. Water is sprayed through pipes in the air through sprinklers.

### Sprinkler Irrigation



## Drip Irrigation

**Drip irrigation** is a type of micro-irrigation system that saves water and soil nutrients. In this system water drips slowly into the roots of plants through pipes. Pipes can be either above the soil surface or buried below the surface. The water directly reaches the roots and minimises evaporation.

### Drip Irrigation





### ACTIVITY

Let us write



(Tractor, Winnow, Farmer)



Find out the following.

1. One who produces food for us. \_\_\_\_\_
2. It is used for ploughing. \_\_\_\_\_
3. It is used for separating grain from hay. \_\_\_\_\_

### LET US KNOW

**Animal husbandry** is the branch of agriculture. It is to raise animals for meat, fur, milk, eggs and other products.



**Horticulture** is the science or art of cultivating fruits, vegetables, flowers or ornamental plants.

## Important crops in Tamil Nadu

Tamil Nadu has different types of soil, rainfall and weather across its districts. It is suitable for the production of fruits, vegetables, spices, plantation crops, flowers, medicinal and aromatic plants. **Horticulture** is the fastest growing sector within agriculture in Tamil Nadu.

**Paddy** is grown in large areas because rice is the main staple food of the state.

The principal food crops are **rice**, **maize**, **jowar** (cholam), **bajra** (Kambu), **ragi**, and **pulses** (bengalgram, redgram, greengram blackgram and horsegram).

Paddy



Maize



Black gram



Sugarcane



The **cash crops** include cotton, sugarcane, oilseeds, coffee, tea, rubber, coconut, gingelly and chillies.

**Mango** and **Banana** are the leading fruit crops of Tamil Nadu.

The main flowers grown in Tamil Nadu are **Jasmine**, **Chrysanthemum**, **Marigold** and **Rose**.



**Thanjavur** is an important agricultural centre located in the Cauvery Delta. It is known as the **Rice bowl of Tamil Nadu**.

**Think**



Which State is known as the **Rice bowl of India?**

### Cropping seasons in Tamil Nadu



- |                       |         |                       |           |                       |         |
|-----------------------|---------|-----------------------|-----------|-----------------------|---------|
| <input type="radio"/> | Navarai | <input type="radio"/> | Sornavari | <input type="radio"/> | Kar     |
| <input type="radio"/> | Kuruvai | <input type="radio"/> | Samba     | <input type="radio"/> | Thaladi |



**Coimbatore** is the largest cotton producing district in Tamil Nadu. It is known as the **Manchester of South India**.

## Glossary

1. Archaic : Ancient
2. Minimize : Reduce
3. Perennial : Everlast



## Recap

- India is an agricultural country.
- Indian farmers are the backbone of the Indian economy.
- There are several methods of farming systems in India.
- There are four basic types of irrigation.
- The principal food crops are rice, maize, jowar, bajra, ragi and pulses.



## EVALUATION



### I. Choose the correct answer.

1. \_\_\_\_\_ is the cultivation of crops.  
 a) Irrigation                      b) Agriculture    c) Excavation
2. A \_\_\_\_\_ is a person who is engaged in agriculture.  
 a) doctor                              b) teacher              c) farmer

3. \_\_\_\_\_ farming refers to the raising of animals along with the crops.

- a) Commercial      b) Mixed      c) Subsistence

4. \_\_\_\_\_ monitors the level and nature of ground water.

- a) Central Ground Water Board  
b) Metro Water Board  
c) Sewage Water Board



5. \_\_\_\_\_ is the largest cotton producing district in Tamil Nadu.

- a) Coimbatore      b) Chennai      c) Cuddalore

### II. Match the following.

1	Plantation farming	rearing of animals
2	Mixed farming	oldest method
3	Commercial farming	single cash crop
4	Well irrigation	for family consumption
5	Subsistence farming	for trade

### III. True or False.


- Rice is the leading food crop in Tamil Nadu. (      )
- Tamil Nadu has two soil types. (      )
- Drip irrigation is a type of micro-irrigation system. (      )
- Jackfruit is an example of plantation crop. (      )
- Mango is the leading fruit crop of Tamil Nadu. (      )

**IV. Answer the following.**

1. What is agriculture?
2. Write about farmers.
3. Name the different types of farming.
4. What is well irrigation?
5. Give a short note on the Central Ground Water Board.


**V. Answer in detail.**

1. Write about mixed and plantation farming.
2. Explain any two types of irrigation.
3. Write about the important crops of Tamil Nadu.



**FUN WITH ACTIVITY**

## PROJECT



- Collect some varieties of grains like rice, maize, jowar, bajra, ragi and pulses.
- Put them in separate packets.
- Staple / Stick all the packets on a chart and name them.





# Educational Rights



## Learning Objectives

Students will be able to:

- ❖ describe the importance of Education.
- ❖ explain the various educational schemes.
- ❖ list the features of Right To Education .



## Introduction

Education is important for people as well as the nation. Education is the first step for a child's development. Education improves knowledge, skills, values and the quality of one's life. It also helps in overall development of a country.



## Importance of Education

Education doesn't mean that one should be literate. It is more than literacy. Education helps to

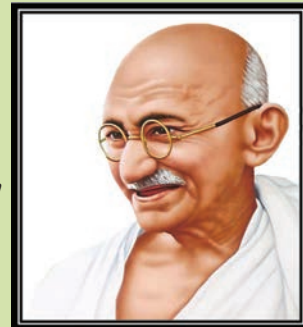
- analyse the reason.
- build skills to live.
- know what is right and wrong.
- lead a moral life.



*"Literacy in itself is no education.  
Literacy is not the end of education."*

*"Real education consists in drawing  
the best out of yourself."*

-Mahatma Gandhi



Education helps in broadening one's mind. It removes superstitious beliefs. Education helps in increasing awareness of surroundings, social and political issues. It develops wisdom.



**Swami Vivekananda** is best known for his speech which began with the words

*"Sisters and brothers of America."*

*"Education is the manifestation of  
the perfection already in man."*

-Swami Vivekananda





**Gurukulam** is the system of education that was practised in ancient India. **Guru (teacher)** and the **Shishya (student)** lived in Ashram.



## Educational Rights

Every child has right to have free and compulsory education. **The Right to Education Act (RTE)** specifies different responsibilities to the local authorities and government to ensure free and compulsory education.



**Right to Education Act (2009)** describes the importance of free and compulsory education for children between 6 to 14 years of age.

Education should be affordable to the common people. There should be no discrimination in education. It should be based on need of the child and mould the child's thoughts. The child should be at the centre of an education system.



### ACTIVITY

Let us do

## Solve the Puzzles.



- 1 I am white when I am dirty and black when I am clean.

Who am I?

- 2 I am tall when I am young and I am short when I am old.

Who am I?

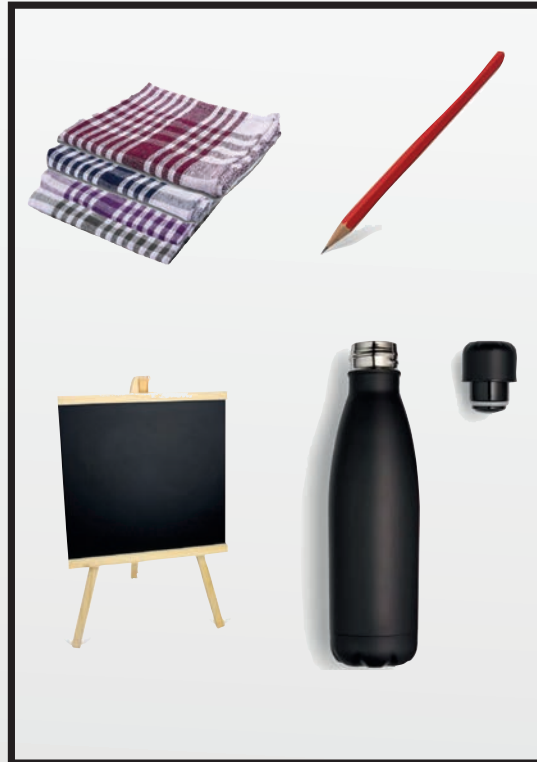
- 3 I am wet when I am drying.

Who am I?

- 4 I have a neck but no head.

Who am I?

### Hints



The legislative section is divided into three lists: **Union List**, **State List** and **Concurrent List**. **Education** comes under **Concurrent list**.



## Important features of RTE

- Until the completion of elementary education, no student is stopped from school.
- Twenty-five percent reservation is given to the economically Underprivileged people in all private schools.
- Improvement in the quality of education.
- School infrastructure should be improved every three years.
- Finances will be shared between the state and the central government.

## National Education Policy (NEP)

In 2019, the Government of India has framed the **National Education Policy (NEP)** to promote education among the people of India. The NPE covers all educational systems from primary to college level.



The first **National Education Policy** was implemented in 1968 followed by the second one in 1986.



**Child labour** is not allowed in our country. All children are entitled to have free and compulsory education.



## Educational Schemes

The most important milestone in education is the **free mid-day meal** programme which was implemented by the former Chief Minister of Tamil Nadu, **K.Kamaraj**.

Indian educational system is mainly divided into four stages. They are:

- ❖ Lower primary
- ❖ Upper primary
- ❖ Secondary
- ❖ Higher secondary

The **Sarva Shiksha Abhiyan (SSA)**, the **Right to Education Act (RTE) Act** have improved the educational performance.

**Sarva Shiksha Abhiyan (SSA)** (Education for All) was launched in the year 2001.

Objectives of Sarva Shiksha Abhiyan

- Increasing the enrolment in primary schools
- Getting access to the free and compulsory education for children up to age 14.
- Improving the quality of education.



**Samagra Shiksha** subsumes the three erstwhile Schemes of **Sarva Shiksha Abhiyan (SSA)**, **Rashtriya Madhyamik Shiksha Abhiyan (RMSA)** and **Teacher Education (TE)**.

**Rashtriya Madhyamik Shiksha Abhiyan (RMSA)** was launched in 2009.

The aim of this programme

- Raising the minimum level of education to class X.

Later in 2018, the government of India wanted to provide a single scheme for school education starting from pre-school to Class XII. This scheme is known as **Samagra Shiksha (SS)**.

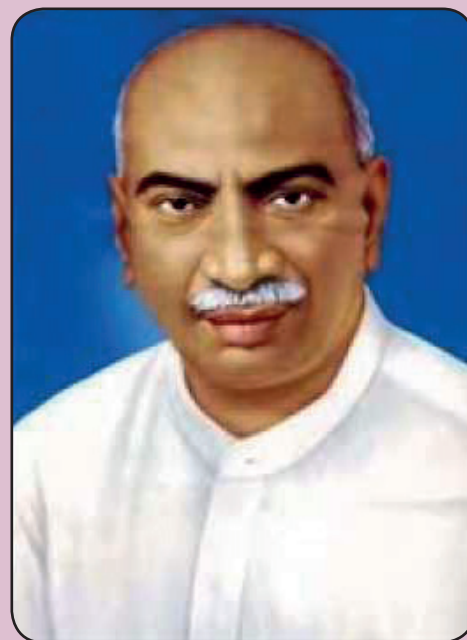
Objectives of Samagra Shiksha

- Providing quality education and improving learning outcomes of students.
- Supporting all state governments in implementing RTE.
- Focusing on girl education.
- Focusing on digital education.

In the past two decades, India has achieved a maximum enrollment of students in schools.



Perunthalaivar  
**K. Kamaraj's** birth anniversary (15<sup>th</sup> of July) is celebrated as **Educational Development Day** in recognition of his contribution to the development of education.



## Glossary

1. Ensure : assure
2. Erstwhile : Former
3. Superstitions : Irrational religious belief



- Education is very important for every individual.
- Every child has the right to have free and compulsory education.
- Education should be affordable to common people.
- The Right to Education Act (2009) describes the importance of free and compulsory education for children between the 6 to 14 years of age.
- Samagra Shiksha Scheme improves the quality of education and the learning of students.





## EVALUATION



### I. Choose the correct answer.

- 1) \_\_\_\_\_ is the first step for a child's development.
  - a) Education
  - b) Exploration
  - c) Excavation
- 2) Education is more than \_\_\_\_\_.
  - a) Numeracy
  - b) Literacy
  - c) all of the above
- 3) "Education is the manifestation of the perfection already in man" is the famous quote of \_\_\_\_\_.
  - a) Mahatma Gandhi
  - b) Dr. Radhakrishnan
  - c) Swami Vivekananda
- 4) \_\_\_\_\_ describes the importance of free and compulsory education for children.
  - a) The Right to Literacy Act
  - b) The Right to Education Act
  - c) The Right to School Act
- 5) The Government of India has framed the \_\_\_\_\_ to promote education.
  - a) National Education Policy
  - b) National Policy on Elementary Education
  - c) National Policy on Literacy



**II. Match the following.**

1	Gurukulam	2009
2	K. Kamaraj	2018
3	Right to Education Act	develops wisdom
4	Education	ancient Indian educational system
5	Samagra Shiksha	free mid-day meal

**III. True or False.**

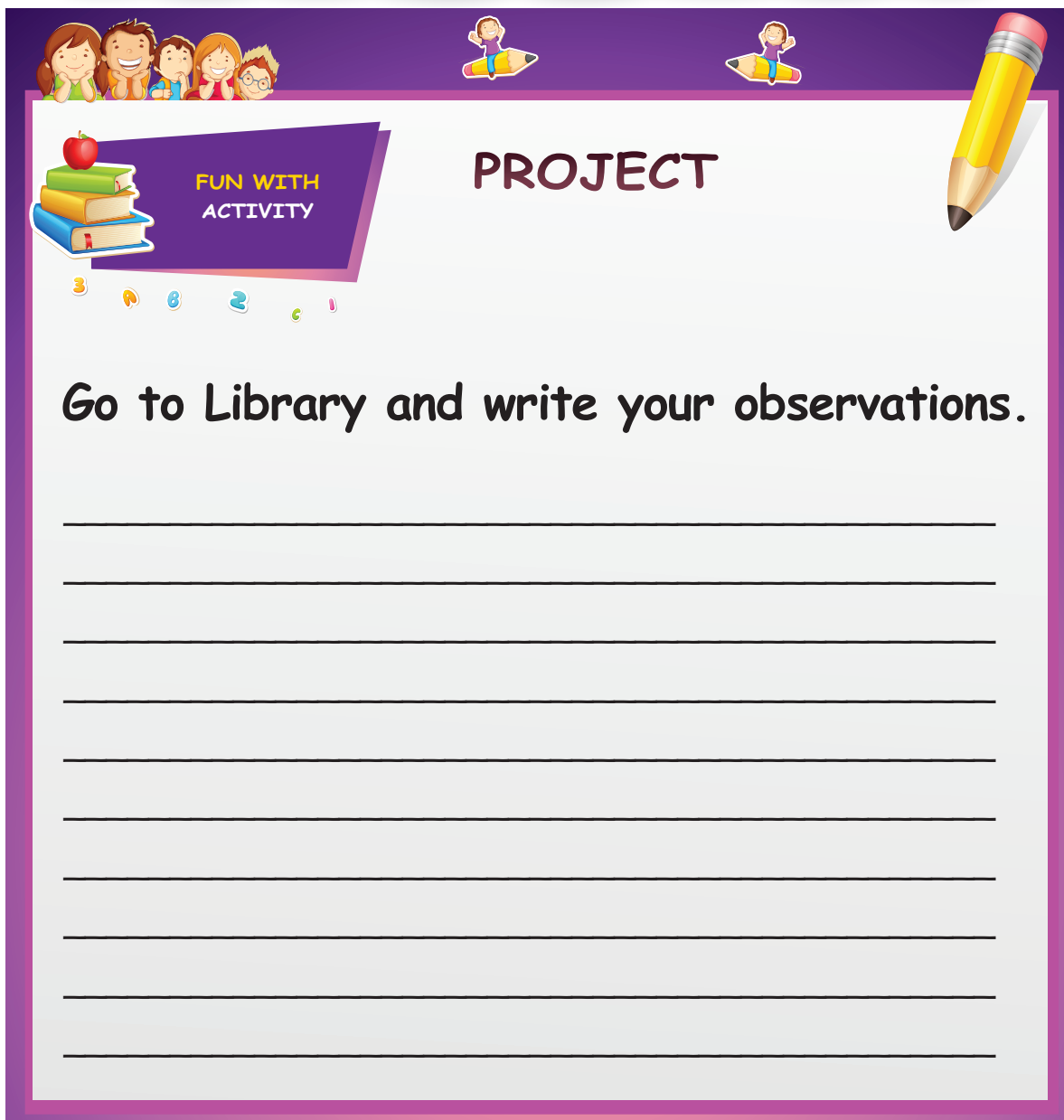
1. Every child has the right to have free and compulsory education. (     )
2. Education helps in increasing awareness of surroundings, social and political issues. (     )
3. Right to School Act describes the importance of free and compulsory education for children. (     )
4. Numeracy is the first step towards making one educated. (     )
5. The former Chief Minister of Tamil Nadu, K.Kamaraj was implemented Free mid-day meal programme. (     )

**IV. Answer the following.**

1. Write about the importance of education.
2. Write a short note on Educational Rights.
3. What is the role of Sarva Shiksha Abhiyan?
4. Give a short note on National Education Policy.
5. Write any two features of Samagra Shiksha.

**V. Answer in detail.**

1. Write about the Indian education system.
2. Write about the Right to Education Act in detail.
3. Write about Samagra Shiksha in detail.



**FUN WITH ACTIVITY**

# PROJECT

**Go to Library and write your observations.**

---

---

---

---

---

---

---

---

---

---

## Class V - Mathematics, Science & Social Science (Term III, Volume 2)

### List of Authors and Reviewers

#### Academic Advisor

**Dr. P. Kumar**

Joint Director (Syllabus),  
SCERT, Chennai.

#### Academic Co-ordinator

**Dr. K.S. Mozhiyarasi**

Principal, DIET,  
Keelapalur, Ariyalur

#### Subject Co-ordinators

##### Maths

**D. Joshua Edison**

Lecturer, DIET,  
Kalayampooni.

##### Science

**Dr. K. Chinthanaiyalan**

B.T. Asst., GHS,  
Periyar nager,  
Nandambakkam,  
Kanchipuram.

##### Social Science

**S. Maheswari**

P.G. Asst., G.G.H.S.School,  
Villupuram.

#### Layout Design and Illustration Team

Gopinath Ragupathi  
Ashok Kumar  
Santhiyavu Stephen  
Sridhar Velu  
Yesu Rathinam  
Arun Kamaraj

#### In-House QC

Rajesh Thangappan  
Jerald Wilson  
Kamatchi Balan Arumugam

#### Wrapper Design

Kathir Arumugam

#### Coordination

Ramesh Munisamy

#### Mathematics

##### Reviewers

**Dr. Ramanujam**

Professor, Institute of  
Mathematical Science,  
Tharamani, Chennai.

**R. Krithika**

Research Centre  
Azim Premji University,  
Bangalore

##### Authors

**P. Kalpana**

B.T. Assistant,  
PUMS, Alambakkam,  
Pullambadi Union,  
Tiruchirappalli.

**S. Natarajan**

B.T. Assistant,  
PUMS, Managethi,  
T. Palur Block, Ariyalur.

**S. Muthamizh Selvan**

Secondary Grade Teacher,  
PUPS, T. Palur,  
T. Palur Block, Ariyalur.

**A. Elayaraja**

Secondary Grade Teacher,  
PUMS, Koraikkuzhi,  
T. Palur Block, Ariyalur.

**V. Kalaiyaran**

Secondary Grade Teacher,  
PUPS, Kavarpalayam,  
Andimadam Block,  
Ariyalur.

**F. Vimal Raja**

Secondary Grade Teacher,  
PUPS, Vengur Colony,  
Thirukoilur Block,  
Villupuram.

**P. Malarvizhi**

BT Asst., P.U.M.School,  
Padiyanallur Thiruvallur.

#### Science

##### Expert & Reviewer

**Dr. K. Chinthanaiyalan**

B.T. Asst., GHS,  
Periyar nager,  
Nandambakkam,  
Kanchipuram.

##### Authors

**M. Mala, Lecturer,**

DIET, Keelapalur,  
Ariyalur.

**V.I. Bhuvaneswari,**

B.T.Asst, PUMS,  
Kalavaipatti, Trichy.

**M. Soundararajan,**

B.T.Asst, PUMS,  
Senapathy, Ariyalur.

#### QR - Code Management Team

**R. Jaganathan ,**

SGT,PUMS,  
Ganesapuram, Polur,  
Tiruvannamalai.

**S. Albert ValavanBabu,**

B.T. Asst., G.H.S,  
PerumalKovil, Paramakudi,  
Ramanathapuram.

**M. Murugesan**

B.T.Asst., P.U.M.School,  
Pethavelankottagam,  
Muthupettai, Thiruvallur

#### Social Science

##### Reviewers

**S. Gomathi Manickam,**

B. T Asst, G.H.S.School,  
Old Perungalathur,  
Kanchipuram.

**P. Suresh,**

P.G. Asst., G.G.H.S.School,  
Attur, Salem.

##### Authors

**S. Maheswari**

P.G. Asst., G.G.H.S.School,  
Villupuram.

**R. Chitra,** B.T. Assistant,

Isha Vidhya Matric.H.S.S,  
Coimbatore.

**Uma Maheswari,**

B.T. Assistant,  
Isha Vidhya Matric.H.S.S,  
Coimbatore.

This book has been printed on 80 GSM Maplitho paper.

Printed by offset at: