SCIENCE AND ELEMENTARY TECHNOLOGY

PRIMARY ONE

PUPIL'S BOOK

Copyright

© 2020 Rwanda Education Board

All rights reserved.

This book is property of the Government of Rwanda.

FOREWORD

Dear Pupil,

Rwanda Education Board is honoured to present to you this Science and Elementary Technology (SET) book for Primary One which serves as a guide to competence-based teaching and learning to ensure consistency and coherence in the learning of Science and Elementary Technology subject. The Rwandan educational philosophy is to ensure that you achieve full potential at every level of education which will prepare you to be well integrated in society and exploit employment opportunities.

The government of Rwanda emphasises the importance of supporting teaching and learning materials with the syllabus to facilitate your learning process. Many factors influence what you learn, how well you learn and the competences you acquire. Those factors include the instructional materials available among others. Special attention was paid to the activities that facilitate the learning process in which you can develop your ideas and make new discoveries during concrete activities carried out individually or with peers.

In competence-based curriculum, learning is considered as a process of active building and developing knowledge and meanings by the learner where concepts are mainly introduced by an activity, a situation or a scenario that helps the learner to construct knowledge, develop skills and acquire positive attitudes and values. For effective use of this textbook, your role is to:

- Work on given activities which lead to the development of skills;
- Share relevant information with other learners through presentations, discussions, group work and other active learning techniques such as role play, case studies, investigation and research in the library, from the internet or from your community;
- Participate and take responsibility for your own learning;
- Draw conclusions based on the findings from the learning activities.

I wish to sincerely extend my appreciation to the people who contributed towards the development of this textbook, particularly REB staff who organized the whole process from its beginning. Special gratitude goes to translators, illustrators and designers who carefully worked to successful completion of this textbook. Any comment or contribution would be welcome for the improvement of this textbook for the next edition.

Dr. NDAYAMBAJE Irénée
Director General of Rwanda Education Board

ACKNOWLEDGEMENT

I wish to express my appreciation to all the people who played a major role in development of this Science and Elementary Technology (SET) book for Primary One. It would not have been successful without active participation of different education stakeholders.

I owe gratitude to different translators, illustrators, designers and all other individuals whose efforts in one way or the other contributed to the success of writing of this translated book.

Finally, my word of gratitude goes to the Rwanda Education Board staff particularly those from the Curriculum, Teaching and Learning Resources Department who were involved in the whole process of writing of this translated book.

Joan MURUNGI
Head of Curriculum, Teaching and Learning Resources Department

TABLE OF CONTENTS

FOREWORD iii

ACKNOWLEDGEMENT v

Unit 1: Materials and tools used at home and at school 1

1.1. Introduction 1
1.2. School materials and their uses 2
1.3. Home materials, tools and their uses 9
1.4. Cleaning of home materials 15

Unit 2: Toys, materials and teaching and learning aids 17

2.1. Introduction 17
2.2. Making toys out of paper 18
2.3. Making toys out of banana fibres 19
2.4. Making toys out of sorghum sticks 20
2.5. Making a toy out of a box, bottle tops, thread and sticks 21
2.6. Making toys out of plastic paper, sticks and threads 22
2.7. Making toys out of clay soil 23

Unit 3: Basic ICT tools 25

3.1. Introduction 25
3.2. Basic ICT tools 26
3.3. Uses of basic ICT tools 27
3.4. How to use basic ICT tools? 28

Unit 4: WATER 31

4.1. Introduction 31
4.2. Sources of water 32
4.3. Types of water 33
4.4. Uses of water 34
4.5. Steps of washing clothes 35
4.6. Steps of cleaning food (sweet potatoes) 36
4.7. Steps of cleaning fruits 37

Unit 5: ANIMALS 39

5.1. Introduction 39
5.2. Domestic animals 40
5.3. Wild animals 41
5.4. Uses of domestic animals 42
5.5. Uses of wild animals 43
5.6. Small animals (Insects) 44
5.7. Main body parts of an insect. 44

Unit 6: PLANTS 47

6.1. Introduction 47
6.2. Cultivated plants 48
6.3. Non- cultivated plants 49

Unit 7: WASTE AND HYGIENE 51

7.1. Introduction 51
7.2. Types of Wastes 52
7.3. Ways of waste management 54
7.4. Ways of cleaning a home and its surrounding 55

Unit 8: THE HUMAN BODY 57

8.1. Introduction 57
8.2. Main human body parts 58
8.3. Uses of human body parts 59
8.4. Taking care of human body parts 60

Unit 9: NATURAL AND ARTIFICIAL MATERIALS 67

9.1. Introduction 67
9.2. Uses of materials 69
9.3. Artificial materials 70

UNIT

1 MATERIALS AND TOOLS USED AT HOME AND AT SCHOOL

1.1. Introduction

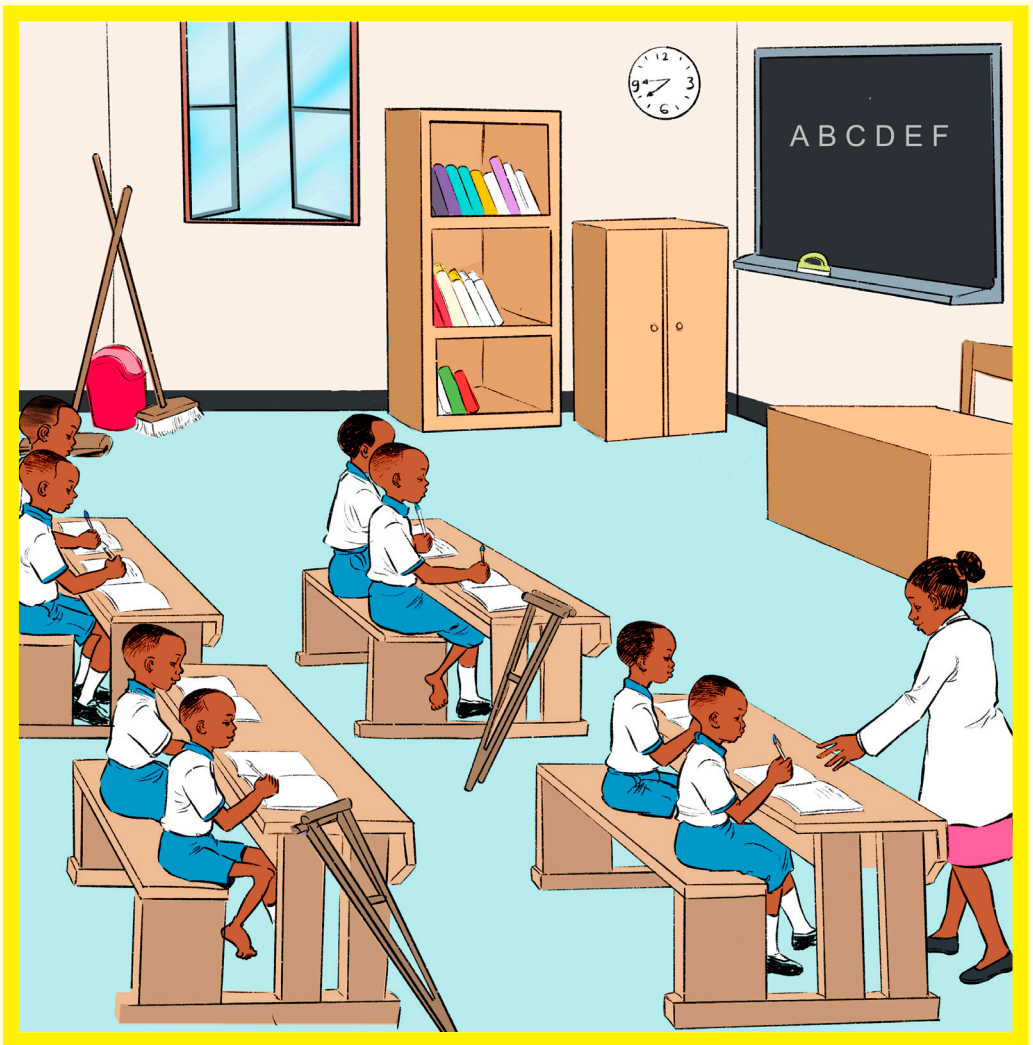
Look at the picture

What do you see in the picture?

1.2. School materials and their uses

1.2.1. Writing materials and their uses

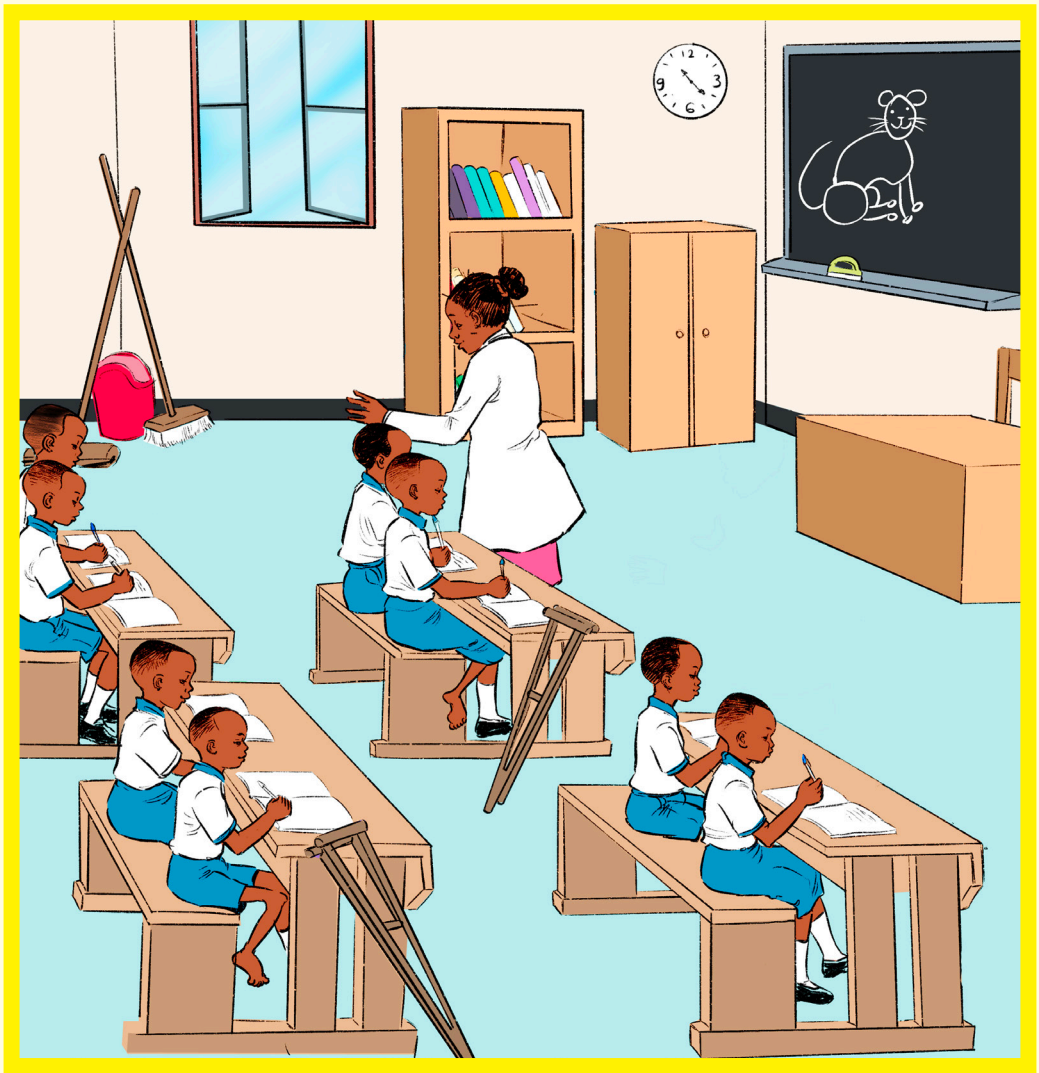
Look at the picture



- What are the pupils doing?

1.2.2. Drawing materials and their uses

Look at the picture



- What are the pupils doing?

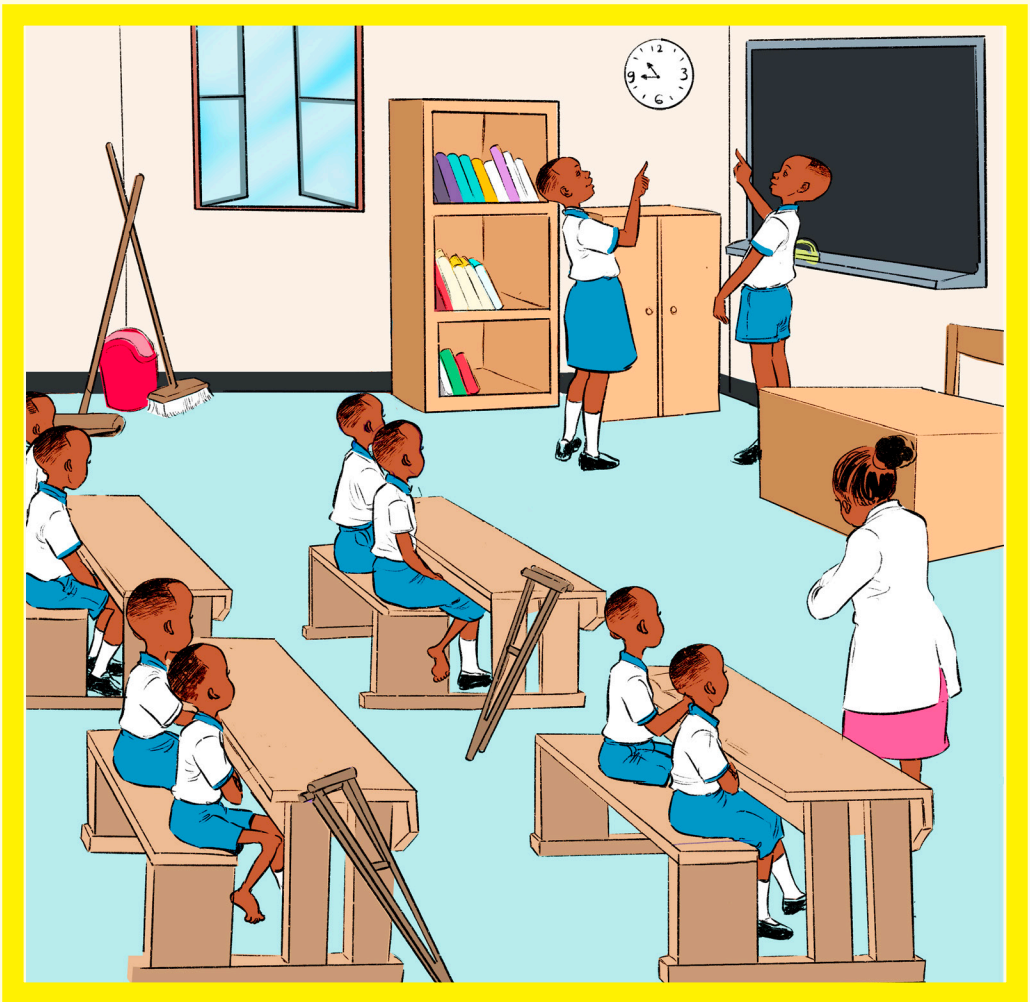
1.2.3. Reading materials and their uses

Look at the picture

- Where are the pupils reading from?

1.2.4. Things we use to tell time

Look at the picture



- What are the two standing pupils doing?

1.2.5. Storage materials at school

Look at the picture

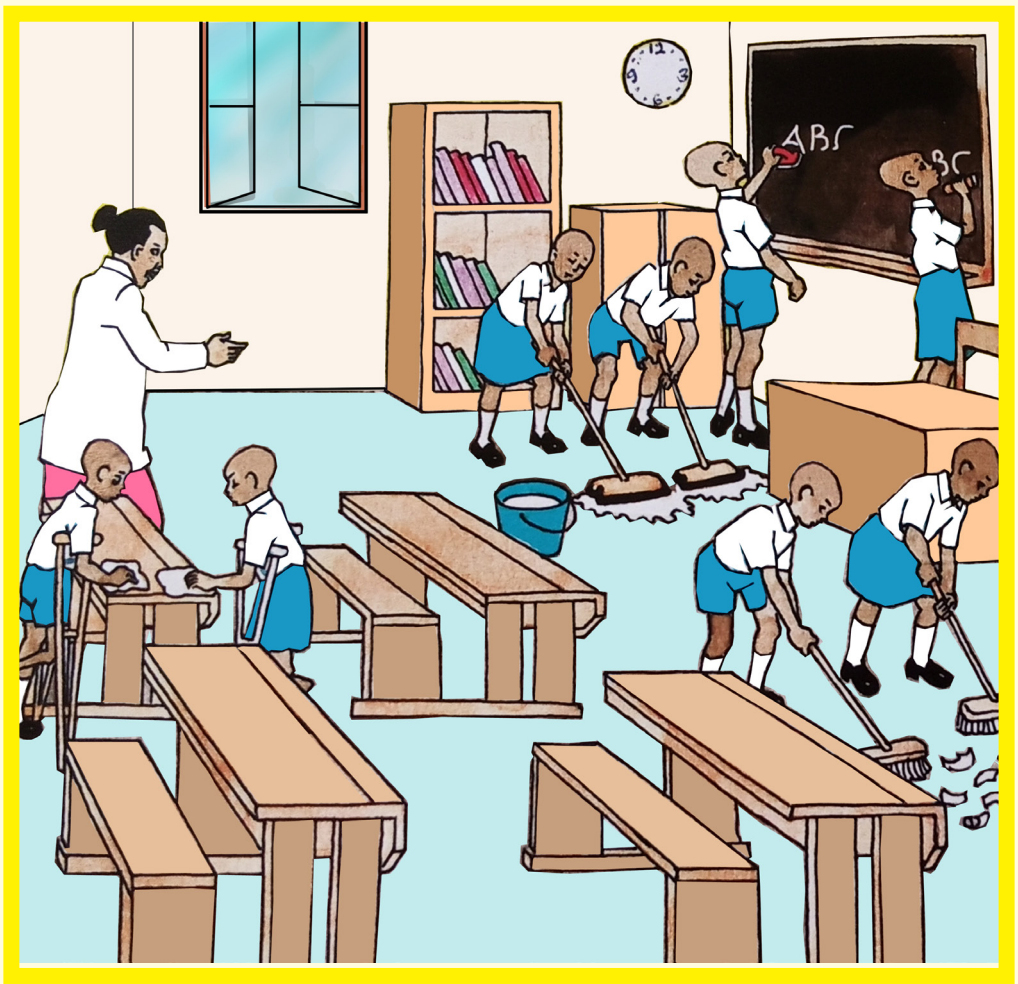
- Where are the pupils keeping their books?

1.2.6. Cleaning materials at School

Look at the picture

- What are the pupils doing?

Look at the picture

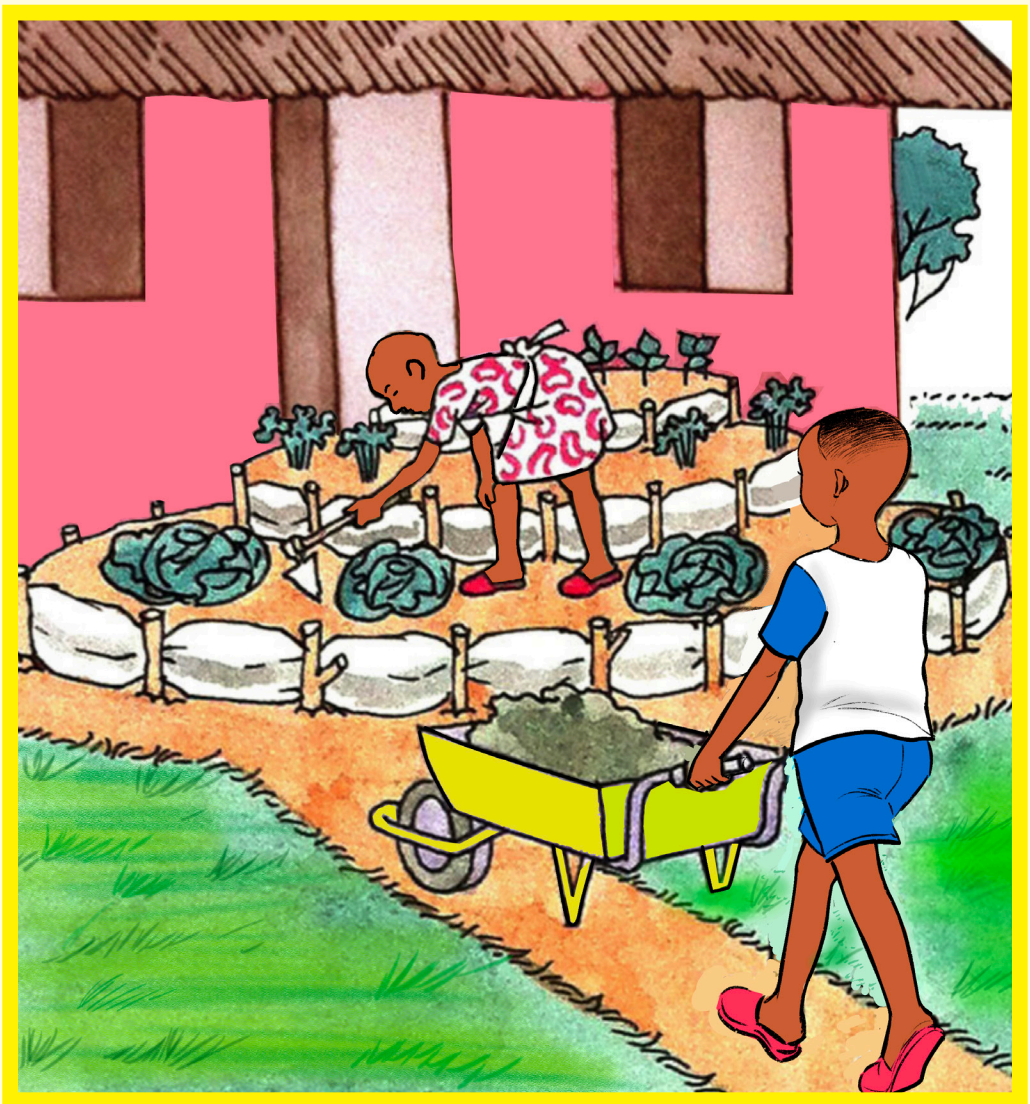


- What are the pupils doing?

1.3. Home materials, tools and their uses

1.3.1. Agriculture tools and their uses

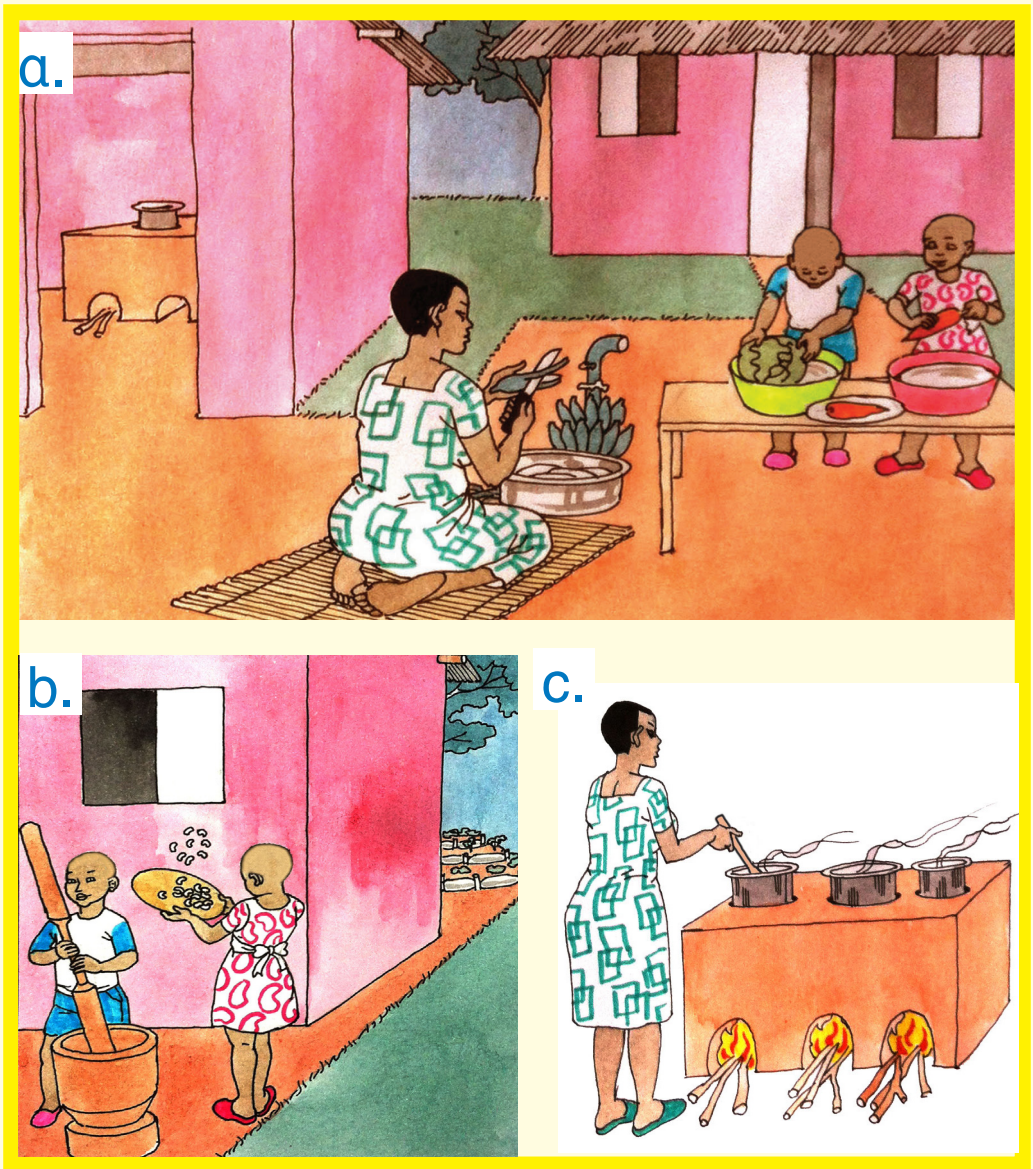
Look at the picture



- What are the children doing?

1.3.2. Kitchen utensils and their uses

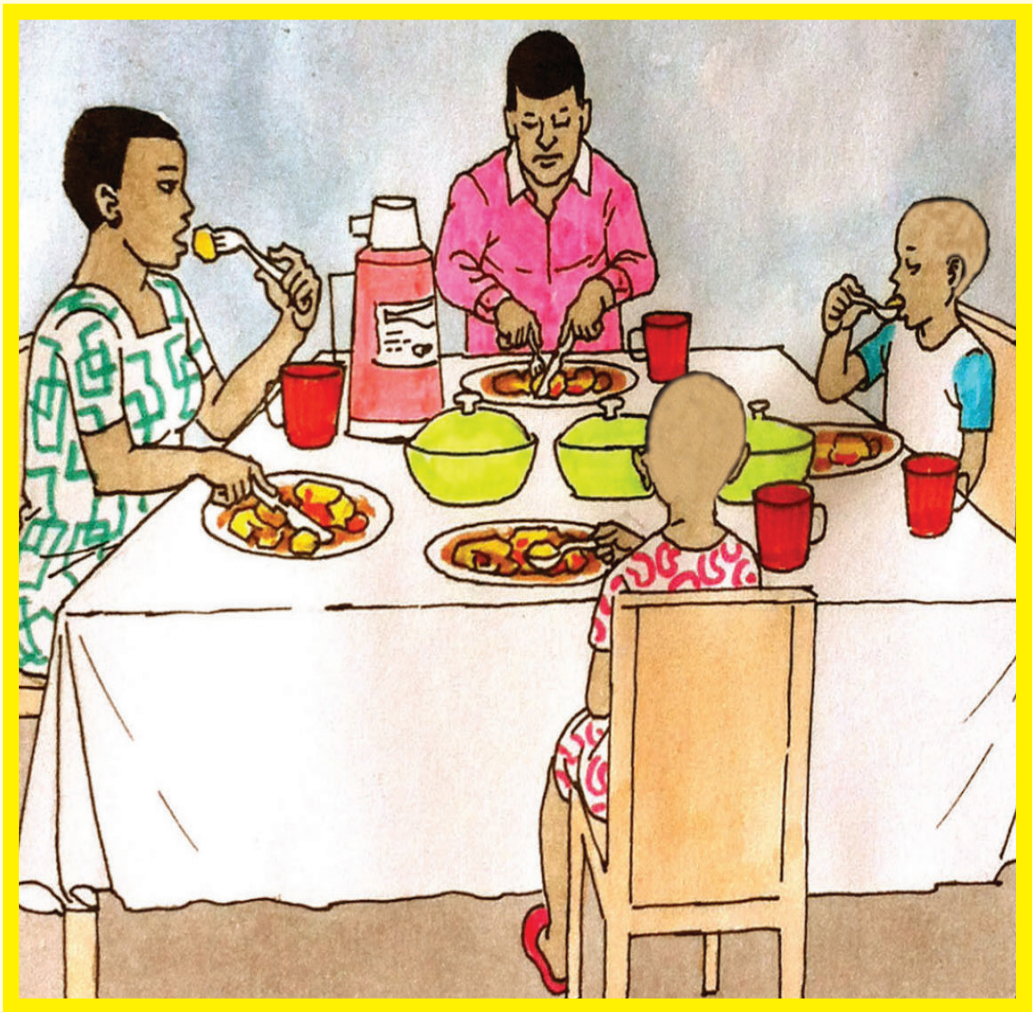
Look at the picture



- What are children in picture **(a)** doing?
- What are children in picture **(b)** doing?

1.3.3. Dining utensils and their uses

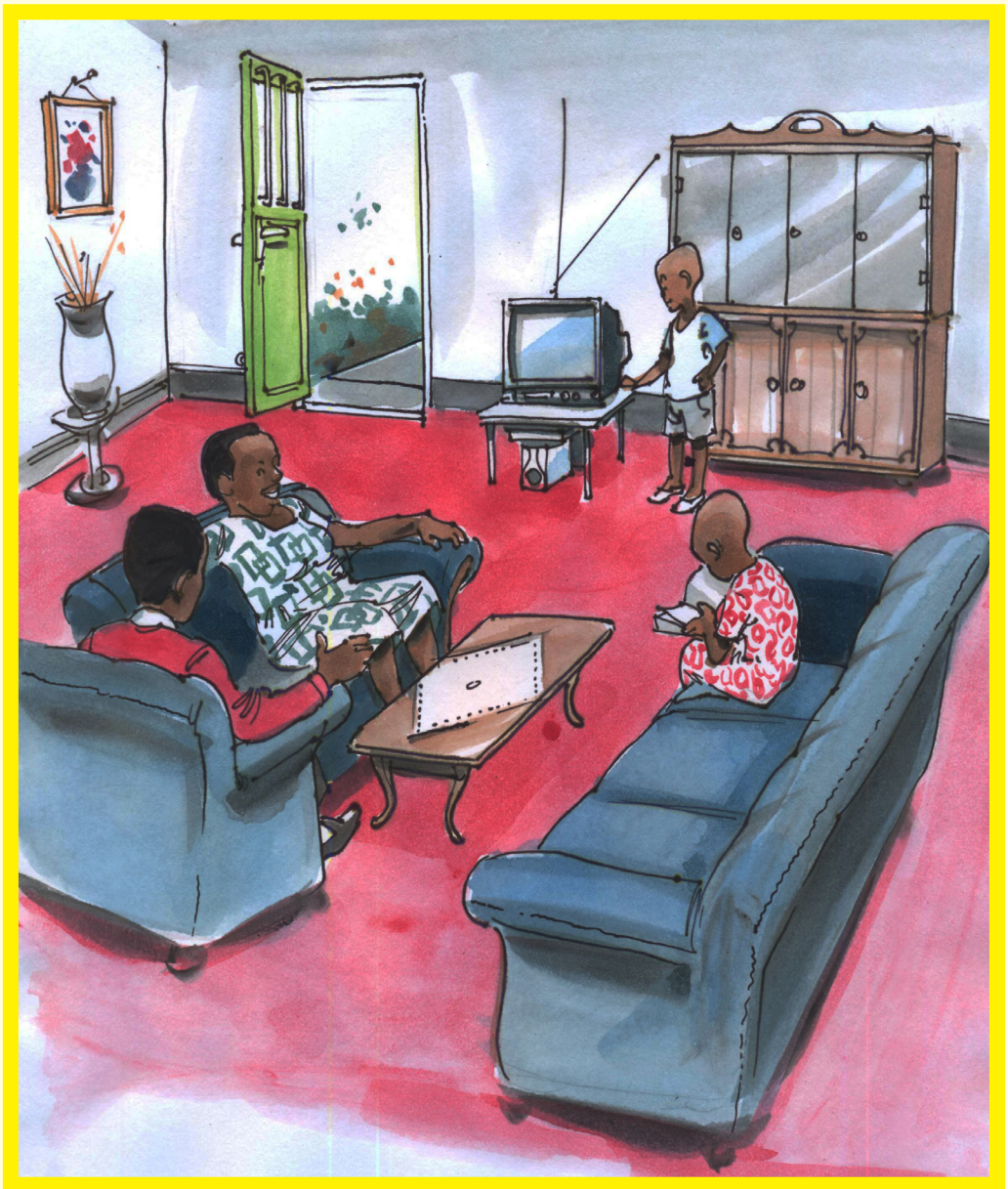
Look at the picture



- What can you see?
- What are these people doing?

1.3.4. Sitting room materials and their uses

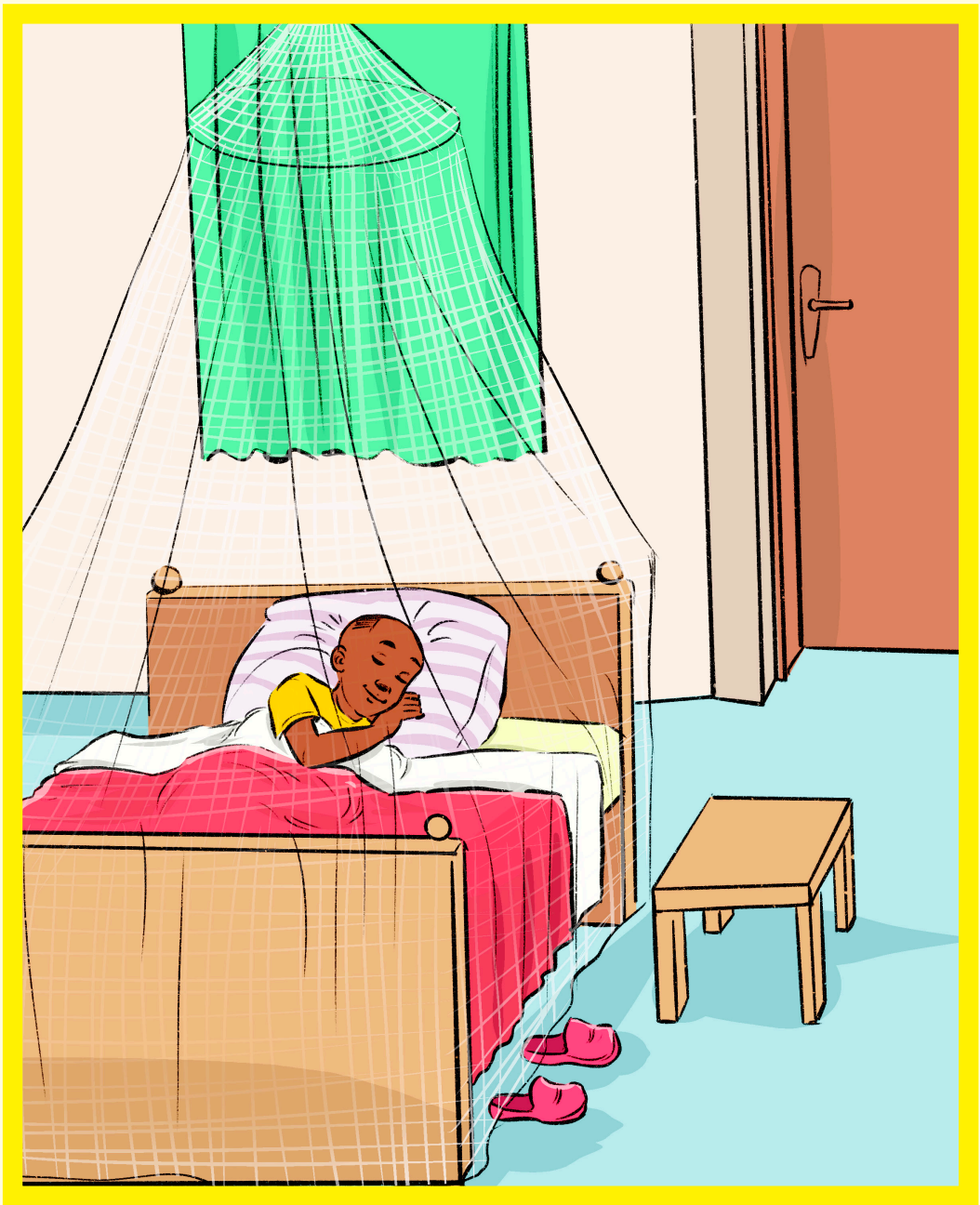
Look at the picture



- Where are these people sitting?
- What are they sitting on?

1.3.5. Bedroom materials

Look at the picture

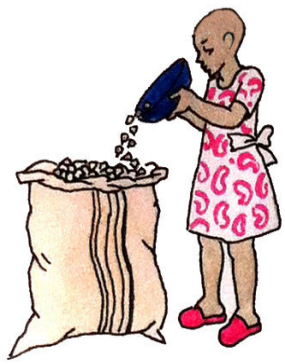


- What is the child doing?

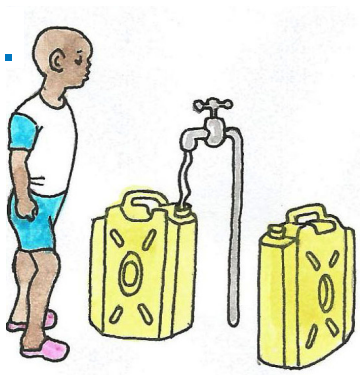
1.3.6. Storage materials and their uses

Look at the picture

a.



b.



c.

d.

e.

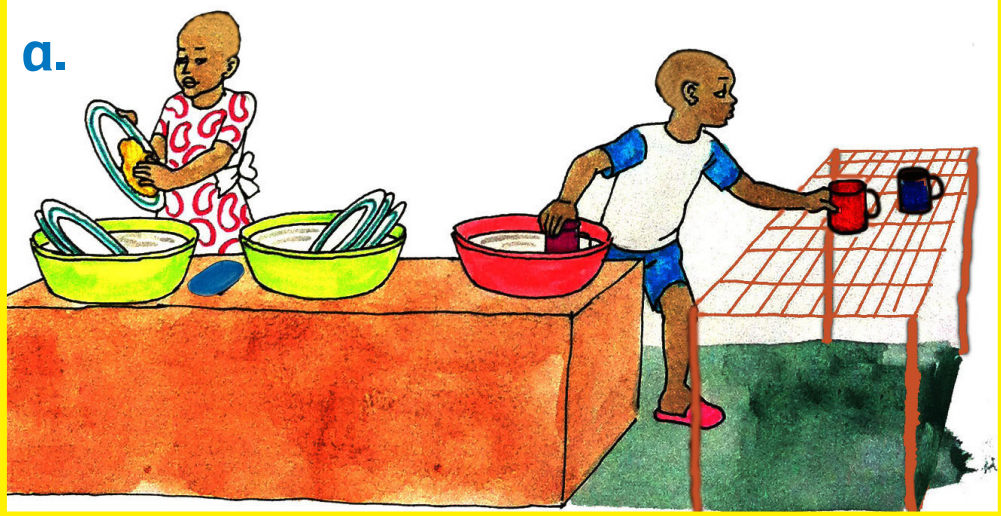
f.

- Where did children keep the clothes?

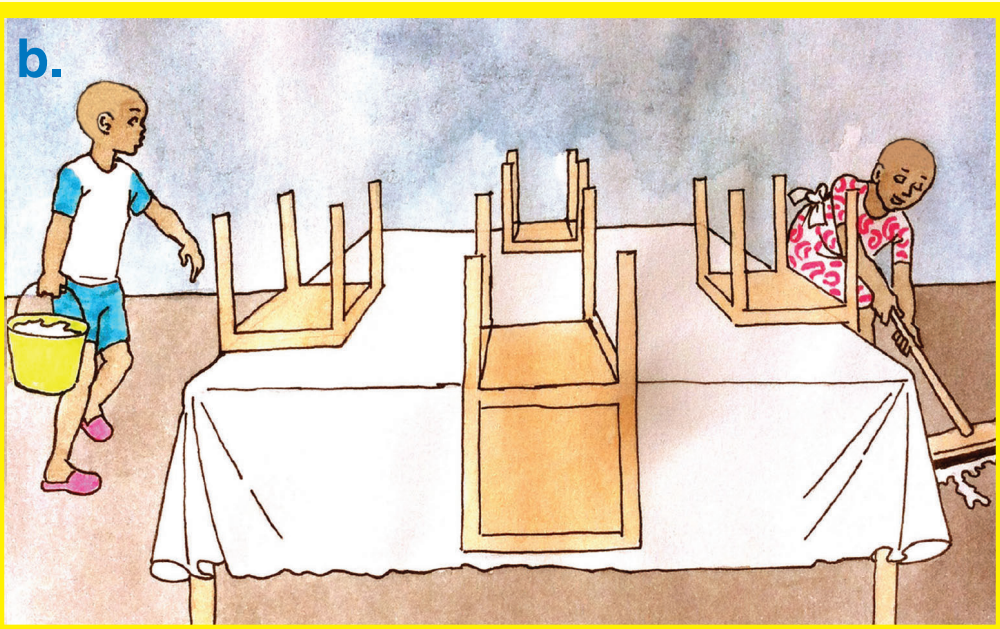
1.4. Cleaning of home materials

Look at the picture

a.



b.



- What do you see in the picture?
- What are the children doing?

I have discovered that:

School materials are:

- Writing materials (pens, notebooks)
- Drawing Materials (Pencils, rubber, sharpener…)
- Reading Materials (Books, papers…)
- Storage materials (School bag, desk…)
- Time telling materials (Clock, bell, alarm)
- Cleaning materials (Soap, water, duster, bloom, basin…).

Home tools and materials are:

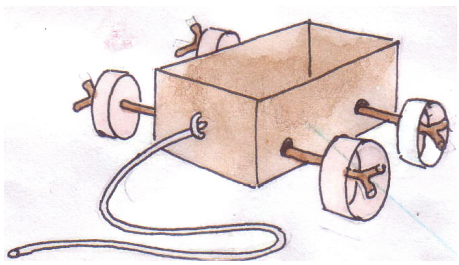
- Agriculture tools (Hoe, wheelbarrow…)
- Kitchen utensils (cooking pots, knives, cups…)
- Dining utensils (spoons, forks, plates…)
- Sitting/living room materials (chairs, table…)
- Bedroom materials (bed, covers, shelves…).

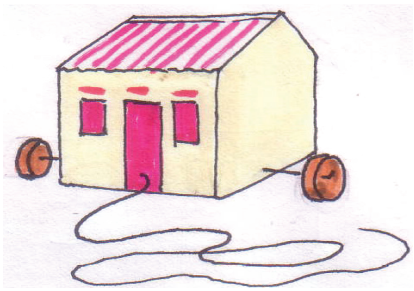
UNIT

2 TOYS, MATERIALS AND TEACHING AND LEARNING AIDS

2.1. Introduction

Look at the picture

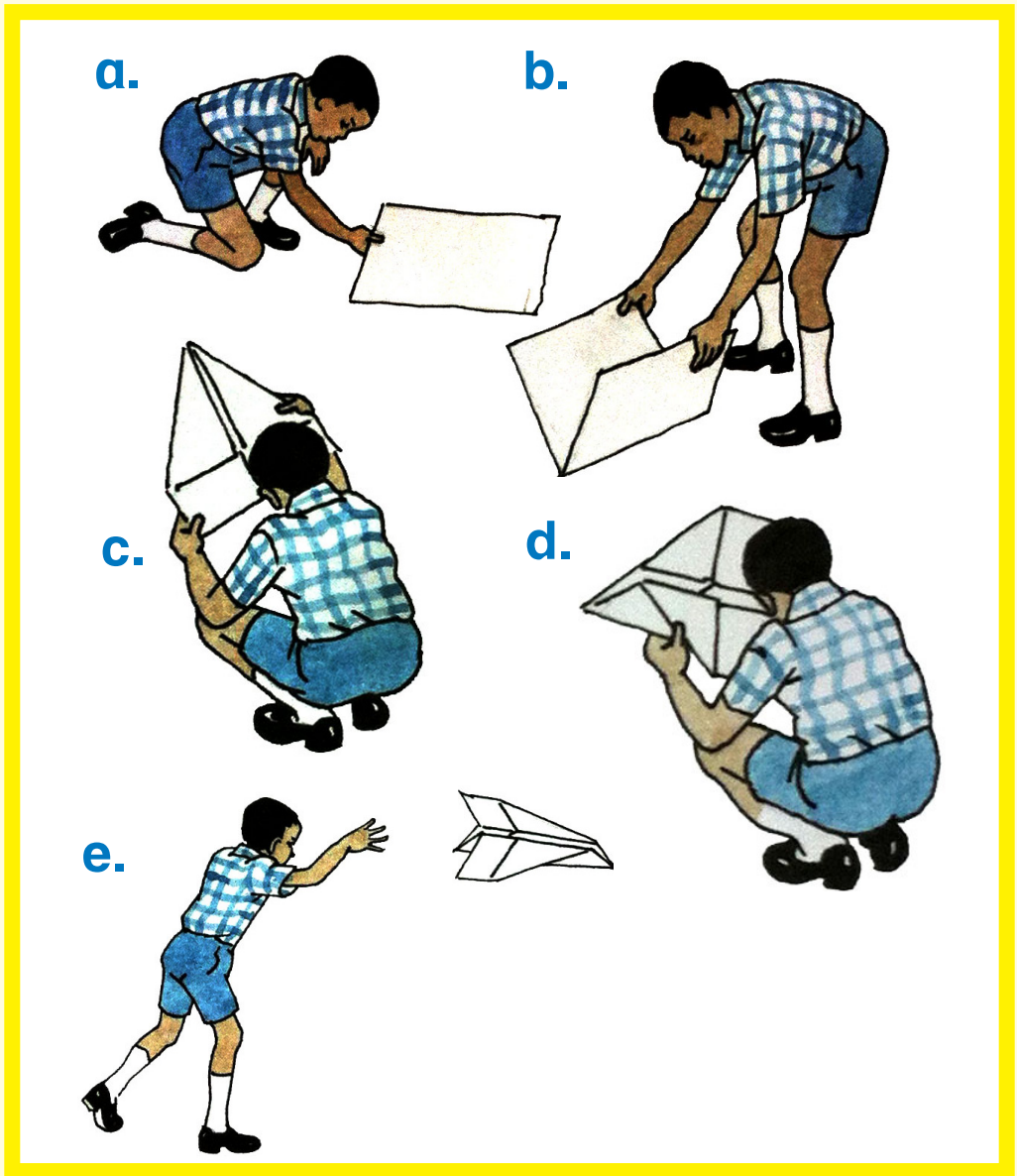




What do you see in the picture?

2.2. Making toys out of paper

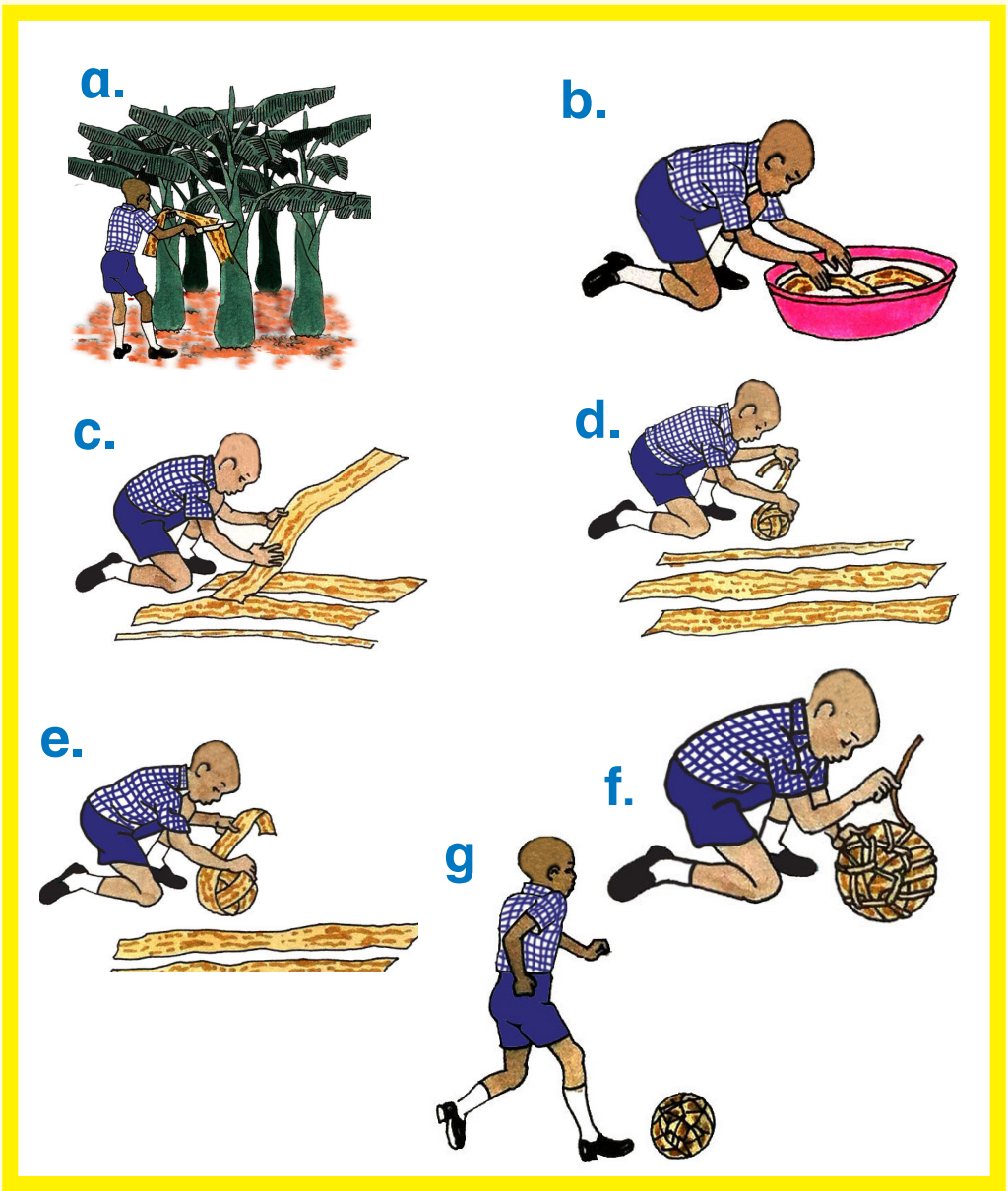
Look at the picture



- What does the picture show?
- Make the same object

2.3. Making toys out of banana fibres

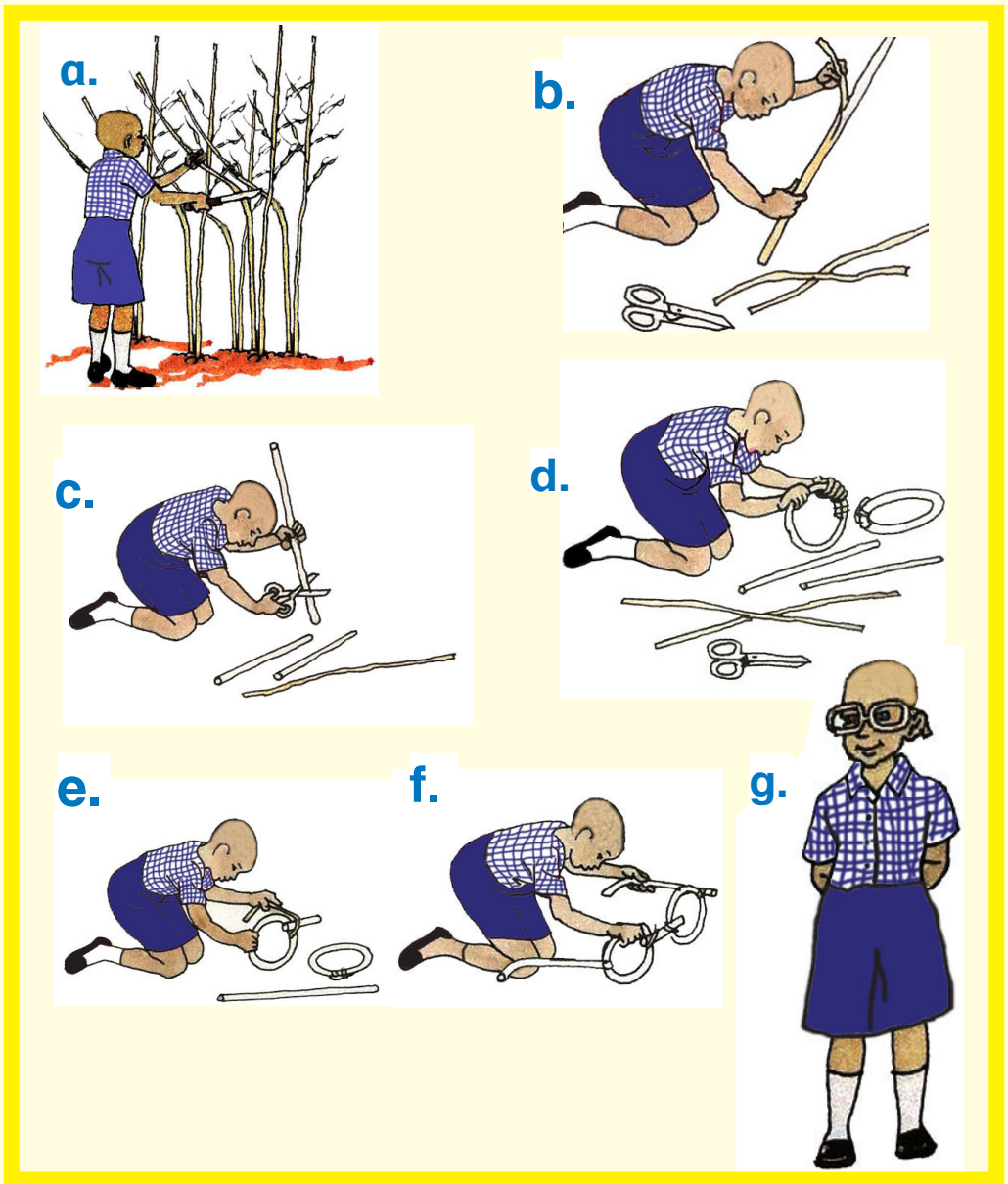
Look at the picture



- What is the child making?
- Make that object.

2.4. Making toys out of sorghum sticks

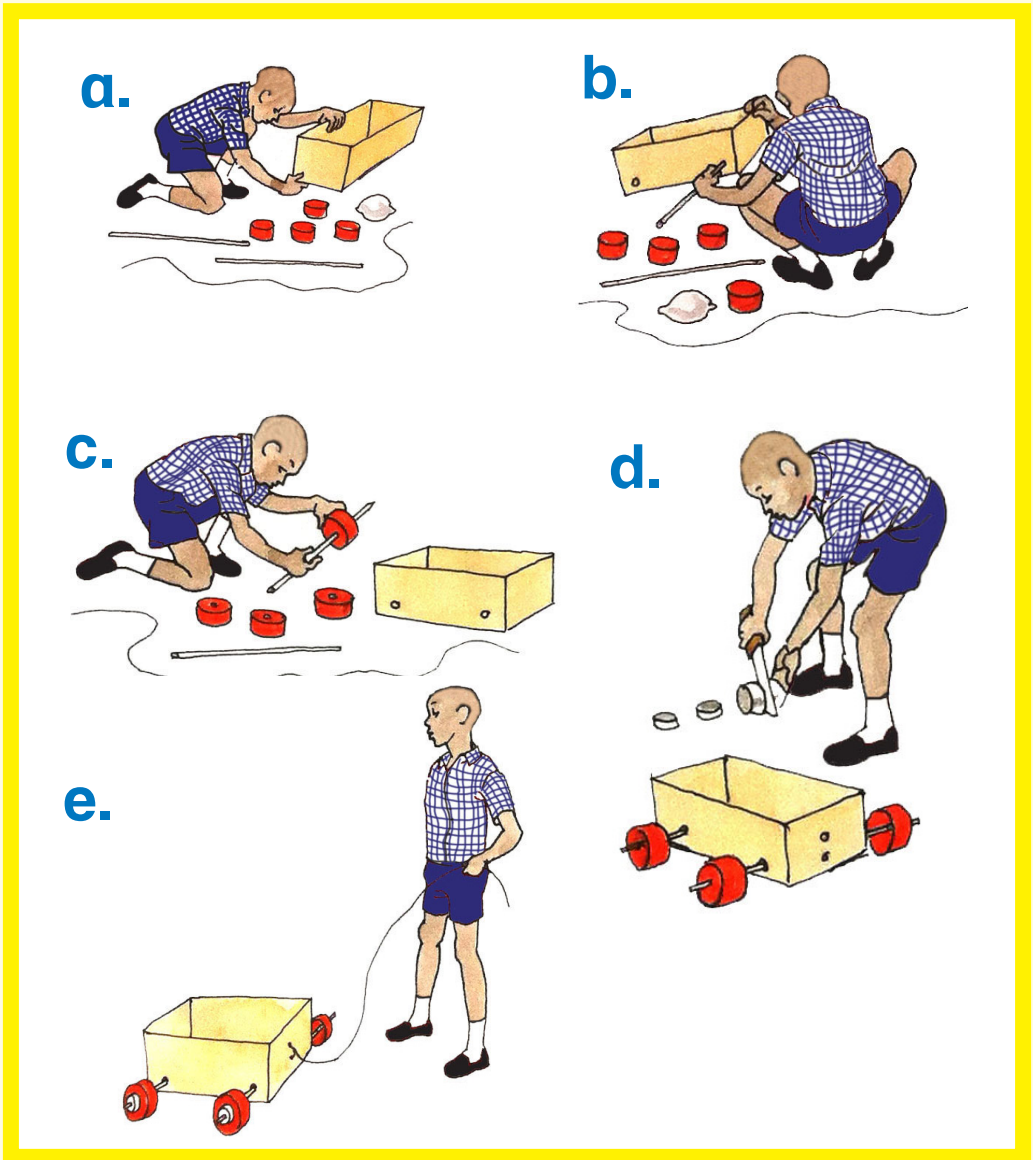
Look at the picture



- What is the child making?
- Try to make that toy.

2.5. Making a toy out of a box, bottle tops, thread and sticks

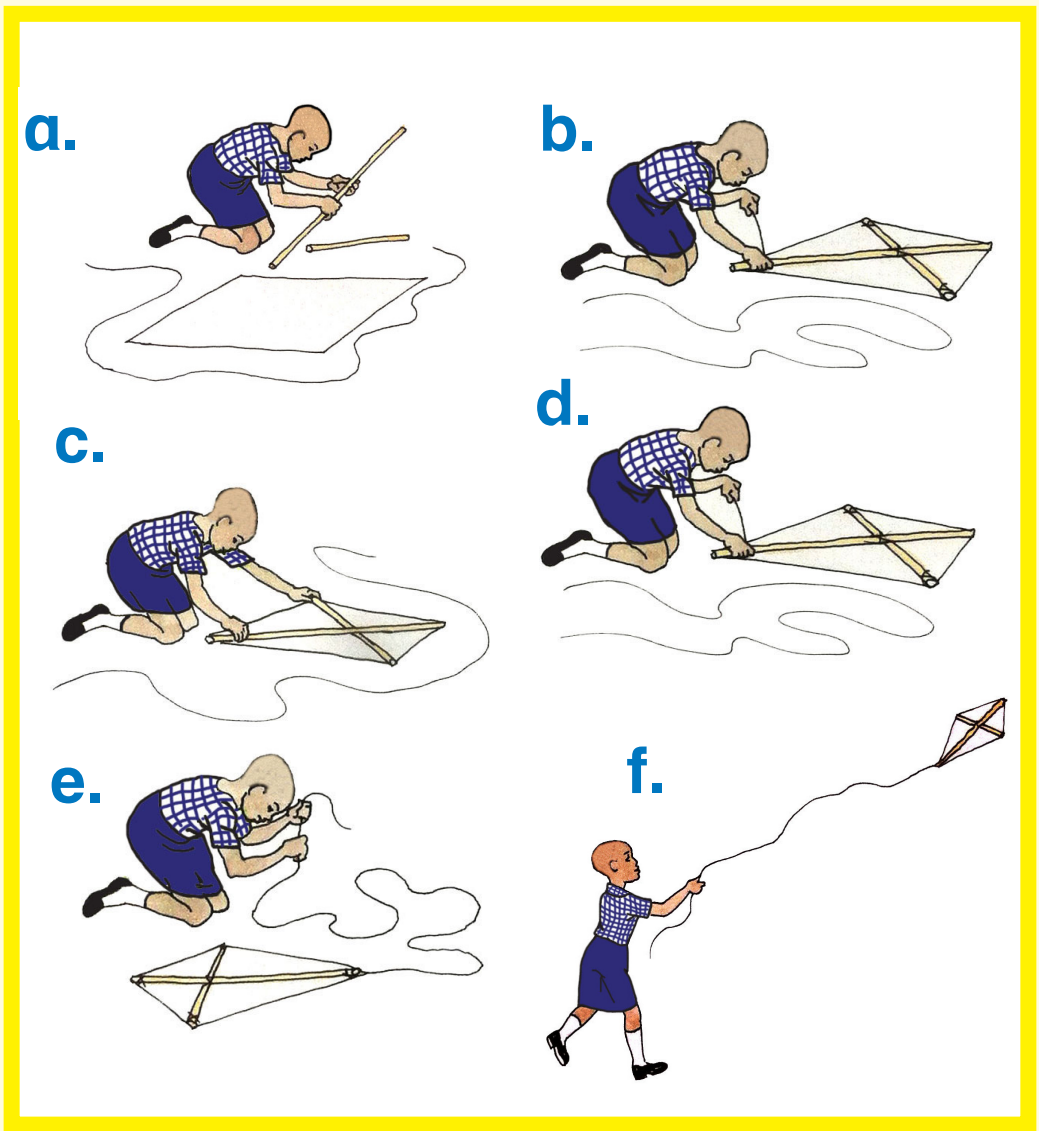
Look at the picture



- What is this toy?
- Try to make the toy.

2.6. Making toys out of plastic paper, sticks and threads

Look at the picture



- What is the child making?
- Try to make that toy.

2.7. Making toys out of clay soil

Look at the picture

- What is the animal in the picture **f**?
- Try and make that animal **f**.

I have discovered that:

- **In paper**, I can make a plane toy
- **In banana fibres**, I can make a ball
- **In dry sorghum sticks**, I can make puppet glasses.
- **In a hard paper box**, I can make a toy car.
- **In clay soil**, I can mold a cow.

UNIT

3 BASIC ICT TOOLS

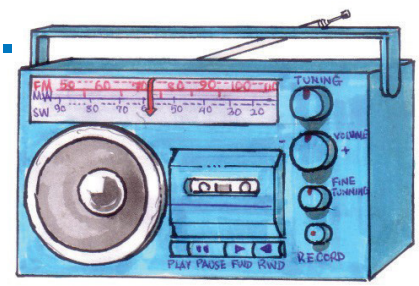
3.1. Introduction

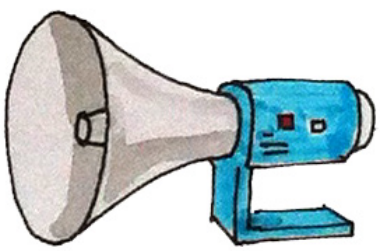
Look at the picture

What do you see in the picture?

3.2. Basic ICT tools

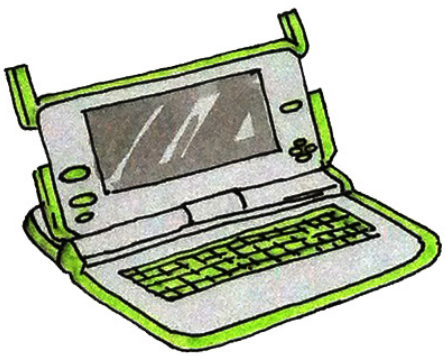
Look at the picture

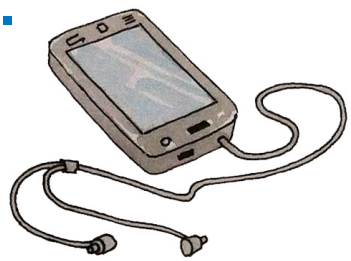
a. 

b. 

c.

d.

e. 

f. 

- What do you see in the picture?

3.3. Uses of basic ICT tools

Look at the picture

a.

b.

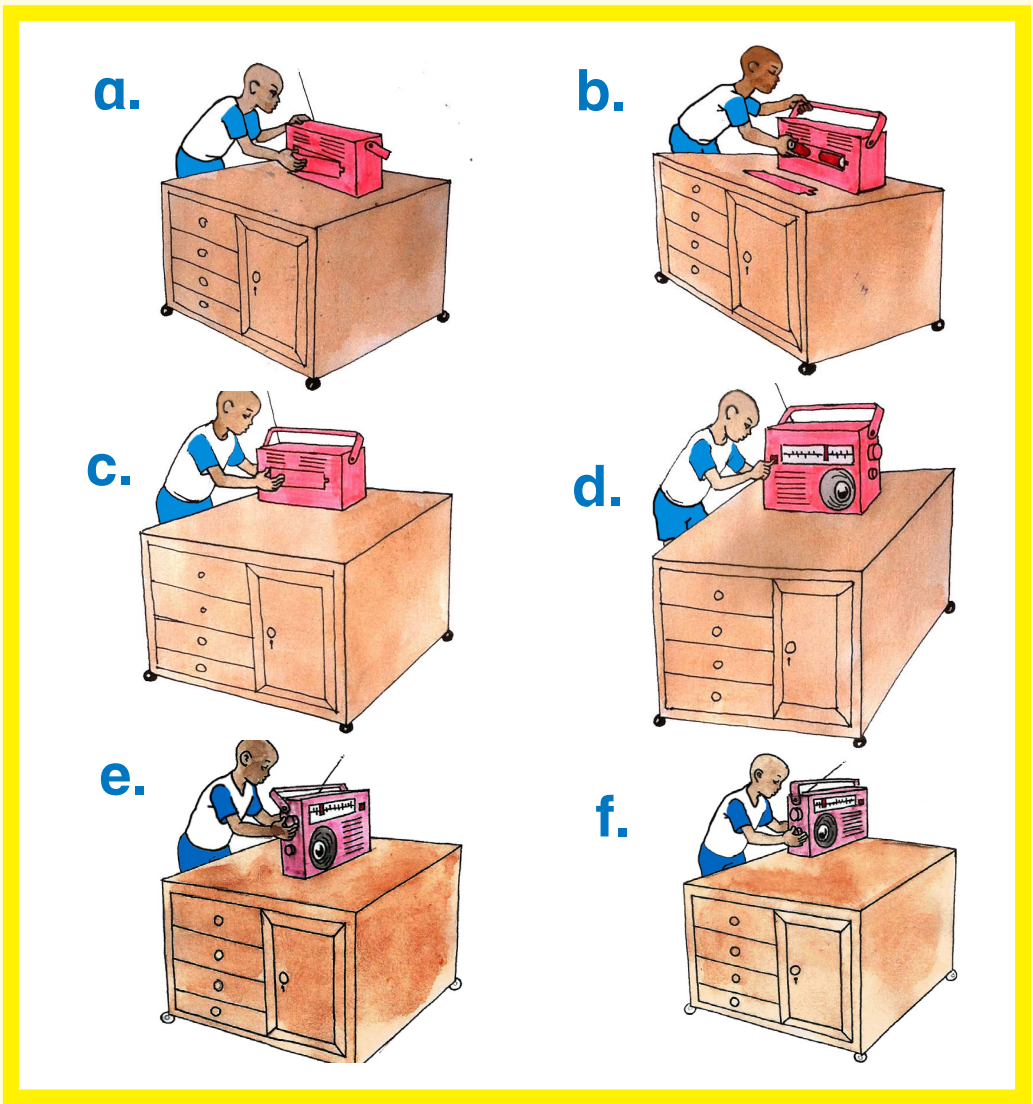
c.

- What are the people doing?

3.4. How to use basic ICT tools?

3.4.1. How to use a radio?

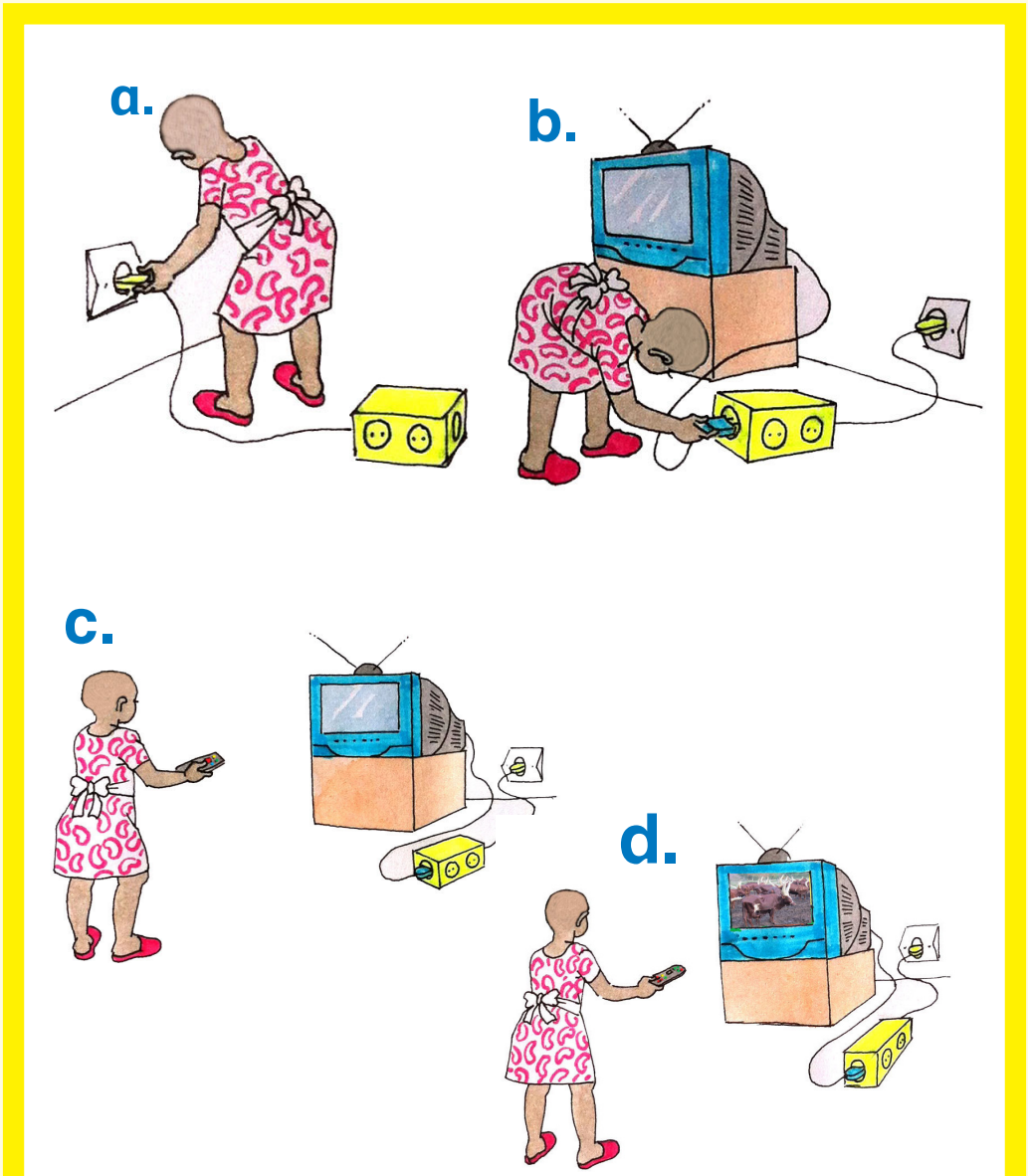
Look at the picture



- What is the child doing?
- Do the same.

3.4.2. How to use a television?

Look at the picture



- What is the child doing?
- Do the same.

I have discovered that:

Basic ICT tools are:

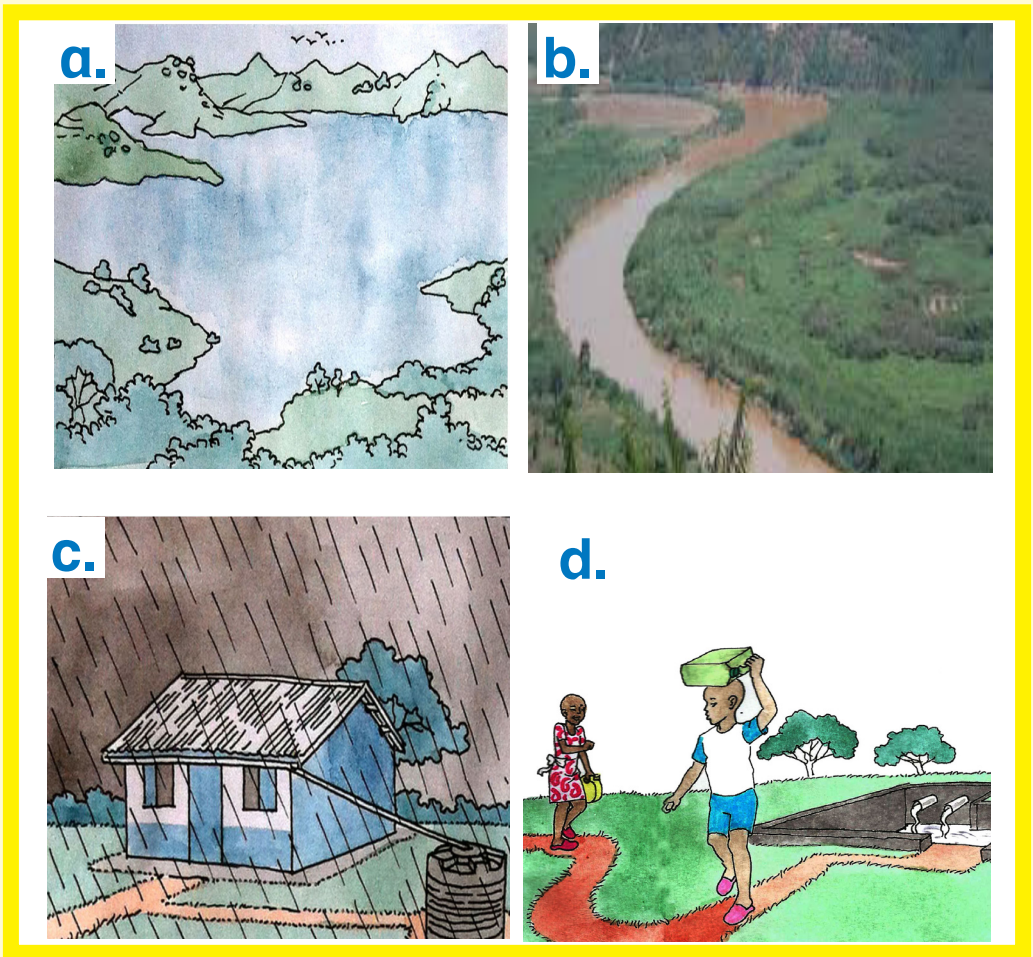
- Loud speakers,
- Recorders,
- Radio,
- Camera,
- Computers,
- Television set.

UNIT

4 WATER

4.1. Introduction

Look at the picture

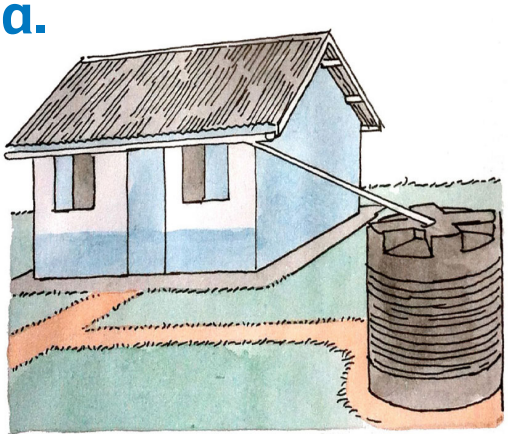


- What do you see in the picture?

4.2. Sources of water

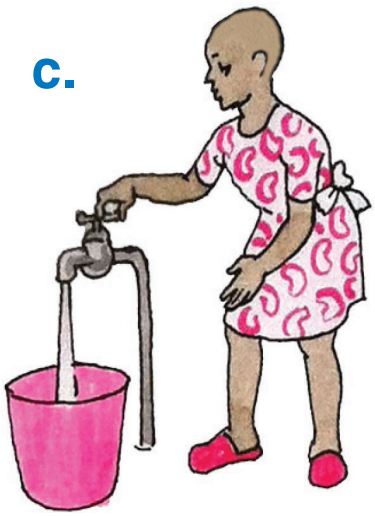
Look at the picture

a.



b.

c.

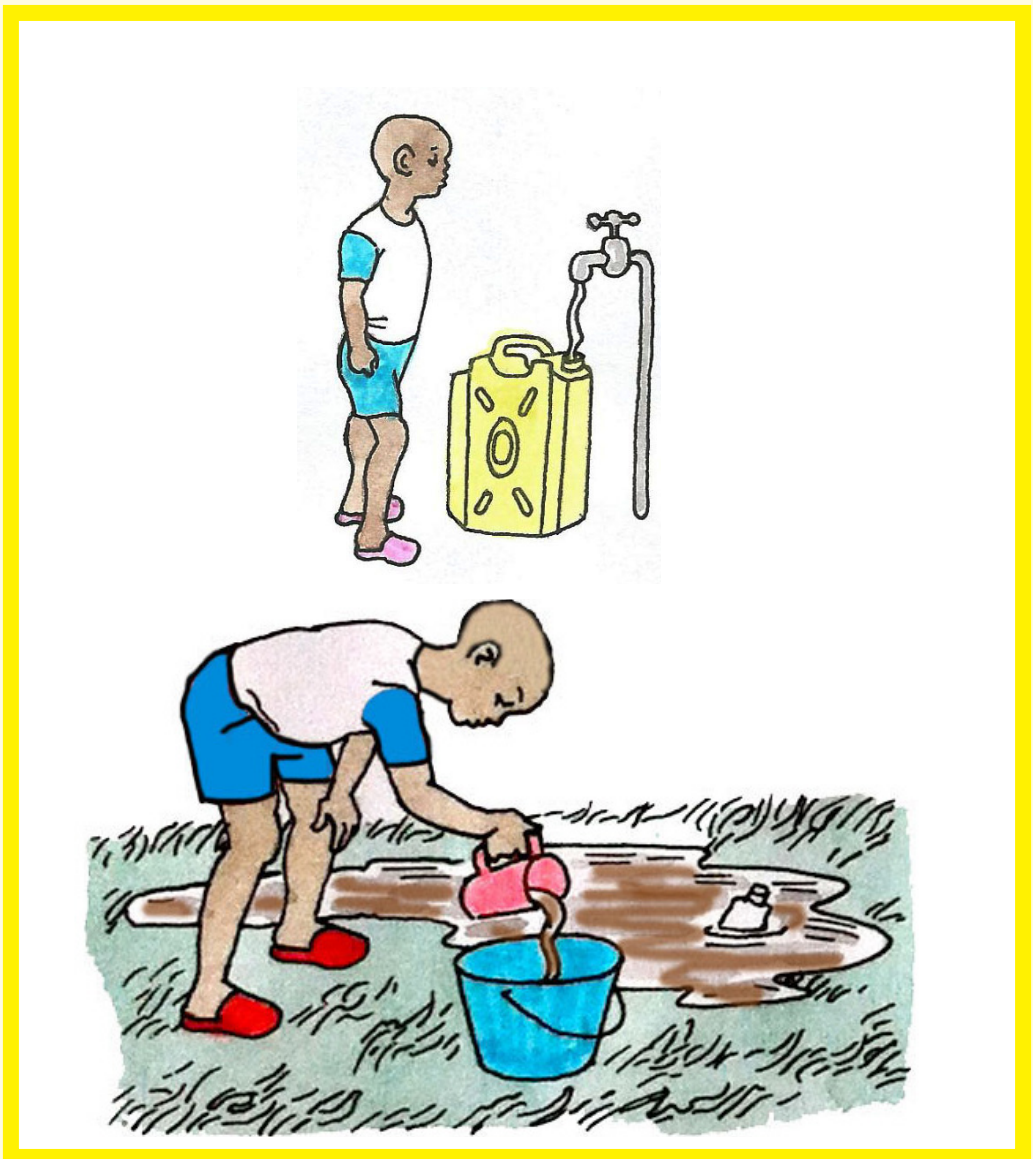


d.

- What do you see in picture?
- What are the children doing?

4.3. Types of water

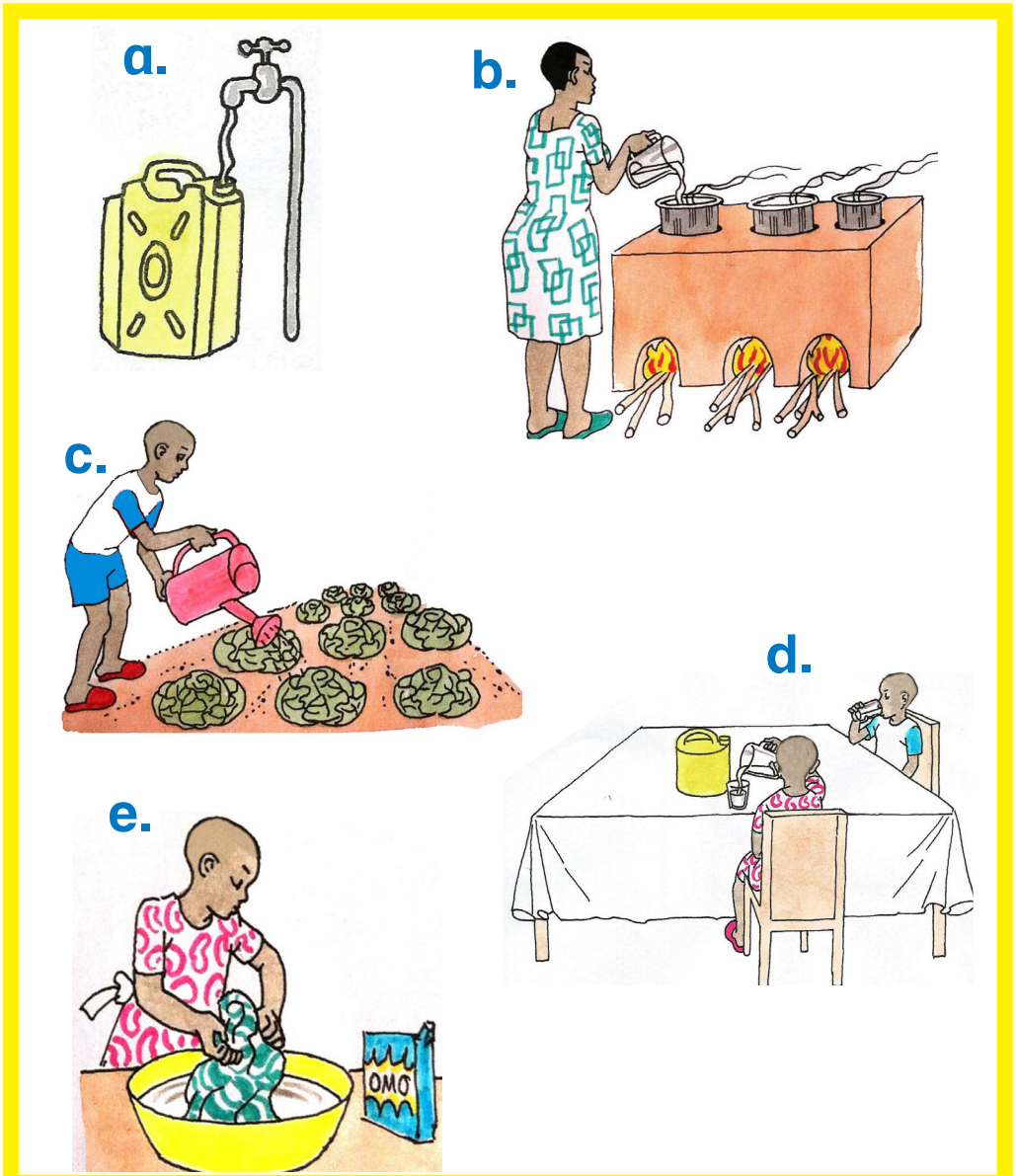
Look at the picture



- Which water can you choose to fetch?

4.4. Uses of water

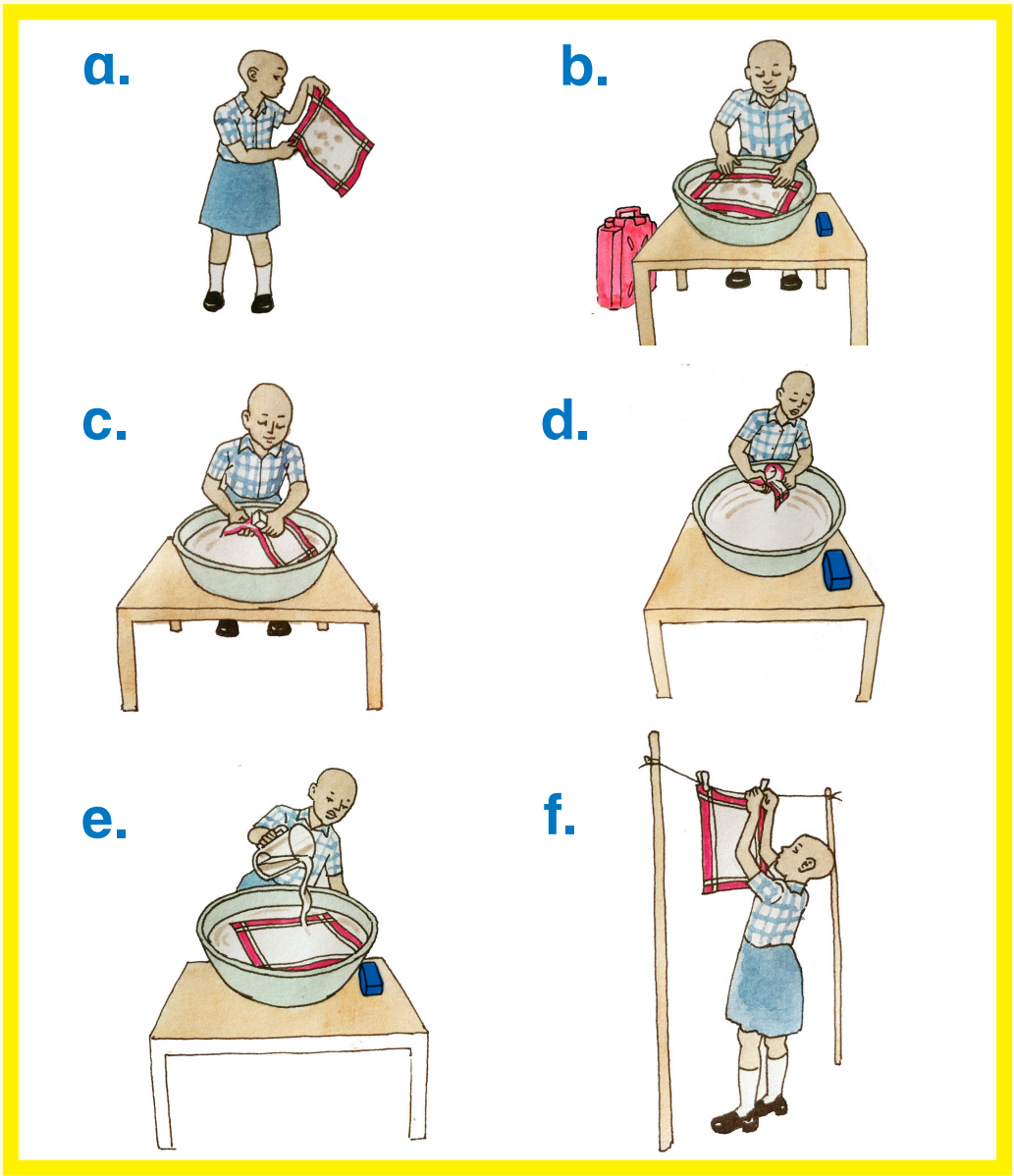
Look at the picture



- What are the people doing?

4.5. Steps of washing clothes

Look at the picture



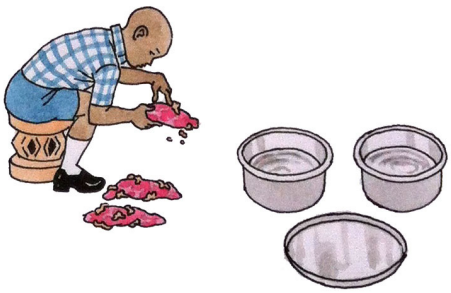
- What is the child washing?
- Try to wash a pair of socks

4.6. Steps of cleaning food (sweet potatoes)

Look at the picture

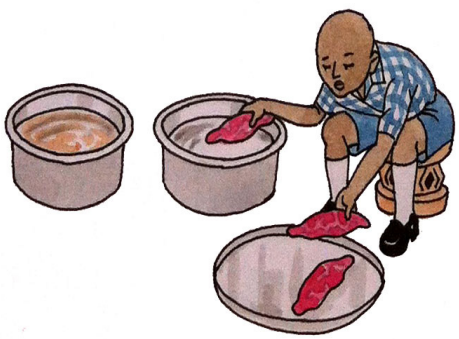
a.

b.



c.

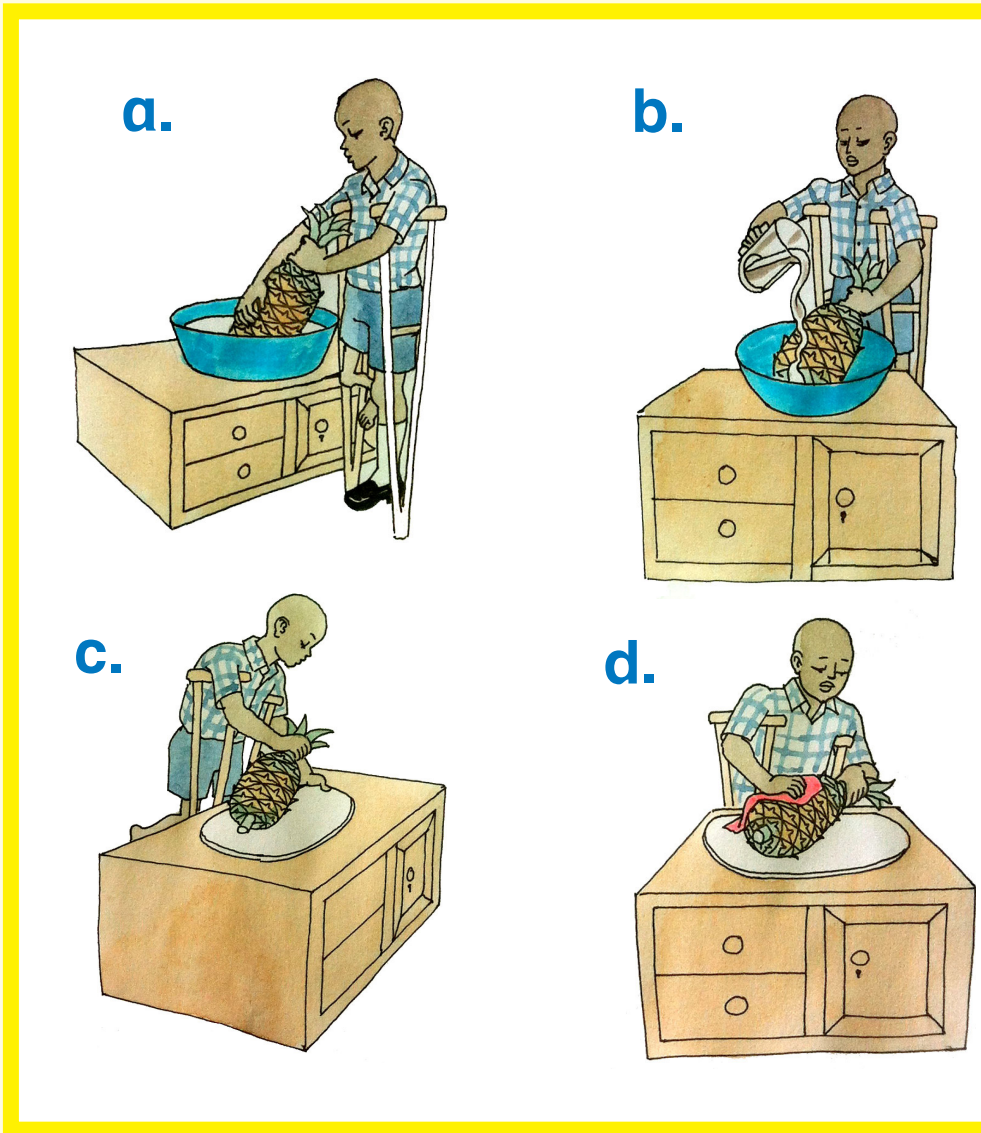
d.



- What is the child doing?

4.7. Steps of cleaning fruits

Look at the picture



- What is the child doing?
- Do like him and clean a mango.

I have discovered that:

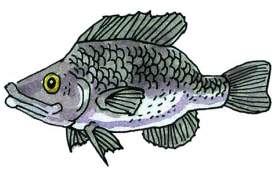
- **Sources of water are:**
  - Taps
  - Streams
  - Rivers
  - Lakes
  - Rainfall
- **Water is important and used for:**
  - Drinking (drinking water)
  - Washing clothes
  - Watering plants
  - Washing our body
  - Cleaning food and fruits

UNIT

5 ANIMALS

5.1. Introduction

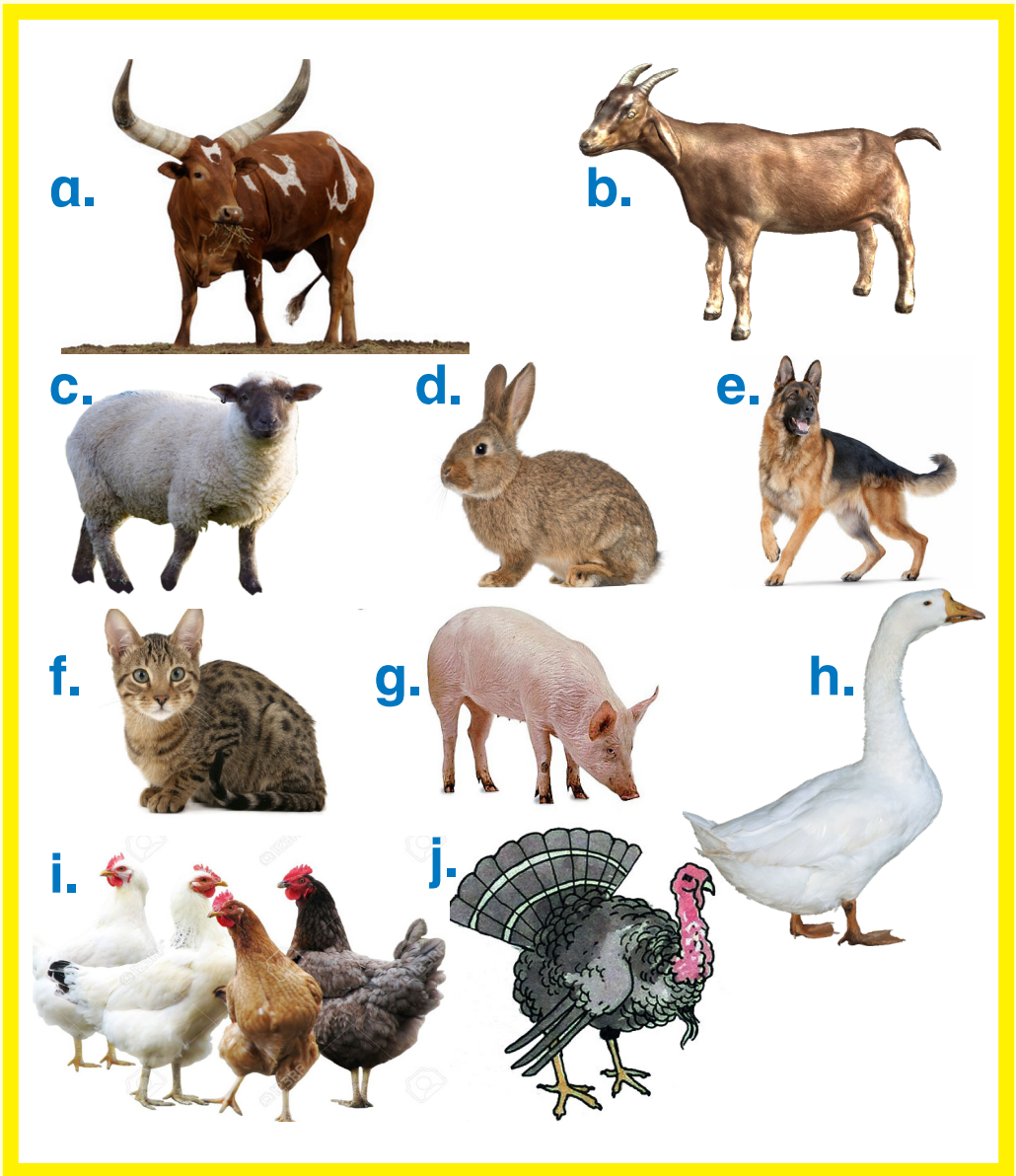
Look at the picture



What do you see in the picture?

5.2. Domestic animals

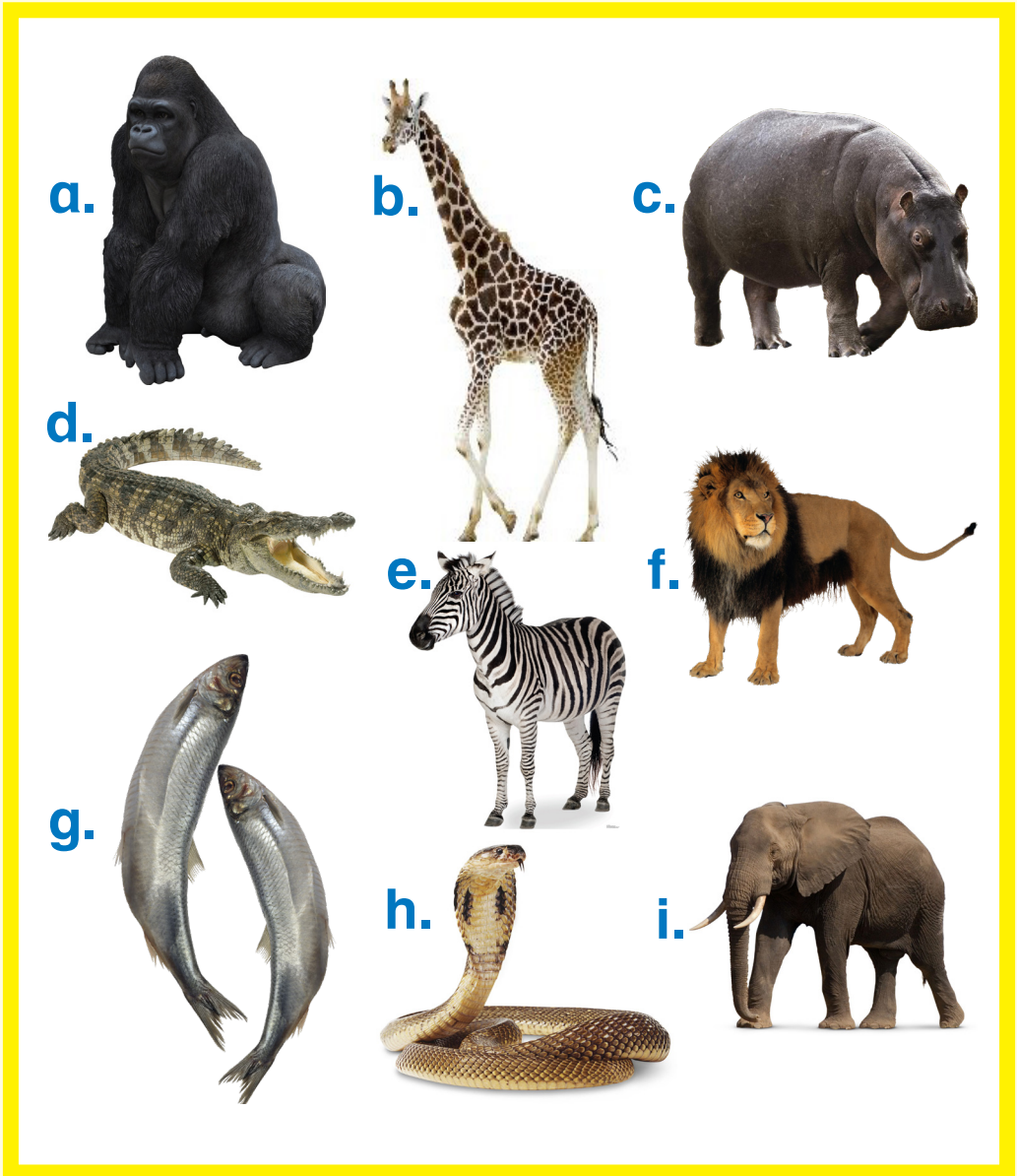
Look at the picture



- Which animals do you see at your home?

5.3. Wild animals

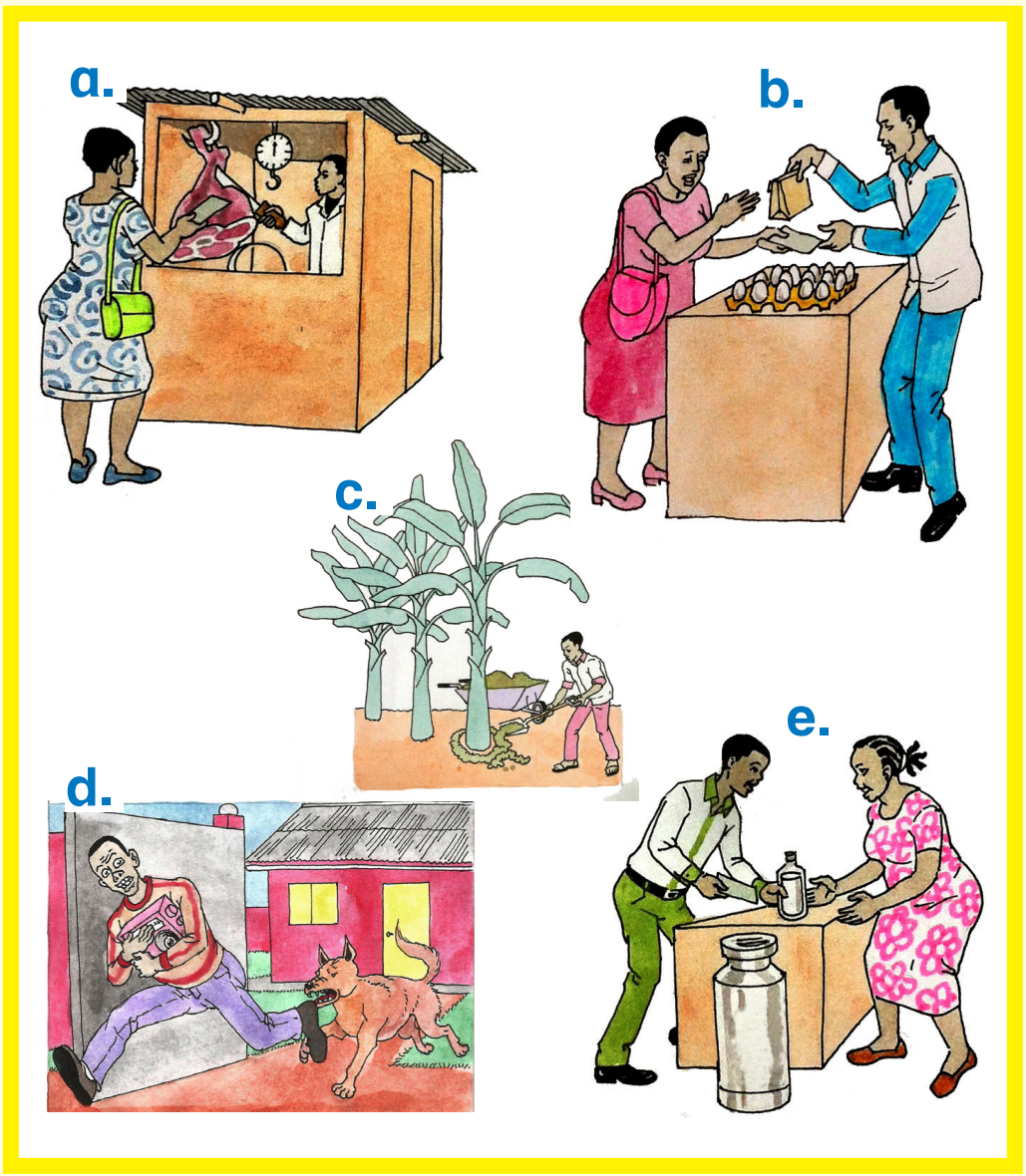
Look at the picture



- Which animals do you know?
- Where do they live?

5.4. Uses of domestic animals

Look at the picture



- What are the uses of domestic animals?

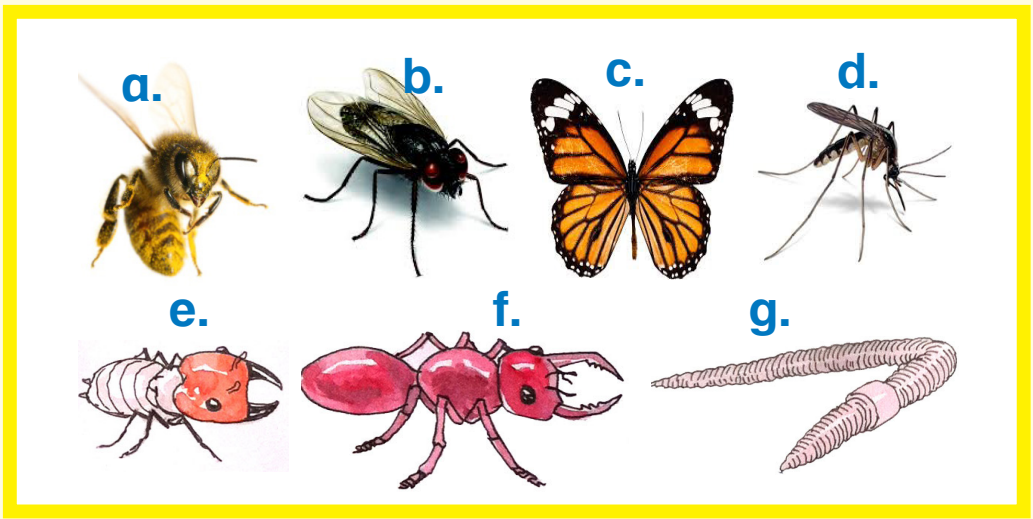
5.5. Uses of wild animals

Look at the picture

What do you see?

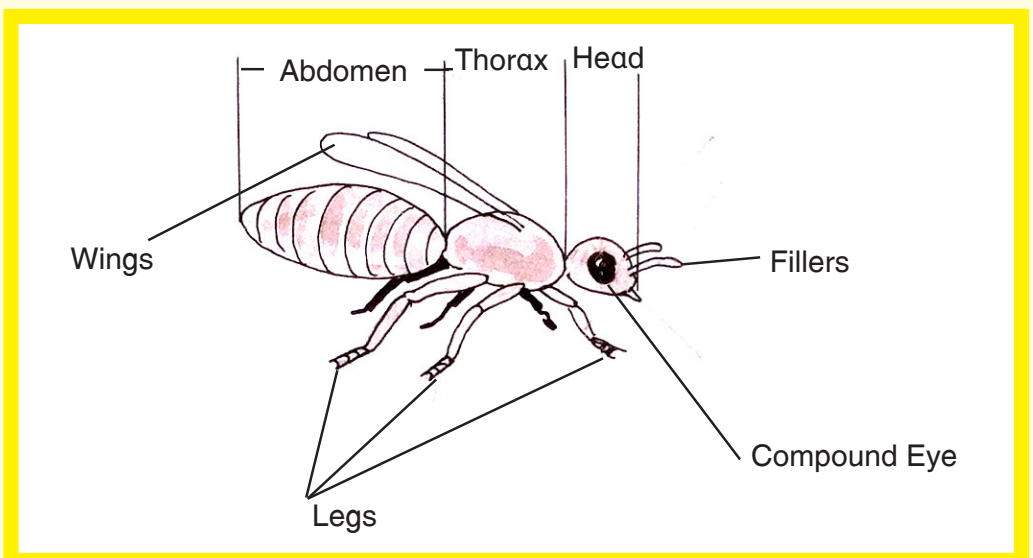
5.6. Small animals (Insects)

Look at the picture



Show the body parts of an insect

5.7. Main body parts of an insect.



I have discovered that:

- **Animals are of two types:**
  - Domestic animals

  Examples: Cows, goats, rabbits, hens …
  - Wild animals

  Examples: Elephants, lions, gorillas, snake, insects…
- Both domestic and wild animals are important

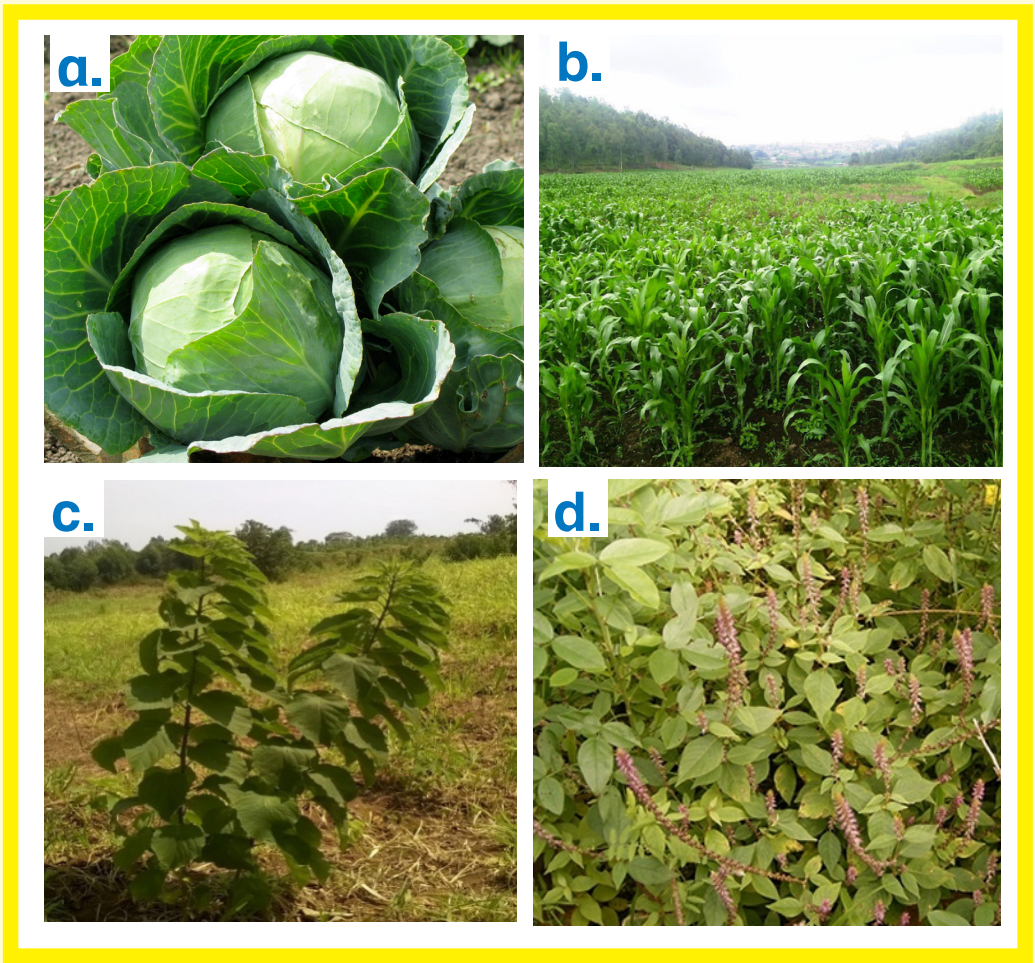
- **Main body parts of an insect are:**
  - Head
  - Compound eye
  - Fillers
  - Thorax
  - Abdomen
  - Legs
  - Wings

UNIT

6 PLANTS

6.1. Introduction

Look at the picture



What do you see in the picture?

6.2. Cultivated plants

Look at the picture

a.

b.

c.

d.

Name the plants in picture **a, b, c, d**

6.3. Non- cultivated plants

Look at the picture

- Which of the plants do you see at home?

I have discovered that:

There are two types of plants:

- Cultivated plants

  Examples: Beans, maize, sorghum, banana plants, eucalyptus, tea, coffee, pear, avocado

- Non-cultivated plants

  Examples: Black jack, African basil, goat apple, black berries, Aloe vera, …

UNIT

7 WASTE AND HYGIENE

7.1. Introduction

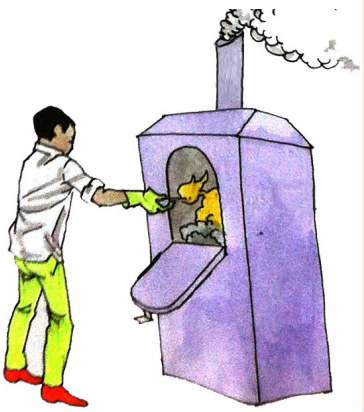
Look at the picture

a.

b.

c.

d.



What do you see in the picture?

7.2. Types of Wastes

7.2.1. Decomposing wastes

Look at the picture

a.

- Wastes that can be burnt,

b.

- Uses of decomposing wastes

c.

- What do you see in picture **a, b, c**?

7.2.2. Non decomposing wastes

Look at the picture

What do you see in the picture?

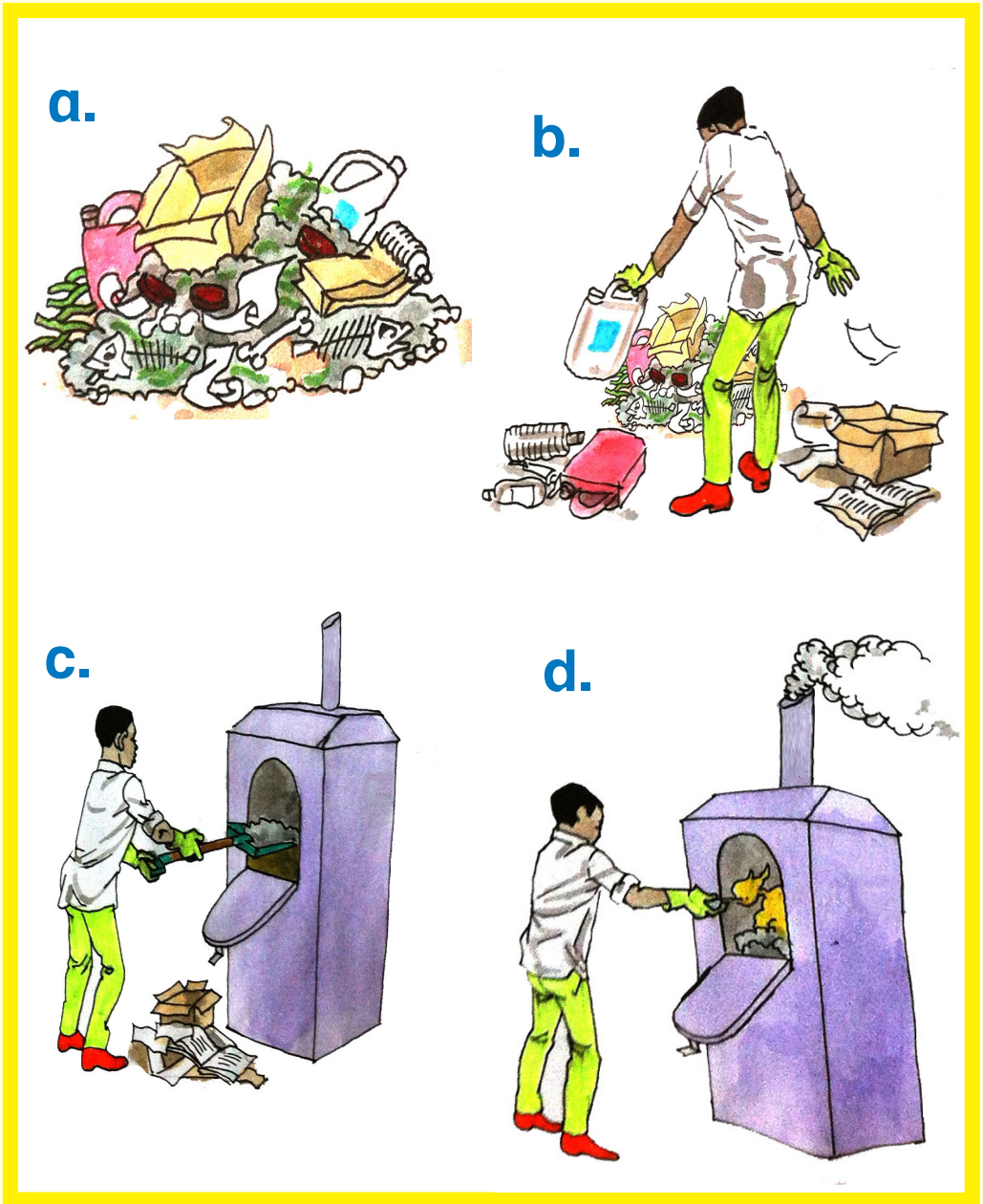
7.2.3. Toxic wastes

Look at the picture

What do you see in the picture?

7.3. Ways of waste management

Look at the picture

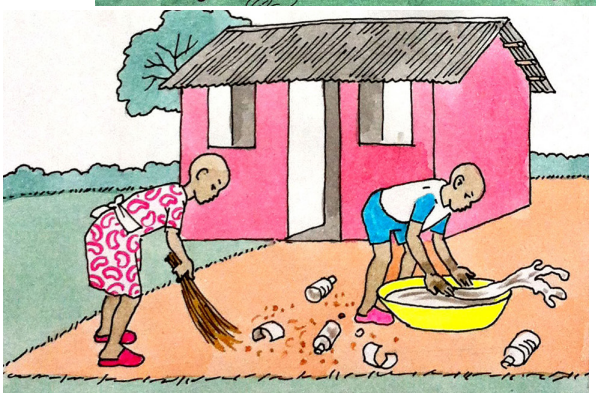


- What is the person doing?

7.4. Ways of cleaning a home and its surrounding

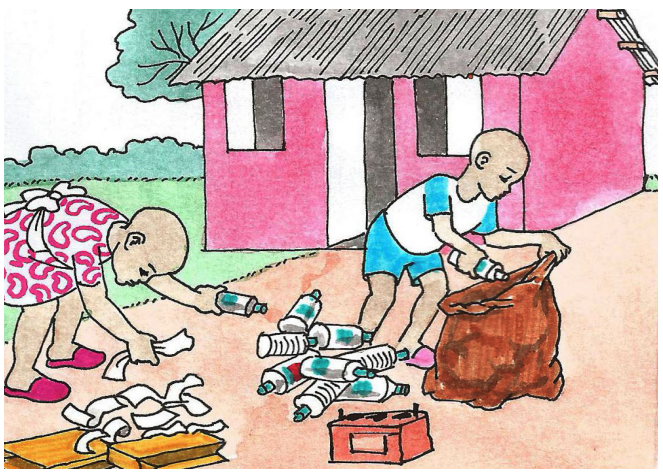
Look at the picture

a.



b.

c.



- What are the children doing?

I have discovered that:

Types of wastes are:

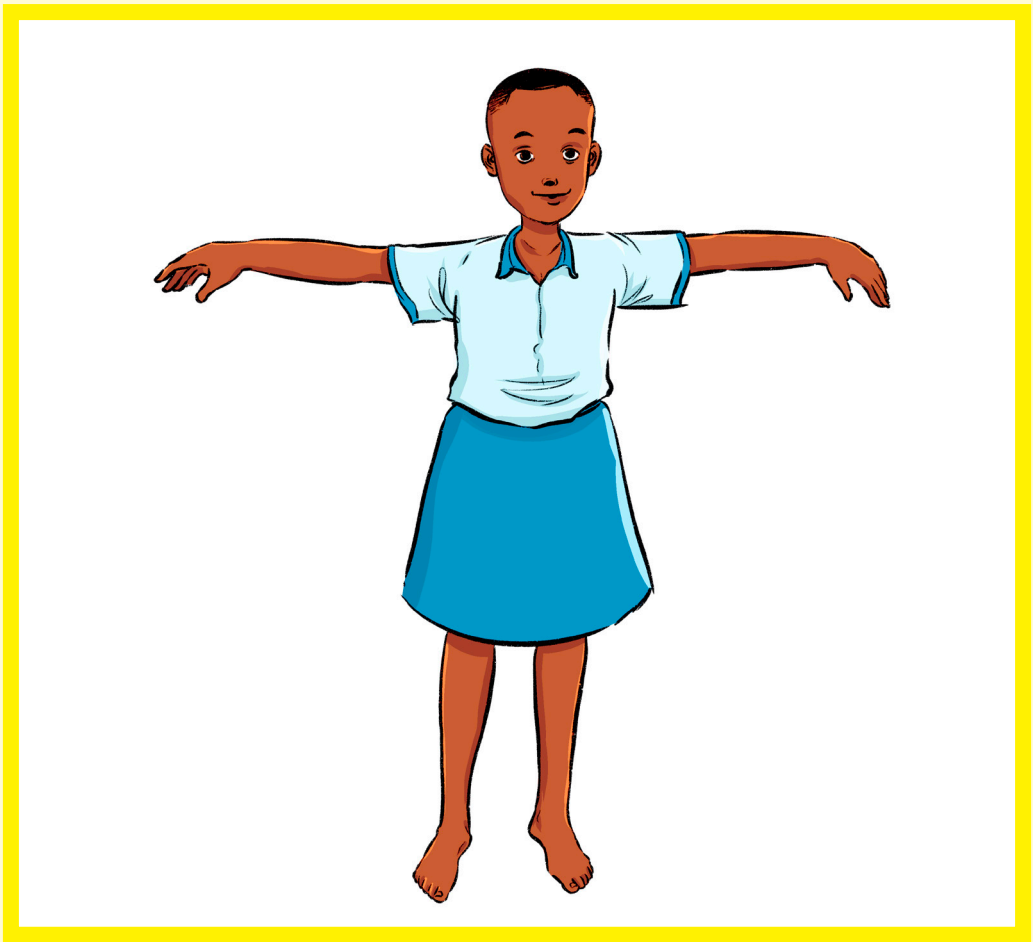
- Wastes that can decompose
- Wastes that can't decompose
- Toxic wastes

UNIT

8 THE HUMAN BODY

8.1. Introduction

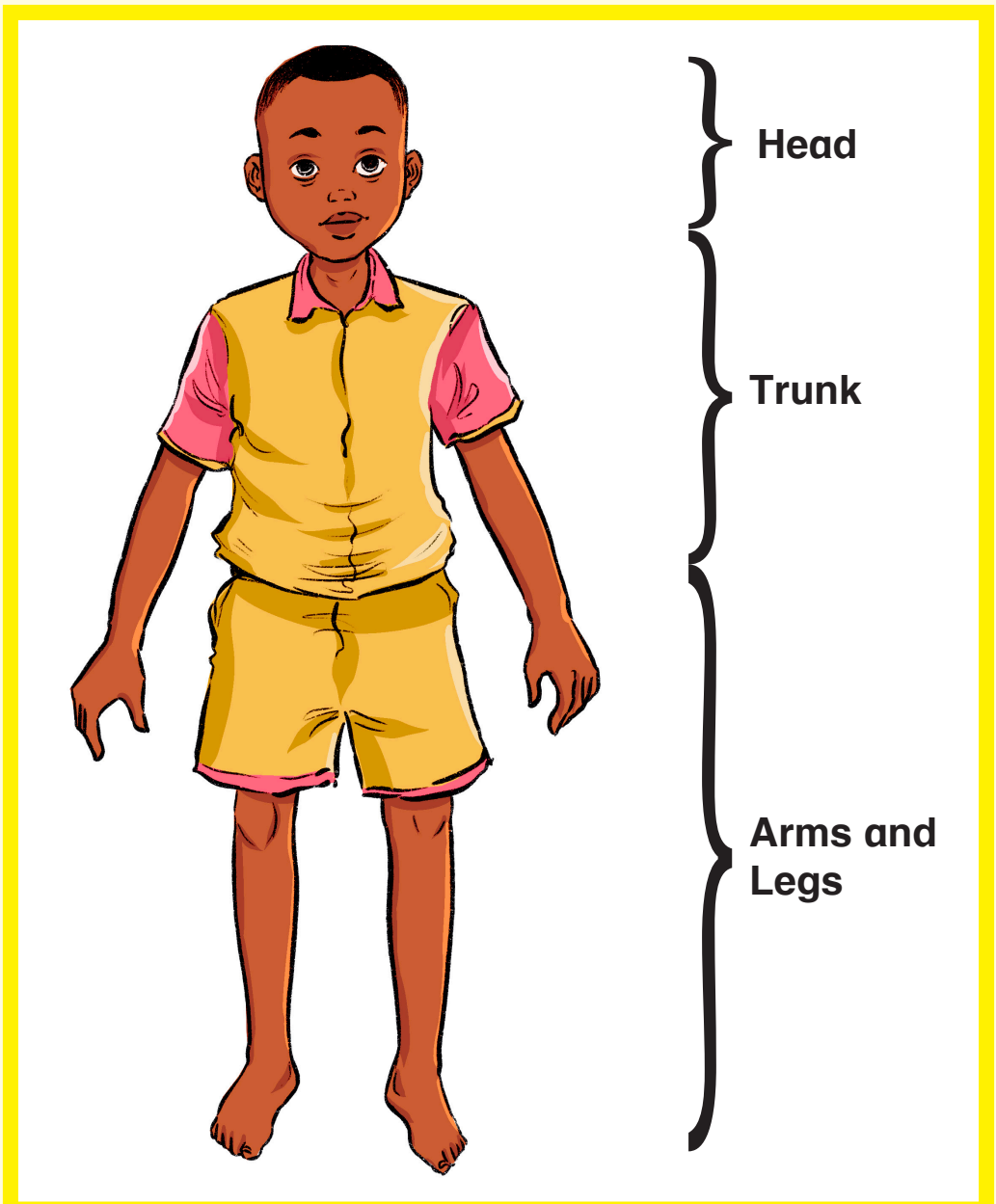
Look at the picture



What do you see in the picture?

8.2. Main human body parts

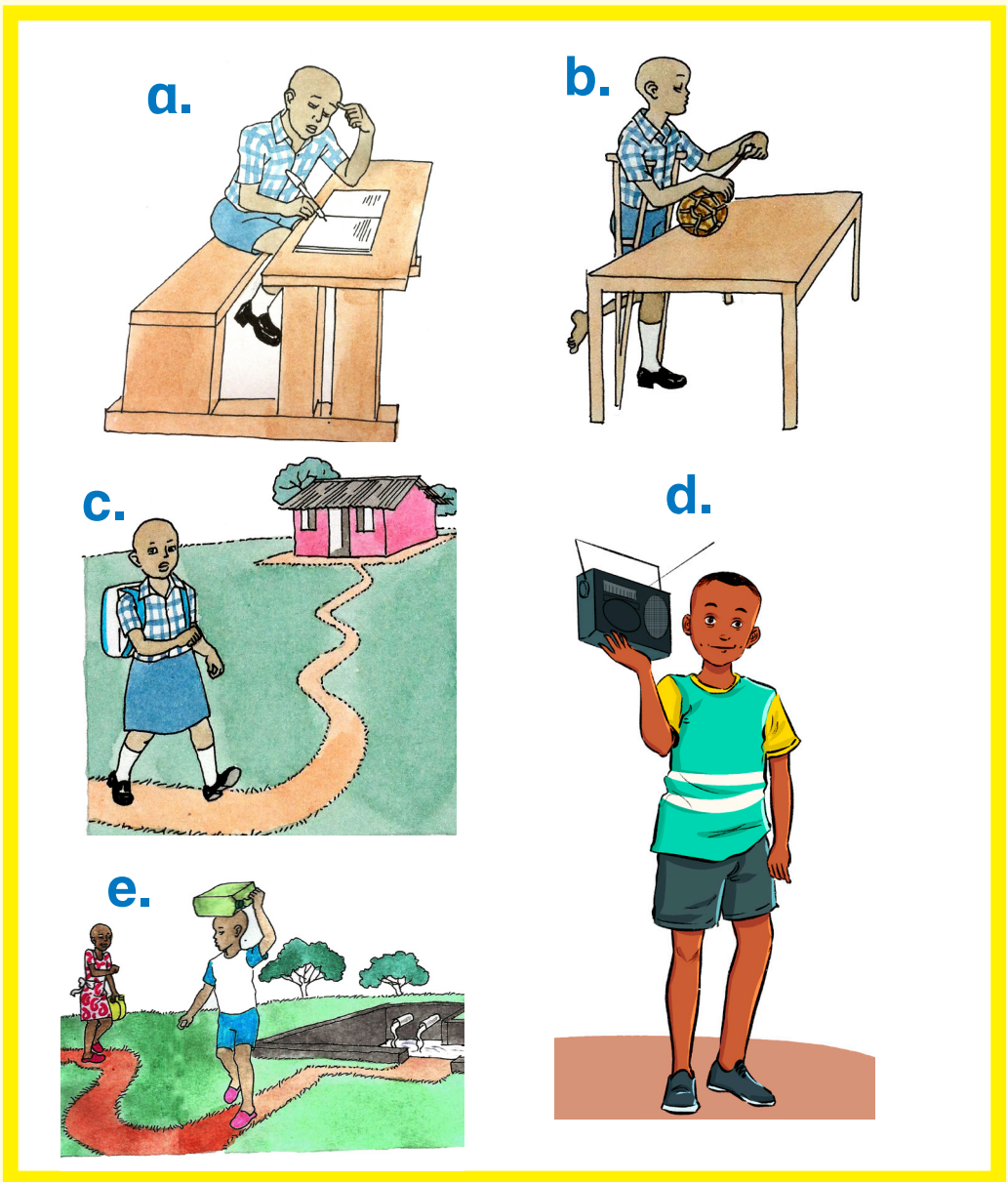
Look at the picture



- What are the main parts of human body?

8.3. Uses of human body parts

Look at the picture

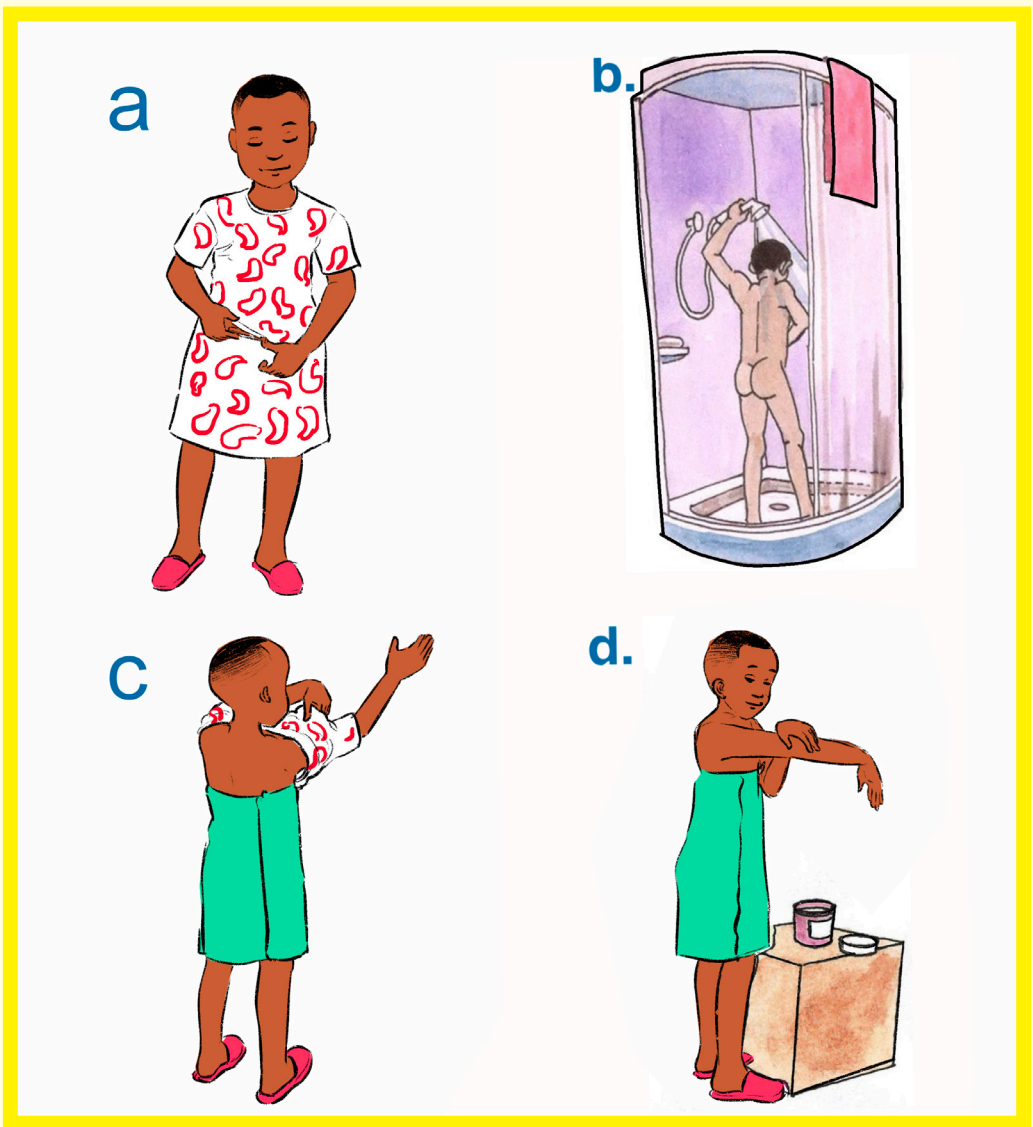


- Which body parts are the children using?
- How are the body parts helping?

8.4. Taking care of human body parts

8.4.1 Bathing

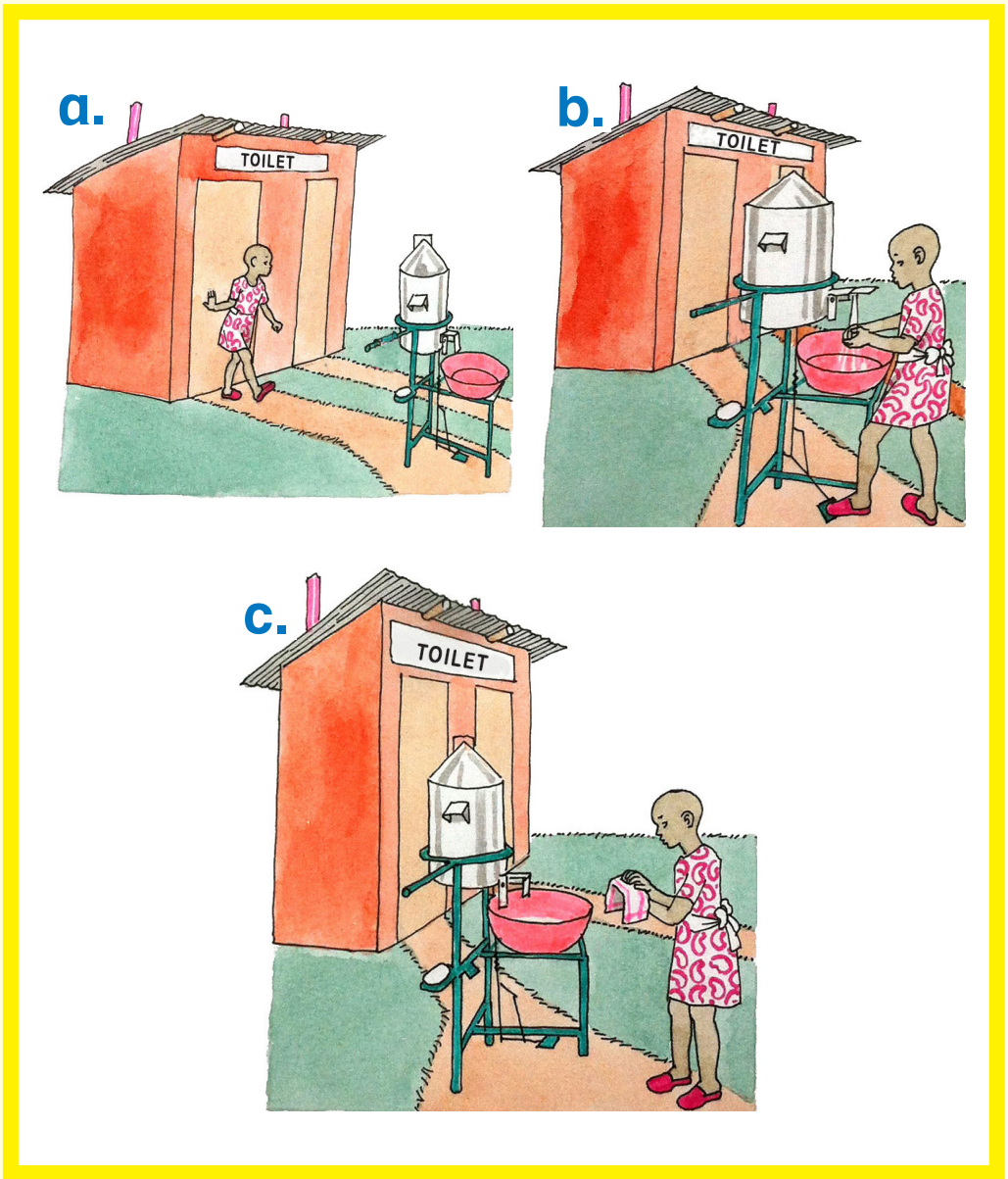
Look at the picture



- What are the children doing?
- Why are they doing so?

8.4.2. Washing Hands

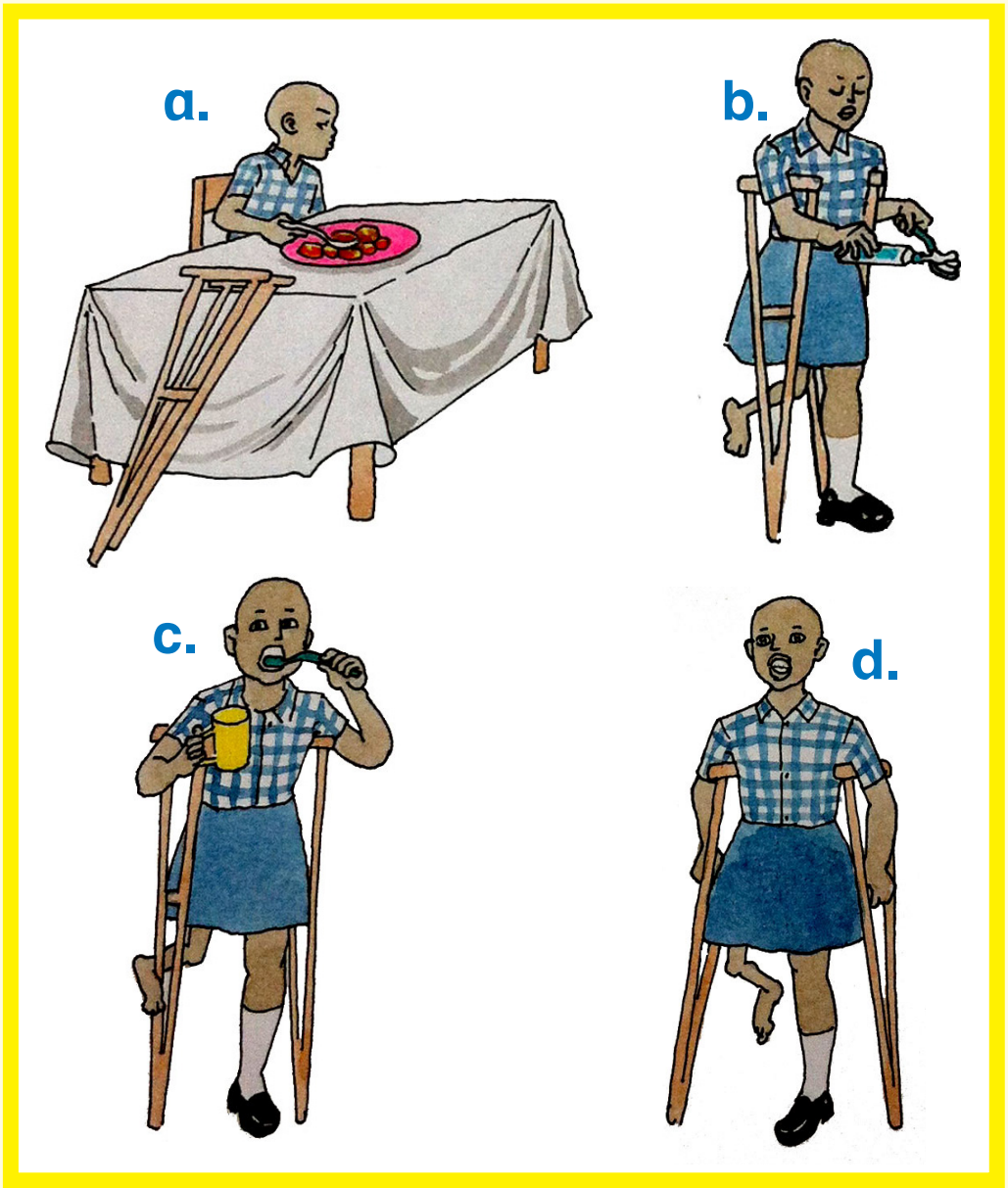
Look at the picture



- What is the child doing?

8.4.3. Brushing the teeth

Look at the picture



- What is the child doing?

8.4.4. Cleaning Noses

Look at the picture

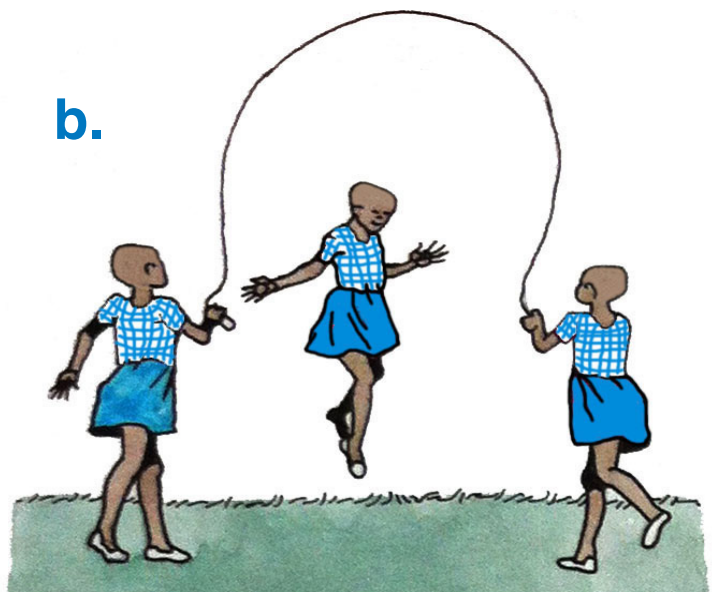
- How would you clean your nose?

8.4.5. Physical Exercises

Look at the picture

a.

b.



- What are the children playing?
- Why is playing important?

I have found out that:

Human body has three main parts:

- Head
- Trunk
- Arms and Legs

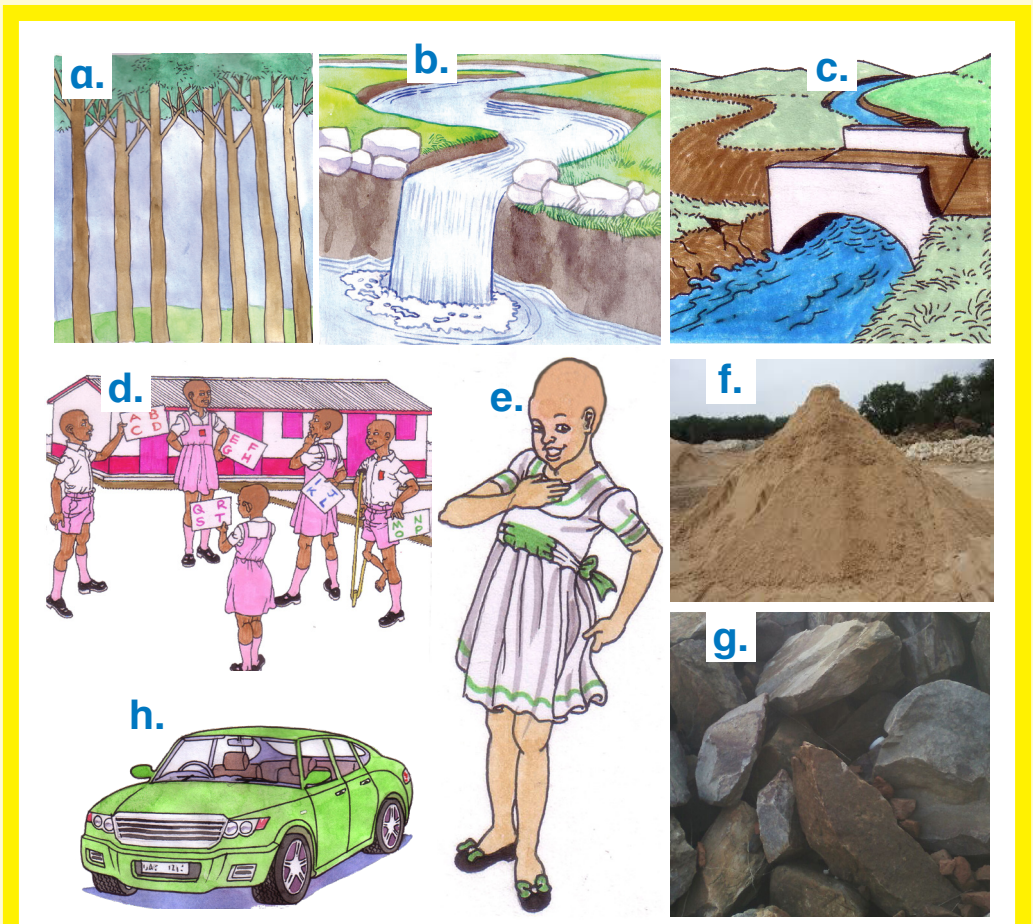
Human body needs good food and physical exercise for better life.

UNIT

9 NATURAL AND ARTIFICIAL MATERIALS

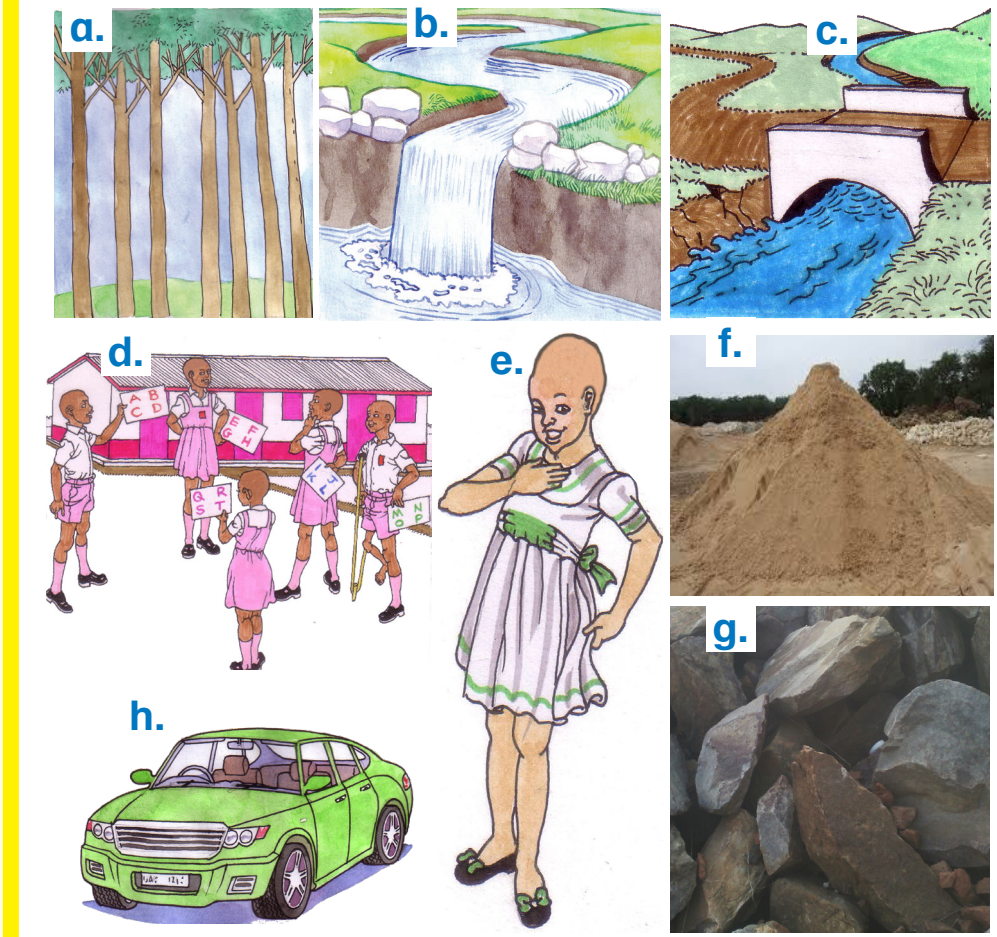
9.1. Introduction

Look at the picture



- What do you see in the picture?

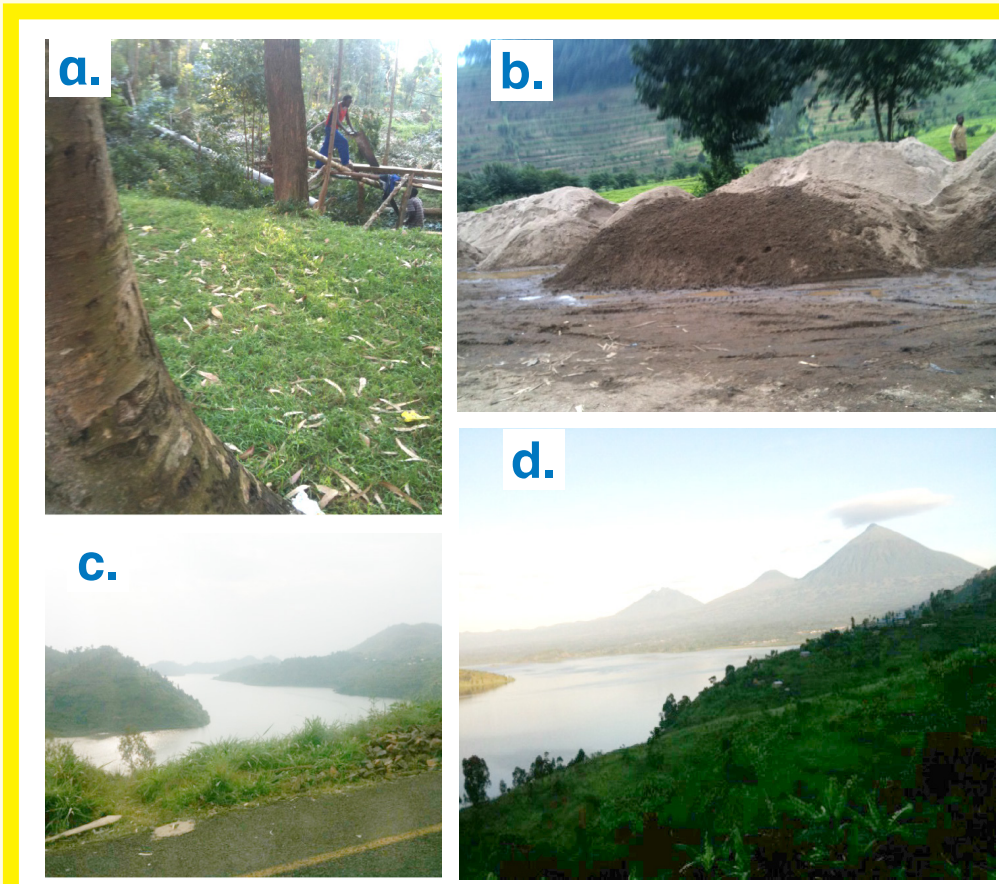
Look at the picture again



- List artificial materials in the picture.
- List natural materials in the picture.

9.2. Uses of materials

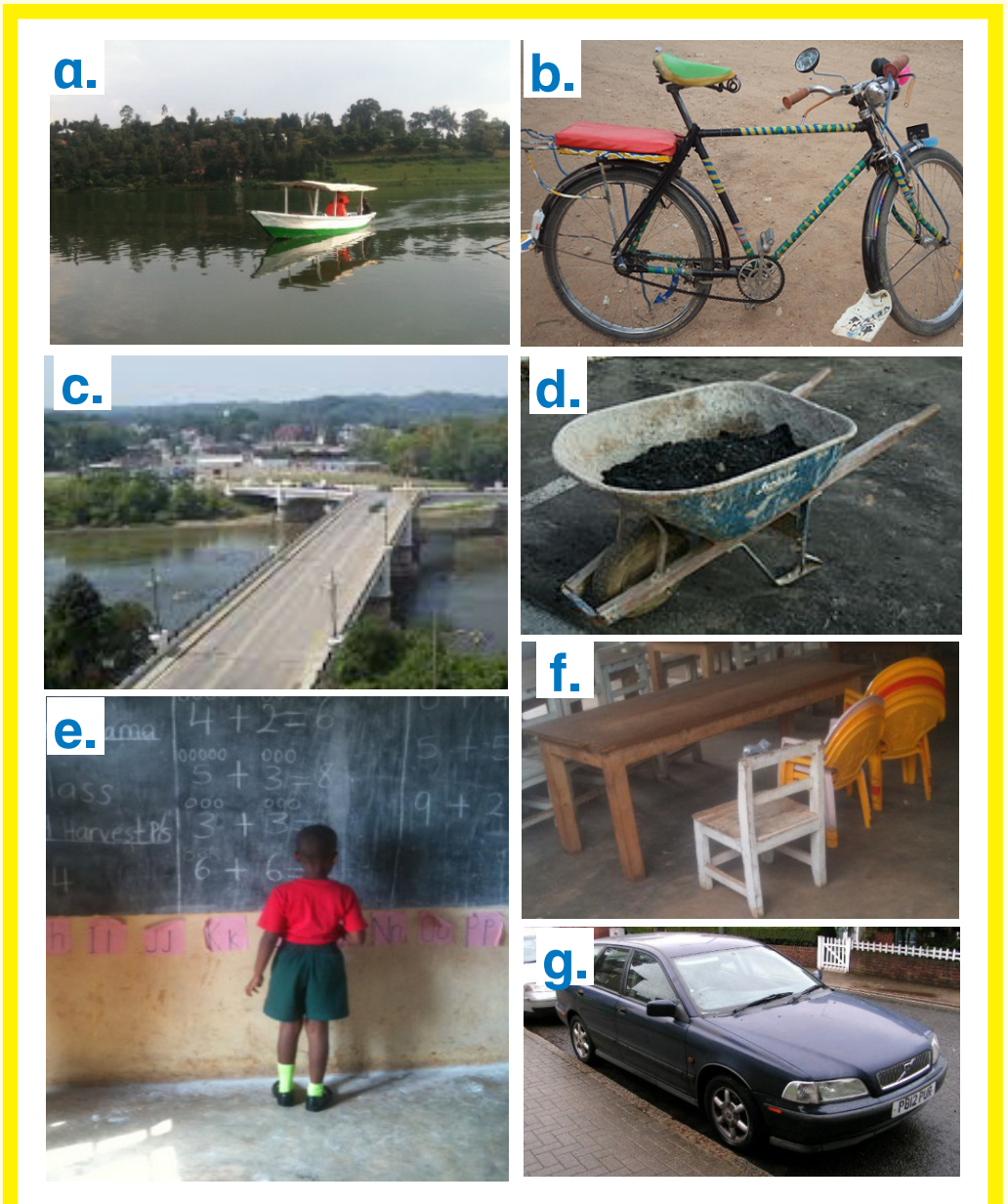
Look at the picture



- What do you see?
- What are the uses of materials in picture **a, b, c, d**?

9.3. Artificial materials

Look at the picture



- What do you see in the picture?

I have found out that:

Our Environment is composed of:

- Natural materials (Soil, stones, wood, water, minerals, wool, …)
- Artificial materials (Buildings, fork, plate, soap, glass, paper, cement, car, roads, bridges)