



Explore the World

SCIENCE -3



Scribbling page

Introduction

Millat Foundation for Educational Research and Development (MFERD) is an organization conceived with the vision of providing a common platform for the networking, co-ordination, collaboration and co-operation among Muslim educational institutions, thereby complementing the efforts of individuals and organizations in achieving excellence in education within the boundaries of Islamic Shariah. MFERD aims to address the various challenges faced by these institutions and find solutions through research and development.

One of its major program is to design a value based curriculum for school to nurture and culture our future generations with excellence.

Curriculum is the sum total of all learning experience a child undergoes including academics, activities, learning environment, assessment and interaction with teachers, students, parents all together from the moment a child walks in the school until he/she steps out.

After years of research in child psychology, education from Islamic perspective, and review of various curricula, a value based curriculum has been designed in accordance with National Curriculum Framework and International standards to focus on all round development of the children so that they identify their identity, realize the need and become leaders of tomorrow.

This curriculum is comprised of:

- **Objectives** - as per Islam psychology, education and stakeholders
- **Syllabus** - as per age group and government standards
- **Methodology** - child centric and appropriate to the subject and objectives
- **Resources** - including teacher training, teaching aids manuals and more
- **Assessment** - formative, summative, self, co-scholastic, behavioral and long term
- **Activities** - curricular, co-curricular and extra curricular with guidelines for events
- **Scheduling** - calendar, day-year plans, workload, period split and competitions
- **Observation** - feedback and research

Central Academic Development department has been setup to plan, train and monitor the implementation of this curriculum in various schools at all the levels.

Preface

Explore the world Environmental studies is an integrated book of science and social studies. It is based on the methodology of 'Learning by Doing'. Children at this age need to explore the world around them. They need to comprehend What's being taught, What's happening around, What's expected of them; take clues from it and understand on their own.

Greater the understanding of the details, greater the child will appreciate Islam. Science coexisted, infact flourished in the Islamic era. Islam teaches mankind to observe and learn from the nature. This book prepares young minds to appreciate the importance of environment in a holistic manner, to get them familiarized with the surrounding and to view it with a sense of care and responsibility. It imbibes in children the values of love and respect for nature and its laws.

The Alif Laam Meem Series aims at promoting this idea among the mankind. It also aims at training the learners to locate and comprehend the relationship between the natural, social and cultural environment to develop an understanding based on observations drawn from life experience.

The language is simple, clear and within the comprehension of the students. There is an attempt towards building up a scientific aptitude and temperament in the learners. Besides making them realize the existence of Allah and His creations, this book teaches them to be thankful to Allah for all His bounties, refrain from inhumane acts and to develop reasoning that leads to the correct path destined for us.

The salient feature of the book:

- ❖ Introduction of the lesson through motivational activities.
- ❖ Group discussion to break the monotony of the class and to develop interpersonal skills
- ❖ Arouse curiosity among the children through various interactive and interesting activities.
- ❖ Promote independent work.
- ❖ Quranic verses and Hadees: To prove the laws of nature laid by Allah.
- ❖ You will learn about: Gives an idea of what the child will learn from each lesson.
- ❖ Quick Look : Recapitulation made easy with keywords and quick look.
- ❖ Science corner: Learning by doing to develop observation data collection and inferential skills.
- ❖ Arts in science: Develop aesthetic values and to make learning a joyful experience.
- ❖ Math in science: To develop reasoning and logical thinking.
- ❖ Writing in science: To develop and encourage students for scientific writing.
- ❖ Take home activity: Activities given to make the child apply his knowledge in day to day life and promote independent work.

We strive to keep our standards high and continually improve the Alif Laam Meem Series based on your feedback and our research. Therefore, we request you to kindly send in your valuable suggestions to us and help this mission be successful.

We wish and pray for the wide spread use of this syllabus and inspire other experienced hands to come forward and do such work or better.

Excerpts from National Curriculum Framework 2005

An overall summary of the National Curriculum Framework 2005

The fact that learning has become a source of burden and stress on children and their parents is an evidence of a deep distortion in educational aims and quality. To correct this distortion, the present NCF proposes five guiding principles for curriculum development

- (i) connecting knowledge to life outside the school;
- (ii) ensuring that learning shifts away from rote methods;
- (iii) enriching the curriculum so that it goes beyond textbooks;
- (iv) making examinations more flexible and integrating them with classroom life; and
- (v) nurturing an over-riding identity informed by caring concerns within the democratic polity of the country

National Curriculum Framework 2005 on the perspective of education

Education must be able to promote values that foster peace, humaneness and tolerance in a multicultural society.

The National Curriculum Frame document seeks to provide a framework within which teachers and schools can choose and plan experiences that they think children should have. In order to realize educational objectives, the curriculum should be conceptualized as a structure that articulates required experiences. For this, it should address some basic questions:

- (i) What educational purposes should the schools seek to achieve?
- (ii) What educational experiences can be provided that are likely to achieve these purposes?
- (iii) How can these educational experiences be meaningfully organized?
- (iv) How do we ensure that these educational purposes are indeed being accomplished?

National Curriculum Framework 2005 on the Guiding Principles of education

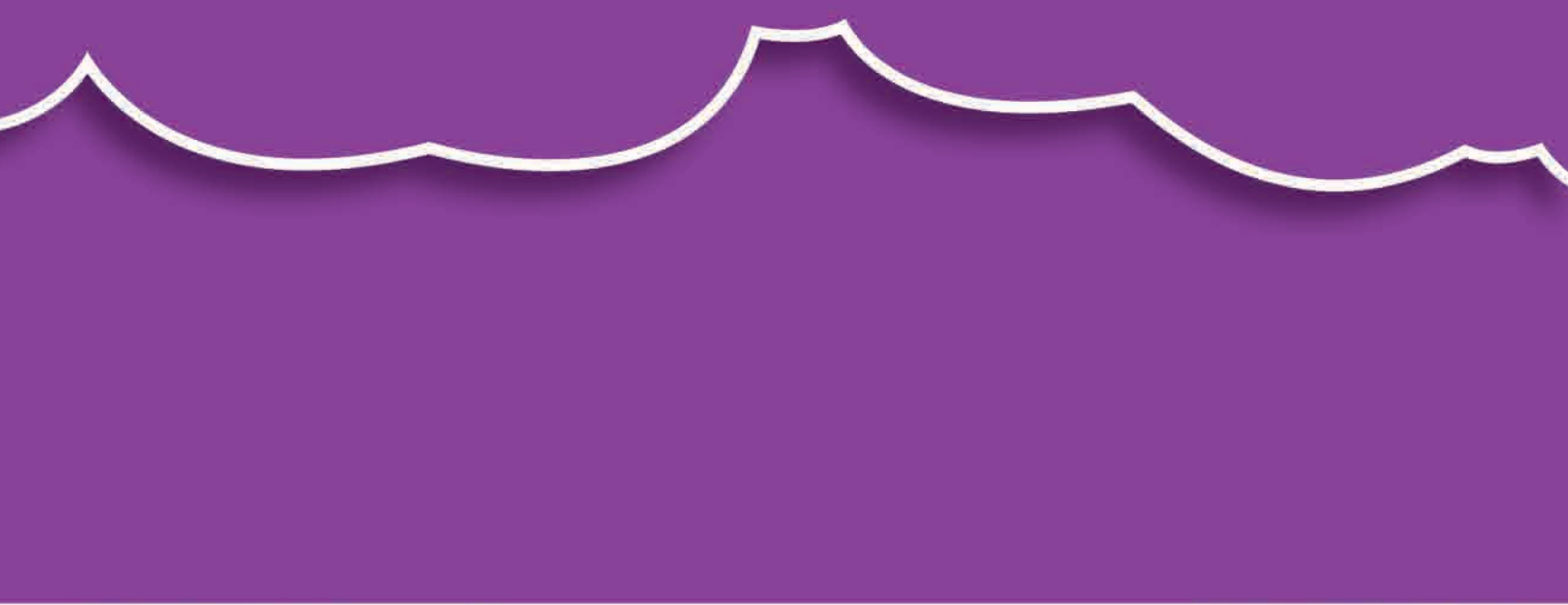
Children acquire varied skills naturally while growing up in their environment. They also observe life and the world around them. When imported into classrooms, their questions and queries can enrich the curriculum and make it more creative. Such reforms will also facilitate the practice of the widely acknowledged curricular principles of moving from 'known to unknown', from 'concrete to abstract', and from 'local to global'.

The MFERD books are designed to adhere to the guiding principles laid down in the National Curriculum Framework 2005. We want the followers/students to abide and fulfill the educational objectives framed by the NCF so that they not only become honest and faithful citizens but also to be a part of the ever growing global world and economy. We sincerely believe that by following this curriculum the students will develop their personality which will be a beacon of light for others to reflect and ponder and be like one.

For MFERD's approach to address these perspectives please refer to the back cover page.

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Living and Non-living



Get active!

Look around and observe the following things given in the table and complete the table. After completion, discuss the table with your teacher.

S.No.	Objects	Does it move ?	Does it grow and change ?	Does it breathe?	Does it need food and water to live?	Does it grow in number?	Conclusion	
							L/NL	N/M
1.								
2.								
3.								
4.								
5.								

Write **L** for all those objects that have a 'Yes'. Write **NL** for all those objects that have a 'No'. Now, observe carefully and write **N** for those things that occur in nature and **M** for those that can be made by man.

Conclusion

Things that move, breathe, eat and grow in number are _____.

Things that do not move, eat, breathe, and do not grow in number are _____.

Name an object from the list above that is living but cannot move _____.

1

Living and Non-living Things

You will learn about :

- *Living and non living things*
- *Difference between living and non living things*
- *Natural and man made things*
- *Movements*
- *Breathing organs*
- *Reproduction*

We see many kinds of things around us. Allah created many things in the earth and heaven and all that is, between it for us. (Surah: Dukhaan chapter 44 verse: 38, 39)
The things in this world can be divided into two **Natural things** and **Man-made things**.

Natural things

Things that are created by Allah and are seen around us are called **natural things**. Some natural things are living. Some are not. Plants, animals, human beings, etc. are **natural things**. Water, air, mountains, sun, moon, etc. are also natural things.



Man-made things

Things made by man are called **man-made things**. All man-made things are non living.



Living and Non-living things

Some natural things have life. They are called living things. Example plants, animals and human beings. Let us learn how living things are different from non-living things.

Living things

Living things can move on their own. Animals move from one place to another place in search of food and shelter.



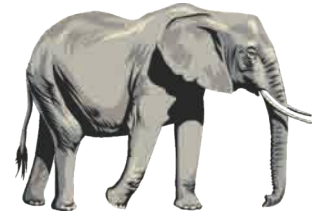
Birds fly



Fish swim



Monkeys swing



Animals walk

Plants do not move from one place to another in search of food.

They make their own food. Some plants show movements in some special ways.



Lotus opens in the morning and closes at night.



Sunflower turns its face towards the sun.



Leaves of Mimosa (touch me not) plant closes when touched.

Non-living things

Have you seen chairs and books move on their own? They move only when someone moves them.

Non-living things do not move on their own.

Non-living things do not have life.



Living things grow

Plants and animals grow with time.



Seed grows into smaller plant.

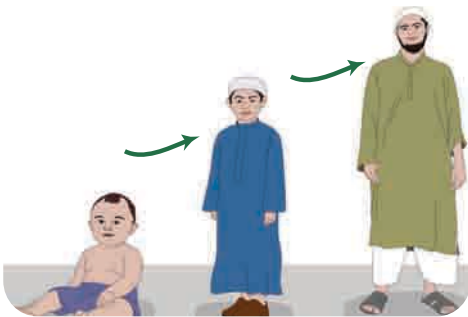


This smaller plant grows into a tree.

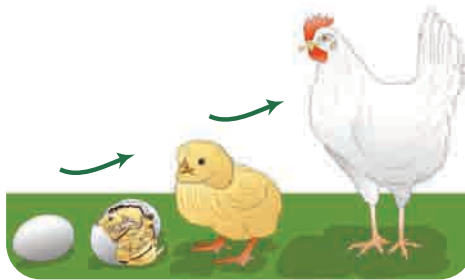
Is a seed and an egg living or non-living? Discuss!!

We bring you out as a child and then you reach your (time of) maturity.

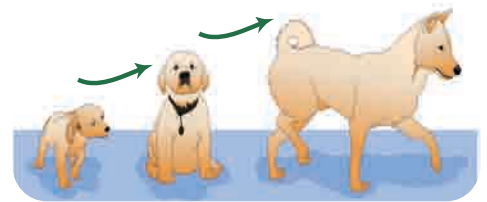
(Surah : Hajj chapter 22 verse : 5)



Baby boy grows into a man.



Chick grows into a hen.



Puppy grows into a dog.

Have you seen dolls and cricket bats grow in size? Why not? This is because they are non-living things. **A non-living thing does not grow.**



Doll



Cricket bat



Books

Living things need food

Living things need food to grow.

Food gives us energy to work and move.

Animals eat plants or other animals as food. They move from one place to another in search of food.

Plants do not need to go in search of food. They make their own food in the presence of air, water and sunlight.



A cow eats grass



A lion eats flesh



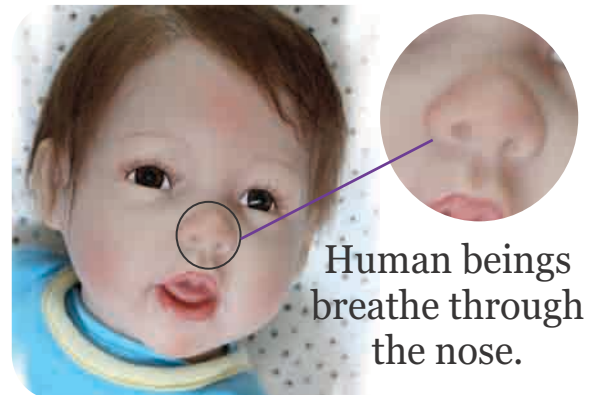
Human beings eat food

Non-living things do not need food.

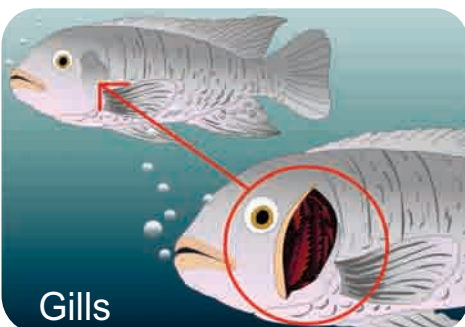
Living things breathe

Living things need air to breathe and live. We breathe through our nose. Several other animals also breathe through their nose.

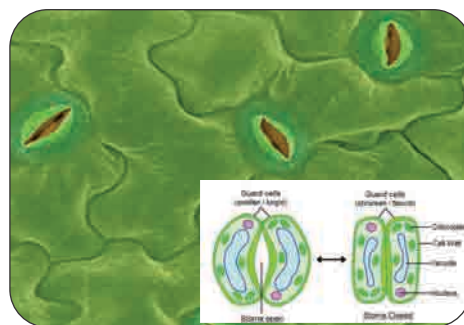
Non-living things do not breathe.



Human beings breathe through the nose.



Fish breathe through **gills**.



Plants breathe through **stomata**.



Insects breathe through air **spiracles**.

Living things feel

All living things feel and react to the changes in their environment. Human beings and animals feel things around them with the help of their sense organs.

Animals also respond to the feelings.



Insects have feelers to feel.



Dogs have a strong sense of smell.



We wear warm clothes when we feel cold.

Plants do not have sense organs, but they can also feel the changes around them. The stem and branches of plants feel the light and grow towards the sunlight. The leaves of the touch-me-not-plant react to the touch by closing its leaves.

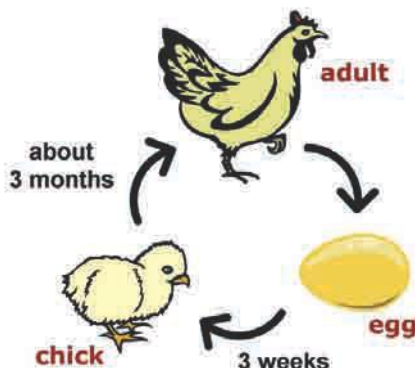
Non-living things do not feel.

Living things reproduce

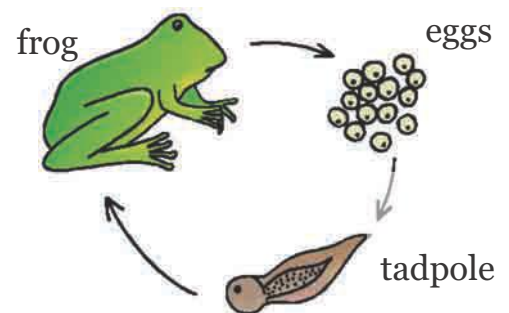
Allah alone can give life to things and can even turn it lifeless. For example: a dry seed is dead. This seed when sown in the soil gives birth to a new plant.

Man can make or give shape only to non living things.

All living things produce young ones of their own kinds. This process is called reproduction. Animals reproduce either by laying eggs or by giving birth to young ones. A hen lays eggs from which chicks come out.



A cat gives birth to a kitten.



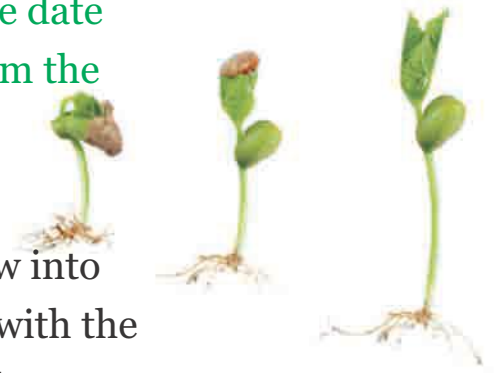
A frog lays eggs.

A tadpole grows into a frog.

Undoubtedly Allah is the One Who splits the seed and the date stone (causing them to sprout). He extracts the living from the dead and the dead from the living.

(Surah: An'aam chapter 6 verse : 95)

Plants reproduce with the help of seeds. These seeds grow into new plants. Some plants can also give rise to new plants with the help of their roots, stem or leaves. **Example:** rubber plant, money plant and sugarcane.



Non-living things do not reproduce.

Living things die

All living things die. The lifespan of an animal depends on the kind of animal it is, and the availability of food and water. Trees and shrubs live for many years, while herbs live for a few months.

He has created death and life to test which of you carry out the best acts.

(Surah: Mulk chapter 67 verse: 2)

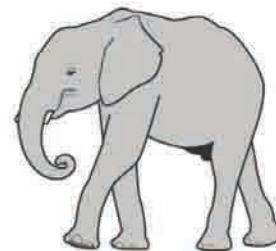
The approximate lifespan of some animals and plants are given below.



Housefly 1 month



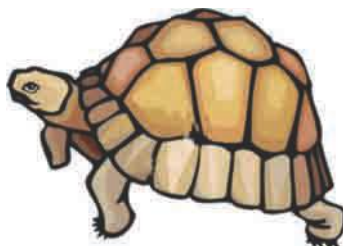
Marigold 5 months



Elephant 35 years



Mango tree 100 years



Tortoise 150 years



Pine tree 300 years

Key words

living things	things that breathe, grow, eat, move, feel and reproduce
non-living things	things that cannot breathe, grow, feel or move
reproduction	to produce young one of its own kind
stomata	pores in the leaves through which plants breathe
spiracles	spiracles are the respiratory organs of some insects
gills	an organ through which fish breathe

Quick look

- Living things differ from non-living things.
- Living things move on their own.
- Living things need air to breathe.
- Living things need food to grow.
- Living things can feel changes around them.
- Living things reproduce.
- Non-living things do not move, breathe, need food, grow, feel or reproduce.

Reviewing words and concepts

1. Answer the following questions.

1. Why animals move from place to place?
2. Why plants do not move from place to place?
3. Give two examples of movements shown by plants.
4. Write the ways in which animals breathe. Give one example for each.

2. Write the characteristics of living and non-living.



1. _____
2. _____
3. _____
4. _____

1. _____
2. _____
3. _____
4. _____

3. Write L for 'Living' things and NL for 'non-living' things.

a. tree : _____

b. rose bush : _____

c. lizard : _____

d. plate : _____

e. brick : _____

f. flowers : _____

g. dry leaf : _____

h. chair : _____

4. Fill in the blanks.

- 1) Things that are created by Allah are _____.
- 2) Human beings feel things around them with their _____.
- 3) _____ breathe through spiracles.
- 4) Insects have _____ to feel.
- 5) Tadpole grows into a _____.

Science corner

Germination of seeds.

Soak a few dry seeds in water. Leave them over night. Remove the seeds and wrap them in a moist cloth. Now observe the seeds and write down your observation.

Take home activity

Collect the pictures of living and non living things from a newspaper or a magazine and make an attractive collage.