# COURSE STRUCTURE

## CLASS IX

(Annual Examination) Marks: 80

| Unit No. | Unit | Marks | Periods |
|---|---|---|---|
| I | Matter - Its Nature and Behaviour | 23 | 50 |
| II | Organization in the Living World | 20 | 45 |
| III | Motion, Force and Work | 27 | 60 |
| IV | Our Environment | 06 | 15 |
| V | Food; Food Production | 04 | 10 |
| | **Total** | **80** | |
| | **Internal assessment** | **20** | |
| | **Grand Total** | **100** | |

| Internal Assessment | | | | |
|---|---|---|---|---|
| Components of Internal Assessment | Existing | | Proposed | |
| | Periodic Test | | Periodic Assessment | |
| | **Periodic Test** (Pen Paper Test) | **10 marks** | **Pen Paper Test** | 5 marks |
| | | | **Multiple Assessment** strategies to be used. (quizzes, oral test, concept map, exit cards, visual expression etc.) | 5 marks |
| | **Notebook** (Class work) | 5 marks | **Portfolio** (Classwork plus peer assessment, self -assessment, achievements of student in the subject, reflections, narrations, journals, etc) | 5 marks |
| | **Subject Enrichment** - consisting of aspects like Practical work for Science; Labwork for Mathematics; Map work & Project Work for Social Science and Listening and Speaking skills for languages, etc. | 5 marks | **Subject enrichment**<br>• Social Science Project Work<br>• No changes in other subjects | 5 marks |

| Board Examination/ Year-end Examination | | | |
|---|---|---|---|
| **Board Examination** | **Existing** | **Proposed** | |
| **Marks** | Marks 80 | **No change** | |
| **Duration** | 3 hours | **No change** | |
| **Internal Choice** | 33% | **No change** | |
| **Components of Board examination paper** | Short Answer/Long Answer (Objective as well as Subjective) | Objective type including Multiple Choice Questions | 20 marks (This is already incorporated in 2019 Board Exams in many subjects) |
| | | Subjective – number of questions will be reduced to enable student to have enough time to give analytical and creative responses. | 60 marks |
| **School Based Assessment of Co-scholastic Areas (Work Experience, Art Education, Health & Physical Education Discipline)** | | | |

Curriculum transaction

- In terms of Chapters

## Curricular Expectations

At this stage learners are expected to:

- develop understanding of concepts, principles, theories, and laws governing the physical world, consistent with the stage of cognitive development.
- develop ability to acquire and use the methods and processes of science, such as observing, questioning, planning investigations, hypothesising, collecting, analysing and interpreting data, communicating explanations with evidences, justifying explanations, thinking critically to consider and evaluate alternative explanation, etc.
- conduct experiments, also involving quantitative measurements.
- appreciate how concepts of science evolve with time giving importance to its historical prospective.
- develop scientific temper (objectivity, critical thinking, freedom from fear and prejudice, etc.).
- nurture natural curiosity, aesthetic sense, and creativity.
- imbibe the values of honesty, integrity, cooperation, concern for life and preservation of environment.
- develop respect for human dignity and rights, equity and equality.

CHAPTER 5

# FUNDAMENTAL UNIT OF LIFE

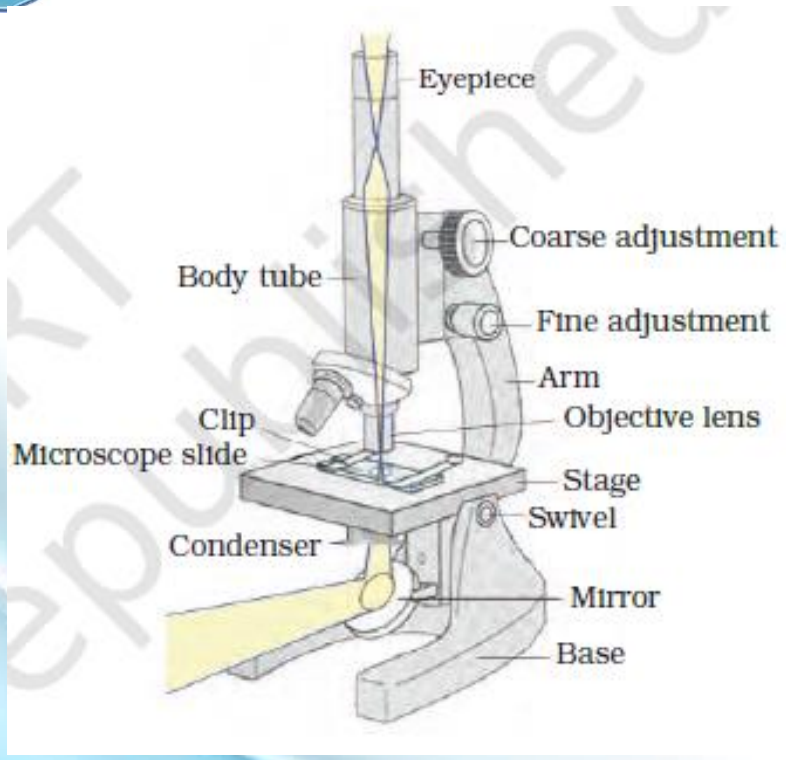
## Learning outcomes

**The Learner**

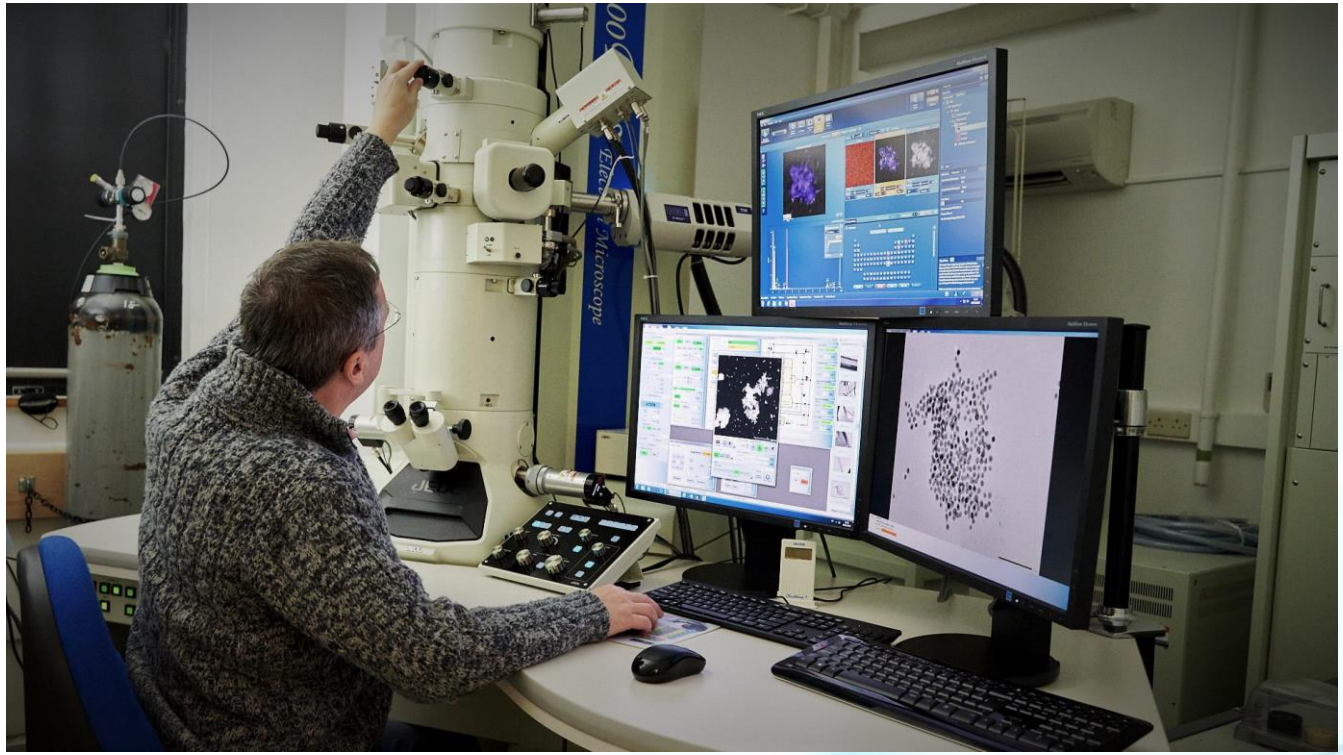
- **Recognises the organization of living organisms**
- **Compares the development of microscope and Discovery of a cell**
- **Understands The shape and size of cells are related to the specific function they perform**
- **Appreciates “division of Labour” among the organs( organism) and cell organelles (in a cell)**
- **Knows what is a cell made up of.**

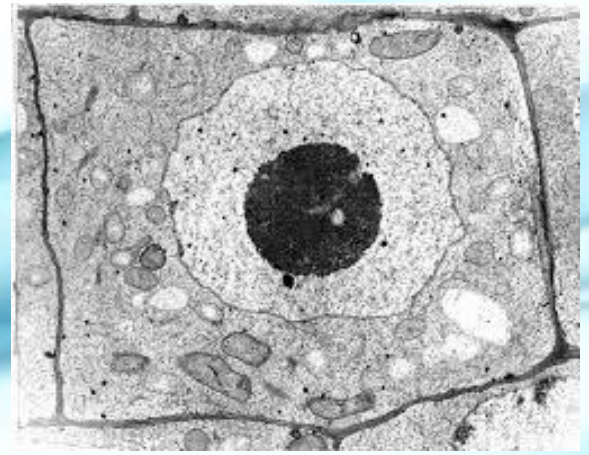
# FUNDAMENTAL UNIT OF LIFE

## COMPOUND MICROSCOPE




## ELECTRON MICROSCOPE



# TO KNOW THE HISTORY OF CELL?

- 1665- Robert Hook discovery of cell
- 1674-A. Van Leeuwenhoek-studied living for the first time.
- 1831-Robert Brown discovery and named Nucleus in a cell
- 1838-39-M.J.Schleiden & Schwann formulated Cell Theory
- 1855-Rudolf Virchow, Stated "*Omnis cellula-e-cellula*"

Leeuw enhoek

M.J.Schleiden

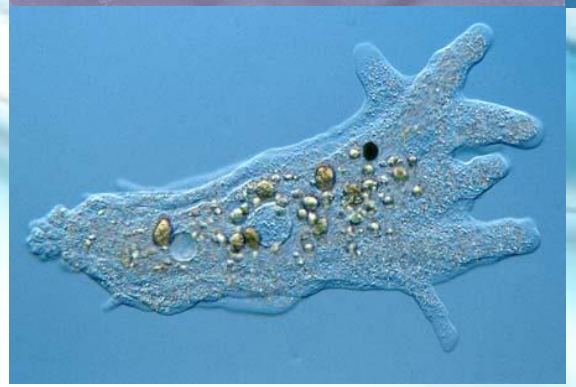
Rudolf Virchow

Robert Hook

Robert Brown

Schwann

# The shape and size of cells are related to the specific function they perform



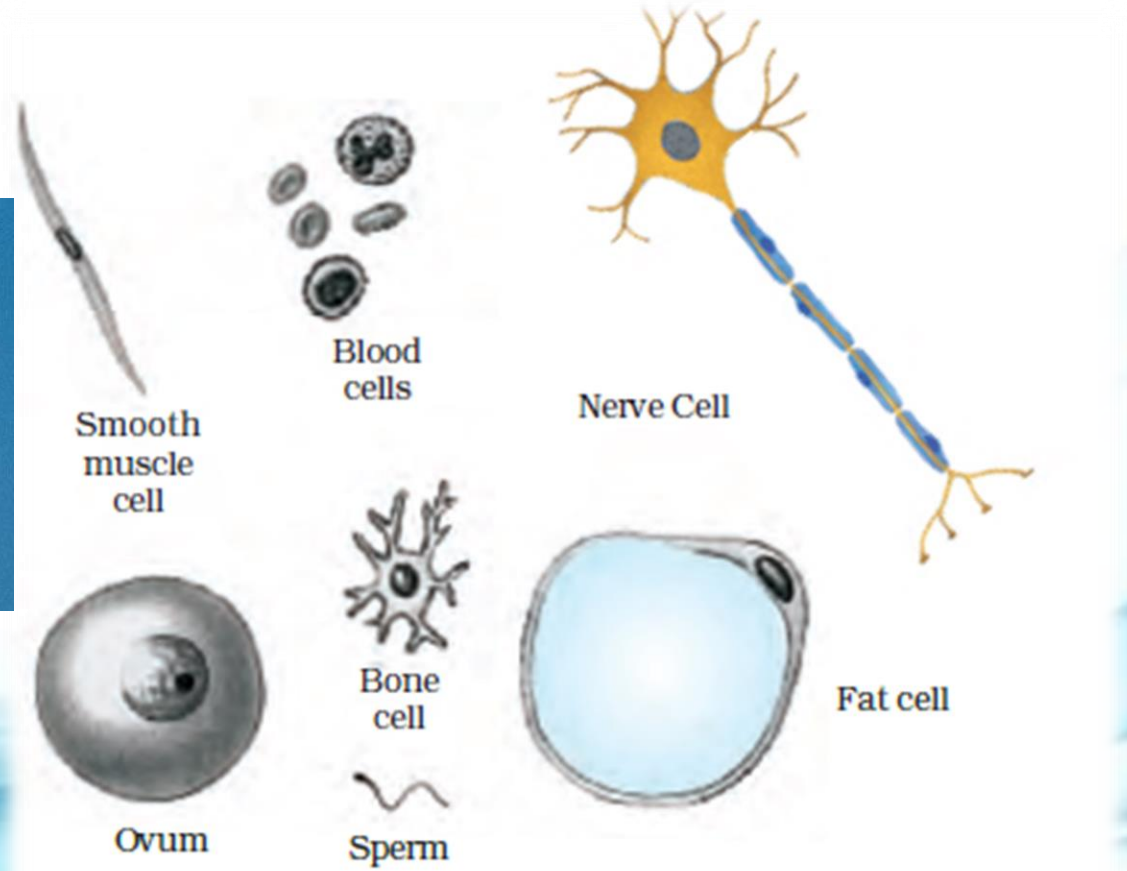



***Fig. 5.3:*** *Vartous cells from the human body*

# Division of Labour- organism/ cell