



Maths Grade VI

Teacher's Manual

ntegration of Values

Teacher Manual for Integration of Values in Teaching Academic subjects

By

HEMA Foundation, Mumbai

Teacher Manual for Integration of Values in Academic subjects

Maths

Grade VI

IDEA conceived and executed by

Vijayam Ravi, PhD

Academic Director @ HEMA Foundation

(Senior Educational Consultant, Curriculum expert, Academic quality Assessor and Leadership Trainer, Competency analyst, with 40 years of experience)

Authors:

1. Dr Sobhana Nanadakumar Nair -Department of Math

(Ex-Principal, & Edu. Consultant)

(State Awardee for Best teacher from State of Maharashtra)

2. Ms. Shobha Rajkumar -Department of EVS

(Retired) Head -Preprimary

(Smt Sulochanadevi Singhania School, Thane

Shri Vasantrao Davkhare Memorial School, Pune)

3. Ms. Priya Cibi- Department of English

(HOD, Special Educator School Counsellor & Educational Consultant)

4. Ms. Sopna T.R – Department of Science

(Er & Tr. in Chemical Engg and IT, N. S from BLTS Pilani)

5. Ms. Rashmi Menon

(Specialist in Endocrinology and Physiology)



All rights reserved under the copyright act. No part of this publication may be reproduced, transcribed, transmitted, stored in a retrieval system or translated into any language or computer language, in any form or by any means, electronic, mechanical, magnetic, optical, chemical, manual, photocopy or otherwise without the prior permission of the copyright owner, Any person who does any unauthorized act in relation to this publication may be liable to criminal prosecution and civil claims for damages.

First Edition: 2021

Publisher: HEMA Foundation Ram Ratna House, Oasis Complex, P. B. Marg, Worli, Mumbai - 400 013 Tel.: 022-2494 9009 / 9142, Extn.: 6178 Mob: 72280 01342 E-mail: admin@hemafoundation.org Website: www.hemafoundation.org

All rights reserved ©

Copyright © 2021 by the_____ Printer:

ADVISORY BOARD

Swami Shri Govind dev Giriji

Shri Rameshwarlal Kabra (Padma Shri, National Patron - FTS)

Shri Manoj Joshi (Padma Shri , Famous Film Actor)

Dr. Chinu Agarwal Psychologist and psychotherapist, Director: Feeling Minds

Dr. Sanjay Malpani (National Chairman - Geeta Pariwar)

Shri Shiv Khera (Motivational Author)

Dr. Anantan Ramkrishna Pillai (Founder President - IDF)

Shri Mukesh Khanna (Film Actor)

Dr. Harish Shetty (Child Psychologist)

Technical Assistant :

Mrs. Hetal Desai	Shri Arvind Pandey
Shri Subhash Medekar	Shri Sujeet Sharma
Publicity Team :	
Shri Prakash Jakhotia	Shri Sanjay Upadhyay
Shri Ashok Motwani	Shri Sushil Maheshwari
Shri Ashok Maheshwari	Shri Shiv Agarwal

Cooperation amount : ₹ 200/-

"This book is meant for educational and learning purposes. The author(s) of the book has/have taken all reasonable care to ensure that the contents of the book do not violate any copyright or other intellectual property rights of any person in any manner whatsoever. In the event the author(s) has/have been unable to track any source and if any copyright has been inadvertently infringed, please notify the publisher in writing for any corrective action."

Download HEMA Foundation Mobile App!



Follow us on: 🚹 😏 You Tube

Preface



It gives immense pleasure to all of us at HEMA Foundation in presenting the "Teacher Manual for Value Integration" from Grade I to Grade X to our beloved teaching fraternity in school education. Teachers are the corner stones in building the huge edifice for the student community and they are the driving force and guiding spirit to the society. Little will change in the society, if the teachers do



not make any efforts. We are all living in a scenario where value systems need to be integrated and enhanced through essential school subjects so that the students assimilate values into their regular habits effortlessly. There may have been innumerable reasons why values from the society are disappearing, but there cannot be two opinions about the significance of educational institutions in restoring the culture and values of the society. When they say, 'values are to be caught', it is leaving a high degree of moral responsibility on the part of our teachers and this manual is our humble effort to lessen that burden for them. This manual is not a substitute to the academic teaching lesson plan, but is a supplementary assistance to the academic text. Nevertheless, the teachers are at perfect liberty to choose and aptly use the learning materials/activities wherever they find it relevant. This manual would be of great use to the teachers as they are written by practicing teachers in the school system and after thorough research and therefore, the general difficulties of teachers such as completion of portions in the given time to teach the subjects etc are taken care of. In fact, some of the lessons have been written after seeing their practical applications in actual classrooms.

We all have a responsibility of creating a society that is driven by values and our younger generation is the key change makers in the society. They all must be inspired by our educational institutions and their teachers so that their intellectual development is supported and augmented by the value systems and culture. HEMA Foundation takes it as a commitment to the society in participating in this huge endeavor. Inviting all the stake holders to this venture of spreading and integrating values into the learning environment of schools, with all humility, we remain always your well wishers

Thank You,

Anita Maheshwari Trustee & Creative Director

Mahendra

Mahendra Kabra Managing Trustee

Acknowledgement

Welcome to HEMA Foundation's "Teacher Manual for Value Integration'. I take this opportunity to thank each one of those who participated in it. At the outset I thank the Management of HEMA Foundation, its Managing Trustee Shri Mahendra Kabra and the Trustee and Creative Director, Smt. Anita Maheswari, for their unstinted support and cooperation in making this happen. Our humble pranams to the Senior most Member of HEMA Foundation Padmashree Shri Rameshwarlal ji Kabra, for his abundant blessings. The Associate Director Hetal Desai, the IT department Head, Shri Arvind Pandey, Shri Akash Shah and all other team mates from HEMA Foundation have contributed immensely toward realizing this manual.

There are several people outside the system who have supported this cause by giving their valuable comments and suggestions and my thanks are due to them as well. My sincere appreciations to the authors of this book who have been esteemed Principals, Section heads and Department heads and educators from reputed institutes of the country and they deserve the highest appreciation in envisaging the concept so well. My sincere appreciation to Dr. Shobana Nandakumar Nair, Mrs. Shobha Rajkumar, Mrs. Priya Cibi, Mrs. Sopna T. R and Rashmi Menon, for authoring the manual for Math, EVS, English and Science respectively. It was their untiring work and willingness to modify the documents as and when changes were required or further researches were needed, that this book was made possible.

As the Academic Director of HEMA Foundation and the person who has conceived this idea of value integration, I have gone through this document several times before presenting it to you and am fully aware of the significance of each word used in this document. I am sure the faculty who uses this manual would strictly adhere to the norms of the school Boards and the suggestions given over here. The Central staff of HEMA Foundation is more than willing to take your valuable suggestions and I promise that we shall be able to incorporate them if found suitable in our next publications.

I thank you for all your incredible commitment. All the credits if you find this document useful, would go invariably to all those who wrote the book and those who helped in the realization of the book and all those demerits if any, are purely due to my oversight. Believing that you would find it very useful in reaching out to the students and become inspiring teachers for our younger generations

I remain your sincere



Vijayam Ravi, PhD

Introduction (must read before the teacher proceeds)

Its 'a Friday evening'. Everyone looks forward to a joyful weekend with family. After a weeklong work, it is a much-needed break. The school campus that was brimming with noises and screams of children, is silent and calm- The evening twilight has set in on the tall buildings, creating beautiful silhouettes. All have shut their tables; cupboards and the office of the school is closed. Principal and staff were slowly proceeding to the gate. They all wished each other a happy weekend. The peon is stepping out. Suddenly it happened. None expected the normal events that take place every day would take a turn so unexpectedly. School watchman came rushing to them to announce that there has been a riot in the city and he said he could see few students along with some other miscreants sabotaging public and private properties and hurting people on streets, hooting and howling. He added that it is not safe now to walk out. That the rioting group included their students as well. The miscreants included some of their old students too. And they were all those 'good' students when they were inside the school campus.

That left the teaching staff and the leaders stunned for a while. For a moment many of them looked at the school building just like that, which is their Almamater, and it stood so tall and elevated with a pride of creating thousands of glorious citizens in the past. Each one had a question mark in their eyes. None spoke. There was a dumb silence. Each one silently started replaying what they have been doing in the classrooms all along. There was an unbelief, inexplicable feeling reflected in their eyes. Did we make any difference to our students today? Did we teach our children to live or did we teach only Math, Science and language?

This is a serious question that all teaching faculty must ask themselves-

Did we teach subjects? Or did we teach children?

Professional standards for teaching academic subjects and transferring the right knowledge to the students have been the main objective of teaching all along, across the universe. All the latest teaching and learning revolutions that are happening in the classrooms and the students are evaluated for their skill development. Education is the vehicle for development of human being. Situations turned out to be grim when the pandemic engulfed the world with its outstretched arms. Every nook and corner of the world reeled under pressure with the pain and uncertainty that was caused by this pandemic. The ambiguity around, the uncertainty, complexity and insecurity around the schools was huge that none could fathom a way to come out of it. Teachers started looking toward blended learning in a hybrid classroom situation as a solution to reach students. All the more a reason for us, to do introspection about what we were doing till yesterday in the classrooms.

Yes, we taught our students Math, English, Languages, Social sciences, Sports, Music, Art and Craft and everything else-but values. We boasted ourselves as the top schools with more students falling into the distinction list in terms of marks. Every year we sent out to the world, thousands of students with less skills and values but more of academics and marks. We were happy. Schools were happy. But we realize today that only some of those schools have been teaching students and not teaching subjects alone. Teaching subjects has a goal post and that is the academic credentials in terms of marks, but teaching students per say has another purpose altogether and that is -Touching their lives. We were confused and placing our balls in the wrong goal' posts. Result? The riots on the street, misbehavior, calamities, destruction, suicide and a valueless society in the making! Yes, certainly we imparted knowledge of academic subjects, however while this intellectual development is transmitted, there was room for us -the teachers for integration of values into these subjects. Few schools include moral science or value education in the curriculum and the teachers do teach the kids values like an academic subject and most of the schools assess the moral science in a written examination. It is very doubtful whether the students have really gained anything out of this process. Chances are bright that they end up considering the value education as just another subject. Teaching values through books was not a mistake, but assessing the children on marks was the issue. So, students when they completed their moral science examination, and received their 'pass marks', they quietly 'passed on' the values to the dustbins.

They say that the society's growth and degradation depend to a large extent the way the students are produced by the schools. The economic prosperity of a Nation depends to a large extent on living style and value systems of the society and there is every reason to believe that when the crime rate in a country goes high, the economic prosperity has declined in the society. The thinking, the culture of coexistence, working as teams and maintaining the art of tolerance, if these are removed from the society, it is very difficult to revive the Nation. India has been such a rich country with its values and it is a very painful scenario to watch how our younger generation is missing out on values. To a large extent the responsibilities can be passed on to the Macaulay's education system, parents and schools. If the schools make deliberate attempts to impart academic subjects and create excellence in that, the student's generation that gets molded out of the schools would certainly prove to be an asset in creating wealth and prosperity for the nation. However, if the schools do not impart values to the students, the nation will end up in a huge disaster after some time in terms of its moral fibre.. Wealth and success alone do not bring happiness to the society or an individual. Yes, it may bring some kind of satisfaction and one can always get a pleasure out of it. But very soon, this feeling becomes very transient and the mind would look for something else. This is human nature and it happens because the purpose of human life is not imparted to the students in schools. And when the assessment is done, that subject is also done.

Is this the purpose of education? Swami Vivekananda conceives education as the process where the innate potential of the human being is revealed. The innate nature of a human being is peace and joy. The riots on the street shows totally opposite virtues. Then where did the schools go wrong?

The riot on the street by students is not the debate here. It may be right or it may be wrong. The question is of larger dimension. It is of citizenry, safety, security and morality of a Nation, of the Globe! But why does such a behavior happen? Why do our students or our citizens behave in such an unruly manner that is a pain to others? When did our children or our citizens who passed out of the portals of our school, become so very intolerant? What is the fundamental cause for such an unrest in the minds of students, or generally speaking mankind as a whole? The intellectual quotient is very much in place. But when the spiritual quotient and emotional quotient are misplaced, the human beings sometimes behave weirdly. They lose cool, the power to think and act. Most often human beings react.

Did we, at schools, teach our stduents to act, or react? Did we, at schools, teach the students values? Or imbue values in them? Did we teach the students only subjects? Or did we touch their lives?

The Context to Value integration with subjects:

It is in this context of these questions, that the thought of integrating values with academic subject teaching dawned. Education and values are no two different subjects. They are mutually interwoven. As a teacher, the biggest role is to prepare their students behave like human beings with all values intact. All academic subjects may give them an opportunity to excel in life, but the values learnt help them to live as human being. Since the teacher is an integral part of education and the inspiration in the life of the children, they have to turn toward integrating values while they teach subjects. Value integration does not mean quoting a value and discussing it, rather it is an effort to lead the students to see a personal meaning in whatever the teacher teaches in all subjects. It depends to a large extent on the creativity of the teacher to highlight the value that is hidden in all subjects, including the languages. Value means a person's personal principles or standards of behavior the judgement of how important that value is to him in his life. In nut shell we can say, "Value is a preferential behavior". What the teacher needs to do in class is to help the kids choose 'his/her preferential behaviour'

The fundamental shift that needs to happen here is this.

At the centre, is the value and all subjects are contributing to the stabilization of the value. Therefore, the teaching has to be intertwined with those values from the subjects and the teachers reach to the students in a very subtle way. Each Subject-be it Science, Math Or languages, or social science, or Non-academic subjects, have got something very fundamental to convey to the people who spend time to learn those subjects. And if we look at those subjects from a very objective perspective, we can clearly see what they are all dying to convey to the children. Math talks about precision, value of time, sharing caring, multiplying happiness and joy and several likes. Science talks about hard work and resilience and the will power to fail and still work hard to achieve. Languages give the

feelings of expression, love, compassion and what not. So, when a student goes out of the school portals, he would have assimilated within him values like precision, punctuality, rationality, truth, compassion, love, caring, sharing, determination, courage to fail, spirit of enquiry et etc. Along with similar such values, the content gets learnt by the kids.

What benefits do Value integration bring to the students?

- 1. The students acquire several time honoured personal and collective values for life
- 2. Along with the cognitive development assured by modern education, integrating values in academic subjects prepares the children to develop their social and emotional lives
- 3. The approach of integration of values in teaching subjects, help the students enrich students' intellectually, physically, socially, morally, spiritually and artistically.
- 4. Schools can witness more of academic diligence with students showing increased attentiveness in the classroom and show capacity to do independent work
- 5. The school ambience also will see less of conflicting situations as the students start demonstrating greater empathy and responsibility
- 6. The student teacher relationships drastically improve and it becomes more trusting
- 7. Students feel a sense connectivity with others and belongingness

The argument

Teachers are the crucial ingredients in getting the values incorporated into the system and there is no two way about it. At present teachers are focused on completing their lessons on time amid all challenges and they do not have the extra time for doing any research for incorporating the lessons with values. Education and imparting values are no two different subjects. They are one. Additionally, thrusting a subject of value addition always attracts criticisms, primarily from the teaching community since they believe that it is an additional work and have to prepare more.

This argument is in place and cannot be ruled out and that is why HEMA foundation pitches in for help.

What does HEMA foundation offer to teachers?

This particular attempt from HEMA Foundation is to address this conflicting issue in education. HF is striving to reach out to teachers with ways and means to incorporate or integrate values while they teach academic subjects so that additional burden is not on them, while they address a major concern of education.

Values can never be taught, values can only be caught

Every subject has material knowledge that is needed for existence. What goes unnoticed more often is the subtle knowledge that the subjects try to convey. Any subject-Language, Math or science-all stand there for spreading virtues and values alongside the material knowledge. It is an integral part of learning the subject.

How and why are the values integrated by HF?

There is a very sound reason for HF to adopt the project of value integration into academic subjects and it is justified when any one reads the deliberations made in the NEP-2020 -NEP talks passionately about the integration of values, skills, and essential subjects to make the learning holistic. Let us refer to the clause 4.28, and it reads as follows: "Students will be taught at a young age the importance of "doing what's right" and will be given a logical framework for making ethical decisions. In later years, this would then be expanded along themes of cheating, violence, plagiarism, littering, tolerance, equality, empathy, etc., with a view to enabling children to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. As consequences of such basic ethical reasoning, traditional Indian values and all basic human and Constitutional values (such as seva, ahimsa, swachchhata, satya, nishkam karma, shanti, sacrifice, tolerance, diversity, pluralism, righteous conduct, gender sensitivity, respect for elders, respect for all people and their inherent capabilities regardless of background, respect for environment, helpfulness, courtesy, patience, forgiveness, empathy, compassion, patriotism, democratic outlook, integrity, responsibility, justice, liberty, equality, and fraternity) will be developed in all students."

The new NEP and therein the NCERT insist on integration of values with essential subjects. Nature is the mother of all knowledge- Every learning that takes place with human beings is connected through the mind and intellect. While giving food for thought at the intellectual level, teachers have to supplement the emotional aspect through developing the mind. Mind develops by seeing, observations and hearing from sources that make sense to it. Human brain and human mind need to go hand in hand to make rational decisions and emotional attachments. If there are no emotions to any material knowledge learnt, it will remain a subject only. The love for the subject comes, when one extrapolates it to the application of it both at the material and emotional level. The emotional intelligence that gets originated while an academic subject is being taught is as powerful as the academic learning. Because it signals imagination and creativity and these are faculties associated with the mind. The rational brain which is provided with intellectual information about the academic subjects processes the knowledge with the help of the emotional brain-which is the mind. When no food is given to the emotional brain, it gets impoverished. Therefore, a balancing act needs to be done by teachers while imparting knowledge on academic subjects to incorporate the value or virtue that the subject is trying to convey to the reader or learner.

While the teacher teaches a topic 'Patterns' in Math, remember that the teacher has to touch the value of precision, discipline and punctuality. The whole universe gives us innumerable patterns and they all follow a certain order. That order brings discipline and it helps you see things in the right perspective. Similarly, the teacher, while discussing about geography, and earth in particular, what can be brought out is the virtue of evolution and the stability given by the earth. Earth is an evolved planet. The innate stability, the order, the growth and silence involved in this process are all virtues that can be imparted to the students. On similar lines, the ecosystem, the biology, atmosphere, the plants, animals, air, water, aesthetics, and beauty-all talk about values and virtues of truth, tolerance and love, coexistence, interdependence, compassion and honesty.

Integration of values with academic subject teaching is an effort of HEMA Foundation to reach to the teachers with the varied ways of dealing with academic subjects and making it very interesting for the students to learn.

Whom does this manual serve?



The next thing that HF is trying to incorporate is Skills along with values. Skills are also considered to be an integral part of learning and hence while a value is highlighted the skills are also touched upon.

The additional advantage that teachers who use this manual of HF is that, the chart of the flow of lessons can be as such adopted in real teaching sessions without the need for doing a lesson plan again. The pattern of a school lesson plan used for imparting academic session is given incorporating the values integrated in it.

The perfect way of starting an academic lesson in a normal classroom situation so that the students get glued to the teacher's skills of teaching, is assured in the manual through a context text-either by way of a story or an activity or discussion that rouses the interest of children

The description of the lesson ends with assignments for doing individually, at home or in class and this comes as a huge relief for the teachers

There is also a descriptive summary in the beginning of the text manual where in the topic, the core values, the skills and the activities that can be done and also the materials required for the same are all given so that the teacher gets a quick idea about how to go about the same.

HF, thus, is trying to travel that path of imbibing values to children along with the teachers!

Organization of the manual-How to read the manual?

The teacher will have to read and understand the manual as follows:

This teacher manual follows a certain structure that is not replacing the academic journal of the teacher. On the contrary, serves as an additional support as to how the teacher can link those values that are very relevant for a human life with the teaching of the subjects.

It has two parts:

A descriptive summary: this is a sheet in the beginning of each manual, showing what are the core values, sub values and skills that are linked with the topics and describes what activities can be undertaken to teach the values through subject integration and also shows what all education materials are required. Teacher has to glance through this to get a fair idea about how many values are integrated in total and understand this part first

The second part is the actual manual where the method of integration is dealt with the main academic concept.

The structure of the manual goes as follows: Start reading from introduction

- 1. Introduction: This gives what the lesson is about and what values, skills can be integrated here and the significance of it
- 2. Learning objectives: This plan talks about what are the academic and value driven objectives of learning the lesson
- **3. Process and Action:** Here the way how the lesson has to be undertaken and it is shown in the form of a flow chart for quick understanding mentioning the activities at each stage. It starts with the context which actually serves as the introduction of the class to the new topic.
- 4. Activities and related discussion: Here the activities are dealt with in detail with discussion questions that lead to both academic and value driven integration. It is through these the teacher is able to deliver the total lesson effortlessly.
- 5. Assignments: Gives assignments that can be done individually, at home, or as group in the class.

The activities given can be chosen by the teacher as and when needed or as per the time available. It is not mandatory that the teacher does all activities.

Conclusion:

It is a proven fact that any particular value learnt becomes a habit when one practices it consistently. The purpose of integration of values with academic subjects is to learn the values along with the academic concepts and so whenever the academic concepts are tested, the value learnt is reiterated. The creativity and imagination of teacher make the lessons interesting to the students and HEMA Foundation presents this Value Integration Teacher Manual for the benefit of the teaching and student community. Jai Hind

Conceived and presented by Vijayam Ravi, PhD Academic Director HEMA Foundation

"वसुधैव कुटुंबकम्"

Vasudhaiva Kutumbakam ("vasudha", the earth; "iva", is ; and "kutumbakam", family). This Sanskrit phrase literally translates to mean that the whole world is one single family. The Sages have said that the entire world is truly just one family connected with thoughts, emotions, humanity and humility.



सर्वे भवन्तु सुखिनः सर्वे सन्तु निरामया । सर्वे भद्राणि पश्यन्तु मा कश्चित् दुःखभाग् भवेत् ।।

May all be prosperous and happy. May all be free from illness. May all see what is spiritually uplifting. May no one suffer in anyway.





We aim to cultivate a conscious understanding of human values in individuals in order to help them coexist peacefully and harmoniously.



Our mission is to awaken the spirit of value based living in all individuals at school, organizational and community levels through well researched and structured programs resulting in a responsible, effective and harmonious existence for all

->•<--

01 <u>Unit 1</u>

I.	Introduction	1
II.	Learning Objectives / Outcomes	1
III.	Process & Action Plan	2
IV.	Activities & Related Discussion	4
V.	Assignments	7
VI.	Resources	7

02 <u>Unit 2</u>

I.	Introduction	1
II.	Learning Objectives / Outcomes	1
III.	Process & Action Plan	2
IV.	Activities & Related Discussion	4
V.	Assignments	6
VI.	Resources	6

03 <u>Unit 3</u>

I.	Introduction	1
II.	Learning Objectives / Outcomes	1
III.	Process & Action Plan	2
IV.	Activities & Related Discussion	4
V.	Assignments	7
VI.	Resources	7

04 <u>Unit 4</u>

I.	Introduction	1
II.	Learning Objectives / Outcomes	1
III.	Process & Action Plan	2
IV.	Activities & Related Discussion	4
V.	Assignments	6
VI.	Resources	6

05 <u>Unit 5</u>

I.	Introduction	1
II.	Learning Objectives / Outcomes	1
III.	Process & Action Plan	2
IV.	Activities & Related Discussion	4
V.	Assignments	6
VI.	Resources	6

06 <u>Unit 6</u>

I.	Introduction	1
II.	Learning Objectives / Outcomes	1
III.	Process & Action Plan	2
IV.	Activities & Related Discussion	4
V.	Assignments	6
VI.	Resources	6

07 <u>Unit 7</u>

I.	Introduction	1
II.	Learning Objectives / Outcomes	1
III.	Process & Action Plan	2
IV.	Activities & Related Discussion	4
V.	Assignments	7
VI.	Resources	7

08 <u>Unit 8</u>

I.	Introduction	1
II.	Learning Objectives / Outcomes	1
III.	Process & Action Plan	1
IV.	Activities & Related Discussion	4
V.	Assignments	6
VI.	Resources	6

09 <u>Unit 9</u>

I.	Introduction	1
II.	Learning Objectives / Outcomes	1
III.	Process & Action Plan	2
IV.	Activities & Related Discussion	4
V.	Assignments	7
VI.	Resources	7

10 <u>Unit 10</u>

Introduction	1
Learning Objectives / Outcomes	1
Process & Action Plan	2
Activities & Related Discussion	4
Assignments	6
Resources	6
	Introduction Learning Objectives / Outcomes Process & Action Plan Activities & Related Discussion Assignments Resources

11 <u>Unit 11</u>

I.	Introduction	1
II.	Learning Objectives / Outcomes	1
III.	Process & Action Plan	1
IV.	Activities & Related Discussion	3
V.	Assignments	6
VI.	Resources	6

12 <u>Unit 12</u>

I.	Introduction	1
II.	Learning Objectives / Outcomes	1
III.	Process & Action Plan	2
IV.	Activities & Related Discussion	4
V.	Assignments	7
VI.	Resources	7

13 <u>Unit 13</u>

I.	Introduction	1
II.	Learning Objectives / Outcomes	1
III.	Process & Action Plan	1
IV.	Activities & Related Discussion	4
V.	Assignments	6
VI.	Resources	6

14 <u>Unit 14</u>

I.	Introduction	1
II.	Learning Objectives / Outcomes	1
III.	Process & Action Plan	1
IV.	Activities & Related Discussion	3
V.	Assignments	5
VI.	Resources	5



Торіс	Values / Life skills integrated & imbibed	Activities
Knowing our Numbers	Core Values considered : Discipline, Order, Self- awareness& Comparison Other Sub - Accuracy	Value integration Activities:- 1.By doing a discussion& worksheets , teacher shall revise the previous knowledge of students.
	Life skills: estimation, computing, problem solving, and accuracy, decision making and calculation	2. By discussion and Q&A method teacher demonstrate the importance of discipline,order, clarity ,self awareness and comparison in life and there by achieve success in life.
		3.Guiding students to research and do presentations of Roman Nuemerals will instil curiosity among students
		5. Assignment:1.Writes strong and weak points individually and convert all weak points to strong points with the help of teachers and counsellor

Materials / Resources needed

Value Integration:-

1.Card paper to write strong and weak points ,worksheets to revise previous knowledge

2.Facilities and Equipment to show videos and space for conducting activities 3.BB, Pen, Duster

4.Ncert Text Book, Reference books,(R.D Sharma , R.S.Aggarwal)

Description (of the points of discussion)

Value Integration:-

In this chapter the activities, stories and games are incorporated in such a manner that students realise as they learn more about numbers it creates curiosity amongst students. Life is random. Numbers bring discipline, order and certainty in life. Imagine a life without numbers. Everything will become too random. Discipline, order in life and a curious mind of discovering or exploring new areas will enable children to succeed in life

The key discussions are:

1.By doing a discussion& worksheets, teacher shall revise the previous knowledge of students.

2. By discussion and Q&A method teacher demonstrate the importance of discipline,order, clarity ,self awareness and comparison in life and there by achieve success in life.

3.Guiding students to research and do presentations of Roman Nuemerals will instil curiosity among students

5. Assignment:

1.Writes trong and weak points individually and convert all weak points to strong points with the help of teachers and counsellor

<u>Unit 1</u>

Knowing our Numbers

Discipline, Order, Self-awareness& Comparison

I. Introduction

In this chapter, students will learn interesting things such as large numbers, their comparison, arrangement, shifting the digits, use of commas etc. Students will also learn about the estimation of numbers by rounding off. One can study about larger numbers through real life examples, different units and their inter conversion. Apart from that, topics like Using brackets, Indian and International system of numeration followed by roman numerals are also discussed.

Maths is an inevitable part of one's life. Whether it is the breath rate, pulse rate, number of cells in our body etc. When you look around the nature, the activities you do, whichever are you choose number is everywhere. As they learn more about numbers it creates curiosity amongst students. Life is random. Numbers bring discipline, order and certainty in life. Imagine a life without numbers. Everything will become too random. Discipline, order in life and a curious mind of discovering or exploring new areas will enable children to succeed in life.

II. Learning Objectives / Outcomes

Through this unit, the students will achieve the following grade appropriate academic and value based goals

- Learn to find place value of the digit in a number, arrange numbers in ascending & descending order compare numbers, expand numbers, add and subtract numbers, find successor and predecessor of a number.
- Estimate numbers to the nearest tens and round off and round of numbers and find sum, difference and product.
- Use bracket to solve the problem and make calculation quick to avoid confusion.
- Write numbers in the form of roman numerals and represent and interpret the numbers written in clock. Apply the rules of roman numerals operations and perform arithmetic operations on them.
- Learn to keep discipline and order in life.
- Develop a curious mind to explore more

III. Process & Action Plan

Numbers play an important role in our lives. There are numerous numbers directly or indirectly connected to our lives. Blood pressure, oxygen saturation, pulse rate, haemoglobin, number of platelets, number of all types of cells, amount of water in body, different enzymes, acids, etc. Our body is a balance of numbers! Any fluctuation in these numbers will throw one's body out of balance.

Your role as a teacher is significant, as you have the power and the means to shape the lives under your guidance. One of the most important goals you may have as a teacher, is the character education of the students using the academic content at hand.

The values and life skills integration within this unit may follow the following process and action plan, as depicted in the flow chart on next page:



While it would be ideal to expose the students to all the activities as given, and the discussion that would ensue, you may choose as per your convenience and availability of time, the activities that would be relevant to the content being taught and/or suited to the cognitive and emotional maturity of the students.

This topic incorporates the *core approach* – <u>Knowing, Understanding, Valuing and</u> <u>Acting the values embedded in the topic.</u>

The core values being considered are Discipline, Order, Self-awareness & Comparison along with other sub-values like accuracy.

The unit also provides the scope to develop the following life skills in the students: *estimation, computing, problem solving, and accuracy, decision making and calculation*

IV. Activities & Related Discussion

A: The Context Activity For the teacher to start:

A1: Discussion:

Teacher can introduce the topic by discussing the importance of numbers in daily Life (Citing examples as given below). Then teacher can progress to teaching the uses of numbers, next comes categorisation and applications.

- How many people who liked your post on Facebook?
- How many followers do you have in Instagram?
- What time did you get up today?
- What is the % of mark you got in last exam?
- How many students are there in your class?
- Think of five situations where you use numbers in your daily life?

A2: Ordering of numbers

Order these lists of numbers from smallest to largest.								
A)	27141	16978	42763	9627				
	smallest			largest				
B)	68275	82013	7962	10524				
	smallest			largest				
C)	32764	8516	10928	31905				
	smallest			largest				
D)	82761	51328	17828	51982				
	smallest			largest				
E)	67253	81020	42736	6526	10122			
	smallest				largest			
F)	47210	38142	62634	42195	32597			
	smallest				largest			
G)	27612	9805	53005	7925	10527			
	smallest				largest			
H)	76261	28943	35264	22856	29040			

A2: Compare numbers.

Use the symbols >, < and = to compare the numbers.

1)	54567	>	48271	11)	7389		9056	21)	83814	69834
2)	27138		27948	12)	66271		59483	22)	90038	39807
3)	8273		8273	13)	81035		80946	23)	6257	20105
4)	10293		4382	14)	27365		25581	24)	14205	22712
5)	69182		12734	15)	8377		9039	25)	79612	80105
6)	70102		83834	16)	10392		8694	26)	55960	57024
7)	65351		65351	17)	37780		29106	27)	8826	81020
8)	78233		45369	18)	65026		65026	28)	40938	40124
9)	67727		6839	19)	23870		25143	29)	63562	63297
10)	91038		66376	20)	19602		9063	30)	30771	30771
Com	pare the	se a	amounts.							
31)				32865	5 >	2000	00 + 9000			
32)				15027	7	1000	00 + 6000	+ 45		
33)				63527	,	6000	00 + 3000	+ 600)	
34)				70360)	7000	00 + 300 +	- 60		
35)				81523	3	8000	00 + 200 +	- 80		
36)				61052	2	6000	00 + 152			
37)				21706	5	2100	00 + 620			
38)			4000	0 + 285	5	4208	35			
39)			2400	0 + 371	L	2439	96			
40)		70	000 + 600	0 + 183	3	7600	00 + 100 +	- 83		

Ref:https://www.math-salamanders.com

B:Value Based Activity

Discussion in the class room:

BI. Math / Numbers are a powerful and incredibly useful tool.

Teacher should divide the class into different groups or assign the task to individual students, Ask every team member to find one example that numbers are powerful and incredibly useful discuss and present the same in class, groupwise.

Teacher shall give examples.

- Mobile number of parents
- Number of students in your class
- Income of your parents.
- If the pulse rates go down
- Cost of the dress purchased on your birthday.
- Date and year you born.

After students' presentation & discussions, teacher shall co-relate the examples given by students to how numbers play a vital role in maintaining order. Furthermore, the teacher should explain to students, just like how numbers give order, discipline and clarity in daily life, students should make an active effort to bring order and discipline in life. This will help them to achieve their goals and in general maintain happiness

B2. Teacher instruct the same group to find the consequences if they don't use numbers in daily life.

Let them discuss among the group and present in the class. It will be fun learning for students.

Teacher shall give examples and elicit more from students

- Thermometer without numbers
- A car without speedometer
- Clock with no numbers
- Exams without marks
- Cricket without runs / football/basketball without goals

After students' presentation & discussions teacher shall explain that without numbers there will not be order or clarity. Similarly, students should learn from this topic to be more disciplined, inculcate the value of orderliness in life. This will help one and all to achieve success, maintain a balanced and healthy life and be happy in general.

B3: Now teacher shall discuss about comparison & self-awareness while teaching comparison of numbers & brackets

- What is the effect of comparison in real life situation?
- Do you compare yourself with others?
- Ask students to write in a paper and do not disclose it.

Teacher shall explain the importance of being themselves. Break the habit of feeling insecure, envious, and discontented with your life. Be grateful for the good in your life and resist any lies that shout "It's not enough" If you commit yourself to being deeply grateful for what's good in your life, and remind yourself of it daily, you'll be far less vulnerable to comparison and envy. If someone or something triggers that ugly feeling of negative comparison, stop and remind yourself of what's good in your life, right now.

There is so much. Make a list of who and what you frequently envy or compare yourself to. Write how each negatively affects you, and why it's actually a waste of your time. Resolve to catch yourself next time. Avoid comparison triggers if you can, especially if the activity or contact doesn't add meaning or any real value to your life.

B4. Roman Numerals: Teacher shall inculcate curiosity among students while teaching Roman Numerals

Even though Roman numerals as a math topic, it's actually an important part of ancient Roman history. While teaching Roman numerals Techer can inculcate curiosity among students and instruct them to do a research on roman numerals Their Origins, Impact, and Limitations & Present day uses

V.C:Assignments

C1: Teacher shall guide students to introspect and write

- All strong areas about them
- All weak areas about them –discuss/seek help of teacher or counsellor of school how to overcome/improve it.

Resources

References:

NCERT Textbook, Reference books, (R.D Sharma, R.S.Aggarwal)



Topic i	Values / Life skills ntegrated & imbibed	d Activities
Whole Numbers	Core Values considered : Inclusivity Other Sub-Values:	Value integration Activities:- 1.By doing discussion in the class room and by solving worksheets teacher shall revise the previous knowledge of students
	Kindness and empathy Life skills: Drwaing, calculationand computing	2.Bydiscussion and explanation teacher shall instill the meaning& need inclusive education in students
		 3. By discussion & explanation of famous personalities who overcame their disability by inclusion in society teacher shall inculcate the value of empathy ,kindness & importance of inclusion in students 4. Assignment:
		Teacherinstruct students and give assignment 1. To do research and write about famous personality who had a made a difference in the world by conquering all difficulties& make presentation for the class

Materials / Resources needed

Value Integration:1Worksheets of puzzles
2.Facilities and Equipment to show videos and for conducting activities
3.BB, Pen
4.Ncert Text Book, Reference books,(R.D Sharma , R.S.Aggarwal)

Description (of the points of discussion)

Value Integration:-

In this chapter the activities and games are incorporated in such a manner that students learn the value in such a way that when we include zero in natural numbers it has brought many properties and usefulness in the number system. Similarly through this lesson teacher can inculcate the importance of inclusivity. It is our responsibility to focus on a person's abilities and not their disabilities. One should be kind, respectful, generous and empathetic towards less fortunate. Inclusiveness means to value diversity and the unique contributions each student brings to the classroom. All children should be able to be a part of their community and develop a sense of belonging and become better prepared for life in the community as children and adults. It also provides the opportunity to learn about and accept individual differences.

The key discussions are:

1.By doing discussion in the class room and by solving worksheets teacher shall revise the previous knowledge of students

2.Bydiscussion and explanation teacher shall instill the meaning& need inclusive education in students

3. By discussion & explanation of famous personalities who overcame their disability by inclusion in society teacher shall inculcate the value of empathy kindness & importance of inclusion in students

4. Assignment:

Teacher instruct students and give assignment

1. To do research and write about famous personality who had a made a difference in the world by conquering all difficulties& make presentation for the class

<u>Unit 2</u> <u>Whole Numbers</u> Inclusivity& Kindness

I. Introduction

The general objective of whole numbers is to introduce the number, '0' which is very important in the Number System. The whole numbers are numbers without fractions and it is a collection of positive integers and zero. The number zero has a lot of important properties, without which our Number System would not be complete.

When we include zero in natural numbers it has brought many properties and usefulness in the number system. Similarly through this lesson teacher can inculcate the importance of inclusivity. It is our responsibility to focus on a person's abilities and not their disabilities. One should be kind, respectful, generous and empathetic towards less fortunate. Inclusiveness means to value diversity and the unique contributions each student brings to the classroom. All children should be able to be a part of their community and develop a sense of belonging and become better prepared for life in the community as children and adults. It also provides the opportunity to learn about and accept individual differences.

II. Learning Objectives / Outcomes

Through this unit, the students will achieve the following grade appropriate academic and value based goals:

- Able to find predecessor and successor of a number.
- Able to draw number line and do addition, subtraction and multiplication on number line.
- Learn all properties of whole numbers (Closure, commutative, associative, Distributive, Identity) and able to apply while doing sums.
- · Able to arrange numbers in elementary shape made up of dots
- · Able to assimilate meaning and importance of inclusivity and kindness in life

Whole number is introduced in classVI.The inclusion of 'zero" to the natural number gave a whole new concept to number system. Zero is a special number and it plays a central role in mathematics. In the history the discovery of zero will always standout as one of the greatest single achievements of the human race. Your role as a teacher is significant, as you have the power and the means to shape the lives under your guidance. One of the most important goals you may have as a teacher, is the character education of the students using the academic content at hand.

The values and life skills integration within this unit may follow the following process and action plan, as depicted in the flow chart on next page:



While it would be ideal to expose the students to all the activities as given, and the discussion that would ensue, you may choose as per your convenience and availability of time, the activities that would be relevant to the content being taught and/or suited to the cognitive and emotional maturity of the students.

This topic incorporates the core approach - Knowing, Understanding, Valuing and Acting the values embedded in the topic.

The core value being considered is inclusivity along with other sub-values like kindnesses empathy

The unit also provides the scope to develop the following life skills in the students: drawing, calculation, computing

IV. Activities & Related Discussion

A: Context Activity for the teacher to start:

Teacher revises the number operations by using crossword puzzle worksheet

		1	2	3		4	5	6	7
	8					9			
10				11	12				
13			14					15	16
		17					18		
19	20				21	22			
23			24	25				26	27
	28	29						30	
31		\square	\square		32	33	34		
35	\square	\square	\square		36				

ACROSS

1. 1408 - 427 4. 1627 + 6068 8. 601 + 3466 9. 6046 - 2918 10. 9+18 11. 84863 - 2084 13. 24 + 21 14. 2109 + 7810 15. 58-4 17. 420 - 105 18. 40 + 946 19. 219 + 501 21. 499-15

DOWN

16. 9+37

17. 20 + 10

23.	2 + 37	1.	172 - 82
24.	401 + 2294	2.	115 - 29
26.	28 + 53	3.	27929 - 10
28.	23833 - 11720	4.	4734 + 264
30.	62 - 5	5.	138 + 479
31.	328 + 1133	6.	90348 + 20
32.	10074 - 261	7.	105 - 47
35.	2826 + 3220	8.	779 - 304
36.	142 + 442	10.	1+23
		12.	2 + 19
		14.	20 + 71

18. 167 - 73 2. 115 - 29 3. 27929 - 10034 4. 4734 + 2645 19. 1+72 20. 25695 + 3445 21. 70644 - 21249 5. 138 + 479 6. 90348 + 2610 22. 21 + 64 24. 1300 + 816 25. 110 - 49 26. 1207 - 354 27. 1+16 29. 54 + 210 31. 1+15 33. 50 + 38 34. 5+9

B: Value based activities:

 ${\bf B1}{\rm :}$ Teacher shall discuss with students about the meaning of inclusive education by interactive method

- What you mean by inclusive education?
- Why is it necessary? How is it helping them
- How is it helping other students?
- Can you say any personality who has made a mark in the world with disability?

Teacher shall explain that all students, regardless of any challenges they may have, are placed in age-appropriate general education classes to receive high- quality instruction, interventions, and supports that enable them to meet success in the core curriculum. Many students with disabilities have higher achievement and improved skills through inclusive education.

B2: Famous personalities who overcome their disability and become successful.

These great people with disabilities prove that it is just a state of mind, who have not let their disability hold them back them in any way. They have made us so proud.

1. Helen Keller



An American author, political activist, and lecturer, Helen Keller was the first deaf and blind person to earn a Bachelor of Arts degree. Her story was famously portrayed in the play and film, The Miracle Worker, which documented how her teacher Anne Sullivan was finally able to develop a language that Helen could understand. Helen wrote a total of twelve published books, including her spiritual autobiography, My Religion, and was also a member of the Socialist Party in America. She campaigned heavily for women's rights and other labour rights, and was also awarded the Presidential Medal of Freedom by Lyndon

Johnson in 1964.

2. .Sudha Chandran



This Indian actress and classical dancer needs no introduction. Born in Kerala, this 50-year-old artist met with an accident when she was just 16. Doctors missed a small wound in her ankle and plastered it, which later got infected and there was no alternative left but to amputate her leg. She overcame her disability by getting a prosthetic "Jaipur Foot" and became one of the most popular and acclaimed classical dancers of the country. Having performed Bharatanatyam

internationally, Chandran has also been a known figure in the Indian
television and film industry. Having received many awards for her amazing talent. Chandran is an inspiration to many

H. Boniface Prabhu



H. Boniface Prabhu is a Padma Shree awardee wheelchair tennis player from India. He was born on 14 May 1972 in Bangalore. At the age of four, a blotched lumbar tumor made him quadriplegic. He began his sporting career with shot put and javelin throw. Prabhu went on to win gold medal in shot put and silver medal in discus throw at the 1996 World Wheelchair Games, UK. He is the first Indian to win a medal in the International Paralympic Games. Then he shifted his focus to wheelchair tennis and he won a medal in 1998 World

Championship. He has reached a career best world ranking of 17 in singles and 19 in doubles

Through the above example of personalities who overcame all odds to become successful in what they do, the teach should emphasize on inclusivity and how treating each person with dignity and respect is important to have a healthy and happy relationship with both oneself and the community. People from diverse backgrounds have their own unique experiences. As part of the community their unique experiences can help generate unique ideas that will add value to everyone on the community. https://wecapable.com/famous-disabled-persons-india/

https://www.britannica.com/biography/Helen-Keller

V. C: Assignments

C1: Students will do research and write about a famous personality who had a made a difference in the world by conquering all difficulties. Instruct to make a presentation in the class.

Resources

References:

1.https://wecapable.com/famous-disabled-persons-india/ 2.https://www.britannica.com/biography/Helen-Keller 3.NCERT Textbook, Reference books, (R.D Sharma, R.S.Aggarwal)



Topic	Values / Life skills integrated & imbibed	Activities
Playing with numbers	Core Values considered : Integrity, Accuracy, Creativity	Value integration Activities:- 1 By solving Crossword puzzles teacher shall revise previous knowledge of students.
	Other Sub-Values: team building, equality, rationality,kindness Life skills: planning, reasoning skills, problem solving calculation	 2. By showing video and discussion of accdemics teacher connect with real life and inculcate sharing,& kindness 3.By discussion& game :- teacher instill curiosity,team work & equality among students 5. Assignment: Research work on cryptography and software security which will help them to create curiosity

Materials / Resources needed

Value Integration:-

- 1. Crossword puzzle work sheets& games worksheet
- 2. Facilities and Equipment to show videos & conducting games
- 3. BB, Pen
- 4. Ncert Text Book, Reference books, (R.D Sharma, R.S.Aggarwal)

Description (of the points of discussion)

Value Integration:-

In this chapter the activities and games are incorporated in such a manner that children learn to recognize and appreciate (through patterns) the broad classification of numbers as even, odd, prime, co-prime, etc. Applies the concept of HCF or LCM in order to solve problems in a real-life situation. The topic "Playing with Numbers" inculcates the value of equality, sharing, curiosity & identifies common positive traits/skills in people. When an individual works with people who have relatable positive traits, the individual and the team can achieve great results.

The key discussions are:

1 By solving Crossword puzzles teacher shall revise previous knowledge of students.

2. By showing video and discussion of accdemics teacher connect with real life and inculcate sharing,& kindness

3.By discussion& game :- teacher instill curiosity,team work & equality among students

5. Assignment:

Research work on cryptography and software security which will help them to create curiosity

<u>Unit 3</u>

<u>Playing with Numbers</u> Curiosity& Sharing

I. Introduction

The lesson playing with numbers identifies number patterns through factorization. Through this lesson students learn to recognize and appreciate (through patterns) the broad classification of numbers as even, odd, prime, co-prime, etc. Applies the concept of HCF or LCM in order to solve problems in a real-life situation. The topic "**Playing with Numbers**" inculcates the value of equality, sharing, curiosity & identifies common positive traits/skills in people. When an individual works with people who have relatable positive traits, the individual and the team can achieve great results.

II. Learning Objectives / Outcomes

Through this unit, the students will achieve the following grade appropriate academic and value based goals:

- Determine factors, multiples, common factors, common multiples HCF & LCM of two or more whole numbers.
- Identify prime numbers & composite numbers, perfect number and twin prime numbers Odd & Even numbers within a given range of whole numbers. Perform prime factorization of any whole number
- Apply divisibility tests of 2, 3, 4, 5, 6, 8, 9 and 10 & recognize the need for divisibility tests when working with large, whole numbers.
- Differentiate between
 - 1. Factors & Multiples
 - 2. Prime Numbers& Composite Numbers:
 - 3. Even & Odd numbers
 - 4. HCF&LCM
- Learn the value of sharing; as you share you increase your wealth & knowledge (Multiples)

- Learn the ability to study topics by their real world applications and develop the curiosity to learn more (Prime & Composite & Odd & Even numbers
- Learn the ability to break down complex problems into smaller blocks and solve easily. (Factorization/Divisibility, HCF/LCM.

III. Process & Action Plan

"Playing with numbers" give students an idea of classification of numbers in different categories. They also learn about the application of this categories of numbers as per the situation arises in real life. Your role as a teacher is significant, as you have the power and the means to shape the lives under your guidance. One of the most important goals you may have as a teacher is the character education of the students using the academic content at hand.



While it would be ideal to expose the students to all the activities as given, and the discussion that would ensue, you may choose as per your convenience and availability of time, the activities that would be relevant to the content being taught and/or suited to the cognitive and emotional maturity of the students.

This topic incorporates the *core approach* – <u>Knowing, Understanding, Valuing and Acting</u> the values embedded in the topic.

The *core values* being considered are **sharing**, **curiosity** along with other sub-values like *team building*, *equality*, *rationality*, *kindness*

The unit also provides the scope to develop the following life skills in the students: *planning, reasoning skills, problem solving calculation*

IV. Activities & Related Discussion

A: Context activity for the teacher to start:

Teacher shall revise the previous knowledge with the help of crossword puzzle work sheets





		1	2	3		4	5	6	7
	8					9			
10				11	12				
13			14					15	16
		17					18		
19	20				21	22			
23			24	25				26	27
	28	29						30	
31					32	33	34		
35					36				

ACROSS DOWN 1408 - 427 23. 2+37 1. 172 - 82 18. 167 - 73 1. 1627 + 6068 24. 401 + 2294 2. 115 - 29 19. 1 + 72 Δ 8. 601 + 3466 26. 28 + 53 3. 27929 - 10034 20. 25695 + 3445 9. 6046 - 2918 28. 23833 - 11720 4. 4734 + 2645 21. 70644 - 21249 10. 9+18 30. 62 - 5 5. 138 + 479 22. 21 + 64 31. 328 + 1133 11. 84863 - 2084 6. 90348 + 2610 24. 1300 + 816 32. 10074 - 261 7. 105 - 47 25. 110 - 4913. 24 + 218. 779 - 304 14. 2109 + 7810 35. 2826 + 3220 26. 1207 - 354 15. 58 - 436. 142 + 442 10. 1+23 27. 1+16 17. 420 - 105 12. 2+19 29. 54 + 210 18. 40 + 946 14. 20 + 71 31. 1+15 19. 219 + 501 16. 9+37 33. 50 + 38 17. 20 + 1034. 5+9 21. 499 - 15

B: Value based activities:

B1:Factors & Multiples & Perfect Number

https://www.youtube.com/watch?v=nwAYpLVyeFU

After showing the video teacher shall discuss along with the teaching of factors & multiples and connect with life examples.

Factors:

Teacher can discuss the factors that affect academic outcomes, and how focusing on factors will result in positive outcome and eventually lead to success. Through this topic the teacher shall help students understand that each goal can be broken down to individual smaller goals or elements. Focusing on each element will help one achieve the overall goal successfully.

Multiples:

Teacher can discuss good deeds like kindness, helping or sharing pay multiple dividends, thereby each one of us should strive to do good for the community and the world at large.

Perfect number:

Teacher can stress on the point how each one of them should strive to achieve perfection. Work relentlessly to be a better version of oneself than what they were yesterday.

Application of the principle of factors and multiples in daily life enables one to identify different aspects that influence a certain situation or identify the consequences of individual actions.

Using this principle, children would be more aware about the impact of their actions and they can also be more understanding in situations by anticipating the various aspects that influence a particular situation.

B2: Prime numbers & Composite Numbers & Even numbers & Odd numbers, Divisibility Tests, HCF & LCM, Prime Factorization.

Teacher shall teach this part by taking different activities which is already mentioned in the textbook. (Sieve of Eratosthenes).

Teacher can create curiosity among students by playing lock open games and define prime numbers & composite number. Even & Odd numbers. Lock opens Game – Refer Appendix

Knowledge of this concept is used in complex technologies such as cryptography and software security. Cite examples of the same to generate curiosity among students.

Divisibility tests

Divisibility tests inculcate the value of sharing equally. It means that everyone should look at others impartially and see them all as the same – friends, enemies, strangers, foreigners, relatives, even animals. Teacher can explain that by using divisibility test we are dividing a number by other number completely, this concept can be used to inculcate the value of sharing. This concept also inculcates the skill of breaking down a difficult task into smaller easily manageable pieces.

For e.g. at the time of exams when you have to cover multiple subjects, you break the entire exercise down into small buckets of chapters to do. This helps in simplifying a complex problem into smaller easy to do tasks.

Common Factors & Common Multiples & HCF & LCM

Factors, Multiples, common factors, common multiples HCF & LCM teaches you to find similarities in people. When one always focuses at the positive virtues of the other person, it helps in nurturing healthy relationships. Teacher can explain by recalling factors and multiples how common properties /qualities among the people help to give better results

Teacher can explain the common feature and properties of students in the class as examples. (Girl students who have long hair/short hair, student sing well, dance, read more etc.)

These concepts can be used to inculcate the value of identifying similarities in a people and encourage collaboration to achieve better results.

Examples of this can be a the migratory patterns of birds, flock of similar birds like geese, pelicans fly to warmer regions before winter, in these long journeys the practice of

grouping together enables them to fly father distances than what they could have achieved alone. (Link to video) Ref:https://www.youtube.com/watch?v=luvExSof0cc

Prime Factorization

Using prime factorization/factoring is a useful skill in life, it inculcates the valuable lesson of breaking down a complex problem into smaller sizes. Prime factorization is also used heavily in several encryption tools for securing internet communication which will help to create curiosity among students.

Therefore Playing with numbers teaches students the value of equality, team building and sharing, planning and create curiosity among them

V. C: Assignments

C1: Collect information regarding cryptography and software security and discuss in the class

Resources

References:

https://www.youtube.com/watch?v=luvExSof0cc

https://www.youtube.com/watch?v=nwAYpLVyeFU

https://interestingengineering.com/solve-the-open-the-lock-puzzle-that-has-internet-puzzled

NCERT, Maharashtra State board Text book for standard VI

Appendix A

Can you open the lock using the given clues?



682- One digit is right and in its place

614- One digit is right but in the wrong place

206- Two digits are right but both are in wrong place

738- All digits are wrong

380-One digit is right but in the wrong place

Clue 4: 738 (All digits are wrong)

We start here since it takes 7, 3, and 8 out of the combination. This gives us some groundwork and navigates us to the next clue where 3 and 8 are present.

Clue 5: 380 (One digit is right but in the wrong place)

We know from the previous clue that 3 and 8 are wrong, which makes 0 the right digit. But the clue tells us that it is in the wrongs place, which means 0 can be in either first or second place.

Clue 3: 206 (Two digits are right but both are in the wrong place)

We already know that 0 is the right digit, which means either 2 or 6 is right. Since this slue states that the two right digits are in the wrong place, we now know that the second place is the wrong place for 0.

Moreover, we know that 0 cannot be placed in the third place too. This gives us our first definitive answer, and now, we can say that 0 is placed in the first place.

Clue 1: 682 (One digit is right and in its place)

This clue sheds light on whether 6 is correct or not since we couldn't figure it out on Clue 3. In this case, 6 is placed in the first position, which we know is the position of 0. Automatically, this makes 6 wrong, and 2 becomes the correct one

Clue 2: 614 (One digit is right but in the wrong place)

At this point, no one can stop us. We already know that 6 is not right, and 1 and 4 are our prime suspects. When we look at 4, we see that it is in the place of digit 2. So, now know that 4 is wrongly placed, and according to this clue, one digit is right but it is at the wrong place. This is why 4 goes to the second place.

Thus, the code is...042

Teacher can prepare more games or can assign students to make games using playing with numbers.



Topic	Values / Life skills integrated & imbibed	Activities		
Basic Geometric Ideas	Core Values considered : Interconnectedness and Inter-relationship	Value integration Activities:- 1.By discussion about basic concepts of geometry from the immediate surroundings, teacher shall revise their		
Other Sub-trust, love and respect		knowledge regarding rays,rectangles,circles,angles& solid figures		
	Life skills: drawing, accuracy, creativity and imagination.	2.By group discussion activity& presentation by students teacher inculcate the significance Interdependence& inter - relationship		
		3.Assignment:		
		Collect quotes on interdependence and make posters for class room		

Materials / Resources needed

Value Integration:-

- 1. Facilities and Equipment to show videos.
- 2. NCERT Text books, reference books (R.D.Sharma, R.S Agarwal)
- 3. Pen, board, Duster.

Description (of the points of discussion)

Value Integration:-

In this chapter the activities are incorporated to encourage students to learn the importance of relationship, interconnectedness and interdependence while teaching this lesson. Geometry is an important area of mathematics because it provides students with a deeper appreciation for the world that surrounds them. Geometric forms can be found in the natural world as well as in virtually all areas of human creativity and ingenunity.

The key discussions are:

1.By discussion about basic concepts of geometry from the immediate surroundings teacher shall revise their knowledge regarding rays,rectangles,circles,angles& solid figures

2.By group discussion activity& presentation by students teacher inculcate the significance Interdependence& inter -relationship

3.Assignment:

Collect quotes on interdependence and make posters for class room

<u>Unit 4</u>

<u>Basic Geometric Ideas</u> Interconnectedness and Inter-relationship

I. Introduction

The lesson "**Basic Geometric shapes**" gives the idea of lines, ray, curve, polygons, angles triangles & quadrilaterals, measuring segments and right & straight angles. If we observe closely we notice these all are inter connected and interdependent. Without points ray, line or curve will not be formed and without lines angles, triangles, quadrilaterals, polygons will not be able to make. Therefore teacher will be able to inculcate the importance of relationship, interconnectedness and interdependence while teaching this lesson. Geometry is an important area of mathematics because it provides students with a deeper appreciation for the world that surrounds them. Geometric forms can be found in the natural world as well as in virtually all areas of human creativity and ingenunity.

II. Learning Objectives / Outcomes

Through this unit, the students will achieve the following grade appropriate academic and value based goals:

- Understand the various geometrical terms such as point, line segment, a ray and a line and differentiate between intersecting and parallel lines.
- Identify simple curves; classify curves as closed and open curves, interior and exterior of the closed figures.
- Learn the definition of
 - 1. Angle-vertex, arm, interior and exterior.
 - 2. Triangle vertices, sides, angles, interior and exterior, altitude and median.

3. Quadrilateral – sides, vertices, angles, diagonals, adjacent sides and opposite sides, interior and exterior angle of the quadrilateral.

4. Circle- centre, radius, diameter, arc, sector, chord, segment, semicircle, circumference.

· Realize value of Interconnectedness and Inter relationship for happiness & success

III. Process & Action Plan

Geometry is a branch of mathematics that studies the sizes, shapes, positions angles and dimensions of things. It provides students with a deeper appreciation for the world that surrounds them. Flat shapes like squares, circles, and triangles are a part of flat geometry and are called 2D shapes. These shapes have only 2 dimensions, the length and the width. Here students study about two dimension geometry and how it is inter- related. Your role as a teacher is significant, as you have the power and the means to shape the lives under your guidance. One of the most important goals you may have as a teacher, is the character education of the students using the academic content at hand.

The values and life skills integration within this unit may follow the following process

A. Introduce the **context** activity: Discussion on classroom objects& objects from surroundings. Ref-A1

B. Carry out the varied **activities** in class (given below) in the sequence specified.

1.

Interdependence & Inter-relationship

Group Discussion on internal system of human body, Classroom, Plants, Animals to make them realise that interdependence give them happiness & success. Ref-B1

C. Aid generalization of the concepts learnt, through **assignments** (given below).

1. Prepares of Posters using meaningful quotes of Interdependence. Refer-C1 While it would be ideal to expose the students to all the activities as given, and the discussion that would ensue, you may choose as per your convenience and availability of time, the activities that would be relevant to the content being taught and/or suited to the cognitive and emotional maturity of the students.

This topic incorporates the *core approach* – <u>Knowing, Understanding, Valuing and</u> <u>Acting</u> the values embedded in the topic.

The core values being considered are Interconnectedness and Interrelationship along with other sub-values such as trust, love and respect.

The unit also provides the scope to develop the following life skills in the students: *drawing, accuracy, creativity and imagination.*

IV. Activities & Related Discussion

A: The context activity for the teacher to start

A1: Teacher shall discuss basic concepts of geometry

Geometry means measuring any shape on the Earth. It is a branch of mathematics which deals with measurements and shapes and elicits examples from real life. This way revise and introduce the topic.

- The rays of the sun are what else? Rays.
- Notebooks have a shape, every table and chair has a shape, most picture frames are rectangles,
- Shape of CDs and DVDs are circles.
- Angles are formed where walls meet, angles are formed when slicing a pizza.
- Solid figures have the shape and have different names such as cuboid, cube, cone, sphere, cylinder etc. The corners are points. The edges are line segments. The faces are plane figures such as rectangle, square etc.

B.Value Based activities.

B1: Interdependence- Everything and everyone is interconnected, interdependent and interrelated. Discussion



Teacher shall explain the meaning of interdependence and inter connectedness to students in a simple way.

Interdependence is how living and non-living things depend on one another. Think about how you go through a day. At some point, you probably depend on your parents for things like food, clothing, and shelter. Interdependence means mutually dependent. We depend on each other for most things: caring relationships, the world economy and even the clarity of the air we breathe. How we treat and connect with each other makes a difference to our happiness often more than we realize. Teacher makes sure they understood the concept and ask students examples of interdependence

Interconnectedness We are part of A NATURAL AND SOCIAL WEB OF LIFE that supports and sustains us. We are connected to nature and dependent on it for the things we need to keep us alive. We are also connected to our family and friends and our community. We depend on others in many ways and they depend on us too. We need others; others need us..

Divide students into groups and ask students to come with examples of interdependence and present in class. Teacher shall help the students to find out different cases.

Team-1: Case study 1-The Body's Interdependence- inside the body there are many systems, including the circulatory system, the muscular system, the nervous system, the digestive system and so on. Each one depends on the others. If one breaks down, the whole body is affected. To be healthy and strong, we need all the systems working together.

Team -2: Case study II- School Classroom Interdependence-In a school, classroom there are many factors Headmaster, teachers, students, friends, office admin, peons, security and so on. Each one depend on others to make school a happy place

Team-3: case study III-Inter dependence : plants & Animals-



Pic Sources: https://www.slideshare.net/MdSujonBabu/plants-and-animals-are-interdependent

Teacher shall give more case studies depends on number of students. Let students discuss, read research and give presentation to whole class.

Think of a world where everyone reached a state of interdependence. Individuals would work with one another, supporting the group and lifting everyone up to reach higher levels of success. There would be harmony among people because they wouldn't be left out or feel abandoned. They would be accepted in a group who would care for them and support them, encouraging their development.

Individuals who are interdependent will reap the rewards immediately. You will achieve more success and happiness when you are connected to those around you. Start today on your road to interdependence, and find happiness in your future endeavors

V. C: Assignments

C1: Collect quotes on interdependence and make posters for class room

Resources

References:

1.https://www.slideshare.net/MdSujonBabu/plants-and-animals-are-interdependent

2.Ncert Textbook, Reference books, (R.D Sharma, R.S.Aggarwal)



Topic i	Values / Life skills integrated & imbibed	d Activities
Understanding Elementary Shapes	Core Values considered : Self–motivation, accuracy, co-existence, interdependence	Value integration Activities:- 1.By discussion, display of images & concrete objects and by eliciting, teacher shall revise the previous knowledge of students
	Other Sub Values: leadership, team management, self- confidence, adaptability, inter connectedness.	2. By hands on activities of measrement teacher shall inculcate and make them experience accuracy,concentration and focus while measuring objects
L p m ca o ca m	Life skills: observation, creativity, concentration, problem solving, time management, communication skill, organisation, execution communication, decision making.	3.By observation, measurment and by eliciting different situations teacher shall inculcate Self–motivation & Self- Confidence among students
		4.By the survey of surrounding closed figures teacher shall inculcate and make them experience adaptability& Co - existance
		5.By observation of objects surround daily life, its uses and applications and by eliciting different situations teacher shall inculcate interdependence& Inter connectedness among students.

Materials / Resources needed

Value Integration:-

- 1. Images and concrete objects (Eiffel tower, Howrah bridge) Clock, Popscicle sticks
- 2. Facilities and Equipment to show videos
- 3. BB, Pen
- 4. Ncert Text Book, Reference books, (R.D Sharma, R.S.Aggarwal)

Description (of the points of discussion)

Value Integration:-

In this chapter the activities are incorporated in such a manner that helps students to realise accuracy, self-motivation, coexistence, inter-dependence with right examples. The key discussions are:

1.By discussion, display of images & concrete objects and by eliciting ,teacher shall revise the previous knowledge of students

2. By hands on activities of measurement teacher shall inculcate and make them experience accuracy, concentration and focus while measuring objects

3.By observation, measurment and by eliciting different situations teacher shall inculcate Self-motivation & Self- Confidence among students

4.By the survey of surrounding closed figures teacher shall inculcate and make them experience adaptability& Co - existance

5.By observation of objects surround daily life, its uses and applications and by eliciting different situations teacher shall inculcate interdependence& Inter connectedness among students.

6. Assignment:

Research study on the topic Co -Existance and geometrical shapes 2D& 3D

<u>Unit 5</u>

Understanding Elementary Shapes

Self-motivation, accuracy, co-existence, interdependence

I. Introduction

The lesson **"Understanding Elementary Shapes"** teaches us measurement of line segments, right and straight angles acute, obtuse and reflex angles, perpendicular lines, classification of triangles, quadrilaterals, polygons & three-dimensional shapes. While teaching and learning elementary shapes, the teacher can inculcate accuracy, self-motivation, coexistence, inter-dependence with right examples.

II. Learning Objectives / Outcomes

Through this unit, the students will achieve the following grade appropriate academic and value based goals:

- Compare the lengths of two line segments.
- Identify different types of angles based on their measures. Measure angles using a protractor.
- Define the perpendicular bisector of a line segment.
- Identify the triangles based on the lengths of the sides.
- Name the polygons based on the number of sides, identify quadrilaterals based on the lengths of the side and diagonals and the angles.
- Identify different types of solid shapes, faces, edges and vertices
- Compare the things in the surroundings as two or three dimensional shapes
- Students understands the importance of lines, angles, polygons, solid in our daily life and learn.
 - 1. Self-motivation & Self-Confidence
 - 2. Co-existence, adaptability
 - 3. Interdependence& Inter connectedness

This lesson deals with measurements of geometrical figures. Measurements play an important role in daily life because they are useful to do basic tasks, such as take a child's temperature with a thermometer, make time estimations, measure out medicine and find weights. Nurses have to measure out doses of medicines, record blood pressure readings and take pulses A normal day would be impossible without measurement. Your role as a teacher is significant, as you have the power and the means to shape the lives under your guidance. One of the most important goals you may have as a teacher, is the character education of the students using the academic content at hand.

The values and life skills integration within this unit may follow the following process and action plan, as depicted in the flow chart on next page:



While it would be ideal to expose the students to all the activities as given, and the discussion that would ensue, you may choose as per your convenience and availability of time, the activities that would be relevant to the content being taught and/or suited to the cognitive and emotional maturity of the students.

This topic incorporates the *core approach* – <u>Knowing, Understanding, Valuing and</u> <u>Acting</u> the values embedded in the topic.

The core values being considered are self-motivation, accuracy, co-existence, interdependence along with other sub-values like leadership, team management, self-confidence, adaptability, inter connectedness.

The unit also provides the scope to develop following life skills in the students: observation, creativity, concentration, problem solving, time management, communication skill, organisation, execution communication, decision making.

IV. Activities & Related Discussion

A: The Context Activity for the teacher to start:

A1: Teacher shall showcase the following to give students a concrete idea and revision of previous knowledge

• Students will be shown with pictures of architectural buildings (Eiffel tower, Howrah bridge) they will be introduced with shapes and its applications.

• By showing two similar figures for e.g.(Showing different sizes of pencils), they will be explained with the importance of measurements. The distance between two end points is called line segment.

• By showing the hands of clock they will be shown to identify different types of angles and with the use of Popsicle sticks they will be shown with different types of triangles and different types of quadrilateral.

B: Value Based Activities:

Divide the class into 4 groups. Assign 4 different sub topics of the lesson.

B1:Group1: Measuring Line Segments & compare- Accuracy, concertation and focus.

Teacher gives different objects to measure from the class room

- 1. Pencils of different lengths
- 2. Length and breadth of note books
- 3. Length breadth and height of tiffin boxes...

To get correct measure, the eye should be correctly positioned, perpendicular to the axis of measurement. Otherwise, errors can happen due to angular viewing.

Teacher shall elicit from students, what did they learn from this activity?

Teacher shall explain to them while doing any activity they need to be very much focused and accurate with utmost concentration to get a right answer. This lesson applies to events in life as well, as you grow up you will be faced with tough decisions. At such points, one should focus on assessing the situation and trying to make an accurate call.

B2:Group 2: Angles – 'Right' and 'Straight', complete, 'Acute', 'Obtuse' and' Reflex' measure of angles- Self-motivation & Self- Confidence

Look around you and identify edges meeting at corners to produce angles. List ten such situations.

- 1. List Ten situations where the angles made are acute.
- 2. List ten situations where the angles made are right angles.
- 3. Find five situations where obtuse angles are made.
- 4. List five other situations where reflex angles may be seen.

Teacher shall elicit from students, what did they learn from this activity? Teacher shall explain to them as per their answer. It is important that we look at the people and events around us from different angles and perspectives. True wisdom is looking at things from a wide (obtuse) angle – if we look at our own personal troubles and problems through a narrow (acute) angle it is very easy for us to make too much of them – but if we look from a wide angled view we can see that they are really very small and trivial in relation to the whole world. This makes it easier for us to be strong and to deal in a healthy way with these troubles and lead a happy life.

B3: Group 3: Triangles, Quadrilaterals & polygons-Co-existence, adaptability

Look around and see where you can find all these shapes. The ability to accurately identify shapes is a foundational mathematical skill, and it is quite rewarding for children because their world is full of shapes. Understanding shapes will enable students to be more in tune to the world around them and see the connections between objects, as well as being better able to appreciate artistic works. The sturdy nature of a triangle makes it the most useful shape in engineering construction. Ask students to find out examples

The properties and rules governing the geometric shapes known as quadrilaterals / polygons are used to create floor plans for new buildings, or to create buildings or spaces through engineering and architecture. Quadrilaterals are also used in graphic art,

sculpture, logos, packaging, computer programming and web design; Most of the areas of daily life where there are no examples of quadrilaterals.

Teacher shall explain that these 2D shapes are closed figures. When two lines meet angles are formed and when two or more angles of different measures meet or unite with each other than triangles, quadrilaterals or polygons are formed, by corelating this point, the teacher can explain the importance of inter connectedness, co-existence and adaptability with respect to different cultures, different capabilities, when they come together or unite a strong bond and relation is formed. India is the right example of this co-existence and adaptability. Therefore, to lead a happy and peaceful life we need to be united & connected with everybody in our community.

B4: Group 4: Three Dimensional Shapes- interdependence & Inter connectedness

Look around almost each and everything around us can be considered a 3D shape. These objects surround our daily lives. A lot of times, they go unnoticed. Ask students to observe about all the different 3D objects around them, their shapes, and their uses and applications. Understanding shapes will enable students to be more in tune to the world around them and see the connections between their different faces, as well as being better able to appreciate artistic works

- Any 3 dimensional object is depended on 2 dimensional
- 1. Cuboid is the combination of rectangles
- 2. Cube is the combination of squares
- 3. Cone is the combination of circle & triangles.
- 4. Cylinder is the combination of circles& rectangle

Teacher shall explain the importance of interdependence to form 3D shape similarly in real life interdependence plays a significant role in molding an individual into a successful person.

V.C Assignments

C1: Research on the topic co-existence and geometrical shapes 2D Shapes

C2: Research on the topic co-existence and geometrical shapes 3D Shapes

Resources

References: Ncert Textbook, Reference books,(R.D Sharma , R.S.Aggarwal) *Resources for Teachers:*



Topic	Values / Life skills integrated & imbibed	Activities
Integers	Core Values considered : Self Confidence & Optimism Other Sub-Values: patience, determination Life skills: critical thinking,	 Value integration Activities:- 1.By presentation and Question and answer session teacher shall revise the previous knowledge of students. 2.By doing Flash card activity - instil in students self confidence, creativity & Critical thinking
	cicalivity.	 3.By connecting to real life situations - teacher inculcate optimism and respect among students 4.Assignment: Essay on the topic A day in school without rules of discipline

Materials / Resources needed

Value Integration:-

- 1. Presentations, Flash Cards
- 2. Facilities and Equipment to show videos & conducting games
- 3. BB, Pen
- 4. Ncert Text Book, Reference books, (R.D Sharma, R.S. Aggarwal)

Description (of the points of discussion)

Value Integration:-

In this chapter the activities are incorporated in such a manner that students learn to accept the ups and downs of life, also they learn to keep a positive outlook and maintain hope of a brighter future. Positive thinking will allow every individual to achieve their goals and lead a happy and blissful life..

The key discussions are:

1. By presentation and Question and answer session teacher shall revise the previous knowledge of students.

2. By doing Flash card activity - instil in students self confidence, creativity& Critical thinking

3.By connecting to real life situations -teacher inculcate optimism and respect among students

4. Assignment:

Essay on the topic A day in school without rules of discipline

<u>Unit 6</u>

Integers

Self Confidence & Optimism

I. Introduction

The topic **"Integers"** deals with the significance of integers and operation of integers with the help of number line. The knowledge of integers helps students in many real-life situations like measurement of temperature, fluctuation in temperature. Profit and loss of money. Altitude and depth. Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world. Through this lesson students learn to accept the ups and downs of life, also they learn to keep a positive outlook and maintain hope of a brighter future. Positive thinking will allow every individual to achieve their goals and lead a happy and blissful life.

II. Learning Objectives / Outcomes

Through this unit, the students will achieve the following grade appropriate academic and value based goals:

- Able to define the set of integers, positive numbers, negative numbers, and signs and familiarize students with addition, subtraction of integers and engage students in activities that will help their mental arithmetic using integers
- Represent integers with their signs and differentiate positive number, negative number and zero from each other, determine the order of integers and represent them on a number line and draw comparison between them, recognize that integers get smaller in value as you move to the left, and larger as you move to the right on a number line, investigate models such as the number line to illustrate the operations of addition & subtraction.
- Denote numbers with their signs and represent real life situations like temperature scale, credit, debit etc, determine one more and one less of a given integers and find

its predecessor and successor and engage students with the everyday uses of integers.

III. Process & Action Plan

An **integer** is defined as a number that does not include the fractional parts. Integers is the combination of positive numbers, negative numbers and zero. Like this combination our life is also a combination of happiness & sorrows, with ups and downs but it is our ability converts all negative to positive. A positive attitude makes us happier and more resilient, it improves your relationships, and it even increases our chances of success in any endeavour. In addition, having a positive attitude makes you more creative and it can help you to make better decisions. Your role as a teacher is significant, as you have the power and the means to shape the lives under your guidance. One of the most important goals you may have as a teacher, is the character education of the students using the academic content at hand.

The values and life skills integration within this unit may follow the following process and action plan, as depicted in the flow chart on next page:



B:Wilhie Biased Activities as given, and the Bis: presinchan would in such as per your convenience and availability of time, the activities that would be relevant to the content being taught and/or suited to the Game Instructions: cognitive and emotional maturity of the students.

The teacher will divide the class into four groups and will give them Flash cards This topic incorporates the core approach <u>Knowing</u>. Understanding, Valuing and containing letter with problem operations. Each group has a task cards about the rules <u>Acting</u> the values embedded in the topic.
 On operations of integer for them to answer the flash cards problem.

The core values being considered are Optimism & confidence along with other sub-values Each group must solve the problem on the flash cards and arrange/ form a word from like patience, determination, the lowest to highest number of their answers.

The unit also provides the scope to develop the following life skills in the students: The first group that finished the activity will say completed loudly within their group. *critical thinking, creativity.*

After posting flash cards on the board, teacher will choose students in the group to discuss their activity work provided with his/her guide questions.

IV. Activities & Related Discussion Through this activity students learn concept, definition, rules, and operations about

integers .At the same time build up self-confidence, creativity and critical thinking among

Are Fiselcontext activity for the teacher to start

To enhance creativity, thinking and previous knowledge of students' teacher shall have

B2: Distatistiond Custie eans verseapine:



IntEpersmononenthinationSpence ative, zero aWepghitive integerso Sign

Teacher shall ask and elicit from students how they can connect the above concepts with real life. While explaining about the concept of integers and its representation on the pumper line tencher shall co-relate the topic to life exercise goes through ups and down in life, some days will be good and you will feel happy and there will be some days which Presenters will action the word given by the teacher regarding with the picture on the may not be as good and you will feel down. It is important that one takes everything in stride be present and maintain a balance. Each group must guess the word with the help of presentation and their presenters. Addition and subtraction of integers

The winner wing operations of addition and subtraction teacher shall explain that addition is abundance if you add the more positives it will increase your value therefore. This activity will not only help to test their previous knowledge but enhance their creativity and thinking skills and the abstract application of integers in real world adding positives in your life whether it is good friends, good deeds, it will give you back in abundance.

If you add negatives it will decrease your morale, so always careful when you deal with negatives like bad habits, bad actions...So we need to subtract all negatives from our life so that each one of us becomes a positive personality.

We need to apply rules while doing operations on integers

While teaching rules of addition & subtraction of integers teacher shall explain to students that Obeying rules is very important not only in math but in all aspects of life. When we live in society, rules help in maintaining law and order and prevents chaos. Our classroom and communities are similar because they both have diverse people who want to live and work in a harmonious environment. In fact life can't be organized without rules.

Can you imagine even a game without rules? Ask and elicit from students by taking names of different games they play.

It will be a kind of mess. When we are playing a game, we must follow its rules or it will be unfair. Also everything in our life should be restricted with rules or it becomes a mess and unfair. If there are no rules and everyone is free to do whatever they want, most people will probably behave selfishly. We need rules to help us get along together and show respect to each other.

V. C: Assignments

C1: Write an essay of a day in school without any rules of discipline

Resources

References:

1. Ncert Textbook, Reference books, (R.D Sharma , R.S.Aggarwal)



Торіс	Values / Life skills integrated & imbibed	Activities	
Fractions	Core Values considered : Sharing, Equality & Diversity	Value integration Activities:- 1.By discussions, questions & answer by solving worksheet teacher, revise the	
Other Sub-Values: caring, empathy, harmony, patience.		previous knowledge of patterns	
	Life skills: calculation, problem solving, estimation& reasoning, decision making	2. Through discussion and debate teacher shall instill the importance of equality or nondiscrimination required in life	
		3By discussion & explanation teacher register the benefits of diversity among students	
		4.Assignment:	
		I. Study on steps taken by Government of India to ensure gender equality, protection of girl child,	
		girl education and women empowerment. II.Study on benefits of diversity and inclusions	

Materials / Resources needed

Value Integration:-

- 1. Worksheets solve in the class
- 2. Facilities and Equipment to show videos
- 3. NCERT Text Book, Reference books, (R.D Sharma , R.S. Aggarwal) P

Description (of the points of discussion)

Value Integration:-

In this chapter the activities are incorporated in such a manner that While learning the lesson students

learn to relate fraction in real life situations like relevance in money distribution, division of things among family members, friends and people, dividing time of a day as per each one's requirement.

Through this lesson students learn an important quality of sharing impartially and there by caring. Sharing teaches children about compromise and fairness. Sharing not only shows care for others but also helps in self-development as a human being. It makes one selfless, humble and empathetic towards others, it further enables one to be a well-adjusted adult throughout life.

The key discussions are:

1.By discussions , questions & answer by solving worksheet teacher revise the previous knowledge of patterns

2. Through discussion and debate teacher shall instill the importance of equality or nondiscrimination required in life

3By discussion & explanation teacher register the benifits of diversity among students

4.Assignment:

I. Study on steps taken by Government of India to ensure gender equality, protection of girl child,

girl education and women empowerment.

II.Study on benefits of diversity and inclusion
Unit 7 Fractions Sharing, Equality & Diversity

I. Introduction

Fractions represent equal parts of a whole or a collection. When we divide a whole into equal parts, each part is a fraction of the whole. Fractions also represent parts of a set or collection. This topic discusses about the concepts of part and whole of an object thereby instilling conceptual understanding of fractions. Students relate fraction in real life situations like relevance in money distribution, division of things among family members, friends and people, dividing time of a day as per each one's requirement. Students learn about representing fractions on a number line, different types of fraction, ordering of fractions and operations of addition and subtraction of fractions.

Through this lesson students learn an important quality of sharing impartially and there by caring. Sharing teaches children about compromise and fairness. Sharing not only shows care for others but also helps in self-development as a human being. It makes one selfless, humble and empathetic towards others, it further enables one to be a welladjusted adult throughout life.

II. Learning Objectives / Outcomes

Through this unit, the students will achieve the following grade appropriate academic and value based goals:

- Define fraction, numerator, denominator, identify the number of shaded parts and the number of equal parts in a shape (circle, rectangle) a represent fractions on a number line.
- Identify a fraction by comparing the number of shaded parts to the number of equal parts.
- Define proper fraction, improper fraction, mixed number. Classify a fraction as proper or improper and recognize that one whole can be represented by many different fractions.
- Define equivalent fractions and recognize that the numerator and the denominator of a fraction must be multiplied by the same nonzero whole number in order to

have equivalent fractions and recognize that equivalent fractions are equal in value. Describe the procedure for finding equivalent fractions.

- Reduce the fraction and determine its simplest form. Identify like and unlike fractions and compare them. Addition and subtraction of all types of fractions
- Learn sharing and caring and importance of equality & harmony in life

III. Process & Action Plan

"Fractions" represents equal parts of a whole or collection. Fractions are used in our daily life without even knowing it. A pizza is a great example of fractions! Each piece represents a part of a whole. Usually pizza is divided into 8 pieces. One piece of pizza is one-eighth. (1/8)of the whole. Fruit is another great example. Every time we cut an apple, an orange, or any kind of fruit, we are taking a piece of the whole. We can represent those pieces as fractions. Fractions are very useful in our daily lives, and learning them is a very useful and important skill in our daily lives, and helps with many daily tasks and jobs. Your role as a teacher is significant, as you have the power and the means to shape the lives under your guidance. One of the most important goals you may have as a teacher, is the character education of the students using the academic content at hand.

The values and life skills integration within this unit may follow the following process and action plan, as depicted in the flow chart on next page:



While it would be ideal to expose the students to all the activities as given, and the discussion that would ensue, you may choose as per your convenience and availability of time, the activities that would be relevant to the content being taught and/or suited to the cognitive and emotional maturity of the students.

This topic incorporates the *core approach* – <u>Knowing, Understanding, Valuing and</u> <u>Acting the values embedded in the topic.</u>

The *core values* being considered are *sharing* O *equality* along with other sub-values like *caring, empathy, harmony, patience.*

The unit also provides the scope to develop the following life skills in the students: calculation, problem solving, estimation & reasoning, decision making

IV. Activities & Related Discussion

A: The Context activity for the teacher to start

A1: Teacher shall revise the previous knowledge by solving work sheet in the class after discussion.



What is the Fraction of the Shaded Area ?

Shade the Figure with the Indicated Fraction.



A2:Circle the right fraction represented by each shape



B: Value based Activity:

B1: Fractions: Teacher shall discuss the definition of fraction and ask students what life lessons do you learn from this? Elicit from students

- Fractions represent equal parts of a whole or a collection
- Dividing equally, each part of the fraction of a whole

Teacher shall ask questions (refer below) and elicit answers from students.

- What does equality mean to you?
- Give some examples of equality?

Teacher shall explains: Equality or non-discrimination is that state where every individual gets equal opportunities and rights to prove themselves, regardless of gender, race, wealth, and religion. Every individual is treated with respect and dignity.

Do you believe Gender equality exists in India? Teacher shall conduct a debate in class on the points

- Do men and women enjoy equal privileges?
- Do all people get equal privileges?
- Do men and women get equal opportunities in political, economic, education and health aspects?
- What do you think is the reason between discrimination between humans?
- What are the initiatives taken by govt of India to ensure equality?

B2: Proper and Improper Fractions; Like & unlike Fractions: Teacher shall discuss the definition of proper & improper fractions, like & unlike fractions and ask students what life lessons do you learn from this? Elicit from students

- **Proper fractions** are those fractions where the numerator is less than the denominator.
- Improper fractions are a fractions where the numerator is greater than the denominator
- **Mixed Fraction:** An improper fraction can be written as a combination of a whole and a part, and such fraction then called mixed fractions
- Like fractions are those fractions that have the same denominator
- Unlike fractions are those fractions that have different denominator

Teacher shall compiled answers given by students and explains that fractions are of different types the same way we come across different types of people, different talents, different religions, differently abled people, people of different countries, cultures,

religion etc

Note to teachers.

The presence of diversity in the classroom allows students to consider perspectives and opinions beyond those they've already formed or were shaped in early life by family and friends. By presenting students with viewpoints far different from their own, it gives them the opportunity to think critically about their own beliefs and examine the world in fresh ways.

Diversity alters the way individuals think by promoting creativity and innovation, as well as decision-making and problem-solving skills. Multicultural awareness and inclusion help students with different backgrounds and needs succeed, but it encourages acceptance and helps prepare students to thrive in an exponentially diverse world. Creativity is all about bringing together different ideas and transforming them to make something new, unique, and personal. The more ideas and experiences people are exposed to, the more creative they can be.

Benefits of Teaching Classroom Diversity

Better prepare students for a global economy. Build confidence later in life. Promote empathy and reduces prejudice. Improve student performance and achievements. Foster creativity.

V. C: Assignments

C1: Teacher shall make groups and assign students

I. Study on steps taken by Government of India to ensure gender equality, protection of girl child,

girl education and women empowerment.

II. Study on benefits of diversity and inclusion

Resources

References:

1. Ncert Textbook, Reference books, (R.D Sharma, R.S.Aggarwal)



Торіс	Values / Life skills integrated & imbibed	Activities
Decimals	Core Values considered :	Value integration Activities:-
	recision & renection	1.Bydiscussion & worksheets teacher shall revise the previous knowledge of students.
	Other Sub-Values: accuracy, fairness	2 Budierussion and quoting examples
]	Life skills: calculation, problem solving	teacher shall inculcate in students the importance of perfection and precision in life situations
		3.By using Whiteboard Bull's-Eye- Game teacher make students experience the importance of precision& perfection among students
		5. Assignment Study on daily life 2 examples where precision and perfection are important and present the same in the class.

Materials / Resources needed

Value Integration:-

- 1. Whiteboard, Suction-cup ball (above), Dry-erase markerVocabulary list/test review questions/flashcards,Work sheets for context activity
- 2. Facilities and Equipment to show videos
- 3. BB, Pen, Duster
- 4. Ncert Text Book, Reference books,(R.D Sharma , R.S.Aggarwal)

Description (of the points of discussion)

Value Integration:-

In this chapter the activities and games are incorporated in such a manner that children learn the usage of decimals in our life in representing units of money, length and weight. Decimal numbers are used in situations where more precision is required than the whole numbers can provide. For example, when we calculate our weight on the weighing machine, we do not always find the weight equal to a whole number on the scale. To know our exact weight, we must understand what the decimal value on the scale means. While teaching decimals teacher shall instill in students that we get answers more accurately and perfectly with precision. Perfection gives us something to strive for and allows us to constantly refine our methods and search a little more for a better way of doing things.

The key discussions are:

1.By discussion & worksheets teacher shall revise the previous knowledge of students.

2.Bydiscussion and quoting examples teacher shall inculcate in students the importance of perfection and precision in life situations

3.By using Whiteboard Bull's-Eye- Game teacher make students experience the importance of precision& perfection among students

5.Assignment

Study on daily life 2 examples where precision and perfection are important and present the same in the class.

Unit 8 Decimals Precision & Perfection

I. Introduction

The topic **"Decimals"** helps students understand the role of the decimal point and the relationship between tenths, hundredths, and thousandths. It also discusses the usage of decimals in our life in representing units of money, length and weight. Decimal numbers are used in situations where more precision is required than the whole numbers can provide. For example, when we calculate our weight on the weighing machine, we do not always find the weight equal to a whole number on the scale. To know our exact weight, we must understand what the decimal value on the scale means.. While teaching decimals teacher shall instill in students that we get answers more accurately and perfectly with precision. Perfection gives us something to strive for and allows us to constantly refine our methods and search a little more for a better way of doing things.

II. Learning Objectives / Outcomes

Through this unit, the students will achieve the following grade appropriate academic and value based goals:

- Explore decimal place value. Read and write decimals using tenths, hundredths, and thousandths.
- · Conversion of fractions to decimals and vice versa and learn to compare the fractions
- Compare decimals using greater-than and less-than notation. Represent decimal numbers on number line and addition and subtraction of decimals
- · Learn to be fair and perfect in all activities.

II. Process & Action Plan

The lesson **"Decimals"** throw light on the precision or near perfect answers. Being precise means having an eye for detail that will let you stand out from others. When it comes to components that are being used on a regular or daily basis, precision is of

utmost importance. Precision is essential, precision is intricate, and precision is beautiful; more than anything else, precision is necessary. When you drive a car, a motorbike, an aeroplane your movements are determined by the use of an engine. Engines are engineered for a specific purpose and each and every component plays an important role in ensuring this happens safely. Your role as a teacher is significant, as you have the power and the means to shape the lives under your guidance. One of the most important goals you may have as a teacher is the character education of the students using the academic content at hand.

The values and life skills integration within this unit may follow the following process and action plan, as depicted in the flow chart on next page



While it would be ideal to expose the students to all the activities as given, and the discussion that would ensue, you may choose as per your convenience and availability of time, the activities that would be relevant to the content being taught and/or suited to the cognitive and emotional maturity of the students.

This topic incorporates the *core approach* – <u>Knowing</u>, <u>Understanding</u>, <u>Valuing and</u> <u>Acting</u> the values embedded in the topic.

The core values being considered are Perfection and Precision along with other sub-values like accuracy, fairness

The unit also provides the scope to develop the following life skills in the students: *calculation, problem solving*

IV. Activities & Related Discussion

A: The context activity for the teacher to start

A1: Teacher revises the previous knowledge by solving the worksheets given below.





Count the total in each

Remember to use a decimal point between the ones and the tenths.

Ref: https://www.math-salamanders.com/decimal-place-value-worksheets.html

B: Value Based Activities

B1: Discussion: The importance of perfection & precision in life

Teacher shall discuss in the class by encouraging students to participate in the discussion. Teacher can write the quote on board and initiate the discussion in the class

As the great Vince Lombardi said, "Perfection is not attainable, but if we chase perfection we can catch excellence."

Ask students to quote some examples where precision/perfection is unavoidable

- In a 100 running competition student A completes 2minute 32 sec and student B completes 31 sec who is the winner?
- If you want to catch an out station train at 11:50 am from Thane Railway station but due to traffic you have reached at 11:52am.Will you able catch the train??
- In mathematics annual examination one student scored 39 marks but passing mark is 40. Will the student be promoted?
- The oxygen level SpO₂ is less than 95% what will happen?
- While constructing buildings, roads, railway lines, making furniture, making vehicles if we don't use the measures with precision and perfection what will happen?

Teacher shall elicit from students more examples and instil among them the one need to try to be nearly perfect and precise in all activities to have a balanced life.

As per discussion and opinions of student's teacher shall conclude by saying If you do any activity or work with accuracy, quality and precision, there is no doubt that you will continually make improvements, and better performances and results will follow. Being precise is hard work to start with but once you get the hang of it, it becomes a habit like any other and will pay back handsomely. Better performance will ultimately follow and your dreams of scaling up will become reality sooner than you think.

B2. Whiteboard Bull's-Eye- Game



Materials needed:

Whiteboard, Suction-cup ball (above), Dry-erase marker Vocabulary list/test review questions/flashcards

Instructions for teachers:

- Split the class into 2 teams
- Draw a target on the whiteboard, labeling each circular ring with a different point value.
- · Quiz students individually on anything you want
- If they answer correctly, they get to throw the ball at the target for points
- The winning team gets a prize, a bonus point on the test, a privilege, etc

This is a fun game but along with game students learn importance of precision to win the game. The teacher should explain to students, just like one aims at the bull's eye and throws with precision to hit the target similarly one should have goals in life and one should work relentlessly to achieve the goal. A lapse in effort will result in missing the goal completely. Therefore, one should ensure that one works hard and aim for perfection to achieve excellence in life.

Ref:https://www.boredteachers.com/resources/12-awesome-games-activities-to-make-your-classroom-fun

V.C Assignments

C1: Study on daily life 2 examples where precision and perfection are important and present the same in the class.

Resources

References:

1.https://www.boredteachers.com/resources/12-awesome-games-activities-to-make-your-classroom-fun

2.Ncert Textbook, Reference books, (R.D Sharma , R.S.Aggarwal)

3. https://www.math-salamanders.com/decimal-place-value-worksheets.html



Topic	Values / Life skills integrated & imbibed	Activities
Data Handling	Core Values considered : Confidence, Cooperation and responsibility Other Sub-Values: respect,	Value integration Activities:- 1.By discussion and solving work sheet teacher shall revise the previous knowledge of students.
	discipline, courage, honesty, consistency Life skills: interpret, categorise, characterise, analyse generate ideas,	2. By doing survey in the class teacher shall instil the value of confidence ,discipline,responsibility& honesty perceptiveness among students
	tabulation, computation.	3Assignment: Teacher shall give a Community survey for students on different topic
		• Choice of newspapers preferred by the people
		• Choice of medium of education preferred by parents for their children

Materials / Resources needed

Value Integration:-

- 1. BB, Pen, Duster,
- 2. Facilities and Equipment to show videos.
- 3. NCERT Text books, reference books (R. D. Sharma, R. S Agarwal)
- 4. Worksheet of graphs

Description (of the points of discussion)

Value Integration:-

In this chapter the activities are incorporated to teach students how the data is collected and the ways in which it can be represented will enhance the skills of the individual like discipline, respect and develop confidence, courage and the cooperation needed to be able to ask questions of (interrogate)the data so that interpretation is accurate and acquire responsibility to present the information accurately and systematically in systematic order

The key discussions are:

1.By discussion and solving work sheet teacher shall revise the previous knowledge of students.

2. By doing survey in the class teacher shall instil the value of confidence ,discipline,responsibility& honesty

perceptiveness among students

3Assignment:

Teacher shall give a Community survey for students on different topic

- Choice of newspapers preferred by the people
- Choice of medium of education preferred by parents for their children

<u>Unit 9</u>

Data Handling

Confidence, Cooperation and responsibility

I. Introduction

The lesson "**Data handling**" deals with collection of information, interpretation and recording of a table of data, interpretation and drawing of pictograph and bar graph. Organisation presentation of data appropriately and interpretation of its findings. is an important aspect of everyday life. Surveys, graphs and charts are often used by the media to inform, persuade and at times, mislead the audience. Providing learners with the knowledge of how this data is collected and the ways in which it can be represented will enhance the skills of the individual like discipline, respect and develop confidence, courage, cooperation needed to be able to ask questions of (interrogate) the data so that interpretation is accurate and acquire responsibility to present the information accurately and systematically in systematic order.

II. Learning Objectives / Outcomes

Through this unit, the students will achieve the following grade appropriate academic and value based goals:

- Able to collect, record, and interpret data. Students will learn to construct bar and picture graphs for data they collect.
- Develop confidence and courage, cooperation, discipline and respect needed to be able to ask questions based on (interrogate) data collected and ensure interpretation is accurate.
- Needs to be systematic/have a logical order and responsibility to present the recorded data

Data handling refers to the process of gathering, recording and presenting information in a way that is helpful to others. data handling is used for organising your data properly in libraries -To keep record of books, doctors keep records of patients, meteorologists take records of the weather astrologists record the movement of stars, for recording water levels in rivers, for recording the economical income of each household, for recording on a graph, the progress you have made in your studies. Your role as a teacher is significant, as you have the power and the means to shape the lives under your guidance. One of the most important goals you may have as a teacher, is the character education of the students using the academic content at hand. Data handling also needs knowledge of inferring the information.

The values and life skills integration within this unit may follow the following process and action plan, as depicted in the flow chart on next page:



While it would be ideal to expose the students to all the activities as given, and the discussion that would ensue, you may choose as per your convenience and availability of time, the activities that would be relevant to the content being taught and/or suited to the cognitive and emotional maturity of the students.

This topic incorporates the *core approach* – <u>Knowing, Understanding, Valuing and Acting</u> the values embedded in the topic.

The core values being considered are *Cooperation, confidence, responsibility* along with other sub-values like *respect, discipline, courage, honesty, consistency*

The unit also provides the scope to develop life skills such as *data interpretation*, *categorisation*, *characterisation*, *analysis*, *ideation*, *tabulation*, *computation*.

IV. Activities & Related Discussion

A: The context activity for the teacher to start

A1: Study the bar graph and answer the following question



- 1. How many kids liked apples?
- 2. Which fruit did the most kids like?
- 3. Which fruit did the kids like the least?
- 4. How many kids liked bananas?



A2: Study the bar graph and answer the following questions

- 1. Which shape is most popular?
- 2. How many votes did square get?
- 3. How many vote did triangle get?
- 4. How many vote did pentagon get?
- 5. How many vote did hexagon get?
- 6. How many vote did octagon get?
- 7. Which shape got the fewest votes?

Ref:

1.https://www.2nd-grade-math-salamanders.com/image-files/2nd-grade-math-worksheets-bar-graphs-2a.gif

2. <u>http://minteatery.com/practice-worksheets-for-1st-grade/bar-graphs-first-grade-12/</u>

A3: Revision of steps of the data handling Cycle

This diagram shows how handling data can be seen as a series of linked stages. Teacher shall elicit the steps and explain the steps in detail.



B: Value based activities

Teacher shall divide students in 4 groups and assigned them the following activity and instruct them to present in the class

Collect information, record by using tally marks, represent by using bar graph and ask the class to interpret by asking questions.

Group1: How do students come to school (Mode of transport-Train, bus, car, bicycle, walking)

GroupII: What is the favourite food item (Burger, Pizza, Sandwitch, French fries) Group III: What is the favourite Subject (English, Math, Science, Social studies) GroupIV: What is the favourite Pizza Toppings (Tomato, pepper, Onion, mushroom)

Ref:https://www.mathinenglish.com/worksheetview.php?id=2328&stid=310030

From this activity students learn to do survey with confidence to collect information from people, record information sytematically and present the same in a graphical manner with utmost responsibility and honesty.

During the survey while collecting the information from each other students realise the importance of cooperation with each other and to be honest while giving answers. At the end of the presentation students learn to prepare meaningful questions for interpreting the graph.

V.C:Assignments

C1: Teacher shall give a Community survey for students on different topic

- Choice of newspapers preferred by the people
- Choice of medium of education preferred by parents for their children

Resources

References:

1.https://www.2nd-grade-math-salamanders.com/image-files/2nd-grade-math-worksheets-bar-graphs-2a.gif

2.http://minteatery.com/practice-worksheets-for-1st-grade/bar-graphs-first-grade-12/

3.https://www.mathinenglish.com/worksheetview.php?id=2328&stid=310030

4. Ncert Textbook, Reference books,(R.D Sharma , R.S.Aggarwal)



Topic	Values / Life skills integrated & imbibed	Activities
Mensuration	Core Values considered: Self-Awareness & Self- Control	Value integration Activities:- 1.Worksheets are used for revision and test the previous knowledge of students.
	Other Sub-Values: self- discipline, will power Life skills: problem solving,	2.By discussion teacher demonstrate the inter relation between Self-Control & Self- Awareness
	computing, and observation.	3.By taking a SWOT analysis by giving proper guidance
		4.Assignment:
		Prepare a chart of strength & weakness analysis under the guidance of teachers and teacher shall help them to work on their weakness to make it strength

Materials / Resources needed

Value Integration:-

- 1. BB, Pen, board, Duster.
- 2. Worksheet of Graph
- 4. Facilities and Equipment to show videos.
- 5. NCERT Text books, reference books (R.D. Sharma, R.S Agarwal) worksheets

Description (of the points of discussion)

Value Integration:-

In this chapter the activities and games are incorporated to help children in learn that they should always set a boundary and space for them. Boundary means a control and discipline in every walk of their life and the space, the amount of surface in a closed figure means one should know about oneself, i.e. self-awareness.

Self-discipline means self-control, which gives you inner strength and a way to control yourself, actions, and reactions in order to avoid temptations and to achieve goals. A person who stays in control has the ability to take charge of his/her actions and reactions. Self-awareness is the ability to realise what we are doing as we do it, and understand why we are doing it.Self –awareness prevent self-control from leading us to more stress to give in temptations

The key discussions are:

1. Worksheets are used for revision and test the previous knowledge of students.

2.By discussion teacher demonstrate the inter relation between Self-Control & Self-Awareness

3.By taking a SWOT analysis by giving proper guidance teacher help students to prepare them to find out their weak & stong points and work on weak points to convert it into strength.

4.Assignment:

Prepare a chart of strength & weakness analysis under the guidance of teachers and teacher shall help them to work on their weakness to make it strength

<u>Unit 10</u>

Mensuration

Self-Awareness & Self-Control

I. Introduction

"Mensuration" is the branch of geometry which deals with the measurement of areas length and volume. This topic enables students to define perimeter and area and calculate perimeter and area of polygon 2D and 3D objects by the application of formula or by using square paper. Perimeter is the distance covered along the boundary forming a closed figure when you go round the figure once. The amount of surface enclosed by a closed figure is called its area. Through this lesson the teacher shall inculcate in students that they should always set a boundary and space for them. Boundary means a control and discipline in every walk of their life and the space, the amount of surface in a closed figure means one should know about oneself, i.e. self-awareness

Self-discipline means self-control, which gives you inner strength and a way to control your actions and reactions, further allowing you to avoid temptations and to achieve goals. It is one of the most important and useful life skills required to achieve success. Self-discipline comes naturally to some people. And some people can achieve it with some effort. The effort made is worth it as it changes life for the better. A person who stays in control has the ability to take charge of his/her actions and reactions. Self-awareness is the ability to realise what we are doing as we do it, and understand why we are doing it. Self-awareness prevent self-control from leading us to more stress to give in temptations

II. Learning Objectives / Outcomes

Through this unit, the students will achieve the following grade appropriate academic and value based goals:

• Enable to calculate the area and perimeter of regular closed figures like square, rectangle and triangle by formula method and by using square paper.

• Able to realise self-discipline, self-control & self-awareness in all the activities in their life.

III. Process & Action Plan

Mensuration (mathematics), a branch of mathematics that deals with measurement of various parameters of geometric figures. Mensuration is a very important topic when it comes to the geometry of the universe. It is concerned with ascertaining lengths, areas, and volumes. Hence, it is easy to see why mensuration is instrumental and plays a big part in real-world applications. Everything from discovering intra-cellular entities to launching a rocket into space, and from surgical equipment in the world of medicine to make sure all instruments work properly. Your role as a teacher is significant, as you have the power and the means to shape the lives under your guidance. One of the most important goals you may have as a teacher, is the character education of the students using the academic content at hand.

The values and life skills integration within this unit may follow the following process and action plan, as depicted in the flow chart on next page:



While it would be ideal to expose the students to all the activities as given, and the discussion that would ensue, you may choose as per your convenience and availability of time, the activities that would be relevant to the content being taught and/or suited to the cognitive and emotional maturity of the students.

This topic incorporates the *core approach* – <u>Knowing, Understanding, Valuing and</u> <u>Acting</u> the values embedded in the topic.

The core values being considered are self-control & self-awareness along with other subvalues like self-discipline, will power.

The unit also provides the scope to develop the following life skills in the students: *problem solving, geometrical skills, calculation, computing, and observation.*

IV. Activities & Related Discussion

A: The Context Activity for the teacher to start:

A1: Teacher shall showcase the following to give students a concrete idea and revA: The context activity for the teacher to start:

A1: Find the area and perimeter of the following geometrical figures by counting square method. After discussing with students teacher gives this work sheet for solving in the class for revising the previous knowledge.



Ref:1.https://www.liveworksheets.com/worksheets/en/Math/Area_and_perimeter/A rea_and_perimeter_ku1356090jz

2. https://www.slideshare.net/snjulehri/area-and-its-boundary.

B: Value Based Activities:

B1: Discussion-Inter relation between Self-Control & Self-Awareness

Teacher shall discuss the relation between self-control & self-awareness with students which they have already studied in previous class. Then explain to them that Self-control is not possible without self-awareness. It is a double-edged sword. If you can use it right, it can be sharpened into a weapon that can help you win a fight. But if you do it wrong, it will hinder you from achieving your goals .So we need to be self-aware and understand how to defeat temptation on the journey to achieve our goals.

Teacher shall discuss with students and ask students to introspect about their weaknesses and strengths, list them on a paper, this will allow one to understand themselves better. After teaching them about self-awareness teacher should guide them how to achieve self-discipline

Set your goals: -

The first step towards leading a disciplined life is to set goals. Goals give you a clear idea about what needs to be achieved. One must always set a timeline for your goals. This serves as a driving force and motivates you to work hard. It is a good idea to set both short term and long term goals and create a well thought out plan to achieve them.

Do meditation:-

Meditation is one of the best ways to channel our energy in the right direction. It helps maintain focus, acquaints us with our inner self and furthers better self- control. It is the stepping stone for a disciplined life. Meditating for half an hour every day can help in inculcating self-discipline.

Set a Routine:-

Those who set a routine and follow it daily lead a more disciplined life. It is suggested to list all the tasks that you require accomplishing in a given day. Write them in the order of their priority, set a timeline for each and act accordingly. This is a good way to lead an organized and disciplined life.

Stay away from distractions: -

In this technology-driven world, there are numerous things that can distract us and take charge of our lives.

Our mobile phones, television, and chatting apps are some of the new age things that are a big hindrance in practicing self-discipline. No matter how determined we are to study, work or sleep on time, we tend to get distracted at the beep of our phone. Social media platforms, chatting apps and web series are extremely addictive and hamper work. In order to practice self-discipline, it is important to stay away from these distractions. Put your phone on silent or keep it at a distance when you sit to study or work. Similarly, just put your phone away at bedtime and instead pick a book to read.

Reward yourself:-

Reward yourself for every goal you achieve. This will motivate you to work harder to achieve more. This is a good way to trick your brain to inculcate self-discipline.

Take proper sleep:-

You can inculcate self-discipline only when you are well-rested. So, it is essential to sleep for eight hours each night. Maintaining a good sleep cycle is also essential. This means that you should try sleeping and waking up at the same time each day. A power nap during the afternoon can help further.

Stay Positive:-

Many people want to inculcate self-discipline but are unable to because they somehow believe that it is difficult to achieve. They feel that it is too much to ask for and that they shall not be able to practice it. This is the wrong approach. You can achieve anything in life if you stay positive and believe in yourself. So, you should stay positive. It is a pre-requisite for inculcating self-discipline.

Ref: https://www.toppr.com/guides/essays/essay-on-self-discipline/

B2: Teacher shall take a SWOT Analysis in class and guide students how they can prepare for themselves.

V. C: Assignments

C1: Prepare a chart of strength & weakness analysis under the guidance of teachers and teacher shall help them to work on their weakness to make it strength

Resources

References:

1.https://www.toppr.com/guides/essays/essay-on-self-discipline

2.https://www.liveworksheets.com/worksheets/en/Math/Area_and_perimeter/Area_and_perimeter_ku1356090jz

3. https://www.slideshare.net/snjulehri/area-and-its-boundary

4.Ncert Textbook, Reference books, (R.D Sharma, R.S.Aggarwal)



Topic	Values / Life skills integrated & imbibed	Activities
Algebra	Core Values considered : Togetherness & Unity	Value integration Activities:- 1.By using mental activity of riddles and pyramid problems teacher revise the
	Other Sub-Values: love, forgiveness.	previous knowledge of students.
	Life skills: logical thinking & reasoning.	2.Discussion & Case study of the topic from daily life . The activity helps students relate to their real life situations and learn the consequences and solution
		3.Story naration& Discussion teacher shall significance of togetherness in life,teacher also explain that there is no shame in accepting your mistake or forgiving each other.
		4.Assignment: 1: Unity in the Family: Draw a picture of your united family
		2: Unity in Nature: Find some examples of unity among plants and animals.

Materials / Resources needed

Value Integration:-

- 1. Work sheet of pyramid
- 2. BB, Pen, scissor, colour pencils.
- 3. Facilities and Equipment to show videos.
- 4. NCERT Text books, reference books (R.D. Sharma, R.S Agarwal) pen, board, Duster.

Description (of the points of discussion)

Value Integration:-

In this chapter the activities incorporated to inculcate togetherness while learning algebra. Algebra is a combination or togetherness of constants and variables connected by signs of addition, subtraction, multiplication and division. Togetherness is an important aspect of life. It unites us, gives us security, much-needed support and a sense of belonging, and encourages us to love one another. Algebra helps development of children's ability to think and reason logically and systematically

The key discussions are:

1.By using mental activity of riddles and pyramid problems teacher revise the previous knowledge of students.

2.Discussion & Case study of the topic from daily life . The activity helps students relate to their real life situations and learn the consequences and solution

3.Story naration& Discussion teacher shall significance of togetherness in life,teacher also explain that there is no shame in accepting your mistake or forgiving each other.

4.Assignment:

- 1: Unity in the Family: Draw a picture of your united family.
- 2: Unity in Nature: Find some examples of unity among plants and animals.

<u>Unit 11</u>

Algebra

Togetherness & Unity

I. Introduction

"Algebra" is the use of letters and symbols to represent values and their relations, especially for solving equations. The combination of each letters and symbols are called Algebraic Expressions. By using algebra we can solve arithmetical problems and geometrical problems. Algebra is a combination or togetherness of constants and variables connected by signs of addition, subtraction, multiplication and division. The important value we learn from Algebra is togetherness. Togetherness is an important aspect of life. It unites us, gives us security, much-needed support and a sense of belonging, and encourages us to love one another. Algebra helps development of children's ability to think and reason logically and systematically

II. Learning Objectives / Outcomes

Through this unit, the students will achieve the following grade appropriate academic and value based goals:

- · Describe algebraic expressions and distinguish them from arithmetic expressions
- Learn how numbers can be replaced by letters and how to write given examples in mathematically language
- · Identify equations from the given options and solve algebraic questions/equations
- · Learn the importance of togetherness & unity in life.

III. Process & Action Plan

"Algebra" is one of the broad parts of mathematics, together with number theory, geometry and analysis. It is the study of mathematical symbols and the rules for manipulating these symbols; it deals with relations, operations and their constructions, it is a unifying thread of almost all of mathematics. It is one of building blocks of mathematics and it finds a huge variety of applications in our day-to-day life. Your role as a teacher is significant, as you have the power and the means to shape the lives under your guidance. One of the most important goals you may have as a teacher, is the character education of the students using the academic content at hand

The values and life skills integration within this unit may follow the following process and action plan, as depicted in the flow chart on next page:


While it would be ideal to expose the students to all the activities as given, and the discussion that would ensue, you may choose as per your convenience and availability of time, the activities that would be relevant to the content being taught and/or suited to the cognitive and emotional maturity of the students.

This topic incorporates the *core approach* – <u>Knowing, Understanding, Valuing and</u> <u>Acting the values embedded in the topic.</u>

The core values being considered are togetherness & unity along with other sub-values like love, forgiveness.

The unit also provides the scope to develop the following life skills in the students: logical thinking & reasoning.

IV. Activities & Related Discussion

A: The context activity for the teacher to start:

Teacher shall all the students to do this mental activity in the class.

A1: Riddles

- Think of a number
- Multiply it by 2
- Add 10 to the number
- Divide total by 2
- Subtract the number you picked from the total

Teacher shall ask students about the answer.

A2: Pyramid Problem

You need to fill number in the bricks in the image below such that the top brick is sum of two brick below it.



http://www.briddles.com/riddles/algebra

A3: Teacher shall introduce concept of algebra by using below examples.

Algebra is mathematics with 'x' the 'x' is used for unknown numbers; All alphabets can be used for unknown numbers in algebra. Addition and subtraction in algebra is similar and simple as in arithmetic.



Term: A word or phrase used to describe a thing or to express a concept

Expression: It is a mathematical sentence: it doesn't have an equal sign **Equation:** It is a complete mathematical sentence that include a sign of equality



www.slideshare.net/seharmangi/introduction-to-algebra-63195134

https://www.slideshare.net/pangalanrao/algebra-basic-introduction ?next_slideshow=1

B: Value based activities:

B1: Importance of Togetherness

It was the coldest winter ever. Many animals died because of the cold.

The hedgehogs (porcupine), realizing the situation, decided to group together to keep warm. This way they covered and protected themselves; but the quills of each one wounded their closest companions.

After a while, they decided to distance themselves one from the other and they began to die, alone and frozen. So they had to make a choice: either accept the quills of their companions or disappear from the Earth.

Wisely, they decided to go back to being together. They learned to live with the little wounds caused by the close relationship with their companions in order to receive the heat that came from the others. This way they were able to survive.

Discussion:

Teacher shall ask students what they have learned from the story. By eliciting different answers from student's teacher shall summarize that the best relationship is not the one that brings together perfect people, but when everyone learns to live with the imperfections of others and can admire the other person's good qualities.

No person is perfect but accepting the imperfections of a person and loving them for it, supporting them and encouraging their dreams is what makes any relationship succeed. Ref: https://www.speakingtree.in/blog/benefits-of-togetherness

B2: Story narration: The Bridge

Once upon a time two brothers who lived on adjoining farms fell into conflict. It was the first serious rift in 40 years of farming side by side. They had been sharing machinery, trading a labor and goods as needed without a hitch. Then the long collaboration fell apart. It began with a small misunderstanding and it grew into a major difference which exploded into an exchange of bitter words followed by weeks of silence.

One morning there was a knock on elder brother's door. He opened it to find a man with a carpenter's toolbox. "I am looking for a few days of work", he said. "Perhaps you would have a few small jobs here and there. Could I help you?"

"Yes! "said the elder brother. "I do have a job for you. Look across the creek at that farm. That's my neighbor, in fact, it's my younger brother and we don't get along. Last week he dug a wider passage for water into his farm. But he ended up creating a very wide creek in between our farms and I am sure he did it just to annoy me. I want you to build me something so that we don't have to stand and see each other's face from across."

The carpenter said "I think I understand the situation. I will be able to do a job that will please you." The elder brother had to go to town for supplies, so he helped the carpenter get the materials ready and then he was off for the day. The carpenter worked hard all that day measuring, sawing, nailing.

At sunset when the elder brother returned, the carpenter had just finished his job. The elder brother's eyes opened wide and his jaw dropped. It was not what he had even thought of or imagined. It was a bridge stretching from one side of the creek to the other! A fine piece of work, beautiful handrails. And to his surprise, his younger brother across the creek was coming to meet him with a big smile and arms wide open to hug him.

"You are really kind and humble my brother! After all I had done and said to you, you still shown that blood relations can never be broken! I am truly sorry for my behaviour", the younger brother said as he hugged his elder brother. They turned to see the carpenter hoist his toolbox on his shoulder. "No, wait! Stay a few days. I have a lot of other projects for you," said the older brother. "I'd love to stay on", the carpenter said, "but, I have many more bridges to build!" Discussion:

- Why did the two brothers quarrel with each other?
- What did younger brother do to annoy elder brother?
- Who did visit the elder brother? What work did he assign to him?
- What did surprise the elder brother when he saw the work of carpenter?
- "I have many more bridges to build". What did you understand from this statement?
- What did you learn from the younger brother's action after seeing the carpenters work?

After eliciting the answers from students teacher shall explain that there is no shame in accepting your mistake or forgiving each other. We should be kind and humble. We should try to stay together as a family and not break away from it over the petty arguments.

https://www.moralstories.org/the-bridge/

V. C: Assignments

C1: Unity in the Family: Draw a picture of your united family.

C2: Unity in Nature: Find some examples of unity among plants and animals.

Resources

References:

1.<u>http://www.briddles.com/riddles/algebra</u>

2.https://www.moralstories.org/the-bridge/

3. https://www.speakingtree.in/blog/benefits-of-togetherness

- 4. www.slideshare.net/seharmangi/introduction-to-algebra-63195134
- 3. Ncert Textbook, Reference books, (R.D Sharma, R.S.Aggarwal)



Topic	Values / Life skills integrated & imbibed	Activities
Ratio and Proportion	Core Values considered : Comparison, Judgement	Value integration Activities:- 1.By doing survey in the class room& discussion regarding favourite recipe teacher shall revise their previous knowledge of students.
	Other Sub-Values: righteousness, self- preservation, relationship	
	Life skills: problem solving,	2.By narrating story & discussion teacher teacher can inculcate the value of responsibility & judgement
		3.By discussion with students regarding benefits of comparison teacher enlighten students it's more than OK to compare yourself to others,.
		5.Assignments
		Prepare an album with quotes and pictures of positive relationship and comparison

Materials / Resources needed

Value Integration:-

- 1. Work sheet to conduct context activity
- 2. Facilities and Equipment to show videos
- 3. Pen, Board, Duster
- 4. NCERT Text Book, Reference books,(R.D Sharma , R.S. Aggarwal)

Description (of the points of discussion)

Value Integration:-

In this chapter the activities are incorporated in such a manner that children learn to compare and understand both pros and cons of situations in life. Students also learn the critical skill of judgement, knowing what is good and what is bad for oneself.

The key discussions are:

1.By doing survey in the class room& discussion regarding favourite recipe teacher shall revise their previous knowledge of students.

2.By narrating story & discussion teacher teacher can inculcate the value of responsibility & judgement

3.By discussion with students regarding benefits of comparison teacher enlighten students it's more than OK to compare yourself to others,. It helps you improve in the future and can make you happier about where you are right now

5.Assignments

Prepare an album with quotes and pictures of positive relationship and comparison

<u>Unit 12</u>

Ratio and Proportion Comparison, Judgement

I. Introduction

A ratio is a numerical comparison of two or more quantities that indicates their relative sizes. Ratios occur frequently in daily life and help to simplify many of our interactions by putting numbers into perspective.

Ratios allow us to measure and express quantities by making them easier to understand. Equate it with another ratio, you will have a proportion. Through this lesson students learn to compare and understand both pros and cons of situations in life. Students also learn the critical skill of judgement, knowing what is good and what is bad for oneself.

II. Learning Objectives / Outcomes

Through this unit, the students will achieve the following grade appropriate academic and value based goals:

- Define ratios and proportions and use ratio to describe the relationship between two quantities.
- Understand and apply ratios to groups of objects, compute rate of change, use cross products in proportions to solve for missing values, and use tables and graphs to solve real-world problems.
- Proportional Comparative relation between things or magnitudes as to size, quantity, number, etc
- Solve problems with ratios and proportions
- Learn the value of comparison and judgement to be successful in life.

III. Process & Action Plan

A ratio is a comparison of two quantities. A proportion is an equality of two ratios. Ratios helps compare current performance with previous records thus helps with future decision making. Your role as a teacher is significant, as you have the power and the means to shape the lives under your guidance. One of the most important goals you may have as a teacher is the character education of the students using the academic content at hand.

The values and life skills integration within this unit may follow the following process and action plan, as depicted in the flow chart on next page:



While it would be ideal to expose the students to all the activities as given, and the discussion that would ensue, you may choose as per your convenience and availability of time, the activities that would be relevant to the content being taught and/or suited to the cognitive and emotional maturity of the students.

This topic incorporates the *core approach* – <u>Knowing, Understanding, Valuing and</u> <u>Acting the values embedded in the topic.</u>

The core values being considered are comparison and judgement along with other subvalues like righteousness, self-preservation.

The unit also provides the scope to develop the following life skills in the students: problem solving

IV. Activities & Related Discussion

A: The context activity for the teacher to start

A1: Ask students to do a survey in the class and gather information such us

- No. of boys and no. of girls.
- No. of girl students with long hair and short hair
- No. of doors and no. of windows in a class room
- No. of lights and no. of fans in the class room
- No of students who likes cricket and no. of students who like foot ball

And make a T-chart, a graphical tool used for listing two separate viewpoints of a topic on the board.

Teacher shall ask students to compare the information collected by them. Explain that ratios are a helpful tool for comparing things to each other in mathematics and real life, so it is important to know what they mean and how to use them.

A2: Ask students to find out the recipe of their favourite dish

Ask students to help you describe the relationship between the items used for it and its measurements

E.g. Rice Pudding Ingredients: 2 cup. cooked rice 1/2 cup. sugar 2 eggs, slightly beaten 2 cup. milk 1/2 tsp. almond extract 1/4 cup. raisins 1/2 tsp. powdered cinnamon

There are many ratios involved with the ingredients. What is the ratio of cooked rice to milk? A representation using the fraction bar is:

2 cups of rice/2 cups of milk

Tell students they are going to be learning about how to describe the relationships between quantities, like ingredients in a recipe, using ratios, and proportions. These descriptions and examples will not only help you to understand ratios and how they function but will also make calculating them manageable no matter what the application.

We are able to compare almost everything and anything around us by using ratio. Equate it with another ratio, you will have a proportion.

B: Value Based Activities:

B1: Discussion: Importance of good judgement

There is a story about a man who sold hot dogs by the roadside. He was illiterate, so he never read newspapers. He was hard of hearing, so he never listened to the radio. His eyes were weak, so he never watched television. But enthusiastically, he sold lots of hot dogs. His sales and profit went up.

He ordered more meat and got himself a bigger and a better stove. As his business was growing, the son, who had recently graduated from college, joined his father. Then something strange happened. The son asked, "Dad, aren't you aware of the great recession that is coming our way?" The father replied, "No, but tell me about it." The son said, "The international situation is terrible. The domestic is even worse. We should be prepared for the coming bad time." The man thought that since his son had been to college, read the papers, and listened to the radio, he ought to know and his advice should not be taken lightly. So, the next day, the father cut down his order for the meat and buns, took down the sign and was no longer enthusiastic. Very soon, fewer and fewer people bothered to stop at his hot dog stand. And his sales started coming down rapidly. The father said to his son, "Son, you were right. We are in the middle of a recession. I am glad you warned me ahead of time."

Discussion - The teacher should ask students about the moral of this story.

- 1. Many times we confuse intelligence with good judgment.
- 2. A person may have high intelligence but poor judgment
- 3. Choose your advisers carefully and use your judgment.
- 4. A person can and will be successful with or without formal education if they have the 5 Cs:
- character
- commitment
- conviction
- courtesy
- courage

5. The tragedy is that there are many walking encyclopedias who are living failures.

Reference: - <u>https://www.speakingtree.in/blog/inspirational-stories-1-education-does-not-mean-good-judgement</u>

B2: Discussion: Benefits of comparison

Why Comparing Yourself to Others Is Actually A Good Thing discuss elicit answers from students.

The positive side of comparing yourself to others can help you see that no one is perfect, and that everyone has to work for their success

1. Comparing shows you what is possible.

Have you ever watched someone give a great presentation, or handle themselves well in a tricky situation and found yourself saying, "Wow, next time I'll do it that way?"

Teacher shall discuss on this point with students and explain to them that whether it's watching how successful people handle themselves at different situations or observing another student behaving in the classroom or on playground comparing their methods to yours opens your mind to new possibilities.

2. Comparing makes you competitive, in a good way.

Do you feel jealous when your friend wins a competition or score more marks than yours?

Teacher shall accept both the answers from students and explain to them. Being competitive doesn't mean you want the other person to fail. It just means you want the same level of success for yourself. Let's call it happy jealously. And tell them that they

can be happy for their friend and jealous at the same time. They should not think of take it away from their friend; they should try to get the same success for themselves

3. Comparing makes you more grateful.

When you are compared with those less fortunate, be honest, don't you feel better?

Teacher shall quote some examples (Street children, orphanages, old age homes) and tell them how blessed they are, how grateful and kind they should be. Studies now show that people who are actually more likely to help others, to volunteer or work toward alleviating social injustice because of their awareness of their blessings. So it's more than OK to compare yourself to others, it's great. It helps you improve in the future and can make you happier about where you are right now.

Ref: https://www.huffpost.com/entry/comparing_b_1340407

V.C: Assignments

C1: Prepare an album with quotes and pictures of positive relationship and comparison

Resources

References:

1. https://www.theemotionmachine.com/the-benefits-of-creating-positive-relationships

2. https://www.huffpost.com/entry/comparing b 1340407

3. Ncert Textbook, Reference books, (R.D Sharma, R.S.Aggarwal)



Topic	Values / Life skills integrated & imbibed	Activities
Symmetry	Core Values considered : Equality & Fairness	Value integration Activities:- 1.By by using worksheets of puzzles teacher shall revise the previous
	Other Sub-Values: harmony, inclusivity	knowledge of students.
	Life skills: drawing, reading, logical thinking	2.By discussion and explanation of the work done by Savitribai phule teacher explain the hardships shouldered by great personalities to give guide them always to trat everyone fairly and equally
		3.By conducting a drwaing /poster making competition on the theme Equality and Fairness teacher bring out the creativity & imagination of students idea of equality& fairness
		4. Assignment Read Auto Biography of Martin Luther King& Dr.B.R.Ambedkar and teacher shall organise a discussion session in the class

Materials / Resources needed

Value Integration:-

- 1. Worksheets of puzzles & cross words for the context activity
- 2. Facilities and Equipment to show videos
- 3. Facilities to conduct games
- 4. BB, Pen
- 5. Ncert Text Book, Reference books,(R.D Sharma , R.S.Aggarwal)

Description (of the points of discussion)

Value Integration:-

In this chapter the activities are incorporated in such a manner that children learn that symmetry has plenty of applications in everyday life as in art, architecture, textile technology, design creations, geometrical reasoning, Kolams, Rangoli etc.Through this lesson students also learn equality, a state of being equal, especially in status, rights, or opportunities. Equality is about removing barriers and making sure people from all sections of the community have fair and equal opportunities.

The key discussions are:

1.By by using worksheets of puzzles teacher shall revise the previous knowledge of students.

2.By discussion and explanation of the work done by Savitribai phule teacher explain the hardships shouldered by great personalities to give guide them always to trat everyone fairly and equally

3.By conducting a drwaing /poster making competition on the theme Equality and Fairness teacher bring out the creativity & imagination of students idea of equality& fairness

4.Assignment

Read Auto Biography of Martin Luther King& Dr.B.R.Ambedkar and teacher shall organise a discussion session in the class

<u>Unit 13</u>

Symmetry

Equality & Fairness

I. Introduction

Symmetry defines that one shape is exactly like the other shape when it is moved, rotated, or flipped. Symmetry is a fundamental part of geometry, nature, and shapes. It creates patterns that help us organize our world conceptually. We see symmetry every day but often don't realize it. A shape has symmetry if a central dividing line (a mirror line) can be drawn on it, to show that both sides of the shape are exactly the same. Symmetry has plenty of applications in everyday life as in art, architecture, textile technology, design creations, geometrical reasoning, Kolams, Rangoli etc.

Through this lesson students learn equality, a state of being equal, especially in status, rights, or opportunities. Equality is about removing barriers and making sure people from all sections of the community have fair and equal opportunities.

II. Learning Objectives / Outcomes

Through this unit, the students will achieve the following grade appropriate academic and value based goals:

- Recognise and draw line of symmetry in 2-D geometrical and non-geometrical shapes.
- Determine line of symmetry through paper folding, square paper and reflection.
- Like symmetry makes things beautiful students realize that equality & fairness is an important aspect to make life beautiful.

III. Process & Action Plan

Symmetry is defined as a balanced and a proportionate similarity which is found in two halves of an object, that is, one-half is the mirror image of the other half. Symmetry in everyday language refers to a sense of harmonious and beautiful proportion and balance. Symmetry is something that we observe in many places in our daily lives

without even noticing it. It is easily noticeable in various arts, buildings, and monuments. Nature uses symmetry to make things beautiful. Your role as a teacher is significant, as you have the power and the means to shape the lives under your guidance. One of the most important goals you may have as a teacher, is the character education of the students using the academic content at hand.

The values and life skills integration within this unit may follow the following process and action plan, as depicted in the flow chart on next page:



While it would be ideal to expose the students to all the activities as given, and the discussion that would ensue, you may choose as per your convenience and availability of time, the activities that would be relevant to the content being taught and/or suited to the cognitive and emotional maturity of the students.

This topic incorporates the *core approach* – <u>Knowing</u>, <u>Understanding</u>, <u>Valuing and</u> <u>Acting</u> the values embedded in the topic.

The core values being considered are equality & fairness along with other sub-values like harmony, inclusivity,

The unit also provides the scope to develop the following life skills in the students: *drawing, reading, logical thinking*

IV. Activities & Related Discussion

A: The Context Activity for the teacher to Start

A1: Complete the pictures worksheet after discussion and by revising previous knowledge

Ref: 1.https://in.pinterest.com/pin/250794272985247572/



2.https://www.nordcollective.com/

B: Value based activities:

B1: Fairness and Equality Are Essential Ingredients for A Successful Society

Teacher shall discuss about Savitribai Phule and her contributions for empowering girls' education which paved way for gender equality and respect for women. She was an Indian social reformer who worked for fair treatment for all strata of society. She was amongst the first Indian woman to speak up for women's right. Savitribai, along with Mahatma Jyotirao Phule, fought for the rights of women, peasants, Dalits and backward castes. Both of them bravely faced the abuses hurled at them by reactionary and casteist dominant forces. They carried on their struggle for gender equality and fight against caste system in spite of tremendous maltreatment by the Manuwadi and Brahminic forces. The principles of humanity, equality, liberty and justice were of utmost importance to her. During a time when women were mere objects, she ignited a spark that led to equality in education - something which was impossible before. She was a strong voice for gender equality. It is because of the strength and vigour she had that at a time when people from certain sections of the society were seen as untouchables, she gave them shelter in her home and took care of them. She challenged the Brahmin hegemony and fractured their dominance through her enduring and heroic struggle for women's and marginalized people's rights. She overcame and survived everyday harassment and oppression and dared to learn and teach other women. Teacher shall discuss the following points.



- Education for girls and women in the country was always Savitribai Phule's first priority.
- She was considered as one of the pioneers of woman education in India during British rule.
- She, along with her husband, founded the first women's school in India at in 1848.
- She fought for women rights for those who were considered untouchables in those time

Divide class into 4 groups; ask them to collect information regarding each point & present to the class.

Ref:https://feminisminindia.com/2016/09/05/essay-life-savitribai-phule/

Teacher should explain to students, that they should remember those great personalities who fought against all odds and struggled to provide the current status and freedom to our country. As students they should be always fare and treat everyone

equally or try to uplift people who needs support & help in their own capacity.

B2: Conduct a drawing/poster making competitions in the class by giving the Theme Equality & Fairness

Here, the teacher shall encourage students to draw their idea of equality & fairness. Drawing helps the creative process and sparks the imagination and ideas. This is one of the best ways to inculcate values in them. Teacher should emphasize that in order to maintain balance and lead a harmonious life one should understand the value of equality and fairness. Teacher shall cite some questions.

- If one student was really good at math and didn't need help and another student needed a lot of help, would it be fair or unfair for the teacher to spend the same amount of time with both of them?
- If one student has a learning disability that means they have hard time writing, would it be fair or unfair to allow them to use a computer to help them write while everyone else in the class uses paper and pencil?
- If one student needs more time to read, would it be fair or unfair for the student to have more time to complete their tests?
- If one student has a difficult home life and unique emotional needs, would it be fair or unfair to allow them extra break times to use coping skills and cool down strategies?

Then teacher shall explain to them that your parents and teachers will do their best to be fair, but this will not always look equal. They may spend more time with some children than others and may treat some children differently than others depending on their needs at the time. They will always do their best to meet everyone's needs. If you feel like your needs are not being met, rather than saying 'that's not fair!' just let us know what your needs are and we will try to meet them.

V. C: Assignments

C1: Read Auto Biography of Martin Luther King& Dr.B.R.Ambedkar and teacher shall organise a discussion session in the class

Resources

References:

1.https://in.pinterest.com/pin/250794272985247572/

2.https://www.nordcollective.com/

3.https://feminisminindia.com/2016/09/05/essay-life-savitribai-phule/

4.https://empoweringeducation.org/wp-content/uploads/2016/08/25-EE_Fairness-and-Equality_Pt1_3-5.pdf



Торіс	Values / Life skills integrated & imbibed	Activities
Practical Geometry	Core Values considered : Precision, Accuracy & Beauty	Value integration Activities:- 1.Teacher shall demonstrate all tools and instruments which are being used for
	Other Sub-Values: aesthetics, creativity	construction in the class room by teacher one by one so that they can relate them with theirs in geometry box.
	Life skills: drawing, logical thinking & reasoning, measuring, observation.	2.By encouraging students to prepare paper plane & catapult teacher make students experience the significance of precision, accuracy & beauty among students.
		4.Assignment Prepare Birds/Butterfly /Flowers using paper craft with accurate measurements so that students experience the beauty.

Materials / Resources needed

Value Integration:-

- 1. Facilities and Equipment to show videos
- 2. BB, Pen
- 3. Ncert Text Book, Reference books, (R.D Sharma , R.S. Aggarwal)
- 4. Colour paper to make paper planes. Scissors, Small piece of cardboard, Rubber bands, 12 pencils/popsicle sticks/Ice-cream sticks, Masking tape

Description (of the points of discussion)

Value Integration:-

In this chapter the activities and games are incorporated in such a manner that children learn about the different ways to construct different types of geometrical figures using ruler, compass and protractor.While learning practical geometry students learn the significance of beauty and precision while doing any construction. When we construct anything with precision and accuracy the final product will be beautiful.

The key discussions are:

1.Teacher shall demonstrate all tools and instruments which are being used for construction in the class room by teacher one by one so that they can relate them with theirs in geometry box.

2.By encouraging students to prepare paper plane & catapult teacher make students experience the significance of precision, accuracy& beauty among students.

4.Assignment

Prepare Birds/Butterfly /Flowers using paper craft with accurate measurements so that students experience the beauty.

<u>Unit 14</u>

Practical Geometry Precision, Accuracy & Beauty

I. Introduction

Construction of geometrical objects or practical geometry is an important branch of geometry. There are specific instruments/tools and specific ways and rules for construction of every object. In this topic learn about the different ways to construct different types of geometrical figures using ruler, compass and protractor.

While learning practical geometry students learn the significance of beauty and precision while doing any construction. When we construct anything with precision and accuracy the final product will be beautiful.

II. Learning Objectives / Outcomes

Through this unit, the students will achieve the following grade appropriate academic and value based goals:

- Describe the different tools of construction and their uses.
- Construct a circle when its radius is known.
- Construct a line segment when its length is known.
- Construct a copy of the given line segment.
- Construct a perpendicular to a line through a point on it.
- · Realize precision and accuracy will bring beauty in any activity

III. Process & Action Plan

Practical geometry is an important branch of geometry which deals with the study of the size, positions, shapes as well as dimensions of objects. It also involves constructing different geometrical patterns. This helps easy techniques to work on geometrical problems. Your role as a teacher is significant, as you have the power and the means to shape the lives under your guidance. One of the most important goals you may have as a teacher, is the character education of the students using the academic content at hand.

The values and life skills integration within this unit may follow the following process and action plan, as depicted in the flow chart on next page:



While it would be ideal to expose the students to all the activities as given, and the discussion that would ensue, you may choose as per your convenience and availability of time, the activities that would be relevant to the content being taught and/or suited to the cognitive and emotional maturity of the students.

This topic incorporates the *core approach* – <u>Knowing</u>, <u>Understanding</u>, <u>Valuing and</u> <u>Acting</u> the values embedded in the topic.

The core values being considered are precision, accuracy & beauty along with other subvalues like aesthetics, creativity

The unit also provides the scope to develop the following life skills in the students: *drawing, logical thinking& reasoning, measuring, observation.*

IV. Activities & Related Discussion

A: The context activity for the teacher to start:

Teacher shall demonstrate all tools and instruments which are being used for construction in the class room by teacher one by one so that they can relate them with theirs in geometry box

B:Value Based activities:

B1: Teacher shall divide the class into groups and give some projects where students make it with precision and accuracy and realize its beauty & efficiency

Make paper air planes which fly far

Steps for making the planes given below. Teacher shall explain any other methods or students shall explore different methods and see whose air plane fly far and give prize and ask students to note down what factors made the plane fly far





Students realize and understand that whoever is made with precision, accuracy will fly far and have beauty.

Ref:https://in.pinterest.com/pin/482940760016439504/

• Make catapult by using pencils or popsicle sticks

Steps for making the catapults given below. Teacher shall explain any other methods or students shall explore different methods and see the efficiency and give prize and ask students to note down what factors made the catapult to work efficiently

Materials required:

Scissors, Small piece of cardboard, Rubber bands, 12 pencils/popsicle sticks/Ice-cream sticks, Masking tape



Step: 1: Make a triangle using pencil/popsicle sticks/Ice-cream sticks. Arrange 3 pencils into an equilateral triangle.

Step2: Reinforce the Triangle with rubber bands and tape

Step3: Make another Triangle, Repeat steps 1 and 2 to make another identical triangle. These will act as your main catapult supports.

Step4: Connect the Supports (At the Top) Span the top of your catapult supports by taping another pencil from peak to peak. No rubber band needed here.

Step5: Connect the Supports (At the Bottom) Repeat step 4, but at the bottom of your catapult supports. Again, no rubber bands needed, just tape.

Step6: Attach the Pivot this is the pivot point which will attach to your catapult's arm.

Step 7: Attach your catapult arm to the middle of your pivot point using a rubber band.

Step 8: Connect Rubber Bands. Stretch them across your catapult supports opposite your pivot arm. Tie the ends together. Depending on the size of your rubber band, you may need to connect three or more rubber bands to span the distance.

Step 9: Make the Launcher and attach Launcher to Catapult

Step 10: Launch!

Students realize and understand that whoever is made with precision, accuracy will have more efficient and have beauty

Ref:https://www.artofmanliness.com/articles/kid-craft-of-the-week-pencil-catapult/

V. C: Assignments

C1: Prepare Birds/Butterfly/Flowers using paper craft with accurate measurements so that students experience the beauty.

Resources

References:

- 1. https://in.pinterest.com/pin/482940760016439504/
- 2. https://www.artofmanliness.com/articles/kid-craft-of-the-week-pencil-catapult/
- 3. Ncert Textbook, Reference books, (R.D Sharma, R.S.Aggarwal)

Grade VI Integration of Values Teacher's Manual

Maths

HEMA Foundation

Ram Ratna House, Oasis Complex, P. B. Marg, Worli, Mumbai - 400 013 | Tel.: 022-2494 9009 / 9142. Extn.: 6178 Mob: 72280 01342 | E-mail: admin@hemafoundation.org Website: www.hemafoundation.org



