IB Mission Statement

The International Baccalaureate aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect. To this end the organization works with schools, governments and international organizations to develop challenging programs of international education and rigorous assessment. These programs encourage students across the world to become active, compassionate and lifelong learners who understand that other people, with their differences, can also be right.

TIPS Mission Statement

"To nurture inquiring, knowledgeable and caring young lifelong learners who are engaged citizens of our world through intercultural understanding and respect".

Dear Parents,

At the outset, we would like to welcome you all to the new academic year. A combination of Performing Arts (PA), Physical Education (PSPE) and Academics has been incorporated in a well balanced manner to give children an all - round development.

Learning experiences throughout the year are designed towards fostering skill development, independent and collaborative decision making in order to prepare the students for smooth transitions every year. Students work in partnership with their peers, parents and teachers – each recognizing their individual and collective responsibilities to create a community of global learners ready to take on the challenges of the 21st century.

The learning environment at TIPS aims at the all round development of the child. It provides ample opportunities for development in academic, physical, emotional and social spheres. Individual attention is ensured as the staff caters to the distinctive needs and talents of a child which is nurtured in a full -fledged manner.

How can parents assist students?

Parents can help their child in a variety of ways:

- Establish a regular routine to complete the homework and assigned tasks independently in an appropriate location that best suits thefamily.
- Available to discuss homework assignments.
- Exhibit support by being focused on time management and choice of resources.
- As a courtesy to classroom teachers, parents are requested to notify, in writing, any change in the student's regular routine. Examples of these include: changes in bus routine or afternoon pick up or after school programs/schedule changes. It is recommended that notification occurs through:
  - Email: a day before (or as soon as possible)
  - A message in the student's diary

Communication with teachers

At TIPS, all teachers value open and constant communication. We encourage students and parents to work in partnership with each other to foster self-responsibility by reflecting on daily routines. Any concerns of teachers and parents should be communicated in a respectful congenial manner. We also encourage parents to use the parent portal for communication/concern.

If you wish to discuss any serious matter with the child's class teacher, please send us an email with the issue on hand and request for an appointment. We do not encourage appointments for general progress updates, since six open forums have been scheduled periodically throughout the year.

Communication Diary: The student diary contains important information concerning school expectations, and procedures. The purpose of the diary is to support students in their efforts to develop organizational and time management skills. It is an important means of communication between school and home.

School circulars: Specific information regarding class routines and organizational matters are communicated through circulars. Additional detailed curriculum information will also be sent home throughout the year in the form of circulars or flyers.

Enhanced PYP

The Primary Years Programme endorses a belief that students learn best when the learning is authentic, relevant to the real world and transdisciplinary, where the learning is not confined within the boundaries of traditional subject areas but is supported and enriched by them.

Agency and the learning community

The learning community recognizes that agency and self-efficacy are fundamental to learning. A learning community that supports agency offers opportunities for students to develop important skills and dispositions, such as critical and creative thinking, perseverance, independence and confidence. These are vital to the learning process and the development of self-efficacy. The learning community further offers students multiple opportunities to experience the impact of their choices and opinions, which support their evolving perceptions of their identity.

TIPS is a school, with a focus on agency considers its perceptions of how children learn, children's capabilities and the overall value of childhood. When teachers consider their beliefs around children's identities and rights, they are examining personal beliefs, theories, cultural backgrounds and values. For example, the teachers' beliefs and values will influence their choices of how to allocate time, how to set up learning spaces, choose and arrange materials and foster relationships within the classroom and the broader community.

Students have voice, choice and ownership for their own learning. When students' have agency, the relationship between the teacher and students becomes a partnership. Students with a strong sense of self-efficacy bring a stronger sense of agency to the learning community. The learning community supports agency and fosters self-efficacy.

PYP students with agency use their own initiative and will, and take responsibility and ownership of their learning. They direct their learning with a strong sense of identity and self-belief, and in conjunction with others, thereby building a sense of community and awareness of the opinions, values and needs of others.

Transdisciplinary: Transdisciplinary learning is the exploration of a relevant concept, issue or problem that integrates the perspectives of multiple disciplines in order to connect new knowledge and deeper understanding to real life experiences. Transdisciplinarity provokes the learner to reflect upon, and reconsider, what he or she believes about the world and about his or her place in it. Students will feel obliged to respond when faced with challenges relating to themselves or to any issues in the world.

Engaging with the concept of transdisciplinarity forces a paradigm shift that moves most teachers out of their comfort zone and an effective implementation of the PYP will bring about "a change in the relationship between students and teachers", whereby students "become co-investigators in dialogue with the teacher and jointly responsible for a process in which all grow".

PYP Curriculum Model

Contributing to transdisciplinary learning in the PYP is the student engagement with units of inquiry at each year level. These units are consolidated into a matrix known as the transdisciplinary programme of inquiry, whereby the themes of global significance, listed below, frame the learning throughout the primary years. The development of each unit of inquiry is focused on a central idea that supports conceptual development and extends understanding of the transdisciplinary theme. The PYP key concepts, themselves transdisciplinary, are embedded in the central ideas. Thus, the knowledge component of the written curriculum is built up of transdisciplinary layers, one supporting the other in the following six themes.

Transdisciplinary Themes

Who we are : An inquiry into the nature of the self; beliefs and values; personal, physical, mental, social and spiritual health; human relationships including families, friends, communities and cultures; rights and responsibilities; what it means to be human.

Where we are in place and time: An inquiry into orientation with regard to time & place; personal histories; homes and journeys; the discoveries, explorations and migrations of humankind; the relationships between individuals and civilizations, from local and global perspectives.

How we express ourselves: An inquiry into the ways in which we discover and express ideas, feelings, nature, culture, beliefs, values; the aesthetic sense and creativity.

How the world works: An inquiry into the natural world and its laws; the interaction between the natural world (physical and biological) and human societies; how humans use their understanding of scientific principles; the impact of scientific and technological advances on society and on the environment.

How we organize ourselves: An inquiry into the interconnectedness of human made systems and communities; the structure and function of organizations; societal decision making ; economic activities and their impact on humankind and the environment.

Sharing the planet: An inquiry into rights and responsibilities in the struggle to share finite resources with other people and with other living things; communities and the relationships within and between them; access to equal opportunities; peace and conflict resolution.

Programme of Inquiry: The programme of inquiry is a matrix made up of the six transdisciplinary themes running vertically, and the age groups running horizontally. Organizing the curriculum around the six transdisciplinary themes contextualizes the learning for the students. It enables them to experience a balance of subject-specific knowledge, concepts and skills in order to develop an understanding of the transdisciplinary themes.

Unit of Inquiry : A unit of inquiry is a 6-8 week in-depth exploration of a concept. Students will inquire into a central idea or a main understanding by being guided by lines of inquiry and prompting questions.

Central Idea: Each of the six units of inquiry has a central idea based on each theme. The central idea is written in one sentence that expresses precisely the context. Each central idea will support student's understanding of the particular transdisciplinary theme it is connected to, and would challenge and extend student's prior knowledge.

Lines of inquiry: Each unit will contain three or four lines of inquiry. The lines of inquiry clarify the central idea and define the scope of the inquiry. These contributing aspects of the central idea extend the inquiry, focus student research, and deepen student's understanding. Connections are made, as appropriate, between the lines of inquiry as well as with the central idea.

Concepts:

A concept - driven curriculum, helps the learner to construct meaning through improved critical thinking and the transfer of knowledge and understanding. The PYP key concepts— form, function, causation, change, connection, perspective, responsibility are themselves transdisciplinary and increase coherence across the curriculum. By identifying concepts that have relevance within each subject area, and across and beyond all subject areas, the PYP has defined an essential element for supporting its transdisciplinary model of teaching and learning. These concepts provide a structure for the exploration of significant and authentic content. In the course of this exploration, students deepen their understanding of the concepts and learn to think conceptually.

In planning units of inquiry, related concepts derived from the subject areas are also identified. These related concepts may be seen as subject-specific versions of the PYP key concepts, for example, transformation in science is a version of the key concept "change". These related concepts deepen an understanding of the subject areas while providing further opportunities to make connections throughout the learning, from one subject to another, and between disciplinary and transdisciplinary learning.

Key Concepts

- **Form:** The understanding that everything has a form with recognizable features that can be observed, identified, described and categorized.
- **Function:** The understanding that everything has a purpose, a role or a way of behaving that can be investigated.
- **Causation:** The understanding that things do not just happen, that there are causal relationships at work, and that actions have consequences.
- **Change:** The understanding that changes is the process of movement from one state to another. It is universal and inevitable.
- **Connection:** The understanding that we live in a world of interacting systems in which the actions of any individual element affect others.
- **Perspective:** The understanding that knowledge is moderated by perspectives, different perspectives lead to different interpretations, understandings and findings. Perspectives may be individual, group, cultural or disciplinary.
- **Responsibility:** The understanding that people make choices based on their understandings, and the actions they take as a result do make a difference.

Approaches to learning : These inquiries also allow students to acquire and apply a set of transdisciplinary skills: social skills, communication skills, thinking skills, research skills, and self-management skills. These skills are relevant to all learning, formal informal, in the school, and in events experienced beyond its boundaries. Students also develop skills and strategies drawn from the subject areas, but aligned with the five transdisciplinary skills.

For example, becoming literate and numerate enhances student's communication skills. The acquisition of literacy and numeracy, in their broadest sense, is essential as these skills provide students with the tools of inquiry. Within their learning throughout the program, students acquire a set of transdisciplinary skills - social, communication, thinking, research and self management. These skills are valuable not only in the unit of inquiry, but also for any teaching and learning that goes on within the class room and in life outside the school.

Thinking skills

- Critical-thinking skills: Analysing and evaluating issues and ideas
- Creative-thinking skills: Generating novel ideas and considering new perspectives
- Transfer skills: Using skills and knowledge in multiple contexts
- Reflection/metacognitive skills: (re)considering the process of learning

Research skills:

- Information-literacy skills: Formulating and planning, data gathering and recording, synthesizing and interpreting, evaluating and communicating
- Media-literacy skills: Interacting with media to use and create ideas and information
- Ethical use of media/information: Understanding and applying social and ethical technology

Communication skills

- Exchanging-information skills: Listening, interpreting, speaking
- Literacy skills: Reading, writing and using language to gather and communicate information
- ICT skills: using technology to gather, investigate and communicate information

Social skills

- Developing positive interpersonal relationships and collaboration skills: Using self-control, managing setbacks, supporting peers
- Developing social-emotional intelligence

Self-management skills

- Organization skills: Managing time and tasks effectively
- States of mind: Mindfulness, perseverance, emotional management, self motivation, resilience

IB Learner Profile Attributes:

The kind of student we hope, who graduates from a PYP school, will be laying the foundation upon which international mindedness will develop and flourish. The attributes of such a learner, as shown below are relevant to both students and adults in a PYP school. They are interpreted and modeled for students. The purpose of the modeling is not to encourage students to mimic but to provide support a metacognitive framework, to help students reflect on and develop their own set of values, albeit in the context of that being demonstrated. The teacher looks for authentic demonstrations of these attitudes in the daily life of the students in order to make them inquisitive, and build an appreciation for them.

IB learners strive to be:

Inquirers: We nurture our curiosity, developing skills for inquiry and research. We know how to learn independently and with others. We learn with enthusiasm and sustain our love of learning throughout life.

Knowledgeable: We develop and use conceptual understanding, exploring knowledge across a range of disciplines. We engage with issues and ideas that have local and global significance.

Thinkers: We use critical and creative thinking skills to analyse and take responsible action on complex problems. We exercise initiative in making reasoned, ethical decisions.

Communicators: We express ourselves confidently and creatively in more than one language and in many ways. We collaborate effectively, listening carefully to the perspectives of other individuals and groups.

Principled: We act with integrity and honesty, with a strong sense of fairness and justice, and with respect for the dignity and rights of people everywhere. We take responsibility for our actions and their consequences.

Open minded: We critically appreciate our own cultures and personal histories, as well as the values and traditions of others. We seek and evaluate a range of points of view, and we are willing to grow from the experience.

Caring: We show empathy, compassion and respect. We have a commitment to service, and we act to make a positive difference in the lives of others and in the world around us.

Risk takers: We approach uncertainty with forethought and determination; we work independently and cooperatively to explore new ideas and innovative strategies. We are resourceful and resilient in the face of challenges and change.

Balanced: We understand the importance of balancing different aspects of our lives intellectual, physical, and emotional to achieve well-being for ourselves and others. We recognize our interdependence with other people and with the world in which we live.

Reflective: We thoughtfully consider the world and our own ideas and experience. We work to understand our strengths and weaknesses in order to support our learning and personal development.

SLC Overview

Student Led Conference is a platform to get a better picture of each child. It forces parents and teachers to sit down with each student and review strengths and weaknesses. These conversation/ presentations inform teaching and learning more than perhaps conventional assessments. **Student**-led Conferences communicate not only how a student is performing but also why. It also enable **the** student to take responsibility and control of their own efforts to learn and at the same time be a team member and ensure success for all.

Schedule of SLCs & PTMs:

- Students of Grade 1 to 5 will have 3 SLCs and 3 PTMs in an Academic Year.
- SLC may be scheduled in between or before completion of the ongoing inquiry.
- SLC 1 & 2 will be held on a scheduled date in two sessions.
- SLC 3 - Project Exhibition and Presentation.

SLC Format:

- **SLC-1** to focus on the curriculum covered from the beginning of the academic year to the date of first SLC.
- **SLC-2** to focus on the curriculum covered from the first SLC to second SLC across subject areas.
- **SLC-3** the final SLC to focus on an elaborate Science Project undertaken by the students as part of their Science Learning till date.
    - Students will be able to choose from one of 2 science projects given to them based on the science learning completed during the academic year.
    - Students in their groups to develop and exhibit their understanding of the selected project with the help of working models/ ppts / displays and oral presentation as specified by the project document.
    - The assessment criteria and rubrics will be shared with the students for their selected science project.
    - The students would be assessed for their individual as well as group performance.
    - Project selection and project details will be completed by Nov/Dec to provide ample time for successful project completion.

SLC Overview – (1 & 2):

- At the beginning of each SLC timeframe, each student to be assigned in a group.
- Group to consist of 3 or 4 students.
- Each member of the group to choose a subject and topic to present for 5 mins
- All group members to choose different subjects to present
- Group members to prepare and support each other in planning
- Each member to present independently during the SLC
- Each SLC will cover the learning experiences of the students from one SLC to another.
- Presenters may make use of PPT/ Working Model/ Live demonstration/ Experiment/ Manipulative/ Note-books etc to showcase their learning experiences

Presentation Format: time allotted 5 mins for each team member (20 mins per group)

- Introduction
- Significance of the topic
- Content development
- Conclusion
- Acknowledgements

Essential conditions for SLC:

- Parental participation in all the SLCs is mandatory. The student will be assessed by both the parent and the teacher.
- Absentees will be marked zero
- Parents to assess on the given criteria, out of FIVE points.
- Teachers to assess each member of the team on the given criteria, out of TEN.
- The final points will be an yearly average of all SLC's

Expectations from the Parents:

- Be present for the SLC on time
- Encourage the child in her/his preparation
- Ask relevant questions to prepare the child as per the expectations
- Assess the child without bias

SLC Assessment: Each child is assessed on the following criteria by parents and teachers alike.

- Presentation style and confidence
- Clarity
- Subject content
- Self-Management skills
- Team work

Both parents and teachers are integral in ensuring student success.

Project-based learning

Project-based learning (PBL) is an instructional framework that encourages critical thinking, creativity, innovation, inquiry, collaboration and communication. Students investigate real-world questions and solve authentic challenges. Science-based PBL integrates science, technology, engineering, math, language arts, and other content areas.

Each PBL pack presents a scenario that establishes a problem to be solved and asks a **Driving Question**. This question sets a purpose for a student-driven investigation or challenge. Then students design a solution to the problem, develop a project, and deliver a presentation to the audience.

Based on the PBL units,

- Students are segregated in groups.
- Each group will research, plan, create and present the project based on the driving question of the unit.
- Each child will be receiving a student booklet which comprises of Project Outline, Project planner, Vocabulary, KWLS, Recommended Reading, Project Ideas, Project Description, Project Check Up, Presentation Rubric, and Team Reflection.

Parents participation is very essential in organizing the groups, providing the materials needed and supporting the child in every step to complete the project.

This inquiry based student-directed instruction will help the children to communicate and collaborate with others to solve problems which is an integral part in the real world.

Parent Teacher Meeting

PTM is an informal session in the class room of your child with the class teacher. The Coordinators can also be met on the same day. This is an opportunity for parents to review their child's progress and discuss other issues with the class teacher. Parental participation in PTM is mandatory. School will organize 3 PTMs in an Academic Year.

Management Review Meetings:

The management of TIPS receives feedback about the academic year from the parents as well as shares the future plans with them. This platform provides another opportunity for parents to communicate and put forward their suggestions directly. The management provides an excellent platform for direct communication to the parents. They receive individual feedback about the academic year and about the future plans of the school.

5 Initiatives 2022-23

TIPS group has taken a '5 point change' initiative to help our students become future ready and serve better to our community. The initiatives will provide parents and students scope to explore a variety of learning areas, building them into confident individuals who are ready to shape the world.

Following are the ***five select focus areas*** that will give impetus for the upcoming year:

1. **Introducing AI, Coding and Rocketry – Space Tech**

TIPS is taking a major leap by introducing new integrated ICT and Applied Science curriculum to better prepare our students for the future technological revolution along with introducing Rocketry (Space Tech) from primary years and participating in 75 Students' Satellite Mission. TIPS is the first and the only school to participate in this mega event.

a) The ICT-AI-Coding curriculum has been updated to include coding, app development, web development, and machine learning principles. The key advantages of this curriculum are that it successfully and practically teaches elementary students complex modern-day technologies through hands-on activities.

b) The STEM curriculum based Rocket laboratory to include all the components necessary to design and build model rocket including nose cones, body tubes, adapter cones and rocket motors. The lab will be equipped with remote ignition system and launcher apparatus. The best feature of the lab is the Propulsion Test Stand. This test lets the students measure various metrics of the rocket motor like total impulse and burn time, which is captured on a computer rig to receive data. This data is further used by the students to design rockets with predictable performance along with designing and launching Satellites.

c) 75 Student Satellite Mission- In the 75th year of Indian Independence, the nation is embarking on the launch of 75 student developed satellites. TIPS takes immense pride in being the first school to take part in this incredible project. This unique collaboration platform will provide our learners the distinctive opportunity to design and structure Cubesats under the guidance of the eminent scientists from ITCA and ISRO. The students who enroll for the 75 Students' Satellite Mission will be able to leverage the end-to-end lifecycle expertise including design, development, manufacture, integration, testing, launch services facilitation and satellite operation, thereby using a high-performance Space-Tech ecosystem at TIPS.

2. **Enhancements of offerings for AY 2022-23:**

Along with introducing the new initiatives, TIPS has enhanced offering in the following areas of school life.

a. **Online Third Language Learning :** In addition to meeting the needs of future students, **Mother Tongue and Foreign - language learning and acquisition** will be introduced from Grade I-V for AY 2022-23. Children can choose to learn the language of their choice for basic speaking, reading and writing every Saturday from the comfort of home in online classes. The language offered are as follows:

   National Languages: Tamil/ Kannada/ Telugu/ Malayalam/ Hindi

   Foreign Language: French/ Spanish/ German

b. **Virtual PTMs:** Parent teacher meetings are a prominent and notable feature of the school curriculum. Post COVID digital interaction is the need of the hour. The PTMs will be available from KG to 12 in both the modes (Physical meeting / Online Meeting) for all the parents as per their availability throughout the year.

c. **More to Extended School Program (ESP):** The ESP **program** will strive to provide Creative Arts along with various areas of Performing Arts & Sports already offered by us. This is offered to meet the needs of children and further enhance their skills in creative areas too.

d. **IXCEED Program:** IXCEED Program is being introduced from Grade I-VIII, to make children independent and confident in basic and core mathematical concepts and topics by giving level based additional practice worksheets. Children will be

attempting the level based mathematical problems independently and will continue to do others level worksheets as per their progress. Trained teacher support will be provided to the students. No concept teaching will be done by the staff.

3. **Internships: Skill Based Learning Program**

With the intention to provide our students platforms where they get an opportunity to apply knowledge learned and explore various career options, the school now plans to launch its ***Pilot Internship Program*** for Grades IX to DP2 students during the summer and winter breaks in the upcoming academic year (2022-23).The Program is divided into 2 groups –

a. Grade IX & X: 3 internship programs within the 2 year period, each consisting of a minimum duration of 1 week.
b. Grade XI & XII: 1 internship program of 1 month duration within the DP study period. (Mandatory)

4. **Moral and Social Responsibility**

The sense of being socially responsible starts from the early stages of a child's life. Engaging the students to help them evolve as a responsible person shouldering the responsibility of the nation, is the need of the hour. At TIPS we take this responsibility to heart and have initiated Farming and joining hands with AATRAL Foundation to extend our support in the building of national character through our own small steps.

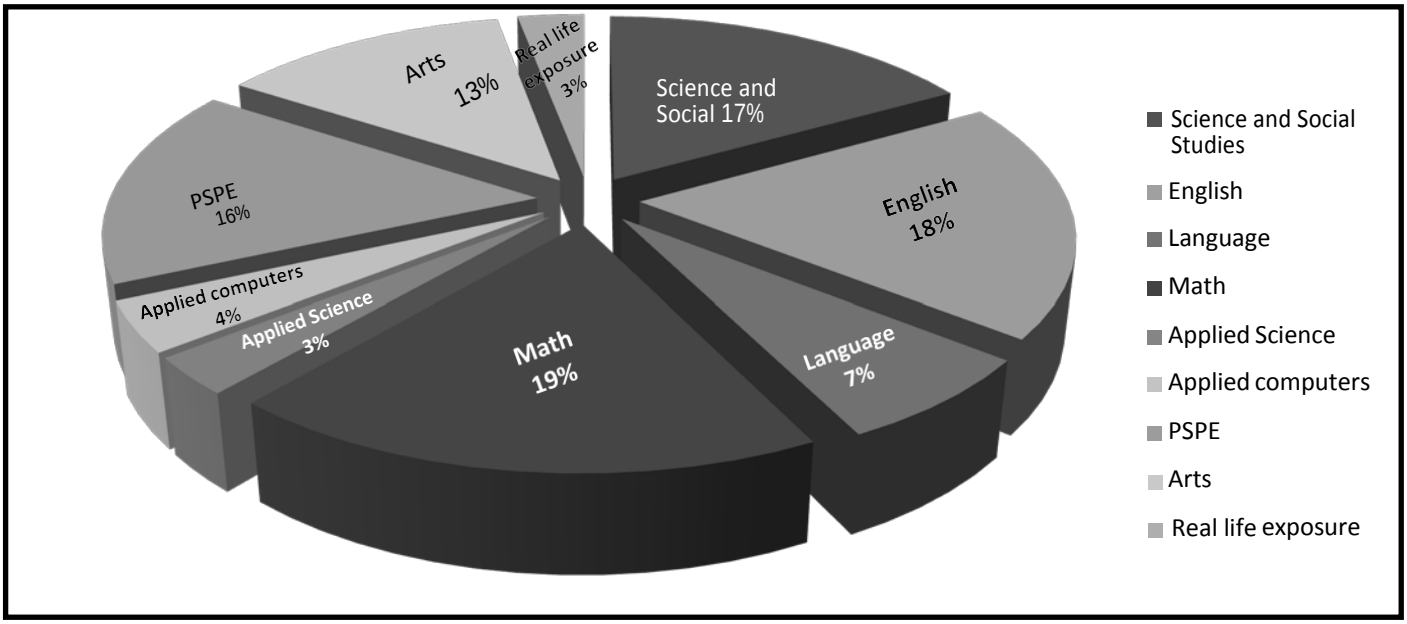
a. **Farming: Introduction of Farming as a part of Indian social and cultural fabric:** Agriculture plays a critical role in the entire life and is a backbone of the economic system of a given country. This is especially true of India. TIPS has planned to offer Farming as part of the regular curriculum which will encourage the children to appreciate and understand the complexities of life. Farming practices for grade 3 to 9 & DP1 has been scheduled in such a way that there is coherence in the understanding and learning of them.
b. **Social Responsibility through Service:** The TIPS school community has decided to offer consistent and continuous programs to help the underprivileged involving Children, Parents, Teachers, Staff, and Local Community with focus on life skills learning. We expect our students to understand the realities of the world outside their protective zone and help in making the world a better place for all.

5. **TIPS Media Centre – An Initiative by the TIPS Students**

TIPSMedia Centre, led by the senior students is an initiative where the students will get a productive opportunity to express themselves. Specially post Pandemic times where students are more into gadgets, TIPS will provide an eco-system for the students to aperture their creative wisdom be it short films, advertisements, posters, shorts, reels and other creative ideas.

All the shared initiatives will ensure TIPS students the competitive edge by introducing our youngsters to the world beyond, by instilling and developing in them the skills and abilities needed to thrive in the ever-changing world. To this end, we plan to keep the momentum and keep ourselves ahead of time, as has been TIPS legacy.

ANNUAL CURRICULUM PLAN



This pie- chart gives you an approximate break-up of the various disciplines offered by the TIPS curriculum.
The subjects focused in each theme will be integrated in the units of inquiry.

Our Grade IV children will be inquiring into the following Transdisciplinary themes

ANNUAL CURRICULUM OVERVIEW- UOI		
Discipline	**Objective**	
UOI	Sharing the planet	**SEM - I**
	How we organize ourselves	
	How we express ourselves	
	How the world works	**SEM - II**
	Where we are in place and time	
	Who we are	

Our Grade IV children will be inquiring into the following Transdisciplinary themes

Sharing the planet: An inquiry into rights and responsibilities in the struggle to share finite resources with other people and with other living things; communities and the relationship within and between them; access to equal opportunities; peace and conflict resolution.

Central idea

Biodiversity results in the healthy ecosystems which ensure the natural sustainability of earth and all life forms

Key Concepts

- Connection
- Causation
- Responsibility

Related Concepts

- Interdependence
- Consequences
- Conservation

Lines of inquiry

- Understanding ecosystems, biomes and environments
- Interdependence of living organisms
- Consequences of imbalance within ecosystems
- Our responsibility in conserving Bio diversity

Subject focus Science, Social Science, Math

Strands

- Science : Living Things
- Social Studies : Resources and Environment
- Math : Numbers and Data Handling

The learning outcomes - After the inquiry the students will be able to :

- define the characteristics of different biomes and ecosystems
- explore the various biotic and a - biotic factors unique to different ecosystems
- recognize different habitats, and the animals and the natural resources in the habitat
- explain how plants and animals support/depend on each other in the food chain or food web.
- understand how the disappearance of one species affects other species.
- understand how human action help or hurt the ecosystem.
- take steps or create awareness to conserve the Bio-diversity

Expected transdisciplinary skills while inquiring into this theme

- Social skills
- Self - management skills
- Communication Skills

While inquiring into the theme, children exhibit these learner profile attributes

- Caring
- Balanced
- Reflective

Students have an access to the following resources during this inquiry.

Books

- Food Chains
- Micro Food Chains
- Plant vs Animals
- Biodiversity - Carla Mooney
- Jurassic food chains
- Broken Chains
- Apex Predators

Possible hands on activities

- Paper Food Chains and Food Web
- How Environmental Changes Affect Food Webs

Key Vocabulary

- Ecosystem
- Carnivores
- Omnivores
- Biomes
- Interdependence
- Organisms
- Environment
- Decomposers
- Predators
- Conservation
- Endangered
- Imbalance

Note to parents: If you find any other useful books/website please email to us

How we organize ourselves: An inquiry into the interconnectedness of human-made systems and communities; the structure and function of organizations; societal decision-making; economic activities and their impact on humankind and the environment.

Central idea

Effective Civic engagement and the right government systems in societies reflect human rights and social justice

Key Concepts

- Form
- Function
- Responsibility

Related Concepts

- System
- Justice, Equality
- Human rights
- Global goals

Lines of inquiry

- Forms of Governments, and the basic services provided
- Purpose and the process of making laws
- Human rights issues around the world
- Importance of civic and social engagement in a society

Subject focus - Social Studies, Math, Arts and Language

Strands

- Social Studies : Human systems and Economic activities
- Math : Data Handling
- Language : Oral and Written

The learning outcomes - After the inquiry the students will be able to :

- name and explain the major features of different types of government (autocracy, monarchy, dictatorship, and , oligarchy)
- explore a range of political systems and laws (for example, local, regional, national or international)
- research and explain the functions of different branches of government
- identify some of the values, morals, or other concerns upon which societies base their laws.
- appreciate the relationship between rights and responsibilities.
- participate as an global citizen with each other and with public officials on issues that concern the "public good".
- understand the importance of responsible participation to achieve social justice

Expected transdisciplinary skills while inquiring into this them

- Social skills
- Self - management skills
- Research skills

While inquiring into the theme, children exhibit these learner profile attributes

- Knowledgeable
- Principled
- Courageous

Students have an access to the following resources during this inquiry.

Books

- Right or wrong _ What difference does it make? - Sarah Medina
- Fundamental Rights and Duties In Our Constitution Ekalavya
- Human Rights _ Mark Friedman
- Governing the UK Ivan Minnis
- The Houses of Parliament - Nigel Smith
- Capitalism David Downing
- Leading Lives -Winston Churchill - Fiona Reynoldson
- Women's Right Kate Stearmen

Key Vocabulary

- Government
- Monarchy
- Opportunity
- Dictatorship
- Democracy
- Responsibility
- Justice
- Autocracy
- Human rights
- Equality
- Theocrac
- E lections

Note to parents: If you find any other useful books/website please email to us

How we express ourselves: An inquiry into the ways in which we discover and express ideas. feelings, nature culture, beliefs and values; the ways in which we reflect on, extend and enjoy our creativity; our appreciation of the aesthetic.

Central idea

Artists can use scientific principles to create and express

Key Concepts

- Function
- Perspective
- Connection

Related Concepts

- Properties
- Creativity
- Transformation

Lines of inquiry

- Exploring the properties of Light, and Sound
- Creative expression and communication using light and sound
- Light and sound technologies in art

Subject focus - Science, Math, Arts and ICT

Strands

- Science : Forces and Energy
- Math : Pattern
- Arts : Responding and Creating

The learning outcomes-After the inquiry the students will be able to:

- investigate the properties of light and sound energy
- to explore creative uses of light and sound energy
- to investigate if similar sounds can be made in different ways
- to explore different tools and instruments
- understand the literary, technical, and performance elements of drama and explore how these elements interrelate to achieve a desired effect

Expected transdisciplinary skills while inquiring into this theme

- Research skills
- Thinking skills

While inquiring into the theme, children exhibit these learner profile attributes

- Inquirers
- Thinkers
- Knowledgeable

Students have an access to the following resources during this inquiry.

Books

- Light Energy
- How does sound changes
- Campfire science
- Sound effects Artists - Virginia Loh hagan
- Make a light your way - Rachael Thomas
- Telescopes

Possible hands on activities

Exploration - Explore Shadows
Experiment - Refraction
Projects - Spinning Color Disks

Key Vocabulary

- Refraction
- Frequency
- Waves
- Convection
- Expression
- Compose
- Transformation
- Instruments
- Sensory
- Reflection
- Technologies
- Concert

Note to parents: If you find any other useful books/website please email to us

How the world works : An inquiry into the natural world and its laws; the interaction between the natural world and human societies; how humans use their understanding of scientific principles; the impact of scientific and technological advances on society and on the environment

Central idea

The properties and combination of materials and matter leads to the understanding of how chemistry contributes to the inventions

Key Concepts

- Form
- Function
- Perspective

Related Concepts

- Properties
- Behaviour
- Creativity, Transformation

Lines of inquiry

- Structure, components and properties of matter
- Chemical and physical changes, and practical applications
- Creating and exploring new substances and transformations

Subject focus - Science, Math and Arts

Strands

- Science : Materials and Matter
- Math : Numbers-Fractions and Measurement
- Arts : Responding and creating

The learning outcomes- After the inquiry the students will be able to :

- understand that matter is all around and exist in one of three main states: solid, liquid, or gas
- identify , classify and describe properties of matter, including: flexibility, strength, transparency, hardness,water resistance, size, color, weight, and texture
- differentiate physical and chemical changes and analyze the changes that occur are reversible or irreversible
- explore and understand the application of chemistry in different aspects of everyday life
- explore new areas of research in both chemistry and allied fields of science and technology
- explore and create new substances for different purposes

Expected transdisciplinary skills while inquiring into this theme

- Research skills
- Thinking skills
- Social skills

While inquiring into the theme, children exhibit these learner profile attributes

- Inquirers
- Thinkers
- Courageous

Students have an access to the following resources during this inquiry.

Books

- Mixing Matters
- The chemistry of art
- Dmitri's table
- The science of baking
- Curious Marie Curie
- The science of Lemonade

Possible hands on activities

Experiment - Mixtures, Solutions & Suspensions

Key Vocabulary

- Reversible
- Irreversible
- Chemical
- Physical
- Atom
- Permanent
- Temporary
- Matter
- Mixture
- Elements
- Substances
- Materials

Note to parents: If you find any other useful books/website please email to us

Where we are in place and time: An inquiry into orientation in place and time; personal histories; homes and journeys; the discoveries, explorations and migrations of humankind; the relationships between and the interconnectedness of individuals and civilizations, from local and global perspectives.

Central idea

Earth's natural features change over time and has impact on the environment and human settlements

Key Concepts

- Form
- Change
- Causation

Related Concepts

- Geology
- Transformation
- Pattern

Lines of inquiry

- Structure and physical features of earth
- How has the earth's surface changed? and what causes the change ?
- The impact of earth's changes on the environment and human settlements

Subject focus - Science, Social Science and Math

Strands

- Science : Earth and Space
- Math : pattern
- Social Studies : Continuity and Change through time

The learning outcomes- After the inquiry the students will be able to :

- explore and explain the features of different layers of earth.
- identify and explain the features of different landforms.
- recognize the processes that cause weathering , erosion, earth quake and climate change.
- understand the factors that shapes the structure of earth.
- research, understand and share the impact of catastrophic events on human settlements.
- integrate information from different sources and continue to learn.
- make inferences about Earth systems from observations of the natural world.

Expected transdisciplinary skills while inquiring into this theme

- Research skills
- Thinking skills
- Self – management skills

While inquiring into the theme, children exhibit these learner profile attributes

- Inquirers
- Thinkers
- Knowledgeable

Students have an access to the following resources during this inquiry.

Books

- Earth's changing Face
- Earth quakes
- Human Settlements
- Landslides
- What is inside planet Earth?

Possible hands on activities

Experiment – Erosion

Key Vocabulary

- Geology
- Weathering
- Civilization
- Continents
- Sedimentary Rocks
- Urbanization
- Transformation
- Structure
- Society
- Landforms
- Settlements
- Weathering
- Tectonic plates
- Interaction
- Features
- Volcanoes

Note to parents: If you find any other useful books/website please email to us

Who We Are : An inquiry into the nature of the self; beliefs and values; personal, physical, mental, social and spiritual health; human relationships including families, friends, communities, and cultures; rights and responsibilities; what it means to be human

Central idea

Stories and Artfiacts provide opportunities to understand history and dynamics of peoples, and our heritage

Key Concepts

- Perspectives
- Causation
- Change

Related Concepts

- History
- Values, Heritage
- Transformation

Lines of inquiry

- Exploring family and social history through Stories and Artifacts
- Ways and importance to develop and Maintain cultural heritage, identity and diversity
- Current events in historical perspective

Subject focus - Social Studies, Math, Arts and ICT

Strands

- Social Studies : Community and Change Through Time
- Math : Number, Pattern
- Arts : Responding
- Language : Oral, Visual and Written

The learning outcomes- After the inquiry the students will be able to :

- gain a deeper understanding of their family's history and heritage.
- explain the components of *a* family tree and create a family tree.
- define historical fiction ' and list the characteristics of historical fiction.
- find stories and artiacts and analyze historical information related to it.
- understand how things have evolved and how world has changed over years.
- research on the famous historic events.

Expected transdisciplinary skills while inquiring into the theme

- Social skills
- Communication skills
- Research skills

While inquiring into the theme, children exhibit these learner profile attributes

- Knowledgeable
- Communicators
- Open-minded

Students have an access to the following resources during this inquiry.

Books

- Ancient artifacts Rachel L Thomas
- What is culture Bobbie Kalman
- Cultures around the world Jeonne Dustman
- Around the world in eighty days Jules Verne
- The three investigators Robert Arthur

https://www.youtube.com/watch?v=iC3SMrUDmDE

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

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

Key Vocabulary

- History
- Belief
- Archeology
- Families
- Artiacts
- Perspectoive
- Choronolgy
- Celebrations
- Culture
- Revolution
- Civilization
- Identity
- Values
- Ancient
- Immigration
- Diversity

Note to parents: If you find any other useful books/website please email to us

ANNUAL CURRICULUM OVERVIEW- ENGLISH			
Discipline		Objectives	Time **frame**
English	**Reading and Comprehension**	Analyze character	Week 1-3
		Analyze Plot	Week 4-6
		Analyze Setting	Week 7-9
		Author's point of view	Week 10-12
		Author's Purpose (Entertain)	Week 13-14
		Author's Purpose (Inform)	Week 15-16
		Author's Purpose (Persuade)	Week 17-18
		Cause & Effect	Week 19-20
		Compare & Contrast	Week 21-22
		Fact or Opinion	Week 23-24
		Identify character point of view	Week 25-26
		Main idea and details	Week 27-28
		Make inferences & Draw conclusions	Week 29-30
		Problem & Solution	Week 31-32
		Reality & Fantasy	Week 33-34
		Sequence events	Week 35-36
	Spelling	Revisiting concepts taught in previous levels	Week 1 - 3
		Consonant Team TCH	Week – 4
		Consonant Team DGE	Week – 5
		Ways to Spell /j/	Week – 6
		Prefixes	Week – 7
		The Four Sounds of Y	Week – 8
		The /er/ of Works	Week 9 - 10
		Months of the Year	Week – 11
		The Sound of / oo / Spelled EW	Week – 12
		Short E Spelled EA	Week – 13
		Ways to Spell /eˇ/	Week – 14
		The Sound of /r/ Spelled WR	Week 15 -16
		The Sound of /n/ Spelled KN	Week – 17
		More ER Words	Week – 18
		The Sound of /uˇ/ Spelled O	Week – 19
		Practice Spelling Strategies	Week – 20
		Words with EIGH and Numbers	Week 21 - 22
		The Sounds of / ū / and / oo / Spelled UE	Week – 23

English	**Spelling**	PH and the /er/ of Early	Week – 24
		Unaccented A	Week – 25
		Long A Spelled EA	Week – 26
		/shuˇn/ Spelled TION	Week 27-28
		Ways to Spell /er/	Week – 29
		/w ō r/ Spelled WAR	Week 30 - 31
		The Sound of /ē/ Spelled EY	Week – 32
		The Sound of /ō/ Spelled OE	Week 33-34
		The /iˇk/ Words	Week 35-36
	Writing	Warming up	Week 1
		How to	Week 2 - 4
		Introduction, Focused Grammar, Sample discussion	
		Independent Practice	
		Assessment	
		Persuasive Pro and Con	Week 5 - 8
		Introduction, Focused Grammar, Sample discussion	
		Independent Practice	
		Assessment	
		Informational speech	Week 9 -12
		Introduction, Focused Grammar, Sample discussion	
		Independent Practice	
		Assessment	
		Biography	Week 13 -15
		Introduction, Focused Grammar, Sample discussion	
		Independent Practice	
		Assessment	
		Persuasive Opinion	Week 16 - 18
		Introduction, Focused Grammar, Sample discussion	
		Independent Practice	
		Assessment	
		Realistic Fiction	Week 19 - 21
		Introduction, Focused Grammar, Sample discussion	
		Independent Practice	
		Assessment	

English	**Writing**	Experimental Report	Week 22-24
		Introduction, Focused Grammar, Sample discussion	
		Independent Practice	
		Assessment	
		Descriptive writing	Week 25 - 27
		Introduction, Focused Grammar, Sample discussion	
		Independent Practice	
		Assessment	
		Informational report	Week 28 - 30
		Introduction, Focused Grammar, Sample discussion	
		Independent Practice	
		Assessment	
		Personal Narrative	Week 31 - 33
		Introduction, Focused Grammar, Sample discussion	
		Independent Practice	
		Assessment	
		Fairy tale	Week 34 - 36
		Introduction, Focused Grammar, Sample discussion	
		Independent Practice	
		Assessment	
	Language Skills	Warming up	Week 1
		Nouns, Common nouns and Proper nouns	Week 2
		Concrete & Abstract noun, Compound nouns & Number and gender nouns	Week 3
		Uses of nouns, Nouns as objects	Week 4
		Person of a pronoun & Number of a pronoun	Week 5
		Subject and object pronouns	Week 6
		Possessive pronouns, Indefinite pronouns, Demonstrative pronouns	Week 7
		Pronoun-Antecedent Agreement	Week 8
		Types of verbs	Week 9
		Simple verb Tenses, Singular and plural Verbs	Week 10
		Irregular Verbs & Review	Week 11
		Common and Proper Adjectives	Week 12
		Demonstrative Adjectives & Forms of Adjectives	Week 13
		Adverbs & Types of Adverbs, Forms of Adverbs	Week 14
		Prepositional phrases	Week 15

English	**Language Skills**	Coordinating conjunctions	Week 16
		Subordinating conjunctions & Conjunctions Review	Week 17
		Interjections, Parts of Speech Review	Week 18
		Simple and complete Subjects & Simple and complete Predicates	Week 19
		Compound Subjects and Predicates, Clauses	Week 20
		Prepositional phrases, Sentence Fragments	Week 21
		Run-On sentences & Rambling Sentences	Week 22
		Double Negatives	Week 23
		Sentence Problems Review	Week 24
		Subject- Verb Agreement	Week 25
		Subject- Verb Review	Week 26
		Combining sentences using key words	Week 27
		Combining sentences with phrases	Week 28
		Sentence combining with Compound subjects and predicates	Week 29
		Sentence combining Review	Week 30
		Kinds of Sentences	Week 31
		Types of Sentences	Week 32
		Compound Sentences	Week 33
		Complex Sentences	Week 34
		Expanding Sentences with Prepositional Phrases	Week 35
		Sentence -Variety Review	Week 36
	Vocabulary Cluster	Auxiliary and Helping Verbs & Time	
		1, 342, 411, 2,16,24,52	Week 1
		Time	
		59,79	Week 2
		83, 126,144, 233	Week 3
		Comparison and Contrast	
		5,27,252	Week 4
		Pronouns	
		299, 6,8,11,12,34	Week 5
		Physical Location and Orientation	
		9, 17, 20 ,21	Week 6
		22,23,25,26,37,49, 390	Week 7
		Cause and Effect	
		430, 10,273	Week 8

English	**Vocabulary Cluster**	Measurement, Size and Quantity	
		15,18	Week 9
		19,28	Week 10
		33,73,130	Week 11
		327,373,374, 14,61	Week 12
		Verbal Interaction	
		100,105,177	Week 13
		198	Week 14
		207, 255	Week 15
		Attitudinals	
		345,346, 383, 30,31, 285,369, 431, 439, 440	Week 16
		Animals	
		32,35	Week 17
		64,70	Week 18
		65	Week 19
		82, 95, 117,155	Week 20
		188,189, 194,309, 310,341	Week 21
		Trees and Plants	
		36,108,192	Week 22
		269	Week 23
		Movement and Action	
		421, 38,39,44	Week 24
		66,141,147, 169	Week 25
		170,182,199,215,216,247	Week 26
		280,282,283,300	Week 27
		301,302,322,338	Week 28
		Acquisition and Ownership	
		403, 41,89,148	Week 29
		171,184, 426,43	Week 30
		Emotions and Attitudes	
		45,55,291	Week 31
		292,293, 311 312	Week 32
		313,378,379,380,381	Week 33
		Contractions	
		416,417,422,427,428,81,85,235	Week 34
		Reasoning and Mental Actions	
		46,67,132,137	Week 35
		154,225,249,277	Week 36

Our language programme includes all aspects of English such as:

Reading Comprehension**:**

At TIPS, the students will be going through a complete Reading Programme which motivates them to read in an engaging way. The multi-sensory approach and the hands-on activities help them learn the important components of reading -Phonological awareness, Decoding, Vocabulary, Fluency and Comprehension. This curriculum aims at laying a firm foundation of learning and create interest in reading for a lifetime.

Spelling

Through ' All about spelling ' students will learn encoding skills, reliable spelling rules and multi-sensory strategies to help them master the sounds of 26 letters and common combinations. With these tools, the students become proficient spellers for life.

Writing

Pupils learn to write in a range of genres or styles, organizing and developing their ideas logically, using appropriate vocabulary and a variety of sentence structures. By the end of the academic year children would have progressed in their writing skills and will be able to write *Biography, Descriptive, Experimental report, How to, Informational Report, Informative Speech, Narrative – Fairy Tale, Personal Narrative, Realistic Fiction, Persuasive – Opinion and Persuasive – Pro-Con.*

Listening & Speaking

The language of the classroom is English. Our aim is that children will become comfortable speaking English in the classroom. Children will be given the opportunity to express their opinions and ideas on a range of issues. They will be expected to listen appreciatively to the viewpoints of others.

Vocabulary – Clusters

Robert J. Marzano identified basic and advanced vocabulary which a speaker who wishes to communicate in the English language should know. These words are grouped into clusters. Grades 1 – 3 will be given basic vocabulary, while Grades 4 & 5 will be given advanced vocabulary. We will be sending home sets of words which will be discussed in the class. Your child will illustrate his/her understanding of the word in the space provided. We will send this home every day and children have the liberty to complete the work throughout the week rather than in one sitting. Allow your child to take time to look at the word, recall the meaning and illustrate. This will help the child identify the word in a text and use the same while writing as well.

Language Skills

Children will learn grammar using the *Language skills* book. The topics which will be dealt with are *Parenthesis, Pronouns, Possessive nouns, Conjunctions, Future tense verbs, Simple, compound & complex sentences and Adjectives*. In addition, they will also be given grammar practice every day for which *Write Rights* resource book will be used.

Dramatics

Dramatics is an essential area of learning in the PYP and is built in to the curriculum. Dramatics enables the development of creative skills, verbal and non-verbal expression, an awareness of the perspectives of others and aesthetic appreciation. Drama encourages students, to communicate in powerful ways that go beyond their spoken language ability.

Dramatics in PYP identifies 6 major expectations:

- Creative exploration and expression
- Technical incorporation
- Performance
- Personal and social development
- Reflection, Evaluation & Appreciation
- Drama in society

Through drama, students can begin to construct an understanding of their community, their environment and their own feelings and emotions. They will also have opportunities to work cooperatively to put together a performance.

ANNUAL CURRICULUM OVERVIEW-HINDI

DISCIPLINE	OBJECTIVES	TIME FRAME
HINDI	1. पुनरावृति- स्वर, व्यंजन, बारहखड़ी 2. पाठ - प्यारा - सा एक पत्र 3. पाठ - परोपकारी शतपत्र 4. व्याकरण- संज्ञा, उपसर्ग, प्रत्यय 5. गिनती 1- 20 6. मेरी हिन्दी	SEM-I
	1. पाठ - मीठे बोल 2. पाठ - हिन्द देश का प्यारा झंडा 3. व्याकरण- सर्वनाम और उसके भेद 4. गिनती 21- 40 5. मेरी हिन्दी	
	1. पाठ - चाँद का कुरता 2. पाठ - आँखों की देखभाल 3. व्याकरण- काल 4. गिनती 41- 50 5. मेरी हिन्दी	
	1. पाठ - कर लो पर्यावरण सुधार 3. व्याकरण- विशेषण, विशेष्य 4. गिनती 51- 60 5. मेरी हिन्दी	SEM-II
	1. पाठ - गिलहरी और कबूतर 2. पाठ - चींटी से सीखो 3. व्याकरण- क्रिया 4. गिनती 61- 70 5. मेरी हिन्दी	
	1. पाठ - हमारे उत्सव और त्योहार 2. पाठ - हिम्मत और समझदारी 3. व्याकरण- पुनरावृति 4. गिनती 71- 80 5. मेरी हिन्दी	

लेखन कौशल

केन्द्रीय शिक्षण बिन्दु :

वाचन एवं अर्थ ग्रहण की क्षमता ।

शैक्षणिक उद्देश्य :

- अर्थ समझकर वाक्य बनाना
- संयुक्ताक्षर का अभ्यास
- शब्द निर्माण
- शब्द भंडार में वृध्दि
- विषय वस्तु संबंधित रचनात्मक कार्य करना और जानकारी इकट्ठा करना

पठन /वाचन कौशल :

केन्द्रीय शिक्षण बिन्दु :

- स्पषट एवं शुद्ध उच्चारण

शैक्षणिक उद्देश्य :

- सही उच्चारण के साथ पढ़ने का अभ्यास
- वार्तालाप का अभ्यास
- अर्थ बोध का ज्ञान

श्रवण कौशल :

केन्द्रीय शिक्षण बिन्दु :

- बोलचाल की भाषा के प्रति आत्मविश्वास जगाना

शैक्षणिक उद्देश्य :

- विचार व्यक्त करना
- कहानी बताकर उससे सम्बंधित प्रश्न पूछना
- शीर्षक के अनुसार अपने विचार प्रकट करना

संदर्भ ग्रंथ सूची :

पंखुड़ियाँ	-	वीवा एजुकेशन
स्वाति	-	सरस्वति हाउस प्रा. लि.
गुंजन	-	मधुबन एजुकेशनल बुक्स
वितान	-	मधुबन एजुकेशनल बुक्स
ज्ञान मंजरी	-	एशिया बुक हाउस
पल्लवी	-	एलाइट पब्लिशर्स प्रा. लि.

Websites :

www.akhlesh.com ,

www.Hindiclassroom.com

www.indg.in/primary-education/Shiksha

ANNUAL CURRICULUM OVERVIEW - TAMIL

DISCIPLINE	OBJECTIVES	TIME FRAME
TAMIL	சொற்களின் பயன்பாடுகளையும், வாக்கியத்தில் அமைக்கும் முறைகளையும் தெரிந்து கொள்ளுதல். பாடக்கருத்துகள் சார்ந்து பத்தி அமைத்தல்.	SEM I
	அறவழிக் கருத்துக்களையும், வாழ்வில் கடைபிடிக்க வேண்டிய நல்வழிகளையும், வாக்கிய அமைப்பில் ஒருமை - பன்மை, திணை வகைகளையும் அறிதல்.	
	நல்ல கருத்துகளை உடைய கதைகள் வாயிலாக மாணவர்களின் அறிவுத்திறனை மேம்படுத்துதல்.	
	பத்தி, கட்டுரை வடிவாக்கத்தில் சொற்களின் பயன்பாடு, பொருளுணர்ந்து வாக்கியம் அமைத்தல் போன்றவைகளை அறிந்து கொள்ளுதல்.	SEM II
	சொல்வளப்பெருக்கம், வாக்கியங்களில் நிறுத்தற்குறியீடுகளின் பயன்பாடு, பத்தி அமைக்கும் முறையை அறிதல்.	
	கட்டுரை வாயிலாக நாட்டுப்பற்றுணர்வை வளர்த்துக் கொள்வதோடு ஒற்றுமையின் பலத்தை அறிதல்.	

LISTENING AND SPEAKING

LEARNING OBJECTIVES : (கற்றலின் குறிக்கோள்கள்)

- அறிமுகம் இல்லாத பொருள்களைப் பற்றி விவரிக்கும் திறன்.
- இடைநிறுத்தமின்றி இயல்பாகத் தொடர்ந்து பேசுதல்.
- எளிய வகுப்பறை விவாதங்கள், கலந்துரையாடல்கள்.
- செய்தித்தாள்கள் மற்றும் சிறுவர் கதைகளைப் புரிந்து விளக்கம் கூறல் .

READING

LEARNING OBJECTIVES : (கற்றலின் குறிக்கோள்கள்)

- சிறுவர்களுக்கான இதழ்கள், கையெழுத்து பிரதிகளை வாசித்துப் புரிந்து கொள்ளும் திறன்.
- செய்தித்தாள்கள், சுவர் ஒட்டிகள் வாசித்து பொருள் உணரும் திறன்.
- உரைநடை, செய்யுள் பகுதி படித்த பின் பொருள் விளங்கக்கூறல்.

WRITING

LEARNING OBJECTIVES : (கற்றலின் குறிக்கோள்கள்)

- வாய்மொழிக் கூற்றினை பிழையின்றியும் சொற்களை தெளிவாகவும், அழகாகவும் எழுதுதல்.
- நிறுத்தற்குறிகளை சரியான இடங்களில் பயன்படுத்துதல்.
- இலக்கண விதிகளின்படி வாக்கியத்தை அமைத்தல்.
- தலைப்பு சார்ந்து பத்தி அமைத்தல் பத்தியை மொழிபெயர்த்தல்.

RESOURCE BOOKS **: அழகு தமிழ், வண்ணத் தமிழ் இலக்கணப் பயிற்சி நூல்.**

WEBSITES : *www.tamilnoolagam.com* , *www.tamilcube.com*, *www.tamilvirtual.com*

ANNUAL CURRICULUM OVERVIEW - MATH				
Discipline	**Objectives**			**Time frame**
	Revisiting previous year concepts			Week 1 - 2
MATH	**Place value of whole numbers**	Numbers to 100,000	Write numbers to 100,000 in standard form, word form, and expanded form	Week 3
		Comparing Numbers to 100,000	Compare and order numbers to 100,000	
			Identify how much more or less one number is than another number	Week 4
			Find the rules in a number pattern.	
	Estimation and Number theory	Estimation	Round numbers to estimate sums, differences, products, and quotients	Week 5
			Estimate to check that an answer is reasonable.	Week 6
			Decide whether an estimate or an exact answer is needed	
		Factors	Find the common factors and greatest common factors of two whole numbers	Week 7
			Identify prime numbers and composite numbers	
		Multiples	Find multiples of whole numbers	Week 8
			Find common multiples and the least common multiple of 2 or more numbers	
	Whole number Multiplication and Division	Multiplying by a 1digit number	Use different methods to multiply up to 4 digit numbers by 1 digit number, with or without regrouping	Week 9
		Multiplying by a 2 digit number	Multiply by 2 digit numbers, with or without regrouping	Week 10
			Estimate products	
		Modeling division with Regrouping	Model regrouping in division	Week 11
			Divide a 3-digit number by a 1-digit number with regrouping	
		Dividing by a 1 digit number	Divide up to a 4 digit number by a 1 digit number with regrouping, and with or without remainders	Week 12
			Estimate quotients	
		Real world problems; Multiplication and Division	Solve real world problems	Week 13
	Tables and line graphs	Making and interpreting a table	Collect ,organize and interpret data in a table	Week 14
			Create a table from data in a tally chart and a bar graph	
		Using a table	Read and interpret data in a table, using rows, columns, and intersections	
		Line graphs	Make, read, and interpret line graphs	Week 15
			Choose an appropriate graph to display a given data set	
	Data and probability	Average	Describe a data set using the average or mean	Week 16
		Median, Mode and Range	Find the mean, median, mode and Range of a set of data	
			Make and interpret line plots	
		Stem-and -Leaf Plots	Make and interpret stem & leaf plots	Week 17
		Adding fractions	Find equivalent fractions	Week 18
			Add unlike fractions	
		Subtracting Fractions	Find equivalent fractions	
			Subtract unlike fractions	

	Fractions and Mixed Numbers	Mixed Numbers	Write a mixed number for a model	Week 19
			Draw models to represent mixed numbers	
		Improper fractions	Write improper fraction for a model	
			Express mixed numbers as improper fractions	
		Renaming improper fractions and mixed fractions	Use multiplication and division to rename improper fractions and mixed numbers	Week 20
		Renaming Whole numbers when adding and subtracting fractions	Add fractions to get mixed number sums	Week 21
			Subtract fractions from whole numbers	
		Fraction of a set	Use a bar model to represent a fraction of a set	Week 22
			Find a fractional part of a number	
		Real world problems; Fractions	Solve real world problems involving fractions	
	Decimals	Understanding tenths	Represent and interpret tenths models	Week 23
			Read and write hundredths in decimal and fractional forms	
		Understanding hundredths	Represent and interpret hundredths models	
		Comparing decimal	Compare and order decimals	Week 24
			Complete number patterns	
		Rounding decimals	Round decimals to the nearest whole number or tenth	
		Fractions and decimals	Express a fractions as decimals and a decimals as a fractions	Week 25
	Adding and Subtracting Decimals	Adding decimals	Add decimals up to two decimals places	Week 26
		Subtracting decimals	Subtract decimals up to two decimals places	
		Real -world problems Decimals	Solve real- world problems involving addition and subtraction of decimals	Week 27
	Angles	Understanding and Measuring Angles	Estimate and measure angles with a protractor.	Week 28
			Estimate whether the measure of an angle is less than or greater than a right angle (90˚)	Week 29
		Drawing Angles to 180°	Use a protractor to draw acute and obtuse angles.	
		Turns and Right Angles	Relate ¼, ½ , ¾ and full turns to the numbers of right angles (90˚)	Week 30
	Perpendicular and parallel Line segments	Drawing Perpendicular Line Segments	Draw Perpendicular line segments	Week 31
		Drawing Parallel line Segments	Draw parallel line segments	
		Horizontal and vertical Lines	Identify horizontal and vertical lines	
	Squares and Rectangles	Squares and rectangles	Understand and apply the properties of squares and rectangles	Week 32
		Properties of squares and Rectangles	Find unknown angle measures and side length of squares and rectangles	
	Area and Perimeter	Area of a Rectangle	Estimate the area of a rectangle by counting grid squares.	Week 33
			Find the area of rectangle using a formula	Week 34
		Rectangles and Squares	Solve problems involving the area and perimeter of squares and rectangles	

	Symmetry	Identifying Lines of Symmetry	Identify a line of symmetry of a figure	Week 35
		Rotational symmetry	Related rotational symmetry to turns	
			Trace a figure to determine whether it has rotational symmetry	
		Making Symmetric Shapes and Patterns	Draw a shape or patterns about a line of symmetry and check for rotational symmetry	
			Complete a symmetric shape or pattern.	
			Create symmetric patterns on grid paper	
	Tessellations	Identifying Tessellations	Recognize and make tessellations	Week 36
			Identify the unit shapes used in a tessellations	
		More Tessellations	Tessellate shapes in different ways	

At TIPS we follow a structured curriculum based on "*Math in focus".*

This emphasizes problem solving and positive attitudes toward mathematics, while focusing on student development of skills, concepts, processes and meta-cognition. Students are encouraged to reflect on their thinking and learn how to self-regulate so that they can apply these skills to varied problem-solving activities. Thus development is holistic in this curriculum.

Each chapter contains numerous embedded problem-solving situations so that students learn to flexibly apply their mathematical knowledge. Additionally, Put On Your Thinking Cap! Problems require students to extend the concepts they have learned to non-routine situations to demonstrate mastery.

It also emphasizes a concrete to pictorial to abstract pedagogy. Students are first introduced to concepts with concrete manipulative, which allows them to experience and understand the math they are learning. They then learn to visually represent concepts using models, including number bonds and bar models. Finally, once students have a strong understanding of the concept, they move to the abstract stage where they use symbols, such as numbers and equations, to represent mathematical situations.

Math in Focus supports mathematical instruction at a variety of levels to target all learners, from struggling to gifted. It also emphasizes deep understanding, which is demonstrated through consistent opportunities to explain why mathematical concepts work. This is modeled for students throughout Math in Focus with thought bubbles, which display pictures of students expressing their understanding. Students then have the opportunity to justify their own understanding through activities such as Math Journals.

Math Key Words

- Conversion
- Reducing
- Equivalent
- Simplify
- Percentage
- Discount
- Factors
- Fractions
- Numerator
- Denominator
- Algebric
- Expression
- Equation
- Arithmetic
- Sequence
- Geometry
- Cube
- Square
- Function
- Angle
- Acute
- Obtuse
- Length
- Breadth
- Height
- Perimeter
- Area
- X-axis
- Y-axis
- Horizontal
- Vertical
- Scale

Math in Focus

SCHOOL to HOME Connections

Chapter 1 Place Value of Whole Numbers

Dear Family,

In this chapter, your child will study numbers to 100,000. Some of the skills your child will practice are:

- reading and writing large numbers in different ways
- comparing and ordering numbers
- finding the rule in a number pattern

Activity

Large numbers can be intimidating, but when their place-value structure is understood they are actually very simple. Encourage your child to draw a place-value chart like the one below. Place a few coins or other small household objects in each column (any number from 0 to 9) and have your child write the number that is formed. An example is shown.

Number	Ten Thousands	Thousands	Hundreds	Tens	Ones
43,012	○○ ○○	○○ ○		○	○○

- Ask your child to make statements about the numbers using what he or she has learned about place value. For example, the digit 3 in 43,012 stands for 3 thousands or 3,000.
- Have your child compare three numbers using the vocabulary shown above.

Vocabulary to Practice

Standard form: 73,816
Word form: Seventy-three thousand, eight hundred sixteen
Expanded form:
70,000 + 3,000 + 800 + 10 + 6

28,539	31,707	32,807

31,707 is **greater than** 28,539.
31,707 is **less than** 32,807.
32,807 is the **greatest** number.
28,539 is the **least** number.

32,807 is 1,100 **more than** 31,707.

Math in Focus

SCHOOL to HOME Connections

Chapter 2 Estimation and Number Theory

Dear Family,

In this chapter, your child will learn about estimation, and factors and multiples.
Some of the skills your child will practice are:

- estimating, and choosing between an estimate and an exact answer
- finding common factors and common multiples
- identifying prime numbers and composite numbers

Activity

Finding common factors and common multiples of numbers is a math skill that has numerous applications in everyday life. Explain the following scenario to your child. Joe takes 4 minutes to run around a track. Ali takes 6 minutes to run around the same track. They start running from the start line at the same time.

- Help your child work out how many minutes later Joe and Ali meet again at the start line.
- Use a chart like this to help you. The chart shows the time in which each of them completes a certain number of laps.

	1 lap	2 laps	3 laps	4 laps	5 laps	6 laps
Joe	4 min	8 min		16 min	20 min	24 min
Ali	6 min			24 min	30 min	36 min

- Now, help your child see how this is linked to finding the least common multiple of 4 and 6. (12 minutes is 3 times 4 minutes and also 2 times 6 minutes.)

Vocabulary to Practice

2 is a **factor** of 12, as 12 can be divided exactly by 2.

The **greatest common factor** is the greatest number among all the common factors of two or more numbers.

A **multiple** of a number is the product of the number and any other whole number except zero. 12 is a multiple of 2.

The **least common multiple** is the least number among all the common multiples of two or more numbers.

Math in Focus

SCHOOL to HOME Connections

Chapter 3 Whole Number Multiplication and Division

Dear Family,

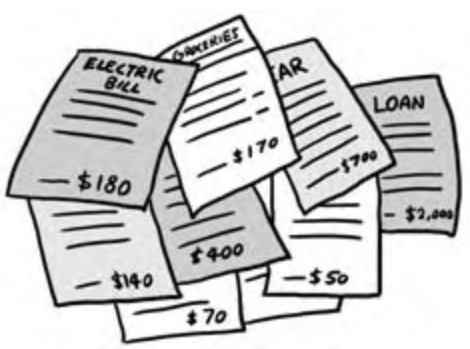
In this chapter, your child will study multiplication and division of whole numbers.
Some of the skills your child will practice are:

- multiplying and dividing with regrouping
- estimating products and quotients
- solving real-world problems

Activity

Estimating products and quotients is an important mental math skill. You can carry out many activities around the house to help your child practice this skill. For example, show your child some grocery bills for your family for the current month.

- Have your child estimate the grocery bill for different hypothetical scenarios. For example, what would the grocery bill be for a family with twice as many members as your own? What would be the amount spent on groceries if the prices of all items were doubled?



Vocabulary to Practice

A **product** is the answer to a multiplication problem. 12 is the product of 6 and 2.

A **quotient** is the answer to a division problem. When 100 is divided by 2, the quotient is 50.

A **remainder** is the number left over when a number cannot be divided evenly. 11 ÷ 5 = 2 R 1
When 11 is divided by 5, the remainder is 1.

To **estimate** 576 × 12, you can
round 576 → 600
round 12 → 10
The estimate is
600 × 10 = 6,000.

Math in Focus

SCHOOL to HOME Connections

Chapter 4 Tables and Line Graphs

Dear Family,

In this chapter, your child will study tables and line graphs. Some of the skills your child will practice are:

- making and interpreting tables and line graphs
- choosing an appropriate graph to display a given data set

Activity

Reading and interpreting line graphs is an important math skill which allows your child to visualize trends and developments over time. Encourage your child to find some line graphs in newspapers.

- Ask your child to read the axes labels and graph titles, and then describe what each of these graphs represents. Help them to see that although the scenarios are different, line graphs are always used to show how data changes over time.

Vocabulary to Practice

A set of **data** is a set of information, usually numbers.

A **table** organizes and presents data in rows and columns.
Rows organize data in a table horizontally.
Columns organize data in a table vertically.
An **intersection** is the area of the table where a row and a column meet.

A **line graph** shows how data changes over time.
The **horizontal axis** on a graph is the line that runs straight across from left to right.
The **vertical axis** on a graph runs straight up and down.

Math in Focus

SCHOOL to HOME Connections

Chapter 5 Data and Probability

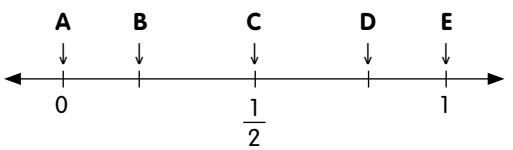
Dear Family,

In this chapter, your child will learn to find a typical value for a data set and predict the probability of different results.
Some of the skills your child will practice are:

- finding the mean, median, mode, and range of a data set from raw data, line plots, and stem-and-leaf plots
- determining the likelihood and probability of an event

Activity

We deal with probability in everyday life whenever we are faced with situations where we are not sure what is going to happen. Examples are: what the weather will be like tomorrow, what you are likely to roll on a die, and so on. This activity will help your child explore such situations. Show your child this number line.



- Have your child think of and describe some events whose probability is shown by the arrows **A** - **E** on the number line. Encourage your child to use the terms *more likely*, *less likely*, *equally likely*, *certain*, and *impossible* to describe the likelihood of these events.

  For example, **A** represents an impossible event and **E** represents a certain event. If you toss a regular die, it is certain that it will show a number less than 7 and impossible that it will show a number greater than 7.

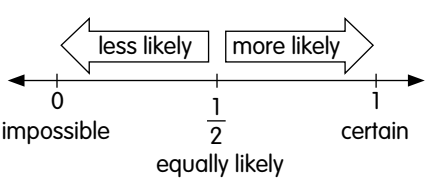
Vocabulary to Practice

An **outcome** is the result in a probability experiment.
A **favorable outcome** is a desired result.

Probability

$$= \frac{\text{Number of favorable outcomes}}{\text{Number of possible outcomes}}$$

An outcome that will definitely occur is a **certain** outcome.
An outcome that will definitely not occur is an **impossible** outcome.
If the probability of an outcome is between $\frac{1}{2}$ and 1, it is **more likely** to occur.
If the probability of an outcome is between 0 and $\frac{1}{2}$, it is **less likely** to occur.
Outcomes that have the same chance or probability of occurring are described as **equally likely** outcomes.



Math in Focus

SCHOOL to HOME Connections

Chapter 6 Fractions and Mixed Numbers

Dear Family,

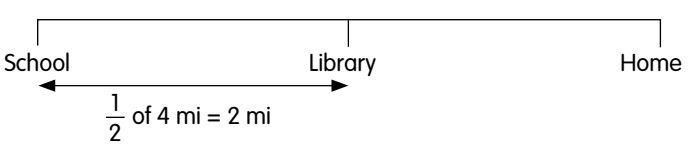
In this chapter, your child will learn more about computing with fractions and mixed numbers.
Some of the skills your child will practice are:

- adding and subtracting fractions
- converting between mixed numbers and improper fractions
- finding a fraction of a set
- solving real-world problems

Activity

Finding the fraction of a set or a number is a useful skill with many applications in everyday life. Look out for opportunities like the following to help your child practice this skill:

- While traveling by bus or car, tell your child that the distance between two points, say your home and school, is 4 miles. Ask your child to calculate the distance between the school and another place, say the library, which is half-way between school and home. (Answer: $\frac{1}{2} \times 4 = 2$ mi)



- Tell your child that you read $\frac{1}{4}$ of a book that has a total of 100 pages. Ask your child to find how many pages you read. (Answer: $\frac{1}{4} \times 100 = 25$ pages)

Vocabulary to Practice

A **mixed number** represents the sum of a whole number and a fraction. Example: $2\frac{1}{4}$

An **improper fraction** has a numerator that is equal to or greater than its denominator. It represents a fraction that is greater than or equal to 1.
Example: $\frac{7}{3}$

The **division rule** can be used to rename an improper fraction as a mixed number.

$\frac{9}{4} = 9 \div 4 = 2$ R 1

$\frac{9}{4} = 2\frac{1}{4}$

The **multiplication rule** can be used to rename a mixed number as an improper fraction.

$$3\frac{3}{4} = 3 + \frac{3}{4}$$
$$= 3 \times \frac{4}{4} + \frac{3}{4}$$
$$= \frac{12}{4} + \frac{3}{4}$$
$$= \frac{15}{4}$$

Math in Focus

SCHOOL to HOME Connections

Chapter 7 Decimals

Dear Family,

In this chapter, your child will be introduced to decimals. Some of the skills your child will practice are:

- expressing fractions and mixed numbers as decimals
- comparing and ordering decimals
- rounding decimals

Activity

Decimals are used to show amounts that are parts of a whole. Encourage your child to keep an eye out for instances where decimals are used. (For example, distance shown on an odometer, prices of most items at a supermarket, bank interest rates, a 1.5 liter bottle of juice, and so on.) Use this activity to help your child practice some of the skills he or she has learned.

- Use playing cards or make two sets of cards with the numbers 1, 2, 4, 5, and 10.
- Have your child pick two number cards from the stack, and form proper or improper fractions using the two numbers. Make four such fractions.
- Ask your child to write these fractions as decimals, and then order them from least to greatest.
- You can verify answers with a calculator. For example, $\frac{5}{4}$ is 5 ÷ 4 = 1.25

Vocabulary to Practice

A **decimal** is a way to show amounts that are parts of a whole.

1.52 is a decimal.

decimal point

$\frac{1}{10}$ = 1 **tenth**

1 tenth written in **decimal form** is 0.1.

$\frac{1}{100}$ = 1 **hundredth**

0.3	0.6	7.2

Here, 0.3 is the **least** decimal and 7.2 is the **greatest** decimal.

Math in Focus

SCHOOL to HOME Connections

Chapter 8 Adding and Subtracting Decimals

Dear Family,

In this chapter, your child will learn to add and subtract decimals and use this skill to solve real-world problems.

Activity

Adding and subtracting decimals is a key skill needed to perform simple everyday tasks. While traveling by car or on a trip to the supermarket, look for opportunities to demonstrate this to your child and help them practice some of the skills they have learned. For example, encourage your child to notice that at the supermarket, the prices of many items are listed as decimals, not whole numbers.

- Ask your child to write down the prices of 5 items from the supermarket.
- At home, have your child add these decimals to find the total cost of all 5 items.
- Ask your child to calculate how much money he or she will have remaining after buying these 5 items, if he or she had $70 to begin with. (Choose a number that is greater than the total cost of the 5 items.)

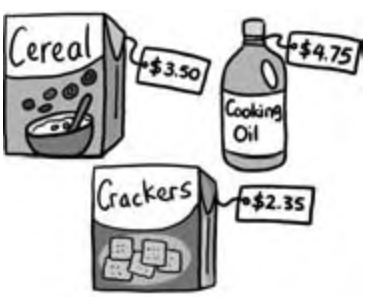
Vocabulary to Practice

Regrouping tenths:
10 tenths = 1 one

Ones	Tenths
	○○○○○ ○○○○○

Regrouping hundredths:
10 hundredths = 1 tenth

Tenths	Hundredths
	○○○○○ ○○○○○



Math in Focus

SCHOOL to HOME Connections

Chapter 9 Angles

Dear Family,

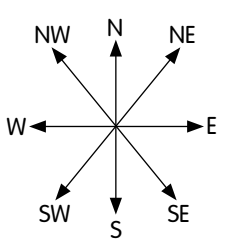
In this chapter your child will study angles.
Work in this chapter will include:

- measuring and drawing angles
- identifying acute, obtuse, right, and straight angles
- relating turns to the number of right angles

Activity

The concept of angles is fundamental to the study of geometry. Children must be able to estimate the measure of angles and use the correct vocabulary to describe them before they study geometry further. To practice new terms, have your child look at this diagram.

- Mark an angle on the diagram. Have your child estimate the measure of the angle and identify it as an acute, obtuse, or right angle. For example, the angle between East and Northwest is an obtuse angle because it is greater than 90°.
- Repeat with different angles.
- Now, ask your child to imagine that you are facing North. Ask, for example, what direction you will be facing if you complete a $\frac{3}{4}$-turn to the right. (Answer: West) Ask your child how many degrees you would have turned through. (Answer: 270°)



Vocabulary to Practice

An angle is measured in **degrees**.

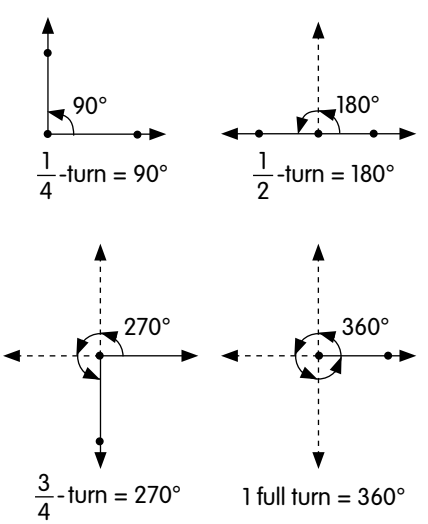
A **right angle** has a measure of 90 degrees, which is written as 90°.
An angle that measures less than 90° is an **acute angle**.
An angle that measures more than 90° is an **obtuse angle**.
An angle that measures 180° is a **straight angle**.

$\frac{1}{4}$-**turn** is 1 right angle.

$\frac{1}{2}$-**turn** is 2 right angles.

$\frac{3}{4}$-**turn** is 3 right angles.

1 full turn is 4 right angles.



$\frac{1}{4}$-turn = 90°
$\frac{1}{2}$-turn = 180°
$\frac{3}{4}$-turn = 270°
1 full turn = 360°

Math in Focus

SCHOOL to HOME Connections

Chapter 10 Perpendicular and Parallel Line Segments

Dear Family,

In this chapter, your child will study perpendicular and parallel line segments.
Some of the skills your child will practice are:

- using a protractor or drawing triangles to draw parallel and perpendicular line segments
- identifying horizontal and vertical lines

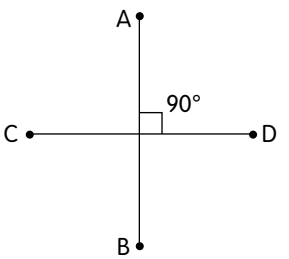
Activity

Understanding the different types of lines and line segments is important when children study the properties of plane and solid shapes. Help your child connect the concepts of parallel, perpendicular, horizontal, and vertical lines with this activity.
Invite your child to identify some horizontal line segments in a room. Examples are table edges, the sides of a doormat, and so forth.

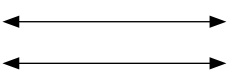
- Ask your child to explain why they are horizontal. (Answer: Table edges are parallel to the level ground, so they are horizontal.)
- Now have your child identify line segments perpendicular to the ground. Examples are the legs of a table, the sides of a window frame, and so forth. Ask your child whether these are horizontal or vertical line segments, and ask why. (Answer: Table legs are perpendicular to the level ground, so they are vertical.)

Vocabulary to Practice

Perpendicular line segments are at right angles to each other.



Parallel line segments will never meet, even if they are extended. They are always the same distance apart.



Horizontal lines are parallel to the level ground.

Vertical lines are perpendicular to the level ground.

Math in Focus

SCHOOL to HOME Connections

Chapter 11 Squares and Rectangles

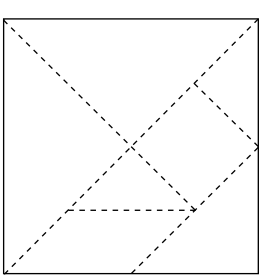
Dear Family,

In this chapter, your child will learn about squares and rectangles. Some of the skills your child will practice are:

- identifying the properties of squares and rectangles
- finding unknown side lengths and angle measures

Activity

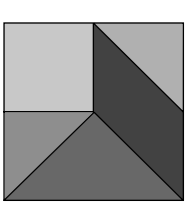
Having children form squares and rectangles from other geometric shapes tests their understanding of the properties of squares and rectangles. You can support your child with simple activities and puzzles around the house, like working with tangrams. A tangram is a puzzle which consists of seven shapes cut from a square that can be put together to make other shapes.



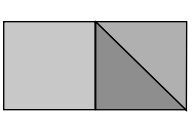
A tangram

- Ask your child to form squares and rectangles using different combinations of the seven pieces.

  For example:



A square formed from 5 pieces

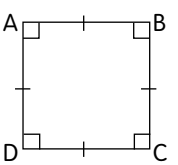


A rectangle formed from 3 pieces

Vocabulary to Practice

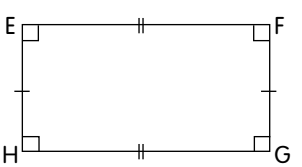
A **square** is a four-sided figure:

- it has four sides of equal length
- its opposite sides are parallel
- each of its angles is a right angle



A **rectangle** is a four-sided figure:

- its opposite sides are of equal length
- its opposite sides are parallel
- each of its angles is a right angle



A square is a special type of rectangle.

Math in Focus

SCHOOL to HOME Connections

Chapter 12 Area and Perimeter

Dear Family,

In this chapter, your child will learn to find the area and perimeter of squares, rectangles, and composite figures.
Some of the skills your child will practice are:

- estimating areas of figures by counting squares
- using formulas to find the area and perimeter of figures

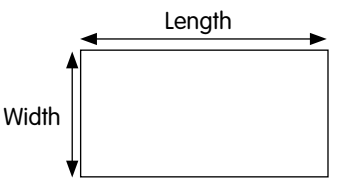
Activity

Finding the area and perimeter of figures has many applications in everyday life. For example, shopping for a new rug, buying a tablecloth, or building a fence around a garden require that you know the dimensions of the material needed. Tell your child to imagine that you plan to buy a new rug for his or her room to cover the entire floor. (Choose a rectangular room.)

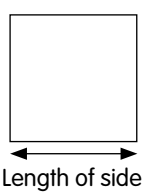
- Ask your child to explain how to find the area of the rug required for the room. (Answer: Find the area of the room.)
- Now, have your child measure the dimensions of the room to the nearest foot and then calculate the area in square feet of the rug required.
- Tell your child you want to put some wallpaper border around the room. Have him or her find the length of wallpaper border required. (Hint: Your child should find the perimeter of the room.)

Vocabulary to Practice

Length and **width** of a rectangle:



Area of rectangle
= Length × Width
Perimeter of rectangle
= Length + Width + Length + Width



Area of square
= Length of side × Length of side
Perimeter of square
= 4 × Length of side

A **composite figure** is made up of different shapes.

Math in Focus

SCHOOL to HOME Connections

Chapter 13 Symmetry

Dear Family,

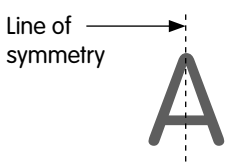
In this chapter, your child will learn about symmetric figures. Work in this chapter will include:

- identifying the line of symmetry of a figure
- relating rotational symmetry to turns
- identifying rotational symmetry
- completing or making symmetric shapes and patterns

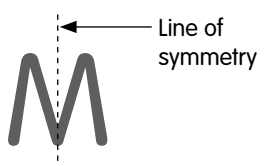
Activity

The concept of symmetry is very important in math and will be used at higher levels for geometry and algebra. To help your child become familiar with the concept of line and rotational symmetry, invite your child to look at the letters of the alphabet.

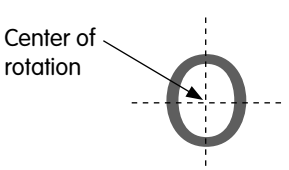
- Ask him or her to identify which letters are symmetric, and say whether the letters show line symmetry or rotational symmetry. Have your child identify the line of symmetry or center of rotation. For example, answers could be:



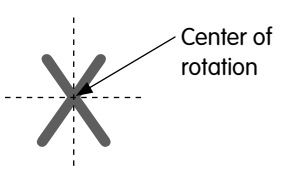
The letter `A´ shows line symmetry.



The letter `M´ shows line symmetry.



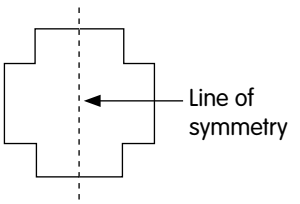
The letter `O´ shows line and rotational symmetry.



The letter `X´ shows line and rotational symmetry.

Vocabulary to Practice

A **line of symmetry** is a line that divides a figure into two congruent parts. The parts match exactly when folded along this line.



A **symmetric figure** is one with two congruent parts that match across the line of symmetry. A figure can have more than one line of symmetry.

A **rotation** turns a figure about a point. This point is called the **center of rotation**.

A figure has **rotational symmetry** if it can be rotated less than a full turn (360°) around a center and looks the same as it did before the turn.

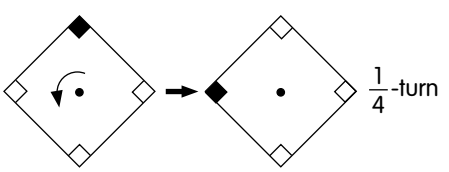


Figure A

Figure A has rotational symmetry.

Math in Focus

SCHOOL to HOME Connections

Chapter 14 Tessellations

Dear Family,

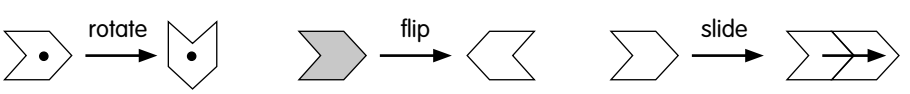
In this chapter, your child will learn about tessellations. Work in this chapter will include:

- identifying the repeated shape in a tessellation
- tessellating shapes in different ways
- modifying shapes to make tessellations

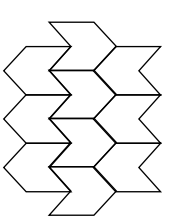
Activity

Identifying and making tessellations by repeating shapes helps students deepen their understanding of patterns and two-dimensional space. Encourage your child to look for tessellations in your surroundings; for example, brick patterns, floor tiling, or gift-wrap designs.

- Ask your child to identify the repeated shape in each of these tessellations. Keep in mind that some tessellations may involve more than one repeated shape.
- Now, have your child copy the repeated shape on a dot paper and try to tessellate the repeated shape in another way.
- Ask your child to use slide, flip, or rotate to explain how he or she tessellated the shape. Example: Repeated shape:

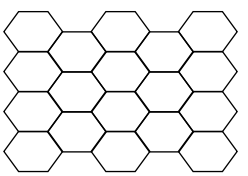


Tessellation Sample:



Vocabulary to Practice

A **tessellation** can be made by using any number of a repeated shape or shapes fitted together to cover a surface without any gap or overlap.



The **repeated shape** in this tessellation is  .

You can **flip**, **slide**, and **rotate** shapes and repeat them to make tessellations.

APPLIED SCIENCE -SPARK

Traditional spark lab activities employ sensors and interfaces to collect and display real-time data in order to understand an idea or phenomenon, such as a technological inquiry process. The upgraded spark activities for the academic year allows the students to build sensor devices using microcontrollers to understand how digital sensors can measure physical data like as sound, light, and temperature. Students can learn about calibration and how physical data can be measured in terms of current or voltage while writing the program to represent the data.

The students engaged in inquiry based learning are taken through a series of stages so that target knowledge and skills are assimilated by the students gradually but systematically:

- Establishing the foundation by Cooperative learning.
- Forming students' team with assigned roles for each member.
- Fostering inquiry skills to plan , organize , self assess learning and presentation strategies.

Importance of SPARK: -

- Students acquire procedure-oriented critical thinking by preparing apparatus and calibrating sensors to measure a physical parameter.
- Experiment with technology to better understand major academic concepts by recording data for further research.
- The ability to record physical parameter data aids the function of technology and automation in everydaylife.
- Students develop logical thinking and decision-making skills by controlling actuators based on sensordata.
- Provides students with many opportunities to engage with equipment, analyze data, communicate, and discuss conclusions.
- The sensors and equipment utilized in the spark lab provide students with real-time experience with technology that is widespread in our daily lives.

Learning Outcomes: -

- Students will be able to develop critical thinking skills- posing good questions, developing experimental strategies, finding and fixing operational errors.
- Students will be able to acquire procedural expertise-calibrating equipment and collecting data.
- Students will be able to acquire proficiency in design and construction-assembling apparatus, following safety measures, mixing solutions.
- Students will be able to develop analytical skills-graphing modeling statics.
- Students will be able to describe what happens to the current of a circuit when either the voltage or resistance is increased or decreased
- Student will be able to explore how sound is produced and propagates in material medium
- Students will be able to build simple circuits , alarm and explore automation and integrated circuits

Exp.No	Topics	Deep Drives	Objectives	Time Frame
1	Fundamentals of Electronics	Voltage, Current, Ohm's law, Resistance	To introduce the role of Voltage, Current & Resistance in the field of Electronics.	SEM - I
2	Experimenting Sound	Decibels, Vibrations, Hertz, Electrical Signals	To understand how the variable resistance can lower the sound from the speaker	
3	Hunting with Light	Resistance, V/R/I, Variable Resistance, Light Intensity	Build a circuit to understand how the Electrical Components measure the Physical parameters.	
4	Alarm Circuit - Pencil Alarm	Integrated Circuit, Alarm IC, Amplifier, Frequency, Amplitude	To explore the working and applications of Integrated Circuit using Alarm IC	
5	Simple Water Alarm - Rain Detector	Conductivity of water, Rain Detector Probe, Salt Water.	To investigate the conductivity of different water samples.	SEM - II
6	Light Controlled Sound	Sound, Vibrations, Amplitude, Frequency, Photoresistor.	Build a circuit to explore the simple automation handled by Electronic Circuits.	
7	Automatic Street Light	Photoresistor, Light Intensity, Light vs Resistance vs Current	Design andimplement Automatic Street Light system with the help of LDR.	
8	Renewable Energy - SOLAR	Photovoltaic Cell, Holes and Electrons, Semiconductor, Photoelectric Effect	Understand how the Light energy is converted into Electrical energy in SOLAR Panel.	

APPLIED SCIENCE -STEM

STEM inculcates **S**cience, **T**echnology, **E**ngineering and **M**athematics, which connects the current and future authentic world. It is an interdisciplinary and applied approach that is coupled with hands on and problem based learning. STEM education can link scientific inquiry, by formulating questions answered through investigation to inform the student before they engage in the engineering design process to solve problems. Problem-based learning is an effective and valuable method that can guide students towards a better understanding of STEM programs.

Enhanced Curriculum:

The STEM activities were enhanced to integrate traditional subject mapping as well as the most recent technical activities conducted by ICT, Artificial intelligence and Machine learning. The students learn the principles of programming and artificial intelligence in ICT, and the STEM activities cover a wide range of AI and coding applications such as robots, automation, and the internet of things.

Artificial Intelligence: AI (Artificial Intelligence) has its own role to play in this STEM education. Students will explore how programs can be developed to categorise images by training, developing and testing a program to identify the characteristics of different objects.

Highlights: -

- In the fourth industrial revolution we move from 'just' the Internet and the client-server model to additional accelerators such as advanced robotics and AI/cognitive which enable Industry 4.0 with automation and optimization.
- Highly upgraded technical activities were introduced in STEM curriculum to prepare our students to meet the current skill set requirement.
- The technical learning in ICT, STEM and Spark labs are properly integrated to bring out the real technical skill sets required to survive in industry 4.0 revolution.

STEM in/through ROBOTICS:

We use robotics as a way to teach interdisciplinary STEM abilities. Robotics is a profession that involves four engineering areas(Electronics, Electrical, Mechanical and Computer science) for its process. STEM Robotics involves engineering, and computer science incorporated with design, construction, operation, application, and computer systems to produce something called robots.

Futuristic Skills

The transferable skills developed through STEM education will help students develop future skills that will empower and foster:

- Critical thinking
- Innovative thinking
- Problem solving
- Design thinking
- Social responsibility
- Productivity
- Leadership
- Collaboration
- Teamwork
- Communication
- Engineering skills
- Inquiry skills

These skills are in high demand in today's globally connected world, with its unprecedented advancements in technology.

Importance of STEM:

- The focus on logical thought processes and problem-solving allows students to develop mental habits that will help them succeed in any field.
- STEM activities challenges students to think critically and come up with their own solutions. As a result, students who receive a quality STEM education are primed to become the next generation of innovators.
- STEM Classes Provide Unique Opportunities for Teamwork, which is one of the most underrated and important drivers of success. Living & working in the modern world usually requires some degree of collaboration, often with a large and diverse group of people.
- A STEM Curriculum Helps Students Develop Project Management Skills
- Recent Events Have Only Made Technology Skills More Important and Building a strong STEM foundation now will set students up for success in 2022 and beyond.

ANNUAL CURRICULUM OVERVIEW - STEM			
Topic	**Deep Drives**	**Objective**	**Time Frame**
Tower crane	Pulley system, Fixed pulley, Movable pulley, Reel	Understanding the working principle of Tower crane and different types of pulley system	SEM-I
Renewable Energy: Land yacht	Area, Wind resistance, Renewable energy, Gearing down, Friction	Investigating a safe cart that is powered by the wind and carries atleast one LEGO weight block	
Powered Machine: Dragster	Gears, Energy, Acceleration, Levers	Making a dragster car go further by applying combination of gears	
Fundamentals of LEGO NXT	Components Names, Logical Connections, SPA	Understanding the fundamentals of LEGO NXT components and programming	
Programming Technique	Logical Connection, Switch Block and Sensor	Programming based on the common palette in Lab view program	SEM-II
Types of turns	Point and swing turn, Steering operation	Learning about the calibration to rotational sensor in degree/rotation	
Touch me not	Calibration and application of values, application of force	Applying turning mechanism of robot to control the motor to attain specific action	
Bump into me	Touch Sensor, Bumped, Pressed, Switch and Loop	Introduction to NXT touch sensor helps the students to understand and create basic obstacle avoider robot.	

WORKSHEET : As they come in for each session, students will do worksheet for the modules practiced in the lab. All these worksheets will be recorded and maintained in the form of log book which will be evaluated.

SPACE SCIENCE & ROCKETRY PROGRAM

Introduction

In the Space Science & Rocketry program provides an opportunity for all students from grade 1 to 5 to learn about aerospace technology, scientific experiments, and space launches with a single aim to promote practical learning and effective application of theory by real world examples. This is exactly how we have designed our teaching module keeping in mind the curiosity, the subject of physics, the application and technical hobby in model rocketry.They will also learn about the history and the future of rockets as we know them here at ISRO, NASA, SpaceX, etc.

Engineering Design Process

The **Engineering Design Process(EDP)** is a series of steps engineers use to guide them in problem solving. Engineers must ask a question, imagine a solution, plan a design, create that model, experiment and test that model, then take time to improve the original – all steps that are crucial to mission success. What makes this guide different from others is?

- There are no specific instructions or "recipes" for building the items;
- There are no given drawings. The emphasis is for students to understand that engineers must "imagine and plan" before they begin to build and experiment.

To successfully complete the **BEST (Beginning Engineering Science & Technology)**Activities, students must draw their ideas first before constructing.

Many of the activities have been adapted from others, and then aligned with the theme of efforts to return to the Moon with a focus on using the Engineering Design Process. Each activity features objectives, a list of materials, educator information, procedures, and student worksheets. When appropriate, the guide provides images, charts, and graphics for the activities. All activities are intended for students to work in teams.

Student success criteria:

- **ASK:** Students identify the problem, requirements that must be met, and constraints that must be considered.
- **IMAGINE:** Students brainstorm solutions and research ideas. They also identify what others have done.
- **PLAN:** Students choose two to three of the best ideas from their brainstormed list and sketch possible designs, ultimately choosing a single design to prototype.
- **CREATE:** Students build a working model, or prototype, that aligns with design requirements and that is within design constraints.
- **TEST:** Students evaluate the solution through testing; they collect and analyze data; they summarize strengths and weaknesses of their design that were revealed during testing.
- **IMPROVE**: Based on the results of their tests, students make improvements on their design. They also identify changes they will make and justify their revisions.

Implementation Process:

Bottle-rocket Engine Thrust Acquisition (BETA) System - Student teams will collect both theoretical and experimental data for their rockets. The theoretical data will be collected using our uniquely designed BETA system. The BETA System uses a force sensor coupled with signal conditioning and sophisticated programming to collect data from the rocket's engine. This is very similar to how ISRO, NASA & SpaceX performs rocket engine testing. The real-time data is collected using a flight computer on board the rocket during experimental launches.

The project is completed in three stages:

1. Design Process
2. Launching
3. Landing

Annual Curriculum Plan			
Module	**Unit**	**Learning Outcomes**	**Time Frame**
1	a) Introduction to Model Rocketry & Engineering	Students will be introduced to statics and dynamics, free-body diagrams, combustion and thermodynamics to gain an understanding of the forces needed to lift rockets off the ground.	SEM – I
	b) Parachute Area Versus Drop Time	Students will be able to study parachute area and its relationship to drop time.	
	c) Balloon Staging Rocket	Students will be able to simulate a multistage rocket launch by using two inflated balloons that slide along a fishing line by the thrust produced from escaping air	
	d) Heavy Lifting: Payload Carry	Students will be able to construct balloon-powered rockets to launch the greatest payload possible to the classroom ceiling.	
2	e) Design Squad Challenge: Aqua-Rocketry (two Stage) without safe landing	Students will be able to design and build a water bottle rocket that flies straight and in the desired direction.	SEM – II
	f) Testing: Aqua-Rocketry (two Stage)	Students will be able to design and build a water bottle rocket that flies straight and in the desired direction.	
	g) Countdown: Improve a Rocket	Students will be able to step in the design process as they created their rockets, suggesting further improvements in pre-testing.	
	h) Engineering Showcase: Liftoff!	Students will be able to share their findings and offering advice to other groups, just as real engineers do, can be helpful. Engineers have to improve a design many times before it is complete.	

ANNUAL CURRICULUM OVERVIEW – ICT

Mission:

Our Mission is to combine Education and Technology to provide children with the core computing skills that will best prepare them for the future.

Technology Integration:

Technology provides students with easy to access information, accelerated learning, and fun opportunities to practice what they learn. It enables students to explore subjects and deepen their understanding of difficult concepts. Through the use of technology inside and outside the classroom, students can gain technical skills necessary for future occupations.

ICT skills: Data Analysis, Database Management and Programming skills.

Learning Outcome:

Students will be able to:

- design a table, choose the data type, add record, type, edit, format in MS Access
- calculate and perform arithmetic functions such as addition, subtraction, multiplication, division and average of values convert the data into a graphical representation using MS Excel
- apply the formatting techniques to design a webpage using Code Dragon.
- Understand how ML systems are trained, used and some of the real-world implications of AI applications

Application of Skills:

Project Based Learning is a unique approach for teaching technology skills. With project-based learning students complete technology projects that focus around problem solving tasks. Students learn technology skills gradually as they complete activities such as creating Spreadsheets, Databases, Webpages and Graphic designs.

Module	Objective	Focus	Integration	Software Applications	Technical skills	Time Frame
Enumerate	Students analyze financial data and use basic functions to manipulate the data for creating a chart.	About MS Excel Basic Mathematical Functions Creating and inserting a chart Formatting techniques	Math	MS Office Excel	Spreadsheet	SEM 1
Basic Internet & Block-based learning	Students will learn to build a website using code dragon and the block programming to understand the working of web pages in browsers.	Introduction to Web Page First text Adding images Tables List	Science, Math	Code Dragon	Programming	
Machine Programming	Students will learn to train the computer to recognize face, text and voice using the Machine Learning for kids' tool by using block programming and some of the real-world implications of AI applications.	Text / Face recognition Sound recognition Image classification Number detection	Social Science, Language, Art	Machine Learning for Kids	AI & Block Based Programming	SEM 2
Database	Students will learn to create Table, add Records and Fields, and format them using the MS Access software	About MS Access Table creation Records and fields Datatypes Formatting techniques Creating forms	Science, Math	MS Office Access	Database Management Systems	

Physical Education (PE)

PE involves human movement in relation to the physical environment. It is concerned with learning about physical activity and through physical activity. PE offers students the opportunity to discover the capabilities of their body and the variety of ways in which they are able to use their body to solve problems, address physical challenges, function as part of a group, manipulate equipment or apparatus and express themselves in a range of situations. Through movement, students develop personally, socially, emotionally as well as physically. They learn to understand and accept their own strengths and weaknesses in physical fitness sessions.

Students will be exposed to a number of activities that will develop motor skills, which may later be applied in various physical activities within and beyond the school setting. They will become aware of a number of positive leisure-time pursuits. In PE , students are exposed to a wide range of physical and health-related activities and experiences so that they can make informed choices throughout their lives.

Students are encouraged to participate in an active lifestyle and recognize the ways in which exercise affects their body and their overall fitness or well-being, developing an understanding of the role of physical activity in a healthy lifestyle. Students also come to recognize that PE takes place within a cultural context that should be appreciated. PE offers students the opportunity to set themselves physical objectives, gaining pleasure or satisfaction from accomplishing these physical tasks or challenges and reflecting on their performance.

The PE component of the curriculum also provides opportunities for students to:

- learn about body control and spatial awareness
- master new skills and techniques in a variety of physical activities
- manipulate equipment or apparatus
- recognize the importance of fair play
- understand how strategies can assist them when participating in physical activities
- use cooperative behaviours in order to function as part of a group or team
- use proper safety precautions while engaged in physical activities

ANNUAL CURRICULUM OVERVIEW – PHYSICAL EDUCATION		
Discipline	Game	Objectives
Physical Education	**Soccer**	Receiving ball (controlling the ball at speed)
		Heading
		Dribbling (drills, basic dribbling, intermediate moves and advanced)
		Passing
		Throw-in
	Swimming	Breaststroke
		Backstroke
		Butterfly
		Freestyle
	Track & Field	Sprints
		Hurdles
		Relay
	Badminton	Straight line footwork, Forehand serves, clears
		Back hand serves, Service returns, Drives
		Drops & Net lifts

Performing Arts (PA)

Arts are viewed by the PYP as a form of expression that is inherent in all cultures. They are a powerful means to assist in the development of the whole child, and are important for interpreting and understanding the world. Arts in the PYP promote imagination, communication, creativity, social development and original thinking.
Learners of the arts are both active and reflective. As well as being actively involved in creating and performing, students reflect on their work and on the work of others. Collaborative activities with other students in their own classes or other classes are essential; inquiring, working and reflecting with other students (older or younger) in a two-way learning process.

The PA component of the curriculum also provides opportunities for students to:

- develop proficiency as musicians, actors and visual artists
- acquire audience skills such as listening and viewing responsively
- interpret and present their own or others works to a range of audiences
- evaluate the different roles of artists in society such as to entertain, provoke debate or challenge views and perceptions
- create and critique plays, compositions and artwork using a selection of tools and techniques
- express feeling, ideas, experiences and beliefs in a variety of ways
- improve coordination, flexibility, agility, strength and fine motor skills.

Drama perspective

Drama includes the development of creative skills, verbal and non-verbal expression, an awareness of the perspectives of others, and aesthetic appreciation. Drama enables all students to communicate in powerful ways that go beyond their spoken language ability. Through drama, students can begin to construct an understanding of their community, their environment and their own feelings and emotions. They will also have opportunities to work cooperatively to put together a performance and to experience situations from different viewpoints. Indian drama has rich variety of various forms. With TIPS, students explore elements of drama as the very part of their inquiry, through the ‘Reader’s Theatre’.

Music perspective

Music includes the study and exploration of sound and the expressive use of musical elements. Students will join together in musical activities using their voices, bodies and simple instruments to develop concepts about sound and musical awareness. Students will be exposed to and work on, a wide range of musical stimuli. They will participate both individually and in groups. Students will read, develop and record musical ideas in composition. They will develop an awareness and appreciation of music from a range of times, places and cultures. The development of listening skills will be constantly reinforced through live and recorded performances. Students will have opportunities for practice and consistent exposure to music in order to produce mastery and lifelong appreciation.

Western Dance

Dancing is the act of moving the body in rhythm, usually in time to music. It seems natural for people to express themselves through rhythmic movement. Young children jump up and down when they are excited and sway gently when content or at rest. Dancing is both an art form and a form of recreation. Dance as an art form may tell a story, set a mood, or express an emotion. Some dances consist of symbolic gestures that tell a story completely through movement. As recreation, dancing has long been a people's source of fun, relaxation, and companionship.

Health benefits

Dancing can be a way to stay fit for people of all ages, shapes and sizes. It has a wide range of physical and mental benefits including:

- Improved condition of the heart and lungs
- Increased muscular strength, endurance and motor fitness
- Weight management
- Stronger bones and reduced risk of osteoporosis
- Better coordination, agility and flexibility
- Improved balance and spatial awareness
- Greater self-confidence and self-esteem
- Better social skills.

ANNUAL CURRICULUM OVERVIEW – Performing Arts				
Discipline	**Music**	**Classical Dance**		**Western Dance**
		Theory	**Practical**	
Performing Arts	Including different ragas Pitches Practicing different tempos & rhythm Different types of thalam Short songs	Asamyuktha Hasthas and Meaning	Basic posters Steps along with hand movements Bhavam in detail Combination of steps Eye movements & neck movements basics	Basic foot works Combination of foot work and beat Basic flexibility exercises Free style combination of steps Floor steps and balancing Basics of urban dance, hiphop, contemporary, bollywood and folk Body and face expressions Choreography knowledge

*** The above is the planned schedule. There may be alterations which will be informed through circulars**