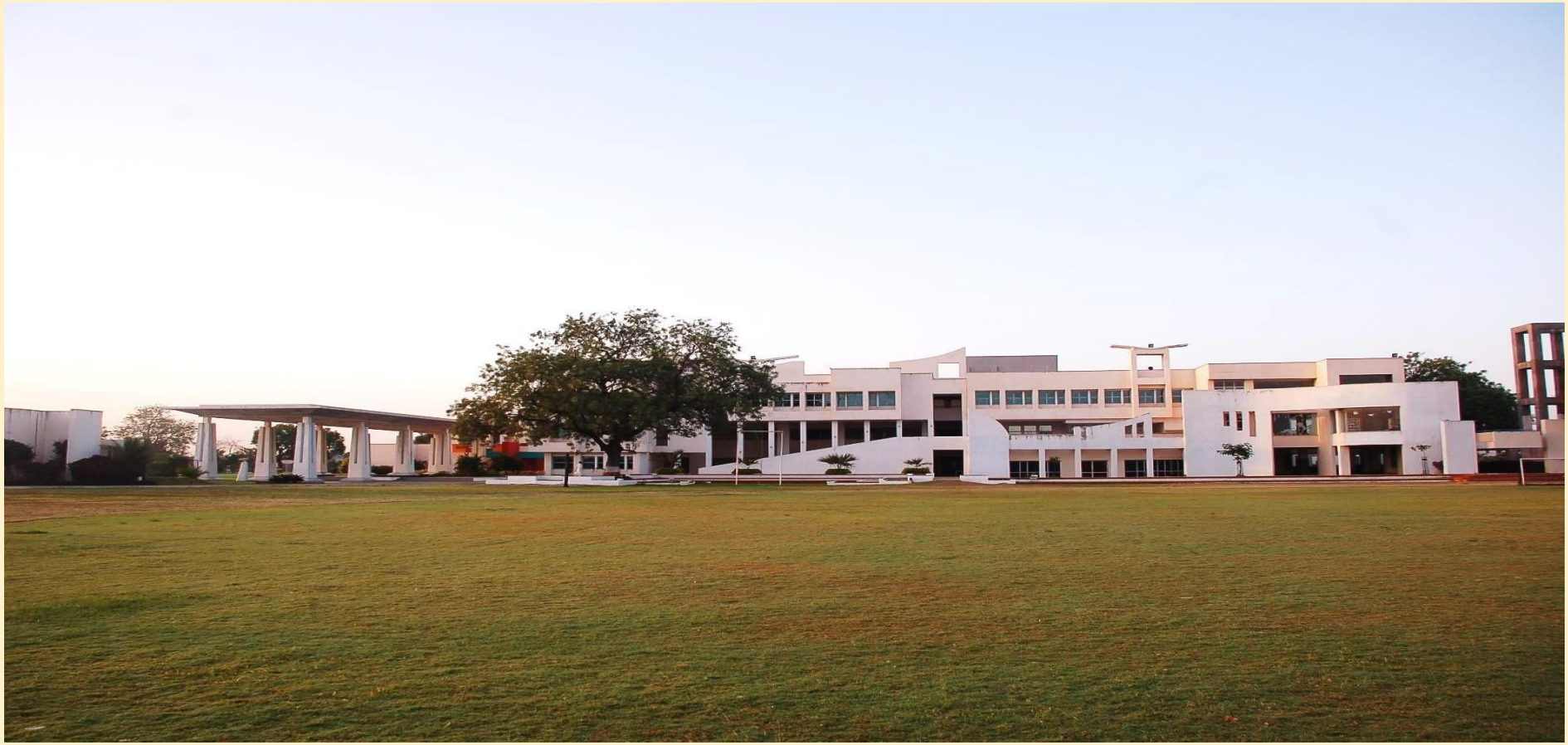
NISV
Navrachana International School, Vadodara
नवरचना
Educating - Empowering - Enlightening

MYP SUBJECT GROUP OVERVIEW (SGO)
DIGITAL DESIGN



MYP YEAR 1 – DIGITAL DESIGN							
Unit Title	**Key concept**	**Related Concept (s)**	**Global Context**	**Statement of Inquiry**	**MYP subject group objective(s)**	**ATL Skills**	**Content (topics, knowledge, skills)**
Digital Document Production MS Word Advanced Features 40 sessions @ 40 minutes each	Communication	Innovation	Personal and cultural expression Exploration – Artistry, Creation for designing a story book	Communication plays key role for any innovation giving the end users an opportunity to express their ideas	A – Inquiring and Analyzing B – Developing Ideas C – Creating the solution D – Evaluating	Skill: Communication Research Clusters: Information Literacy Media Literacy	1 Organize page layout ● Page size, orientation, margins ● No. of columns, column width, spacing 2 Format Text ● Line spacing, Paragraph spacing ● Tabulation (left, right, center, decimal) ● Indented and hanging paragraphs ● Text enhancement – bold, italic, underline, superscript, subscript, changes in case ● Bulleted and numbered lists ● Corporate House Styles 3 Find and Replace ● Including matching case, whole words 4 Navigation ● Add and delete bookmarks / hyperlinks 5 Pagination ● Page, section, column breaks 6 Printing ● Printing All Pages, Custom Print ● Print both sides, gutters ● Collated and uncollated

							7 Adding Tables 8 Inserting Graphic Objects 9.Check Spelling, Grammar and Readability 10 Saving Document in other formats 11 Password protection 12 Use Research tools 13 Check Accessibility 14 Editing techniques ● Highlight, delete, move, cut, copy, paste, drag and drop ● Wrap text around table, chart or object ● Place objects into the document from a variety of sources including text, image, screenshot, shapes **Connection** Language & Literature Creating Reports **Service As Action** Students will design story books, invitations for various school events, project reports in various subjects.

Unit Title	Key concept	Related Concept (s)	Global Context	Statement of Inquiry	MYP subject group objective(s)	ATL Skills	Content (topics, knowledge, skills)
Programming Fundamentals QBasic 40 sessions @ 40 minutes each	Communities	Perspective	Scientific and Technical Innovation Exploration – Products, processes and solutions for automating repetitive tasks	Communities can have many different perspectives that influence the way the ideas develop and new discoveries are made.	A – Inquiring and Analyzing B – Developing Ideas C – Creating the solution D – Evaluating	Skill: Communication Research Thinking Clusters: Information Literacy Media Literacy Critical Thinking	1 Components of a QBasic Window 2 Working with QBasic ● Writing / Editing program ● Compilation / Execution ● Saving / Opening ● Exiting QBasic 3 Programming Fundamentals ● Character Set ● Constants ● Variables ● Keywords ● Naming Rules ● Comment entries ● Input statements ● Output statements ● Datatypes 4 Conditional Statements ● Programs related to conditional statements 5 Looping Statements ● Programs related to looping statements 6 Mathematical Functions 7 Reading and Wring Files **Connection** Any automation processes **Service As Action**

							Students will design simple projects that helps school, businesses of their kith and kin to perform repetitive tasks that involves calculations.

MYP YEAR 2 – DIGITAL DESIGN							
Unit Title	**Key concept**	**Related Concept (s)**	**Global Context**	**Statement of Inquiry**	**MYP subject group objective(s)**	**ATL Skills**	**Content (topics, knowledge, skills)**
Website Authoring HTML CSS 40 sessions @ 40 minutes each	Communication	Adaption, Invention	Scientific and Technical Innovation Exploration – digital life, virtual environments and the information age	The innovative invention namely Internet has evolved as a platform mainly focusing on communication and sharing of information.	A – Inquiring and Analyzing B – Developing Ideas C – Creating the solution D – Evaluating	Skill: Communication Research Thinking Clusters: Information Literacy Media Literacy Creative Thinking	1 Content Layer – to create structure of a web page 2 Presentation Layer – to display and format elements 3 Behavior layer – scripting languages – controlling elements 4 head section 5 body section 6 tags and attributes 7 Hyperlinks 8 Inserting tables, images, audio and video 9 Creating lists 10 Bookmarks within a webpage 11 send mail to a specified email address 12 to open in a specified location (the same window, a new window, with a window named as specified) 13 Creating Anchors 14 Relative file path and absolute file path 15 Function of metatags including to define: the charset, keywords for search engines 16 Create the presentation layer of a web page 17 background properties including colour, images 18 font properties 19 table, table row, table header and table data properties including size, background colour, horizontal and vertical alignment, spacing, padding, borders: including

							collapsed, colour, thickness, visible/invisible 20 Create external styles to be tagged in a web page including h1, h2, h3, p, li **Connection** All Subjects - Accessing information about any subject with ease **Service As Action** Students will design simple websites, blogs for various scenarios / businesses / organizations

Unit Title	Key concept	Related Concept(s)	Global Context	Statement of Inquiry	MYP subject group objective(s)	ATL Skills	Content (topics, knowledge, skills)
Animations – Tweening and Publishing ADOBE FLASH 40 sessions @ 40 minutes each	Creativity	Innovation Perspective	Scientific and Technical Innovation Exploration-Digital life, Virtual environments and the Information Ages and solutions for creating animated movie/scene.	The innovation in information age can be done with creativity using new perspectives focusing on digital life and virtual environment important for community and milieu.	A – Inquiring and Analyzing B – Developing Ideas C – Creating the solution D – Evaluating	Skill: Communication Research Thinking Clusters: Information Literacy Media Literacy Creative Thinking	1 Students will learn and understand Animation tools and will design an animated movie using an animation software. 2 Introduction to Animation - Flash development environment Creating Flash animations ¨ Layers ¨ Timelines ¨ Creating animation ¨ Adding sound Publishing animations on Web pages Using Flash to create embedded multimedia 3 What Can a Flash Animation Include? Vector-based graphics ¨ Has the ability to "tween" Automatically generates fill-in frames between a beginning and an ending image Bitmap-based graphics ¨ Can be moved & rotated Embedded fonts Can be moved, resized, skewed, rotated, recolored Sound ¨ Can synchronize sounds with animation frames. 4 Flash Environments Flash authoring environment ¨ Design environment (graphics tools) ¨ Scripting environment (create program code) Flash Files ("Movies") Authoring file ¨.fla extension ¨ This file creates the design version of your animation Published file ¨.swf extension ¨ Can't be edited ¨ Can play on most operating systems ¨ Fairly small files 5 Topics Introduction to Flash and animation - The Flash development environment Creating Flash animations ¨ Layers ¨ Timelines ¨ Creating animation ¨ Adding sound Publishing animations on Web pages Using Flash to create embedded multimedia Flash Development Environment Properties Panel Toolbox "Stage" Layers/Timelines 6 Working with Layers, Active layer, Hide layer, Lock layer, Insert layer, Delete layer Drawing with Flash Timelines Creating Flash

							Animation Creating a Shape Animation Create a new layer 7 Create the layer Create the keyframes Create the tween Create the initial shape with the ending keyframe selected, create the final shape Creating a Motion Tween Symbols Symbol: reusable object ¨ Save an animation image as a symbols Saving Symbols 8 Publishing Save distribution files ¨ File – Publish Preview – Flash or HTML to preview ¨ File – Publish Settings to view file types.swf,.html,.gif, etc. Select desired settings ¨ File – Publish to actually save files Use HTML to create a new HTML document **Connection** All Subjects **Service As Action** Students will design animations to demonstrate the basic of concepts from various subjects.

MYP YEAR 3 – DIGITAL DESIGN							
Unit Title	**Key concept**	**Related Concept(s)**	**Global Context**	**Statement of Inquiry**	**MYP subject group objective(s)**	**ATL Skills**	**Content (topics, knowledge, skills)**
Spreadsheet Analysis / Data Models MS EXCEL 40 sessions @ 40 minutes each	Systems	Function Innovation Collaboration	Scientific and Technical Innovation Exploration – Systems, Models, Methods, Processes and solutions	Collaboration leads to better creation of systems and products scientifically.	A – Inquiring and Analyzing B – Developing Ideas C – Creating the solution D – Evaluating	Skill: Research Self-management Clusters: Information Literacy Organization Skills Reflection Skills	1 Moving around the Worksheet / Spreadsheet, Rows, Columns, Cells 2 Entering, Editing and Formatting Data 3 Entering, Editing and Formatting Data - Continuation 4 Autofill and Custom Lists 5 Managing Worksheets 6 Changing Rows and Columns 7 Formatting Numbers 8 Understanding Formulae 9 Common Formulae 10 Relative and Absolute References 11 Mixed References 12 Changing Views 13 Conditional Formatting 14 Outline, Sort, Filter and Subtotal 15 Cell Ranges - Range Names 16 Logical Functions 17 Text Functions 18 Date and Time Functions 19 Introduction to Charts 20 Formatting Charts 21 Adding Graphics to Spreadsheets 22 Lookups - Exact match, appropriate match 23 Pivot Tables 24 Protecting Data 25 Printing

							Connection Mathematics, Accounts, what-if-analysis **Service As Action** Students will create data models that can help teachers to calculate / analyze the student performance in examinations and many more.

Multimedia Editing Tools GIMP OPENSHOT AUDACITY 40 sessions @ 40 minutes each	Communi cation	Collaboration	Scientific and Technical Innovation Exploration - The biological revolution, Adaptation, Digital life, Virtual environments and the Information Age	Technology can be a tool to communicate effectively and work collaboratively	A – Inquiring and Analyzing B – Developing Ideas C – Creating the solution D – Evaluating	Skill: Research Communication Thinking Clusters: Information Literacy Media Literacy Creative Thinking	1 GIMP ● Using Tools in GIMP ● Layer Masks ● Filters ● Morphing ● Removing parts of an image ● Editing / Removing Background 2 OPENSHOT ● Import Photos & Music ● Arrange Photos on Timeline ● Add Music to Timeline ● OpenShot Tools ● Properties, Transitions, Overview, Direction, Cutting & Slicing, Mask ● Export your Video ● Editing / Removing Background 3 AUDACITY ● Editing an Audio file ● Mixing Voice with Background Music ● Recording Multitrack overdubs

							● Vocal / Noise Removal ● Duplicating, cutting, blending and grafting different sound documents together **Connection** Visual Arts, Performing Arts **Service As Action** The students will create a short video where they will convey a message of staying safe. They will work collaboratively using effective communication skills and make use of technology at its best. Ultimate product will be shared during school morning assembly which will fill everyone with hope, renew faith in humanity and have faith in the almighty. A powerful message of never giving up and God's healing hand is a blessing on all mankind across the world. Students also can create various phenomena using digital multimedia editing tools.

MYP YEAR 4 – DIGITAL DESIGN							
Unit title	**Key concept**	**Related concept(s)**	**Global context**	**Statement of inquiry**	**MYP subject group objective(s)**	**ATL skills**	**Content (topics, knowledge, skills)**
Types and Components of Computer Systems 30 sessions @ 40 mins each	Systems	Ergonomics Function	Fairness and development - Exploration- imagining a hopeful future by looking at the old and new technological inventions.	Systems that are designed to meet an individual's ergonomic requirements can increase their ability to function within the world.	Objective A:Inquiring and analysing Objective B: Developing Ideas	Skill: Research Clusters: Information Literacy	Candidates should be able to: a) describe the difference between hardware and software; b) identify the main components of a general-purpose computer: central processing unit, c) State the purpose of main/internal memory (including ROM and RAM), input devices, output devices and secondary/backing storage; e) identify operating systems, including Graphic User Interface, command line interface; and types of Softwares f) Identify different types of input devices and their functions g) Analyse a range of sensors and suggest the one appropriate for the given system h) Identify different types of Storage devices and Media and explain its need to the client/organisation and justify it i) Identify different types of output device and explain its usefulness to the client/organisation and justify it
Innovation in Design and Technology to Computer Devices	Developmen t	Innovation, Function, Resource, Adaptation tion	Scientific and technical innovation Exploration Systems, Process	Innovation in technology can contribute to development in various fields by providing solutions by	A - Inquiring & Analysing B-Developing Ideas C- Creating Solutions D-Evaluating	Communication Skills Research Skills (Media Literacy, Information Literacy)	1-Input Devices- keyboard, Mouse, Scanners, Tracker ball, Sensors….. 2-Processing Devices from Super Computers to small low Power consumption devices like Smart Phones & Microcontrollers 3-Storage Devices and Media

45 sessions @ 40min			and Solution Digital Life	automating processes.		Thinking skills(Creative)	4-Primary Memory (RAM,ROM) 5-Secondary Devices- HDD,SDD,CD,DVD,CD-RW ..... 6. Output Devices - Printers, Monitors, Projectors
Data Representation & Binary Logic 25 sessions @ 40 min.	Development	Systems	Forms	Systems are designed to store and process data in Binary form and communicate with the user in decimal form.	Objective C: Creating the Solution Objective D: Evaluating	Thinking Skills (Critical)	Students should understand **1. Data Representation** in a- binary notation & to convert denary numbers to & from binary b-Hexadecimal notation & to Hexadecimal integers to & from Binary & Denary c-Significance of Hexadecimal in Computer System **2- Binary Logic** a-define the function of AND, OR, NOT, NOR and XOR Gate be able to produce b-the truth table for the Logic Gate c- a Logic Gate from a Truth Table d-Logic Circuit for a given problem e- Logic circuit for a logic Statement
Data Integrity & Security 30 sessions@ 40 min	Communities	Interaction and consequences	Exploration Authority, Security and Freedom	3. Secure and free transmission of data among communities without fear of unauthorised access	Objective A : Inquiring and Analyzing Objective C: Creating the Solution	Thinking Skills Research Skills Communication Skills	students should understand that 1. the data needs to kept safe a. from accidential damage. b. from malicious actions 2. how to keep the data safe when storing, transmitting, including use of passwords, firewalls, security protocols. 3. online systems need to be kept safe from attacks.

MYP YEAR 5 – DIGITAL DESIGN							
Unit title	**Key concept**	**Related concept(s)**	**Global context**	**Statement of inquiry**	**MYP subject group objective(s)**	**ATL skills**	**Content (topics, knowledge, skills)**
Programming logic Building using Algorithm 50 sessions @ 40 min	Communications	Evaluation and Function	Identities & Relationship Exploration: Identity formation, Roles and Models	Developing & Evaluating the logical & functional relationship between Data & Process Identifies to design a Software Solution	A- Inquiring and Analysing B-Developing Ideas C:Creating Solutions Strands	Thinking Skills-Critical Research information Literacy	1-Introduction to Pseudocode 2-design tools for representing logic for System development 3-Pseudocode - A simple method of showing an Algorithm(set of steps to complete a given task) 4- Reserved words & Statement in pseudocode (a)← for assignment (b) Conditional Statements 5- Developing & Representing logical solution by connecting Flowchart symbols for different processes or problem statement 6- Test data , v) Validation (a) Range Check (b) Length check (c) Type check (d) Character check (e) Format check (f) presence check (g) check digit 7- Verification (a) Double entry (b) Screen/Visual check (c) Parity check (d) Checksum 8-Using Trace Table (a) Identifying & Correcting Errors

Database Concepts 25 sessions@ 40 minutes	Systems	Evaluation & Function	Scientific and technical innovation Exploration: Systems, Models and Methods, Products, processes and solutions	Applying Scientific & Programming techniques for Developing & Evaluating the functionality of digital System.	C-Creating Solutions D-Evaluation	Thinking Skills Critical Thinking	Students should be able to: understand that database can be paper based or electronic what database are used for understand what is meant by database structure including tables, records and fields understand what is meant by single table(flat file) database understand different data types and how to choose suitable data type for a filed understand what is meant by primary key and how to choose a suitable primary key understand what is meant by query and how to perform query by example understand the data in the database is only of use if it is reliable be able to explain the consequences of unreliable data in database
Introduction to Programming concepts in Python 40 sessions@ 40 min.	Systems	Functions, Forms, Perspective	Identities and relationships : Consciousness and mind	Designers adapt the form in which information is communicated in order to make it accessible to the end-user.	A-Inquiring and Analysing B-Developing Ideas C:Creating Solutions Strands	Communications Subject specific skills: knowledge and understanding	Students should be able to: variable, constant, operators. Programming Statements ◦ Statement and Keywords ◦ Simple Statements -assignment, call, return, expression etc. ◦ Compound statements - ◦ Loop controlled by condition ◦ Loop controlled by count variable • · Including Comments in a program • · Using Operators – Arithmetic, Logical, Conditional. Analyse the use of variables, constants and operators in algorithms. Problems involving Selection/decision making ◦ o Construct algorithms using branching. • Problems involving looping ◦ o Construct algorithms with loops /repetition Describe the characteristics and applications of an array • Construct algorithms to declare and initialize an array

							• Construct algorithms to access an array using subscripts and loops

The Navrachana logo comprises three leaves of the Bodhi tree under which Lord Buddha attained enlightenment. The leaves signify the three vital facets of the child's physical, mental-emotional growth, and development. This translates as Navrachana, which is "New Creation".

The emblem thus symbolizes the aim of the school, which is to build, nurture, and groom these three qualities, to create well-balanced and multifaceted individuals who consistently strive to realize their true potential