



ENTREPERNEURSHIP MINDSET & DESIGN (EMD) OVERVIEW GRADES 9 AND 10

Delhi Board of School Education (DBSE)

Directorate of Education, Government of National Capital Territory of Delhi

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ABBREVIATIONS AND ACRONYMS

| | |
|-------|--|
| ASoSE | Ambedkar School of Specialised Education |
| DBSE | Delhi Board of School Education |
| TA | Term-end Assessment |
| IA | Internal Assessment |
| IB | International Baccalaureate |
| IGCSE | International General Certificate of Secondary Education |
| KP | Knowledge Partners |
| MYP | Middle Years Programme |

DRAFT

1. Introduction to Entrepreneurship Mindset & Design

1.1. What is Entrepreneurship Mindset?

Entrepreneurial mindsets enable people to bring about change and "increase value" in the field of their choice. Entrepreneurial mindsets are relevant in all types of work, and in all spheres of life and can enable students to realise their full potential in whichever career-path they wish to pursue. For a person employed in a company, such mindsets enable him or her to perform at a higher level and make rapid career advancement. For a person seeking self-employment, such mindsets enable him or her to create a business from scratch and create jobs. For a person joining a family business, such mindsets enable him or her to expand and flourish the business.

While entrepreneurship is usually looked at in a business context, entrepreneurial people are found in diverse fields. People like E. Sridharan, the Metroman, Murugan, the Padman and Anna Hazare, an anti-corruption activist, have been highly entrepreneurial. That is, they have brought about major changes and also created tremendous value. These entrepreneurs or intrapreneurs are willing to dream and pursue it with zeal and perseverance; they are embodiments of entrepreneurial mindsets.

1.2. What is Design?

Design is the process of transformation to bring about a desired change. The field of Design, and the resultant development of new technologies, has given rise to profound changes in society: transforming how we access and process information; how we adapt our environment; how we communicate with others; how we are able to solve problems; how we work and live. In the case of E. Sridharan, the design was about the metro system in Delhi, For Murugan, it was about designing a low-cost sanitary napkin machine and grassroots mechanisms for generating awareness around menstrual hygiene. For Anna Hazare, it was about creating a people's movement against systemic corruption.

Design starts with an initial set of thoughts, exploring the possibilities and constraints associated with products or systems, allowing them to redefine and manage the generation of further thought through prototyping, experimentation, and adaptation. Design is the link between innovation and creativity. It is human-centred and focuses on the needs, wants and limitations of the end user. By following time-tested, rigorous processes, everyone can achieve competent design. The IB Design Cycle represents the use of such well-established design principles and processes. It gives a detailed breakdown of the four phases of inquiring and analysing, developing ideas, creating the solution, and evaluating as shown below. The summative assessment criteria based on these are enumerated in the section on Assessment.

Figure 1: The IB Design Cycle



1.3. Importance of Entrepreneurship Mindset & Design

Successful entrepreneurs leverage both design thinking and human-centred design principles in order to drive towards growth and achieve their long-term goals. They combine novel ideas that address an unmet need or challenge and bring value to a large total addressable market. More importantly, they recognize that applying design thinking is not a once-and-done exercise, but a mindset that will arm them for long-term success. Beyond the tools and techniques of design thinking is the mindset of being passionately focused on human-centred design, a mindset that is at the very foundation of successful entrepreneurs.

Similarly, an entrepreneurial mindset adds tremendous value to an otherwise outstanding designer. While a designer can create great solutions for a given problem, it is the entrepreneurial mindset that helps the designer in dreaming big and identifying an opportunity that is worth pursuing for financial gain or social impact. And when the designer has a solution for the associated target group, it is the entrepreneurial mindset that relentlessly perseveres to actually realise the intended impact at scale despite various hurdles and adversities.

Hence this curriculum aims at training students in both design thinking and entrepreneurship mindset.

1.4. What Problems to Solve and What Tools to Use?

The Design Cycle provides a rigorous problem-solving approach, and the entrepreneurship mindset provides the driving force, the students need guidance regarding what problems to address and what tools to use. For the purpose of this curriculum, the following choices have been made:

- The **Sustainable Development Goals (SDGs)** provide a set of problem areas for the students to select from after contextualising to the associated problems seen in his or her community. Where

needed, specific problem area is provided so that the students can focus on specific aspects of the design cycle.

- The need for **Digital Empowerment & Engagement** implies that students need to become intimately familiar with practical applications using digital tools and cloud apps in a few common categories. This curriculum will provide ample opportunities to the students for applying these tools.

1.5. Aims of Entrepreneurship Mindset & Design

The primary objective of this curriculum is to inculcate the entrepreneurial mindset and design thinking practice among students so that they can confidently take charge of their career-paths and are able to systematically and innovatively solve any and all problems that they face in day to day life.

The entrepreneurial mindset will enable the students to dream big, take risks, try new & challenging things, identify opportunities in their surroundings and pursue them with zeal, while bouncing back from failures and persevering relentlessly.

In their pursuit of opportunities, using the design thinking practice, students will become outstanding problem solvers with:

- a strong foundation of knowledge, understanding and skills in applying the design cycle,
- innovative thinking and regular practice of reflection, coming out of inhibitions and preset biases
- practice in applying a wide range of technologies effectively to access, process and communicate information, model and create effective solutions,
- respect for others' viewpoints and appreciate alternative solutions to problem
- appreciation of the elegance and power of the design process
- integrity and honesty, taking responsibility for their own actions and developing effective working practices.

In addition, the students are expected to become familiar with many problems in their communities and lives associated with some of the Sustainable Development Goals (SDGs) and various digital tools and cloud apps useful in daily lives.

1.6. Objectives of Entrepreneurship Mindset & Design

For the summative assessment purpose, this subject leans on the objectives of MYP design that encompass the factual, conceptual, procedural and metacognitive dimensions of knowledge.

Each objective is elaborated by several strands; a strand is an aspect or indicator of the learning.

These objectives relate directly to the assessment criteria found in the "Assessed" section.

Together these objectives reflect the Design related knowledge, skills and attitudes that students need in order to engage with and solve complex, real-life problems in both familiar and unfamiliar contexts; they represent essential aspects of design methodology.

A INQUIRING AND ANALYSING

Students are presented with a design situation, from which they identify a problem that needs to be solved. They analyse the need for a solution and conduct an inquiry into the nature of the problem.

In order to reach the aims of design, students should be able to:

- i. explain and justify the need for a solution to a problem for a specified client/target audience
- ii. identify and prioritize the primary and secondary research needed to develop a solution to the problem

- iii. analyse a range of existing products that inspire a solution to the problem
- iv. develop a detailed design brief which summarizes the analysis of relevant research.

B DEVELOPING IDEAS

Students write a detailed specification, which drives the development of a solution. They present the solution.

In order to reach the aims of design, students should be able to:

- i. develop a design specification which clearly states the success criteria for the design of a solution
- ii. develop a range of feasible design ideas which can be correctly interpreted by others
- iii. present the final chosen design and justify its selection
- iv. develop accurate and detailed planning drawings/diagrams and outline the requirements for the creation of the chosen solution.

C CREATING THE SOLUTION

Students plan the creation of the chosen solution and follow the plan to create a prototype sufficient for testing and evaluation.

In order to reach the aims of design, students should be able to:

- i. construct a logical plan, which describes the efficient use of time and resources, sufficient for peers to be able to follow to create the solution
- ii. demonstrate excellent technical skills when making the solution
- iii. follow the plan to create the solution, which functions as intended
- iv. fully justify changes made to the chosen design and plan when making the solution
- v. present the solution as a whole, either:
 - a. in electronic form, or
 - b. through photographs of the solution from different angles, showing details.

D EVALUATING

Students design tests to evaluate the solution, carry out those tests and objectively evaluate its success. Students identify areas where the solution could be improved and explain how their solution will impact on the client or target audience.

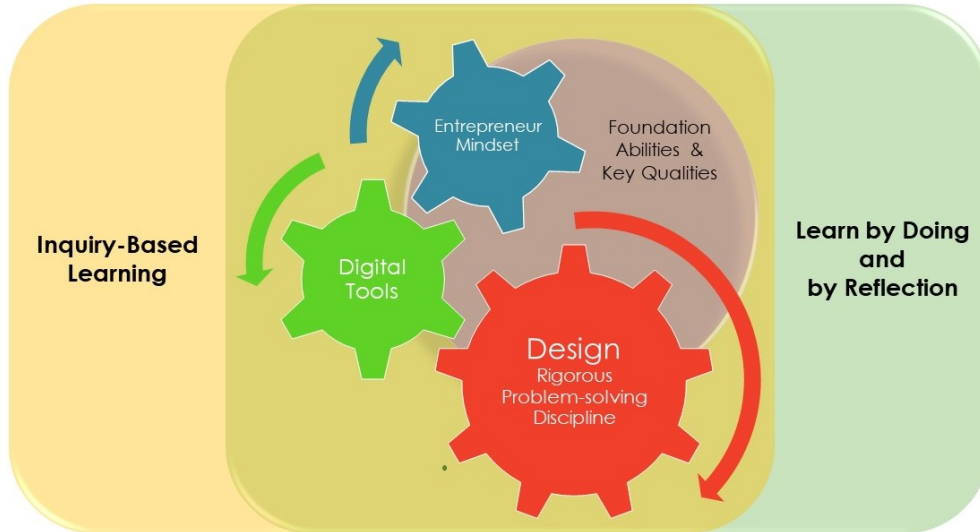
In order to reach the aims of design, students should be able to:

- i. design detailed and relevant testing methods, which generate data, to measure the success of the solution
- ii. critically evaluate the success of the solution against the design specification
- iii. explain how the solution could be improved
- iv. explain the impact of the solution on the client/target audience.

2. Entrepreneurship Mindset & Design as a subject

2.1. Components of Entrepreneurship Mindset & Design

Figure 2: Components of EMD Curriculum



Strongly rooted in Inquiry-based Learning as well as Learn by Doing and by Reflection, EMD curriculum has four main components: Entrepreneur Mindset, Design, Digital Tools, as well as Foundational Abilities & Key Qualities.

2.1.1 ENTREPRENEUR MINDSET & DESIGN

Figure 3: Entrepreneurial & Design Abilities



Note: The Design Abilities in the above figure correspond to the “Criteria” in the Design Cycle in the IB Design curriculum.

Table 1: Entrepreneurial and Design Abilities

| Ability | Students' Perspective |
|----------------------------------|--|
| Dream Bigger | We need to dream bigger, and not be limited by our limitations or circumstances – financial or otherwise. We have to dream before our dreams can come true. |
| Try New & Challenging | Rather than playing safe all the time, we should be willing to get out of our comfort zones, push the envelope, take risks, and try new & challenging things. |
| Identify Opportunity | There are so many opportunities in our surroundings in the form of unsolved problems and unaddressed needs. We need to learn the art of recognizing opportunities that are aligned with our passion and aptitude. |
| Take Ownership | Having identified a worthy opportunity, I should confidently take ownership of addressing the associated problem or need and not wait for someone else to do it. |
| Inquire & Analyse | We should conduct an in-depth inquiry into the nature of the problem at hand, empathise with all stakeholders and analyse the need for a solution. |
| Develop Ideas | With creativity and innovation, we will ideate a range of solution approaches, and choose the design solution that meets clearly stated success criteria. Present the final chosen design and be able to justify its selection. |
| Create Solution | We will create a plan for implementing the chosen solution and follow the plan to develop a prototype or product sufficient for testing and evaluation. |
| Bounce back from Failures | Plans rarely work out; we will encounter unexpected obstacles and failures. We will learn & practice how to bounce back and consider alternatives. |
| Evaluating | We will design tests to evaluate the solution, carry out those tests and objectively evaluate its success. We will identify areas where the solution could be improved and explain it will impact the client or target audience. |
| Persevere | Learning from both successes and failures, like entrepreneurs, we will relentlessly keep at it, without giving up. Experimentation and iteration are important tools for eventually producing a successful solution. |

2.1.2 DIGITAL TOOLS

Given that EMD is taught as a foundational subject in class 9th and 10th irrespective of the specialization, the purpose of introducing Digital Tools here is **Digital Engagement & Innovation** and **not** teaching computer science. Hence, the choice of tools categories are applications that are useful in everyday lives, largely independent of the career-path. (Note: Digital Literacy, Thinking & Agency are to be covered in grades 6-7-8. If the students have not been exposed, additional handholding may be needed). The below list is not meant to be complete; only to be treated as examples. Students are allowed to take charge of learning and using whatever digital tool or app is appropriate for working on the task at hand.

Table 2: Digital tools and Cloud Apps

| Category | Example Digital Tools or Cloud Apps |
|---|--|
| Authoring Letters, Documents | Google Doc, MS Word, LibreOffice & other Open Source Editors |
| Presentation | Google Slides, MS PowerPoint |
| Survey & Data Analysis | Google Form, Survey Monkey, etc. (Analysis using Google Sheet, Excel) |
| Making Digital Creatives (Poster, Photo, Video, Gif, Logo, etc.) | Canva, AutoDraw, Several Video Editors, Photo editors, etc. |
| Effective Search | Google Advanced Search, Image Search |
| Block Programming / Scripting | Snap!, Scratch, Pictoblox, LOGO |
| Drawing Mind maps, diagrams | AutoDraw, Several open-source cloud apps |
| Annotating Maps | Google Maps, My Maps |
| Record keeping & calculations | MS Excel, Google Sheets |
| Building Website | Google Sites, and many others |
| Online Collaboration | Padlet, Mentimeter, Google Drive |

2.1.3 FOUNDATIONAL ABILITIES & KEY QUALITIES

From the point of view of the primary objective of the EMD curriculum, it may be sufficient to inculcate only the Entrepreneurial and Design abilities described in a previous section. In reality, they are built on top of foundational abilities and key qualities described below. These Foundational abilities enable a person to excel in professional life.

Table 3: Foundational Abilities

| Foundational Ability | Commentary |
|-------------------------------|--|
| Adapt to Change | Amidst execution, we discover that working assumptions no longer hold or goals need rework. May need to tweak or overhaul the plan, reorient the bearings, and keep going. |
| Collaboration | Collaboration improves the way one works together with others in solving a problem. It leads to more innovation, efficient processes, increased success, and improved communication. Listening to and learning from others benefits both individual and collective goals. |
| Communication | Effective and timely communication is inevitable in all aspects of life. Practising purposeful, time-bound communication with constructive feedback from the audience is a time-tested way for students to become confident communicators. |
| Critical Thinking | Critical thinking refers to objective, unbiased analysis and evaluation of the situation at hand. It is a prerequisite to making quality decisions. |
| Decision Making | High quality decision making relies on a balance between deliberate reasoning and instinctive thinking. Timeliness of the decision is often as important as the decision itself. |
| Integrity & Ethics | Integrity is doing the right thing even when no one is watching. Ethics is knowing the difference between what you have the right to do and the right thing to do. Together they form the conscience that guides our wholesome behaviour. |
| Reflection | Reflection is the process of analysing and discussing a situation or a proceeding, typically involving oneself. Reflective thinking helps one develop new perspectives and identify areas for improvement. Regular practice of reflection helps us come out of inhibitions and pre-set biases. |

The **Key Qualities** described below are essential ingredients in one or more of the abilities listed above. The curriculum would not be complete without ensuring adequate intervention for inculcating these qualities.

Table 4: Key Qualities

| Key Quality | Commentary |
|-----------------------|---|
| Confidence | Self-Confidence in one's abilities is key to human progress. It manifests in confident communications, taking initiative, and accepting responsibility for one's actions. |
| Creativity | Creativity refers to a lot more than artistic expression; it is about viewing things from different perspectives, generating new possibilities or alternatives, with some degree of uniqueness. Everyone is creative in some way or the other; giving a variety of opportunities for creative expression nurtures that ability. |
| Curiosity | Curiosity is the ability to seek and acquire new knowledge, skills, and ways of understanding the world. It motivates young people to learn and keep learning throughout their lives. |
| Empathy | Empathy is the first step in design thinking because it is a skill that allows us to understand and share the same feelings that others feel. Through empathy, we are able to put ourselves in other people's shoes and connect with how they might be feeling about their problem, circumstance, or situation. |
| Joyfulness | Learning is most effective when the element of joy is woven into learning experiences. Joyful Learning brings sparkle in the eyes of students and excites and empowers them to engage with learning experiences in a fun-filled, playful manner. |
| Manage Fears | A wide range of fears blocks us from pursuing our dreams. Managing fear refers to acknowledging it, looking at it in its face, and gaining strength, courage and confidence in the process. |
| Mindfulness | Mindfulness is the practice of purposely focusing your attention on the present moment—and accepting it without judgement. Mindfulness is now being examined scientifically and has been found to be a key element in stress reduction, focused attention, and overall happiness. |
| Observation | Keen observation is a key ingredient of creativity as well as empathy. Observing is the most powerful way of learning and creativity is the most powerful way of deriving meaning out of that learning. Observing skills helps you develop a better understanding and also inculcates a sense of empathy. |
| Self-Awareness | Self-awareness is the ability to pay attention accurately and consistently to ourselves and become aware of our strengths and areas of development. This plays a major role in making important decisions in our lives. That's why self-awareness is called a superpower – it has the power to change our life. |

2.2. Key Concepts in Entrepreneurship Mindset & Design

IB recommends using key concepts¹ as a linkage between different components of the subject group. These key concepts also help in linking Design skills with skills in other academic subjects. The key concepts used in components of Entrepreneurship Mindset and Design for grades IX and X are given in the below tables.

Table 5: Key Concepts in grade IX & X

| Grade | Design | Entrepreneurship Mindset |
|-------|---|--|
| IX | Communities / Stakeholders, Communication, Systems, Development | Value Creation, Competition |
| X | Communities / Stakeholders, Communication, Systems, Development | Opportunity, Iteration, Value Addition, New Skills |

3. EMD curriculum overview for grades IX and X

An academic year at DBSE consists of two terms. Grade IX and X curriculum is clustered into 6 units. These units are delivered in two terms of an academic year. Unit names, content, duration and the learning resources are provided in the subsequent sections.

¹ International Baccalaureate Organization.2017. Design subject guide

3.1. Grade IX curriculum overview

Table 6: Descriptions for Grade IX units

| Unit Name | Duration | Application Topics (following the design cycle) | Digital Tools / Apps used for | Resources |
|-----------------------------------|----------|--|--|---|
| TERM 1 | | | | |
| Communication for social campaign | 6 weeks | Identify a problem; Research and analyse; Ideate & select solution; Prepare a communication message using a digital creative. Present. | <ul style="list-style-type: none"> • Making Digital Creatives (poster, gif, video, etc.) • Drawing Mind-maps, Empathy Maps • Lateral thinking • Programming / scripting tools as applicable • Making Presentation | <ul style="list-style-type: none"> • Pedagogue Companion • Student Companion • Videos • Best practices documents • Tutorials |
| Empathy In-depth | 4 weeks | For building a “game for learning”, develop insights via a detailed empathy exercise with the chosen target group and define the requirements. View the problem from multiple perspectives, applying lateral thinking, come up with several alternative solution ideas, and choose one. Develop design specification, explaining the impact of the empathy exercise. | | |
| Creative Ideation | 3 weeks | Begin creating the solution. Realize the need to redesign. Ideate among various alternative implementation approaches while keeping in mind the user requirements. Then select one and complete the implementation. Evaluate vis-à-vis user requirements. Present the solution and evaluation. | | |
| TERM 2 (Community Project) | | | | |
| Identify Opportunity | 6 weeks | Do a detailed inquiry and analysis for coming up with ideas to reuse/repurpose waste items. Develop solution ideas, create a design specification. | <ul style="list-style-type: none"> • Searching effectively on the Internet • Online authoring & collaboration (sharing + communication) • Programming / scripting tools as applicable • Annotating & sharing online maps | <ul style="list-style-type: none"> • Pedagogue Companion • Student Companion • Videos • Best practices documents • Tutorials |
| Make Something Useful | 4 weeks | Using the above created design specification, develop a product/service. Evaluate and seek target group feedback. Present the solution, evaluation and feedback. | | |
| Analyse and Improve | 5 weeks | Analyse the feedback, review the evaluation. Adapt the design to address these points and create the next version of the solution. Present the revised solution and justify the changes. Submit Community Project. | | |

3.2. Grade X curriculum overview

Table 7: Descriptions for Grade X units

| Unit Name | Duration | Application Topics (following the design cycle) | Digital Tools / Apps used for | Resources |
|---|----------|---|---|---|
| TERM 1 | | | | |
| Engage with Large Audience | 6 weeks | Identify a problem; Conduct an online survey with target group and analyse; Ideate & select solution; prepare a design specification. Present & submit E-Portfolio. | <ul style="list-style-type: none"> • Conducting Online Surveys & Analysing Results • Task tracking • Programming / scripting tools as applicable • Building E-Portfolio • Editing Videos | <ul style="list-style-type: none"> • Pedagogue Companion • Student Companion • Videos • Best practices documents • Tutorials |
| Solution Creation & Evaluating | 4 weeks | Make a logical plan for implementing the design specification. Team members distribute roles and coordinate. Make important decisions, creatively working around blockers. Seek stakeholders' evaluation. Present. | | |
| Iteration & Fine-Tuning | 3 weeks | Review stakeholder feedback on function and quality, being truthful about any limitations and warnings. Irrespective of feedback, keep marching with flexibility, figuring out how to handle change suggestions and any quality issues. Deliver revised version. Present, explaining the changes with justifications. | | |
| TERM 2 (Personal Project) | | | | |
| Leverage Personal Strengths | 6 weeks | Inspire to dream bigger and identify several opportunities for business or social impact where personal talents/strengths are applicable, select one. Do stakeholder analysis, communication and give a detailed shape to the idea. | <ul style="list-style-type: none"> • Building a website with multiple collaterals including documents, videos and images • Programming / scripting tools as applicable • Online Authoring & Structuring | <ul style="list-style-type: none"> • Pedagogue Companion • Student Companion • Videos • Best practices documents • Tutorials |
| Learn and Grow | 4 weeks | Make a detailed implementation plan. take on new challenges. Make important decisions, creatively working around blockers. Seek stakeholders' evaluation. Present. | | |
| Create Value with Ecological Responsibility | 5 weeks | Besides technical and financial viability, analyse the Social and Ecological Impact. Plan & implement the necessary changes to work around any negative social and ecological impacts or improve positive impacts. Submit Personal Project. | | |

4. Assessment Overview

DBSE approach to assessment and reporting is based on the IB specified assessment criteria and grades. Criterion based assessments enable students to self-monitor and build self-belief as they can see the evidence of the progress they are making over time. Students can track their progress using level descriptors, they can clearly understand how their work can be improved over time.

The four core criteria assessed in Design are:

- Criterion A – Inquiry and Analysis
- Criterion B – Developing Ideas
- Criterion C – Creating Solution
- Criterion D – Evaluating

DBSE promotes multiple ways of assessing students. There are three types of assessments conducted at DBSE schools throughout a learning period.

Assessment FOR learning: It is the process of gathering and interpreting evidence for use by students and teachers to know where the students are on their learning pathway, decide where they need to go and how best to get there. The teacher plays a supportive role wherein the student responses in the assessment tasks are analysed to help students progress on their learning pathway. Consequently, it is important that these assessments must always be accompanied by feedback and feed-forward mechanisms to enable deep learning and help improve teaching. Example tasks include homework, classwork, class tests, assignments, projects, etc. The assessments should provide the right amount of challenge to students based on learning levels so that appropriate feedback can be provided.

Assessment OF learning: It takes place at key points in the learning cycle, such as at the end of a learning period, e.g. a term, to measure if students have achieved the learning objectives. Example tasks include exams, final projects, essays, etc. The primary purpose is to assess what students can do at a point in time to understand their readiness to move to the next stage of education.

Assessment AS learning: Students are provided with opportunities to monitor their own progress, self-assess and reflect on their learning. Example tasks include self-assessment, peer assessment, student portfolio, etc.

The assessment tasks and methods used in internal assessment are criterion related, student-centric and provide feedback for further enhancement of learning. There are two types of assessments available for reporting student performance: Internal Assessments and Term-end Assessments.

- For Entrepreneurship Mindset and Design, Internal assessments (IA) will carry 100% of the weight.
- There will be no Term-end assessments (TA) in this subject.

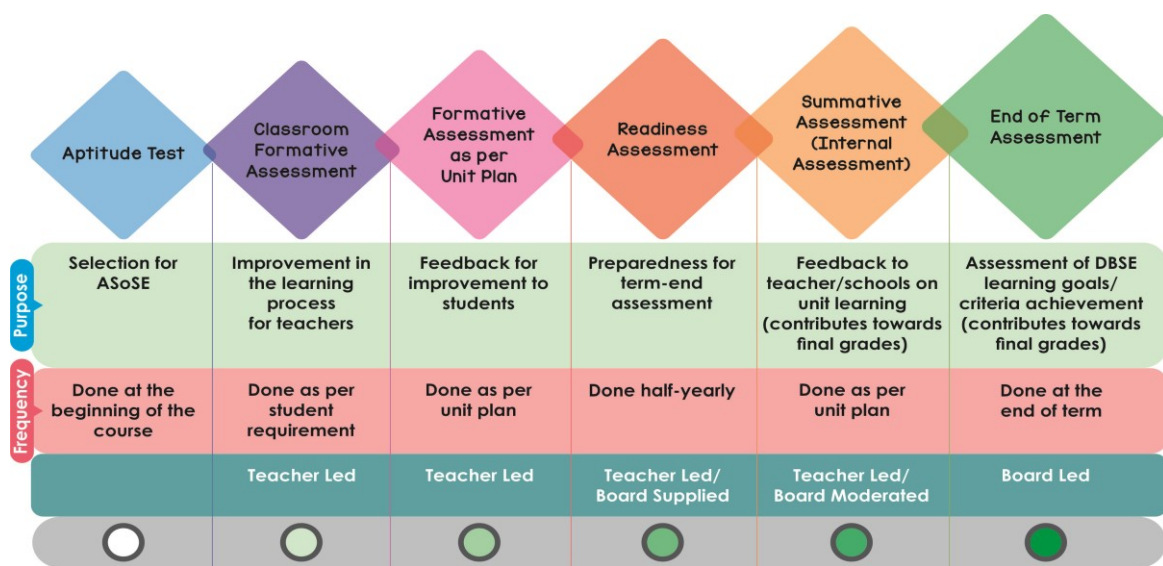
The assessment tasks and methods used in internal assessments provide opportunities for students to show their achievements in multiple ways and provide feedback for further enhancement of learning. External assessment tasks are based on curriculum objectives defined for the subject.

DBSE assessments used for reporting for grades 9 & 10 can be school-led and/or board-led. School-led assessments are based on an item pool provided by DBSE and Board-led assessments are developed and administered by DBSE. In grade 10, DBSE monitors internal assessments and readiness assessments. Term-end assessments are conducted by DBSE.

4.1. Assessment structure

Global best practices suggest a multifaceted assessment structure. That is, students should be assessed in multiple ways and at multiple times without increasing the workload of teachers or students, to the extent possible. A schematic representation of the DBSE assessment structure is presented below:

Figure 4: Assessments in DBSE



4.2. Assessment calendar

The assessment calendar for internal and external assessments for academic year 2022- 23 grade 9 assessments is given below.

Table 8: Grade IX assessment calendar

| Unit | Duration | | Assessment | Criteria Assessed | Assessment Strategies |
|-----------------------------|----------|--------|-----------------------|---|---------------------------|
| 1 | 4-Jul | 13-Aug | IA - Unit 1 Summative | Inquire & Analyse, Develop Ideas | Research & Analysis (30%) |
| 2 | 16-Aug | 10-Sep | IA - Unit 2 Summative | Inquire & Analyse, Develop Ideas | Research & Analysis (30%) |
| 3 | 12-Sep | 30-Sep | IA - Unit 3 Summative | Create Solution, Evaluating | Presentation (40%) |
| 10 – 24 October 2022 | | | Term-end 1 | Not Applicable | |
| 4 | 31-Oct | 10-Dec | IA - Unit 4 Summative | Inquire & Analyse, Develop Ideas | Research & Analysis (30%) |
| 5 | 12-Dec | 21-Jan | IA - Unit 5 Summative | Create Solution, Evaluating | Research & Analysis (30%) |
| 6 | 23-Jan | 25-Feb | IA - Unit 6 Summative | Inquire & Analyse, Develop Ideas, Create Solution, Evaluating | Community Project (40%) |
| 1 - 20 March 2023 | | | Term-end 2 | Not Applicable | |

Table 9: Grade X assessment calendar

| Unit | Duration | | Assessment | Criteria Assessed | Assessment Strategies |
|-----------------------------|----------|--------|-----------------------|---|---------------------------|
| 1 | 4-Jul | 13-Aug | IA - Unit 1 Summative | Inquire & Analyse, Develop Ideas | Research & Analysis (30%) |
| 2 | 16-Aug | 10-Sep | IA - Unit 2 Summative | Create Solution, Evaluating | Research & Analysis (30%) |
| 3 | 12-Sep | 30-Sep | IA - Unit 3 Summative | Inquire & Analyse, Develop Ideas, Create Solution, Evaluating | Portfolio (40%) |
| 10 – 24 October 2022 | | | Term-end 1 | Not Applicable | |
| 4 | 31-Oct | 10-Dec | IA - Unit 4 Summative | Inquire & Analyse, Develop Ideas | Research & Analysis (30%) |
| 5 | 12-Dec | 21-Jan | IA - Unit 5 Summative | Create Solution, Evaluating | Research & Analysis (30%) |
| 6 | 23-Jan | 25-Feb | IA - Unit 6 Summative | Inquire & Analyse, Develop Ideas, Create Solution, Evaluating | Personal project (40%) |
| 1 - 20 March 2023 | | | Term-end 2 | Not Applicable | |

4.3. Assessment levels and grades

The Assessment Criteria directly relate to the Objectives of the Design curriculum and carry equal weightage. The student achievement levels will be reported as a number grade as done in IB with an associated description.

The grade descriptions are based on assessment criteria levels. The level descriptors of an assessment criterion depict clear progression of improvement of skills and competencies for a learning period.

All the assessment tasks used to report students' achievements are based on task specific, hierarchical, and qualitatively defined rubrics. The categories used in rubrics represent increasing quality or sophistication of response to a task. They provide a basis for evaluating and recording students' responses to an assessment task. A rubric makes assessment expectations transparent.

In order to show the degree of competence in each criterion, fine grained descriptions of various levels are used. These descriptions indicate the progression of achievement in each criterion. IB Design criteria levels and grade descriptions are given in the following tables

Table 10: Criterion A: Inquire & Analyse

| Levels | Level Description |
|--------|--|
| 0 | The student does not reach a standard described by any of the descriptors below. |
| 1-2 | The student: <ol style="list-style-type: none"> <li data-bbox="405 434 911 461">i. states the need for a solution to a problem <li data-bbox="405 479 1031 506">ii. states some of the main findings of relevant research. |
| 3-4 | The student: <ol style="list-style-type: none"> <li data-bbox="405 600 935 627">i. outlines the need for a solution to a problem <li data-bbox="405 645 1382 672">ii. states the research needed to develop a solution to the problem, with some guidance <li data-bbox="405 689 1187 716">iii. outlines one existing product that inspires a solution to the problem <li data-bbox="405 734 1225 761">iv. develops a basic design brief, which outlines some of relevant research. |
| 5-6 | The student: <ol style="list-style-type: none"> <li data-bbox="405 860 935 887">i. explains the need for a solution to a problem <li data-bbox="405 904 1342 967">ii. constructs a research plan, which states and prioritizes the primary and secondary research needed to develop a solution to the problem, with some guidance <li data-bbox="405 985 1262 1012">iii. describes a group of similar products that inspire a solution to the problem <li data-bbox="405 1030 1233 1057">iv. develops a design brief, which outlines the findings of relevant research. |
| 7-8 | The student: <ol style="list-style-type: none"> <li data-bbox="405 1151 1062 1178">i. explains and justifies the need for a solution to a problem <li data-bbox="405 1196 1334 1258">ii. constructs a research plan, which states and prioritizes the primary and secondary research needed to develop a solution to the problem independently <li data-bbox="405 1276 1241 1303">iii. analyses a group of similar products that inspire a solution to the problem <li data-bbox="405 1321 1230 1348">iv. develops a design brief, which presents the analysis of relevant research. |

Table 11: Criterion B: Developing Ideas

| Levels | Level Description |
|--------|--|
| 0 | The student does not reach a standard described by any of the descriptors below. |
| 1-2 | The student: <ol style="list-style-type: none"> i. states the need for a solution to a problem ii. states some of the main findings of relevant research. |
| 3-4 | The student: <ol style="list-style-type: none"> i. outlines the need for a solution to a problem ii. states the research needed to develop a solution to the problem, with some guidance iii. outlines one existing product that inspires a solution to the problem iv. develops a basic design brief, which outlines some of relevant research. |
| 5-6 | The student: <ol style="list-style-type: none"> i. explains the need for a solution to a problem ii. constructs a research plan, which states and prioritizes the primary and secondary research needed to develop a solution to the problem, with some guidance iii. describes a group of similar products that inspire a solution to the problem iv. develops a design brief, which outlines the findings of relevant research. |
| 7-8 | The student: <ol style="list-style-type: none"> i. explains and justifies the need for a solution to a problem ii. constructs a research plan, which states and prioritizes the primary and secondary research needed to develop a solution to the problem independently iii. analyses a group of similar products that inspire a solution to the problem iv. develops a design brief, which presents the analysis of relevant research. |

Table 12: Criterion C: Create Solution

| Levels | Level Description |
|--------|--|
| 0 | The student does not reach a standard described by any of the descriptors below. |
| 1-2 | The student: <ol style="list-style-type: none"> <li data-bbox="405 421 911 450">i. states the need for a solution to a problem <li data-bbox="405 465 1031 495">ii. states some of the main findings of relevant research. |
| 3-4 | The student: <ol style="list-style-type: none"> <li data-bbox="405 584 935 613">i. outlines the need for a solution to a problem <li data-bbox="405 629 1382 658">ii. states the research needed to develop a solution to the problem, with some guidance <li data-bbox="405 674 1185 703">iii. outlines one existing product that inspires a solution to the problem <li data-bbox="405 719 1222 748">iv. develops a basic design brief, which outlines some of relevant research. |
| 5-6 | The student: <ol style="list-style-type: none"> <li data-bbox="405 846 935 875">i. explains the need for a solution to a problem <li data-bbox="405 891 1342 958">ii. constructs a research plan, which states and prioritizes the primary and secondary research needed to develop a solution to the problem, with some guidance <li data-bbox="405 974 1262 1003">iii. describes a group of similar products that inspire a solution to the problem <li data-bbox="405 1019 1230 1048">iv. develops a design brief, which outlines the findings of relevant research. |
| 7-8 | The student: <ol style="list-style-type: none"> <li data-bbox="405 1137 1070 1167">i. explains and justifies the need for a solution to a problem <li data-bbox="405 1182 1342 1249">ii. constructs a research plan, which states and prioritizes the primary and secondary research needed to develop a solution to the problem independently <li data-bbox="405 1265 1254 1294">iii. analyses a group of similar products that inspire a solution to the problem <li data-bbox="405 1310 1238 1339">iv. develops a design brief, which presents the analysis of relevant research. |

Table 13: Criterion D: Evaluating

| Levels | Level Description |
|--------|--|
| 0 | The student does not reach a standard described by any of the descriptors below. |
| 1-2 | The student: <ol style="list-style-type: none"> <li data-bbox="422 439 927 472">i. states the need for a solution to a problem <li data-bbox="422 488 1046 521">ii. states some of the main findings of relevant research. |
| 3-4 | The student: <ol style="list-style-type: none"> <li data-bbox="422 600 951 633">i. outlines the need for a solution to a problem <li data-bbox="422 649 1398 683">ii. states the research needed to develop a solution to the problem, with some guidance <li data-bbox="422 698 1203 732">iii. outlines one existing product that inspires a solution to the problem <li data-bbox="422 748 1241 781">iv. develops a basic design brief, which outlines some of relevant research. |
| 5-6 | The student: <ol style="list-style-type: none"> <li data-bbox="422 857 951 891">i. explains the need for a solution to a problem <li data-bbox="422 907 1358 974">ii. constructs a research plan, which states and prioritizes the primary and secondary research needed to develop a solution to the problem, with some guidance <li data-bbox="422 990 1278 1023">iii. describes a group of similar products that inspire a solution to the problem <li data-bbox="422 1039 1249 1072">iv. develops a design brief, which outlines the findings of relevant research. |
| 7-8 | The student: <ol style="list-style-type: none"> <li data-bbox="422 1153 1086 1187">i. explains and justifies the need for a solution to a problem <li data-bbox="422 1202 1358 1236">ii. constructs a research plan, which states and prioritizes the primary and secondary <li data-bbox="422 1252 1270 1319">iii. research needed to develop a solution to the problem independently analyses a group of similar products that inspire a solution to the problem <li data-bbox="422 1335 1257 1368">iv. develops a design brief, which presents the analysis of relevant research. |