

NEW NORMAL FUNCTIONAL CURRICULUM
Instructional Guide for Special and
Inclusive Education
Mathematics
Classes IX - XII



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Foreword

COVID-19 has suddenly caused unforgiving disruptions in the public education all over the world, and brought about threats of fragmentation due to disparities in accessibility and connectivity in many systems. In Bhutan too, continuity of education and learning has been severely affected as a result of nationwide school closures and due to restrictions and health protocols. The disruptions have led to challenges in many existing patterns and trends in education resulting in a massive shift away from learning and teaching in traditional settings with physical interactions to the maximum in terms of relevancy and efficiency. This has caused a major problem for children living in poverty worldwide, who often rely on the physical settings of their schools for educational materials, guidance, and, sometimes, the only decent meal of the day.

In the new normal education, human interaction and well-being is a priority. Technology, particularly digital technology that enables communication, collaboration and learning across distance, is a formidable tool – not a panacea but a source of innovation and expanded potentials. As we embrace this exceptional opportunity to transform the world, and as we reimagine the organization of our educational institutions and learning environments, we will need to think about where we want to go.

In the post COVID 19 era, we must prioritize the development of the whole person not just academic knowledge. Inspiration for the change can be drawn from the 1996 Delors report, *Learning the treasure within*, in its specification of four pillars of learning as “learning to know”, “to do”, “to be”, and “to live together”. Therefore, curricula must be increasingly perceived as an integrated and based on themes and problems that allows learners to learn to live in peace with our common humanity and our common planet. This has the potential in the development of a strong base of knowledge about one’s self and about the world and find purpose and be better able to participate in social and political milieu.

The New Normal Curriculum is, not just a mere response to the pandemic, but also a culmination of the curriculum reform work for the last four years by the Royal Education Council. It is an attempt to transform education from the teaching of “what” to learning of “how” and “why” towards empowering learners with the transversal competencies and the 21st century skills, and preparing them to be lifelong learners. We are optimistic that this move orients our education process towards nurturing nationally rooted and globally competent citizens.

Wish all our learners and teachers a life enriching experiential teaching and learning.

Tashi Delek



Kinga Dakpa

Director General

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Introduction

This guide has been developed for teachers teaching Functional Curriculum to the learners with special educational needs in special institute/schools with Special Educational Needs (SEN) Programme across the country for the implementation of the Functional curriculum. As Functional Curriculum for SEN is aimed at equipping the learners with a set of competencies, it is crucial for all the teachers to have the understanding about the intent of the curriculum so that they would be able to implement it as desired.

The functional curriculum for SEN has multiple learning areas. Each learning area has a set of competencies to be acquired and demonstrated by the learners at each stage of learning, which are outlined as Standards, Competencies and Objectives. While guiding teachers on what to teach, these standards, competencies and objectives will also inform the stakeholders about the levels of knowledge and skills expected from the learners at various stages of education. Children with disabilities are unique, and in that lies the hidden and unexplored talents and personal disposition. Where there is a flexible curriculum, all children have a chance to learn and benefit from education, and their achievements can be recognised. One of the alternatives to ensure that all children are educated and developed to their optimum capacities, is the implementation of functional curriculum. It caters to the learners with severe or multiple sensory impairments which hinder a learner from participating in the general curriculum setting.

The sample activities given in the guide are suggestive in nature. Teachers can negotiate to adapt and design their own teaching learning activities or experiences that best suit their learners and their environment. What is non-negotiable is the teaching of the competencies that the learners must acquire at each class before they move on to the next class.

The curriculum has a wide range of knowledge, concepts and skills that the students need to master. There are those which the learners can explore, acquire and practice to master on their own, and there are also more complex ones which need to be taught explicitly and practised consistently to gain a satisfactory level of mastery. Classroom teaching and instructional time should focus on teaching those concepts and skills that the students cannot learn on their own, while encouraging learners to explore some areas to learn and practice on their own.

The major shift in the curriculum is the teaching and development of skills by the learners. Therefore, the curriculum contents should be used as vehicles to move towards the acquisition of competencies. The competencies for each class are further broken down as objectives that should serve as signposts for teachers to decide what to teach.

Since, competencies are at the heart of curriculum and its implementation, teachers should make conscious choice of the most suitable teaching-learning approaches. And, because the teaching focusses on acquiring skills/competencies, assessment will also be on the acquisition and demonstration of the skills -skills in terms of literacy and numeracy, social, behavioural and affective domains that are demonstrable/measurable. Various assessment approaches and tools may be used for assessment, recording and reporting. Teachers are asked to be consistent to meaningfully assess students and report to stakeholders at various levels. Further, the focus of assessment should be for learning rather than assessment of learning, which would happen periodically.

CurriculumContent

The Functional Curriculum contents serve as the means for the delivery of education towards achieving the competencies desired at various classes. Cross curricular linkages, various approaches and other co-curricular activities also contribute towards a systematic and comprehensive learning. In this age of advanced communication and information technology, contents are widely available from a number of sources, therefore, the contents of the curriculum have been kept flexible enough so that teachers can select, structure and sequence them to best suit the learners need while maintaining coherence and consistency. While, teachers may have access to number of materials, it should be kept in mind that the teaching and learning should be focused on achieving the competencies. The teaching-learning materials should be used as means to create a learning environment that is competency-based where the students need to master the skills presented to them. While designing lesson plans and teaching learning activities, teachers need to ensure that the materials are relevant and appropriate for the given task.

The assessment should be competency-based wherein the teachers should assess the learners' mastery of the given tasks. Teachers should use appropriate assessment tools and techniques depending on the nature of the learning activities. The learners should be clearly informed about the success criteria, the areas of assessment and the tools to be used so that they know exactly what tasks are to be performed or expected of them. In the process of the performance, the teacher should continuously provide feedback and, if necessary, modify instructions. Efforts have to be made to ensure that every learner has mastered the skills to realise their potential to the maximum.

Class IX

Competencies: Search the internet and communicate via email

Core Concept (Topic/Chapter/Theme)

➤ Internet

Learning Objectives

- Use search engines to search for information. (keywords, images, links)
- Create Email ID, open their mail, compose mails, send mails, email etiquette

Learning Objectives:

- Use search engines to search for information. (keywords, images, links)

Pedagogy/Learning Experiences:

○ Demonstration:

- Introduce children to a web browser. (Use resource link: <https://www.youtube.com/watch?v=FxirRVJWUTs&list=PLpQQipWcxwt9qeniFKxipVhk77b4Pfe8s&index=7>)
- Introduce children to search engines and demonstrate basic search techniques such as using keywords, searching for images and link. (Use resource link: <https://edu.gcfglobal.org/en/internetbasics/using-search-engines/1/>)
- Introduce children to URL and its parts. (Use resource link: <https://www.youtube.com/watch?v=5Jr-Za5yQM&list=PLpQQipWcxwt9qeniFKxipVhk77b4Pfe8s&index=10>)

○ Activity-Based Learning:

- Children learn about how the Internet works using the web browser and a search engine.

Learning Objectives:

- Create Email ID, open their mail, compose mails, send mails, email etiquette

Pedagogy/Learning Experiences:

○ Demonstration:

- Explain what an email is. (Use resource link: <https://edu.gcfglobal.org/en/email101/introduction-to-email/1/>)
- Demonstrate how to create an Email ID. (Use resource link: <https://edu.gcfglobal.org/en/gmail/setting-up-a-gmail-account/1/> <https://www.youtube.com/watch?v=1GHbNYkX0mo>)
- Demonstrate how to compose, send and respond to emails. (Use resource links: <https://www.youtube.com/watch?v=2eH0JbEE-6k&list=PL007352170EA6EB06&index=1> <https://www.youtube.com/watch?v=a9e7XNo4agE&list=PL007352170EA6EB06&index=2>)
- Demonstrate how to attach files to their email. (Use resource link: <https://www.youtube.com/watch?v=NGu6MOEDNel>)

- **Activity-Based Learning:**
 - Children send emails to each other and respond to emails send by others.
 - Children must follow the email etiquettes properly. (Use resource link: https://tutoring.asu.edu/sites/default/files/email_etiquette_v2.pdf)

Assessment:

- **Anecdotal Record:**
 - Observe children use web browser and search engines.
 - Observe children communicate through their email accounts.
- **Checklists:**
 - Find out how children use a search engine to search for information on the web without assistance.
 - Check the understanding of URL and its parts while surfing the internet.
 - Check how well children follow the proper email etiquettes.

Class X

Competencies: Perform basic calculation in spreadsheet

Core Concept (Topic/Chapter/Theme)

➤ Excel application

Learning Objectives

➤ Use Cell border, alignment, font colour, highlight, sum , max, min, average in spreadsheet

Learning Objectives:

- Use Cell border, alignment, font colour, highlight, sum , max, min, average in spreadsheet

Pedagogy/Learning Experiences:

- **Activity-Based Learning:**
 - Show case a simple spreadsheet with simple mathematic functions to the children.
 - Take the students now, step by step to making that spreadsheet.
- **Blended Learning:**
 - Getting started with MS Excel. (Use resource link: <https://www.youtube.com/watch?v=lgIWIPDJuPo&list=PLpQQipWcxwt9kEYnMTd8nBuRxC3LFmera&index=3>)
 - Learning how to open and create MS Excel workbooks. (Use resource link: <https://www.youtube.com/watch?v=EBGrJckHadw&list=PLpQQipWcxwt9kEYnMTd8nBuRxC3LFmera&index=4>)
 - Learning the basic of MS Excel cells. (Use the resource link: <https://www.youtube.com/watch?v=6mSKsaquTAM&list=PLpQQipWcxwt9kEYnMTd8nBuRxC3LFmera&index=6>)
 - Learning to modify columns, rows and cells. Use resource link: <https://www.youtube.com/watch?v=9s0OdXiuqL0&list=PLpQQipWcxwt9kEYnMTd8nBuRxC3LFmera&index=7>)
 - Applying simple formatting to the cells. (Use resource link: <https://www.youtube.com/watch?v=etAMCOKRuBE&list=PLpQQipWcxwt9kEYnMTd8nBuRxC3LFmera&index=8>)
 - Doing Mathematical operation in MS Excel. (Use resource link: <https://edu.gcfglobal.org/en/excel2013/simple-formulas/1/>)
 - Learning to freeze cells and change viewpoints in MS Excel. (Use resource link: <https://www.youtube.com/watch?v=zuhsUNBeNHw&list=PLpQQipWcxwt9kEYnMTd8nBuRxC3LFmera&index=18>)
 - Finding max, min, average in MS Excel. (Use resource link: <https://www.youtube.com/watch?v=Tc2s1pAKBnU>)

Assessment:

- **Rubrics:**
 - Use rubrics to find out how children prepare simple and efficient spreadsheet.

Class XI

Competencies: Use Google apps for daily work

Core Concept (Topic/Chapter/Theme)

Learning Objectives

- Online application
- Current technologies

- Use Google apps such as Google-Drive, Google-Meet, Docs, Slides, Sheets
- Use emerging technologies

Topic: Online Application

Learning Objectives:

- Use Google apps such as Google-Drive, Google-Meet, Docs, Slides, Sheets

Pedagogy/Learning Experiences:

- **Demonstration:**
 - Demonstrate how Google Suite packages can be used to collaborate online.
- **Blended Learning:**
 - Learning to use Google Drive for easy access and convenience. (Use resource link: <https://www.youtube.com/watch?v=P7555XLfHgs>)
 - Learning to use Google Docs for collaboration. (Use resource link: <https://www.youtube.com/watch?v=kLLWdvEI77Q&list=PLpQQipWcxwt-xTTePEbbjS8zW4lbr9ck-&index=2>
<https://www.youtube.com/watch?v=b4wF58sbzPU>)
 - Learning to use Google Sheets for collaboration. (Use the resource link: <https://www.youtube.com/playlist?list=PLpQQipWcxwt8hmVAPM940Ed1GArH5A0G>)
 - Learning to use Google Slide for presentation. (Use resource link: <https://www.youtube.com/playlist?list=PLpQQipWcxwt8VFQWcbUcmIHKeiroVSzs0>)
- **Activity-Based Learning:**
 - Learning to use Google-Meet for e-conferences. (Use resource link: <https://www.youtube.com/watch?v=O8Y1vlfpbEU>)

Topic: Current Technologies

Learning Objectives:

- Use emerging technologies

Pedagogy/Learning Experiences:

- **Demonstration:**
 - Teacher may demonstrate the use of different emerging assistive technologies such as text to speech, speech to text features, touchscreen board, screen-readers and etc. as per the need of a child.

Assessment:

- **Checklist:**

- Find out how children use Google apps to collaborate and present their work to each other.

Class XII

Competencies: Use ICT for work related skills

Core Concept (Topic/Chapter/Theme)

Learning Objectives

➤ Working with IT

➤ Writing business proposal and job application

➤ Attend webinar/ online interview practices

➤ IT for mobility

➤ Fill in online feedback system

➤ Use GPS map for mobility purposes

Topic: Working with IT

Learning Objectives:

- Writing business proposal and job application
- Attend webinar/ online interview practices
- Fill in online feedback system

Pedagogy/Learning Experiences:

- **Activity-Based Learning:**
 - Using MS Word to write job application and business proposal. (Use resource link: <https://www.thebalancecareers.com/application-letter-template-2061568>)
 - Using Google Search Engine to search for information to write a job application or a business proposal.
 - Using MS Excel to keep and present comparative study of figures for business proposal. (Use resource link: <https://www.vertex42.com/ExcelTemplates/cash-flow-statement.html>)
 - Using Google slide to make presentation of the proposals. (Use resource link: <https://www.slideshare.net/SlideTeam1/start-up-business-proposal-powerpoint-presentation-slides>)
 - Saving documents on Google Drive for convenience.
 - Using emails to share and send job applications and proposals.
 - Conduct online webinar with Google Meet/ Zoom to practice online participation to learn.
 - Use Google Form for class feedback to help children learn about filling up online feedback forms. (Use resource link: https://edu.google.com/teacher-center/products/forms/?modal_active=none)

(Use the 3Ps model for business proposal. 3Ps= Problem Statement, Providing Solution, Pricing Information)

Topic: IT for mobility

Learning Objectives:

- Use GPS map for mobility purposes.

Pedagogy/Learning Experiences:

- **Demonstration:**
 - Demonstrate how to use the GPS map to travel around. (Use resource link: <https://support.google.com/maps/answer/3093979?co=GENIE.Platform%3DiOS&oco=1>)

(Set or change home or work address)

<https://support.google.com/maps/answer/3273406?co=GENIE.Platform%3DAndroid&hl=en&oco=1>

(Start or stop navigation)

<https://www.google.com/maps/d/u/0/viewer?ie=UTF8&hl=en&t=h&om=1&msa=0&ll=27.382790989087894%2C89.43251718007947&spn=0.001838%2C0.003787&z=19&mid=1GC-26pGg4Z58eto8mukpi6dyUj4>

(GPS- Google My Map)

https://www.youtube.com/watch?v=VO5Nhb_shOs

(Waze app)

Assessment:

○ **Anecdotal:**

- Create activities to see if the students can apply the skills learned above. E.g.:
Tagging a place on Waze app/ Google Map for students to follow directions using the software.

○ **Rubrics:**

- Use rubrics to check how children prepare business proposal, write job application and participate online.