निर्णय नं ४ NARN Framework निर्माण कार्यदलले तोकिएको समयमा नै उच्च व्यावसायिकताका साथ आफ्नो जिम्मेवारी पूरा गरेको हुँदा कार्यदलका संयोजक डा. दिनेश घिमिरे लगायत सम्पूर्ण सदस्यलाई धन्यवाद ज्ञापन गर्दै प्राप्त कार्यढाँचालाई परिमार्जन सहित पारित गर्ने निर्णय गरियो।

प्रतिलिपि

निर्देशक

नेपाल सरकार
शिक्षा, विज्ञान तथा प्रविधि मन्त्रालय
शैक्षिक गुणस्तर परीक्षण केन्द्र
सानोठिमी, भक्तपुर

बैठक नं २

समय बिहान ६ बजे

आज मिति २०७० वैशाख ८ गते शैक्षिक गुणस्तर परीक्षण केन्द्रको निर्देशिका २०६६ को दफा ६ अनुसार गठित नेपाली विषय समितिको बैठक सो समितिका अध्यक्ष श्री प्र.डा. पारसमणि भण्डारीको अध्यक्षतामा बसी कक्षा ३ को NARN परीक्षण नतिजालाई अन्तिमीकरण गर्न निम्न उपस्थितिमा देहायबमोजिम निर्णय गरियो।

उपस्थिति

1. प्र.डा. पारसमणि भण्डारी अध्यक्ष
2. श्री चन्द्रकान्त मुसाल, महानिर्देशक
3. श्री नारायणप्रसाद श्री. निर्देशक
4. डा० राजेन्द्र खनाल सदस्य
5. श्री इन्दु खनाल "
6. श्री रजनी धिमाल "
7. श्री विष्णु रिमाल "
8. श्री केदारप्रसाद दाहाल "
9. श्री लक्ष्मण प्रधान "
10. कुमार खिमिरे, सदस्यसचिव

आमन्त्रित सदस्य

1. डा० दिनेश घिमिरे

छलफलका विषय र निर्णयहरू

निर्णय नं १ :- NARN परीक्षण नतिजामा प्रक्षेपीपको आधाररेखा (benchmark) मान्ने निर्णय गरियो।

निर्णय नं २ :- प्रश्न निर्माणको आधार परिवर्तन भएअनुरूप प्रश्नहरू पनि परिमार्जन गर्ने निर्णय गरियो।

निर्णय नं ३ :- मासिक प्रकाशन भएका कमजोरीहरू निराकरण गर्न विषय समितिका सदस्य प्राविधिक अधिकृत रजनी धिमाल र पाठ्यक्रम अधिकृत इन्दु खनाललाई अनुरोध गर्ने निर्णय गरियो।

प्रतिलिपि

नेपाल सरकार
शिक्षा, विज्ञान तथा प्रविधि मन्त्रालय
शैक्षिक गुणस्तर परीक्षण केन्द्र
सानोठिमी, भक्तपुर

निर्देशक

बैठक नं १

आज मिति २०७० बैशाख ६ गते दिउँसो ६ बजे शैक्षिक गुणस्तर परीक्षण केन्द्र निर्देशिका २०६४ को दफा ६ अनुसार गठित नेपाली विषय समितिको बैठक सो समितिका अध्यक्ष पारसमणि भण्डारीको अध्यक्षतामा बसी कक्षा ८ को पढाइ तथा गणितीय सिप परीक्षण (NARN) हाँचाको सम्बन्धमा छलफल गरी निम्नानुसारको निर्णय गरियो।

उपस्थिति

१. प्रो-डा० पारसमणि भण्डारी, अध्यक्ष
२. श्री चन्द्रकान्त मुखाल, महानिर्देशक
३. श्री नारायण प्रसाद भा निर्देशक
४. श्री डा० रामहरि खनाल सदस्य
५. श्री हरि खनाल "
६. श्री रजनी घिमाल "
७. श्री किशोर रिमाल "
८. श्री केदार प्रसाद दाहाल "
९. श्री लक्ष्मण प्रधान "
१० कुमार विष्ट - सदस्य-सचिव

आमन्त्रित सदस्य

१ श्यामप्रसाद आचार्य

छलफलका विषय र निर्णयहरु

निर्णय नं १ NARN को प्रस्तावित हाँचामा रहेको एकीकृत पाठ्यक्रमको सामान्य परिचय शीर्षक हटाउने र परिचय खण्डलाई विस्तृत बनाउने निर्णय गरियो।

निर्णय नं २ आजिवो सीपगत झेललाई हटाउने निर्णय गरियो।

निर्णय नं ३ मूल्याङ्कन हाँचाको कुन पंक्ति २ र ३ लाई पुनर्विचार गर्ने निर्णय गरियो।

निर्णय नं ४ पठनबोध र प्रवाहको लागि अलग अलग निर्देशन दिने निर्णय गरियो।

निर्देशक

T4_Q1_vii-Three digit is divided by	20.817	77.796	.544	.864
T4_Q1_viii-Three digit divided by one digit with no division 0	20.880	78.489	.517	.864
T5_Q1-Fractions of the shaded part	19.120	64.220	.473	.882
T5_Q2-biggest fractions	20.993	80.844	.293	.868
T6_Q1_i-take time to reach school and return home	20.838	78.066	.528	.864
T7__q1_i-Recognize and calculate Nepalese currencies	20.528	77.584	.465	.864
T8_Q1-cout from chart (Apple)	20.366	77.879	.462	.864
T8_Q2-cout from chart (orange)	20.697	78.823	.344	.866
T8_Q3-cout from chart (Maximum)	20.669	76.904	.567	.862
T8_Q4-cout from chart (Apple and grapes)	20.831	78.524	.455	.865
T9_Q1-dostamce of house and temple	20.782	79.604	.277	.868
T9_Q2-who has more money	20.669	77.429	.504	.864
T9_Q2_i-How to find who has more money	20.796	79.298	.323	.867
T9_Q2_ii-need to do to find who has more money	20.838	80.264	.202	.869
T9_Q3-cost of pen	20.408	75.378	.388	.866
T9_Q4-chocolates distribute equally to 5 friends	20.768	75.981	.359	.867
T9_Q4_i-need to distribute equally	20.852	79.404	.346	.867
T9_Q4_ii-Perform and find for equally distribute	20.894	79.272	.411	.866

Reliability Statistics of Numeracy pilot test

The overall reliability of the test items was calculated by using Cronbach Alpha method by using SPSS23. The overall internal consistency/reliability is presented in table below.

Reliability Statistics	
Cronbach's Alpha	N of Items
.869	35

Corrected Item total Correlation.

Item-Total Statistics				
Item description	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
T1_Q1-Match the shape with their names (Circle, Triangle, Square, Rectangle)	17.627	72.718	.445	.866
T1_Q2-Length of pencil	20.190	79.900	.295	.867
T1_Q3_i-Identify the right angle	20.585	80.784	.102	.871
T2_Q1-Devanagari and hindu Arabic script (4, 8, 12, 16)	17.655	75.291	.349	.868
T3_Q1_i-Write Number name (36)	20.535	76.974	.536	.863
T3_Q1_ii-Write Number name (126)	20.521	77.003	.533	.863
T3_Q1_iii-Write Number name (4583)	20.648	76.599	.597	.862
T3_Q2_i-Write in figure (159)	20.458	77.073	.532	.863
T3_Q2_ii-Write in figure (12356)	20.627	77.072	.535	.863
T3_Q3_i-Ascending order below 100	20.817	78.973	.381	.866
T3_Q3_ii-Ascending order below 1000	20.789	78.877	.376	.866
T4_Q1_i-Ascending order of below 100	20.190	79.659	.333	.867
T4_Q1_ii-Ascending order of below 1000	20.225	79.594	.313	.867
T4_Q1_iii-Double digit addition with carry over	20.521	77.301	.498	.864
T4_Q1_iv-Four digit subtraction	20.697	77.376	.521	.863
T4_Q1_v-One digit multiplication	20.472	77.499	.480	.864
T4_Q1_vi-3 digit multiplication	20.894	78.634	.516	.865

Appendix

1. Item parameters of Mathematics Pilot test for benchmarking.

Item parameters

Items	N	Min	Max	Mean	Std. Dev.	Percentage of correct answer
T1_Q1-Match the shape with their names (Circle, Triangle, Square, Rectangle)	150	0	4	3.373	1.0902	84%
T1_Q2-Length of pencil	149	0	1	0.839	0.3688	84%
T1_Q3_i-Identify the right angle	150	0	1	0.453	0.4995	45%
T2_Q1-Devanagari and Hindu Arabic script (4, 8, 12, 16)	150	0	4	3.373	0.9451	84%
T3_Q1_i-Write Number name (36)	150	0	1	0.487	0.5015	49%
T3_Q1_ii-Write Number name (126)	150	0	1	0.5	0.5017	50%
T3_Q1_iii-Write Number name (4583)	150	0	1	0.373	0.4853	37%
T3_Q2_i-Write in figure (159)	150	0	1	0.56	0.498	56%
T3_Q2_ii-Write in figure (12356)	148	0	1	0.405	0.4926	41%
T3_Q3_i-Ascending order below 100	150	0	1	0.22	0.4156	22%
T3_Q3_ii-Ascending order below 1000	150	0	1	0.247	0.4325	25%
T4_Q1_i-Ascending order of below 100	149	0	1	0.839	0.3688	84%
T4_Q1_ii-Ascending order of below 1000	149	0	1	0.812	0.392	81%
T4_Q1_iii-Double digit addition with carry over	149	0	1	0.53	0.5008	53%
T4_Q1_iv-Four digit subtraction	150	0	1	0.353	0.4796	35%
T4_Q1_v-One digit multiplication	150	0	1	0.567	0.4972	57%
T4_Q1_vi-3 digit multiplication	150	0	1	0.153	0.3615	15%
T4_Q1_vii-Three digit is divided by	150	0	1	0.227	0.4201	23%
T4_Q1_viii-Three digit divided by one digit with no division 0	150	0	1	0.16	0.3678	16%
T5_Q1-Fractions of the shaded part	150	0	4	1.933	1.8705	48%
T5_Q2-biggest fractions	150	0	1	0.04	0.1966	4%
T6_Q1_i-take time to reach school and return home	149	0	1	0.195	0.3973	20%
T7__q1_i-Recognize and calculate Nepalese currencies	149	0	1	0.497	0.5017	50%
T8_Q1-cout from chart (Apple)	148	0	1	0.662	0.4746	66%
T8_Q2-cout from chart (orange)	149	0	1	0.322	0.4689	32%
T8_Q3-cout from chart (Maximum)	149	0	1	0.362	0.4823	36%
T8_Q4-cout from chart (Apple and grapes)	149	0	1	0.208	0.4073	21%
T9_Q1-dostamce of house and temple	149	0	1	0.262	0.4411	26%
T9_Q2-who has more money	148	0	1	0.351	0.479	35%
T9_Q2_i-How to find who has more money	149	0	1	0.255	0.4374	26%
T9_Q2_ii-need to do to find who has more money	149	0	2	0.208	0.4235	10%
T9_Q3-cost of pen	149	0	9	0.617	0.8511	7%
T9_Q4-chocolates distribute equally to 5 friends	149	0	9	0.262	0.8252	3%
T9_Q4_i-need to distribute equally	149	0	1	0.181	0.3865	18%
T9_Q4_ii-Perform and find for equally distribute	148	0	1	0.142	0.3501	#SRILL!

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facilitate the construction of the test items. It also consists of instruction for undertaking reading assessment with some specific guidelines.

On the whole, this framework provides a theoretical guideline in order to make national assessment on the core literiacy and numeracy competencies that are fundamental in early grade language and mathematics. Moreover, it helps understand the existing status of students' literacy skills in order for the Ministry of Education to formulate the policies that improve reading and numeracy skills of early grade students. It is also expected that this framework provides insights into understanding how schools, parents, students and local authorities can work together towards supporting early grade students in developing their reading and numeracy skills. In fact, the framework for early grade literacy and numeracy is developed in acordance to international practices of early literacy assessment in mathematics and early grade literacy as well as on the basis of our curriculum. Since content points, competencies and types of task/item are dependent upon curricular competencies, the National Litercy Assessment framework is targetted to assess literacy achievement of early grade students in reading and mathematics reasonably. Therefore, it is expected that this framework as a whole provides input to the Ministry of Education and other concerned stakeholders to design programs and activities for developing students' literacy skills as well as to develop effective ways to assess literacy skills of the students.

Temporal Comparison

Benchmarks of reading and numeracy in NARN will be a standard for upcoming days in comparing results over the time as temporal comparison. The benchmark of reading has been already published in a separate document. Hence, Numeracy benchmark is a part of this framework which is developed during the process of framework development as an integral part of the framework. This benchmark will also help in comparing results with the GPF with a policy linking workshop. Since the curriculum of Nepal and international organizations and countries is different, it is a meaningful decision of ERO to develop a NARN framework based on the national curriculum and it is also aligned with GPF within its limitation.

Chapter III

Summary and conclusion

Basic literacy is the foundation that children need to be successful in all other areas of education. Children first need to learn to read so that they can read to learn and as children pass through the grade levels, more and more academic content is transmitted to them through text, and their ability to acquire new knowledge and skills depends largely on their ability to read and extract meaning from text. Early grade learning has been one of the major focus areas of the national education reform agenda. Therefore, there is a need for assessing students' reading ability in the early grades. Primarily, this framework provides a general guideline to clarify the concept of literay, literacy assessment (framework and cycle), skills and domains of readings, and mathematics.

Children's reading and numeracy competency has been given much importance since early grades lay important foundation for further development of education. The Early Grade Literacy traditionally involved simple reading, writing and arithematic shortly abbreviated as three R's. Realizing the importance of early grade literacy many countries and international agencies have conducted Early Grade Literacy Assessment in different names. Early Grade Mathematics Assessment (EGMA) and Early Grade Reading Assessment (EGRA) have been used as the model for early literacy assessment among many countries of the world. Learning from international practices and based on national curriculum of primary school mathematics (grades through 1 to 3) the framework for National Assessment for Reading and Numeracy(NARN) for Nepal has neen constructed. The main objective of NARN is to measure whether our national educational system is creating opportunities for students to achieve reading and mathematical literacy. In this context, this Framework provides a general guideline for understanding the concept of National Assessment for Reading and Numeracyin measuring both early grade reading and numracy (mathematics) skills. The Framework is consisted of four sections: Introduction to National Assessment for Reading and Numeracy, Assessment of Reading competencies, Assessment of numeracy and mathematics competencies including this conclusion. This framework specified content domain including number and patterm. For each content domains, there are sub-domains which are detailly specified in terms of performance competencies. Major categories of tasks or item types have also been formulated and then examples for tasks/items have also been developed so as to

things associated to the administreation of the test including an appropriate environment for conducting the test.Wriitten guidelines for conducting the test should be developed so as to maintain uniformity in administering the test. The following guidelines are some to be taken into consideration while conducting well formed paper and pencil assessment/test on already sampled/selected students' groups.

Sitting Arrangement:

i) Arrangement of spacious/comfortable sitting arrangement as needed with enough light for each examinee.

ii) Special arrangement for differently abled examinee.

Group Instruction:

i) Orient to the class/group(examinees) what is going to be assessed and with what purpose and how to make response in written form.

ii) Make them clear whether or not to use some tools like compass/ set squares etc. in their workings.

iii) Orient what is to be done when they want to make quarry as to the item(s) or any thing else during the test period.

iv) Orient them as to the total time limit of the test duration and division of time on the items.

One-to-one assessment

i) Orient the sampled students what is going to be assessed and the purpose of the assessment

ii) Make them clear that they have to answer the some of the questions orally following the instruction of the assessor.

Ethical Consideration

i) Make clear that ethical consideration including their personal identification will be kept confidential/secret in course of study.

ii) Make clear that they might not be involved in the test if they don't want.

Instruction within test items/tasks- Instruction to the test items

i) Mention the type of the items and the mode of answering clearly.
For example, selecting right response in multiple choice item,
transferring mode such as changing units of measurements,
or solving verbal problems.

ii) Mention if some instrument are intended to be used in drawings or free drawings are prererred.

2.4.Method and process of conducting assessment

Most national and international assesments were historically administered as paper-and-pencil test including grade 4 and above. But oral assesment seems to be the common approach to assess early grade literacy as adopted by international studies sush as, EGMA (2014) and ERGA (2016). In regard to necessacity and importance of oral assessment in assessing early literacy, ERGA (2016) mentions:

> …most national and international assessments were historically administered as paper-and-pencil tests to students in grade 4 and above (that is, they assumed students could read and write). It was not always possible to tell from the results of these tests whether students scored poorly because they lacked the knowledge tested by the assessments, or because they lacked basic reading and comprehension skills. Since 2010, a turn toward reading-skill assessments in the early grades . . . marks a change in awareness among international education researchers and stakeholders regarding the need for more empirical information about young children's ability to read with comprehension (p.1-2).

The above paragraph clearly indicate that written assessment might be inadequate to assess early literacy and the influence of awareness about young children ability to read with comprehension has been brouhgt by international studies such as ERGA since 2010. Due to such reason, recent version of ERGA (ERGA, 2016) and EGMA (2014) has been taken as one main reading in developing early literacy here in this study. Since children *learn to read* for *read to learn,* reading becomes one of the means to achieve literacy. The paper and pencil test assumes that students could read and write. In order to assess literacy skill of mathematics students are given problems/ items/tasks in written form and students need to answer in written form. Unlike oral assessment written assessment has many constraints in asessing students assessment achievement. This is because in oral assessment the assessor can suplement for language defeciency and other problems. This is why conducting written assessment using paper and pencil test imposes many limitations in assessing early litreacy of mathematics. To overcome such problems at least partially, clear and detail instruction for conducting the item/task should be developed appropriately(in addition to construction of appropriate items/tasks). For that purpose, clear and detail guidelines should be made so as to facilitate the conduction of assessment for the assessment takers or asessors. So after constructing the test set with the guidelines of conduction, the test are piloted to get better precision for final administration. More than that the test takers or the assossors should be given training so as to conduct the test appropriately and uniformly. There are many other

पठनसीपको राष्ट्रिय आधारसूचक (benchmark)

सन् २०१७ मा तय गरिएको बेन्चमार्क सन् २०२२ वि.सं. २०७८ मा पुनरवलोकन गरिएको छ । शैक्षिक गुणस्तर परीक्षण केन्द्रको नेतृत्व र EGRP/RTI को सहयोगमा सन २०१७ को ढाँचालाई पुनरवलोकन गरिएको हो । सन् २०१७ को विन्दुमा सीमाबद्ध गरिएको थियो । कक्षा १, २, ३ लाई ४५ शुद्ध शब्द प्रति मिनेट पठन प्रवाह र ८० प्रतिशत बोध हुनुपर्ने भनिएको थियो । यसले निर्धारित सीमा पार गर्ने र नगर्ने मात्र बताउँथ्यो । सीमा पार गर्ने त सक्षम भई गए यसमा कुनै समस्या थिएन । तर सो सीमा पार नगर्नेहरू कति तल छन् भनी तिनीहरूको स्थिति थाहा पाउन सक्ने स्थिति थिएन । यसले धाराप्रवाह पाठक वा प्रवीण पाठक गराउनका लागि के कस्तो रणनीति अख्तियार गर्ने स्पष्ट दिशा निर्देश गर्न सकेको थिएन । यही कुरालाई मध्यनजर गरी अहिलेको आधारसूचक (benchmark) मा विभिन्न दायरा उल्लेख गरिएको छ । जुन तल तालिकामा दिइएको छ ।

तालिका

आधारसूचक

पठनसीप		कक्षा १	कक्षा २	कक्षा ३
पूर्वआधारभूत (Pre basic)	पठन प्रवाह शुद्ध शब्द प्रतिमिनेट	१५ भन्दा कम	१५ भन्दा कम	२० भन्दा कम
	पठनबोध प्रतिशत	२० भन्दा कम	३० भन्दा कम	३० भन्दा कम
आधारभूत (Basic)	पठन प्रवाह शुद्ध शब्द प्रतिमिनेट	१५ देखि २५ भन्दा कम	१५ देखि ३० भन्दा कम	२० देखि ३५ भन्दा कम
	पठनबोध प्रतिशत	२० देखि ४० भन्दा कम	३० देखि ५० भन्दा कम	३० देखि ६० भन्दा कम
प्रवीण (Proficient)	पठन प्रवाह शुद्ध शब्द प्रतिमिनेट	२५ देखि ३५ भन्दा कम	३० देखि ४० भन्दा कम	३५ देखि ४५ भन्दा कम
	पठनबोध प्रतिशत	४० देखि ६० भन्दा कम	५० देखि ७० भन्दा कम	६० देखि ८० भन्दा कम
उच्च दक्षता (Advance)	पठन प्रवाह शुद्ध शब्द प्रतिमिनेट	३५ र सोभन्दा माथि	४० र सोभन्दा माथि	४५ र सोभन्दा माथि
	पठनबोध प्रतिशत	६० र सोभन्दा माथि	७० र सोभन्दा माथि	८० र सोभन्दा माथि

स्रोतःराष्ट्रिय प्रारम्भिक कक्षा पठनसीप आधारसूचक २०७९

९. तपाईलाई विद्यालय किन मन पर्छ ? तीन वाक्यमा लेख्नुहोस् । (३)

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विशिष्टीकरण तालिका

क्र.स.	विषयक्षेत्र	परीक्षणीय पक्ष	साधन	प्रश्न सङ्ख्या	पूर्णाङ्क	समय
१	हाम्रो समुदाय	शब्दभण्डार	शब्द सूची	२	२	२ मि.
२	म र मेरो परिवार	शब्दभण्डार	अर्थबोध र प्रयोग	२	३	३
३	रुचि र बानी	लेखन अभ्यास	श्रुतिलेखन	१	३	४
४	हाम्रो वातावरण	दृश्यबोध	चित्र वर्णन	१	३	४
५	हाम्रा क्रियाकलाप	लेखन अभ्यास	अनुच्छेद लेखन	१	३	४
६	मेरो विद्यालय	पठनअभ्यास र सस्वरवाचन	पठनबोध र प्रश्नोत्तर	६	७	७
७	मेरो सिर्जना र हाम्रो संस्कृति	लेखन अभ्यास	सिर्जना	१	३	४
			जम्मा	१४	२४	२८

७. दिइएको अनुच्छेद शुद्धसंग पढेर सुनाउनुहोस् : (२)

हर्षमान किसान हुन् । उनको खेत गहिरो ठाउँमा छ । उनको खेतलाई गैरीखेत भनिन्छ । खेतको वरपर ठुला साना रुखहरू छन् । खेतको सिरानमा पानीको मुहान छ । खेतमा बाह्रै महिना पानी लाग्छ । उनी दिनहुँजसो खेतीपातीमा व्यस्त हुन्छन् । मौसमअनुसार धान, मकै, गहुँ, आलु, तोरी लगाउँछन् । उनको खेतमा धेरै उब्जनी हुन्छ । उनले लगाएको बाली घरसम्म पुऱ्याउनका लागि मोटरबाटो छैन । उनी आफ्नो खेतसम्म मोटरबाटो लाने योजनामा छन् ।

८. प्रश्न नं. ७ को अनुच्छेद पढी तलको प्रश्नको उत्तर लेख्नुहोस् :५

(क) खेतमा काम गर्ने मानिसलाई के भनिन्छ ?

(अ) व्यापारी (आ) गोठालो

(इ) किसान (ई) माली

(ख) हर्षमानको खेतको नाम के हो ?

(अ) धानखेत (आ) गहुँखेत

(इ) तोरीखेत (ई) गैरीखेत

(ग) हर्षमानको खेतमा कति महिना पानी लाग्छ ?

(अ) बाह्र महिना (आ) दश महिना

(इ) आठ महिना (ई) छ महिना

(घ) हर्षमान खेतमा कुन् कुन् वाली लगाउँछन् ?

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(ङ) हर्षमान किन आफ्नो खेतसम्म मोटरबाटो लाने योजनामा छन् ?

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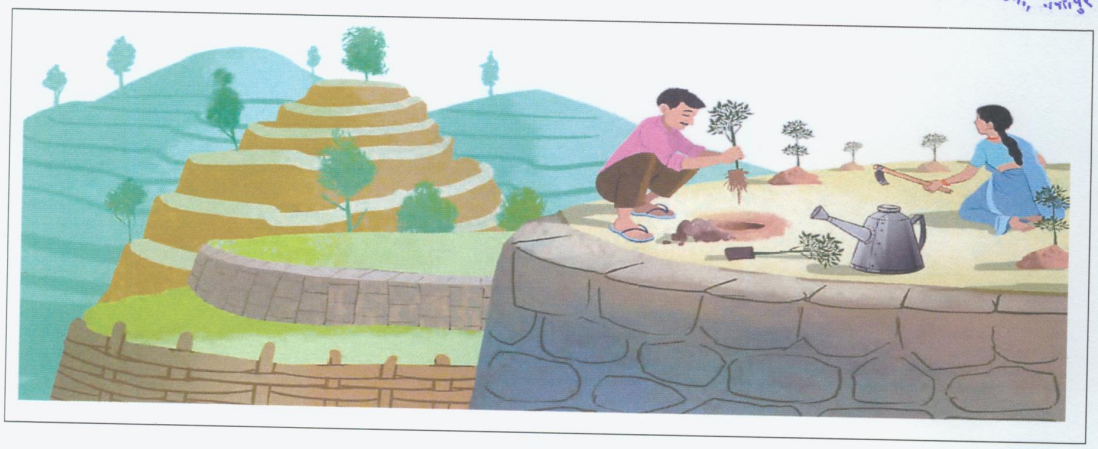
५.दिइएको चित्र हेरी तीन वाक्यमा वर्णन गर्नुहोस् : (३)



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६. मिल्दो शब्द राखेर अनुच्छेद पूरा गर्नुहोस् : (२)

पढन्ते	आवाज	खुसी	आनन्द	घुमन्ते

निमेष ..... निकालेर पढ्छन् । साथीहरू उनलाई ..... भन्छन् । धनेश प्राय: गाउँ घुमिरहने भएकाले साथीहरूले ..... भन्छन् । यस्ता नाममा निमेष र धनेश ..... नै छन् ।

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नमुना प्रश्न

१. शिक्षकले उच्चारण गर्नुभएको शब्दमा ठिक चिह्न लगाउनुहोस् : (२)

(क) जनैपूर्णिमा धान्यपूर्णिमा फागुपूर्णिमा गुरुपूर्णिमा

(ख) गाउँ घाँस वंश पञ्च

२. खाली ठाउँमा उपयुक्त शब्द छानी वाक्य पूरा गर्नुहोस् : (२)

(क) खुसीयालीमा मान्यजनबाट दिने कोसेलीलाई ..... भनिन्छ । (आहार, उपहार, अनुहार)

(ख) 'आमा' शब्दको उस्तै अर्थ दिने शब्द ..... हो । (नयनी, जननी, नानी)

३. 'पाहुना' शब्दलाई अर्थ खुल्ने गरी वाक्य बनाउनुहोस् : (१)

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४. शिक्षकले उच्चारण गरेका शब्दहरू सुनेर शुद्धसँग लेख्नुहोस् : (३)

(क) .....

(ख) .....

(ग) .....

(घ) .....

(ङ) .....

(च) .....

शिक्षकका लागि		
(क) गीत	(ख) जुत्ता	(ग) रुचि
(घ) आँगन	(ङ) पाङ्ग्रा	(च) तृतीय

४. हाम्रो वातावरण	चित्र वर्णनसम्बन्धी प्रश्नोत्तर गर्न	दृश्यबोध	चित्र वर्णन	१. चित्र दिई तीन वाक्यमा वर्णन गर्न लगाउने ।	३	१	४ मि.
५ हाम्रा कियाकलाप	दिइएको निर्देशनअनुसार अनुच्छेद पूरा गर्न	लेखन अभ्यास	अनुच्छेद लेखन	१. दिइएको निर्देशनअनुसार तीन वाक्यको अनुच्छेद पूरा गर्न लगाउने	३	१	४ मि.
६. मेरो विद्यालय	प्रवाहपूर्ण रूपमा दिइएको सामग्री पढ्न र बोध गर्न	पठनअभ्यास र सस्वरवाचन	पठनबोध र प्रश्नोत्तर	१. गद्य विधाका पाठबाट ६० शब्दसम्मको अनुच्छेद दिई गति, यति मिलाई प्रवाहपूर्ण पठन गर्न लगाउने र प्रत्येक विद्यार्थीले १ मिनेटमा शुद्ध उच्चारण गरेका शब्दको यकिन गर्ने २.दिइएको अनुच्छेदबाट तीनओटा बहुवैकल्पिक र दुइओटा अति छोटो उत्तर दिन लगाउने	२+५=७	६	७ मि.
७. मेरो सिर्जना/ हाम्रो संस्कृति	दिइएका विषयवस्तुका आधारमा अनुच्छेद रचना गर्न	लेखन अभ्यास	सिर्जना	१. दैनिक क्रियाकलाप वा चाडपर्वको बारेमा तीन वाक्यसम्मको अनुच्छेद लेख्न लगाउने	३	१	४ मि.
				जम्मा	२४	१४	२८

तोकिएका विषयक्षेत्रमा रहेर प्रश्नपत्र निर्माण गर्नुपर्ने छ ।

रचना गर्न

१५. लिङ्ग, वचन, पुरुष र आदरका आधारमा सरल वाक्यमा परिवर्तन गर्न

१६. सर्गपरक शब्दको पहिचान गरी उच्चारण र शब्दसूची निर्माण गर्न

१७. पाठमा प्रयुक्त दैनिक प्रयोगमा आउने शब्द, लब्ध शब्द तथा शीर्ष शब्द पढ्न

१८. हर्ष, चिन्ता, घृणा, आश्चर्य, उत्सुकता जस्ता संवेगात्मक अभिव्यक्ति बुझेर प्रतिक्रिया व्यक्त गर्न

१९. स्थानीय परिवेश, सन्दर्भ तथा विषयवस्तु झल्किने शीर्षक वा विषयवस्तु छनोट गरी अनुच्छेद लेख्न

२०. शब्दअनुसारका चित्र र चित्रअनुसारका शब्द पहिचान गरी प्रश्नोत्तर गर्न

२१. तथ्य, सन्दर्भ, सूचना र पूर्वज्ञानमा आधारित भई मौखिक र लिखित उत्तर दिन

२२. शब्द, वाक्य र अनुच्छेदको अनुलेखन, श्रुतिलेखन, निर्देशित लेखन र सिर्जनात्मक लेखन गर्न

कक्षा ३ का विद्यार्थीहरूको पठनसिप परीक्षणको लागि निम्न विषयक्षेत्रहरू निर्धारण गरिएको छ ।

मूल्याङ्कनका आधार

विषयक्षेत्र	सिकाइ उपलब्धि	परीक्षणीय पक्ष	साधन	व्याख्या	अङ्क	प्र.स.	समय
१. हाम्रो समुदाय	पारिवारिक, विद्यालयीय र सामाजिक परिवेशमा प्रयोग हुने शब्द पहिचान गर्न	शब्द भण्डार	शब्द सूची	१. शिक्षकले आधा वर्णसहित मात्रा लागेका शब्द उच्चारण गर्ने र विद्यार्थीलाई शब्द पहिचान गर्न लगाउने २. शिक्षकले चन्द्रबिन्दु/शिरबिन्दु/पञ्चम वर्ण प्रयोग भई बनेका दुई वर्णसहितका शब्द उच्चारण गर्ने र विद्यार्थीलाई शब्द पहिचान गर्न लगाउने	२	२	२ मि
२. म र मेरो परिवार	पारिवारिक परिवेशमा आउने शब्दको अर्थ र प्रयोग गर्न	शब्द भण्डार	अर्थबोध र प्रयोग	१. खाली ठाउँमा उपयुक्त शब्द छानी वाक्य पूरा गर्न लगाउने अथवा उपयुक्त विकल्प छानी ठिक चिह्न दिन लगाउने खालका दुईओटा प्रश्नको उत्तर दिन लगाउने २. पारिवारिक परिवेशमा आउने कुनै एक शब्दको वाक्यमा प्रयोग गर्न लगाउने	२ १	२	३ मि.
३. रुचि र बानी	दिइएका शब्द श्रुतिलेखन गर्न	लेखन अभ्यास	श्रुतिलेखन	१. छओटा शब्दको श्रुतिलेखन गर्न लगाउने (शब्दको कठिनाइस्तर मिलाउने)	३	१	४ मि.

तहगत सक्षमता

यस तहको अन्त्यमा विद्यार्थीहरूमा निम्नलिखित समक्षता हासिल हुने छन् :

१. कुराकानी, संवाद, छलफल र प्रश्नोत्तरका क्रममा दोहोरो सञ्चार

२. चित्र, घटना, परिवेश र पाठगत सन्दर्भका आधारमा विषयवस्तुको बोध र अभिव्यक्ति

३. शब्दमा प्रयुक्त ध्वनि र वर्णको शुद्ध उच्चारण

४. वर्ण, मात्रा र शब्दको सङ्केतन र विसङ्केतन गरी शुद्ध बोलाइ र लेखाइ

५. प्रवाहपूर्ण पठन, उपयुक्त बोध र अभिव्यक्ति

६. श्रव्य, दृश्य र श्रव्यदृश्य सामग्रीको बोधसहितको भाषिक कार्य

७. मौखिक र लिखित अभिव्यक्तिमा सिर्जनात्मक तथा समालोचनात्मक शिल्पको प्रयोग

कक्षा तीनको कक्षागत सिकाइ उपलब्धि

१. उपयुक्त भाषाको प्रयोग गरी कुराकानी, संवाद, छलफल र प्रश्नोत्तर गर्न

२. पारिवारिक, विद्यालयीय र सामाजिक परिवेशमा प्रयोग हुने शब्द पहिचान गरी प्रयोग गर्न

३. उस्तै उस्तै ध्वनि तथा समान संरचना भएका शब्दको प्रयोग गरी भाषिक सञ्चार गर्न

४. पाठका आधारमा घटना वर्णन, अनुभव वर्णन, बुँदा लेखन र तार्किक विश्लेषण गर्न

५. विषयवस्तुका आधारमा कुराकानी र छलफल गरी लिखित अभिव्यक्ति दिन

६. शब्दका वर्ण विभाजन गर्न र वर्ण जोडेर, थपेर, झिकेर र परिवर्तन गरेर नयाँ शब्द निर्माण गर्न

७. शब्द शब्द जोडेर वा छुट्याएर शब्दको पहिचान गरी तिनको उच्चारण तथा शब्दसूची निर्माण र प्रयोग गर्न

८. शब्दको सन्दर्भगत अर्थ पहिचान र प्रयोग गर्न

९. प्राप्त सूचना तथा पढेका सामग्रीका आधारमा विषयवस्तु, पात्र र घटनाको बोध गरी प्रतिक्रिया व्यक्त गर्न

१०. शीर्षक र पूर्वज्ञानका आधारमा पाठ पढ्न र त्यसका आधारमा स्वसिकाइको परीक्षण गर्न

११. हलन्त र संयुक्त व्यञ्जन वर्ण प्रयोग भएका शब्दको पहिचान गरी उच्चारण र अर्थबोध गर्न

१२. सन्दर्भ सामग्री पढेर विषयवस्तु बोध गरी लेख्न

१३. पाठका चरित्र, परिवेश र घटनाको वर्णन गर्न

१४. पदसङ्गति मिलाई लेख्यचिह्न र क्रियाका कालको उपयुक्त प्रयोग गरेर वाक्य तथा अनुच्छेद

NARN को उद्देश्य

१. कक्षा ३ मा अध्ययनरत बालबालिकाको वर्तमान उपलब्धिको अवस्था र भाषिक तथा गणितीय सीप थाहा पाउनु,

२. भाषिक तथा गणितीय सीपको न्यूनतम उपलब्धि हासिल गर्न विद्यार्थीको आर्थिक, सामाजिक तथा भौगोलिक अवस्थाले पार्ने प्रभाव पत्ता लगाउनु,

३.विद्यालय तथा प्रधानाध्यापकको पृष्ठभूमिको कारण भाषिक तथा गणितीय सीपको उपलब्धिमा पर्ने प्रभावको अध्ययन गर्नु,

४. उपलब्धि स्तरलाई सुधार गर्नको लागि नीति तथा कार्ययोजनामा परिमार्जन गर्न प्रमाणमा आधारित सुझाव प्रदान गर्नु ।

कक्षा ३ का विद्यार्थीमा नेपाली भाषामा हुनुपर्ने न्यूनतम सिकाइ उपलब्धि कुन स्तरमा हासिल भएको छ भन्ने प्रमाणित आधार लिनका लागि भाषिक सिप परीक्षण एक महत्त्वपूर्ण कार्यप्रक्रिया हो । यो कार्यलाई वस्तुगत र विश्वसनीय बनाउन त्यसका आधारहरूलाई सकेसम्म वस्तुनिष्ठ बनाउनका लागि यो परीक्षण ढाँचाले सहयोग पुर्याउने अपेक्षा गरिएको छ । एकीकृत पाठ्यक्रमले सिकाइ क्षेत्रलाई विषयक्षेत्रगत एकाइमा विभाजन गरी भाषिक सिप, व्यवहारकुशल सिप, विद्यार्थीको वैयक्तिक सिकाइ क्षमतालाई सम्बोधन गर्ने उपागम र भाषिक प्रकार्यलाई एकीकृत रूपमा प्रस्तुत गरिएको हुनाले यस परीक्षण ढाँचामा सकेसम्म धेरै विषयक्षेत्रगत एकाइलाई समावेश गर्ने प्रयास गरिएको छ ।

२. विषयक्षेत्र पहिचान

कक्षा ३ का विद्यार्थीको सक्षमताले आधारभूत तहको कक्षा तीनसम्मको सक्षमता जनाउने भएकाले विषवस्तुको पहिचान गर्दा तल्ला कक्षादेखि माथिल्ला सक्षमताको समेत विचार गर्नुपर्ने हुन्छ । यही कुरालाई विचार गरेर विषयक्षेत्रको पहिचान गर्नका लागि कक्षा १-३ तहको एकीकृत पाठ्यक्रमले निर्धारण गरेका नेपाली विषयको तहगत सक्षमतालाई ध्यान पुर्याउनुपर्ने हुन्छ । कक्षा १-३ तहको अध्ययन पूरा गरेपछि नेपाली भाषामा विद्यार्थीहरू निम्नलिखित कार्य गर्न सक्नेछन् भनी एकीकृत पाठ्यक्रमले तहगत सक्षमता र कक्षागत सिकाइ उपलब्धि निर्धारण गरेको छ :

3. Framework for Reading

नेपाली विषयको भाषिक सीप परीक्षण ढाँचा

परिचय

नेपाली भाषा नेपालको सरकारी कामकाजको भाषा हो । यो भाषा नेपालमा बोलिने नेपाली भाषाबाहेकका विभिन्न राष्ट्रभाषाका प्रयोक्ताबिचको सम्पर्क भाषा पनि हो । नेपाली भाषा विद्यालय तहको शिक्षाको माध्यम भाषा भएकाले विद्यालय तहको प्रारम्भिक कक्षादेखि नै अनिवार्य विषयका रूपमा पठनपाठन हुँदै आएको छ । नेपाली भाषाको पठनपाठनलाई व्यावहारिक र प्रभावकारी बनाउनु समयको आवश्यकता पनि हो ।

विश्वमा भएका अनुसन्धानहरूले भाषालाई सिकाइको प्रमुख र आधारभूत पक्ष मान्दै आएका छन् । भाषा विचार विनिमयका साथै सिकाइको माध्यम र चिन्तनको आधार पनि हो । भाषाका सिपहरूमार्फत सिकाइलाई प्रभावकारी बनाउन भाषाको मुख्य भूमिका रहन्छ । भाषिक सिपमार्फत विद्यार्थीको सिकाइ क्षमता अभिवृद्धि गर्ने लक्ष्य राखिएको हुन्छ । आधारभूत तह कक्षा ३ मा नेपाली सिकाइनुको प्रयोजन चित्र, घटना, परिवेश र पाठगत सन्दर्भका आधारमा विषयवस्तुको बोध, प्रवाहपूर्ण पठन, मौखिक र लिखित अभिव्यक्तिमा सिर्जनात्मक तथा समालोचनात्मक शिल्पको प्रयोग तथा सामान्य भाषिक दक्षता अभिवृद्धि रहेको छ । आधारभूत तह कक्षा ३ का लागि विस्तृतीकरण गरिएका सिकाइ उपलब्धिको आधारमा यो परीक्षण ढाँचा विकास गरिएको छ । यो परीक्षण ढाँचाले शैक्षिक गुणस्तर परीक्षण केन्द्रबाट सञ्चालन गरिने कक्षा ३ को भाषिक सिप परीक्षणका लागि तयार गरिने प्रश्नहरू र त्यसबाट आएको नतिजालाई व्याख्या र विश्लेषण गर्ने आधार प्रदान गर्ने छ

शैक्षिक गुणस्तर परीक्षण केन्द्रले २०१५ मा कक्षा ३ मा पनि विद्यार्थीको सिकाइ उपलब्धि पत्ता लगाउन NASA परीक्षण गरेको थियो । २०१५ मा NEGRP लागू भएपछि NASA बाट कक्षा ३ लाई अलग गरियो । EGRA ले केबल मौखिक परीक्षण मात्र गर्ने भएकाले कक्षा ३ मा कस्तो लेखन सीपका बालबालिकाहरू कक्षा ४ मा स्तरोन्नति हुन्छन् र कक्षा ५ मा गरिने NASA परीक्षणमा उनीहरूको उपलब्धिलाई जोड्न सकिन्छ भन्नेमा अन्यौलता थियो । त्यसैले कक्षा ३ मा NASA र EGRA को मिश्रित रूपरेखाको आवश्यकता महसुस भयो । यही आवश्यकतालाई पूरा गर्न NARN को अवधारणा विकास भएको पाइन्छ ।

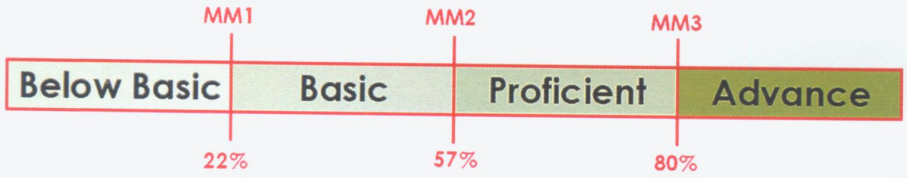
NARN को परीक्षण ढाँचा CB—EGRA र EGRA को मिश्रण जस्तो छ । नेपाली र गणित विषयलाई मिसाएर परीक्षण साधन निर्माण गर्नु NARN को अर्को विशेषता हो । प्रारम्भिक कक्षाको अन्त्यमा पढाइ र गणितीय सीपको न्यूनतम स्तर मापनको लागि NARN परीक्षण साधन उपयुक्त मानिएको छ ।

Benchmark Summary

STAGE	Round 1	Round 2	Round 3
MM1	22%	24%	22%
MM2	52%	44%	57%
MM3	73%	78%	80%

Those cut-scores are the valid threshold to compare performance of students of grade 3 in numeracy. The final round cut-scores are presented in a visual form to make it more understandable.

The above cut-scores are presented in a visual form below:



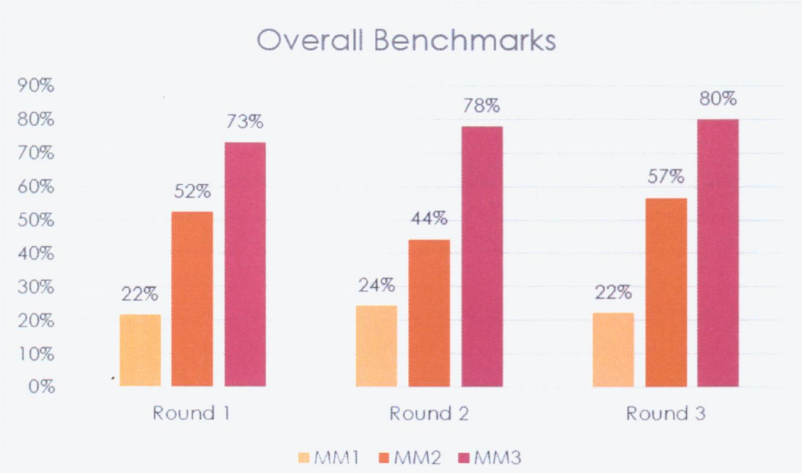
Result: The three cut scores – MM1 represents the cut score between below basic and Basic, MM2 represents the cut-score between basic and proficient, and the MM3 represents the cut score between proficient and advance. Thus, the final cut scores for NARN assessment in Numeracy are MM1 – 22%, MM2 = 57% and MM3 = 80%. These cut-scores are the final benchmark for numeracy that are used to compare the results and identify proficiency of all children at the end of grade 3.

The y-axis represents the bookmarked percentage of correct answer and in x-axis, panel experts code number.

The standard deviation of the bookmarked difficulty is 7% in first cut score, 6% in second cut score and 3% in third cut-score in second round.

2.6 Results

Through the three round rigorous efforts of the panel members, three set of cut-scores were generated. Those three sets of cut-scores of three different rounds is presented in the figure below:



The standard deviation of bookmarks of all levels revealed that in the last round, the panel experts were close to the similar bookmark or cut-score.

The final average score of the cut-scores was calculated by subtracting the percentage of correct answer from 1 to get the appropriate difficulty level of the items. Thus, the average summary is generated by using the 1-MM1, 1-MM2 and 1-MM2 average scores. Overall benchmark summary in terms of cut-scores of all three rounds are presented in the following picture.

The standard deviation of the bookmarked difficulty is 10% in first cut score, 6% in second cut score and 5% in third cut-score in second round.

3. Third Round bookmarks presented in the difficulty level.

The bookmarks of 20 raters are presented in the table below:

Expert's Code	MM1	MM2	MM3
1	81%	48%	20%
2	81%	49%	21%
3	84%	45%	21%
4	81%	35%	16%
5	81%	45%	20%
6	81%	32%	15%
7	81%	35%	16%
8	81%	41%	20%
9	66%	48%	25%
10	81%	41%	20%
11	57%	45%	22%
12	81%	49%	21%
13	81%	48%	21%
14	81%	32%	15%
15	66%	40%	20%
16	81%	49%	22%
17	66%	36%	21%
18	81%	49%	21%
19	81%	49%	21%
20	81%	49%	21%

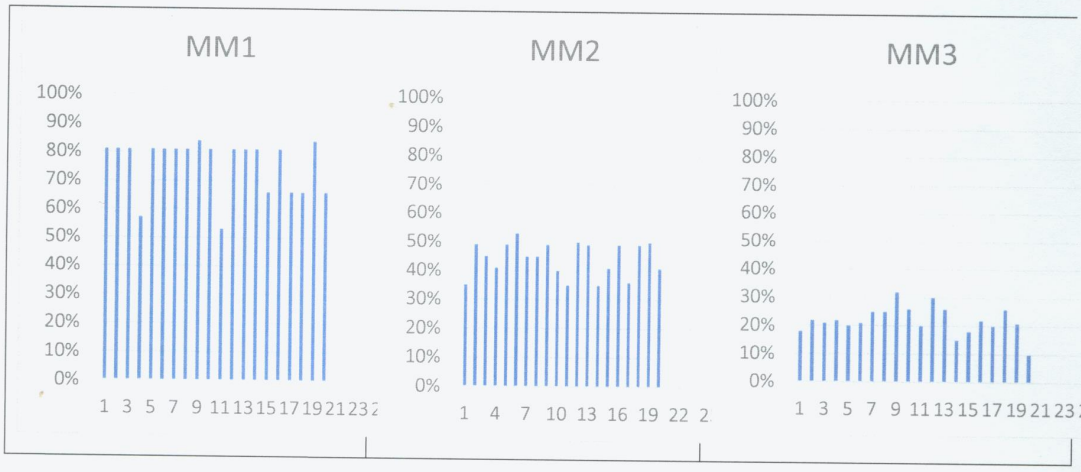
The graphical presentation of the cut scores based on the bookmarked percentage correct answer are presented below:

2. Second Round bookmarks presented in the difficulty level.

The bookmarks of 20 raters are presented in the table below. The MM1 represents the first cut-score between below basic and basic level, MM2 represents the cut-score between basic and proficient and MM3 represents the cut-score between proficient and advance levels.

Expert's Code	MM1	MM2	MM3
1	81%	35%	18%
2	81%	49%	22%
3	81%	45%	21%
4	57%	41%	22%
5	81%	49%	20%
6	81%	53%	21%
7	81%	45%	25%
8	81%	45%	25%
9	84%	49%	32%
10	81%	40%	26%
11	53%	35%	20%
12	81%	50%	30%
13	81%	49%	26%
14	81%	35%	15%
15	66%	41%	18%
16	81%	49%	22%
17	66%	36%	20%
18	66%	49%	26%
19	84%	50%	21%
20	66%	41%	10%

The graphical presentation of the cut scores based on the bookmarked percentage correct answer are presented below:

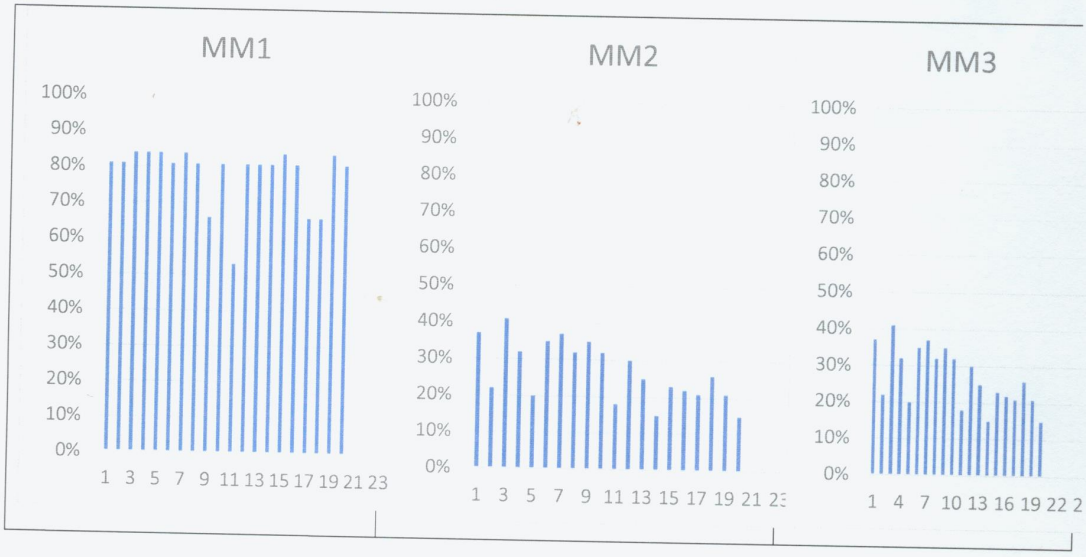


1. First Round bookmarks presented in the difficulty level.

The bookmarks of 20 raters are presented in the table below:

Panel Expert's Numeric Code	MM1	MM2	MM3
1	81%	41%	37%
2	81%	49%	22%
3	84%	81%	41%
4	84%	49%	32%
5	84%	45%	20%
6	81%	49%	35%
7	84%	45%	37%
8	81%	48%	32%
9	66%	49%	35%
10	81%	45%	32%
11	53%	35%	18%
12	81%	50%	30%
13	81%	50%	25%
14	81%	32%	15%
15	84%	40%	23%
16	81%	48%	22%
17	66%	35%	21%
18	66%	49%	26%
19	84%	66%	21%
20	81%	48%	15%

The graphical version of the bookmark is presented below:



The standard deviation of the bookmarked difficulty is 8% in first cut score, 11% in second cut score and 8% in third cut-score.

2.5 Output of Bookmark Method for NARN

The cut scores for benchmarking were derived through a thorough and rigorous process involving multiple rounds of deliberation by a panel comprising experts from esteemed organizations such as the World Bank, USAID, World Education, Centre for Education and Human Resource Development (CEHRD), Curriculum Development Centre (CDC), and the Education Review Office (ERO). Although there were more than 30 participants, only 20 person's panel have participated in the bookmarking activity and other participants observed the process.

The panel's collaborative efforts, spanning three rounds of intense bookmarking and one discussion session, resulted in the establishment of the cut scores. These scores represent the thresholds that define the different proficiency levels. To visually present the outcomes, the cut scores generated by the panel have been graphically represented.

The panel participants were coded to anonymize them. Anonymity of the participants is expected make them confident and bookmark will be confidential so that they do not hesitate in the process of bookmarking. The codes used for the panel are presented below.

Panel Expert's code [used to identify by moderator]	Panel Expert's Numeric Code
Nehanman Primary	1
KM	2
Fifty four	3
sh	4
SAM	5
Five	6
NR	7
Secondary - SA	8
T0316	9
KSSS	10
RT	11
RT1	12
ST	13
University - DA	14
HP	15
Officer - RC	16
Org- CLAMP	17
TP	18
S2070	19
SUP	20

	Global Minimum Proficiency: Learners lack the most basic knowledge and skills. As a result, they generally cannot complete the most basic grade-level tasks.	**Minimum Proficiency:** Learners have limited knowledge and skills. As a result, they can partially complete basic grade-level tasks.	**Proficiency:** Learners have developed sufficient knowledge and skills. As a result, they can successfully complete the most basic Grade-level tasks.	**Minimum Proficiency:** Learners have developed superior knowledge and skills. As a result, they can complete complex grade-level tasks.

NARN adopted the same general descriptors which are used in GPF.

2.3 Alignment with the Global Proficiency Framework

The following table shades light on the alignment of NARN framework with the Global Proficiency Framework.

	Proficiency Levels			
NARN Framework	**Below Basic:** below partially meets minimum proficiency	**Basic:** Partially meets minimum proficiency	**Proficient:** Meets minimum proficiency	**Advance:** Exceed minimum proficiency
GPF	Below Partially Meets Global Minimum Proficiency	Partially Meets Global Minimum Proficiency	Meets Global Minimum Proficiency	Exceeds Global Minimum Proficiency

2.4 Alignment of General Descriptors of NARN with GPF

	Descriptors			
NARN Framework	**Below Basic:** Learners lack the most basic knowledge and skills. As a result, they generally cannot complete the most basic grade-level tasks.	**Basic:** Learners have limited knowledge and skills. As a result, they can partially complete basic grade-level tasks.	**Proficient:** Learners have developed sufficient knowledge and skills. As a result, they can successfully complete the most basic Grade-level tasks.	**Advance:** Learners have developed superior knowledge and skills. As a result, they can complete complex grade-level tasks.
GPF	**Below Partially Meets**	**Partially Meets Global**	**Meets Global Minimum**	**Exceeds Global**

S.no.	Domain	Sub skill	Learning outcomes	Proficiency Standard				Sample exercise for "Advanced"
				Below Basic (below grade level)	Basic (partially meets grade level)	Proficient (meets grade level)	Advanced (exceeds grade level)	
22			Convert kilograms into grams.	Recall the units of weight measurement and the relation between kilogram and gram (i.e., 1 kg = 1000 g).	Conduct conversion between kilogram and gram for the weight more than 1 kg, such as 2600 g = 2 kg and 600 g, etc.	Solve simple problems involving conversion between kilogram and gram.	Solve practical, multi-step problems involving conversion between kilogram and gram.	
23			Tell the relation between liter and milliliter.	Identify the unit of volume, involving liters and milliliters.	Recall the relation between liter and milliliter (i.e., 1 L = 1000 mL).	Solve simple problems involving conversion between liter and milliliter.	Solve practical, multi-step problems involving conversion between liter and milliliter.	
24			Conduct addition and subtraction related to liter and milliliter.	Add and subtract either liters or milliliters without carrying and conversion.	Add and subtract either liters or milliliters with carrying within each unit.	Solve simple problems involving addition and subtraction related to liter and milliliter with carries and conversion between liter and milliliter.	Solve practical, multi-step problems involving addition and subtraction related to liter and milliliter.	Ex) A and B divide 3 L of milk. If A takes 1 L 200 mL, how many more liters and milliliters will B take than A?
25		**Measuring area**	Find the area of a rectangular or square plain surface by counting unit squares in a square grid.	Identify rectangular and square areas.	Find the area of squares and rectangles by counting the number of unit squares.	Find the area of a rectangular or square by dividing the area into unit squares and counting the number of unit squares.	Find the area of a rectangular or square plain surface by using an idea that a rectangular area is calculated by multiplying width and length.	
26	Graph	**Arranging data and information**	Construct a pictograph.	Read a pictograph to find the number of data in each column or row.	Read a table and a pictograph to find the number of data in each column or row.	Construct a pictograph when a set of data is given in a table.	Construct a table and a pictograph to represent data collected from real-world situations.	

S.no.	Domain	Sub skill	Learning outcomes	Proficiency Standard				Sample exercise for "Advanced"
				Below Basic (below grade level)	Basic (partially meets grade level)	Proficient (meets grade level)	Advanced (exceeds grade level)	
17			Tell and write the relation of units of time (year, month, week, day, hours, minutes and second).	Recall different units of time, such as hour and minute.	Identify the relation of units between year and month, between week and day, and between hour, minute and second.	Use the relation of units between year, month, week, day, hour, minute, and second, to solve simple problems related to our daily life.	Solve practical, multi-step problems on the unit of time, involving various units.	Ex) Jestha 2080 has 32 days. You started working on a task on 14 Jestha, and completed it 25 days later. On what month and day did you finish the task?
18			Find the elapse time of any work.	Read clocks to calculate the elapsed time in hours in the cases where the difference is only few hours.	Read clocks to calculate the elapsed time either in hours or minutes.	Solve simple problems related to elapsed time whose answers include both hours and minutes, such as: finding the clock time that is several hours and minutes before or after a given clock time, and the difference between two clock times.	Solve practical, multi-step problems on elapsed time in hours and minutes.	Ex) A boy wants to arrive uncle's house by 10:00 in a morning, but he will spend 15 minutes at a shop to buy souvenir. It takes 35 minutes from home and the shop and 25 minutes from the shop to the uncle's house on foot. What time does the boy have to leave home at latest?
19		**Using currency units**	Conduct addition and subtraction related to currency.	Solve simple problems involving addition and subtraction of money not exceeding Rs 1000 without carrying and conversion.	Add and subtract money in rupees with carries and conversion between Rupees and Paisa.	Solve simple problems related to addition and subtraction of money, such as the number of ways to pay money in a given condition.	Solve practical, multi-step problems related to addition and subtraction of money.	
20		**Using standard units of measurement**	Estimate and measure and validate the length of various objects in meters or centimeters.	Measure the length of various objects in meters or centimeters.	Measure the length of various objects in meters and centimeters.	Estimate and measure the length of various objects in meters or centimeters and check how much the actual length is different from one's estimation.	Estimate the length of various objects in meters or centimeters with small difference with the actual length.	
21			Convert meter into centimeter and centimeter into millimeter.	Recall the units of length measurement and the relation between centimeter and millimeter (i.e., 1 cm = 10 mm).	Recall the relation between meter and centimeter (i.e., 1 m = 100 cm)	Solve simple problems involving conversion between meter and centimeter and between centimeter and millimeter.	Solve practical, multi-step problems involving conversion between meters, centimeters, and millimeters.	Ex) The height of A is 108 cm and that of B is 1 m 24 cm. Who is how many centimeters taller than the other?

S.no.	Domain	Sub skill	Learning outcomes	Proficiency Standard				Sample exercise for "Advanced"
				Below Basic (below grade level)	Basic (partially meets grade level)	Proficient (meets grade level)	Advanced (exceeds grade level)	
							more, etc.	
12		**Dividing whole numbers**	Divide up to three-digit numbers by numbers up to 10.	Conduct division within the multiplication tables up to 10.	Divide a three-digit number by a number up to 10 without a remainder.	Divide a three-digit number by a number up to 10 with remainders.	Solve practical, multi-step problems involving division of three-digit numbers by numbers up to 10, with or without remainder.	Ex) There are 460 people. In a conference, 3 people sit together on 1 bench. How many benches do we need to prepare?
13		**Measuring length**	Measure the length of line segments of a given object and draw the line segment of a given length.	Identify line segments and draw line segments using straight objects.	Measure the length of line segments of the straight edges of an object using a ruler.	Measure the length of line segments or the straight edges of an object, and draw line segments of a given length with use of a ruler.	Measure the lengths of line segments or straight objects, and arrange them in ascending or descending order in terms of length.	
14		**Recognizing angles**	Recognize the concept of the right angle.	Recognize angles in given pictures.	Identify right angles in given pictures and in solid objects available in the surroundings.	Demonstrate that a right angle is a half of a straight line and constructed by folding a paper twice.	Draw a right angle and an angle smaller/larger than a right angle with use of set squares.	
15	Geometry	**Recognizing geometric shapes**	Recognize squares and rectangles.	Identify quadrilaterals in given pictures.	Identify squares and rectangles in given pictures and in our surroundings.	Show an understanding that a square has four equal angles and four equal length of sides and that a rectangle has four equal angles and equal length of opposite sides.	Prepare a square and a rectangle by folding a paper.	
16	Measurement	**Identifying different units of time**	Tell and write the time in hours, minutes and second using clocks.	Read a clock to tell and write the time in o'clock for familiar daily activities.	Read a clock to tell and write the time in o'clock and minutes.	Read a clock to tell and write time in o'clock, minutes and second.	Indicate a given time with use of a clock in o'clock, minutes, and second.	

S.no.	Domain	Sub skill	Learning outcomes	Proficiency Standard				Sample exercise for "Advanced"
				Below Basic (below grade level)	Basic (partially meets grade level)	Proficient (meets grade level)	Advanced (exceeds grade level)	
6		**Using fractions**	Demonstrate the fractions 1/2, 1/4, 3/4, 1/3 and 2/3 by using solid objects or drawings.	Demonstrate the fractions 1/2 and 1/4 by using solid objects or drawings.	Demonstrate the fractions 1/2, 1/4, and 3/4 by using solid objects or drawings.	Demonstrate the fractions 1/2, 1/4, 3/4, 1/3 and 2/3 by using solid objects or drawings.	Demonstrate proper fractions with a denominator greater than 3 by using solid objects or drawings.	
7			Compare any two of the fractions between 1/2, 1/4, 3/4, 1/3 and 2/3.	Compare objects based on the concept of whole, half & one fourth and identify which is bigger or smaller.	Compare fractions with the same denominators, such as: 1/4 and 3/4, and 1/3 and 2/3, with the help of pictures.	Compare any two of the fractions between 1/2, 1/4, 2/4, 3/4, 1/3 and 2/3.	Show the equivalence between 1/2 and 1/4 as well as between 2/2/, 3/3, 4/4 and 1 with the help of pictures.	
8		**Adding and subtracting whole numbers**	Add up to four-digit numbers with the answer not exceeding 10,000.	Add up to three-digit numbers with and without carrying and answer not exceeding 1,000. (e.g., 328+21=, 218+524=)	Add up to four-digit numbers with the answer not exceeding 10000, not involving carrying (e.g., 4635+262=, 4203+1154=)	Solve simple addition problems up to four-digit numbers with carrying and the answer not exceeding 10000. (e.g., 2415+1367=)	Solve practical, multi-step problems involving addition up to four-digit numbers, such as conducting addition twice or more, etc.	
9			Subtract up to four digits numbers.	Subtract up to three-digit number from a three-digit number without borrowing.	Subtract up to four-digit number from a four-digit number without borrowing. (ex. 4935-702=, 8947-2925=, etc.,)	Solve simple subtraction problems up to four-digit numbers with borrowing.	Solve practical, multi-step problems involving subtraction between four-digit numbers, such as conducting subtraction twice or more, including both subtraction and addition, etc.	
10			Identify the relationship between addition and subtraction.	Recognize the relationship between addition and subtraction up to 1 digit with use of a picture or a diagram.	Recognize the relationship between addition and subtraction up to 2 digits with use of a picture or a diagram.	Identify the relationship between addition and subtraction (i.e., A + B = C ↔ C - B = A and C - A = B) without using a picture or diagram.	Use the relationship between addition and subtraction to solve problems and check subtraction results.	
11		**Multiplying whole numbers**	Multiply numbers up to three-digits by numbers up to two-digits.	Conduct multiplication within the multiplication tables up to 10.	Multiply two-digit numbers by two-digit numbers.	Multiply three-digit numbers by two-digit numbers.	Solve practical, multi-step problems involving multiplication, such as including addition and subtraction, conducting multiplication twice or	

2.2 The Proficiency Descriptors

The final version of proficiency descriptors/standards are presented in the table below:

Numeracy Benchmark- Descriptors (Grade 3)

S.no.	Domain	Sub skill	Learning outcomes	Proficiency Standard				Sample exercise for "Advanced"
				Below Basic (below grade level)	Basic (partially meets grade level)	Proficient (meets grade level)	Advanced (exceeds grade level)	
1	Numbers	**Counting, reading, writing and comparing whole numbers**	Present up to five-digit numbers in the place value table, count and write the place value in Devanagari and Hindu Arabic numeral systems.	Present numbers up to 4 digits with showing understanding about the place value, such as 1234 is equal to 1000 + 200 + 30 + 4, etc.	Count and read numbers up to 5 digits with showing limited understanding about the place value.	Present numbers up to 5 digits with showing understanding about the place value, such as 12345 is equal to 10000 + 2000 + 300 + 40 + 5, etc.	Collect, read and write five-digit numbers in the surroundings with variety of units.	Ex) Find the numbers up to 5 digits in our daily life, such as: Mt Everest is as high as 8,848 m or 29,029 ft; the population of Dolpa is 42,774 in 2021, and so on.
2			Read and write numbers up to 1,000 in words in both Devanagari and Hindu Arabic numeral systems.	Read and write numbers up to 100 in words in Devanagari and Hindu Arabic numerals.	Read numbers up to 1000 accurately in words both Devanagari and Hindu Arabic numeral systems but have limited knowledge to write numbers up to 1000.	Read and write numbers up to 1000 in words in both Devanagari and Hindu Arabic numeral systems.	Translate numbers up to 1000 between words and numerals.	
3			Recognize numbers patterns.	Identify simple number patterns, such as skip counting by 2s or 5s.	Skip count by 2s, 5s, 10s and 100s.	Solve problems on skip counting involving a sequence created by repeating addition or subtraction of any number.	Analyze number relationships involving a sequence of multiplication of numbers.	Ex) 1, 2, 4, __, 16, __, __, 128, __, …
4			Read and write the numbers up to four digits in ascending and descending order.	Arrange two or three numbers up to 3 digits in ascending and descending order.	Arrange two or three numbers up to 4 digits in ascending or descending order.	Arrange four or more numbers up to 4 digits in ascending and descending order.	Solve practical, multi-step problems, such as preparing, comparing and arranging numbers up to 4-digits.	Ex) Prepare 4-digit numbers with use of 5 cards, 0, 1, 3, 6 and 8. Then write five numbers from the smallest/largest.
5			Compare the numbers up to 4 digits using the symbols =, >, <.	Understand and identify the meaning of the symbols =, >, <.	Compare numbers up to four digits with the help of place value tables or number lines using the symbols =, >, <.	Compare numbers up to four digits using the symbols =, >, <.	Solve practical, multi-step problems involving comparison of numbers up to 4 digits using the symbols =, >, <.	Ex) Fill a correct sign in the blank. 2341+1536 ___ 963 + 2900

- All 20 panel members participated in marking the answer sheets, which helped them gain familiarity with the test questions and understand the students' levels. This experience instilled confidence in their ability to assess the students accurately.

5. Methodology Selection:

a. The Education Review Office evaluated various methods for benchmarking the NARN (Numeracy) proficiency levels. To ensure a valid and evidence-based benchmarking process, the bookmark method was chosen. However, instead of using Item Response Theory, a modified version of the bookmark method was adopted. The modified method utilized classical Test Theory, specifically the difficulty of the test items in terms percentage of correct answer.

d. Process of Benchmark Development:

Step 1: Marking Answer Sheets - Familiarization with Test Items: Panel members marked the answer sheets, which allowed them to become familiar with the test items.

Step 2: Individual Rating of Round 1 - Estimation of Item Difficulty Individually: Each panel member individually bookmarked the test items in the first round based on the sorted items on difficulty.

Step 3: Individual Rating of Round 2 - Conforming Item Difficult, the panel member bookmarked the sorted booklets based on the evidence of pilot test results.

Step 4: Group Discussion - Sharing Reasons for Bookmarking Items: Panel members participated in a group discussion where they shared their reasons for bookmarking particular items based on their perceived difficulty. The items were sorted based on their difficulty level. This process was moderated by psychometrician/facilitator from ERO.

Step 5: Final Rating by Individual Panel Members after Group Discussion: Following the discussion, panel members individually provided their final rating or bookmark for the difficulty of the test items for three cut-scores. .

review, and writing teacher's guidelines, prepared draft descriptors for the learning standards.

b. The draft descriptors were designed to define four proficiency levels: below basic, basic, proficient, and advanced.

2. Panel Discussion and Revision:

The panel of the benchmark development workshop reviewed and discussed the proficiency descriptors prepared by the experts. The panel provided suggestions and feedback to the IMEN team for revising the benchmark descriptors.

3. Alignment with Global Proficiency Framework (GPF):

The Education Review Office defined the alignment of the benchmark with the Global Proficiency Framework (GPF). The alignment process focused on the general descriptors for the below basic, basic, proficient, and advanced levels.

General Descriptors:

- Below Basic: Learners exhibit a lack of fundamental knowledge and skills, preventing them from completing even the most basic tasks.
- Basic: Learners possess partial knowledge and skills, enabling them to partially complete basic tasks.
- Proficient: Learners have sufficient knowledge and skills to successfully complete basic tasks.
- Advanced: Learners demonstrate superior knowledge and skills, allowing them to successfully tackle complex tasks.

Note that the initial task of benchmarking process for numeracy in Grade 3 involves the preparation of draft descriptors by experienced experts, revision based on panel feedback, and alignment with the Global Proficiency Framework to ensure accurate assessment of students' proficiency levels

4. Panel Composition

- The benchmark setting workshop included a panel of 26 members:
  - 9 primary level teachers who teach Grade 3.
  - 7 secondary and lower secondary teacher/experts of Mathematics.
  - 4 University Subject Experts.

These steps in the Bookmark Method guide the process of standard setting, ensuring that the cut scores are determined based on expert judgment and the defined competency levels. The method combines professional expertise with data-driven analysis to establish meaningful and valid cut scores for the assessment.

Adopted from: Issayeva L. (2021). Assessment Systems Corporation (ASC). The Bookmark Method Of Standard Setting. Accessed date: July 9, 2023. Retrieved from: The Bookmark Method of Standard Setting - Assessment Systems
https://assess.com/the-bookmark-method-of-standard-setting/#:~:text=The%20process%20of%20standard%20setting%20employing%20the%20Bookmark,item%20difficulty%20in%20an%20ascending%20order%20More%20items

b. Bookmark Method procedure adopted in Nepal for Grade 3 Mathematics

1. Test Booklets are prepared in dual language – Nepali and English language so that both language using students can communicate and answer.
2. Printing of test booklets – 150 test booklets were printed. Students are allowed to answer in the booklet with an appropriate space.
3. Sample: A sample of 150 students was taken. Half of them were taken from grade 4 and half from grade 3. The reason of selecting students from both grades is that grade 3 students are too earlier to assess in grade 3 curriculum in July and grade 4 students have already studied in grade 4 for 2 months after grade 3. Since the tools are prepared for the students who completed grade 3. To get the realistic data closer to the average level of grade 3 at the end of academic year of grade 3, grade 3 and grade 4 students are mixed in the sample.
4. Test administration: One hour test administration was conducted to pilot the test items.

c. Process of Benchmark Development

Process of Benchmark Development for Numeracy of Grade 3

1. Expert panel composition

a. The experts from the IMEN project, who have extensive experience in curriculum development, textbook development, curriculum piloting, curriculum and textbook

The steps involved in the Bookmark Method for standard setting - cut scores development are as follows:

1. Identify a team of subject matter experts (SMEs): Form a group of 6-12 experts, led by a test developer, psychometrician, or statistician. These individuals should possess expertise in the subject area being assessed.

2. Analyze test takers' responses using item response theory (IRT): Utilize IRT to analyze the data collected from the test administration. This analysis helps determine the difficulty of each item and provides valuable information for the standard setting process.

3. Create a list of items in ascending order of difficulty: Arrange the test items based on their difficulty levels, from easiest to most challenging. This step helps establish a clear understanding of the item difficulty continuum.

4. Define the competency levels for test takers: Engage the SMEs in discussions to define the different levels of proficiency or competency that test takers can achieve. These levels could include categories like "pass" and "fail" or multiple proficiency levels.

5. Place bookmarks based on professional judgment: Without access to IRT values, the experts individually read the items in ascending order of difficulty. They place bookmarks at appropriate points along the continuum based on their professional judgment and the predefined competency levels.

6. Calculate thresholds based on the bookmarks: Once all experts have placed their bookmarks, calculate the thresholds or cut scores for each competency level. These thresholds represent the score ranges that differentiate one level from another.

7. Discuss results and perform a second round if necessary: Review the results and engage in discussions among the panel members. If needed, a second round of placement and discussions may be conducted to refine the cut scores and ensure consensus among the experts.

administering the test to a representative sample of examinees and calculating the difficulty statistics for each item. These items are then arranged in order of difficulty, and a panel of experts reviews them to determine where cut scores should be placed, represented by bookmarks. The method has the advantage of incorporating the expertise and confidence of the panelists, ensuring a thorough and informed decision-making process.

Standard setting, a crucial part of test development, involves defining achievement or proficiency levels and corresponding cut scores. Arbitrary cut scores lack validity, which is why psychometricians use methodologies from the scientific literature to assist in setting appropriate cut scores. The Bookmark Method is one of the two main approaches used internationally for establishing assessment standards, with the other being the Angoff Method. However, unlike the Angoff Method, the Bookmark Method requires administering the test before defining the cut scores based on test data. This enhances the process's validity, as it provides additional information to subject matter experts during the decision-making process.

Implementing the Bookmark Method involves several stages. First, a team of subject matter experts (SMEs), typically comprising 6-12 individuals and led by a test developer or psychometrician, is assembled. The test takers' responses are analyzed using item response theory (IRT), and a list of items is created in ascending order of difficulty. The competency levels for test takers are then defined, and the SMEs individually review the items without access to the IRT values. They place bookmarks where they believe the cut scores should be based on their professional judgment and the defined competency levels. The thresholds and cut scores are subsequently calculated based on the bookmarks set by the SMEs. If needed, a second round of discussion may be conducted to refine the results.

In practice, the Bookmark Method allows for a collaborative and informed decision-making process. It ensures that the classification of examinees is based on valid criteria, contributing to the overall reliability and validity of the assessment results. The method's reliance on difficulty statistics and expert judgment helps establish meaningful and defensible cut scores, meeting the goals of the test and enhancing its overall validity.

C. Benchmark for NARN

The NARN Framework incorporate a benchmark set by the ERO (Education Review Office) as an integral component. This benchmark is established in a realistic manner, taking into account the insights from 150 students' scores from a pilot study. The NARN report, 2020 highlighted a disparity between the expected reading fluency benchmark of 45 words per minute, as set during the NEGRP (National Early Grade Reading Assessment), and the observed reading fluency rate of only 8 words per minute according to the NARN 2020 data. This gap in achievement could be identified and addressed through the use of supporting evidence, such as research-based data. Thus, the numeracy framework will aim to establish a more realistic benchmark for assessing students' mathematical proficiency, drawing from the valuable insights gained from the NARN 2020 data.

As a crucial component, the benchmark for the NARN Framework is developed prior to the administration of the final assessment. This benchmark is carefully prepared and refined to ensure its accuracy and relevance. The framework will serve as a reference point for all to provide clear guidelines and standards for assessing students' mathematical proficiency. The framework is a living document. For periodic updates and refinements based on ongoing research and data analysis, benchmark will provide a basis for ERO and it will be updated periodically.

The NARN Framework provides cut scores for different proficiency levels, along with corresponding descriptors, based on substantial evidence. These cut scores will serve as benchmarks to determine the level of proficiency achieved by students in mathematics. The descriptors will provide clear and concise descriptions of the knowledge and skills demonstrated by students at each proficiency level. By establishing these cut scores and descriptors, the framework aims to ensure consistency and objectivity in evaluating students' mathematical abilities. This evidence-based approach will enhance the validity and reliability of the framework's proficiency levels and descriptors, enabling educators to make informed decisions regarding students' mathematical proficiency.

a. Introduction to Bookmark Method

The Bookmark Method is a scientifically-based approach to setting cut scores on an examination, aiming to make the process of classifying examinees constructive and valid (Lewis, Mitzel, & Green, 1996). Unlike arbitrary cut scores, the Bookmark Method utilizes difficulty statistics on all items, making it a data-driven approach. It operates by

ख) मिरासँग रु. १० छ र आकाशसँग रु.२० छ । कोसँग कति रुपियाँ बढि रहेछ भनी पत्ता लगाउन तपाईके

गर्नुहुन्छ ? ठीक क्रियामा ✓ चिनो लगाउनुहोस् ।

Mira has Rs. 10 and Aakash has Rs. 20. What do you do to find the money who has more by how much? Tick the sign ✓ in the correct operation.

अ) जोड (addition)

आ) घटाउ (Subtraction)

इ) गुणन (Multiplication)

ई) भाग (Division).

कोसँग बढी रकम छ ? हिसाब गरेर देखाउनुहोस् । Who has more money? Find it by calculation.

ग) एउटा कलमको मूल्य रु.२० भए ५ ओटा उस्तै कलमको मूल्य कति होला ?

The cost of a pen is Rs. 20. What will be the cost of 5 such pens?

घ) एउटा प्याकेटमा २५० ओटा चकलेटहरु छन् । यदि तपाईले सबै चकलेटहरु ५ जना साथीहरुलाई बराबर

बाड्दा प्रत्येकले कति कति ओटा प्राप्त गर्छन् होला ?

There are 250 chocolates in a packet. If you distribute all chocolates among 5 friends equally, how many chocolates will each get?

i) तपाईले यसकालागि के गर्नुहुन्छ ? ठिक बिकल्पमा रेजा (√) लगाउनुहोस् । What do you do for above statement? Tick (√) in the correct option.

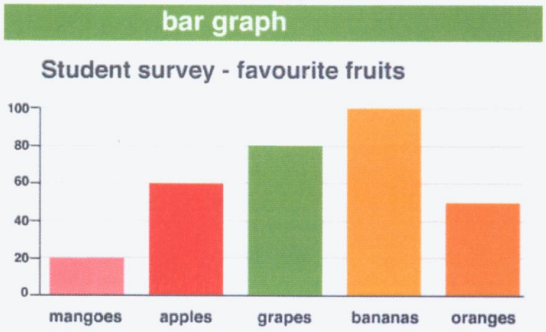
क) जोड (Add) ख) घटाउ (Subtract) ग) गुणन (Multiply) घ)भाग (Divide)

ii) हिसाब गर्नुहोस् र पत्ता लगाउनुहोस् । Calculate and find it.

Task 8. साधारण लेखाचित्र तथा तालिकाबाट जानकारी लिने Take information from simple graphs and table.

तल दिइएको लेखाचित्र अध्ययन गरि दिइएका प्रश्नहरुको उत्तर दिनुहोस् ।

Read the given below graph and answer the following given questions.



क) जम्मा कतिओटा स्याउ रहेछन् ? How many apples are there? .....

ख) जम्मा कतिओटा सुन्तलाहरु रहेछन् ? How many oranges are there? .....

ग) कुन फलफुल सबैभन्दा बढि रहेछ ?Which fruits are maximum? .....

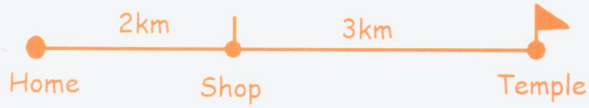
घ) स्याउ र अंगर गरी जम्मा कतिओटा रहेछन् ? How many apple and grapes are there in total? .....

Task 9. गणितयि ज्ञान, सिप, सोच र प्रवृति को विकास र दैनिक जीवनमा प्रयोग

Develop and use of mathematical knowledge, skill, thinking and attitude in daily life.

क) घरदेखि पसल सम्मको दुरी २ किमी र पसलदेखि मन्दिर सम्मको दुरी ३ कि मी छ ।

Distance from home to shop is 2 km and shop to temple is 3km.



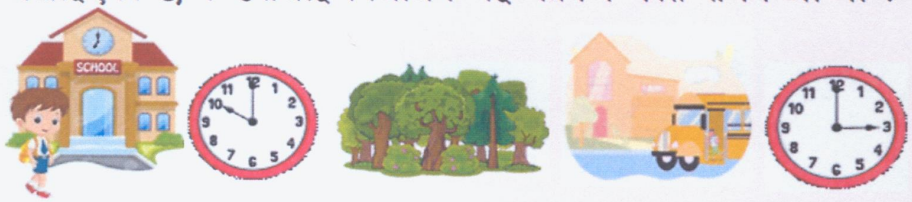
घरदेखि मन्दिरसम्मको दुरी कति रहेछ ? What is the distance from home to the temple?

Task 6 : दैनिक जिवनका समय सम्बन्धि समस्या समाधान मापनमा उपयुक्त साधन तथा एकाइहरुको प्रयोग तथा बिश्लेषण Use appropriate units and apparatus to measure materials, interpret and use them to solve time-related problems in daily life.

क) दिइएको चित्रमा रामलाई बिद्यालय पुगेर घर फर्कन लाग्ने समय दिइएको छ ।
रामलाई बिद्यालय पुगेर घर फर्कन कति समय लाग्यो ?

a) In the given figure, the time table for going to school and returning to home from school
for Ram is given. How long time did he take to reach school and return home?

तलको चित्रमा राम विद्यालय जान हिँडेको समय र फर्केको समय देखाइएको छ । उसलाई विद्यालय गई फर्किन कति समय लाग्यो ?



१० बजे विद्यालय गए।

घर ३ बजे फर्के ।

Task 7. नेपाली नोटको पहिचान र गणना (Recognize and calculate Nepalese currencies)

क) रु.५० बनाउन कुन कुन नोटहरु लिन सक्नुहुन्छ ? रेजा(√) लगाउनुहोस् । Which of the following rupees note are used to make Rs. 50? Tick (√) on the notes.

Task 4. अंकगणितीय क्रियाहरुको प्रयोग गरि दैनिक जिवनका समस्याहरुको समाधान

Solve daily life problems by using basic arithmetic operations.

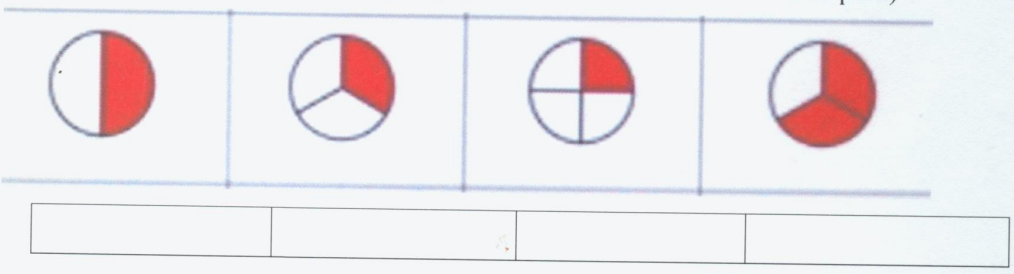
क) चिन्ह हेरी हिसाब गर्नुहोस् । Look at the sign and calculate.

5	9	38	3742	6	254
+7	- 4	+ 53	- 2581	× 5	× 23

5)30 (4)184(

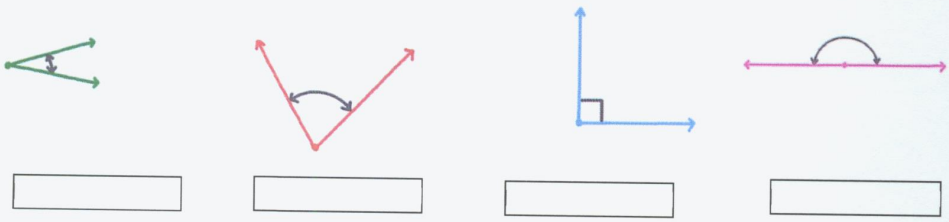
Task 5. भिन्नहरुको धारणाको बोध तथा तुलना Understand the concept of fractions and its comparision.

क) छाया पारेको भागको भिन्न लेख्नुहोस् । (Write the fractions of the shaded part.)



ख) (क) मा भएका भिन्नहरु मध्ये सबैभन्दा ठुलो भिन्न कुन हो ? लेख्नुहोस् । (Which fraction in (a) is the biggest one? Write it.)

ग) समकोण पत्ता लगाइ रेजा(✓) लगाउनुहोस् । **(Identify the right angles and tick (✓))**



Task 2 : पाँच अडकका देवनागरी तथा हिन्दु अरेविक संख्याको दैनिक जिवनमा प्रयोग

Use 5-digit numbers in daily life in Devanagari and Hindu Arabic script.

क) संख्यालाई संख्याको नामसँग धर्का तानेर जोडा मिलाउनुहोस् । (Match the number to their number name by drawing lines.)

संख्या (number)	संख्याको नाम (Number name)
४	सात
८	सोह्र
१२	चार
१६	बाह्र
	आठ

Task 3. पाँच अङ्कका देवनागरी तथा हिन्दु अरेविक संख्याको दैनिक जिवनमा प्रयोग (Use 5-digit numbers in daily life in Devanagari and Hindu Arabic script)

क) दिइएको संख्यालाई अक्षरमा लेख्नुहोस् । (Write in number name for the given number.)

i) 36 =

ii) 126 =

iii) 4583 =

ख) दिइएका अक्षरमा भएको संख्यालाई अंकमा लेख्नुहोस् । (Write in figures for the given number name.)

i) One hundred and fifty-nine = ……..

ii) Twelve thousand three hundred and fifty- six = …….

ग) बढ्दो क्रममा लेख्नुहोस् । (Write in ascending order.)

i) 34, 39, 23

ii) 297, 293, 194

Model Test Paper

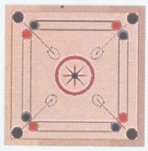
पढाइ तथा गणितीय सीप परीक्षण

पूर्वपरीक्षण

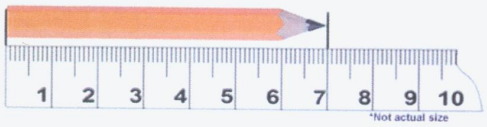
Task 1. ज्यामितीय आकृतिहरु (Geometric Shapes)

क) तलका ज्यामितीय आकृतिहरुलाई तिनीहरुको नामसँग धर्का तानेर जोडा मिलाउनुहोस् ।

(Match the following Geometric shapes to their names by drawing lines)

समूह क (आकृतिहरु) Group A (Shapes)	समूह ख (आकृतिहरुको नाम) Group B (Name of Shapes)
	त्रिभुज (Triangle)
	वर्ग (square)
	आयत (rectangle)
	वृत्त (Circle)

ख) सिसाकलमाको लम्बाइ कति छ ?**(How long is the pencil?)**



_____ से मी

Task 6. Time	a. Read the clock in quarters	1	C
	b. Word Problem of time	1	A
Task 7. Currency	c. Recognize the Nepali currency and add	1	A
Task 8.	a. Read graph	4	K+K+C+A
Task 9. Use of Mathematics in Daily life	a. Reading distance b. Measurement c. Application of basic operation d. Application of basic operation	2	A

Note: Higher ability items will be developed from more than one content areas and concepts.

2. Oral Test

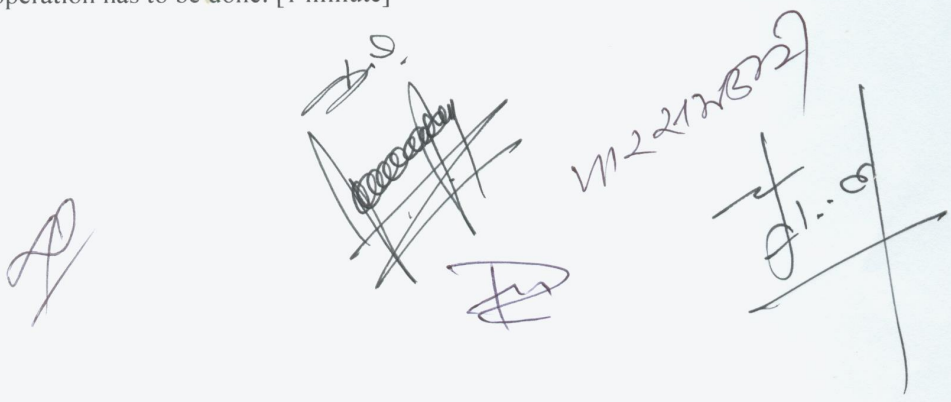
For the 5 minutes oral test of the subsample (5 students) students, questions will be asked based on the following framework:

Make the student familiar by asking

- Introduce yourself: I am XYZ. What is your name? …….
- Who is your Math/Nepali teacher?
- Favorite teacher:

Start the test

1. Number identification below 100 and below 1000 [Time 10 seconds + 10 seconds]
2. Ask to add two one-digit numbers [10 seconds]
3. Ask to subtract one-digit number from a number 10-20. [20 seconds]
4. Currency identification and ask to arrange up to 1000 [1 minute]
5. Identification of type of basic operation: Questions will be asked to identify which operation has to be done. [1 minute]



c. Question Grid for Numeracy

Task	QN	Score	Level
Task 1. Geometric Shapes	a. Shape identification b. Shape measurement c. Angle	1 1 1	Knowledge Comprehension/Application Comprehension
Task 2. Use local numeration system	a. Numbers up to 20 in Devanagari	1+1+1+1	Knowledge
Task 3. Up to 5 digits numbers: Devanagari and Hindu Arabic	a. i. Below 10 (write in words) ii. Below 100 iii. Below 500 iv. Below10,000 b. Write in figure i. Below 10 ii. Below 200 iii. Below Up to 99999	1+1+1+1 1+1+1+1	Knowledge
	c. Arranging Ascending i. below 50 ii. Below 300 iii. Below 2000	1+1+1	Comprehension
Task 4. Basic Operation	a. addition of 1-digit numbers b. Subtraction of 1-digit numbers c. Addition of two-digits numbers with carry over d. Subtraction of three-digits numbers with borrow e. Multiplication of one-digit numbers f. Multiplication of 3-digits numbers with two-digits numbers with carry over g. Division of numbers below 100 with one-digit number h. Division of three digits numbers by one-digit number	8	Comprehension (a, b, e, g) Application – all other
Task 5. Fraction	a. Write the shaded part into a fraction (Up to Quarter)	4	K
	b. Compare fractions add fractions of the same denominator	1	A

8. Basic Operation of Mathematics	- Add 4-digit numbers with sum up to 10,000 (N) - Identify the relationship between addition and subtraction (N) - Subtract 4-digit numbers(N) - Multiple 3-digit number with 2-digit numbers (N) - Divide 3-digit number by 2-digit numbers (N)	- Addition and subtraction of numbers up to 4 digits (two addends only with or without carry over/borrow) - Multiplication of number up to 3-digit number by 2-digit number - Division of 3 digits numbers with one digit number, by 10. - Word problems	- Addition of one digit, two digit without, and 4-digit with carry over. 5+3 =?,45+23 = ? 6578+2282 =? - Subtraction of one-digit number, three digits numbers with borrow … - Multiplication of one-digit numbers, two digits numbers with one digit number - Division of two-digit numbers by one-digit number, three digits number with one digit number - Word problem of multiple choice to choose the appropriate operation
9. Measurement	- Find area of rectangular or square shape by counting squares.	- Count squares to find the rectangle and square.	-

2. Organization of the Tasks in the assessment of numeracy [Competency based]

The general outlines of the 9 tasks asked are given below:

Task 1. Identify, measure and construct two-dimensional shapes

Task 2 Use a local numeration system.

Task 3. Use 5-digits numbers in daily life in Devanagari and Hindu Arabic script.

Task 4. Solve daily life problems by using basic arithmetic operations.

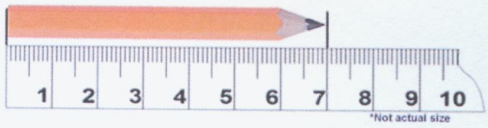
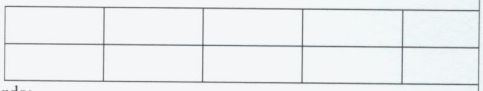
Task 5 Understand the concept of fractions and compare the fractions.

Task 6. Use appropriate units and apparatus to measure materials, interpret and use them to solve time-related problems in daily life.

Task 7. Recognize and calculate Nepalese currencies.

Task 8. Take information from simple graphs and tables.

Task 9. Develop and use mathematical knowledge, skill, thinking, and attitude in daily life.

5. My creation	- Measure and compare a given line and draw a line segment as per given length (N) - Identify Right angle (N) - Use straight edged object to draw and measure length (N) - Identify rectangular and squared shapes (N)	- Measurement of line: estimate, compare length of figures/lines without measuring; measure by ruler and compare - Identify 90 degree in figure - identify square and rectangular shapes in real objects + (circle and triangle)	What is the length of the pencil shown in the following figure?  Which of the following angle is right angle? [figure] Name the shape shown by the objects shown [Triangle, circle, rectangle, square] Fig 1. Fig 2. Fig 3. Fig 4. Fig 5 ....
6. Community technology and market	- Convert Rupees and Paisa from each other (N) - Addition and subtraction of money (N) - Say the relationship between meter, centimeter and millimeter (N) - Estimate and verify it by measurement (N) - Convert Km to m (N) - Say the relationship between meter and centimeter (N) - Measure the capacity of pots in liter and milliliter (N) - Make pictograph (N)	- Relation between Rupees-Paisa - Add and subtract Rupees to Rupees, Paisa to Paisa (without carry over) - Relationship between Km-m, m-cm, cm-mm - Relationship between *l-ml* - Word problems	- You are given 10 Rupees. Mira has 20 Rupees. Find total rupees you both have now. - Distance from home to shop is 2 km and shop to temple is 3km.  What is the distance of home to temple?
7. Number Sense	- Present numbers up to 5-digits in place value table, read and write (N) - Read and write numbers up to 1000 in Devanagari system (N) - Identify number pattern (N) - Compare numbers up to 4-digits by using > and < (N)	- Represent a number up to 5 digits in a place value table and write in words. - Find next number - Use > and < to compare numbers up to 4 digits	- Fill the place value table with 54682 and write the number in words  In words:

b. Learning outcomes, content summary and example items

Themes	Learning Outcomes set by Curriculum	Content (summarized) associated with the learning outcomes	Example Items
1. My daily Life	- Tell the time spent for a task given (N)	- Calculation of time duration spent for a task	तलको चित्रमा राम विद्यालय जान हिँडेको समय र फर्केको समय देखाइएको छ । उसलाई विद्यालय गई फर्किन कति समय लाग्यो ?  १० बजे विद्यालय गए। घर ३ बजे फर्के ।
	- Tell time in minutes from a clock (N)	- Read clock	- What time is shown in the clock?  ….. o'clock
	- Say the relationship between the units of time (year, month, week, day, hour, minutes, and seconds. (N)	- Relation between: year-month, month-week, week-day, day-hour, hour-minutes, minutes-second	- Fill in the blank: 1 hour = …… minutes 1 day = ……. hours 1 week = …… days
	-	-	-
3.Our community	- Read and write numbers up to 20 in local system (N) - Read and write 4-digit numbers in ascending and descending (N) - Half, one-fourth, and two-thirds in fraction (N) - Show above fractions in figure and compare (N) - Say, estimate and justify the length in meter or centimeter in scale (N)	- Devanagari number identification - Ascending and descending order of *one, two, three*, four digits numbers.	- Write in words in Nepali: Match the number with number name ४ — सात ८ — सोह्र १२ — चार १६ — बाह्र — आठ - Arrange in ascending order: - Write the fraction shown in the shaded figure - Shade the given figure to show 3/4th
4. My school		-	-

This categorization process enables educators to provide targeted support and interventions to students at their specific skill levels, promoting personalized learning and growth. The NARN Framework's consideration of subtasks for assessing numeracy skills enhances its ability to cater to the diverse needs of students and foster their mathematical development effectively.

The national curriculum of grade 1-3 is an integrated curriculum in which subjects are integrated with specified number of themes. However, there are competencies and content matters as per the subject-wise learning competencies in the curriculum. In this section, all necessary aspects of the curriculum are analyzed from the assessment point of view.

a. Competencies of Mathematics for Grades 1-3

1. Identify, measure and construct two-dimensional shapes
2. Use 5-digit numbers in daily life in Devanagari and Hindu Arabic script.
3. Use a local numeration system.
4. Understand the concept of fractions and compare the fractions.
5. Solve daily life problems by using basic arithmetic operations.
6. Use appropriate units and apparatus to measure materials, interpret and use them to solve time-related problems in daily life.
7. Recognize and calculate Nepalese currencies.
8. Take information from simple graphs and tables.
9. Develop and use mathematical knowledge, skill, thinking and attitude in daily life.

sample student. The question paper also includes the background information questions which will be filled by the assessor taking the support from the head teacher, and class teacher, and also by studying the class attendance register.

2.3. Assessment Framework

1. Framework for Numeracy

The NARN Framework serves as a comprehensive guideline for the assessment of Reading and Numeracy in grades 3. It delineates learning competencies of Mathematics and Nepali, and that encompass the breadth of mathematical concepts and skills and Reading. In this Numeracy section is discussed. Learning competencies of Mathematics are further specified by explicit learning outcomes and contents, derived from the integrated curriculum. The curriculum also establishes thematic areas that serve as organizing principles for the assessment of Mathematics. By aligning themes, learning outcomes, and contents, the framework ensures a coherent and structured approach to assessing students' mathematical knowledge and abilities. Additionally, the framework emphasizes the integration of tasks within the learning competencies, enabling to evaluation of students' application of mathematical concepts in relevant and authentic contexts. In summary, the NARN Framework provides a clear roadmap for designing valid and reliable assessments, based on well-defined learning goals and carefully selected content.

Furthermore, the NARN Framework presents a unique feature wherein nine tasks are strategically planned to align with the nine learning competencies specific to grade 3. Each task may consist of multiple subtasks, allowing for a comprehensive assessment of a particular learning competency. This aspect highlights the strength and effectiveness of the framework. By assigning tasks that encompass various subtasks, the framework ensures a thorough evaluation of each learning competency. This holistic approach to assessment enhances the overall quality and reliability of the results. The NARN Framework's ability to assess learning competencies through well-designed tasks is indeed a remarkable aspect that contributes to its excellence.

In addition, the NARN Framework incorporates subtasks within the tasks that are designed to assess students' numeracy skills at lower grade levels as well. This inclusion of subtasks allows for the categorization of students based on their current proficiency in numeracy. By including these subtasks, educators can gain a more accurate understanding of students' mathematical abilities and identify any gaps or areas that require further attention.

CHAPTER II

ASSESSMENT METHODOLOGY AND FRAMEWORK

NARN would be the national assessment witha focus on reading and numeracy. TThe assessment is group-administered type; however, some of the skills will be assessed by the one-to-one assessment. As stated in the previous chapter, the group-administered assessment cannot be a reliable mode of assessment to capture the Oral Reading Fluency (ORF) or Correct Word Per Minute (CWPM).

2.1. Population and Sample

2.1.1 Population

NARN is the national-level assessment of reading and numeracy. So, the entire students studying in grade three in community schools from all over the country will be the population of the study.

2.1.2 Sample

An appropriate national and sub-national representative sample will be selected for the research. The sample will be proportionately taken from each province (implicit strata) considering the school as the cluster. The probability proportionate to size (PPS) sampling technique will be used to select the sample. The EGRA result of 2014 (or the latest NASA result of grade 3) will be taken as the reference to select the sample.

2.2. Modes of Assessment

Researches show that oral assessment is one of the best approaches to assessing children at the primary level. Taking the statement into consideration, two types of assessment viz. grouped administered and individual-administered will be the mode of assessment in the NARN. Most of the items of the reading and numeracy will be the group administered where the assessor instructs students to take the test. Moreover, taking a sub-sample from each school, the one-to-one assessment will be conducted to measure the Oral Reading Fluency of students in the reading part and some basic mathematical skills in the numeracy part.

2.2.1 Test Administration

The assessor training is the cascade model. First, Master Training of Trainer will be conducted at the central level and the trainer will train the assessors at the provincial level. The assessor will facilitate the students to take the test. The overall timing of group administration will be one hour and the one-to-one test will be five minutes for each sub-

addition, the insights were gathered from previous studies conducted by various organizations and scholars. The extensive literature review provides insights into understanding domains, processes, and practices of literacy assessment.

1.5.2 Analysis of national curriculum

Since Nepal adopts one national curriculum, it is important to understand the aspects of reading and numeracy that are included in the curriculum. In the process of developing this framework, national curricula for Nepali and Mathematics were analyzed. The analysis was focused on the domains and contents to be included in the assessment.

1.5.3 Discussion with subject teachers and experts

Subject teachers of Nepali and Mathematics have an insider view regarding the assessment of reading and numeracy. In preparing this framework subject teachers have been involved to make sure that the domains and the contents to be covered in the assessment are as per the level of Grade 3 students. In addition, experts who have worked on different assessment studies were also consulted to ensure that the assessment is theoretically valid. The subject teachers and experts were also involved in developing items for the collection of students' background information.

1.6 Assessment Cycle

The NARN cycle begins with the development of the assessment framework and continues with the preparation of assessment tools, piloting, revising, and finalizing the tools, training of assessors, administration of test and sharing of results, data entry and analysis, report preparation, and dissemination of the results. Figure 1 shows the steps of the cyclic process of NARN.

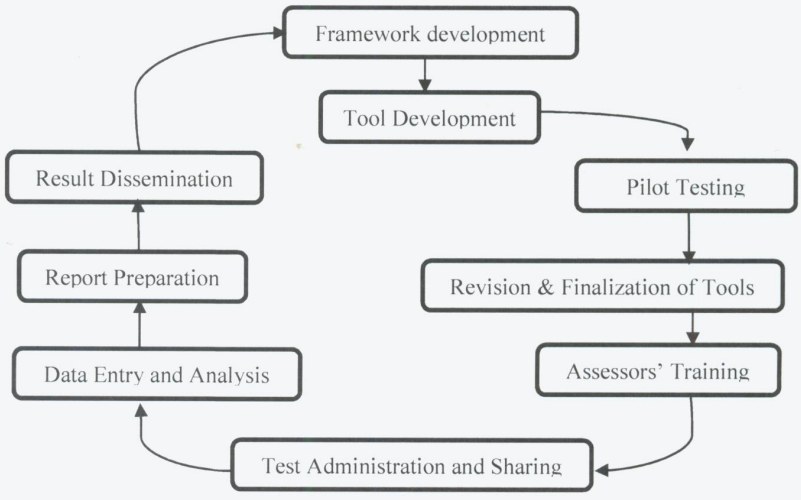


Figure 1. NARN Cycle , Adopted from ERO (2017a)

2. To understand the existing status of students' reading skills for the Ministry of Education, Science, and Technology to formulate policies that improves the reading and numeracy skills of early-grade students.
3. To provide insights into understanding how schools, parents, students, and local authorities can work together towards supporting early-grade students in developing their reading and numeracy skills.
4. To provide the Ministry of Education, Science, and Technology to design programs and activities for developing students' literacy skills (reading and mathematical skills) and develop effective ways to assess the literacy skills of the students.
5. To provide recommendations to strengthen the capacity of schools and teachers in teaching and assessing students' literacy skills.

This national assessment for reading and numeracy would be conducted with an assumption that the literacy and numeracy skills acquired at the school-level largely determine the young people's prospects of succeeding in further education and preparing them for a better adult life. Therefore, the personal development of an individual and the educational status of the country largely depend on knowledge, skills, and understanding acquired by citizens in the early grades. In this regard, understanding what and how students are learning at school is one of the important concerns for all parents, teachers, and the general public. With this realization, ERO aims to conduct this NARN to understand how well the school education system has equipped young students with the knowledge and skills they need for better education and to be able to face future challenges. The measurement of students' skills is also essential for tracking the development of education and assessing the effectiveness of educational policies and practices (Hanushek & Rivkin, 2010). Measuring students' skills is important not only for determining the existing level of literacy and finding the gaps but also for providing feedback to improve the quality of learning.

1.5 Framework Preparation: Method and Process

This framework has been developed to provide a clear direction to the entire national reading and numeracy assessment process. The development of this framework included the following process:

1.5.1 Review of National and International Practices

In order to better understand the issues and practices of literacy assessment, both national and international trends of literacy assessment were reviewed. The major literature reviewed includes ERO's previous NASA studies and CB-EGRA, RTI's EGRA, EGMA, and GALA, and Pacific Islands Literacy and Numeracy Assessment (PILNA) framework. In

groups (the details of these practices will be discussed in the next section). Yet, all of these tests do not assess numeracy skills as part of literacy. Realizing the importance of early-grade literacy in mathematics, many countries have conducted Early Grade Literacy Assessments under different names. Early Grade Mathematics Assessment (EGMA) is one of them. The focus of this tool lies in the early years of mathematics learning emphasizing numbers and operations and geometry through second grade or, in developing countries, perhaps through third grade (EGMA, 2014).

Nepal's National Education System Plan (NESP, 1971) introduced a systematic curriculum framework in school education in which mathematics was introduced as one compulsory subject throughout school education. Primary level education consisting of grades 1, 2, and 3 formed the primary school and the subject of mathematics "Ganita" mainly aimed at developing mathematical literacy of reading, writing, and arithmetic shortly abbreviated as Three R's. Since the many revisions have been made to the curriculum, curricular materials, and teacher training to achieve the expected outcomes in mathematics.

Many assessments/tests have been conducted at different levels but the national level assessment has not been made to assess primary-level students' literacy in mathematics. School Level Certificate Examination (SLC Exam) was the only national-level examination taken at the end of school education. Unsatisfactory results in mathematics became an issue for a long time because it attributed to the increasing failures in SLC examination. The sound basis of mathematical background in elementary grades might be the main reason. But due to the lack of such specific information on their background, no specific remedy could be made. Assessment of early-grade literacy of mathematics can provide useful information in this direction. This is why National Assessment for Reading and Numeracy (NARN) is going to assess both literacy and numeracy (mathematics) competencies of early-grade children.

Viewing the ages of the students in grade 3 (7 or 8 years old), a longer test may be difficult for students. Therefore, the duration of the assessment should be 1 to 1.5 hours almost equal time for each literacy and numeracy (mathematics) skill.

1.4 Purpose and Objective of the NARN

ERO is planning to conduct a national assessment for reading and numeracy with the purpose to identify the existing status of Grade 3 students' reading and numeracy skills with the following objectives:

1. To make a national assessment of the reading and numeracy competencies that are fundamental in early-grade reading and mathematics

Although literacy can be described from multiple perspectives, National Assessment for Reading and Numeracy (NARN) focuses on reading and numeracy. Keeping the importance of reading and numeracy at the center, NARN assesses the reading and numeracy skills of the students in grade three.

1.3 Need for NARN in Nepal

Education Review Office (ERO) has been conducting the National Assessment of Student Achievement (NASA) to identify the existing status of learning achievement of students at a specific grade level. As a large-scale assessment, the NASA study is conducted among a nationally representative sample. The national level student assessment aims to produce objective, accurate, and comparative information on students' achievement in schools. However, NASA is not limited only to assessing students' achievement, but also to serve as a tool to evaluate the entire education system of the country. ERO has already conducted a NASA study to identify the learning achievement of Grade 3 students in 2015. The major objectives of this NASA study were: to identify the learning level of Grade 3 students in Mathematics and Nepali against the national curricular goals; to create a reliable database on the learning level of those subjects for benchmarking; to compare them with earlier achievements to monitor the progress over time; and to generate recommendations for policymaking to improve learning level of students (ERO, 2015).

Although NASA provides information regarding the status of students' learning achievement, it does not assess their literacy knowledge. In other words, NASA is based on curricular competencies and goals, but not on the specific skills that are required for literacy-reading and numeracy. The acquisition of literacy skills in the early grades is important for students' success in the later grades. In this context, the assessment of literacy receives center stage. There are different approaches to literacy assessment in the early grades. Early Grade Reading Assessment (EGRA) has been a popular model to assess literacy in Grades 1, 2, and 3, globally. It has been designed and implemented to assess basic reading skills (RTI, 2011). The original purpose of the EGRA is "to carry out sample-based national or system level diagnostic measurement. It aims to examine gaps in reading competencies among students to inform education ministries and partner agencies regarding system needs for improving teacher professional development and pre-service programs" (ACER, 2012).

Two other practices of literacy assessment include Group Administered Literacy Assessment (GALA) and Classroom Based- Early Grade Reading Assessment (CB-EGRA). While EGRA administers tests to individual students, GALA and CB-EGRA tests reading in

knowledge reading technology, health, information, media, visual and scientific updates (Street, 2003).

Literacy is also viewed as a learning process. This perspective considers literacy as a process and focuses on personal experience as a center of learning. This view takes a constructive process of learning where the experiences of individuals are considered important. From this perspective, reading has to do with interpreting, reflecting, theorizing, interrogating, instigating, exploring, probing and questioning. In other words, reading is not confined to coding the meaning of the given form rather it includes learners' ability to understand the social world. Literacy is also understood as the ability to understand texts. Texts vary in terms of different factors like the subject and the genre; the complexity of the language used and the content. From this perspective, literacy includes the ability to understand and interpret texts.

As the reading skills, "a strong foundation in mathematics during the early grades is the key to future success in mathematics, which is instrumental in the development of workplace skills and knowledge (Malloy, 2008; Nunes & Bryant, 1996; Steen, 2001; U.S. Department of Education, 2008). Similarly, "recent meta-analyses also suggest that early mathematics skills predict later reading skills just as much as early reading skills" (Duncan et al., 2007; Romano et al., 2010). Therefore, literacy assessment refers to the measurement of students' reading and numeracy (mathematics) abilities. Although most assessment frameworks (e.g., PIRLS, PISA, TIMSS, EGRA/EGMA, ASER, SEA-PLM, etc.), literacy and numeracy skills are considered correlated but separate sets of skills, in NARN, both assessment tools are administrated together one after another to understand the foundation on both numeracy and literacy of the same child with the same assessment. It is to note that in NASA assessments of ERO, one student answers on only one subject.

More specifically, literacy assessment is focused on measuring the ability of the students to read; the abilities to interpret, explore, investigate, and question the text. It also includes the measurement of the ability to work with statistical or mathematical problems. The skill of operating statistical information has to do with numeracy or arithmetic skills. The major purpose of literacy assessment is to understand the progress of students' learning in reading and mathematics. By providing information regarding students' basic reading and numeracy skills, literacy assessment offers policy reform agendas to the Ministry of Education, Science, and Technology. The overall objective of the literacy assignment is to identify the existing status of students' ability in reading and numeracy (mathematics) and draw policy implications based on the assessment.

the National Assessment for Reading and Numeracy (NARN) in Nepal is to provide feedback for policy and program at National and Sub-national levels.

In the early grades, literacy which includes reading and numeracy (mathematics) has been one of the major focus areas of the national education reform agenda, there is a need for assessing students' reading and mathematical abilities in the early grades. Assessment data regarding the early grades literacy (reading and mathematics) provide insights into understanding what support students need to improve their literacy ability. This framework provides a general outline that covers the concept of literacy, literacy assessment (framework and cycle), skills and domains of readings, and mathematics and assessment methodology.

1.2 Concept of Literacy and Literacy Assessment

In its simplest term, literacy can be defined as the ability to read and write. It incorporates a process of acquiring a simple cognitive skill (such as comprehension and analysis) to apply those skills to contribute to the socio-economic transformation. The following four broad perspectives of literacy have been discussed by various scholars (UNESCO, 2006):

a) Literacy as an autonomous set of skills
b) Literacy as applied, practiced and situated
c) Literacy as a learning process
d) Literacy as a text

The first view considers literacy as the total of multiple autonomous skills. Literacy from this perspective is seen as a set of autonomous skills that can be measured quantitatively. In other words, literacy is viewed as individuals' cognitive skills in reading and writing. These skills include the abilities such as comprehension, analysis, evaluation, interpretation and organization of textual information. Literacy is also viewed as an ability to deal with numeracy. Numeracy includes the ability to process, interpret and communicate numerical, statistical and mathematical information in ways that are appropriate in a variety of contexts. In other words, literacy as numeracy skills focuses on the ability to process mathematical information understandable in various settings.

Literacy is also viewed as the skill that enables learners' access to knowledge and information. This perspective views literacy from a broader social context that includes multiple literacies such as Information Literacy, Visual Literacy and Media Literacy. From this perspective, a single definition of literacy does not suffice; literacy should be regarded as the ways of 'reading the world' in specific contexts that cover the ability to understand

CHAPTER 1

INTRODUCTION TO NATIONAL ASSESSMENT FOR READING AND NUMERACY (NARN)

1.1 Context

Reading, writing, and mathematics skills are the foundations for children's future development. Realizing this fact, basic literacy, reading, writing and mathematics skills have been included as the core skills in the school curricula in Nepal. Various types of school-based assessments have been practiced to identify students' achievements in these areas so that adequate learning of students could be ensured by improving teaching-learning practices. Besides, for the providing feedback on policy and program, several national, regional, and international assessments have been practiced. Different types of assessments have been practiced around the globe, among them Early Grade Reading Assessment (EGRA), Early Grade Mathematics Assessment (EGMA) as well as subject (language and mathematics) specific assessments in written form at the national level (eg National Assessment of Students Achievement, NASA at grade 3 and 5 in language and mathematics in Nepal) and regional or international level (eg, Trend in International Mathematics and Science Study, TIMSS and Progress in International Reading Literacy Study, PIRLS for grade 4 students) are some of the examples. In Nepal, two rounds of National Assessments of Students Achievement in grades 3 and 5 have been conducted by Education Review Office (ERO) in 2012 and 2014. Similarly, Early Grade Reading Assessment (EGRA) has been initiated as a part of the National Early Grade Reading Program (NEGRP), and at the same time ERO conducted Classroom Based Early Grade Reading Assessments (CB-EGRA) in 2017 and 2018.

Looking at the above-mentioned different international practices on the assessment of early reading, writing, and mathematics, and the practices of Nepal including NASA, EGRA, CB-EGRA, ERO has decided to develop an appropriate assessment which could assess the reading and mathematics skills of children in early grades. For this ERO initiated the discussions on designing an appropriate tool and process for assessing students' reading and numeracy skills at early grades, particularly grade 3. This framework is a product of such discussions and initiation towards developing a combining assessment tool and process to assess third-grader students' skills in reading and numeracy. Tools developed based on this framework may be used to improve classroom practice, but the overall purpose of designing

Abbreviations

ACER:	Australian Council for Educational Research
CB-EGRA:	Classroom-Based Early Grade Reading Assessment
CWPM:	Correct Words Per Minute
EGMA:	Early Grade Mathematics Assessment
EGRA:	Early Grade Reading Assessment
ERO:	Education Review Office
GALA:	Group Administered Literacy Assessment
NARN:	National Assessment for Reading and Numeracy
NASA:	National Assessment of Students Achievement
NEGRP:	National Early Grade Reading Assessment
NESP:	Nepal's National Education System Plan
ORF:	Oral Reading Fluency
PILNA:	Pacific Islands Literacy and Numeracy Assessment
PIRLS:	Progress in International Reading Literacy Study
RTI:	Research Triangle Institute
SLC:	School Leaving Certificate
Three R's:	Reading, Writing and Arithmetic
TIMSS:	Trend in International Mathematics and Science Study,
UNESCO:	United Nation Educatioal and Scientific and Cultural Organization

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Preface

National Assessment of Reading and Numeracy (NARN) is a large-scale assessment like National Assessment of Students' Achievement (NASA) to identify the existing status of grade three students' reading and numeracy skills called foundational skills of every child. The first NARN was carried out in 2020 and the report was published accordingly with the technical support of the then EGR-RTI. With the wonderful experience gained from the first NARN, Education Review Office (ERO) has developed this framework in line with the existing integrated curriculum. This framework will be a milestone for the upcoming NARN that has been scheduled to be held in 2023/24. NARN in line with this framework will be instrumental in the formulation and improvement of educational policy regarding the learning achievement of elementary-level students.

I am especially indebted to Ministry of Education, Science and Technology for encouraging, supporting and guiding us to bring this framework to this form. I further would like to express my gratitude to Central Level Agencies (CLAs) under the ministry for their kind support to make this work successful. This work would not have been possible without the support of development partners and organizations who have played an indispensable role in it. Further, I would like to extend my thanks to World Bank for its unwavering support, expertise and collaboration as well as frequent constructive feedback on the framework.

I am grateful to the subject committees of Nepali and Mathematics as well as all the staff of ERO with whom I have had the pleasure to work during the development of this framework. In a nutshell, this comprehensive framework with benchmark standards would not come to this form without the support of the above-mentioned organizations and the people working therein. Finally, I believe, this framework will be pivotal for assessing the quality of learning in days to come. As this framework guides the NARN, I would expect constructive feedback from the policymakers, experts, classroom practitioners and other interested readers to enrich and amend for its betterment.

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