

EVALUATION OF COMPETENCY  
BASED INSTRUCTIONAL MATERIALS  
DEVELOPED BY KERALA

BASIC MATHEMATICS

DPEP CURRICULUM ACTIVITY NO. 10



1996

Regional Institute of Education  
NATIONAL COUNCIL OF EDUCATIONAL RESEARCH  
AND TRAINING  
Mysore - 570 006.

EVALUATION OF COMPETENCY  
BASED INSTRUCTIONAL MATERIALS  
DEVELOPED BY KERALA

BASIC MATHEMATICS  
STANDARD I AND II

DPEP CURRICULUM ACTIVITY NO.10

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# WORKSHOP FOR EVALUATION OF COMPETENCY BASED INSTRUCTIONAL MATERIALS DEVELOPED BY KERALA

4th to 15th January, 1996.

Venue : Regional Institute of Education  
Mysore 570 006.

## REPORT

### A. INTRODUCTION

Prior to NPE 1986, whenever we referred to the Universalisation of Elementary Education (UEE) our focus used to be on (i) Universal Access; (ii) Universal Enrollment; and (iii) Universal Retention. But due to the success related to the first and second component of UEE, the number of students has increased tremendously and we have not been successful in providing quality education to all the students. So in the NPE 1986 a new component has been added to the UEE which relates to imparting quality education to the learners. For the realisation of this goal, minimum levels of learning (MLLs) at primary stage have already been identified in terms of specific competencies to be attained by all the learners at the mastery level. Therefore, emphasis has been laid on increased and sustained inputs into the system in terms of improved infrastructure facilities and boosting up of the teaching, learning and evaluating processes. Instructional materials, such as textbooks, workbooks, teachers handbooks, etc., play an important role in enhancing the attainment level of the learners. So, the development of suitable instructional materials commensurate with children's developmental needs and the competencies to be mastered by all the learners, constitutes an important component of the planned activities under District Primary Education Programme (DPEP) in various states, including Kerala.

So far, Kerala has developed competency based textbooks, teachers handbooks and MLL based model questions for standards I and II related to Malayalam, Mathematics and Environmental Studies. Since, the newly developed competency based instructional materials may have farreaching implications for learners, teachers and the system as a whole vis-a-vis improvement of the quality of education at the primary stage, it would be desirable to evaluate such materials and suitably modify them before they are put to wider use.

For evaluating the competency based instructional materials of Kerala State, a 12-day workshop has been conducted at Regional Institute of Education, Mysore from 4.1.96 to 15.1.96. In this workshop ten experts from the State of Kerala (Malayalam - 3, Mathematics - 3, Environmental Studies - 4 vide Annexure-2) in addition to the faculty of RIE, Mysore and NIE, New Delhi participated. The evaluation of the instructional materials was carried out by the experts as per the guidelines and the tools (vide Annexure - 1) developed for this purpose at the national level involving experts, the faculty of NIE and RIEs. The evaluation criteria were associated with six major aspects of evaluation, namely, Physical Aspects, Coverage and Treatment of Competencies, Content, Style of Presentation, Visuals and Evaluation Exercises.

In this workshop, first of all, the evaluators were made fully aware of each and every criterion for evaluation of the material. Then by taking one of the materials each individual prepared a report on the specified proforma. Then, evaluators in a subject, held group discussion and arrived at a consensus report and rating for various criteria in respect of that instructional material.

In this way the following instructional materials in the area of Malayalam, Mathematics and Environmental Studies for both standard I and II have been evaluated (all 1995 edition) :

1. Text book
2. Teachers Handbook and
3. MLL Based Model questions.

[It seems that the state authorities have undertaken this exercise in Nov. 1995 in order to bring out further revised edition of the text book for use from the next academic session 1996 - 97].

The information about the instructional material under consideration is supplied in proforma - 1 at the beginning of evaluator comments on each instructional material.

The product of the workshop is the subject wise report - three in number (i.e., Mathematics, Malayalam and Environmental Studies).

## B. GENERAL PROPOSALS :

In a group discussion involving all evaluators, it has been agreed upon to make the following proposals in order to have uniformity in the preparation of the various instructional materials :

1. At the beginning of the instructional material an index consisting of  
(a) competency No. (b) statement of competency in clear terms and (c) the page number(s) in which that has been first treated, may be given.
2. The statement of the competency or at least the competency number may be given at the top of the lesson/unit.
3. Exemplar unit tests may be given in the text book to enable the students to face tests/examinations with confidence.
4. There is no need to have a separate MLL based model questions book. This could be integrated with the Teachers Handbook.
5. It is desirable to list the questions/exercises under specific competency number.
6. There must be a serious effort while preparing the textbooks/teachers handbook to bring about integration among various subjects (Mathematics, Malayalam and Environmental Studies) and also non-cognitive areas (Health and Physical Education, Art Education, Work Experience, Value Education, etc.).

## C. EVALUATORS COMMENTS :

## Proforma No.1

### Proforma for Identification Data of the Instructional Material

Each item of this proforma should be written in the script of the material developed and again in Roman Script. For example : Title of the book is गणित भाग 1'. It is to be written as गणित भाग 1 (Mathematics Part 1).

State	: KERALA
Type of Material	: Textbook
Title	: അടിസ്ഥാന ഗണിതം (BASIC MATHEMATICS)
Language in which material is written	: MALAYALAM
Class	: I
Author(s)	:
Editor(s)	:
Publisher	: Kerala State Institute of Education.
Publisher's Address	: Poojappura, Thiruvananthapuram-695 012.
Year of Publication	: 1995
Edition	:
Number of Pages	: 178
Price	:

## 1. Physical Aspects :

This textbook has 178 pages which are more than that (136) in std. II textbook. There is a need to reduce the number of pages to at least 120, if not less than that. The coverpage and back page have pictures which have nothing much to do with the theme in mathematics. It is therefore suggested that the front page be shifted to the back and replaced by a more suitable one. A specimen for coverpage has been prepared and appended for consideration. This has a theme of cartoons depicting the numbers and inviting children to learn mathematics. The book may be made more durable by using calico binding. The pages of the book may be designed in such a way that there is maximum use of the space. For example, in pages 134 and 135, the sums can be rearranged and the space can be saved. Also in the same pages the mathematical signs +, - and = may be arranged one below the other, a practice normally required to be cultivated by children. The sizes of the boxes for learner's response could be made smaller in pages 140 and 141 and put on the right side of the question so that space could be saved, thereby reducing the number of pages. The following printing errors need to be rectified.

REFERENCE	WORD PRESENT	CORRECT WORD
P 29	വർക്ക് ബുക്ക്	വർക്ക് ബുക്ക്
P 81	60 പുതൽ	60 മുതൽ
P 92	82	92
P 99	സെറ്റ് : 1	സെറ്റ് : 1

In P.89 two alphabets and one word are unnecessarily printed in colour. The book cannot be flattened easily and on account of this, some numbers/figures are not easily visible (P.10, P.24 etc.)

## 2. Coverage and Treatment of competencies :

A list of competencies has been given at the beginning of the book. Their treatment has not been taken up in that sequence. The order for treatment 1.1.1 (P.8), 1.1.2A (P.24), 1.1.3 (P.39), 1.1.2B (P.43), 1.1.4 and 1.1.5 (P.53), 1.1.2C (P.65), 1.1.6



(P.69), 1.1.6A (P.78), 1.1.6B (P.80), 1.1.7 (P.87), 1.1.8 (P.94), 1.1.9 (P.108), 2.1.1 (P.119), 2.1.5A (P.122), 2.1.2 (P.128), 2.1.3 (P.130), 2.1.4 (P. 132) and 2.1.5 (P.133) seems to be more logical. Therefore, either the list of competencies can be given in this sequence or the page number where it is first treated could be indicated in the existing list in which case this would serve as an index.

Further, the following competency numbers have not been mentioned at the top of the lesson :

1.1.1 (P.8), 1.1.2B (P.43), 1.1.6 (P.69), 1.1.9 (P.108), 5.1.2 (P. 169) and 5.1.3 (P. 175). This may be done so. At the same time the following competency numbers are printed where they are not required : 2.1.1 (P.117), 2.1.4 (P.130) and 2.1.5B (P.131). These may be deleted. In P.28, exercise no.2, the numbers 16 and 13 should be deleted as only numbers less than ten have been introduced up that stage.

The following words found in the text are not appropriate and have to be replaced as shown :

PAGE NO.	WORD	REPLACEMENT
28 Q.1 and 2	അക്കങ്ങൾ	സംഖ്യകൾ
64	കൂട്ടിലിൽ	കൂട്ടിലിലെ
- do -	ചിഴുതുക	പറയുക

The word അക്കം (digit) is not used in MLL. The third replacement is necessary because the learners are expected to give only oral response at this stage.

The competencies 1.1.3, 1.1.4 and 2.1.3 (P.39,40) have not been treated satisfactorily. More attention has to be given for their development. With regard to competency No. 1.1.5, (P.60 to 63) it is not introduced/developed. But exercises and worksheet activities are given. This may be rectified. The symbol '0' (zero) has to be introduced in 1.1.3 (P.39 and 40). In pages 58, and 59 (1.1.4A and 1.1.4B) headings are required.

### 3. Content :

Adequacy and appropriateness of content to develop a specified competency and its adaptability to local learning situations are very good. The accuracy of the content and its

relation to learners' daily experiences are good. There is a fair measure of content facilitating creative expression. Gender equality is found wanting as most of the figures depict only males. Observance of small family norms may be included in competency 1.1.1 and 1.1.2. (counting the numbers of members in small, medium and big sized families). Inclusion of content with wit and humour has been good. But this could be improved by including some more cartoons and match-stick or line figures.

#### 4. Style of Presentation :

The material has been very well presented in a graded manner following logical and sequential order. The vocabulary used is simple and familiar to children. The structure of sentences ensures comprehensibility. Variety of play-way activities have been included and more could be attempted using splinters, thread, matchsticks, grains, beads, etc. A few examples are given at the end of this report and children could be enthused to prepare similar interesting figures/diagrams/objects using their imagination. There is a fair measure of scope for creative activities related to specified competencies. Provision of situations encouraging oral expression and of instructions for doing the activities in clear and specific terms are very good. Provisions of materials for development of (i) the skills of observation, discrimination, classification and analysis, (ii) the skills for handling of simple tools/objects by learners and (iii) for the development of imagination and thinking are good. The book has sufficient provision for self-learning and co-operative learning commensurate with the level of the children. Interesting reading and number readiness activities have been adequately provided.

#### 5. Visuals :

Requisite number of appropriate visuals have been provided and there is variety in them. The proximity of visuals to content, linkage and referencing between them, the accuracy of the visuals in terms of perspective, proportion and conformity with the objects and their attractiveness are by and large good. However, the following observations have been made which need improvement/rectification.

Page No.	Fig. No.	Observations
1	1(2)	Colour not appropriate. Features of goat are not very clear.
	1(4)	Object not familiar to the children. It does not appear to be a vessel. Also the figure is not attractive.

4	1(9)	Same type of trees of different sizes may be drawn.
	1(11)	Difficult to recognize the difference between the two figures - one boy has to be fat and the other lean.
5	1(13)	The figure is crowded. Two buses would be sufficient to recognize that a distant object appears smaller than one nearby.
6	1(15)	Figure is confessing - concept not clearly recognizable.
7	1(16), 1(17) 1(20), 1(21)	Avoid the shading in order to make the object appear prominent.
	1(16), 1(17) 1(22)	Put the boundary for the groups of objects for comparison as done in rest of the figures in this page.
	1(21),	Draw attractive, flowers.
	1(16)	Colour of leaves may be made green.
8 to 12,	1(25) to 1(33)	Illustrations for a particular number are attempted. Among of them items that represent the numbers previously learnt are also given. This may lead to confusion and is to be deleted. Instead, more illustrations for that specific number may be included. It is perhaps better to colour the pictures instead of the background.
24	1(80), 1(81)	Divide the page into two halves horizontally, upper half to illustrate 'one' and lower half to illustrate 'two' as done on page 25.
38	1(114)	Delete the number 10 and diagram of leaves as skill of writing up to 9 has only been attempted so far.
39	1(115)	Introduce the symbol '0' for zero.
	(1.1.3.)	More visuals may be provided to develop the concept of zero, after page 40.
53	2(1)	There are eleven beads shown in figure. Therefore delete the bead at the place of the knot to make the total number of beads ten.

54		Each group of ten objects can be enclosed in a boundary as done in P.55.
56,57		The spikes of abacus may be made longer in order to insert more beads.
96	4(3)	In the first box only five apples are drawn instead of 10. Insert five more.
142 - 149		Clear pictures of coins and currency notes are needed.
147		Delete 3-paise coin as this is not in wide circulation now.

## 6. Evaluation Exercises :

The number of exercises after a lesson is very less and they are not properly graded; though the worksheet has graded exercises. Most of the exercises demand oral response. Variety could be increased by inclusion of exercises in the form of activities to develop mastery learning. There is no exemplar unit test provided in the text which perhaps is a must. Suggestion for obtaining feedback and use the same for remedial instruction has to be provided. Provision of comprehension questions to ensure use of imagination and thinking is just satisfactory and therefore, has to be improved by providing more exercises. With regard to the adequacy of the evaluation exercises the following observations have been made.

P.57(bottom) & 58 (top)		Exercises may be deleted and included in P.60.
130	(2.1.3.)	More exercises are needed.
162	Q.1.	Using this calendar leaf more exercises may be included such as : count the number of working days in this month. How many Sundays are there in this month? Mention the date of second Saturday in the month.
163, 164	(5.1.1.)	More activities could be given such as drawing of different shapes, collecting objects of different shapes. (Worksheet for this competency has a variety of activities)

#### D. EVALUATORS RATING :

S.NO.	RATING	CRITERIA NO.
1	5 (Excellent)	None
2	4 (Very good)	1.4, 1.10, 1.11, 2.5, 2.6, 3.1, 3.4, 3.8, 4.1, 4.2, 4.3, 4.7, 4.9, 5.1, 6.4, 6.6, 6.7, 6.8.
3	3 (Good)	1.1, 1.2, 1.9, 1.12, 2.1, 2.2, 2.3, 2.4, 3.2, 3.3, 3.5, 3.6(vi, ix, & x), 3.7, 3.11, 3.12, 3.13. 4.4, 4.5, 4.6, 4.8, 4.10, 4.11, 4.12, 4.15, 5.3, 5.4, 5.5, 5.6, 6.3, 6.12.
4	2 (Satisfactory)	1.3, 1.5, 1.6, 1.7, 1.8, 5.2, 6.1, 6.2, 6.11, 6.13, 6.15.
5	1 (Poor)	6.10.

#### E. CONCLUSION :

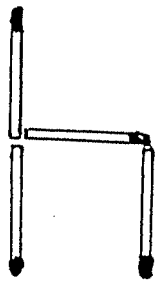
Only eighteen criteria have been rated as very good, none as excellent and a large number (thirty) as 3(good). The book, thus can be regarded as adequate and could definitely be improved by giving due consideration to the comments and suggestions indicated in this report.

A specimen cover page is appended : A specimen coverpage and a page illustrating a variety of play-way activities using splinters, thread, grains, match sticks, etc.

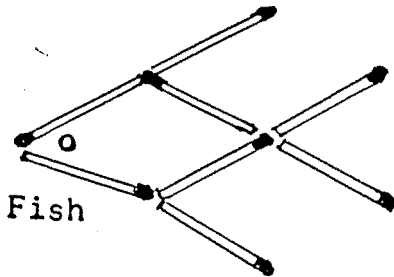


അടിസ്ഥാന ഗണിതം.

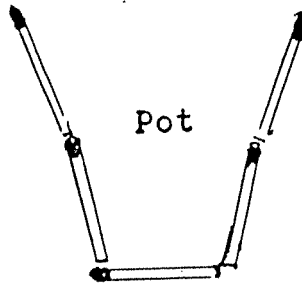
സ്നാനഭവരം - 1



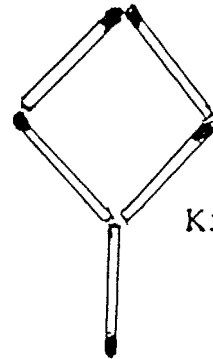
Chair



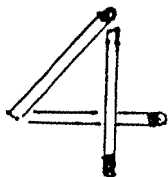
Fish



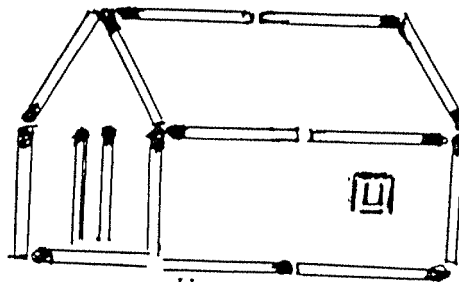
Pot



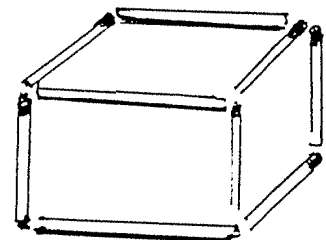
Kite



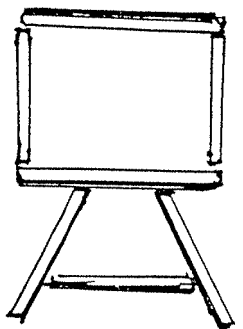
Number



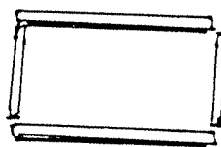
House



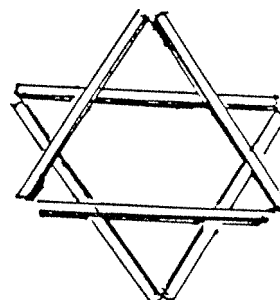
Box



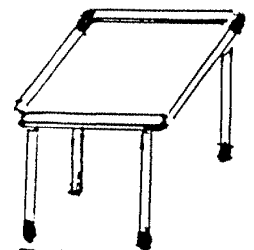
Blackboard



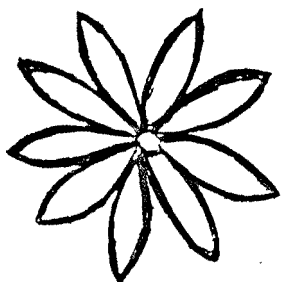
Shapes



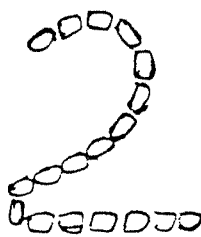
Star



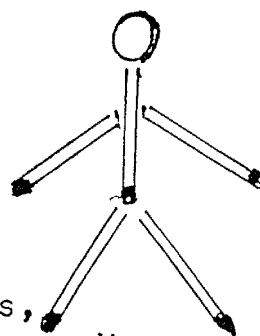
Table



Flower (thread & seed)



Numbers  
(grains, beads,  
thermocool)



Man

## Proforma No.1

### Proforma for Identification Data of the Instructional Material

Each item of this proforma should be written in the script of the material developed and again in Roman Script. For example : Title of the book is ഗണിത भाग 1'. It is to be written as ഗണിത भाग 1 (Mathematics Part 1).

State	: KERALA
Type of Material	: അദ്ധ്യാപക സഹായി Teachers Handbook
Title	: അടിസ്ഥാനഗണിതം (BASIC MATHEMATICS)
Language in which material is written	: MALAYALAM
Class	: Standard I
Author(s)	:
Editor(s)	:
Publisher	: Kerala State Institute of Education.
Publisher's Address	: Poojappura, Thiruvananthapuram-695 012.
Year of Publication	: 1995
Edition	:
Number of Pages	: 53
Price	:



## 1. Physical Aspects :

Throughout the book the layout has been organised under three columns :

Competency

Learning  
activities

Evaluation

Such organisation is useful and helpful for the teachers to locate information easily under any column or category. Still there is a suggestion from the evaluators to modify the present layout so as to economise the available space. The space for the first column may be reduced and more space given to column 3 or 2. On the whole the get up of the material is satisfactory.

Use of better quality paper is recommended and contrast in printing is to be improved in some pages. The table of contents at the beginning of the book mentions the corresponding competency numbers though the page numbers associated are not given. Inclusion of page numbers will enable the teachers to refer to any desired section/topic quickly.

A few printing mistakes have crept in and these have to be corrected after a careful scrutiny. An errata may be supplied to the teachers incorporating the corrections wherever needed. Some of the representative printer's devil are  $\text{ഒന്നുകൂട്ടം}$  ( $\text{ഒന്നുകൂട്ടം}$ ) in page 22,  $\text{ഒന്നുകൂട്ടം}$  ( $\text{ഒന്നുകൂട്ടം}$ ) in page 46 and  $\text{അല്ല}$  for  $\text{അല്ല}$  in page 50. An exhaustive list of such mistakes has not been included in the report as it is opinion of the evaluators that a majority of them can be corrected by the teacher himself.

## 2. Coverage and Treatment of competencies :

By and large the coverage and treatment of the competencies has been comprehensive and detailed, with a large number of interesting learning activities and games provided, which forms a good resource for the teachers in addition to the activities given in the text book. However, further improvements can be brought about as per the following observations and suggestions.

Only the competency numbers are given in the table of contents. The full statement of the competencies may be given at the beginning as in the text book. The competency 1.1.1 ( $\text{ഒന്ന് ചെന്ന് ആശയം}$ ) actually starts on page 6 and should be indicated there instead of on page 4. What is presented at the beginning of Teacher's Guide (p.4 to middle of p.6) relates to ideas and topics coming under the title 'Readiness for Primary Mathematics' - mentioned on p.32 of the companion volume ( $\text{അല്ലെങ്കിൽ ചുരുക്കം - പ്രാഥമികതലത്തിൽ}$  (Minimum Levels of Learning - Primary Stage by SCERT, Thiruvananthapuram)). These are

ideas/concepts regarding the qualitative relationships between various objects : big and small, near and far etc. - psychologically prerequisite ideas required in the mind of the child before he begins to learn quantitative relationships. A brief explanation may be given to the teacher regarding the necessity and importance of these ideas (already developed in most children but verbalisation may be done with the help of teachers).

On page 4, an activity/game with a ball is described. Only one ball is mentioned. One more ball can be introduced into the activity and the idea of 'big', 'small' can be brought in. Competencies 1.1.3 (P.14), 1.1.4 (p.16), 1.1.5 (P.17) and 2.1.3 (P.38) need better and clearer development. The concept of 'ചുവടു' (p.48) is given as the length between the ends of thumb and index finger when stretched. The evaluators from Kerala felt that it is the length between the ends of thumb and the middle finger when the palm is stretched. It is quite likely to vary from region to region and therefore necessary instructions may be given to the teachers in the handbook. In chapter 8 activities may be given (along with diagrams) for making different geometrical shapes using match sticks, beads, thread, stones, etc.

There is no proper correlation and link between the discussion in the Teacher's Handbook and the corresponding text book material as illustrated by some representative examples below :

1) The addition facts/numbers given in the text (p.122) are not mentioned in the Teacher's Handbook (p.35) - how to introduce the addition symbol + to the children using the text book examples. The directions to the teacher in the Teachers Handbook (the use of + etc.) are centered around the addition examples in the Teachers Handbook, which are no doubt useful to the teachers; but if the discussion is related first to the text book examples, it will be more useful and relevant.

2) Out of many visuals in the text book (p.24 to 28) only one picture (the cat) is referred to in the Teachers Handbook (p.12, 1.1.2A).

3) While introducing the concept of zero, the Teachers Handbook (p.14, 1.1.3) makes no reference to the use of the diagrams on p.39 and 40 of the text book. The Teachers Handbook discussions are centered entirely around additional activities ignoring altogether the text book material.

### 3. Content :

Most of the criteria under this aspect have been rated 3 or below thereby indicating a need for revision. Accuracy needs to be improved as indicated by the following case. A question on page 48 asks the student to identify the longer line of the two,

whereas the visual provided is that of two lines of equal lengths. Such discrepancies may be removed after a careful perusal. There is scope for inclusion of material using local learning situations in chapters 5, 6 and 7. Attempts have been made to include content integrating the core components of NPE 86. Importance of human values, national flag, equality of sexes, removal of gender bias, economic importance and proper use of money etc. have been highlighted through suitable situations. Necessary instructions may be provided to the teacher for proper inculcation of these values among the learners. Situations are also provided where positive attitudes towards environment can be developed. However, the evaluators are of the opinion that the number and frequency of such situations should be increased. Some additional activities in the form of songs, games etc. have been constructed by the evaluators with a view to develop national identity and unity among children. These have been appended at the end.

#### 4. Style of Presentation :

The style of presentation has been rated good and very good with respect to several criteria. Simple, familiar vocabulary has been used. There is a lot of provision for play way activities using easily available materials and objects from the surroundings. Many creative activities are also included.

However, with regard to criterion 4.9 (instructions for conducting the activities in clear and specific terms), further clarifications and suggestions to the teacher may be included. For example, the instructions to the teacher to hold a bundle of 10 sticks in the left hand and 1 stick in the right hand is misleading regarding the concept of place value. It is better to provide a diagram illustrating how to do this activity in addition to the verbal instructions.

Special materials/apparatus for teaching mathematics have been mentioned here and there in the Teachers Handbook : place-value pocket, place-value slide, abacus (p.18), domino (p.33) for development of creative abilities among the learners. Though enough number of situations are provided to develop imagination and thinking among learners (criterion 4.1) there is need to include more activities. The learners may be asked to make different geometrical shapes (two dimensional and three dimensional) using sticks, seeds, clay, grains, paper, etc.

#### 5. Visuals :

On the whole visuals are very few in this material and hence comments and suggestions are also few. The number and quality of the visuals may be improved. The following defects in the presentation of visuals may be rectified.

<i>Page No.</i>	<i>Error</i>	<i>Correct Form</i>
17, column 3	It is possible to insert only 5 beads into the rod of the Abacus.	Increase the height of the rod to accommodate 9 beads.
26, fig.4(3)	The objects in the second circle are joined.	Show them as four separate objects.
32, column 3	Diagram misplaced here.	Shift the diagram to top portion of p.33, column 3.

## 6. Evaluation Exercises :

Evaluation exercises and items are given in the third column in the Teachers Handbook. Though the activities and exercises given in the second column are mainly learning activities meant to develop the competencies many of them can also serve as evaluation exercises especially for the weaker students. Some of the examples of such situations are namely, p.15 last para, p.17 lines 6 and 5 from the bottom, p.9 line 5 from the bottom. Such instructions provided in Teachers Handbook can be used for remedial teaching. Thus considering the evaluation items in the third column and the potential evaluation exercises/items in the second column also, one finds a large variety of evaluation exercises, problems and test situations throughout the handbook in addition to those in the text book and model questions book. However, further improvements may be made as per the following suggestions.

More evaluation exercises are needed for the competency 2.1.3. Activity-based (including group activities) evaluation exercises are more useful. Hence activity-type evaluation questions may be provided wherever possible.

There is a very brief instruction given to teachers to conduct unit test No.1 on six competencies (p.18 bottom) and unit test No. 2 on four competencies (p.29) and so on. But there is no provision for exemplar unit test either in Teachers Handbook or in the Model Questions book. The evaluators have suggested the need for it. If separate exemplar unit tests are not provided, clear instructions to the teachers may be given to pool some evaluation items from the Model Questions Book and the Teachers Handbook and to construct their own questions for conducting unit test in a systematic way.

There is not enough provision for assessing the learner's skill of observation, discrimination and classification. More of such material should be included with detailed instruction on their use. Provision for tools and techniques for assessing mathematics-related values, attitudes and appreciation in the learners is very little and this needs to be rectified.

#### D. EVALUATORS RATING :

S.NO.	RATING	CRITERIA NO.
1	5 (Excellent)	None
2	4 (Very good)	1.9, 2.5, 3.8, 4.2, 4.3, 4.4, 4.6, 4.7, 6.2.
3	3 (Good)	1.1, 1.2, 1.3, 1.4, 1.6, 1.7, 1.8, 1.10, 1.11, 1.12, 2.1, 2.2, 2.3, 2.4, 2.6, 3.1, 3.3, 3.4, 3.5, 3.6(vi), 3.6(ix), 3.11, 4.1, 4.5, 4.8, 4.9, 4.10, 4.11, 4.12, 4.15, 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 6.1, 6.3, 6.6, 6.7, 6.8, 6.9.
4	2 (Satisfactory)	3.2, 6.15.
5	1 (Poor)	6.10, 6.11, 6.12, 6.13.

#### E. CONCLUSION :

Most of the criteria have been graded 3(good). Grade 4(very good) has been awarded to a few criteria only and grade 5(excellent) awarded to none. Thus this material may be considered as just adequate for the intended purpose. Its quality can be further improved by giving due consideration to the suggestions made by the evaluators. Revision along these lines is expected to provide many desirable features to the Teachers Handbook which will make it a more effective instrument for the classroom transaction of mathematics.

A list of additional activities, games, rhymes and action songs is appended herewith.

**Mathematics - Teacher's Hand book – Std. 1**  
**ADDITIONAL ACTIVITIES**

Competency : 1.1.1.

1.

ഓരോ കുട്ടിക്കും ഓരോ ഇൗർക്കിൽ കൊടുക്കുന്നു. കുട്ടികൾ അതുപയോഗിച്ച് വ്യത്യസ്ത വലുപ്പമുള്ള രണ്ട് കഷണങ്ങൾ ഉണ്ടാക്കട്ടെ...എല്ലാ കുട്ടികളുടെയും കഷണങ്ങൾ പ്രദർശിപ്പിച്ച് ഏറ്റവും വലുതും ഏറ്റവും ചെറുതുമായവ കാണട്ടെ...

2. Competency : 1.1.1

കളിമണ്ണ് ചെളി ഇവ ഉപയോഗിച്ച് വണ്ണം കൂടിയതും കുറഞ്ഞതുമായ രൂപങ്ങൾ നിർമ്മിക്കുന്നു.

3. Competency 1.1.2 A

വിട്ടഭാഗം കമ്പുകൾ ഉപയോഗിച്ച് പൂരിപ്പിക്കുക( ആവശ്യത്തിന് ഇൗർക്കിലോ, തീപ്പെട്ടി കൊള്ളിയോ ഉണ്ടായിരിക്കണം.)



4. Competency : 1.1.2 A .

കുട്ടികളെ വട്ടത്തിൽ നിർത്തിയശേഷം, രണ്ടുകുട്ടികളെ വീതം വൃത്തത്തിനകത്തേക്ക് വിളിക്കുന്നു. ഷർട്ടിൽ കുത്തിയിരിക്കുന്ന നമ്പർ കാർഡുകൾ അന്യോന്യം വായിക്കുന്നു. ഉറക്കെ, മറ്റുകുട്ടികൾ ഏറ്റുപറയണം. കുട്ടികളെയും സംഖ്യകളെയും മാറ്റി കളി തുടരാം.

കളികൾ

Competency : 1.1.1

Motivation

1.വിസിൽ മുഴങ്ങുമ്പോൾ കുട്ടികൾ പരമാവധി വലുതാകണം. അടുത്ത വിസിൽ വരെ സ്റ്റിൽ. വിസിൽ മുഴങ്ങുമ്പോൾ പരമാവധി ചെറുതാകണം. ആവർത്തിച്ച് രസകരമാക്കാം

2.മുകളിലോട്ട്...താഴോട്ട്. 1.1.1.

കുട്ടികൾ നിരനിരയായി നിൽക്കുന്നു. വിസിൽ മുഴങ്ങുമ്പോൾ മുകളിലോട്ട് നോക്കണം. രണ്ടുമിനുട്ടിനുശേഷം കണ്ടവസ്തുക്കൾ പറയണം. അടുത്ത വിസിലിന് താഴോട്ടുമാത്രമേ നോക്കാൻ പാടുള്ളൂ. നിരീക്ഷിച്ച വസ്തുക്കൾ ഉറക്കെ പറയിപ്പിക്കണം.

3. കുട്ടികൾ വൃത്തത്തിൽ നിന്ന് ഇടതുകൈ വൃത്തത്തിനകത്തേക്ക് ചൂണ്ടി....'പറയൂ പറയൂ... എത്രപേർ'

എന്നുപാടിമെല്ലെ ഓടുന്നു. അധ്യാപകനോ കുട്ടിയോ നാല് എന്നു പറയുമ്പോൾ നാലുകുട്ടികൾ ഒന്നിച്ചു നൽക്കണം. നാലല്ലാത്ത കുട്ടങ്ങൾ കളിക്കു പുറത്ത്. 1.1.2(A) (B), (C) എന്നീ പ്രാപ്തികളിൽ ഫ്ലാഷ് കാർഡ് ഉപയോഗിച്ച് ഈ കളി നടത്താം.

4. കടലപെറുക്കൽ മത്സരം (Competency : 1:1:3/1:1:2A) വൃത്തിയായ സിമൻറ് തറയിലോ, തുണിയിലോ കടലമണികൾ, പയറുമണികൾ, ചെറുമണിക്കല്ലുകൾ ഇവ വിതറി, വിസിലടിക്കുമ്പോൾ, കുട്ടികളോട് പെറുക്കാൻ പറയുന്നു. മുഴുവൻ പെറുക്കിത്തീർന്നാൽ വിസിൽ മുഴക്കി കളിനിർത്തണം. തറയിൽ ബാക്കി ഇല്ല. 0 എന്ന ആശയവും എണ്ണവും പഠിപ്പിക്കാൻ ഈ കളി ഉപയോഗിക്കാം.

സംഭാഷണങ്ങൾ ; ചെറുകഥകൾ

Competency : 1-1-1

1. സ്കൂളിനടുത്ത വീട്ടിലേക്ക് പഠനയാത്ര ; വലിയപാത്രങ്ങളും ചെറിയപാത്രങ്ങളും, വലിയമുറികൾ , വസ്തുക്കൾ....etc., , ചെറിയ മുറികൾ, ചെറിയവസ്തുക്കൾ എന്നിവ നേരിട്ട് കാണുന്നു. സംഭാഷണങ്ങളിലൂടെ പ്രാപ്തി വളർത്തുന്നു.

2.. വാഴത്തട - വണ്ണ കുറച്ചാൽ ... എന്തുകിട്ടും? വാഴപ്പിണ്ടിയും വാഴത്തടയും താരതമ്യം ചെയ്യുന്നു--സംഭാഷണത്തിലൂടെ.

3. അടുത്തവീട് ഏതാണ്? ആരുടെ വീടാണ് സ്കൂളിന് വളരെ അടുത്തുള്ളത്?...etc.

Competency 1.1.2 A

4. കാർട്ടൂൺ ചിത്രങ്ങൾ (0-9 വരെ സംഖ്യകളെപ്പറ്റി)

ഇവ വരച്ച് വലിയ ഫ്ലാഷ് കാർഡുകളിൽ പ്രദർശിപ്പിക്കണം. അധ്യാപകൻ ബോർഡിൽ വരച്ച് അവതരിപ്പിച്ചാൽ ഏറെ നല്ലത്.

Rhymes

Competency : 1.1.1

1. അച്ഛൻ ഒന്ന്; അമ്മ ഒന്ന്  
നാൻ ഒന്ന് ; ഭാരതമൊന്ന്  
ഒന്നേ....ഒന്നേ....ഒന്ന്....

2. ഉയരട്ടെ കൈകൾ ഉയരട്ടെ.  
ഒന്നൊന്നായിട്ടുയരട്ടെ...  
ഒന്നിച്ചൊന്നായ് ഉയരട്ടെ....

വാനത്തോളം ഉയരട്ടെ....  
 ഉയരുമ്പോൾ നാം ഒന്നായ് പാടും  
 ഒന്ന്...ഒന്ന്.....ഒന്ന്  
 നമ്മൾ ഒന്ന്.....ഒന്ന്....  
 ഇന്ത്യക്കാരിവർ ഒന്ന്.....  
 ഒന്ന്.....ഒന്ന്.....ഒന്ന്.....

3. വായും വയറും ഓരോന്നെന്നാൽ  
 നമുക്കു കൈകൾ രണ്ടില്ലേ.....  
 തലയും നാക്കും ഓരോന്നെന്നാൽ  
 നമുക്കു കണ്ണുകൾ രണ്ടില്ലേ....  
 നമുക്കു കാതുകൾ രണ്ടില്ലേ.....

Competency : 1. 1. 3

- 4.(a) ചിക്രിച്ചിക്രിവരുന്നുണ്ട് കുട്ടരെ  
 കോഴിയമ്മ വരുന്നുണ്ട് കുട്ടരേ...  
 ആരൊക്കെയാണെന്ന് നോക്കിയാട്ടെ - കൂടെ  
 ആരൊക്കെയാണെന്ന് നോക്കിയാട്ടെ..  
 തൂവെള്ള വേഷത്തിലാൺ കുഞ്ഞും പെൺകുഞ്ഞും  
 അമ്മയ്ക്ക് മക്കൾ രണ്ടല്ലോ - തള്ള -  
 കോഴിക്ക് മക്കൾ രണ്ടല്ലോ.....  
 ആറ്റാദത്താൽകൂവും കോഴിയെ  
 കാണാനെന്നൊരു ചന്തം.....  
 കേൾക്കാനെന്നൊരു ചന്തം....

- (b) ഒരു ദിനം നമ്മുടെ കുഞ്ഞിനെ രണ്ടും  
 ക്രൂരൻ പറുന്ത് ആഹാരമാക്കിപ്പോൽ  
 കുട്ടരെ ...ഇനിയെത്ര കുഞ്ഞുങ്ങൾ ബാക്കിയുണ്ട് ? തള്ള  
 കോഴിക്കിനിയെത്ര കുഞ്ഞുങ്ങൾ ബാക്കിയുണ്ട് ?  
 ഒന്നല്ലേ.....ഒന്നല്ലേ.....ടേപാ.....  
 അതാണ് പൂജ്യം .....അതാണ് പൂജ്യം.  
 ഒന്നിച്ചൊന്നായ് ചൊല്ലൂ .. നിങ്ങൾ  
 ഒന്നിച്ചൊന്നായ് ചൊല്ലൂ....

(ഈ പാട്ട് കുട്ടികളെക്കൊണ്ട് ഗ്രൂപ്പായി അഭിനയിപ്പിച്ചുതന്നെ ചെയ്യിക്കണം....മൂന്നു കുട്ടികളെ (കോഴിയമ്മ; കുഞ്ഞുങ്ങൾ ) എന്നിങ്ങനെയും ഒരാളെ പറുന്തായും വേഷം ധരിപ്പിക്കുക. മറ്റുകുട്ടികൾ കാണികൾ. ഇത് മാറി മാറി ആവർത്തിച്ച് എല്ലാവർക്കും അവസരം കൊടുക്കണം)

:



Competency : 1.1.9

5. ഒന്നെന്നെങ്ങനെ എഴുതാം  
ഒന്നെന്നെങ്ങനെ എഴുതാം  
ഒന്നെന്നെങ്ങനെ എഴുതാം  
വളവില്ല....ചരിവില്ല...  
കുത്തനെ ഒരു വര...  
ചെറിയ വര..  
നന്നായ് എഴുതിയ കുറിയ വര  
ഒന്നായാൽ നന്നായി  
നന്നായാൽ ഒന്നായി....

(കുഞ്ഞുണ്ണിമാഷിന്റെ വരികൾ.....വരികൾ ചിട്ടപ്പെടുത്തണം)

Competency : 1.1.9

6. നിങ്ങളുടെ ക്ലാസിലിപ്പോൾ ഏതുസംഖ്യയാണെടോ?  
ഞങ്ങളുടെ ക്ലാസിലിപ്പോൾ ' 2 ' എന്നസംഖ്യയാണെടോ.  
2 എന്നെഴുതുന്നതെങ്ങനെ - പിന്നെങ്ങനെ ..പിന്നെങ്ങനെ?  
2 എന്ന സംഖ്യ ഇങ്ങനെ - പിന്നിങ്ങനെ -പിന്നിങ്ങനെ....

(അദ്ധ്യാപകൻ കുട്ടികൾക്ക് കാണത്തക്കവിധം സംഖ്യ എഴുതുന്ന രീതി, വായുവിൽ, ബോർഡിൽ വിരൽ,ചോക്കു ഉപയോഗിച്ച്, കുട്ടികളെ വട്ടത്തിലിരുത്തി, തറയിലോ പൂഴിയിലോ ചെയ്യിക്കണം. 0-9 വരെയുള്ള എല്ലാ സംഖ്യകളും ഇങ്ങനെ പരിശീലിപ്പിക്കണം.)

Competency : 1.1.1

(കുട്ടികൾ ഒന്നിച്ച് അഭിനയിച്ചു പാടുന്നു)  
ഒരു വിരൽ ആടുമ്പോൾ; ആടുമ്പോൾത്തന്നെ..  
പാടുന്നു ഞങ്ങൾ പാടുന്നു...  
ഒന്ന്.....ഒന്ന്.....ഒന്ന്.  
ഇരുവിരൽ ആടുമ്പോൾ ...ആടുമ്പോൾത്തന്നെ  
പാടുന്നു ഞങ്ങൾ പാടുന്നു..  
രണ്ട്.....രണ്ട്.....രണ്ട്.  
മൂവിരൽ .....  
പാടുന്നു.....  
മൂന്ന്.....മൂന്ന്.....മൂന്ന്.....  
-ഇങ്ങനെ അഞ്ചുവിരൽ .....തുടർന്ന് പത്തുവിരൽ  
വരെ പാടി അഭിനയിക്കണം.

Competency : 1.1.5

അഞ്ചു നൂറുകൾ ചേർന്നു ഞങ്ങൾ  
അഞ്ഞൂറായി തീർന്നല്ലോ...  
രണ്ടു പത്തുകൾചേർന്നു ഞങ്ങൾ  
ഇരുപതായി തീർന്നല്ലോ....

മൂന്നു ഒന്നുകൾ ചേർന്നപ്പോൾ  
 മൂ.....നായിത്തീർന്നല്ലോ.  
 ഞങ്ങൾ ഒന്നായ്ച്ചേരുമ്പോൾ  
 നിങ്ങൾ ഒന്നായ് വായിക്കും  
 523.....523.....  
 (അഞ്ഞൂറ്റിഇരുപത്തിമൂന്ന്... അഞ്ഞൂറ്റിഇരുപത്തിമൂന്ന്)

അഭിനയഗാനം: (Action Song)

Competency : 1.1.2

കുട്ടികളെ A, B ഗ്രൂപ്പുകളാക്കി രണ്ട് നിരയായി നിർത്തുന്നു. രണ്ടു ഭാഗത്തെയും കുട്ടികൾ 0-9 വരെയുള്ള സംഖ്യകൾ എഴുതിയ ഫ്ലാഷ് കാർഡുകൾ എഴുതി തൂക്കിയിട്ടുണ്ട്.

B ഗ്രൂപ്പ്: ആരുചൊല്ലും സംഖ്യ ഇപ്പോൾ, നിങ്ങളിൽ  
 ആരുചൊല്ലും സംഖ്യ -?  
 കൂട്ടരെ നിങ്ങൾക്കാവശ്യമുള്ള സംഖ്യ.

A ഗ്രൂപ്പ്: ഗോപി ചൊല്ലും സംഖ്യയിപ്പോൾ കൂട്ടരെ  
 ഞങ്ങളുടെ ഗോപിചൊല്ലും സംഖ്യ  
 ഞങ്ങൾക്കാവശ്യമുള്ള സംഖ്യ

A ഗ്രൂപ്പിലെ ഗോപി സംഖ്യ പറയുമ്പോൾ B ഗ്രൂപ്പിലെ കുട്ടികൾ നിരന്നുനിന്ന് സംഖ്യ ഉണ്ടാക്കുന്നു. അത്രയും കുട്ടികൾ A യിലേക്ക് പോകുന്നു. പിന്നീട് A ഗ്രൂപ്പ് ചൊല്ലുന്നു.

Motivation to Competency : 3.1.2 , 3 . 1. 3, 3. 1. 4 ; 3.1.5

കുപ്പിനിറയ്ക്കൽ: കുട്ടികളെ 5 വീതം ഗ്രൂപ്പുകളാക്കി തിരിക്കുന്നു. നിരയിൽ നിർത്തി- ഓരോ കുട്ടിയും അവനുനേരെ പത്തടി അകലത്തിൽ വെച്ചിരിക്കുന്ന വാവട്ടം കുറഞ്ഞ കുപ്പിയിൽ കൈയിൽ വെള്ളമെടുത്ത് നിറയ്ക്കണം. സ്റ്റാർട്ടിങ് പോയന്റിൽ ഒരു ബക്കറ്റിൽ വെള്ളം വെച്ചിട്ടുണ്ടായിരിക്കും. ഏറ്റവും കുറഞ്ഞ സമയം കൊണ്ട് കുപ്പിനിറയ്ക്കുന്ന കുട്ടി ജയിക്കും.

## Proforma No.1

### Proforma for Identification Data of the Instructional Material

Each item of this proforma should be written in the script of the material developed and again in Roman Script. For example : Title of the book is ഗണിത भाग - 1'. It is to be written as ഗണിത भाग - 1 (Mathematics Part 1).

State	: KERALA
Type of Material	: മാതൃകാ ലോഭ്യങ്ങൾ MLL Based Model Questions
Title	: അടിസ്ഥാന ഗണിതം (BASIC MATHEMATICS)
Language in which material is written	: MALAYALAM
Class	: Standard I
Author(s)	:
Editor(s)	:
Publisher	: Kerala State Institute of Education.
Publisher's Address	: Poojappura, Thiruvananthapuram-695 012.
Year of Publication	: 1995
Edition	:
Number of Pages	: 68
Price	:

## 1. Physical Aspects :

The get-up of the material is good on the whole with the physical aspects such as the design, whiteness of paper, attractiveness of cover page etc. receiving 'good' and 'very good' by the evaluators. However the following corrections and improvements have been pointed out. The layout may be improved so as to save space - for example, pages : 4, 36, 39, 46, 51, 54. It is better to arrange the 'equal to' (=) signs one below the other in page 54, question No.11 and 12.

## Printing Mistakes :

Page No.	Given Form	Correct/Better Form
2, Qns. 12, 13	കൊടുക്കുന്നതുപോലെ	കൊടുത്തിരിക്കുന്നതുപോലെ
3, Qns. 37 to 41	ഉചാദ്യത്തിലും	കൃട്ടത്തിലും നക്ഷത്രങ്ങൾ
11, Qn. 14	തെഴു	താഴെ
12, Qn. 3	11 ദൃഷ്ടികൾ	1 ദിനം
31, Qn. 13	അകത്തുള്ള	രണ്ടു ചിത്രങ്ങളുടെ അകത്തുള്ള
45, Qn.16, 2nd sub-question	ചിത്രവും	ചിത്ര
51, Qn. 3	$3 + 2 = 7$	$3 + 2 = 5$
60, Qn. III	നാണങ്ങൾ	നാണയങ്ങൾ

The table of contents does not show the page numbers and only the competency numbers are given there. It is better to include the full statement of competencies and also the associated page numbers for quick and easy reference.

## 2. Coverage and Treatment of Competencies :

All the competencies have been treated in the model questions book and each competency has been covered comprehensively. The contents page carries only the competency number and not the complete list covered in the book. In the interior also the statement of the competencies with number is given in many cases but some have been presented by giving only the competency number. Some examples are 1.1.2 (A) (p.6), 1.1.3 (p.9) 1.1.2C (p.13) and so on. Some lapses have been found in treating the competencies in a continuous and sequential manner. A few representative cases are given below.

- i) Page 2, question numbers 8 to 11, 16 and 17. - These come under competency 1.1.8 but shown under 1.1.1.
- ii) Page 3, question numbers 24 to 31 - same as above.
- iii) Some of the questions related to 1.1.4 have also been included under other competencies. For example, questions 18 to 23 (page 3) should come under 1.1.4 and not under 1.1.1. Similarly question numbers 8 and 9 (page 13) have been wrongly placed under 1.1.2C. Such wrong sequences have been observed throughout the book and these may be rectified.

## 3. Content :

All the questions given in this Model Questions book are based on the mathematics content and competencies prescribed for Standard 1. Only the arrangement of questions according to competencies require many corrections as pointed out in the previous section. Several criteria have been graded 3 (good), but the following improvements have been suggested.

On page 6, questions 4 and 5 may be avoided since children at this stage (beginning of class 1) may not have developed the ability to read the words corresponding to each numeral. The same remark applies to Qn.16, p.7 where figures representing four objects may be shown instead of the Malayalam word for 'four'; similarly five objects, seven objects etc. Question 12, page 14, also requires suitable modification after deleting the words ഇരുപത്തിയെഴു, മുപ്പത്തിരണ്ട് etc, on the left column.

There is scope for including more questions connected with some of the ten core components. Questions may also be included to bring in the aspects of environmental situations, to generate positive attitudes towards environment and also to stress the interdependence of human beings and nature on each other.

#### 4. Style of Presentation :

Questions have been framed and presented in different forms showing variety in the style of presentation - oral, performance and written questions and different styles such as, questions with visuals with and without boxes, different shapes like thick dots, match sticks, stars, diamonds, human figures, familiar objects, etc. are present. The question types include multiple choice items, matching type and fill-in the blank questions with number cards. The performance tests have been designed imaginatively; exhibit variety; have scope for individual/group activities and to some extent promote creativity.

Criteria 4.11 to 4.13 are relevant for an instructional material dealing more with learning activities and hence no comments have been made regarding these. Answer key has not been provided and it is the view of the evaluators that no key need be given at this level.

#### 5. Visuals :

Questions have been constructed and presented through a variety of visuals. The following corrections and improvements can enhance the effectiveness and quality of this material.

P.2, Qn. 9. It may be better to show separate objects in each group.

P.5, Qn. 65 : There are two boxes with 6 items. One of them should contain 7 items.

P.29, Qn. 9 : Delete the X mark.

P.33, Qn. 1 : Figures mentioned in the question are missing.

P.34, 35 : Questions with visuals given but they are not numbered.

P.35, last two questions: For each question, four alternatives are given in the form of visuals, but none of the four alternatives contain the correct answer. This should be rectified.

P.36, Qn.7 : The example shown is incorrect. The arrow should point toward 15.

P.37, Qn.10 : Delete the arrow marks shown above the rectangular boxes.

P.41, Qn.3 : In the second pair of figures, which portion is to be subtracted is not clear.

A careful scrutiny may bring out some more such omissions. These are to be corrected or notified to the teachers through an errata.

## 6. Evaluation Exercises :

This book is devoted exclusively to model evaluation items and exercises. We find a large number of evaluation items for each competency most of which are expected to reinforce the learning of concepts in students. But there are several printing mistakes, misplacement of competencies, defects in visuals etc. which have been pointed out in the respective sections. In addition, the following corrections are also required.

P.11, Qn. 14 : the instructions are not clear.

P.49, Qn.5 : the 11th sub-question requires the following correction : 6 മോട് എത്ര കുട്ടിയാൻ 8 കിട്ടും.

P.49, Qn. 6 sub-question 10 & both these should be  
Qn.7, sub-question 11 : modified suitably.

Regarding the provision for separate evaluation exercises for remedial instruction, there is no such specific provision explicitly given in this book. But the teachers may be instructed to make their own selection of items for remedial teaching from the set of model questions. There is no exemplar unit test provided in this book. A few questions may be added to assess the learners skill of observation, discrimination, classification and analysis. There are not enough items aimed toward the development of imagination and thinking. If these are implemented it will be a more effective tool for evaluation in the hands of teachers.

#### D. EVALUATORS RATING :

SL.NO.	RATING	CRITERIA NUMBER
1	5 (Excellent)	None
2	4 (Very good)	1.4, 1.9, 1.10, 1.11, 6.2.
3	3 (Good)	1.1, 1.2, 1.3, 1.6, 1.7, 1.8, 2.4, 2.5, 2.6, 3.1, 3.2, 3.4, 3.5, 3.6(vi), 3.6(ix), 3.7, 3.8, 3.9, 3.11, 3.12, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 6.1, 6.2, 6.6, 6.7, 6.8, 6.15.
4	2 (Satisfactory)	1.12, 2.1, 2.2, 3.3, 4.10.
5	1 (Poor)	2.3, 6.10, 6.11, 6.12, 6.13, 6.14.

#### E. CONCLUSION :

A large number of criteria are rated good (3), five are rated very good and five satisfactory. This shows that the material on the whole is good. But the five ratings of 'satisfactory', and six ratings of 'poor' point to the fact that further improvements and corrections are a must if this material is to function as a 'model' questions book as the title goes. If instructions and clarifications regarding unit test, the diagnostic aspect of evaluation items under the context of mastery learning and remedial teaching are also brought in, this material will have a greater potential as a tool for continuous and comprehensive evaluation.



### Proforma No.1

#### Proforma for Identification Data of the Instructional Material

Each item of this proforma should be written in the script of the material developed and again in Roman Script. For example : Title of the book is गणित भाग 1'. It is to be written as ഗണിത भाग 1 (Mathematics Part 1).

State	: KERALA
Type of Material	: Textbook
Title	: അടിസ്ഥാന ഗണിതം (BASIC MATHEMATICS)
Language in which material is written	: MALAYALAM
Class	: II
Author(s)	:
Editor(s)	:
Publisher	: Kerala State Institute of Education.
Publisher's Address	: Poojappura, Thiruvananthapuram-695 012.
Year of Publication	: 1995
Edition	:
Number of Pages	: 136
Price	:

## 1. Physical Aspects :

Picture on the cover page is attractive. Looking at the colourful cover page one may be tempted to ask what is its relevance to mathematics? The counting of petals could be an exercise in lesson 1(1.2.1). Or the facing page picture can be shifted to front cover page with some additional mathematical features. Back cover page could be improved by introducing more geometrical shapes. It is suggested that the cover pages be laminated and calico-binding used for durability. In pages 47, 53, 54, 58 and 59 the sums could be presented in two rows and the space thus saved could be used for providing creative activities related to the corresponding competency. Similarly, the blank space found on pages 21, 24, 70, 81, 112 and 119 could be used to provide some puzzles, quiz items, rhymes etc. With regard to printing the following discrepancies have been observed which need rectification :

### a) Errata

Reference	Wrong word	Correct word
i. List of competencies line 1	നൃമറു കച്ചുടേയും	സ്ത്രമറപു കച്ചുടേയും
ii. Competency 5.2.1	ചിറുപാടുമുച്ച	ചുറുപാടുമുച്ച
iii. P.25 Q.2. last number	75, 80 ..... 105	70, 75 ..... 100
iv. P.32, set 6 Q.4	86 + 6	86 + 5
v. P.57 First box ചട്ടം-1	7 4 - 4 5	7 4 - 2 5
vi. P.91, Q.5 (last line)	കൂടി	കൂടി
vii. P.118 Q.4	{വാങ്ങുന്നവരെ അല്ലാത്തവരെ	വാങ്ങുന്നവയ്ക്ക് അല്ലാത്തവയ്ക്ക്
viii. P.123 Q.9	നിയതിയാണ്.	നിയതിയാണ്.
Wherever appears	Work book	Worksheet

### b) Deletion :

P.49 last column : delete the symbol '-' after 5 and 2.

P.66, 10th line from above : delete the symbol '-' after 27.

c) Omission :

P.17, 4th line from top. Add the word <sup>26m</sup> after 5.

P.17, Provide chapter heading.

P.25, 75 & 93, Provide the heading - worksheet.

P.94, 5th row, 3rd box. One dot is missing.

P.125, In November and December months dates corresponding to Saturday are missing.

2. Coverage and Treatment of competencies :

The list of competencies has been provided in the beginning and they are not treated in the text book in the same sequence. Some changes have been made keeping logical and sequential development of competencies. The treatment of the competencies 1.2.2, 1.2.4, 2.2.2, 2.2.4 (A and B) and 2.2.10 require more exercises and explanation, to be considered as 'covered comprehensively'. The mentioning of the competency number at the top of the lesson is missing in the following cases :

P.23 - 1.2.4

P.93 2.2.7 and 2.2.8

P.74 - 2.2.6

P.98 2.2.9

P.77 - 2.2.7

P.105 2.2.10

P.51 - 2.2.2

P.106 3.2.1

The treatment of all competencies starts at the top of the page, except 1.1.2 (P.7) and 3.2.3 (P.117), 3.2.4 (P.118), 3.2.6 (P.126), 5.2.2 (P.132) This may be set right.

3. Content :

The content is mostly adequate, appropriate, accurate, related to learners' daily life experiences and adaptable to local learning situations. Here and there some discrepancies have been noted as listed below.

P. 48 - The figure and explanation has no correlation.

It may be given as follows. ആദ്യത്തെ ചിത്രത്തിലെ മരത്തിൽ 28 കിച്ചികൾ ഉണ്ട്. അതിൽ നിന്ന് 5 കിച്ചികൾ പറന്നുപോയി. (രണ്ടാമത്തെ ചിത്രം) ബാക്കി എത്ര?

P. 56 - The first and second figures need more explanation which can be as follows : താഴെ ചിത്രങ്ങളിൽ 42 രണ്ടു രീതിയിൽ ചിത്രീകരിച്ചിരിക്കുന്നു. ശ്രദ്ധിക്കുക.

P.115 - The term ചാപ്പ (span) is the distance between Fig 8(4) the tip of the thumb and that of middle finger (when the palm is stretched).

P.120,121 Activity questions may be given instead of pictures.

P.122 Give instructions to the learner for doing this activity.

In competency 3.2.5, the content may be related to agriculture by asking questions such as;

- (i) which is the paddy harvesting season? Coffee harvest season? Pepper season?
- (ii) when does the rainy season begin? etc. Inclusion of activities facilitating creative expression is needed in competency 5.2.1 and 5.2.2 by using broomsticks, leaves, match sticks, shell, etc. The gender equality is apparent in the text. All chapters may be begun with some content/ activity having wit and humour in order to provide motivation. The text uses Hindu-Arabic system of numeration. In pages 117 and 118 the Roman numbers i to x have been used, which could be avoided.

#### 4. Style of Presentation :

The vocabulary is simple and familiar. The sentence structure adequately ensures comprehension. The material has been presented in a graded manner following logical and sequential order. A variety of play-way activities are included for ensuring mastery. Most of the criteria under this aspect has been considered as good except the suggestions for supplementary visual material and teaching aids. The provision of answer key at the end of each unit has not been made.

#### 5. Visuals :

There are adequate number of visual aids and variety is maintained among them. The visuals are placed close to the content and there is proper linkage and reference between them

(except in P.33 and 45). They are attractive and are accurate in terms of perspective, proportion and conformity with objects. However, the following discrepancies have been noticed and they may be remedied :

P.1            Appears crowded and does not provide motivation.  
              Instead, pictures of objects such as balloon, toys,  
              etc. may be given.

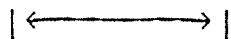
P.1,6,8,      Avoid colouring of the answer boxes/circles.  
9,10 & 15

P.17, Fig.2(2) }  
P.21, Fig.2(2) } Visuals are patchy/not clear and some of them  
P.106 Fig.7(2) } do not conform with the actual objects.

P.20, Fig.2(11)            Avoid the shadow/shade by the sides of  
P.116, Fig.8(6,7,8)        the objects so that they appear prominent.

P.106,107      The colouring of the coins and currency notes do not  
                 appear natural.

P.115, 116      Indicate the respective measure showing demarcation,



P.117, Fig.1      Pointer of the balance and object on the pans are  
                  not clear. So also some objects on the scale pans  
                  in other diagrams.

P.122            Sizes of buckets, bottles and heaps be made different.

## 6. Evaluation Exercises :

The grading of exercises, commensurate with the level of learners, is by and large satisfactory. The provision of a variety of items, problems and activities for each competency is good; so also the number of exercises for the reinforcement of learning. However, the provision of worksheets for remedial and multiple class instruction is not up to the mark. The exercises of the type 'things to do' and 'things to find out' are adequate. Enough space has been provided for learner's response though

boxes (P.75) to write answers are needed in some exercises and worksheets. Provision of clues and hint to different questions has been adequately made wherever necessary.

The following observations have been made, which need to be considered :

P.7 (1.2.2) Exercises for practice are not given.

P.75 (2.2.6), P.105 (2.2.10) Work sheet not given.  
P.47 (2.2.5)

P.105 (2.2.10), Work sheet is insufficient  
P.74,82,Q.4

P.75 Provide small boxes for writing answers.

P.26 Include more activity questions.

P.120-122 Exercises given are not appropriate.  
More activity questions are needed.

P.71 It is not necessary to give steps in the work sheet.

P.72 Give more questions for the addition of three two-digit numbers.

Provision of comprehension questions to ensure use of imagination and thinking by the learner is just satisfactory and therefore could be improved.

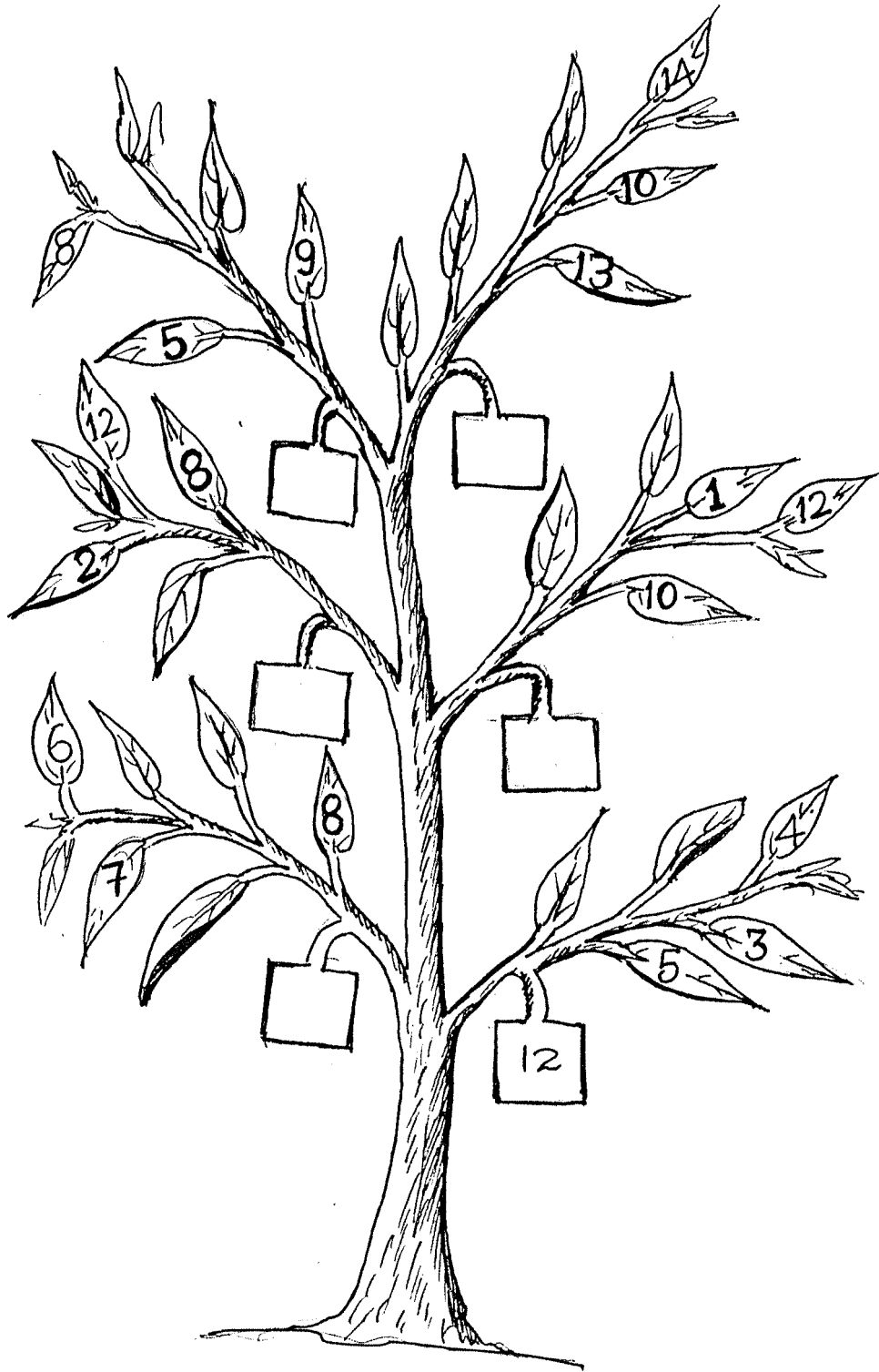
#### D. EVALUATORS RATING :

S.NO.	RATING	CRITERIA NO.
1	5 (Excellent)	None
2	4 (Very good)	1.10, 1.11, 2.5, 3.4.
3	3 (Good)	1.1, 1.2, 1.3, 1.4, 1.8, 2.1, 2.3, 2.4, 2.6, 3.1, 3.2, 3.3, 3.5, 3.6(vi & x) 3.7, 3.8, 3.9, 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 4.10, 4.11, 4.12, 5.1, 5.2, 5.3, 5.5, 5.6, 6.2, 6.3, 6.6, 6.7, 6.8.
4	2 (Satisfactory)	1.5, 1.6, 1.7, 1.9, 1.12, 2.2, 4.15, 6.1, 6.15.
5	1 (Poor)	4.4, 6.4, 6.9, 6.11, 6.12, 6.13, 6.14.

#### E. CONCLUSION :

More than seventy percent of the criteria have been rated 3(good) and 4(very good); fifteen percent 2(satisfactory). The textbook can therefore be rated as adequate. Most of the criteria rated poor correspond to evaluation exercises which need lot of improvement. Improvements could be made in respect of the criteria rated 3(good) which are very large in number if the comments made by the evaluators are given due consideration, during the revision of this book. If done, surely a better book may be brought out.

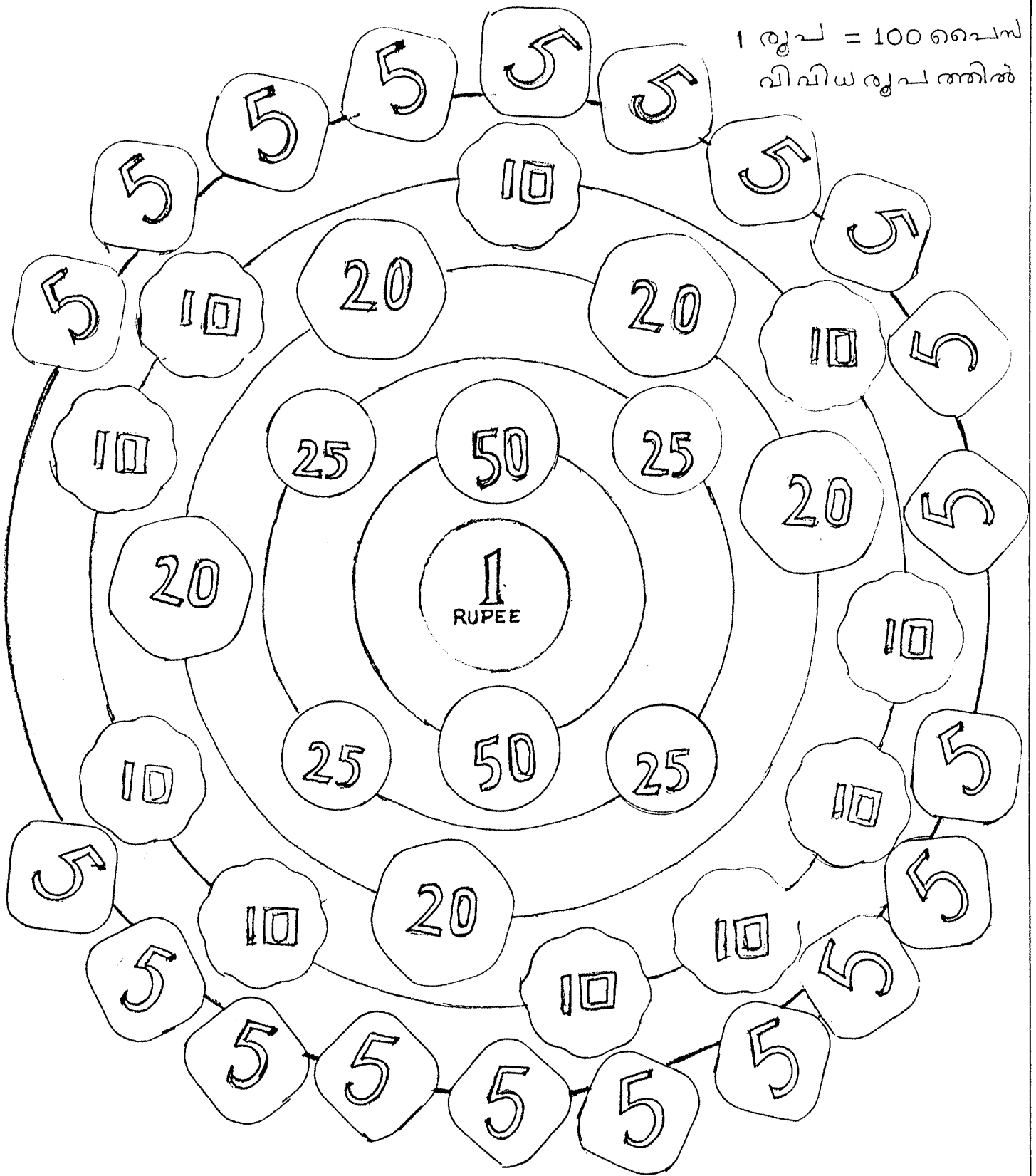
An alternate way of giving the exercises in P.45 and P.109 is appended at the end.



ഒരോ ശിഖരത്തിലും ഉള്ള ഇലകളിൽ ഏകദേശം 14-15 നമ്പരുകളുടെ തുകയായ അതതു ശിഖരത്തിൽ തുക്കയ്ക്കുള്ള കാര്യങ്ങൾ എഴുതുക. ഉദാഹരണം വലതുവശത്ത് താഴെ ശിഖരത്തിൽ കാണാം. അതുപോലെ ചെയ്യുക.



1 രൂപ = 100 പൈ  
വിവിധ രൂപത്തിൽ



In addition to Fig.7(8), page 109, this may be given as an exercise for finding out how many coins of a particular denomination make one rupee.

### Proforma No.1

#### Proforma for Identification Data of the Instructional Material

Each item of this proforma should be written in the script of the material developed and again in Roman Script. For example : Title of the book is गणित भाग 1. It is to be written as गणित भाग 1 (Mathematics Part 1).

State	: KERALA
Type of Material	: അദ്ധ്യാപക നോഡ് Teachers Handbook
Title	: അടിസ്ഥാന ഗണിതം (BASIC MATHEMATICS)
Language in which material is written	: MALAYALAM
Class	: Standard II
Author(s)	:
Editor(s)	:
Publisher	: Kerala State Institute of Education.
Publisher's Address	: Poojappura, Thiruvananthapuram-695 012.
Year of Publication	: 1995
Edition	:
Number of Pages	: 64
Price	:

## 1. Physical Aspects :

The general layout of the material under three columns (competency, learning activities, evaluation) is quite effective and useful for the teachers. However, it would be better to reduce the space for column 1 and to use the space thus saved for column 2 and 3. The overall quality of printing and black and white contrast need to be improved because in some pages (may be in some copies only) the printing is very light or shows double impression. The numerals printed in the evaluation columns are in too small a print and this should be improved. Also the plus or equal to signs used are not clear.

## 2. Coverage and Treatment of competencies :

The treatment of the competencies maintains continuity and sequence and the inter-related competencies have been treated in an integrated manner. All the competencies have been covered in the handbook and the coverage is comprehensive. However, a few improvements may be made on the basis of the suggestion forwarded by the evaluators.

The table of contents may be modified to provide the list of competencies with its appropriate number and the page number where they are dealt with in the book. In some pages the competency number and the statement are not written in order. For example, the competency 2.2.2 (page 33) actually starts on page 32 itself and hence the reference number should be shifted there. Similarly the competency number 3.2.3 (page 54) may be shifted upwards in column 1 to match the corresponding discussion in column 2.

## 3. Content :

Most of the criteria under this aspect are rated 3 (good). The content is accurate enough except in some instances as outlined below and is related to learners' daily life experiences. Some of the songs included are not appropriate enough for the development of the competencies (For example, the second song on page 59). The idea of place value may be better represented by avoiding the horizontal lines on page 9 and writing the place value directly under digits.

1                      1                      3                      7  
ഒരുപത്      ഒരുരത്ത്      മൂന്ന് പത്തുകൾ      എഴുതുകൾ

Similarly the abacus is shown with 8 beads instead of 7 required. In many places the plus sign is not clearly seen. A representative list of errors is given below.

Page No.	Error	Corrected form
5,19,21,24, 32		Shift the numbers in column 3 to the right.
10, Column 3	പാർട്ടികൾ	ചങ്ങുകൾ
12, Column 2 8th line from bottom	അനവൻ	അവനവൻ
15, last line	$6 + 5 = 11$	$5 + 6 = 11$
18	$14 + 15 = 19$	$14 + 5 = 19$
18	ഘട്ടം 1	This word here means phase 1, phase 2 etc. Since they constitute sub-headings print them in bold letters.
19	ഘട്ടം 2	
49, 50	5൧, 10൧ etc.	5൧൦൧, 10൧൦൧

This list is only representative. Careful scrutiny is bound to show more mistakes and they should be eliminated in a subsequent revision. There are several activities and games provided to facilitate creative imagination and expression. Attempts are made to include content related to learners' daily-life experiences. But there are not enough activities related to the core components specified in NPE 1986. The Teachers Handbook has enough scope to include more activities or alternate activities aimed toward this goal.

#### 4. Style of Presentation :

The vocabulary used is simple and familiar. A lot of scope is provided for encouraging oral expression. A variety of play-way activities are included wherever feasible. But provision for group activities and creative activities may be enhanced. With respect to the presentation of material in a logical and sequential manner the following positive examples may be cited.

- (i) Page 4, competency 1.2.1. The prerequisite ideas needed are quoted first before proceeding with the development of the competency.

- (ii) Page 31, competency 2.2.5. Before starting the discussion on this competency the prerequisite ideas are quoted along with their competencies.

The above two cases out of the many are also related to the criterion of readiness activities. Throughout the handbook instructions for conducting the activities (in more or less clear and specific terms) have been provided to the teacher. The three column approach used is quite convenient for this purpose. However, instances of inadequate instructions are also present. For example in page 19, the instructions given by the side of the addition facts ( $5 + 3 = 8$  etc) are not related to these facts. Neither is it made clear how these addition facts are to be used. Such discrepancies need to be removed.

## 5. Visuals :

The visuals provided are requisite in number and are related to the content. However, in many situations the visuals need careful scrutiny and improvement. Where 10 sticks are to be shown to represent the place value of ten, either nine have been shown or 11 are shown (page 20, 26 and 29). Such mistakes are seen in other pages also. The spacing between the sticks may be increased for clarity in counting. Though the handbook is to be used by teachers care should be taken to make the visuals more attractive.

## 6. Evaluation Exercises :

Most of the criteria under this are rated three or below. Though a large number of exercises, commensurate with the level of the learners is provided, variety needs to be improved. Exercises meant for reinforcement of learning need to be provided in adequate number. Similarly exercises should be included, with clear instructions to the teacher, for remedial instruction. As in the Teachers Handbook for Standard I here also no provision has been made to include exemplar unit tests. These may be done or at least clear instructions could be given to the teacher for preparing such unit tests using the evaluation exercises provided in the textbook and handbook. These points need to be looked into while revising the handbook.

#### D. EVALUATORS RATING :

S.NO.	RATING	CRITERIA NO.
1	5 (Excellent)	None
2	4 (Very good)	2.3, 2.5, 2.6, 4.1, 4.2, 4.4, 4.7.
3	3 (Good)	1.1, 1.2, 1.3, 1.4, 1.7, 1.8, 1.9, 2.2, 2.4, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6(vi) 3.6(ix), 3.7, 3.8, 4.3, 4.5, 4.6, 4.8, 4.9, 4.10, 4.11, 4.12, 4.15, 5.1, 5.2, 5.3, 5.4, 6.1, 6.3, 6.6, 6.8, 6.9.
4	2 (Satisfactory)	1.6, 1.10, 3.9, 5.5, 5.6, 6.2, 6.11, 6.15.
5	1 (Poor)	1.12, 2.1, 4.14, 6.10, 6.12, 6.13, 6.14.

#### E. CONCLUSION :

Grade 3 (good) has been awarded to a large number of criteria under the different aspects. Grade 4(very good) is given only to seven criteria, and 2 (satisfactory) to eight criteria. This shows that the Teachers Handbook on the whole is just adequate. The poor grading mostly refers to the different aspects of evaluation items which have not received proper attention, namely, exemplar unit tests, provision for feed back and remedial instruction etc, as already mentioned earlier. If improvements are made regarding these and also regarding the quality of printing, quality of visuals etc. the Teachers Handbook will be able to achieve better the aims and objectives for which it was planned.

## Schedule of Corrections

Page - 4 - 11 → പത്തിന്റെ ഒരു കൂട്ടം; 1 ഉന്ന് (correct it as ഉ)  
20 → പത്തിന്റെ രണ്ടു കൂട്ടം, ഉന്നുകൾ ഇല്ല. (ഒ)

Page - 8 Fig. 1(2) തുല്യമാമെന്ന് (തുല്യമാണെന്ന്)

Page - 9. വശ്യപ്പെടുന്നു (ആവശ്യപ്പെടുന്നു.)

Fig. 1(4)    ↓    \_\_\_\_\_ഒരു ഒന്ന്  
                 ↓    \_\_\_\_\_ഒരു പത്ത്

Page - 10. സ്ഥാനവില ചാർട്ടിൽ ചിത്രീകരിക്കുക  
സംഖ്യ | ചാർട്ടുകൾ | ഒന്നുകൾ |  
| \_\_\_\_\_ പത്തുകൾ

Page - 12 - 3rd Column  
രണ്ടാമത്തെ (Correct it as മൂന്നാമത്തെ)

99. ചുറ്റിക്കൊണ്ടു(ണ്ടു) } - Column 2  
അതുവൻ (അവരവൻ)

Page - 21. പെട്ടുന്ന് (പെട്ടെന്ന്)  
വിറയ (വിവിധ)

Page - 49, above 3-1-1- നാണങ്ങളും (നാണയങ്ങളും)

Page - 8 Fig. 1(2) } Group showing ten, the lines given are not correct  
" 18 } in number  
" 20 }

Page - 15,16,17,21,22 - Symbols for plus and minus are not visible.

Page - 57. I Column തീയതിക്കും (തീയതിയ്ക്കും)

## Additional Activities, Rhymes and Games

Competency: 1.2.1

1 a). നമ്പർ കാർഡ് കുട്ടികളുടെ കഴുത്തിൽ തൂക്കിയിട്ട് കുട്ടികളെ 1 മുതൽ 9 വരെ അക്കങ്ങളാക്കി തിരിക്കുന്നു. ഒന്നാം നമ്പർ ഒന്നാം സ്ഥാനത്ത് പോയി നിന്ന് ഇങ്ങനെ പാടുന്നു; തുടർന്ന് പത്താം സ്ഥാനത്ത് മാറി നിന്ന് പാടട്ടെ....

- |                             |  |
|-----------------------------|--|
| 1.(ഒന്നാം സ്ഥാനത്ത്)        | ഒന്നാം സ്ഥാനത്താകുമ്പോൾ<br>ഒന്നല്ലോ എന്റെ വില  |
| 1(പത്താം സ്ഥാനത്ത് നിന്ന്)  | പത്താം സ്ഥാനത്താകുമ്പോൾ<br>പത്തല്ലോ എന്റെ വില  |
| 2.(ഒന്നാം സ്ഥാനത്ത് നിന്ന്) | ഒന്നാം സ്ഥാനത്താകുമ്പോൾ<br>രണ്ടല്ലോ എന്റെ വില.   |
| 2 (പത്താം സ്ഥാനത്ത്)        | പത്താം സ്ഥാനത്താകുമ്പോൾ<br>ഇരുപതായിത്തീരും ഞാൻ   |
| 3(ഒന്നാം സ്ഥാനത്ത്)         | ഒന്നാം സ്ഥാനത്തിരിക്കുമ്പോൾ<br>മൂന്നെന്നു വിളിക്കുന്നു<br>പത്താം സ്ഥാനത്തായാലോ<br>മുപ്പത്തായിത്തീരും ഞാൻ |

ഇങ്ങനെ 9 വരെ പാടുന്നു.

- b) പത്താം സ്ഥാനത്ത് 4  
ഒന്നാം സ്ഥാനത്ത് 2  
എങ്കിൽ സംഖ്യയേതെന്ന്  
പെട്ടെന്നുത്തരമോതാമോ?  
ഉത്തരം: 42.

c) Competency : 1.2.1 (Introduction)

കുട്ടികളെ A, B ഗ്രൂപ്പുകളാക്കി തിരിച്ച് രണ്ടുവരിയായി നിർത്തുന്നു. അകലെ വെച്ചിരിക്കുന്ന സ്റ്റേറ്റിൽ ആദ്യമായി 1 മുതൽ 50 വരെ ക്രമമായി എഴുതുന്ന ഗ്രൂപ്പുകളിയിൽ വിജയിക്കും. A ഗ്രൂപ്പിലെ ഒന്നാമത്തെ കുട്ടി ഓടിച്ചെന്ന് സ്റ്റേറ്റിൽ 1 എന്നെഴുതി പെൻസിൽ അവിടെ ഏല്പിച്ചശേഷം വരിയുടെ പിന്നിൽ വന്നു നിൽക്കണം



ഉടനെ വരിയിലെ അടുത്തകുട്ടി ഓടിപ്പോയി അടുത്ത സംഖ്യ എഴുതണം. ഒരു കുട്ടി ഒരേ സമയത്ത് ഒന്നിലധികം സംഖ്യ എഴുതുന്നില്ല എന്നുറപ്പുവരുത്തണം.

A ഗ്രൂപ്പ് സംഖ്യ എഴുത്ത് തുടരുന്ന സമയത്തുതന്നെ B ഗ്രൂപ്പും ചെയ്യുന്നു. കളിയിലില്ലാത്ത മറ്റു കുട്ടികൾ, കൈയിടിച്ചു പ്രോത്സാഹിപ്പിക്കണം.

## 2 Competency 1.2.3 (P. 11)

a) കുട്ടികൾ തോണിയായി നിൽക്കുന്നു. വഞ്ചിപ്പാട്ടുപാടി തോണിതുഴയുന്നതിനിടയിൽ അദ്ധ്യാപകൻ കുട്ടികളുമായി സംഭാഷണത്തിലേർപ്പെട്ട് 'ഒന്നാമത് .....പത്താമത്' എന്ന ആശയം ഉറപ്പിക്കണം.

അടിസ്ഥാനഗണിതം - ടെക്സ്റ്റിലെ 1 മുതൽ 10 വരെയുള്ള അധ്യായങ്ങളാണ് ഇവിടെ ക്രമത്തിൽ അവതരിപ്പിക്കുന്നത്. ഈ ഓപ്പിക്കുകൾ കുട്ടികൾ 1-ാം ക്ലാസിൽ പഠിച്ചിട്ടുള്ളവയാണ്.

(വഞ്ചിപ്പാട്ട്)

ഒന്നാം പാഠം കൊണ്ട് ഒന്നാം തുഴയാക്കി  
സ്ഥാനവിലത്തോണി തെയ്തെയ്തോം...

രണ്ടാം പാഠം കൊണ്ട് രണ്ടാം തുഴയാക്കി  
സംഖ്യാക്രമത്തോണി തെയ്തെയ്തോം...

മൂന്നാം പാഠം കൊണ്ട് മൂന്നാം തുഴയാക്കി  
സങ്കലനത്തോണി തെയ്തെയ്തോം....

നാലാം പാഠം കൊണ്ട് നാലാം തുഴയാക്കി  
വ്യവകലനത്തോണി തെയ്തെയ്തോം....

അഞ്ചാം പാഠം കൊണ്ട് അഞ്ചാം തുഴയാക്കി  
ജീവിതത്തോണി തെയ്തെയ്തോം....

ആറാം പാഠം കൊണ്ട് ആറാം തുഴയാക്കി  
ഗുണനത്തോണി തെയ്തെയ്തോം...

ഏഴാം പാഠം കൊണ്ട് ഏഴാം തുഴയാക്കി  
നാണയത്തോണി തെയ്തെയ്തോം....

എട്ടാം പാഠം കൊണ്ട് എട്ടാം തുഴയാക്കി  
അളവിൻതോണി തെയ്തെയ്തോം...

ഒൻപതാം പാഠം കൊണ്ട് ഒൻപതാം തുഴയാക്കി  
(സമയം) കലണ്ടർ തോണി തെയ്തെയ്തോം

പത്താം പാഠം കൊണ്ട് പത്താം തുഴയാക്കി  
ചിത്രത്തോണി തെയ്തെയ്തോം....

b) ചീർപ്പ്, കടലാസ്, സ്റ്റേയ്റ്റ്പെൻസിൽ--തുടങ്ങി പത്ത് സാധനങ്ങൾ ഒരു ചരടിൽ തൂക്കി കുട്ടികളുടെ മുൻപിലൂടെ വേഗത്തിൽ ചലിപ്പിക്കുന്നു. കുട്ടികളോട് ചരടിലൂടെ മാഞ്ഞു പോകുന്ന വസ്തുക്കൾ ക്രമത്തിൽ ഓർമ്മിക്കാൻ പറയണം. പത്ത് വസ്തുക്കളും പ്രദർശിപ്പിച്ച ശേഷം ഓരോരുത്തരോട് ചോദിക്കുക. 'ഒന്നാമത് പ്രദർശിപ്പിച്ച സാധനം ഏത്?' -ചിലർ തെറ്റിക്കും.

ശരിയായ ഉത്തരം ചീർപ്പ്

അദ്ധ്യാപകൻ: ഒന്നാമതായി കാണിച്ച വസ്തു ചീർപ്പ് കുട്ടികളെ കൊണ്ട് പറയിപ്പിക്കാം. ഇങ്ങിനെ പത്തുവരെ ആകാം. അവസാനം വസ്തുക്കളെല്ലാം ഒന്നുകൂടി പ്രദർശിപ്പിക്കുമ്പോൾ - ആശയം ശരിയായിരിക്കും.

c) ഒന്നാമത്തെ .. ഒൻപതാമത്തെ....എന്ന് വാക്കുകളുള്ള കഥകളും , സംഭാഷണങ്ങളും പഠനയാത്രകളും ഉപയോഗിച്ച് സംഭാഷണരൂപേണ പ്രാപ്തി കൈവരിക്കാം.

d) ഓട്ട മത്സരം നടത്തി ഒന്നാമതായി എത്തിയകുട്ടി എന്നിങ്ങനെ പ്രാപ്തി കൈവരിക്കാം.

e) അദ്ധ്യാപകൻ പുറത്തിരിഞ്ഞു നിൽക്കുന്നു. കുറെ അകലെ (5/6 മീറ്റർ ദൂരത്തിൽ )കുട്ടികൾ നിൽക്കുന്നു. കുട്ടികൾ പതുക്കെ പതുക്കെ മുന്നോട്ടു നീങ്ങി കൊണ്ടിരിക്കണം. അദ്ധ്യാപകൻ പിന്നോട്ടു നോക്കുമ്പോൾ കുട്ടികൾ നിശ്ചലരായി നില്ക്കണം. അല്ലാത്തവർ കളിക്ക് പുറത്ത്. അദ്ധ്യാപകൻ കാണാതെ മെല്ലെ നടന്ന് അദ്ദേഹത്തിന്റെ മുൻപിലെത്തിയ കുട്ടികൾ വിജയിച്ചതായി പ്രഖ്യാപിക്കണം. ഒന്നാമത് എത്തിയതാര്....? രണ്ടാമത് എത്തിയതാര്? എന്നിങ്ങനെ ആശയവ്യക്തത കൈവരുത്താം.

3. പിങ്...പോങ്ക് കളി OR

റോം....റോം കളി

Competency : 1. 2. 4. (P.13)

കുട്ടികളെ വട്ടത്തിൽ നിർത്തി എണ്ണാൻ പറയുന്നു. കുട്ടികൾ 1,2,3,4 പിങ് ,6,7,8,9, പോങ് ....എന്നിങ്ങനെ എണ്ണുന്നു. 5,10,15,20....എന്നിവയ്ക്ക് പകരം യഥാക്രമം പിങ് , പോങ്, പിങ്,പോങ്....(റോം, റോം, റോം, റോം....) എന്നിങ്ങനെയാണ് എണ്ണേണ്ടത്. 5,10,15....എന്നിങ്ങനെ പറയുന്നവരോ, മറ്റു അക്കങ്ങൾ തെറ്റായി എണ്ണുകയോ ചെയ്യുന്നവർ കളിയിൽ നിന്ന് പുറത്താകും.... 100വരെ എണ്ണം..എല്ലാവരും കളിയിൽ നിന്ന് പുറത്താകുന്നതുവരെ കളി തുടരാം.

4. Competency : 2.2.1 (P.21)

മാന്ത്രികചതുരങ്ങൾ പരിചയപ്പെടുത്താം.

8	1	6
3	5	7
4	9	2

5. Competency : 2. 2. 5

കിളിയും കുടും കളി

കുട്ടികളെ കിളികളും കുടുകളുമായി മാറ്റുന്നു. രണ്ടു കുട്ടികൾ ചേർന്ന് കുടുകളാക്കി വൃത്താകൃതിയിൽ നിൽക്കണം. കിളികൾ കുടുകളേക്കാൾ ഒരേണ്ണം അധികമുണ്ടായിരിക്കണം. വിസിൽ മുഴങ്ങുമ്പോൾ കിളികൾ കുടിനിടയിലൂടെ പറക്കുന്നു. അടുത്ത വിസിലിന് കുടണയണം. കുട്ടിൽ എത്താത്ത കിളി പുറത്ത്. ഇപ്പോൾ ആകെ കിളികൾ  $11-1=10$ ; കുടുകളുടെ എണ്ണം ഒന്നു കുറയുന്നു.  $10-1=9$ . ഇങ്ങനെ കളി തുടരാം...

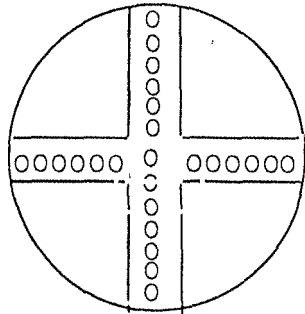
6. Competency 2. 2. 5

താഴെ കാണുന്ന ചിത്രം നോക്കുക. ഒരു ആർട്ട് ഗാലറിയിലെ മണിച്ചട്ടങ്ങളാണ്. ചിത്രം 1ൽ. ആകെ 25 മണികളാണുള്ളത്. പക്ഷേ, മണികൾ, ക്രമീകരിച്ചിരിക്കുന്നത് (കോർത്തിരിക്കുന്നത്) ഒരു പ്രത്യേക രീതിയിലാണ്. ചട്ടത്തിൽ മുകളിൽ നിന്ന് താഴോട്ടും മുകളിൽ നിന്ന് വലത്തോട്ടും ഇടത്തോട്ടും എണ്ണിയാൽ ഉത്തരം 13 കിട്ടും. (ചിത്രം 1) .

ഒരു ദിവസം ചട്ടം താഴെ വീണു. മണികൾ ഇളകി വീണു. 2 മണികൾ നഷ്ടപ്പെട്ടു. മുമ്പത്തെപ്പോലെ കോർത്തുവെക്കാൻ ഒരു പണിക്കാരനെ ഏല്പിച്ചു- മൂന്നുവിധത്തിൽ എണ്ണിയാൽ 13 കിട്ടുന്നവിധത്തിൽ ആയിരിക്കണം മണികളുടെ ക്രമീകരണം. പലപ്രാവശ്യം ശ്രമിച്ചിട്ടും പണിക്കാരൻ പരാജയപ്പെട്ടു. അവസാനം അയാളുടെ മകനാണ് ആ വിദ്യ (ചിത്രം 3) പറഞ്ഞു കൊടുത്തത്- ആ വിദ്യ എന്താണ്? ശ്രമിച്ചു നോക്കുക. ഉത്തരം അറിയാൻ അടുത്ത പേജിൽ നോക്കൂ...

2 മണി കുറഞ്ഞശേഷം  
പണിക്കാരൻ ഉണ്ടാക്കിയത്

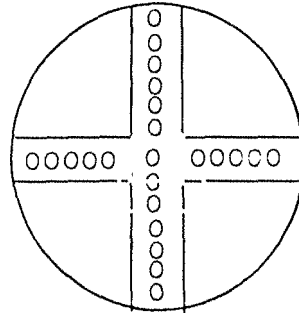
25 മണികൾ



ചിത്രം 1

$$7+6+6-6=25$$

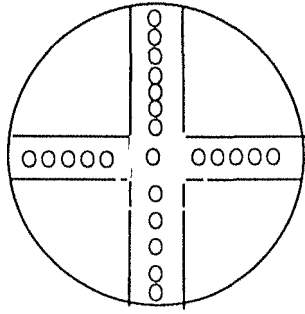
23 മണികൾ



ചിത്രം.2

48

23 മണികൾ  
മകൻ ഉണ്ടാക്കിയത്



$$8+5+5+5=23$$

ചിത്രം 3

## Proforma No.1

## Proforma for Identification Data of the Instructional Material

Each item of this proforma should be written in the script of the material developed and again in Roman Script. For example : Title of the book is गणित भाग 1'. It is to be written as गणित भाग 1 (Mathematics Part 1).

State : KERALA

Type of Material : മാതൃകാചോദ്യങ്ങൾ  
MLL Based Model Questions

Title : അടിസ്ഥാന ഗണിതം  
(BASIC MATHEMATICS)

Language in which material is written : MALAYALAM

Class : Standard II

Author(s) :

Editor(s) :

Publisher : Kerala State Institute of Education.

Publisher's Address : Poojappura,  
Thiruvananthapuram-695 012.

Year of Publication : 1995

Edition :

Number of Pages : 53

Price :

## 1. Physical Aspects :

This material is rated 'good' and 'very good' regarding most of the criteria pertaining to physical aspects. Only 'correctness and legibility of printing' has received low rating - 'satisfactory'. The evaluators have reported 14 printing mistakes upto page 36 in the evaluation proforma but a thorough perusal through this material of 53 pages may reveal some more mistakes. Such a task should be undertaken before bring out the next edition of the book. For the present, the page numbers which contain printing errors noticed during a quick perusal by the evaluators are listed here : pages 3, 4, 9, 18, 19, 21, 22 (2 errors), 23, 26, 28, 32, 34, 35 and 36.

Other improvements suggested are as follows. The layout may be rearranged in the following pages to save space : pages 1, 6, 17, 28, 29, 36, 37. The heading 'calendar' on page 48 may be shifted to page 46 along with the competency number 3.2.5.

## 2. Coverage and Treatment of Competencies :

All the competencies have been covered in the material and the treatment is more or less comprehensive. No list of competencies has been included in the beginning, nor is it mentioned in the interior. But the competency number has been mentioned in the material. The list of contents may also include the page numbers for quick reference. The other corrections and improvements suggested by the evaluators are as follows.

On pages 4 and 5 question Nos. 3, 4, 5, 11, 12, 13, 14 related to competency 1.2.2 are not relevant when compared with the development presented in the text book. The following wrong placement of competencies is to be corrected.

<i>Page No., Qn. No.</i>	<i>Shown under competency number</i>	<i>Should come under competency number</i>
P.8,9, Qns. 1 to 12	1.2.2	1.2.4
P.19, Qns. 1 to 5 (first set)	2.2.2	1.2.1

Also page 7, Qns.7 and 8 are given under competency 1.2.2 but there is ambiguity whether they come under 1.2.2 or 1.2.1. This can be rectified by properly rewording and modifying these two questions especially after examining how these competencies are developed in the text book.

### 3, Content :

The questions provided are appropriate to the content in the textbook and majority of them are related to learners' daily-life experiences. The selection of the questions satisfy the criteria to a large extent and most of the criteria have been rated as "good". The following inadequacies need rectification. The instructions given for questions 1-5 on page 24 are inadequate. The matching - type question given on page 25 also needs proper wording. It is also not related to the competency 2.2.7 under which it is placed. A few mistakes are seen either due to printer's devil or due to wrong formulation of the question. For example, in question number 20 on page 40 (2.2.9) one of the items is given as  $3 \times \underline{\hspace{1cm}} = 20$ . This should be modified as  $3 \times \underline{\hspace{1cm}} = 21$ . Similarly the item under fill in the blanks

1 രൂപ = 2 ഇരുപതു പൈസ + ... അമ്പതു പൈസ

(page 43) needs to be written as

1 രൂപ = 2 ഇരുപതു പൈസ + ... പത്തു പൈസ

Use of Roman numerals may be avoided. More questions may be included emphasizing the 10 core components. Similarly, activity-oriented questions related to environmental situations, questions on interdependence of man and environment etc. may also be included.

### 4. Style of Presentation :

Regarding this the overall impression is good and the rating 'good' is given to most criteria by the evaluators. Evaluation exercises have been provided for all the three categories : oral, performance and written. More attention can be given to include items directed to measure the various skills such as discrimination, classification etc. and also to include items wherein the learners' imagination and thinking can be developed.

### 5. Visuals :

Since it is the model questions book, the visuals are few but wherever they are included, they are attractive enough and are linked with the content.



## 6. Evaluation Exercises :

Just as the model questions book for standard 1, this book for standard 2 also contains a large number and variety of evaluation items and exercises for the use by teachers and also as model for them to construct their own test items. The following corrections have been suggested.

Page.26, Qn.12 :

- a) This question requires modification to function as a test for a sub-skill under competency 2.2.7.
- b) Corrections are required in the block of questions on the right side ; 6th line and 9th line. The wording should be changed as  $\frac{1}{2}$  and  $\frac{1}{4}$  respectively.

Page 31, Qn.6 and P.32, Qn.7 : avoid using the term "മടങ്ങ്" since it is not introduced in the text book.

P.27, Qns. 13, 14, 15 : How these questions are linked to the main competency 2.2.7 or its sub-competencies is not at all clear. Either modify these questions suitably with clear instructions or delete them since there seems to be repetition/duplication of similar type of questions.

Efforts may be made to include questions with a view to get feedback and for organizing remedial instructions. Exemplar unit tests may be provided or clear instructions may be given to the teacher to prepare such unit tests using the model questions booklet. A model question book also can be useful in inculcating values and attitudes. The questions framed should reflect such values.

#### D. EVALUATORS RATING :

SL.NO.	RATING	CRITERIA NUMBER
1	5 (Excellent)	None
2	4 (Very good)	1.4, 1.10, 2.5, 4.1.
3	3 (Good)	1.1, 1.2, 1.3, 1.6, 1.7, 1.8, 1.9, 2.4, 2.6, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6(v), 3.6(x), 3.7, 3.8, 3.9, 3.11, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 6.2, 6.3.
4	2 (Satisfactory)	1.12, 2.2, 2.3, 6.1, 6.6, 6.8, 6.9.
5	1 (Poor)	2.1, 4.14, 6.4, 6.10, 6.12, 6.13.

#### E. CONCLUSION :

The rating 'good' has been awarded to a large number of criteria and 'very good' to four criteria which show that the material in its present form is just adequate. The rating of 'satisfactory' given to seven criteria and 'poor' to six criteria show that there is scope for improvement of several aspects. If these are effected during the next revision, this material will prove itself to be a real 'Model'.

## ANNEXURE - 1

### Proforma No. 2

#### Proforma for Evaluation of Instructional Material

##### 1.0 PHYSICAL ASPECTS

S No.	Criteria	Reference (Chapter, Competency no. Page, Para, Line etc.)	Comments/Suggestions	Rating
1.1	Appropriateness of the get-up of the instructional material			
1.2	Appropriateness of the lay-out			
1.3	Attractiveness of the design			
1.4	Suitability of the size of the material to the design			
1.5	Convenience of pupils for handling the size of the material			
1.6	Durability of the binding of the material			

**1.0 PHYSICAL ASPECTS****Proforma No. 2**

S No.	Criteria	Reference (Chapter, Competency no. Page, Para, Line etc.)	Comments/Suggestions	Rating
1.7	Flatness in opening the material			
1.8	Thickness and endurance of the cover page			
1.9	Attractiveness of the cover page			
1.10	Thickness and whiteness of the paper used			
1.11	Suitability of the type size (in relation to pupils age and grade level)			
1.12	Correctness, legibility and pleasantness of printing			

## 2.0 COVERAGE AND TREATMENT OF COMPETENCIES

Proforma No. 2

S No.	Criteria	Reference (Chapter, Competency no. Page, Para, Line etc.)	Comments/Suggestions	Rating
2.1	Mention of the list of competencies prescribed for the class in the beginning			
2.2	Mention of the competency at the top of the lesson			
2.3	Treatment of competencies in the instructional material in continuity and sequence			
2.4	Treatment of inter-related competencies in an integrated manner			
2.5	Treatment of all the competencies in the instructional material			
2.6	Comprehensive coverage in a required competency			

### 3.0 CONTENT

S No.	Criteria	Reference (Chapter, Competency no. Page, Para, Line etc.)	
3.1	Adequacy and appropriateness of content to develop a specified competency		
3.2	Accuracy of the content		
3.3	Inclusion of content related to learner's daily-life experiences		
3.4	Adaptability of textual material to local learning situations		
3.5	Inclusion of content facilitating creative expression		

Performa No. 2

Comments/Suggestions	Rating

### 3.0 CONTENT

Performa No. 2

S No.	Criteria	Reference (Chapter, Competency no. Page, Para, Line etc.)	Comments/Suggestions	Rating
3.6	<p>Confirmity of content to 10 core components specified in NPE, 1986</p> <p>(i) History of India's Freedom Movement</p> <p>(ii) The Constitutional Obligations</p> <p>(iii) Content essential to nurture National Identity</p> <p>(iv) India's common cultural heritage</p> <p>(v) Egalitarianism, democracy and secularism</p> <p>(vi) Equality of sexes</p> <p>(vii) Protection of environment</p> <p>(viii) Removal of social barriers</p> <p>(ix) Observance of small-family norms</p> <p>(x) Inculcation of scientific temper</p>			



**3.0 CONTENT**

Proforma No. 2

S No.	Criteria	Reference (Chapter, Competency no. Page, Para, Line etc.)	Comments/Suggestions	Rating
3.7	Inclusion of content with wit and humour			
3.8	Use of international symbols for the numerals, /e. Hindu- Arabic system of Numeration			
3.9	Inclusion of themes and topics of special interest for the learners of specific age group			
3.10	Integrated approach in textbooks of EVS (integrating social and natural environment components)			

## 3.0 CONTENT

Proforma No. 2

S No.	Criteria	Reference (Chapter, Competency no. Page, Para, Line etc.)	Comments/Suggestions	Rating
3.11	Provision of activities for communication with environmental situations through suitable examples			
3.12	Provision of activities for generating positive attitudes and sense of identification with objects and living-beings in nature			
3.13	Provision of examples from daily-life situations sharing inter-dependence of human beings and nature on each other			

#### 4.0 STYLE OF PRESENTATION

Proforma No. 2

S No.	Criteria	Reference (Chapter, Competency no. Page, Para, Line etc.)	Comments/Suggestions	Rating
4.1	Use of simple, familiar vocabulary and sentence structure to ensure comprehensibility			
4.2	Classification of terms and concepts in simple and familiar language			
4.3	Presentation of material in a graded manner following logical and sequential order			
4.4	Provision of variety of play-way activities for ensuring mastery			
4.5	Inclusion of creative activities related to specified competencies			

## 4.0 STYLE OF PRESENTATION

Proforma No. 2

S No.	Criteria	Reference (Chapter, Competency no. Page, Para, Line etc.)	Comments/Suggestions	Rating
4.6	Provision of material for development of the skills of observation, discrimination, classification and analysis amongst learners			
4.7	Provision of situations encouraging oral expression			
4.8	Provision for developing the skills for handling of simple tools, instruments and equipments by the learners, wherever required			
4.9	Provision of instructions for conducting the activities in clear and specific terms			
4.10	Provision of situations to develop imagination and thinking amongst learners			

#### 4.0 STYLE OF PRESENTATION

Proforma No. 2

S No.	Criteria	Reference (Chapter, Competency no. Page, Para, Line etc.)	Comments/Suggestions	Rating
4.11	Provision of self-learning and co-operative learning activities for diversified group of learners			
4.12	Provision of interesting reading and number readiness activities (especially for class I)			
4.13	Introduction of alphabets through words and sentences in different interesting situations			
4.14	Provision of answer-key at the end of each unit			
4.15	Suggestions for supplementary visual material and teaching aids			

# 5.0 VISUALS

Proforma No. 2

S No.	Criteria	Reference (Chapter, Competency no. Page, Para, Line etc.)	Comments/Suggestions	Rating
5.1	Provision of the requisite number of visual aids			
5.2	Proximity of visuals to content			
5.3	Inclusion of a variety of visuals			
5.4	Proper linkage and referencing between visuals and contents			
5.5	Accuracy of visuals in terms of perspective, proportion and conformity with objects			
5.6	Attractiveness of the visuals			

## 6.0 EVALUATION EXERCISES

Proforma No. 2

S No.	Criteria	Reference (Chapter, Competency no. Page, Para, Line etc.)	Comments/Suggestions	Rating
6.1	Presentation of exercises in a graded manner commensurate with the level of learners			
6.2	Provision of a variety of items, problems and activities for each competency			
6.3	Provision of a large number of exercises for the reinforcement of learning			
6.4	Provision of separate worksheets for (a) remedial and (b) multiple class instructions			
6.5	provision of exercises for group discussion on events, situations and issues related to the environmental protection			

## 6.0 EVALUATION EXERCISES

S No.	Criteria	Reference (Chapter, Competency no. Page, Para, Line etc.)	
6.6	Inclusion of exercises in new learning in the forms of 'things to do', 'things to find out' and projects		
6.7	Provision of enough space, wherever provided for learner's response to questions		
6.8	provision of clues and hint to different questions		
6.9	provision of hints to the teachers for developing the learner's skills of answering the oral, written and situational questions		
6.10	Inclusion of exemplar unit-tests for evaluating the mastery learning and suggestions for its use		



Comments/Suggestions	Rating

## 6.0 EVALUATION EXERCISES

Proforma No. 2

S No.	Criteria	Reference (Chapter, Competency no. Page, Para, Line etc.)	Comments/Suggestions	Rating
6.11	Provision of suggestions for obtaining and utilising the feedback and organising remedial instruction			
6.12	Provision of tools for assessing the learner's skill of observation, discrimination, classification and analysis			
6.13	Provision of tools and techniques for assessing the values and attitude of the learners			
6.14	Provision of answers in handbooks for those exercises for which provision is not there in the text-book			
6.15	Provision of comprehension questions to ensure use of imagination and thinking by the learners			

## ANNEXURE 2

### INFORMATION ABOUT THE EVALUATORS

Name (In Capital): Mrs. A.R. LALITHA

Designation : Senior Lecturer

Office Address : DIET,  
Kottayam,  
Velloor Post, (Via) Pampady - 686 501.

Residential Address : T.C 16/1372, J.M. Press, Kannettumukku,  
Thycaud PO. Thiruvananthapuram - 695 014.

Qualifications (Degrees/Diplomas with subjects offered)

B.Sc. (Mathematics),  
M.A. (Hindi)  
M.Ed.

Experience		<u>Subject</u>	<u>Class/Level</u>	<u>No. of years</u>
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a) Teaching	.	Mathematics	X	8
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b) Research	.	-		
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c) Development	.	-		
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d) Training	.	Mathematics and general topics		4
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e) Special Experience/Involvement in MLL Programmes : --

1. Attended two days course on MLL at Thiruvananthapuram.
2. Implemented MLL in 20 schools in Kottayam District.
3. Giving training to teachers of these schools.
4. Attended work shop for the revision of MLL textbooks of Std.III and IV at SCERT, Thiruvananthapuram.

f) Development of Instructional Material : --

<u>Title of the Material</u>	<u>Subject</u>	<u>Class</u>	<u>Year of Publication</u>
1. Mathematics Textbooks		III, IV	1995

g) Review of Instructional Material : --

INFORMATION ABOUT THE EVALUATORS

Name (In Capital) : Mr. O. SIVARAMAN  
Designation : Lecturer (P & M)  
Office Address : DIET,  
Wayanad,  
PO. Sulthan's Bathery - 673 592.  
Residential Address : Ombalamurickal House,  
PO. Nenmeni, S. Bathery - 673 592.  
Thrissur.

Qualifications (Degrees/Diplomas with subjects offered)  
M.A. (Economics),  
M.A. (English),  
M.Ed.  
Diploma in Kannada Language.

Experience :

	<u>Subject</u>	<u>Class/Level</u>	<u>No. of years</u>
a) Teaching	English & Social Science	Primary High school DIET	2½ 14 1
b) Research	-		
c) Development	-		
d) Training	.		

e) Special Experience/Involvement in MLL Programmes :

1. Attended two days class on MLL.

2. Implemented MLL in 80 schools and giving training to teachers of these schools.

f) Development of Instructional Material :

g) Review of Instructional Material :

1. Reviewed English text of IV std.

### INFORMATION ABOUT THE EVALUATORS

Name (In Capital): Mr. M. NARAYANAN

Designation : P.O. Teacher

Office Address : GWUPS, Kodakkad, (PO) Kodakkad,  
Pin 671 357, Kasargod Dt., Kerala.

Residential Address : Kodakkad (PO)  
Pin 671 357, Kasargod Dt., Kerala.

Qualifications (Degrees/Diplomas with subjects offered)  
S.S.L.C. and TTC.

Experience		<u>Subject</u>	<u>Class/Level</u>	<u>No. of years</u>
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a) Teaching	.	Mathematics Malayalam, EVS.	I & II	12
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b) Research	.	-		
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c) Development	.	Science club activities	Upper Primary	
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d) Training	.			
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e) Special Experience/involvement in MLL Programmes :

1. Attended several workshop on teaching modules conducted by KSSP.
2. Attended workshop on evaluation of activities in the text book in Malayalam language (Std. I to IV).
3. Attended the workshop on integrated teaching in Std. I and II conducted by KSSP at Kozhikode.

f) Development of Instructional Material :

<u>Title of the Material</u>	<u>Subject</u>	<u>Class</u>	<u>Year of Publication</u>
1. Prepared teaching modules for the Madikai Panchayat Education Complex.			
2. Prepared EVS teaching modules for KSSP for Std. III and IV which were field tested in selected schools all over Kerala.			1992-93
3. Workbook on Science club activities for subdistrict science club association			1994

g) Review of Instructional Material : --