Etoloy Way Mambilang

More about Numbers

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FOREWORD

Some of the glory of the Philippines lies in the beautiful variety of people and languages within its coasts. It is to the great credit of the national leadership over the years that no attempt has been made to destroy this national heritage. The goal has been instead to preserve its integrity and dignity while building on this strong foundation a lasting super-structure of national language and culture.

The present book is one of many designed for this purpose. It recognizes the pedagogical importance of dividing literacy and second-language learning into two steps—literacy being the first. When a student has learned to read the language he understands best, the resulting satisfaction in his accomplishment gives the drive and confidence he needs to learn the national language. His ability to read, furthermore, is the indispensable tool for the study this program will require.

The Department of Education of the Philippines is proud to present this latest volume in a nationwide series designed to teach the national language through literacy in the vernaculars. It will strengthen both the parts of the nation and the whole.

Juan L. Manuel
Secretary

FOREWORD

One of the noble aims of Education is to equip every citizen to participate meaningfully in his society and to share in shaping the destiny of his country. Providing literacy instruction in each man's vernacular is a basic step in realizing this goal. To promote this purpose the Summer Institute of Linguistics works in agreement with and under the auspices of the Department of Education in the Preparation of instructional and supplementary reading materials for the various Cultural Minorities of our country.

The Bureau of Public Schools takes pleasure, therefore, in presenting this volume of literacy material which is part of its list of approved supplementary reading materials prepared for use by the Public School in the areas using the vernacular of these materials.

LICERIA BRILLANTES SORIANO
Director of Public Schools

Preface

This book was prepared for the Natunin Public Schools, grade two. Its aim is to advance students in the study of mathematics and to fulfill the requirements of the Course of Study for this grade.

Mrs. Gloria Baguingan, Mrs. Rosalia Benmaho, and Mr. Peter Benmaho gave kind assistance in the preparation. Mr. Baltazar Tid-ang and Mr. Manuel Dayag, who served as principals of the district during this time, gave encouragement and help.

SUGGESTIONS TO TEACHERS

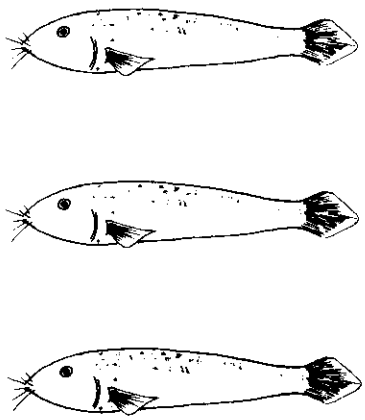
MATERIALS NEEDED: Flannelboard

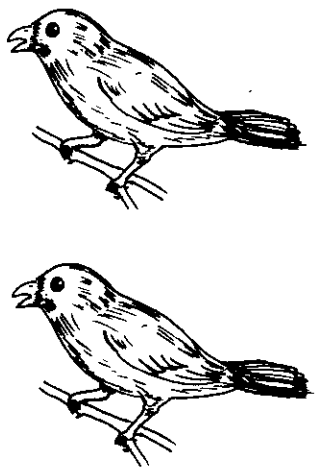
CONCEPT: Like and unlike sets, review

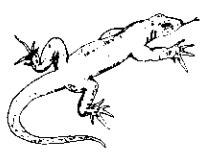
Use felt cut-outs to review like and unlike sets. Continue until children are confident.

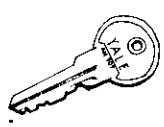
On page 1, orally count each set and tell if it is a like, or unlike set. Then direct the children to color only the like sets on the page. The unlike sets should not be colored.

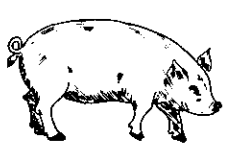
When every child has finished, correct the page together, and give time for the children to correct the work. A set which has been incorrectly colored may be marked with a black X.

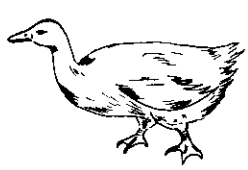


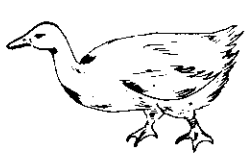


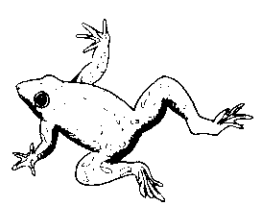


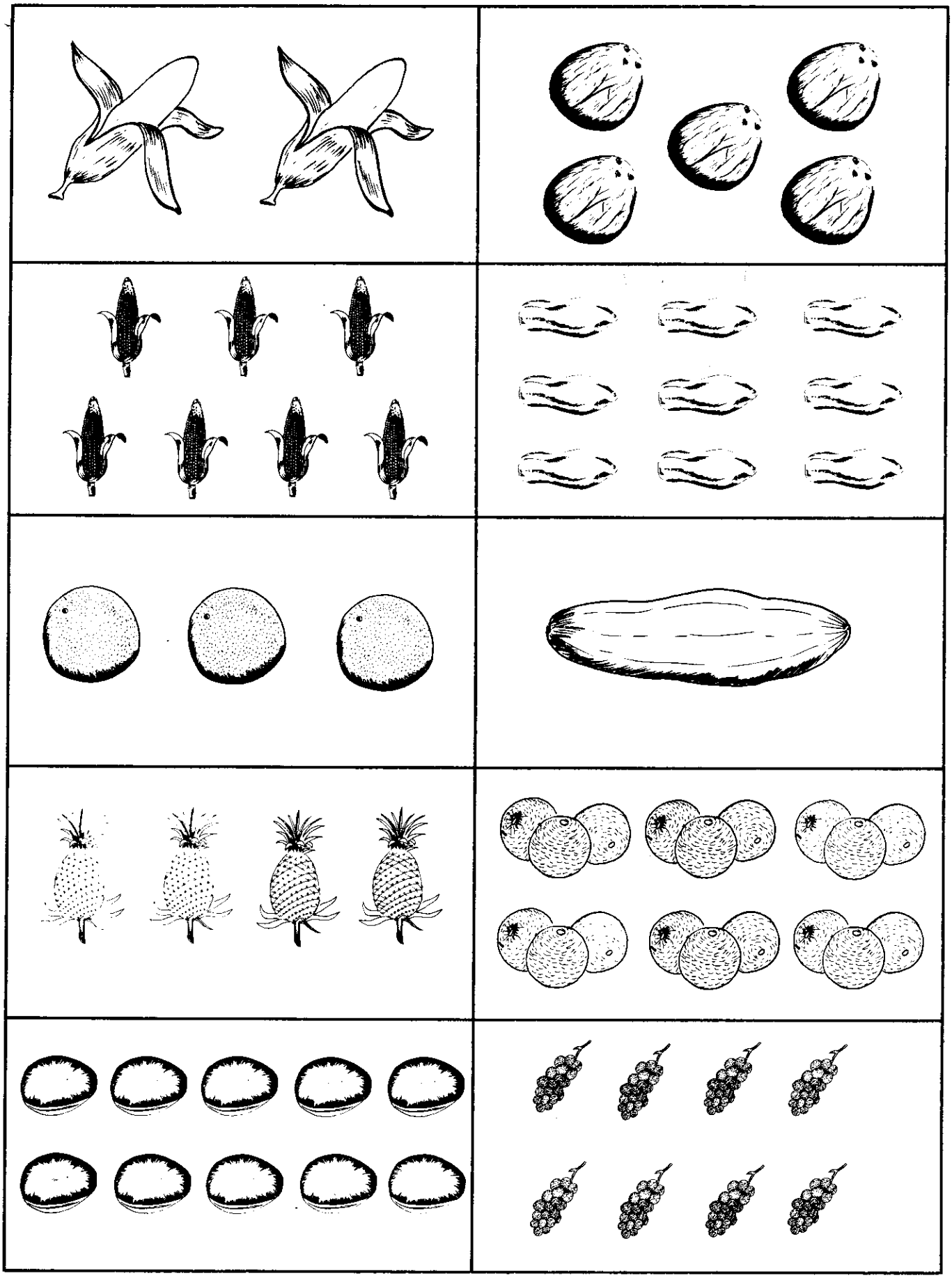












SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flannelboard and felt cut-outs
Slates

CONCEPT: Writing numbers to 10, review

To review, put a set of six felt cut-outs on the flannelboard. Ask the children to write on their slates the number that tells how many objects are on the flannelboard. Continue in this way, to review all numbers to 10.

Next, orally count together the objects in each box on page 2. The children should be directed NOT to write yet.

Finally, the class can complete page 2 independently. Those who finish can color the pictures while they wait for the rest.

SUGGESTIONS TO TEACHERS

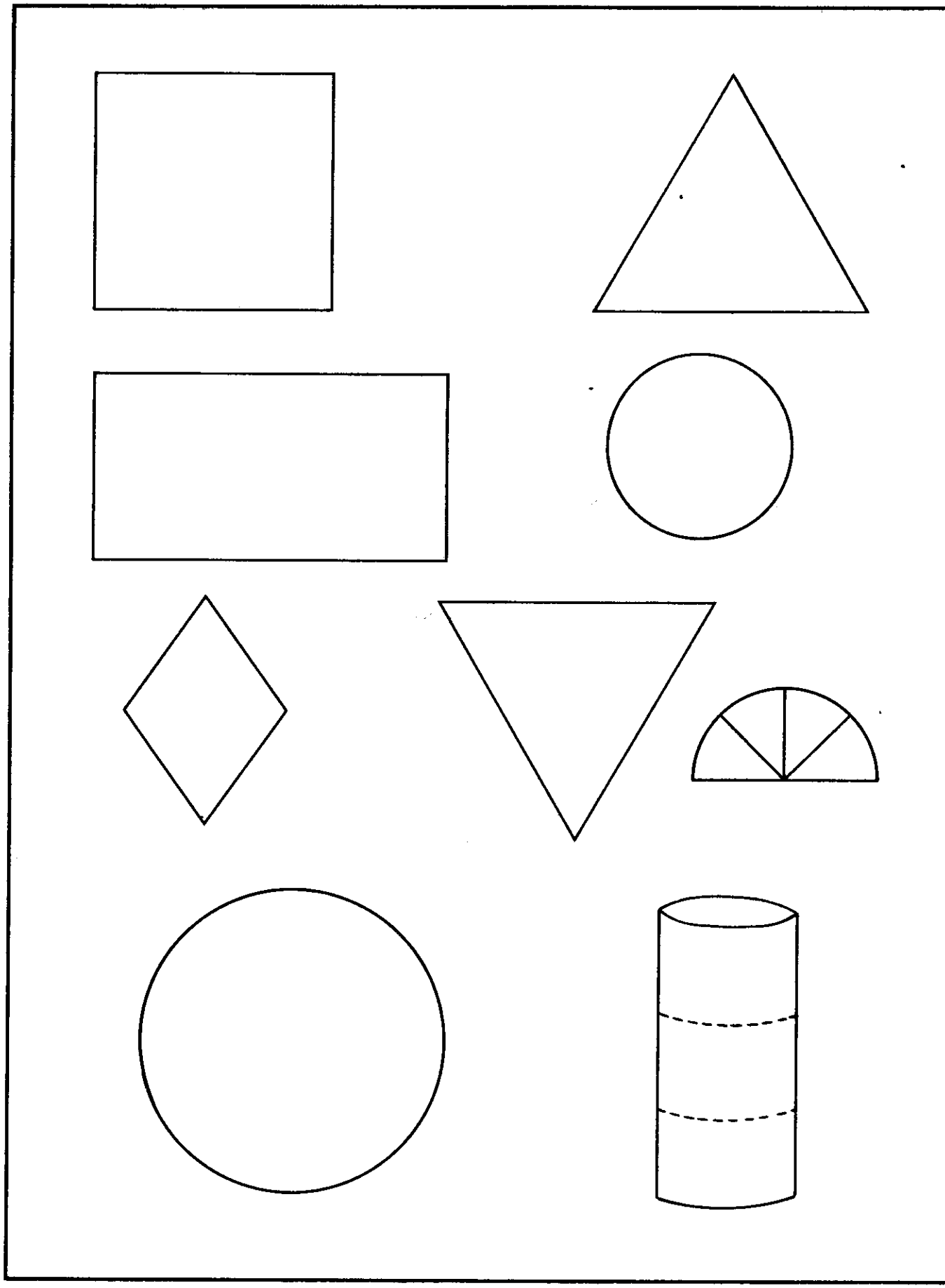
MATERIALS NEEDED: Flannelboard, and felt cut-outs of shapes

CONCEPT: Review of shapes

Use flannelboard to put on shapes of circle, square, triangle, rectangle, diamond, half-circle, and cylinder, one by one. Ask the children to softly call out the name of each one as the teacher puts the shape on the flannelboard.

If more review is needed, ask the children to draw the shape that you tell: "triangle," etc. Then when they have drawn that shape on their slates, put the triangle on the flannelboard so they can check their work.

Finally, give oral directions for page 3.
"Color the square red."
"Color the triangles blue." (Did they find two?)
"Color the circles yellow." (Again there are two).
"Color the rectangle green."
"Color the diamond violet."
"Color the half-circle orange."
"Color the cylinder brown."



1 +1	2 +1	3 +1	1 +0
1 +2	1 +3	2 +2	3 +0

0+2= ☐ 1+1= ☐

2+1= ☐ 1+3= ☐

3+1= ☐ 1+2= ☐

1+0= ☐ 2+2= ☐

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flannelboard, felt cut-outs, flashcards

CONCEPT: Combining sets; addition to 4, review

On flannelboard place one animal and one fruit. If we put both of these things together, how many things do we have? (two). Do you remember from grade 1 how we write this? (See first problem on page 4). Review several more, then direct the children to complete page four independently.

Carefully check the children's work, one by one, when they have finished. Any child who is unable to complete this page correctly by himself, should not proceed in the book, but instead review the addition facts presented on this page.

Use flashcards to review only the addition facts presented on page 4.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flannelboard and felt cut-outs, flashcards

CONCEPT: Combining sets with missing addend, addition to 4, Review

Put one object on flannelboard. "If we want to have three objects here, how many more must I put up?" (two more). "One object and two objects equal three." Underneath write the problem as it appears on page 5.

Continue in this way, until you feel confident that the class understands. If necessary, ask them to complete these same problems on their slates before writing in their books.

Finally, supply the missing addends on page 5.

Review again with flashcards the addition facts presented on page 4.

1 + □ = 3	2 + □ = 4	0 + □ = 3	0 + □ = 4	1 + □ = 2
2 + □ = 3	3 + □ = 4	1 + □ = 1	1 + □ = 4	3 + □ = 3
2 + □ = 2	4 + □ = 4	0 + □ = 1	3 + □ = 4	2 + □ = 3

4 −0	3 −1	2 −2	0 −0
4 −4	3 −2	2 −1	1 −0
4 −3	3 −3	4 −2	2 −0
4 −1	1 −1	3 −0	3 −2

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Four pencils, flashcards

CONCEPT: Subtraction of four, Review

Using pencils as objects, teacher can help class to solve orally all the problems on page 6 together as a class.

Then assign children to solve the problems on their slates, writing only the answers, in straight rows on their slates.

Teacher should check their work to be sure they are completing it correctly. Children who do it correctly on slates can then complete their books.

Any child who is unable to do it correctly on his slate needs to be given extra time and attention to help him learn these facts. Give him objects to count (leaves, rocks, etc.), so that he can solve these.

Use subtraction flash cards to review the addition and subtraction facts of 4.

SUGGESTIONS TO TEACHERS

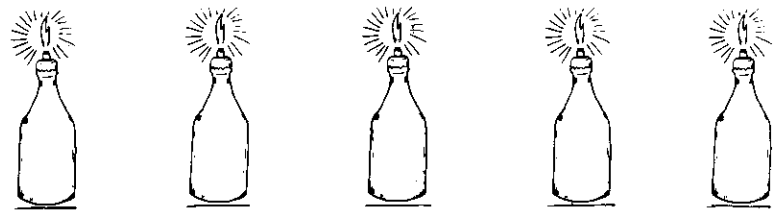
MATERIALS NEEDED: Flannelboard and felt cut-outs
flashcards, slates

CONCEPT: Review of addition facts to five

Use flannelboard to review the six facts on the top of page 7. Continue until class can correctly remember these facts.

If more review is necessary, use flash cards of these six facts, until class can correctly call out correct answers. Or use slates for extra drill.

When children are able to correctly solve all six problems correctly, then solve the problems on page 7.



$2+3=\square$ $3+2=\square$

$1+4=\square$ $4+1=\square$

$0+5=\square$ $5+0=\square$

$5+\square=5$	$4+\square=5$	$4+\square=4$	$2+\square=5$
$3+\square=5$	$2+\square=4$	$0+\square=5$	$1+\square=5$
$3+\square=4$	$0+\square=4$	$1+\square=4$	$5+\square=5$

5 − 3 ___	5 − □ 2	4 − 4 ___	4 − □ 0
5 − □ 4	5 − □ 5	5 − 1 ___	4 − 3 ___
4 − □ 1	4 − □ 2	5 − 0 ___	5 − 2 ___
5 − □ 3	5 − □ 1	5 − 4 ___	5 − 5 ___

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates, flannelboard, and felt cut-outs

CONCEPT: Subtraction facts through 5, with missing subtrahend, Review

On chalkboard write the first two problems from page 8. Show the class that these two problems are actually the same problem--they are alike.

Together solve the first one. Then point out in the second problem that a different part of the problem has been left out. After the problems are solved, the class will easily see that they are the same (5-3=2; and 5-3=2).

Continue in the same way through the page orally.

Give the problems to the children on their slates to solve. If they have difficulty, the teacher can help to illustrate each problem with flannelboard.

When children easily understand this concept, assign them to complete page 8 in the books. Check work. If not mastered, do not go ahead in book, but review these same lessons until they are mastered.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flannelboards, felt cut-outs, slates, and flashcards

CONCEPT: Addition facts through 6, review, and missing addend

Use flashcards to review the six addition facts presented on page 9. Continue until the class readily knows answers.

Then use the same combinations, omitting an addend. Help the children understand that they have to think of the two numbers that add up to 6 ("If I had 0 things, how many more would I need to make 6?), etc. Illustrate with flannelboard.

Use slates for review work of these combinations from page 9. When children can correctly solve the problems, assign them to complete page 9 in their books.

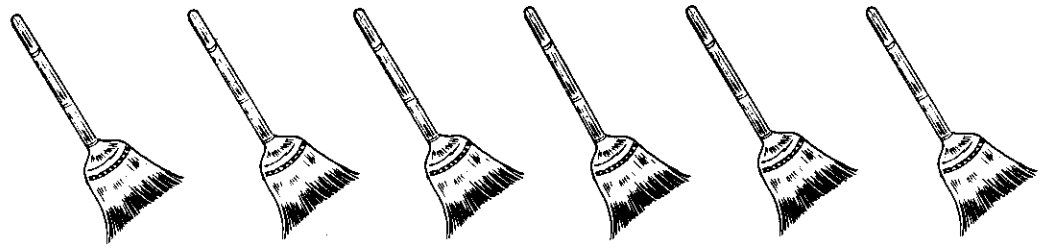
$0+5=\square$ $5+0=\square$

$1+4=\square$ $4+1=\square$

$2+3=\square$ $3+2=\square$

$$\begin{array}{r} 0 \\ +\square \\ \hline 6 \end{array} \qquad \begin{array}{r} 3 \\ +\square \\ \hline 6 \end{array} \qquad \begin{array}{r} 5 \\ +\square \\ \hline 6 \end{array} \qquad \begin{array}{r} 4 \\ +\square \\ \hline 6 \end{array}$$

$$\begin{array}{r} 6 \\ +\square \\ \hline 6 \end{array} \qquad \begin{array}{r} 1 \\ +\square \\ \hline 6 \end{array} \qquad \begin{array}{r} 5 \\ +\square \\ \hline 6 \end{array} \qquad \begin{array}{r} 2 \\ +\square \\ \hline 6 \end{array}$$



6 − 6 =	6 − 2 =	6 − 1 =	6 − 0 =
6 − □ = 6	6 − □ = 2	6 − □ = 1	6 − □ = 0
6 − 3 =	6 − 5 =	6 − 4 =	6 − 1 =
6 − □ = 3	6 − □ = 5	6 − □ = 4	6 − □ = 1

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Subtraction flash cards, flannel-board and cut-outs, slates

CONCEPT: Subtraction facts through 6, Review; and missing subtrahend

Use flashcards to review the seven subtraction facts presented on this page. Continue until the children can easily write the answer on slates as teacher shows card.

Next, write the same problems on chalkboard, omitting subtrahends (see rows 2 and 4 of page 10). Ask the children to solve these problems on their slates.

When they can correctly write answers on slates, then assign them to complete page 10 in the book.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Addition flashcards, flannelboard and cutouts, and slates

CONCEPT: Review of addition facts through 7; Missing addends

With flashcards, review the eight addition facts presented on page 11. Continue until the class can readily give answers.

Use flannelboard to illustrate that these two problems are the same: 7 + 0 = _____ and 7 + _____ = 7. Continue with other problems on page.

On slates, direct the children to complete page 11, writing the answers only. When each child is able to solve these problems, assign class to complete page 11 in their books.

0 + 7 =	1 + 6 =	2 + 5 =	3 + 4 =
4 + 3 =	5 + 2 =	6 + 1 =	7 + 0 =
6 + □ = 7	4 + □ = 7	2 + □ = 7	0 + □ = 7
1 + □ = 7	3 + □ = 7	5 + □ = 7	7 + □ = 7

7 − 0 =	7 − 1 =	7 − 2 =	7 − 3 =
7 − 4 =	7 − 5 =	7 − 6 =	7 − 7 =
7 − □ = 3	7 − □ = 5	7 − □ = 2	7 − □ = 1
7 − □ = 0	7 − □ = 4	7 − □ = 7	7 − □ = 6

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flashcards, Flannelboard, felt cut-outs, and slates

CONCEPT: Review of subtraction facts through 7; Missing subtrahend

Use flashcards to review the eight subtraction facts presented on page 12. Continue until the class has mastered these facts and can quickly give the answers.

Use flannelboard cut-outs to show that these two problems are the same: 7-1=_____ and 7-____=6, etc.

Assign the class to complete page 12 on their slates, writing the answers only. Check their work, and when they have mastered these combinations, allow them to continue by completing page 12 in their books.

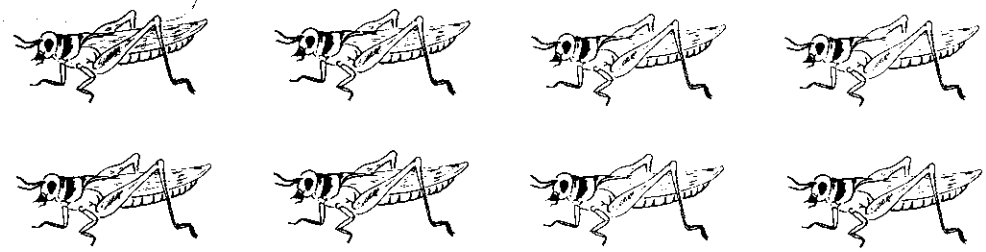
SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Addition flash cards, flannelboard, felt cut-outs, and slates

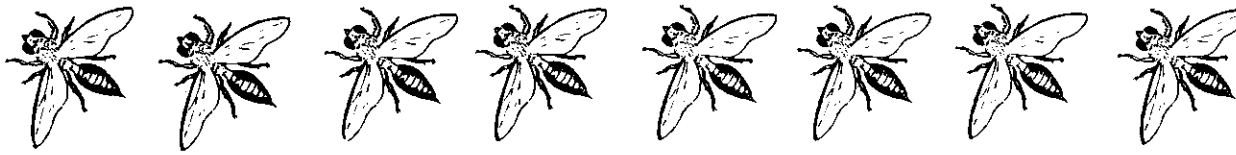
CONCEPT: Addition combinations through 8, review; and missing addends

Use flashcards to review the addition facts presented on page 13.

Use slates and flannelboard as needed for review. After the children can correctly complete the problems on their slates, assign them to write the answers in their books on page 13.



7 + 1 =	2 + 6 =	3 + 5 =	4 + 4 =
5 + 3 =	6 + 2 =	7 + 1 =	8 + 0 =
7 + □ = 8	5 + □ = 8	3 + □ = 8	1 + □ = 8
4 + □ = 8	6 + □ = 8	2 + □ = 8	8 + □ = 8



$8 - 0 = \square$

$8 - 1 = \square$

$8 - 2 = \square$

$8 - 3 = \square$

$8 - 4 = \square$

$8 - 5 = \square$

$8 - 6 = \square$

$8 - 7 = \square$

$$\begin{array}{r} 8 \\ -\ \square \\ \hline 3 \end{array} \qquad \begin{array}{r} 8 \\ -\ \square \\ \hline 1 \end{array} \qquad \begin{array}{r} 8 \\ -\ \square \\ \hline 5 \end{array} \qquad \begin{array}{r} 8 \\ -\ \square \\ \hline 6 \end{array}$$

$$\begin{array}{r} 8 \\ -\ \square \\ \hline 4 \end{array} \qquad \begin{array}{r} 8 \\ -\ \square \\ \hline 7 \end{array} \qquad \begin{array}{r} 8 \\ -\ \square \\ \hline 8 \end{array} \qquad \begin{array}{r} 8 \\ -\ \square \\ \hline 2 \end{array}$$

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flashcards, slates, flannelboard and cut-outs

CONCEPT: Review of subtraction combinations through 8; missing subtrahends

Use flashcards to review the nine subtraction facts until the class can easily give the answers.

Tell the children to use the pictures at the top of page 14 to help them solve the problems. For example to solve the problem: 8-5=_____. "There are eight objects at the top of page 14. The problem tells us to take away 5, so we will cover up 5 objects with one hand. How many objects are left?" Etc.

Review the same problems with missing subtrahends on slates. When children know these combinations well, assign them to complete page 14 in their books.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flashcards, slates, flannelboard and cut-outs

CONCEPTS: Review of addition combinations through 9; with missing addends

Review the ten addition combinations with flashcards, until the class knows them well.

Next present the same combinations with missing addends, using slates to copy problems from the chalkboard.

When children easily can give the answers to these problems, assign them to complete page 15 independently.

$9+0=\square$ $0+9=\square$

$8+1=\square$ $1+8=\square$

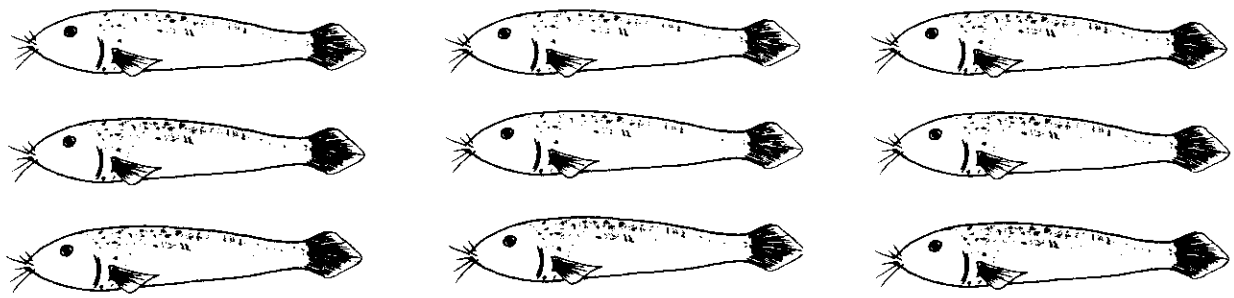
$7+2=\square$ $2+7=\square$

$6+3=\square$ $3+6=\square$

$5+4=\square$ $4+5=\square$

$$\begin{array}{r} 5 \\ +\square \\ \hline 9 \end{array} \quad \begin{array}{r} 3 \\ +\square \\ \hline 9 \end{array} \quad \begin{array}{r} 1 \\ +\square \\ \hline 9 \end{array} \quad \begin{array}{r} 8 \\ +\square \\ \hline 9 \end{array} \quad \begin{array}{r} 7 \\ +\square \\ \hline 9 \end{array}$$

$$\begin{array}{r} 0 \\ +\square \\ \hline 9 \end{array} \quad \begin{array}{r} 4 \\ +\square \\ \hline 9 \end{array} \quad \begin{array}{r} 9 \\ +\square \\ \hline 9 \end{array} \quad \begin{array}{r} 2 \\ +\square \\ \hline 9 \end{array} \quad \begin{array}{r} 6 \\ +\square \\ \hline 9 \end{array}$$



9	9	9	9	9
−0	−1	−2	−3	−4
9	9	9	9	9
−5	−6	−7	−8	−9
9	9	9	9	9
−□	−□	−□	−□	−□
1	5	3	2	9
9	9	9	9	9
−□	−□	−□	−□	−□
0	4	8	6	7

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flashcards, slates, flannelboard and cut-outs

CONCEPT: Review of subtraction combinations through 9; with missing subtrahends

Use subtraction flashcards to review all subtraction facts through 9, spending time especially on the ten combinations presented on page 16.

Give drill using these ten facts, on slates.

If necessary, use flannelboard to relate these ten facts to the facts with missing subtrahends.

When children have mastered these combinations, assign them to complete page 16 in their books.

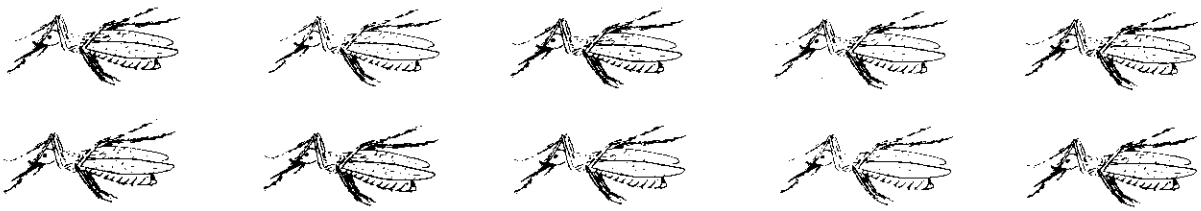
SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flashcards, flannelboard, felt cut-outs, and slates

CONCEPT: Review of eleven addition facts to 10, with missing addends

Follow the procedure presented in the preceding pages to review the eleven addition facts on page 17.

When the children have mastered these problems through oral and written work, assign them to complete page 17 independently.



$0+10=\square$ $10+0=\square$

$1+9=\square$ $9+1=\square$

$2+8=\square$ $8+2=\square$

$3+7=\square$ $7+3=\square$

$4+6=\square$ $6+4=\square$

$5+5=\square$

$$\begin{array}{r} 7 \\ +\square \\ \hline 10 \end{array} \quad \begin{array}{r} 2 \\ +\square \\ \hline 10 \end{array} \quad \begin{array}{r} 1 \\ +\square \\ \hline 10 \end{array} \quad \begin{array}{r} 9 \\ +\square \\ \hline 10 \end{array} \quad \begin{array}{r} 10 \\ +\square \\ \hline 10 \end{array}$$

$$\begin{array}{r} 3 \\ +\square \\ \hline 10 \end{array} \quad \begin{array}{r} 6 \\ +\square \\ \hline 10 \end{array} \quad \begin{array}{r} 8 \\ +\square \\ \hline 10 \end{array} \quad \begin{array}{r} 4 \\ +\square \\ \hline 10 \end{array} \quad \begin{array}{r} 5 \\ +\square \\ \hline 10 \end{array}$$

10	10	10	10	10
−10	− 9	− 8	− 7	− 6
10	10	10	10	10
− 5	− 4	− 3	− 2	− 1
10	10	10	10	10
−□	−□	−□	−□	−□
8	9	4	5	1
10	10	10	10	10
−□	−□	−□	−□	−□
2	10	7	3	6

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Subtraction flashcards, flannel-board, felt cut-outs, and slates

CONCEPT: Review of subtraction facts of 10, with missing subtrahend

Follow the procedure presented in the preceding pages to review these facts taught in grade 1.

Continue with this work, until the children have gained mastery. It is without value to go ahead in this book, where new material is presented, until the children are competent in the material already presented.

When these combinations are learned, assign the class to complete page 18 in their books.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flannelboard with ten different cut-outs of felt

CONCEPT: Ordinal numbers

The teacher may put five different objects on the flannelboard, explaining that the "number one" object is called "first," that "number two" means "second," etc.

Teach the children by rote memory the five words (Balangao) which mean first, second, third, fourth and fifth. Call on various ones to name the object on the flannelboard which is the fourth one, or the first one, etc.

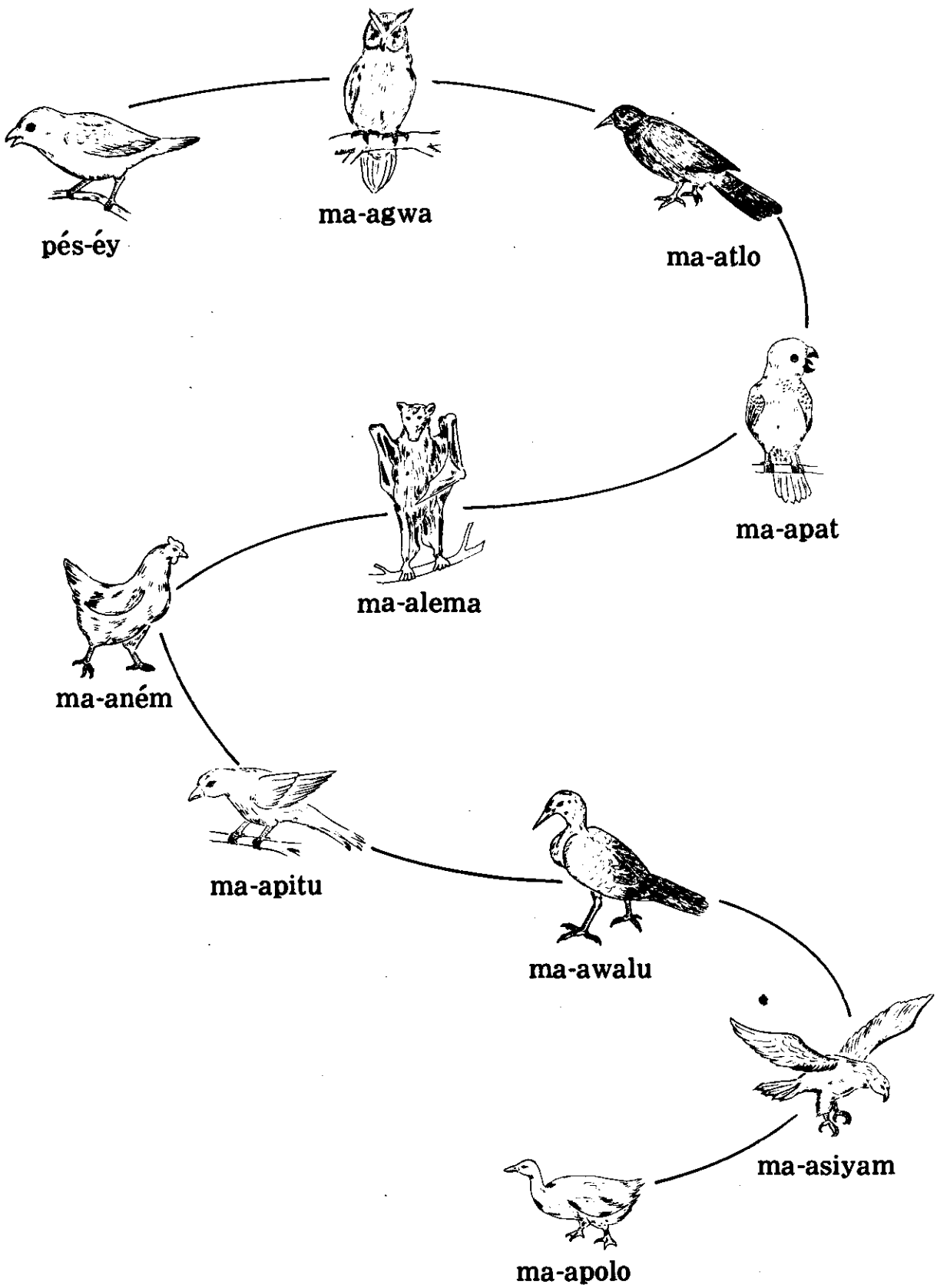
Ask the children to tell what the third object is on page 19; then the second, etc.

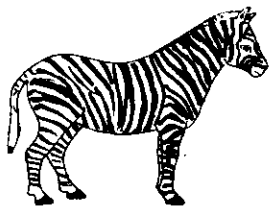
When the first five ordinal numbers are well learned, teach the next five in the same way.

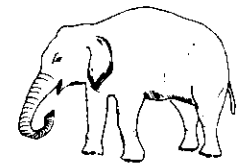
Finally, direct the class to color:
the second item red,
the fourth item blue, etc.

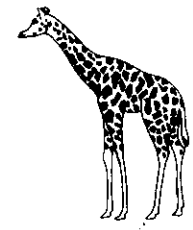
Be sure that your instructions are followed.

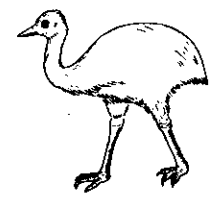
For extra practice, line ten children up in the front of the class. "Who is the first child? Who is the fifth child?" etc. (Insist that the class begins counting from left to right).

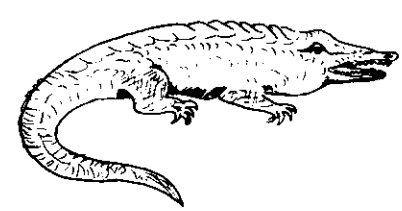

pés-éy
ma-agwa
ma-atlo
ma-apat
ma-alema
ma-aném
ma-apitu
ma-awalu
ma-asiyam
ma-apolo











SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flannelboard with ten different cut-outs of felt

CONCEPT: Ordinal Numbers

Review yesterday's lesson of ordinal numbers, again using flannelgraph to do so.

Do an oral drill with page 20: "Who can raise his hand and tell me what the third object is on page 20?" "What is the tenth object?" Etc.

When the children can easily use the ten ordinal numbers presented here, give the following directions:

"Put a black X on the third object."
"Color the fifth object green."
"Draw a circle around the ninth object."
Etc.

Check work to be sure that children have followed instructions.

On chalkboard, put the words "pés-ey, ma-agwa, ma-atlo," etc. (see page 19) in mixed order. Tell the class to find the word that means "first," and write it on the line under the first picture. Then find the word that means second (ma-agwa), etc.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flannelboard, felt cut-outs, flashcards, and slates

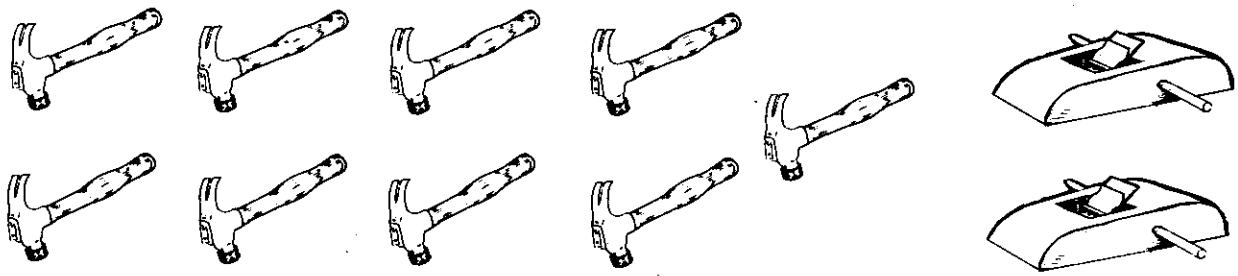
CONCEPT: New addition facts to 11

Use flashcards to introduce these eight new facts. Continue orally, until the children are able to supply the missing number.

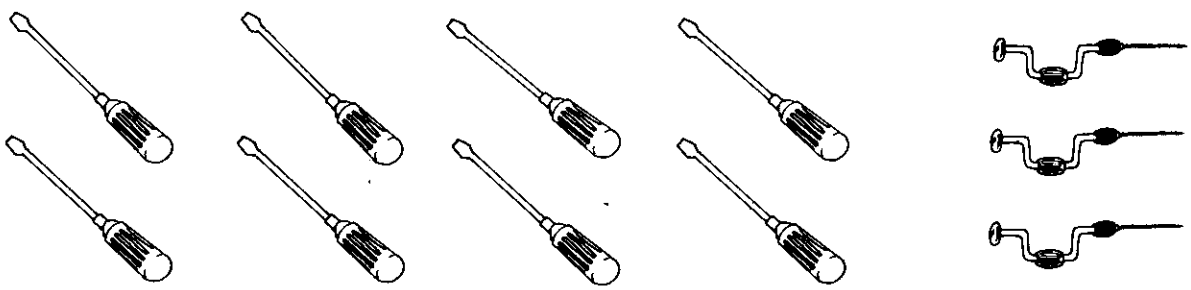
On slates dictate these combinations, occasionally giving a combination of 9 or 10, to keep children alert.

Use flannelgraph to illustrate the facts. (Leave the sets on the flannelboard to help the children).

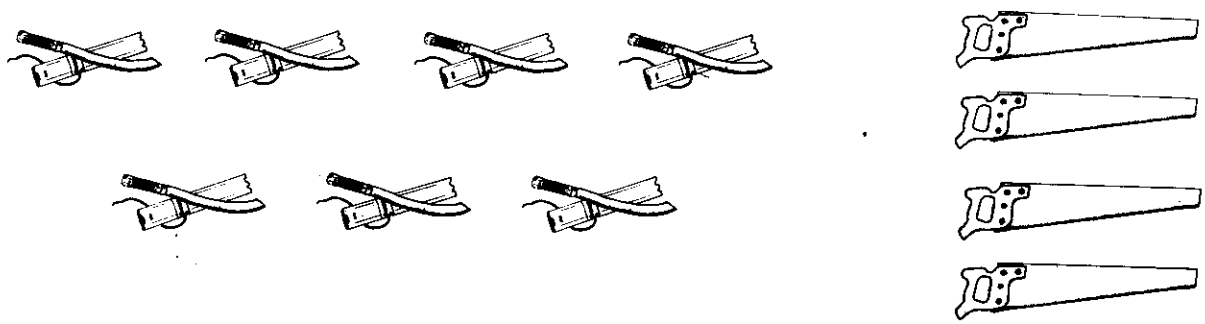
Then assign the class to complete page 21 independently. They may need reminders on how to use the pictures above each problem to help them solve the problems.



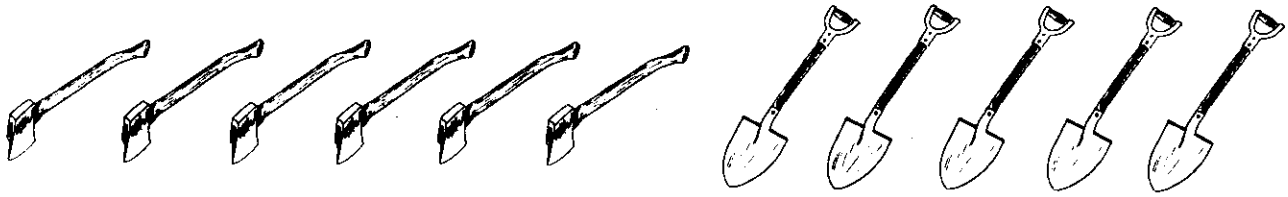
9+2=☐ 2+9=☐



8+3=☐ 3+8=☐



7+4=☐ 4+7=☐



6+5=☐ 5+6=☐

9 +2	8 +3	8 +2	9 +1	7 +4
6 +5	5 +5	4 +5	2 +9	3 +8
3 +7	4 +7	5 +6	2 +8	1 +9
6 +4	8 +3	7 +3	5 +6	4 +6

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flash cards of addition combinations of 9, 10, and 11

CONCEPT: Review of combinations of 9, 10, and 11; addition

Use the flashcards to review all the combinations of 9, 10 and 11. If necessary give extra practice on slates.

When children are confident with these combinations, assign them to complete page 22 independently.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flashcards of addition and subtraction combinations of 11. Flannelboard

CONCEPT: Subtraction is the reverse process of addition; Combinations of 11

Use flannelboard with eleven figures to illustrate the first four problems on page 23. Children must learn to recognize that the four problems presented together are actually ONE problem: they all contain the same numbers in different order.

Repeat this same process with 7 + 4, etc., and the other sets on the page.

Use flashcards to review these combinations. If you wish, you could ask the children to write the answer on their slates as you show the card.

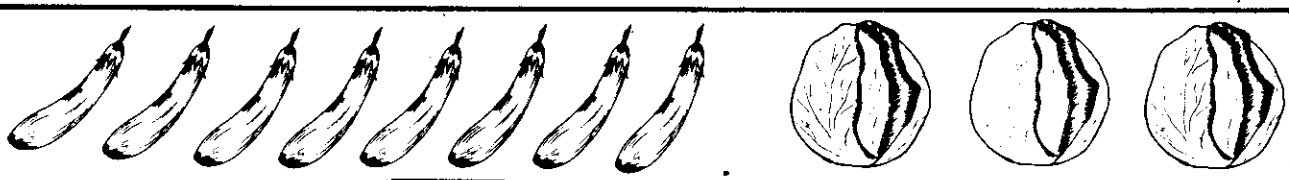
When the class knows these combinations well, direct them to complete page 23 independently.

$6+5=\square$ $5+6=\square$

$11-5=\square$ $11-6=\square$

$7+4=\square$ $4+7=\square$

$11-4=\square$ $11-7=\square$

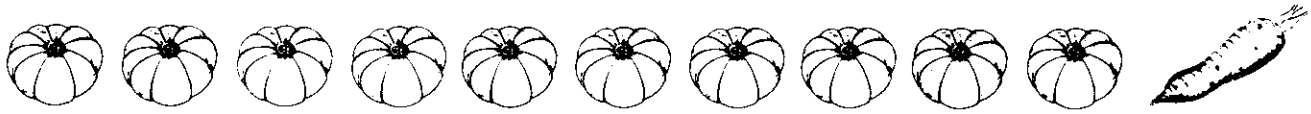


$8+3=\square$ $3+8=\square$

$11-3=\square$ $11-8=\square$

$9+2=\square$ $2+9=\square$

$11-2=\square$ $11-9=\square$



$10+1=\square$ $1+10=\square$

$11-1=\square$ $11-10=\square$

11 −1	6 +5	11 −10	5 +6	11 −2
7 +4	11 −9	4 +7	11 −8	11 −3
8 +3	11 −7	3 +8	11 −4	11 −5
9 +2	11 −6	10 +1	2 +9	11 +0

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flashcards, combinations of 11

CONCEPT: Vertical addition and subtraction
(Review of combinations of 11)

Illustrate on chalkboard the two ways of writing addition or subtraction:

$5 + 3 = 8$ or $\begin{array}{r} 5 \\ +3 \\ \hline 8 \end{array}$

If you wish you can give dictation on slates for practice, and tell the class to write each problem two ways.

Instruct them to complete page 24 independently.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flashcards, flannelgraph and slates

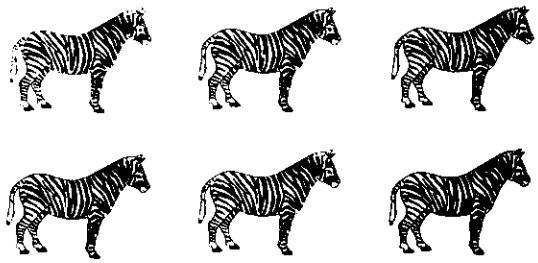
CONCEPT: Addition combinations of 12

With flannelboard and felt cut-outs, show the class 12 objects. Then demonstrate that we can make two sets out of the 12: 6 and 6 (or 7 and 5; or 8 and 4; etc.)

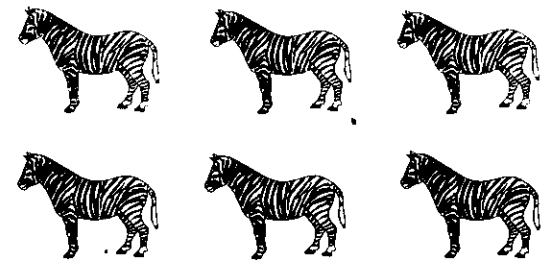
Then use flashcards to re-inforce these new combinations (addition only).

Give practice drills on slates, giving an occasional combination of 11, to keep the children thinking.

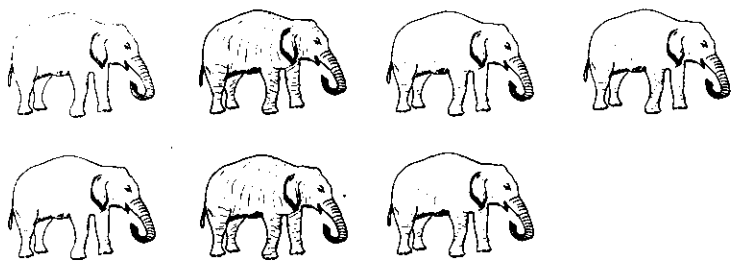
When the combinations are well-learned, direct class to complete page 25 by themselves.



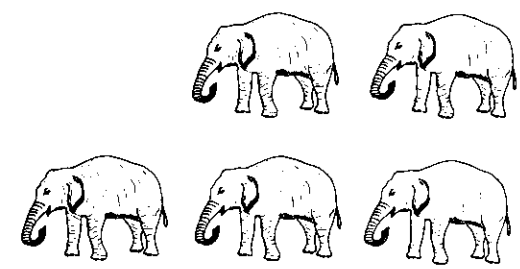
6+6=☐



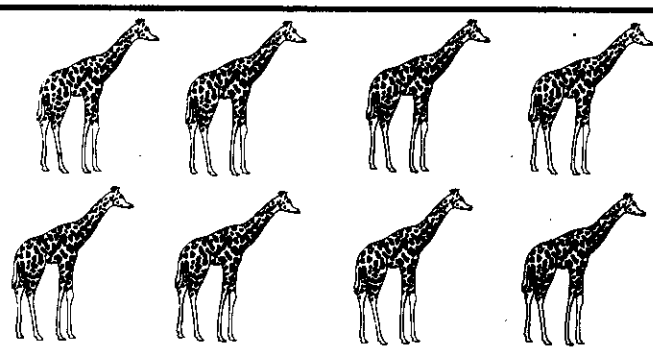
12+0=☐



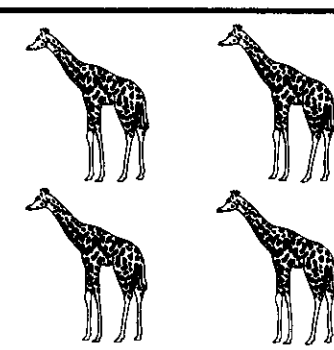
7+5=☐



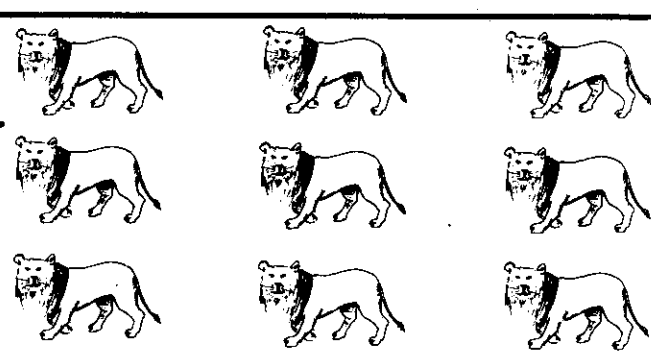
5+7=☐



8+4=☐



4+8=☐



9+3=☐

3+9=☐

6 + □ = 12	7 + □ = 12	9 + □ = 12	8 + □ = 12
5 + □ = 12	1 + □ = 12	4 + □ = 12	3 + □ = 12
2 + □ = 12	3 + □ = 11	4 + □ = 11	9 + □ = 11
6 + □ = 11	2 + □ = 11	7 + □ = 11	8 + □ = 11

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flannelboard, felt cut-outs, flashcards and slates

CONCEPT: Addition combinations of 12, with missing addends

Review lesson on page 25. Repeat procedure with flannelboard, by putting a set of 7 and a set of 5. "If we have seven objects, and we want 12, how many more objects do we need?" etc.

Give practice additions facts on slates, then let the children copy page 26 and complete it. Check their work. If they are able to complete the work correctly on slates, allow them to go on to complete page 26 in their books.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flannelboard, felt cut-outs, flashcards and slates

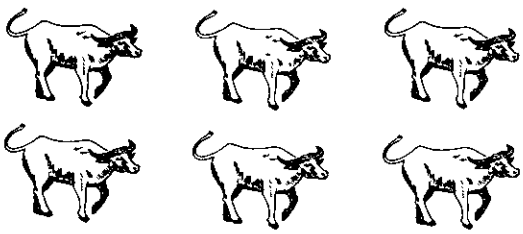
CONCEPT: Subtraction combinations of 12.

Use flannelboard to illustrate that the four facts presented together on page 27, are actually one problem. They all use the same numbers.

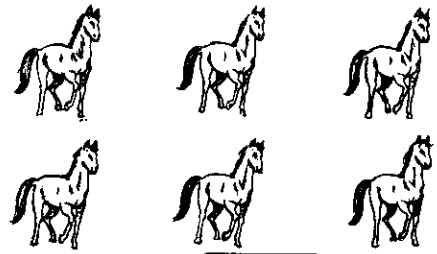
With flashcards, review the four related facts in groups.

Then give extra practice on slates, using these combinations of 12 (addition and subtraction).

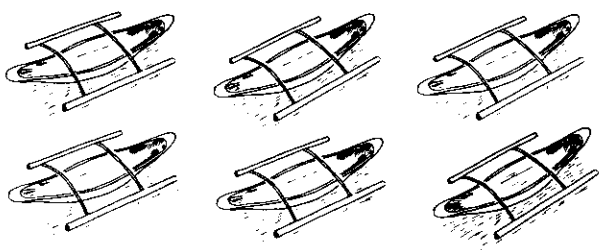
Direct the class to complete page 27 independently.



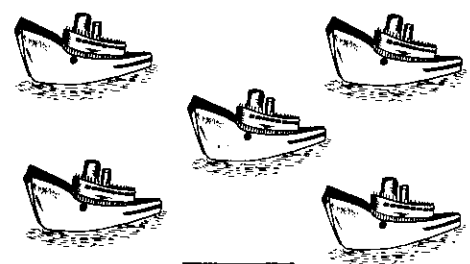
6+6=□
12−0=□



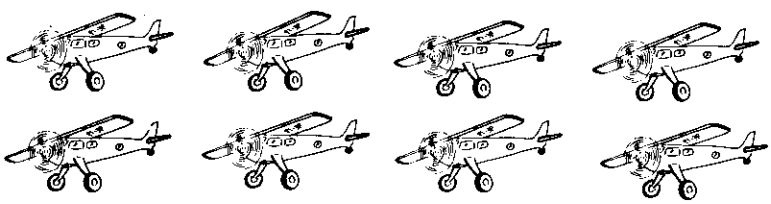
12−6=□
12−12=□



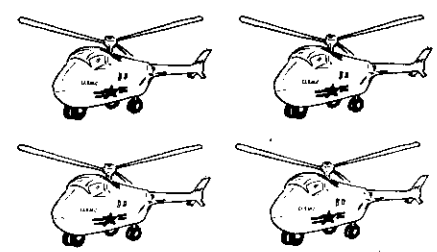
7+5=□
12−5=□



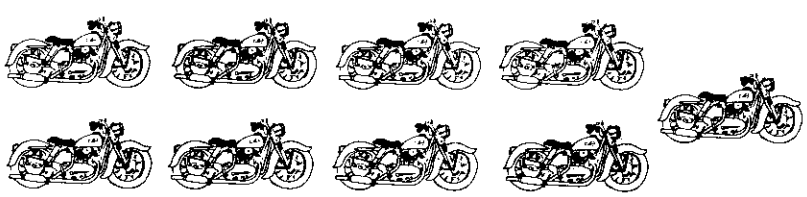
5+7=□
12−7=□



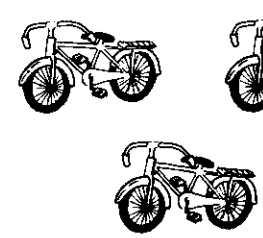
8+4=□
12−4=□



4+8=□
12−8=□



9+3=□
12−3=□



3+9=□
12−9=□

12 − 3	11 − 4	12 − 5	11 − 6	12 − 7
11 − 8	12 − 9	11 −10	12 −11	11 −11
12 − 2	11 − 3	12 − 1	11 − 2	12 − 4
12 −12	12 − 6	11 − 5	12 − 8	12 −10

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flashcards, combinations of 11 and 12, addition and subtraction.

CONCEPT: Review of 11 and 12 combinations

Do a fast oral review of these combinations by calling on children one at a time, going straight down the row, one problem at a time.

Or review by having the children write the answer on their slates as teacher shows problem.

Instruct the class to complete page 28 independently. Check their work. Since there are no objects to count here, it is a good "test" of their mastery.

If your class has not yet mastered these combinations, do not proceed to the next lessons, but rather review all preceding material.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED:

CONCEPT: Counting by five's to 60

Call twenty, twenty-five or 30 children to the front of the class. Tell the class that we are going to divide the class into groups of five each, sending each group of children to a different part of the room.

Together orally count those children, from one to twenty.

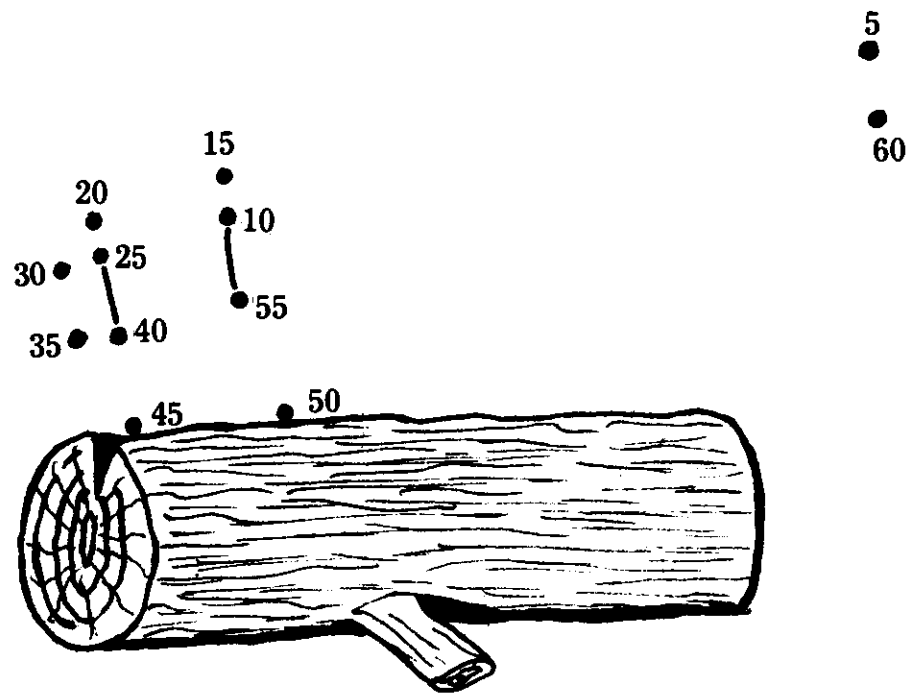
Then tell the class that since we know every group has five children, there is a faster way to count--we just skip all the numbers between. Teach then orally "five, ten, fifteen" etc. Let the class count all the children using counting by fives.

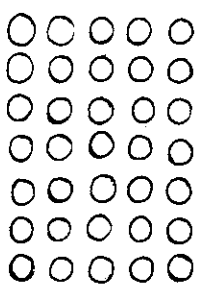
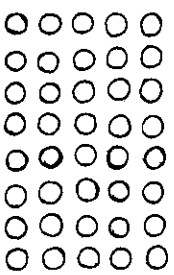
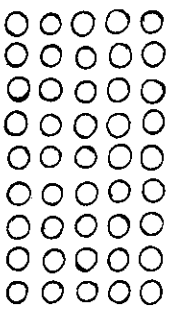
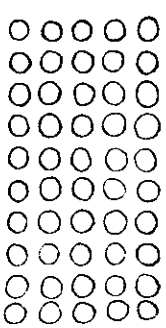
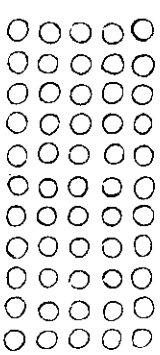
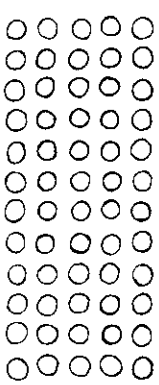
Direct the children to sit down. On their slates make a row of five circles. Underneath that row make a second row of five circles. Then make a third row of circles, etc. Tell the children to point to each row as we count, "five, ten, fifteen," etc.

On page 29 read the numbers at the top to help in counting from 5 to 60 by five's. Tell the children to cover the top row of boxes with the numbers in them, and see if they can count by five's all by themselves, writing in the empty boxes. (If they are not sure how to do it, they can refer to the top row of boxes.)

Instruct the class to find the "5" in the bottom part of the page, and put their pencil on the dot near the 5. Then move to 10, then 15, etc. Color the picture when finished.

5	10	15	20	25	30
35	40	45	50	55	60



5 + 0 = 5 5 × 1 = 5	5 + 5 = 5 5 × 2 = 5	5 + 5 + 5 = 5 5 × 3 = 5
5 + 5 + 5 + 5 = 5 5 × 4 = 5	5 + 5 + 5 + 5 + 5 = 5 5 × 5 = 5	5 + 5 + 5 + 5 + 5 + 5 = 5 5 × 6 = 5
5 × 7 = 	5 × 8 = 	5 × 9 = 
5 × 10 = 	5 × 11 = 	5 × 12 = 

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates, multiplication flashcards

CONCEPT: Review of counting by five's to 60.
Introduction of concept of multiplication.
Review lesson on page 29

"Look in the first box on page 30. If I add 5 + 0, I'll have ____? Yes, 5, because when I add no more to 5, I still have 5. We can say that in another way saying, "5 x 1." That means if we put out five objects, one time, we still just have 5.

This new sign says "times." We read the problem, "Five times one equals _____."

Go on to the middle box. Now we are adding together five, two times. We are adding five and another five. Another way to say it is that we are adding five two times. These two problems are the same. What is the answer?"

Continue in every box, pointing out that adding five three times is the same as "5 x 3," etc.

Give extra practice on slates. Be sure that the children understand that this is the same thing as "counting by fives." (5 x 8 is the same thing as counting by fives, eight times.)

When children understand, let them complete page 30. Check to be sure work is done correctly.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates, multiplication & division flashcards

CONCEPT: Division by fives

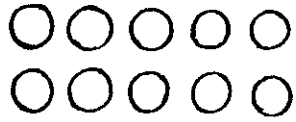
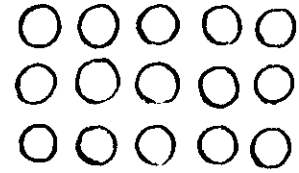
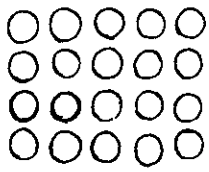
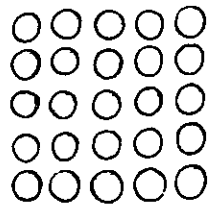
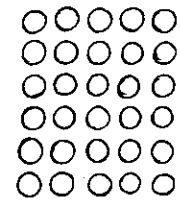
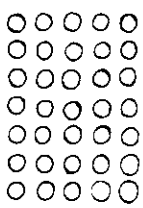
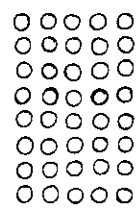
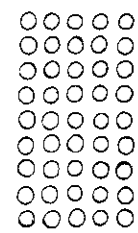
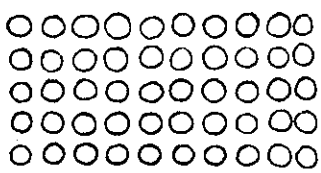
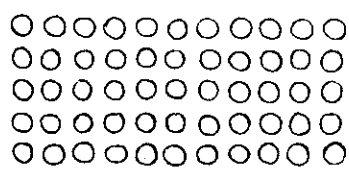
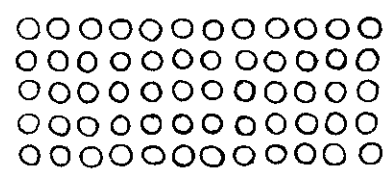
DO NOT BEGIN THIS LESSON UNTIL CLASS HAS MASTERED THE LESSONS ON PAGES 29 AND 30.

Explain division as the reverse of multiplication.
"If we count by fives two times, we get ____."
"If we have ten, how many times do we count by fives, to get to ten?" (two)
5 x 2 = 10 (Turn it backward: 10 ÷ 2 = 5)

Continue with this whole page, each time showing that division is the reverse process of multiplication.

Give practice pairs on slates.

Complete page 31 together as a class.

 5×1=□ 5÷5=□	 5×2=□ 10÷5=□	 5×3=□ 15÷5=□
 5×4=□ 20÷5=□	 5×5=□ 25÷5=□	 5×6=□ 30÷5=□
 7×5=□ 35÷5=□	 8×5=□ 40÷5=□	 9×5=□ 45÷5=□
 10×5=□ 50÷5=□	 11×5=□ 55÷5=□	 12×5=□ 60÷5=□

9	12	3	2	5
X 5	X 5	X 5	X 5	X 5
8	4	6	10	7
X 5	X 5	X 5	X 5	X 5

$5\overline{)45}$	$5\overline{)60}$	$5\overline{)5}$	$5\overline{)10}$	$5\overline{)55}$
$5\overline{)35}$	$5\overline{)50}$	$5\overline{)30}$	$5\overline{)25}$	$5\overline{)40}$

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates, Multiplication and division flashcards.

CONCEPT: Counting by fives, multiplication and division with fives

Instruct the class to read the first problem aloud orally, on page 32. "This means that we count by fives, nine times. Let's do that and keep track on our fingers as we do it--5, 10, 15, 20, 25, 30, 35, 40, 45. Did we say nine numbers? (Yes.) What was the last number we said? (45).

Continue in this way on through the page. The children should understand that 6 x 5 means the same thing as counting by fives, 6 times.

Give practice on slates before assigning class to complete page 32 independently.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates

CONCEPT: Review of counting by two's, to 50.
New material is counting from 50 to 100

To review the idea of counting by two's, tell the children to write to ten on their slates, making a tiny 1, a big 2, a tiny 3, a big 4, etc.

1 2 3 4 5 6 7 8 9 10

Remind them that counting by two's means that we skip a number in between.

On page 33 practice reading the numbers to 50-- then when children can do it independently have them close their books, and count to 50 by two's aloud.

Again open the books and count from 50 to 100 by two's. Review orally until the class can easily do it.

Assign the class to cover the numbers at the left of page 33, and count by two's to 100, in the spaces at the right of the page. If they have difficulty, they can refer to the model at left.

The space at the bottom of the page has a few numbers in the boxes. Skip the numbers written and write to 100 by two's.

2	4	6	8	10
12	14	16	18	20
22	24	26	28	30
32	34	36	38	40
42	44	46	48	50
52	54	56	58	60
62	64	66	68	70
72	74	76	78	80
82	84	86	88	90
92	94	96	98	100

2				10					20
	24					34			
			48						
62							76		
				90					

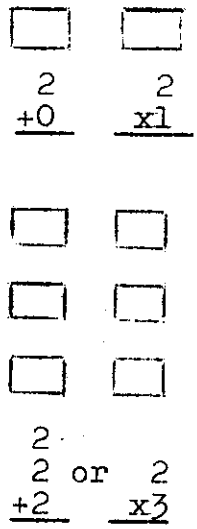
$\begin{array}{r} 2 \\ +0 \\ \hline \end{array}$ $\quad$ $\begin{array}{r} 2 \\ \times 1 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ +2 \\ \hline \end{array}$ $\quad$ $\begin{array}{r} 2 \\ \times 2 \\ \hline \end{array}$
$\begin{array}{r} 2 \\ 2 \\ +2 \\ \hline \end{array}$ $\quad$ $\begin{array}{r} 2 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ 2 \\ 2 \\ +2 \\ \hline \end{array}$ $\quad$ $\begin{array}{r} 2 \\ \times 4 \\ \hline \end{array}$
$\begin{array}{r} 2 \\ 2 \\ 2 \\ 2 \\ +2 \\ \hline \end{array}$ $\quad$ $\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ 2 \\ 2 \\ 2 \\ 2 \\ +2 \\ \hline \end{array}$ $\quad$ $\begin{array}{r} 2 \\ \times 6 \\ \hline \end{array}$

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates

CONCEPT: Counting by two's, review. New material is multiplication by two's.

Demonstrate on the blackboard:



$$\begin{array}{rr} 2 & 2 \\ +0 & \times 1 \end{array}$$

$$\begin{array}{r} 2 \\ 2 \\ +2 \end{array} \quad \text{or} \quad \begin{array}{r} 2 \\ \times 3 \end{array}$$

Explain that 2 + 0 means that we add 2 boxes and no more. Another way to say it is: "Two boxes in a row, and only one row." The answer will be the same.

In this example, we are adding 2 and 2 and 2. Another way to say it is: "Two boxes in a row, and three rows." Both answers are the same.

Continue with each problem on page 34. Assign the class to complete them on slates, and check the work. If they are ready, assign them to complete page 34.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates, multiplication flash cards

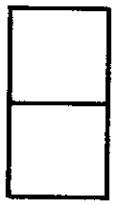
CONCEPT: Multiplication by two's (Counting by two's)

Review the lesson on page 34.

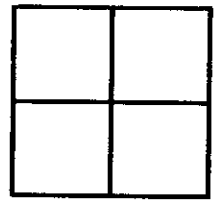
Together orally complete the lesson on page 35, using the boxes to help the children understand the concept of counting by two's, as the same concept of multiplication.

When the children can easily give the answers on page 35 orally, then assign them to complete the page in writing.

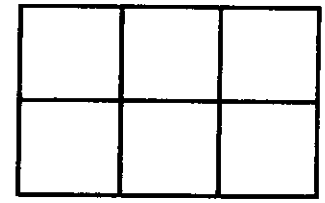
If additional practice is needed, use slates. Assign the children a problem (as 9 x 2)--then tell them to make nine boxes, times two rows. (Or two rows of 9 boxes each.) This should help them understand the concept, and give them objects to count, for the ones unable to memorize.



2X1=



2X2=



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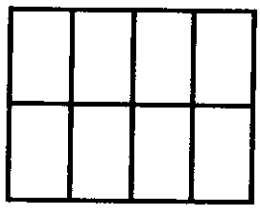
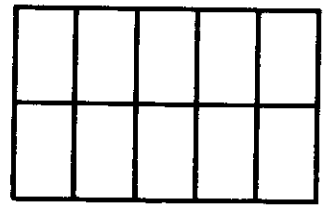


2X4=



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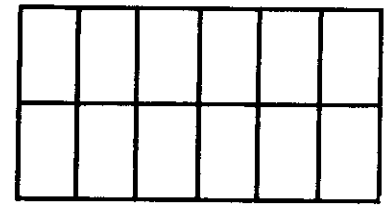
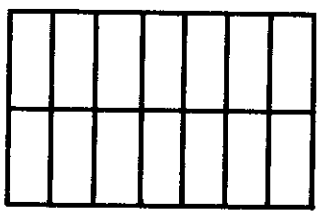
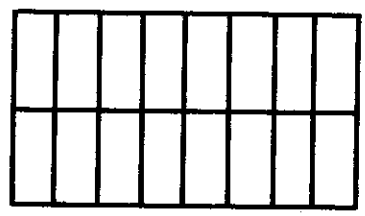


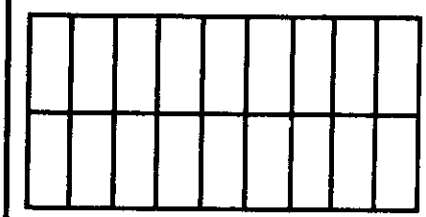
2X6=



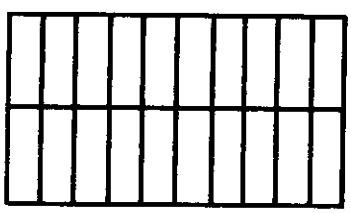
2X7=



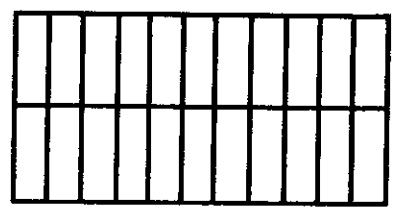
2X8=



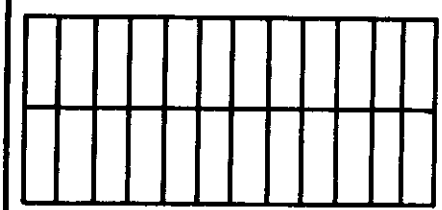
2X9=



2X10=



2X11=



2X12=

8 × 2	7 × 2	1 × 2	5 × 2	3 × 2
2 × 2	4 × 2	10 × 2	9 × 2	6 × 2
11 × 2	12 × 2	2 × 2	2 × 6	2 × 5
2 × 4	2 × 8	2 × 1	2 × 3	2 × 7

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: slates, multiplication flash cards

CONCEPT: Multiplication by two's (vertical)

Review the past two lessons on slates as necessary, then introduce the vertically written form of multiplication on the chalkboard. Show that these two things mean the same:

$8 \times 2 = \_\_\_\_\_$ and $\begin{array}{r} 8 \\ \times\ 2 \\ \hline \end{array}$

On slates give these problems as practice drill, before assigning them to be completed in the book.

Do not proceed to the next lesson until the class has mastered these problems. If necessary review the practice of "counting by two's ten times" to get the answer of 10 x 2.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flannelboard, slates, and multiplication and division flashcards

CONCEPT: Division by two as the reverse of multiplication by two

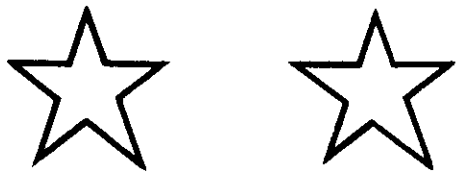
On flannelboard put two objects. Say, "I want to divide this group into two sets. How many objects will be in each set?" (one)

Continue with the next problem on page 37: Put four objects on the flannelboard. Say, "Now I want to divide this group into two sets. How many will I put in each set?" (two) etc.

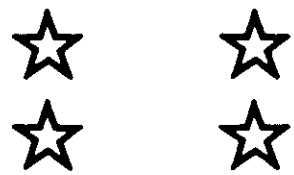
Complete the entire page in this manner.

Then direct the children to complete it on their slates, drawing circles to divide into sets. Work each problem together, one at a time, so that the children understand the concept. Continue until the class can easily read the problem, and know how to solve it on their slates.

Then assign them to complete page 37 in their books.



$2 \div 2 = \square$

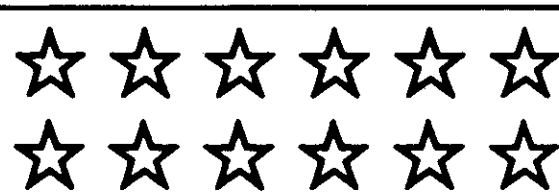


$4 \div 2 = \square$

$6 \div 2 = \square$

$8 \div 2 = \square$

$10 \div 2 = \square$



$12 \div 2 = \square$

$14 \div 2 = \square$

$16 \div 2 = \square$

$18 \div 2 = \square$

$20 \div 2 = \square$

$22 \div 2 = \square$

$24 \div 2 = \square$

$2\overline{)22}$	$2\overline{)18}$	$2\overline{)20}$	$2\overline{)4}$
$2\overline{)6}$	$2\overline{)2}$	$2\overline{)12}$	$2\overline{)8}$
$2\overline{)10}$	$2\overline{)16}$	$2\overline{)14}$	$2\overline{)24}$
$8\overline{)16}$	$6\overline{)12}$	$5\overline{)10}$	$4\overline{)8}$
$3\overline{)6}$	$7\overline{)14}$	$9\overline{)18}$	$12\overline{)24}$

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates, Flannelboard and felt cut-outs, and multiplication and division flash cards

CONCEPT: Division by two (new division sign)

If the children have mastered the work on page 37, this lesson will not be difficult.

On chalkboard show the class that there are two ways to write division:

$22 \div 2 = \_\_\_\_\_$, and $2\overline{)22}$

If necessary illustrate these problems on the flannelboard using objects to divide into sets of two, etc.

Assign the class to complete the page on slates. This should be checked, so that the teacher will know whether the students have mastered the work.

Do not assign the class to complete page 38 until they can correctly do it on their slates.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates

CONCEPT: Counting to 100 by one's

On chalkboard write the numbers from 0 to 9 in a straight row:

0 1 2 3 4 5 6 7 8 9

Tell the children if they know how to write these numbers, they know how to write any number there is --all they need to know is how to put them together to make bigger numbers.

In the next row, again write from 0 to 9:

0 1 2 3 4 5 6 7 8 9
0 1 2 3 4 5 6 7 8 9

Then tell the children that after we get to 9 and want bigger numbers we just put a 1 in front of the numbers in the second row:

0 1 2 3 4 5 6 7 8 9
10 11 12 13 14 15 16 17 18 19

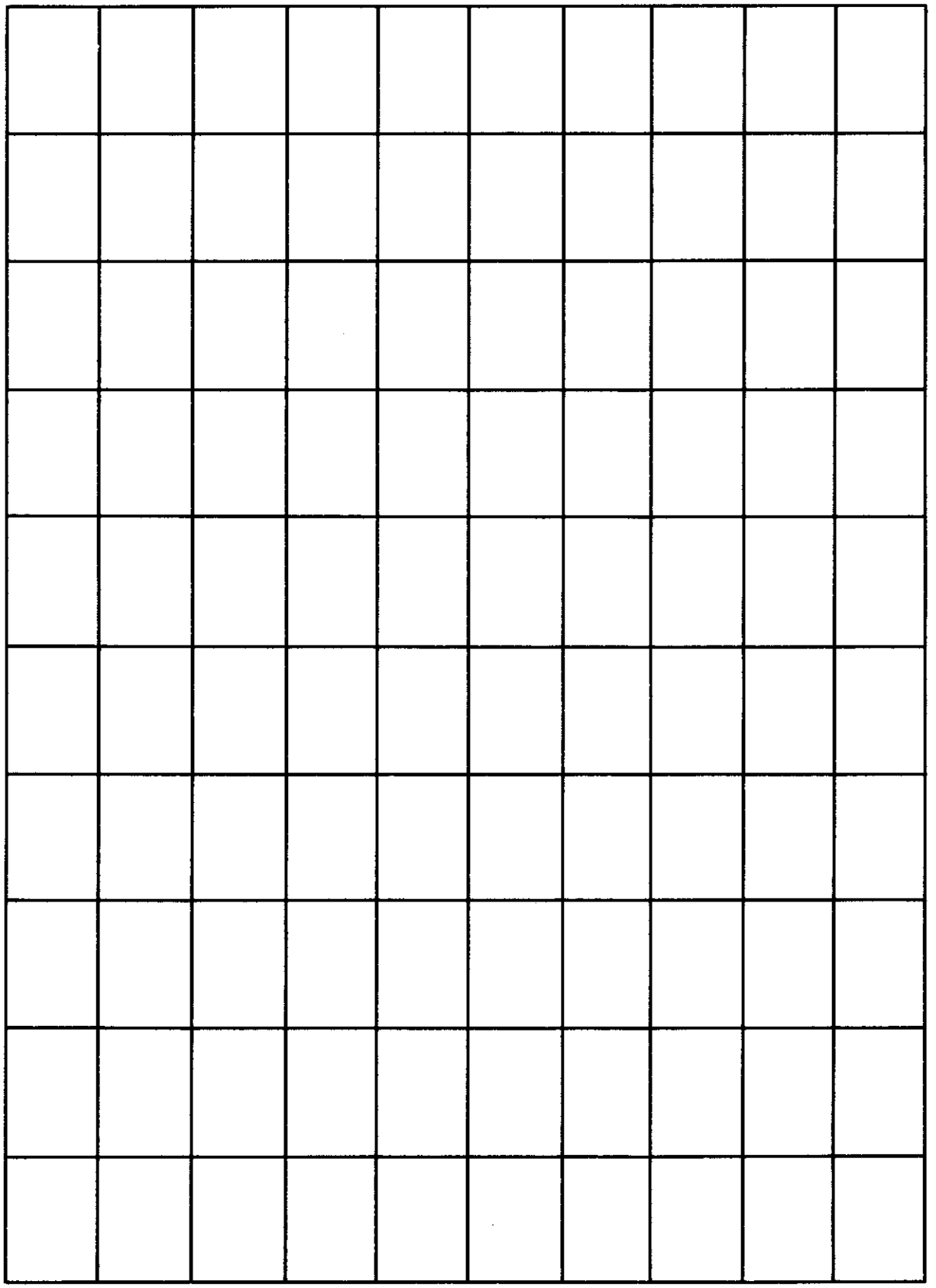
Then count orally from 0 to 19, pointing to each number.

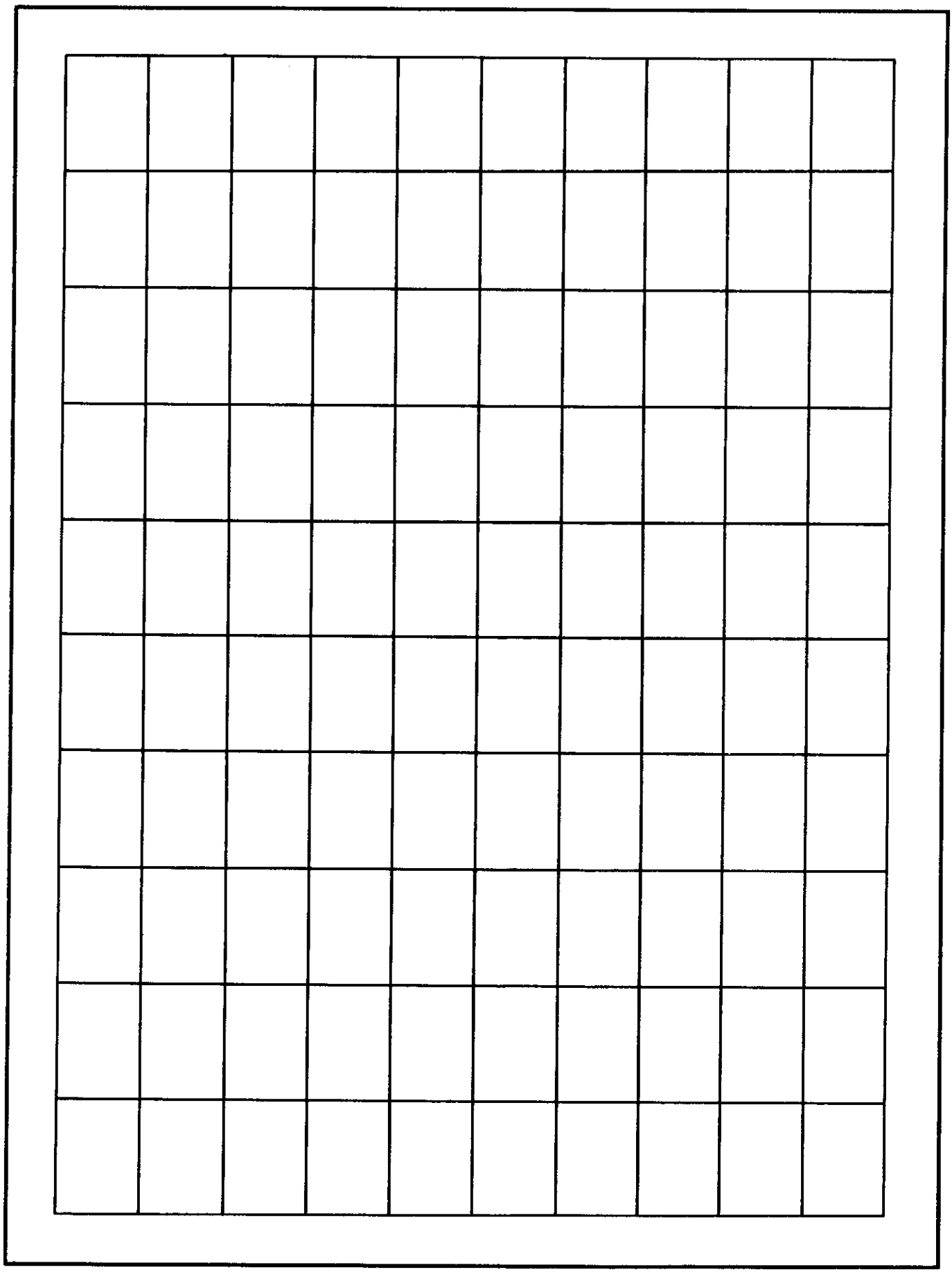
In row three again write from 0 to 9:

0 1 2 3 4 5 6 7 8 9
10 11 12 13 14 15 16 17 18 19
0 1 2 3 4 5 6 7 8 9

Tell the children that we must put a 2 in front of all the numbers in this row to make "twenties." Continue to 100.

Practice on slates until the children can correctly complete page 39.





SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates

CONCEPT: Counting from 100 to 200 by one's

Review the lesson on page 39, for the system of numerical order.

Then continue to build on this system, beginning with 100. If the children are still depending on putting a "one in front of each number in this row" or a "two," etc., then just continue with this system, by putting a "10" in front of each number:

100 101 102 103 104 105 106 107 108 109

Again write:

0 1 2 3 4 5 6 7 8 9

Next put an "11" in front of each number:

110 111 112 113 114 115 116 117 118 119

Continue in the same way, putting a "12" in front of each number, then "13," etc. until you reach 199. Teach 200 as a rote memory number for now.

If you wish to teach the numbers to 500, continue this method on slates. No further work is provided in this book for work beyond 200, as young children do not have opportunity to use such large numbers.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates

CONCEPT: Counting by hundreds to 1000

This should be a simple concept to teach. On the chalkboard write from 1 to 10 vertically:

1
2
3
4, etc.

Then explain that "hundreds" must have three figures in it. We call zeros place-holders, they just help the 1 to move over to a place where the number no longer means "one" --but now "one hundred."

After each number, write two zeros:

100
200
300
400 etc.

Count orally: "One hundred, two hundred," etc. Do not allow the children to say "ten hundred," but rather "one thousand." (If someone asks why, explain again that hundreds must have three figures--and the figure "1,000" has four figures.)

Using the model at the top of page 41, direct the children to write to 1000 by hundreds on their slates. When they can do it correctly, they should complete page 41 independently.

100	200	300	400	500	600	700	800	900	1000

100			400	
	700			

101					

37			40		

151					

160					

84				88	

171					

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates

CONCEPT: Random numbers from 1 to 200

This page is provided to remind the teacher that it is a separate skill to be able to start at any point with numbers and continue correctly in order.

For example, young children can often count to 100 correctly. But if you ask them to count to 100 starting with 25, they cannot do so without beginning at 1.

Much practice is needed in oral rote counting to be able to begin at any point and continue counting.

Use slates to practice this concept. Page 42 gives a sample of the kind of work needed, but far more practice will be necessary than this one page.

When the teacher is satisfied with the progress of the pupils on their slate drills, then page 42 may be assigned as a final check.

Do not proceed to page 43 until this skill is mastered.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flannelboard and 13 felt cut-outs, slates, flashcards

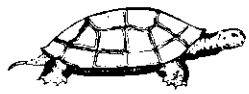
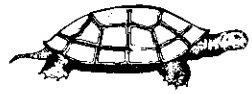
CONCEPT: Addition facts of 13

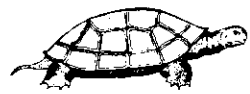
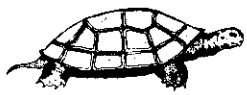
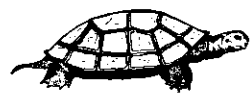
Use flannelboard and felt cut-outs in sets to demonstrate the addition facts of page 43.

Use flashcards for drill until the children can correctly orally respond.

Direct the class to copy the problems on page 43 to their slates, answering each one from the objects shown on the page.

Finally, complete page 43 independently.

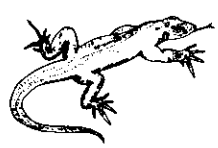
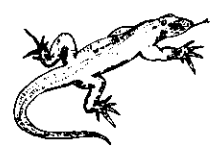






6+7=
7+6=









8+5=
5+8=













9+4=
4+9=

6 + □ = 13	8 + □ = 13	7 + □ = 12	9 + □ = 13
5 + □ = 12	4 + □ = 13	5 + □ = 13	3 + □ = 12
7 + □ = 13	3 + □ = 13	4 + □ = 12	6 + □ = 12

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flannelboard, felt cut-outs, slates, and flashcards

CONCEPT: Addition facts of 13, with missing addends

Again repeat the lesson on page 43, each step.

When the children know the addition facts well by rote memory, then the teacher can introduce the missing addend combination.

It is useless for the teacher to spend time teaching this page unless the combinations have been well learned. If a child is unable to give the correct answer to a simple addition fact, he cannot be expected to learn the missing addend combination, for it is even more complex.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flannelboard, felt cut-outs, slates and flashcards

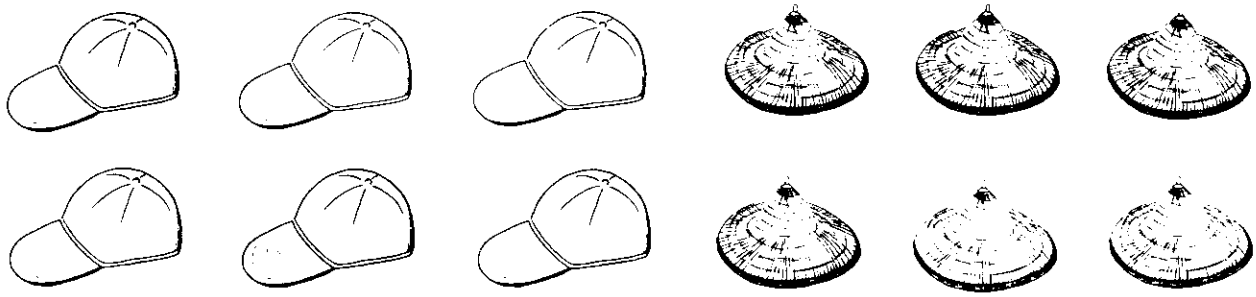
CONCEPT: Subtraction combinations of 13

Use flannelboard cut-outs to demonstrate the four related facts on each part of the page. If the children have by now mastered the addition facts, they will have little difficulty with the subtraction facts, as they can recognize the missing number.

Give practice drills with the four related addition-subtraction facts on the slates.

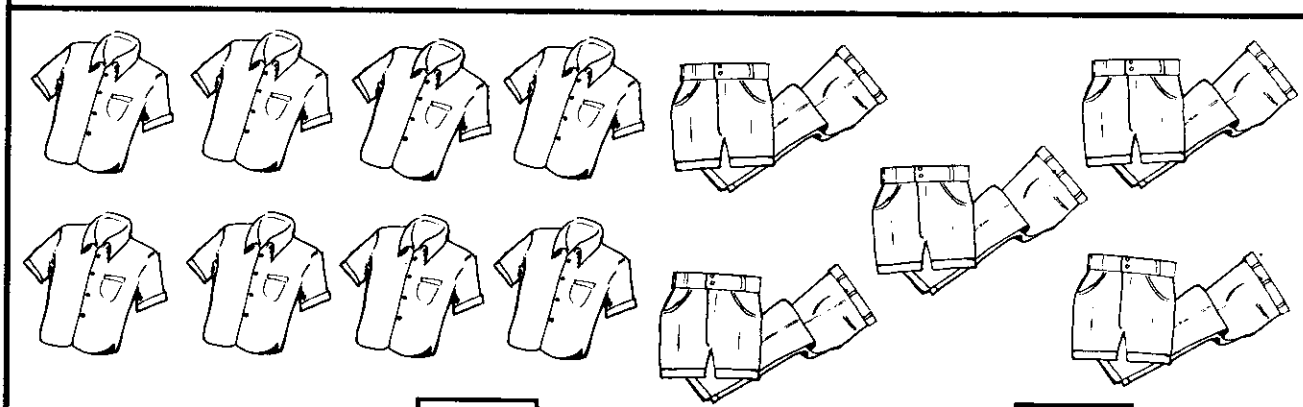
Use flashcards to present these facts.

Finally, when the children are competent, direct them to complete page 45, using the objects in each box, if needed.



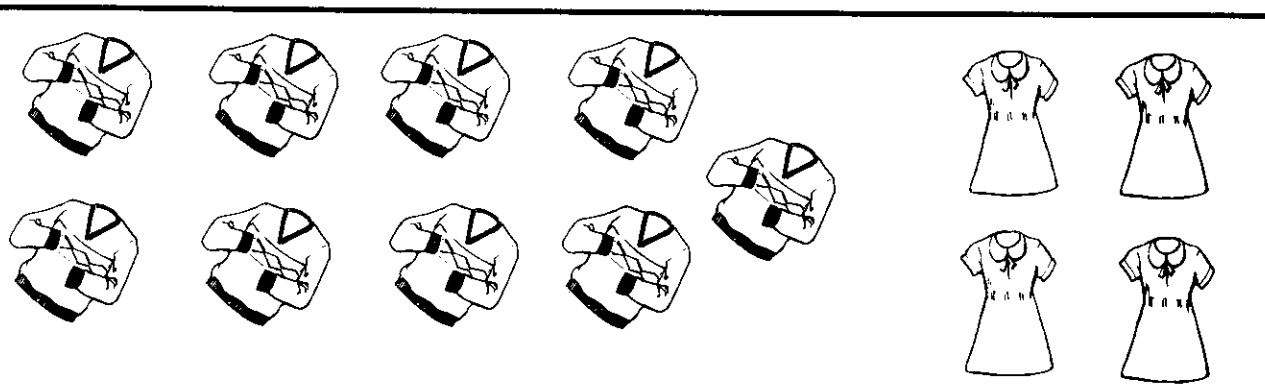
$6+7=\square$ $7+6=\square$

$13-7=\square$ $13-6=\square$



$8+5=\square$ $5+8=\square$

$13-5=\square$ $13-8=\square$



$9+4=\square$ $4+9=\square$

$13-4=\square$ $13-9=\square$

13 −8	13 −5	12 −7	13 −9	12 −5
13 −6	12 −6	12 −4	13 −7	13 −4
12 −3	11 −2	12 −5	12 −8	11 −8
12 −9	11 −3	11 −5	11 −6	11 −4

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flashcards

CONCEPT: Vertical subtraction combinations of 13

Use flashcards for drill of the subtraction combinations of 13.

Then mix in some combinations of 12 to keep the children alert, and to review these combinations previously learned.

If more drill is needed, assign work on their slates.

Then page 46 may be completed independently.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flannelboard, felt cut-outs, slates, and flashcards

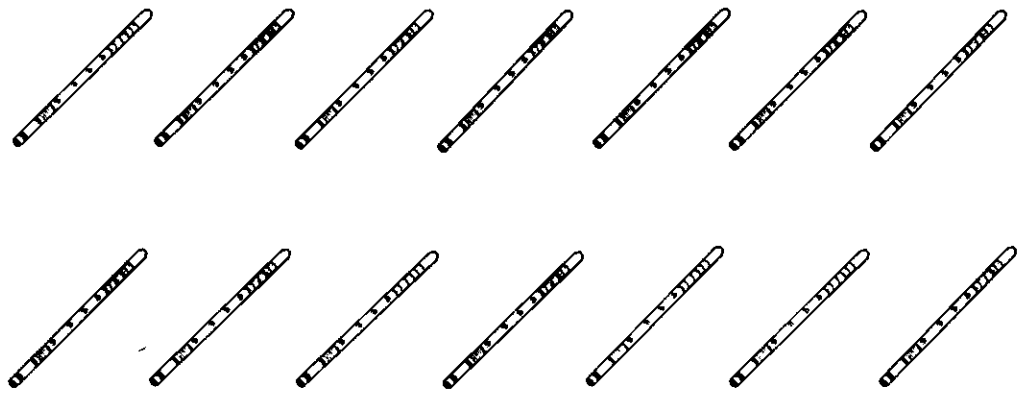
CONCEPT: Addition combinations of 14

Use flannelboard and felt cut-outs to illustrate the six addition facts presented on this page.

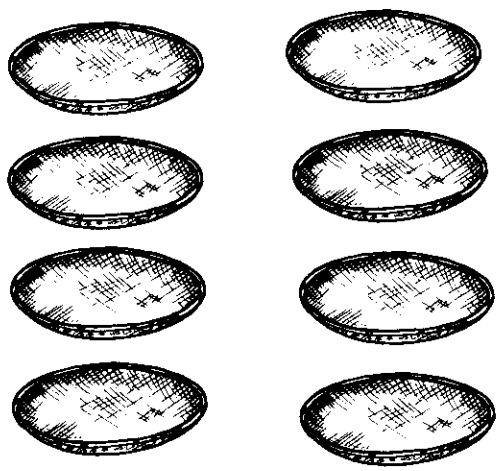
Use flashcards to drill on these six new facts. (Teacher may want to mix in two or three combinations of 13 to keep the children alert).

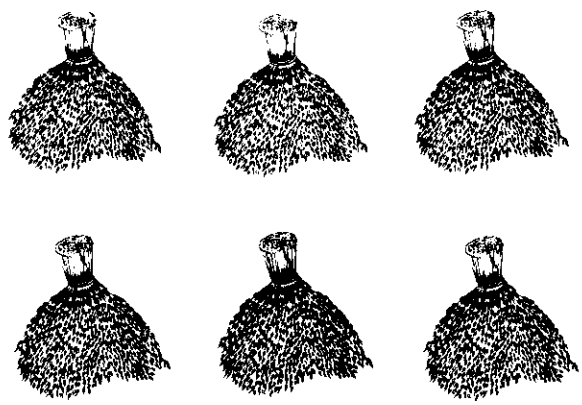
Use slates for practice in addition facts of 13 and 14.

When children can easily complete these combinations, assign page 47. The pictures on the page should help the slow child who has not yet learned the facts by rote memory.

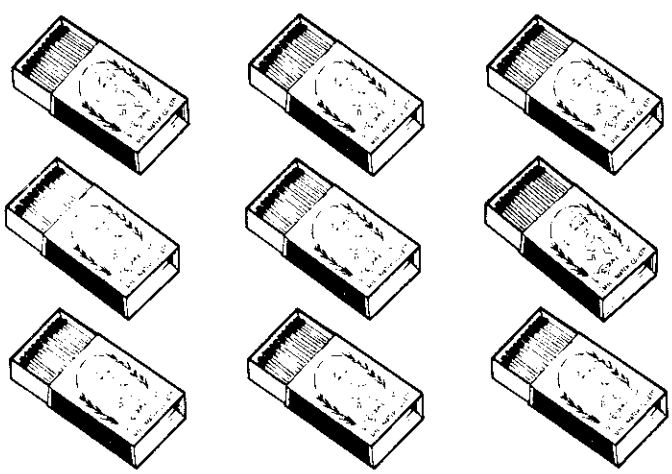


7+7=☐ 10+4=☐





8+6=☐ 6+8=☐



9+5=☐ 5+9=☐

6 +8	6 +7	6 +6	7 +7	7 +6
7 +5	9 +3	9 +4	9 +5	8 +4
8 +3	8 +5	8 +6	5 +8	5 +6
7 +4	5 +7	9 +2	6 +5	5 +9

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Addition flashcards

CONCEPT: Addition combinations of 14, (vertical form)

Use flashcards to review all addition facts of 11, 12, 13 and 14.

Give additional practice on slates with these combinations.

When class is competent, assign page 48 to be completed independently. This is a good page for a "test," since the children do not have objects for counting, and it will check their memorization of these facts.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flannelboard, felt cut-outs, flashcards and slates

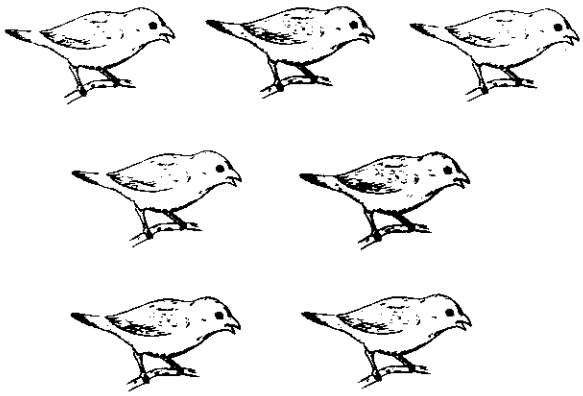
CONCEPT: Subtraction combinations of 14

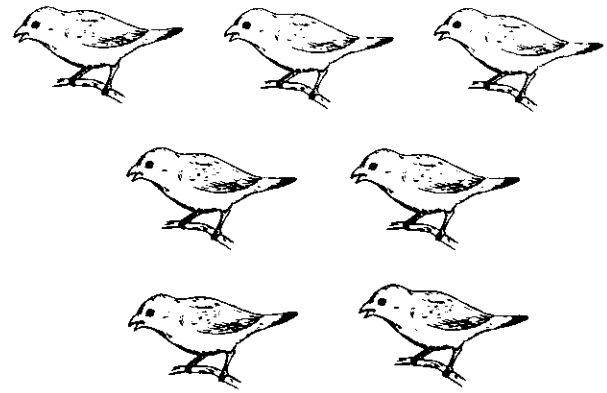
Use flannelgraph to illustrate the four related addition-subtraction facts on page 49.

Use flashcards (subtraction) to teach these five subtraction facts, then mix in the five addition facts as well.

If needed, the children may be given extra practice on slates.

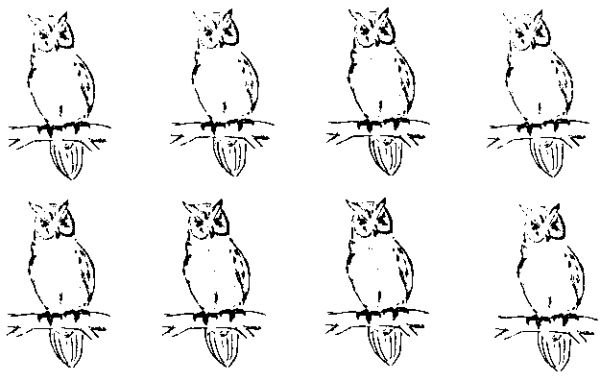
Assign page 49 to be completed independently. Slow children should be reminded to use the pictures at the top of each set of problems to help them solve the problems.

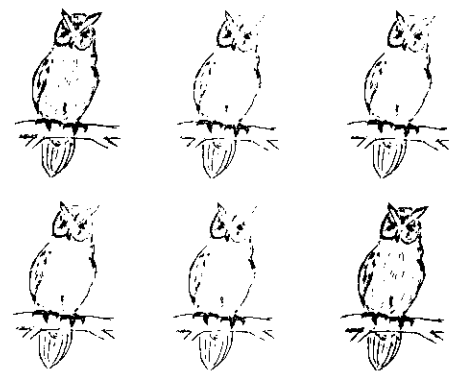




$7+7=\square$

$14-7=\square$



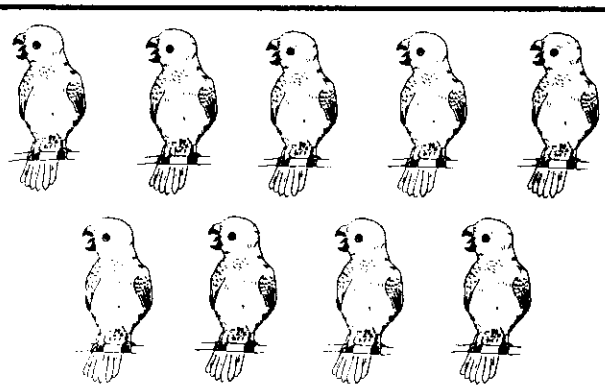


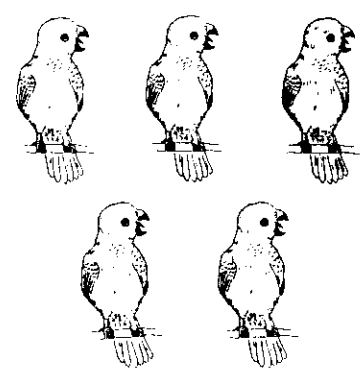
$8+6=\square$

$6+8=\square$

$14-6=\square$

$14-8=\square$





$9+5=\square$

$5+9=\square$

$14-5=\square$

$14-9=\square$

9 +5	6 +8	14 −7	14 −9	5 +9
8 +6	14 −8	7 +7	14 −5	14 −6
6 +7	9 +4	13 −5	13 −6	8 +5
13 −8	7 +6	13 −7	4 +9	5 +8

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flashcards

CONCEPT: Review of addition-subtraction combinations of 13 and 14

Use flashcards (or slates) for as much drill as is necessary to learn these facts.

Do not assign page 50 until the class is quite proficient in these facts. The teacher should help the class to strive for mastery in each lesson before proceeding to the next lesson. Some classes will need more practice than others. Do not judge your class's progress by another class.

It is better to know some material well than to be presented with much material, none of which is mastered.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates

CONCEPT: Counting by three's to 27

Teach the children to read the numbers at the top of page 51 in this manner:

"Whisper the little numbers, then say the big numbers loudly. Whisper 1, 2, 3, 4, 5, 6," etc. Do this several times until the children can go faster and will hear only the "3, 6, 9," etc.

Next ask them to read only the big numbers, skipping all the rest:

3, 6, 9, 12, 15, 18, 21, 24, 27.

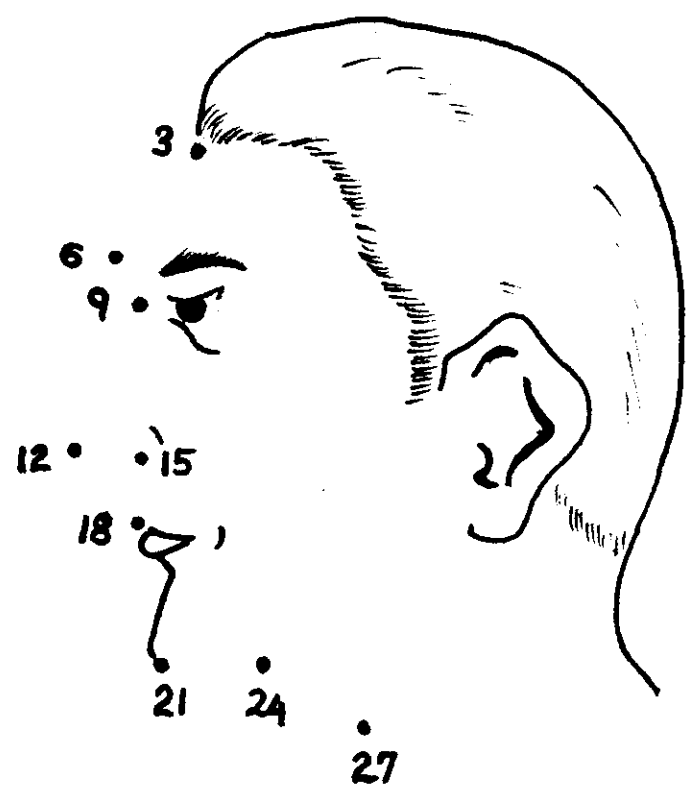
Repeat several times.

On slates direct the class to write to 27, counting by 3's in this manner. If they cannot remember the order, allow them to refer back to page 51.

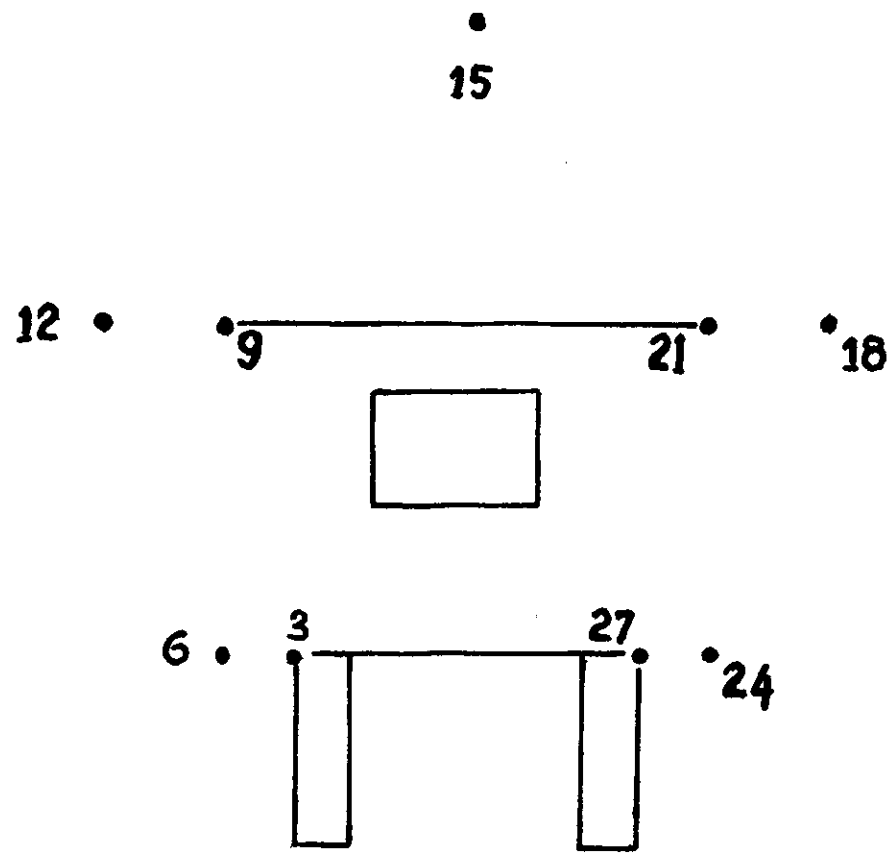
When they are able to write to 27 by three's without help or referring to their books, they are ready to complete the line on page 51.

Assign them to follow the dots to make a picture on page 51, putting their pencils on the dot by number 3 to begin. Color the picture when finished.

1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18
19	20	21	22	23	24	25	26	27



3	6	9	12	15	18	21	24	27



SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates

CONCEPT: Counting by three's to 27

Review the lesson on page 51.

If children have mastered the work there, it will be easy for them to complete this page.

If the teacher does not feel the work is well done on page 51, she should give more practice on slates, and oral rote counting before attempting page 52.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates, multiplication flash cards

CONCEPT: Multiplication by three's

If the children have learned well how to count by three's, they will have little difficulty in transferring that knowledge to multiplication.

Remind them that "6 x 3" tells us that we are going to count by three's, 6 times. Most children can do this without difficulty.

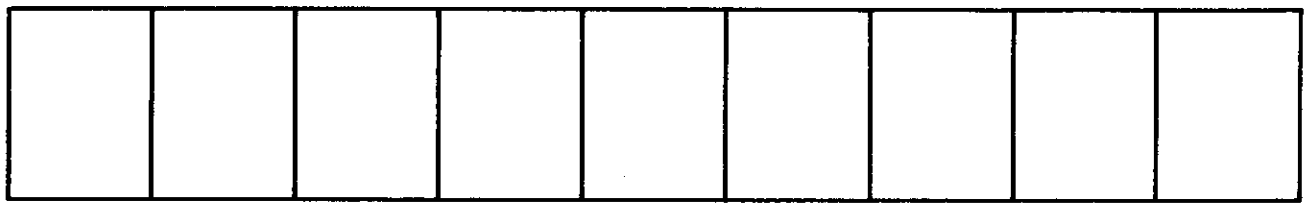
Continue in this way through the entire set of 9 problems.

Use the multiplication flash cards first in order, (1 x 3, 2 x 3, 3 x 3, etc.) until the children can easily do them in order. Then mix them up, and allow time for them to count by three's to the correct answer, if necessary.

Finally, teach for rote memory. Understanding the concept should always precede rote memory. But the concept may not be learned until it is in the child's memory.

This page should be worked from top to bottom, (first completing the facts in order) then moving to the right-hand column, and completing the same facts, out of order.

Give as much additional practice on slates as is needed.



1×3=	7×3=
2×3=	4×3=
3×3=	6×3=
4×3=	1×3=
5×3=	5×3=
6×3=	8×3=
7×3=	2×3=
8×3=	9×3=
9×3=	3×3=

6 × 3	5 × 3	1 × 3	2 × 3
3 × 6	3 × 5	3 × 1	3 × 2
9 × 3	3 × 3	7 × 3	4 × 3
8 × 3	3 × 9	3 × 7	3 × 4

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Multiplication flashcards

CONCEPT: Vertical multiplication of three's

Review the work presented on page 53. If the children have learned the facts well, this page will not give difficulty.

Remind the class that multiplication can be written two ways:

$$6 \times 3 = \_\_\_\_ \qquad \text{or} \quad \begin{array}{r} 6 \\ \times\ 3 \\ \hline \end{array}$$

Give practice on slates for proficiency. When the class has completed page 54 independently, the teacher should check each child's work to decide whether the class is ready to go on to new work.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Multiplication and division flashcards

CONCEPT: Division by three's, as the reverse process of multiplication

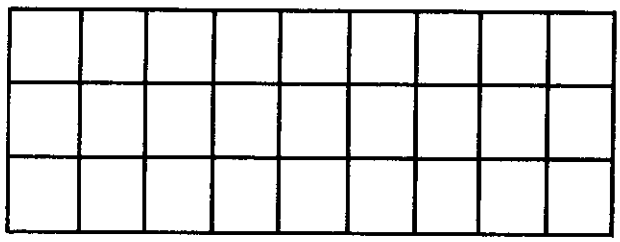
Use the multiplication flashcards to demonstrate that if 3 x 9 = 27, then 27 ÷ into 9 parts would make 3 sets or (27 ÷ 9 = 3).

Do this with each problem on page 55. If the multiplication facts have been well-learned, the related division facts will present no great difficulty.

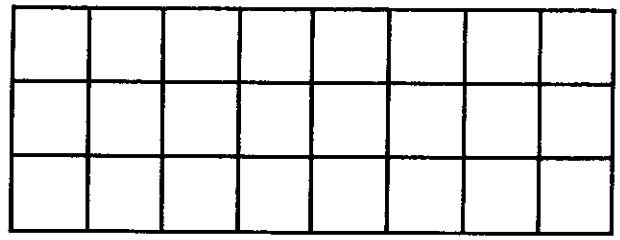
Orally complete page 55 together. Show that there are 27 boxes in the first problem. The problem tells us to divide those 27 boxes into 3 rows. How many boxes will be in each row? Etc.

When the children understand the concept, give additional practice on slates.

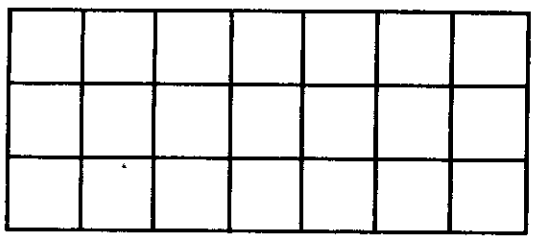
Assign page 55 to be completed independently.



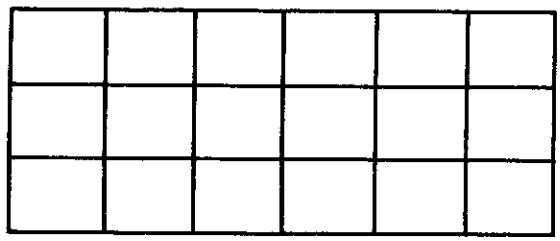
$27 \div 3 =$ ☐



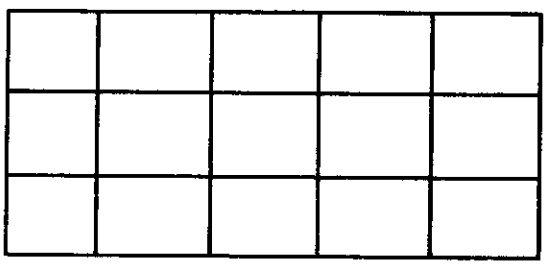
$24 \div 3 =$ ☐



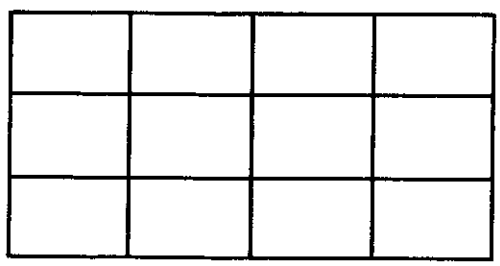
$21 \div 3 =$ ☐



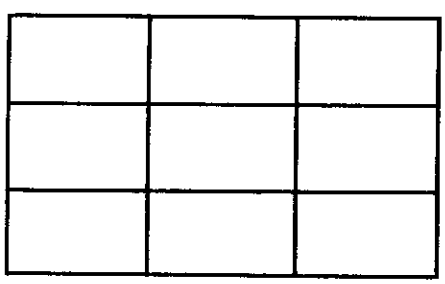
$18 \div 3 =$ ☐



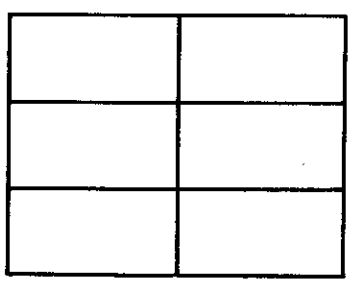
$15 \div 3 =$ ☐



$12 \div 3 =$ ☐



$9 \div 3 =$ ☐



$6 \div 3 =$ ☐

$3\overline{)27}$	$3\overline{)18}$	$3\overline{)24}$
$3\overline{)15}$	$3\overline{)9}$	$3\overline{)21}$
$3\overline{)3}$	$3\overline{)6}$	$3\overline{)12}$
$6\overline{)18}$	$7\overline{)21}$	$8\overline{)24}$
$9\overline{)27}$	$4\overline{)12}$	$5\overline{)15}$

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Multiplication and division flash-cards

CONCEPT: Division by three's

This page should provide a "test" of the children's mastery of the material on the preceding pages.

Children who cannot correctly complete most of the work on page 56 independently, should not go on to the next lesson.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Multiplication flashcards, two's and three's

CONCEPT: Multiplication by two's and three's

This is a review page, provided to reinforce learning of these combinations.

3	3	3	2	2
×3	×2	×1	×1	×2
3	2	2	3	2
×5	×1	×5	×4	×4
2	3	3	2	2
×3	×6	×8	×6	×9
10	2	2	3	3
×2	×7	×8	×7	×9

$3\overline{)9}$	$2\overline{)8}$	$6\overline{)18}$	$5\overline{)15}$
$1\overline{)3}$	$7\overline{)21}$	$4\overline{)12}$	$10\overline{)20}$
$2\overline{)6}$	$3\overline{)12}$	$8\overline{)24}$	$11\overline{)22}$
$3\overline{)30}$	$12\overline{)36}$	$9\overline{)27}$	$2\overline{)18}$

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Division flashcards, two's and three's

CONCEPT: Division by two's and three's

Again this is a review page, which should help to reinforce the division combinations.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flannelboard, felt cut-outs, slates, and addition flashcards

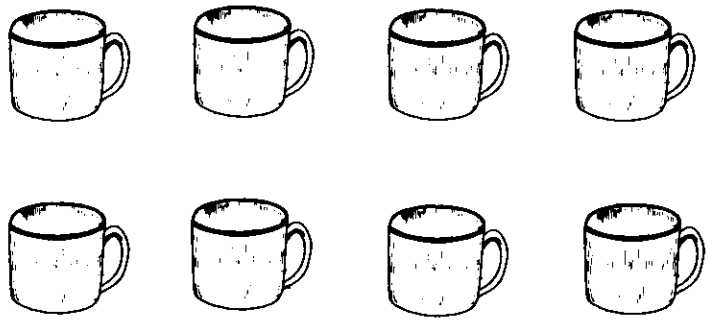
CONCEPT: Addition combinations of 15

Use flannelboard and felt cut-outs to illustrate each addition fact presented on page 59.

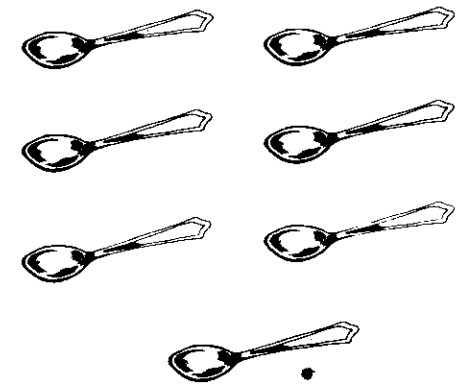
Use flashcards to practice these six new facts. Mix in several combinations of 14.

Use slates to practice adding these combinations from chalkboard. (Teacher should include some combinations of 14 for review).

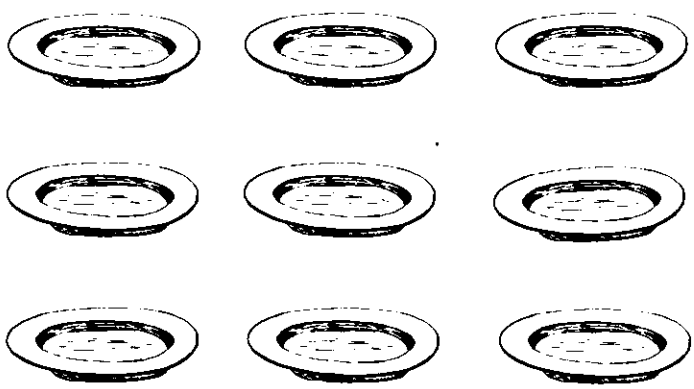
Assign page 59 to be completed independently using the pictures for help, if necessary.



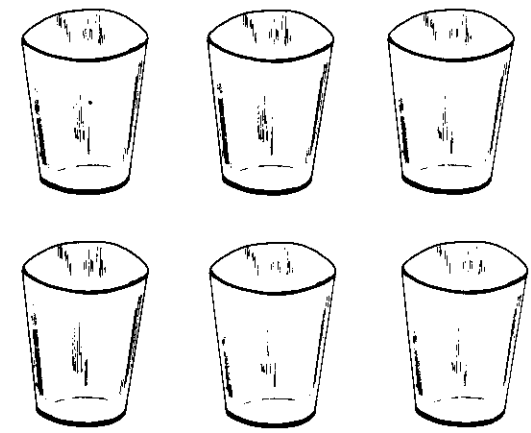
8+7=☐



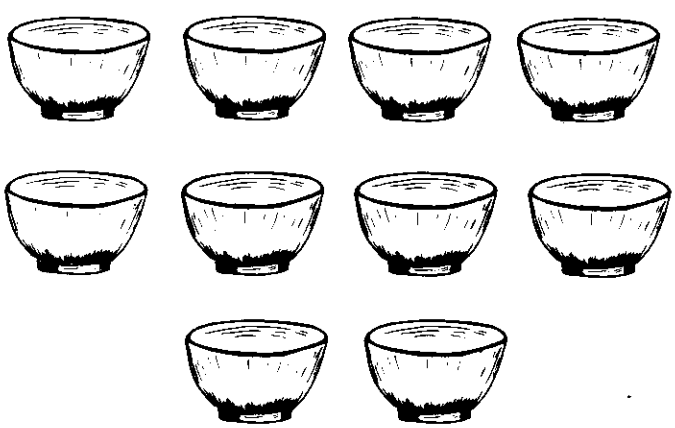
7+8=☐



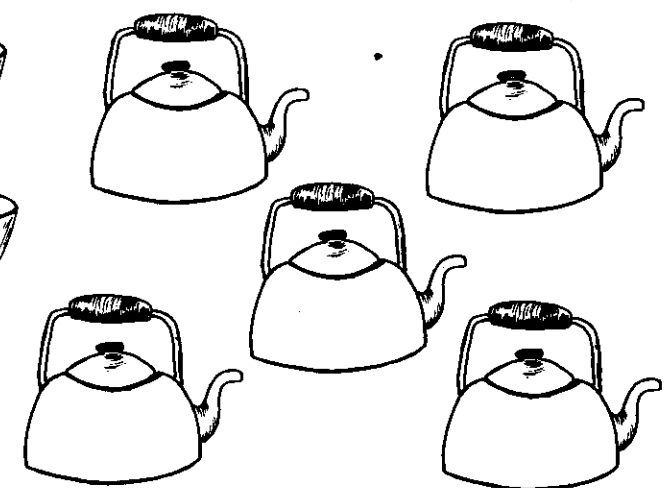
9+6=☐



6+9=☐



10+5=☐



5+10=☐

6 + 9	7 + 8	8 + 7	9 + 6
10 + 5	7 + 7	9 + 5	8 + 6
15 + 0	5 + 9	7 + 6	14 + 0
8 + 7	7 + 7	6 + 9	5 + 9

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Addition flashcards, slates

CONCEPT: Addition combinations of 13, 14, 15

This review page provides more practice in addition facts. Any child who cannot complete this page independently needs more help before going on to page 61.

SUGGESTIONS TO TEACHERS

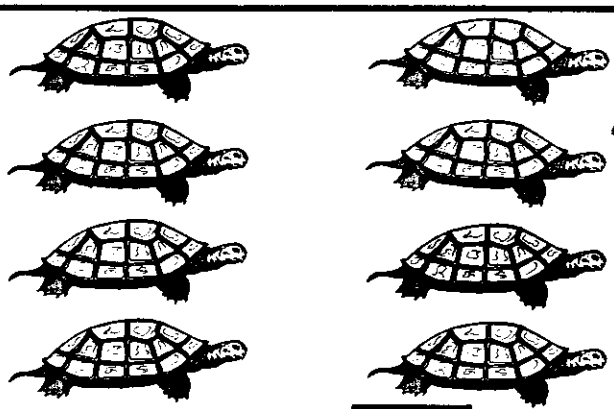
MATERIALS NEEDED: Addition and subtraction flash-cards, slates, flannelboard and felt cut-outs

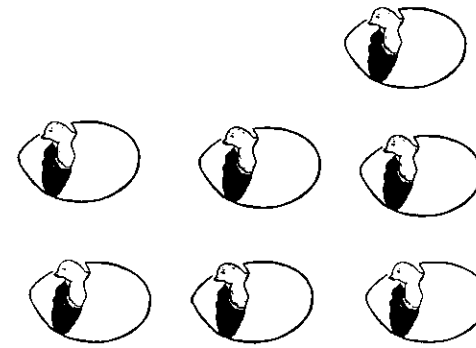
CONCEPT: Subtraction facts to 15

Use flannelboard and felt cut-outs to illustrate the four related facts of 15, on each part of the page. By now most children readily recognize the pattern.

Use flashcards for practice, asking the children to write their answers on their slates.

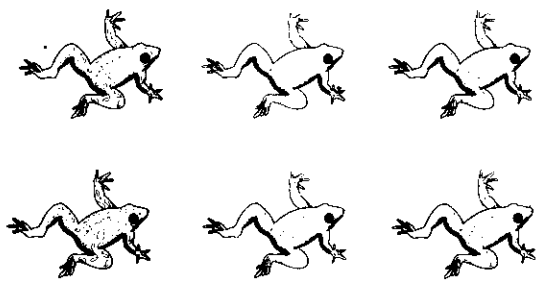
Assign page 61 to be completed independently, using pictures if necessary to compute.





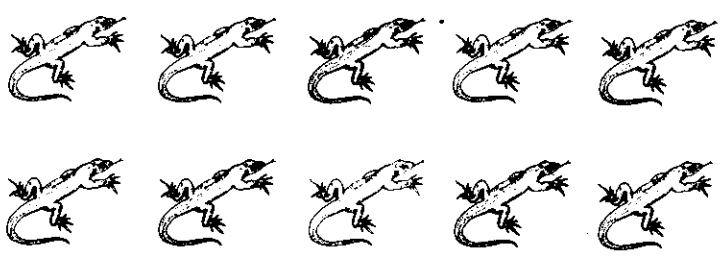
8+7=□ 7+8=□

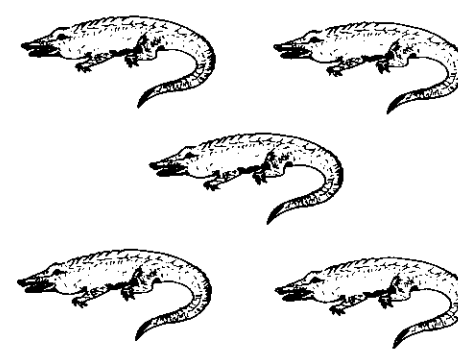
15−7=□ 15−8=□



9+6=□ 6+9=□

15−6=□ 15−9=□





10+5=□ 5+10=□

15−5=□ 15−10=□

15 −10	15 −9	15 −8	15 −6
14 −9	14 −8	15 −7	14 −7
15 −5	14 −6	14 −10	14 −5
13 −7	13 −5	13 −6	13 −9

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Subtraction flashcards 13, 14, 15

CONCEPT: Review of subtraction facts

Review these subtraction facts with flashcards, or on slates or any other method. Teacher may want to use "spelldown" for these:

Divide the class into half. One half of the class stands against one wall--the other half stands against the opposite wall. The children are instructed that they cannot help each other--they may make no sound until their turn.

The teacher shows any addition or subtraction fact first to the first person in line on team 1. If that person answers correctly, he stays in place. If his answer is incorrect, he must sit down in his desk. The teacher takes a new card for the first person of team 2, etc. Teacher continues until time is up.

The team which has the most members standing at the end of the game, is the winning team.

This can be used at any time for practice. Then assign page 62 to be completed.

SUGGESTIONS TO TEACHERS

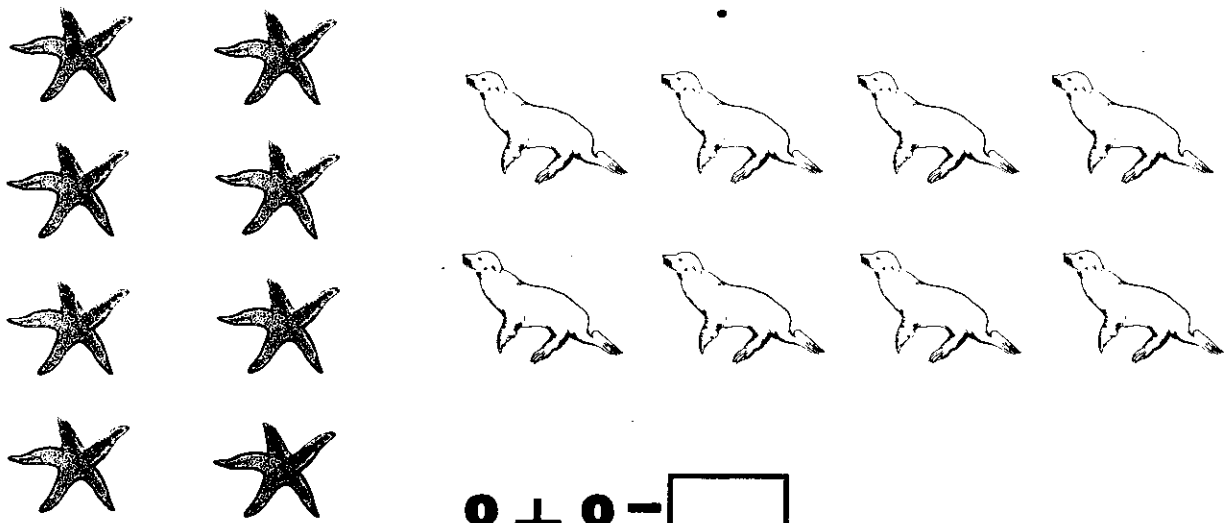
MATERIALS NEEDED: Flannelboard and felt cut-outs, additions flash cards, and slates

CONCEPT: Addition facts of 16

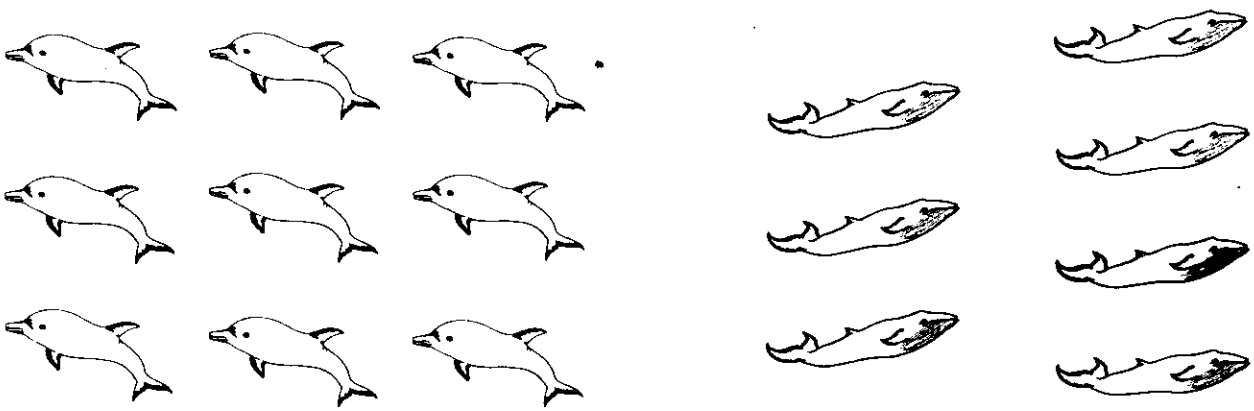
Use flannelboard and felt cut-outs to illustrate each addition fact on page 63.

Use flashcards to review all addition facts of 11 through 16. Give practice drills on slates.

Assign page 63 to be completed with the help of the pictures.

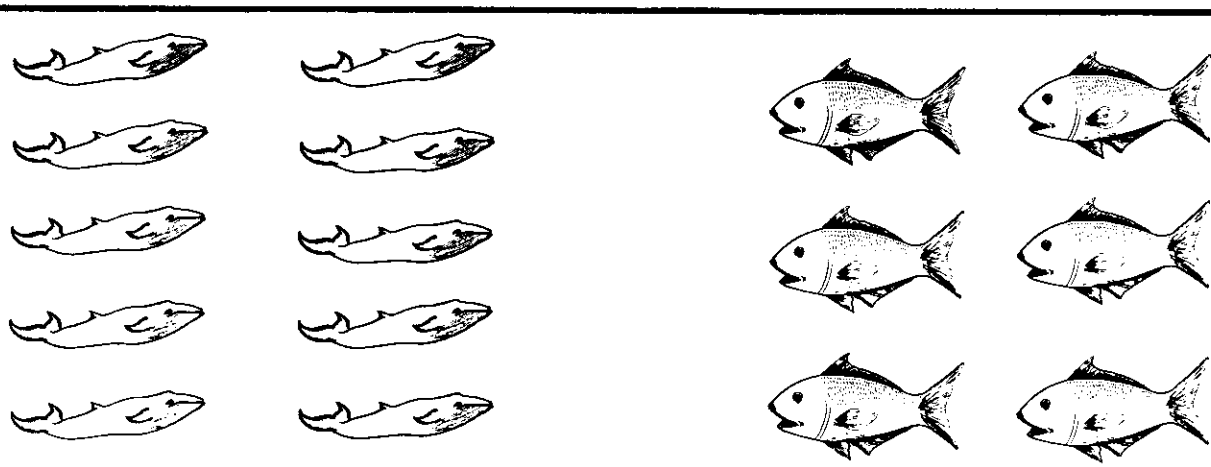


8+8=□



9+7=□

7+9=□



10+6=□

6+10=□

8 +8	8 +7	9 +7	8 +7
10 +7	10 +6	10 +3	10 +4
7 +7	8 +6	10 +2	9 +2
5 +6	7 +4	7 +5	7 +6

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Addition flash cards

CONCEPT: Addition facts of 11 through 16

Review again especially the new addition facts of 16, and also the facts from 11 through 16.

Assign page 64 to be completed independently.

SUGGESTIONS FOR TEACHERS

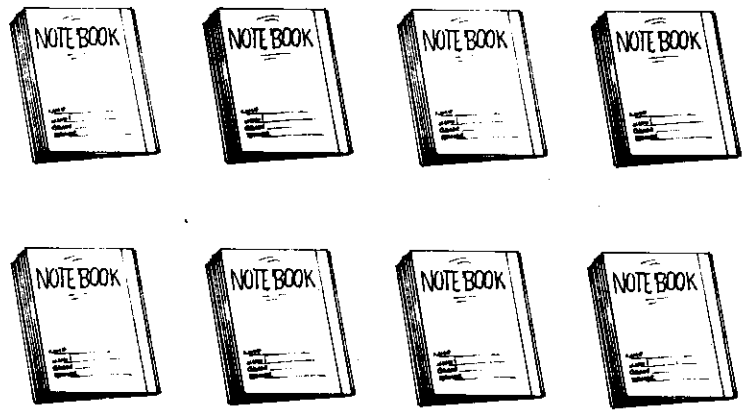
MATERIALS NEEDED: Flashcards

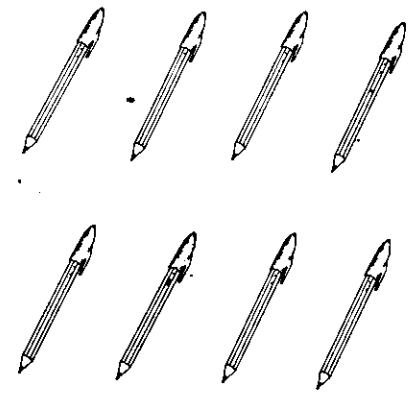
CONCEPT: Addition and subtraction facts of 16 with missing addends or subtrahends

Introduce the subtraction facts of 16, with the addition facts of 16, as related facts. The chalkboard should be a sufficient introduction, by this time.

Use flash cards to review these facts.

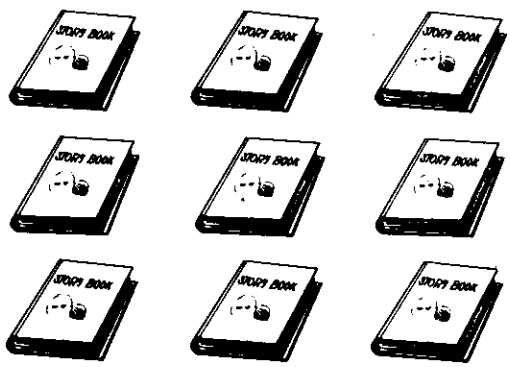
Assign page 65 to be completed independently.

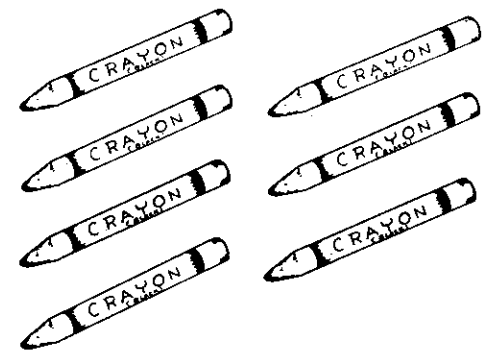




$8 + \square = 16$

$16 - \square = 8$



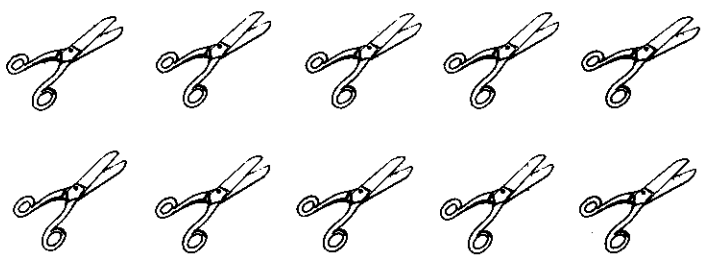


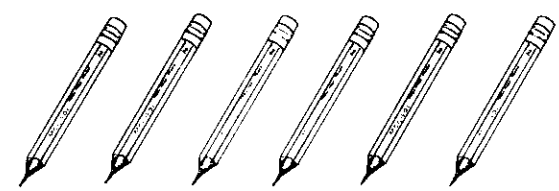
$9 + \square = 16$

$7 + \square = 16$

$16 - \square = 9$

$16 - \square = 7$





$10 + \square = 16$

$6 + \square = 16$

$16 - \square = 10$

$16 - \square = 7$

16 −9	16 −10	8 +8	9 +7	16 −6
7 +9	10 +6	16 −8	8 +7	16 −7
10 +5	7 +7	9 +6	5 +6	7 +6
6 +6	7 +5	9 +2	9 +4	8 +4

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Addition and subtraction flashcards

CONCEPT: Review of addition and subtraction facts 11 through 16

This page is meant to check the children's mastery of the facts so far. If they are not able to complete this page with most problems correctly answered, they are not ready to begin new work.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flannelboard and felt cut-outs, flashcards (addition), slates

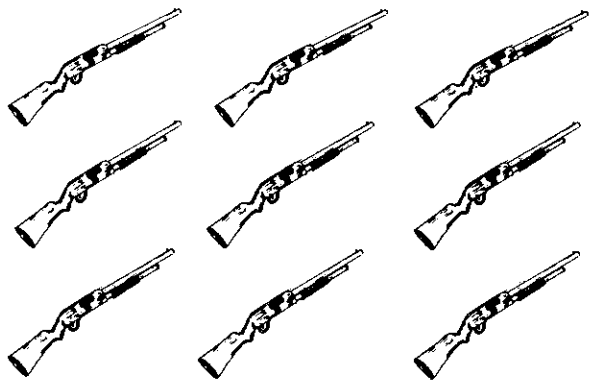
CONCEPT: Addition facts of 17 and 18

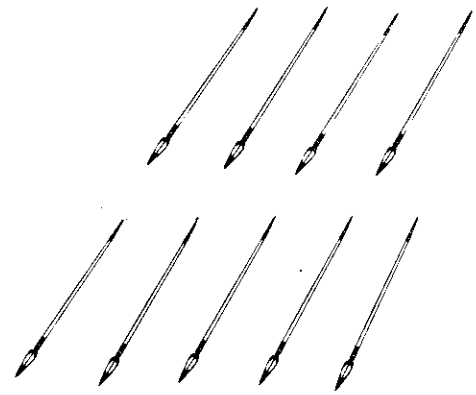
Use the sets of felt cut-outs to illustrate the new addition facts.

Use flashcards to review these new facts. Mix in the addition facts of 16.

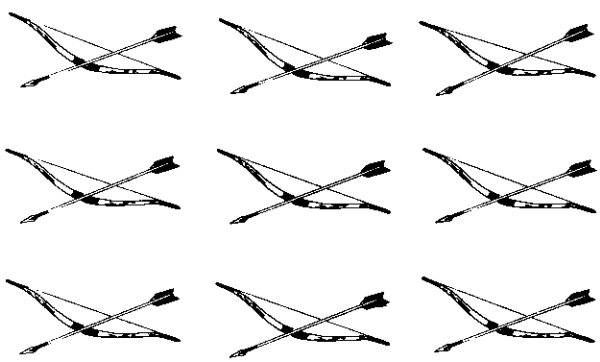
Ask the children to complete the page, using the pictures to help them.

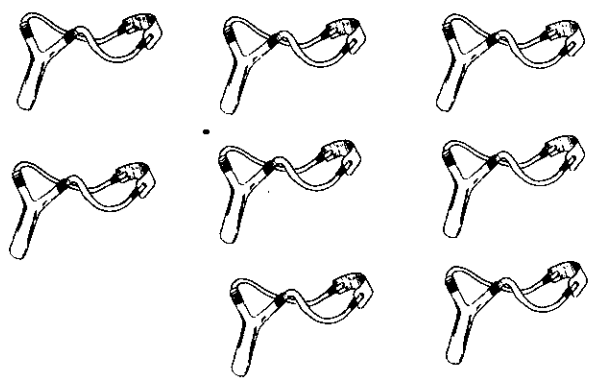
On slates review all addition facts, from 11 to 18.





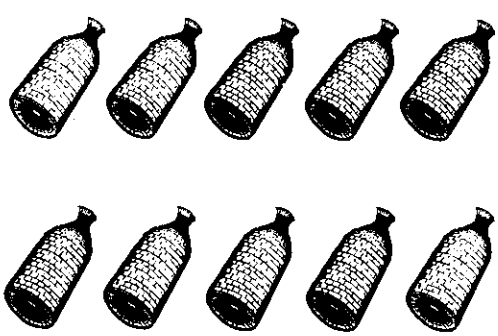
9+9=□

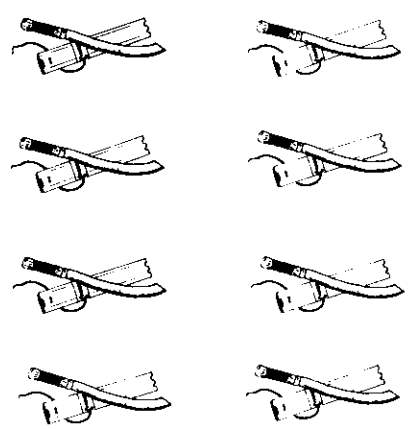




9+8=□

8+9=□





10+8=□

10+7=□

18 −9	17 −8	17 −9	16 −8	15 −8
16 −9	15 −10	16 −7	16 −10	15 −9
14 −9	13 −4	15 −7	12 −6	14 −7
14 −8	12 −9	13 −8	13 −6	14 −6

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Subtraction flashcards, slates

CONCEPT: Subtraction facts of 17 and 18

Review all subtraction facts through 16. Then present the new facts with flashcards.

Practice with these facts until the children are familiar. Assign problems to be completed on slates.

When the children are able to work them independently on slates, assign page 68.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED:

CONCEPT: Missing sign, addition or subtraction

Present this lesson on the chalkboard. Put one problem on the board at a time, together discussing the logic: 8 △ 8 = 16.

The two numbers, 8 and 8 somehow have to be worked together until they make 16. If we had 8, and take away 8, will we have 16? (No)

If we have 8 and put 8 more with it, will that make 16? (Yes)

Continue through the page, pointing out that if the answer is <u>larger</u> then the other two numbers--we must have added to get a bigger answer, etc.

Complete the page when the children show ability to do so.

8 △ 8 = 16

8 △ 8 = 0

9 △ 5 = 4

9 △ 5 = 14

5 △ 8 = 13

6 △ 7 = 13

4 △ 7 = 11

4 △ 1 = 3

6 △ 5 = 11

6 △ 5 = 1

7 △ 7 = 14

10 △ 5 = 5

6 △ 6 = 12

12 △ 6 = 6

18 △ 9 = 9

8 △ 9 = 17

10 △ 1=11

16 △ 8=8

5 △ 6=11

12 △ 6=6

7 △ 7=14

13 △ 7=6

8 △ 3=11

15 △ 9=6

8 △ 4=12

14 △ 8=6

7 △ 6=13

15 △ 7=8

12 △ 2=10

9 △ 8=17

9 △ 2=11

15 △ 8=7

7 △ 5=12

14 △ 9=5

5 △ 8=13

9 △ 4=13

7 △ 4=11

15 △ 10=5

13 △ 9=4

9 △ 3=12

15 △ 6=9

8 △ 5=13

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED:

CONCEPT: Missing sign, addition or subtraction?

Review the lesson on page 69, again orally discussing the entire page, before assigning the class to complete it independently.

Teacher should check the work of the pupils to be sure they have understood this operation.

If extra work is needed, class can get extra practice on their slates, as teacher assigns.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates

CONCEPT: Two-column addition

Introduce two-column addition on the chalkboard, being careful to always add the right column first, and pointing this out to the class.

In the first problem, $\begin{array}{r} 12 \\ +5 \\ \hline \end{array}$ teach the class to add the right column in the same way they have already learned. Since there is nothing to add in the left dolumn, we just bring the 1 down to the answer space.

Continue with enough examples that children can volunteer answers.

Give these same problems to the class to complete on their slates. Teacher should check students' work as they finish to be sure that they are able to follow the procedure.

Assign page 71 to be completed independently.

Do not assign problems with addends of more than 9. Students have not yet been taught to "carry."

12 +5	89 +0	34 +4	65 +3
70 +7	25 +1	36 +3	47 +1
91 +3	80 +6	74 +1	63 +3
53 +4	44 +2	31 +5	28 +0

23 +45	56 +23	47 +31	81 +11
90 + 3	10 +59	24 +65	38 +50
62 +34	78 +11	34 +34	56 + 1
65 +10	43 +12	39 +40	78 +20

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates

CONCEPT: Two column addition

Review the lesson on page 71. Next introduce the problems presented on page 72, one at a time. Remind the class again to add the right hand column, then the left. Children should be able to read the number that is the answer.

For example the first problem adds to 68. The children should not be allowed to read the number as "six-eight" but should be able to read it as "sixty-eight."

If extra practice is needed on this skill, give more problems on slates. Beware of using problems that add to more than nine.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: slates

CONCEPT: Two column subtraction

On chalkboard introduce two-column subtraction in the same way as addition:

```
  15
- 5
```

Begin with the right hand column subtracting. Since there is nothing to subtract from the 1, it is just brought down to the answer line. Complete many samples with the class.

When the children are assigned to complete page 73, teacher should be checking children to be sure they work from right to left in each problem.

15 −5	27 −3	46 −5	82 −0
31 −1	93 −2	58 −4	64 −4
79 −6	90 −30	88 −7	89 −9
22 −2	47 −5	88 −6	59 −7

97 -36	85 -45	73 -52	51 -50
69 -55	48 -37	36 -24	24 -12
12 -10	98 -46	86 -53	74 -41
62 -20	50 -30	47 -13	35 -14

SUGGESTIONS TO TEACHER

MATERIALS NEEDED: Slates

CONCEPT: Two column subtraction

Review lesson on page 73.

On chalkboard introduce the first few problems on page 74, one at a time. By now the students should be able to direct the teacher, step by step, as to what should be done.

Assign page 74 to be completed independently.

If checking shows that more practice is needed, assign similar problems for slates.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates

CONCEPT: Two-column subtraction

Review again pages 73-74. Assign class to complete page 75 independently. Check children's work.

39 −15	48 −34	57 −23	66 −42
75 −55	84 −60	93 −71	102 −82
26 − 5	15 − 3	94 −74	83 −62
59 −10	74 − 2	38 − 4	62 −31

574 −463	320 −100	581 −541	404 −203
378 −65	429 −28	105 −84	546 −43
347 −47	250 −40	474 −63	517 −206
517 −204	243 −121	329 −218	260 −260

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates

CONCEPT: Three-column subtraction

Students will likely need only to be shown one or two examples completed on the chalkboard to understand that this differs little from two-column subtraction.

Can your class read the numbers presented on this page? If not, take more time at this point to practice reading figures of the hundreds.

If necessary turn back to page 39 and 40 to review, and then practice on slates.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Roman Numeral flashcards

CONCEPT: Roman Numerals from 1 to 12

Introduce the numerals I, II, and III first. Children have no trouble learning these.

Skip four (IV) and next introduce V as 5. Mix up the four cards, I, II, III, and V, telling the children to softly call out the numeral as teacher shows the flashcard.

Next introduce 4, IV as 1 subtracted from 5. Since the I is on the left side of the V, the I is subtracted. 5-1=4 --so IV is four.

When the children can readily name these numerals go on to:

VI --now the I is on the right side of the V, so the I is added to the V: 5 + 1 = 6, so VI = 6.

VII is 5 + 1 + 1 or 7

VIII is 5 + 1 + 1 + 1 or 8

Skip 9 (IX)

X is 10.

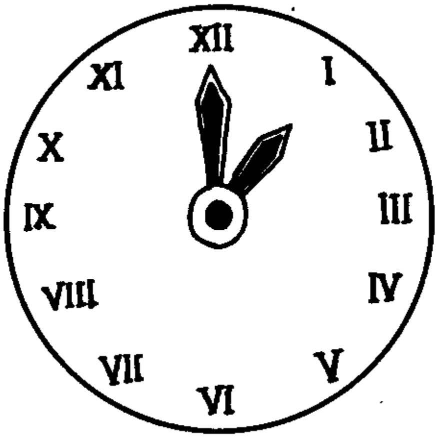
IX is 9, because the I is on the left of the X, so it is subtracted from the X.

The children may like to know that the Romans had a system of numbers using these letters, which went into the thousands. We do not use the numbers in many places today, but oacasionally clocks will be written with these numerals.

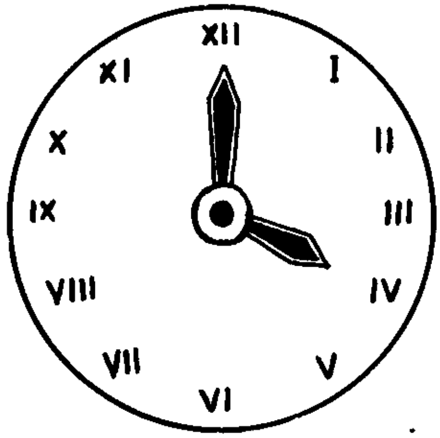
I	II	III	IV	V	VI
1	2	3	4	5	6
VII	VIII	IX	X	XI	XII
7	8	9	10	11	12

1	2	3	4	5	6
7	8	9	10	11	12

8	12	1	7	4	3
2	9	10	11	5	6


XII
I
II
III
IV
V
VI
VII
VIII
IX
X
XI

: ______


XII
I
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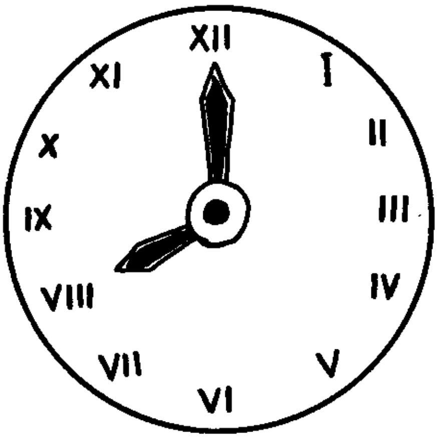
IX
X
XI

: ______


XII
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VIII
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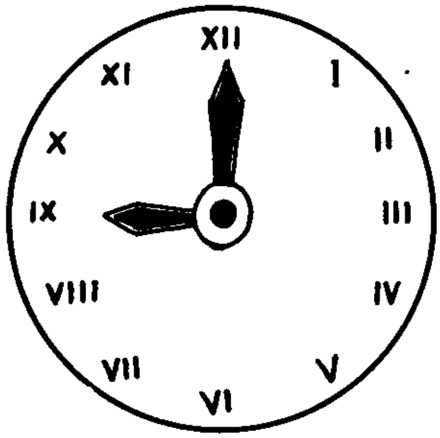
X
XI

: ______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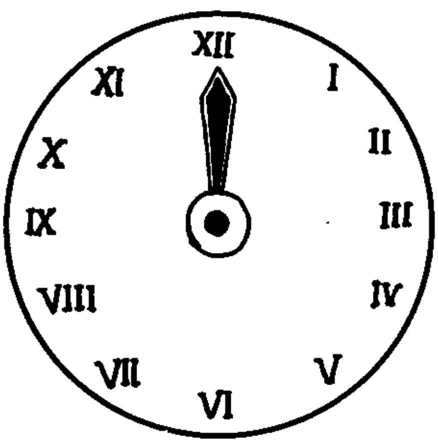
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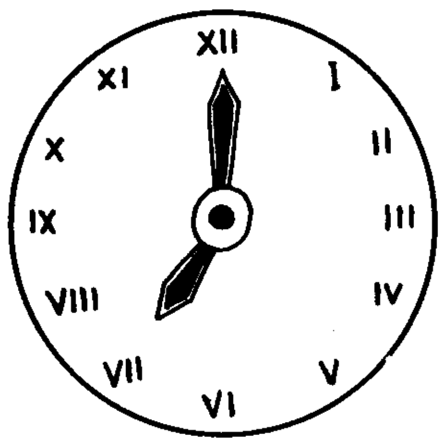
XII
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XI

: ______

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Roman Numeral Flashcards
Roman Numeral clock

CONCEPT: Telling time on the hour, with Roman Numerals

Review the lesson from page 77.

To be sure that children can still remember the twelve Roman Numerals, use the flashcards and ask the class to softly call out the number of each.

Use the demonstration clock with Roman Numerals. Set the hands at various hours (8:00, 12:00, etc.) and ask various children to read the time.

When the class is able to do this, orally read together the time on each clock on page 78.

Direct the class to complete the page independently.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Roman numeral clock, slates

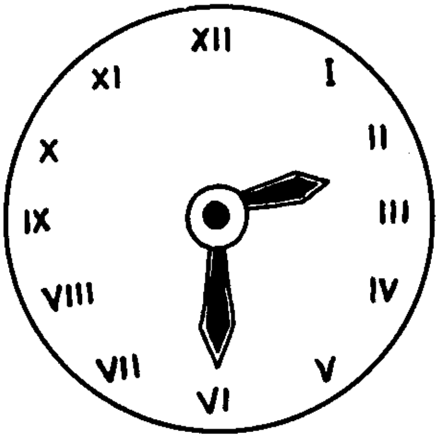
CONCEPT: Telling time by half-hour (with Roman numerals)

Use the demonstration "clock" to practice telling time by the half-hour.

The class may need to be reminded that "half past" means that the "long hand" has gone half way around the clock.

Practice orally reading the time shown on each clock on page 79. Then practice writing on slates the time shown on teacher's demonstration clock.

Assign the class to write the time shown on each clock on page 79.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XI

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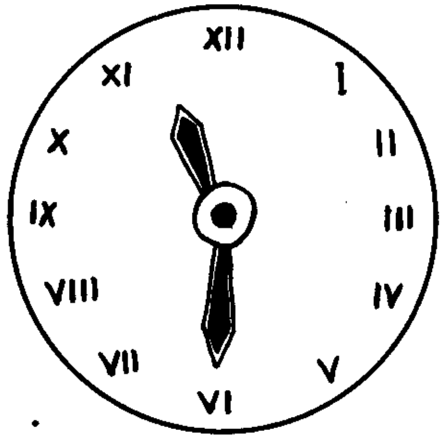
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XI

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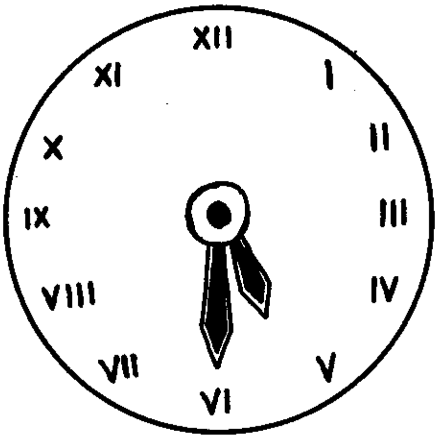
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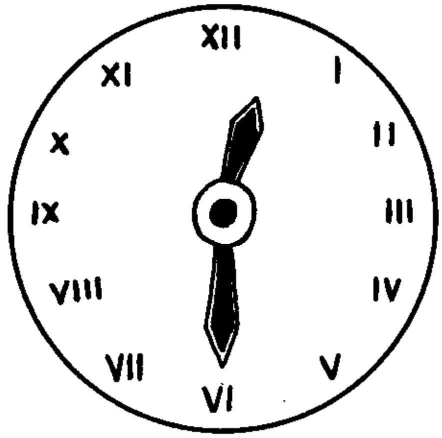
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XI

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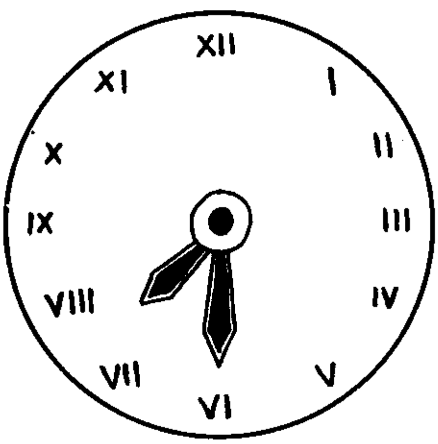
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XI

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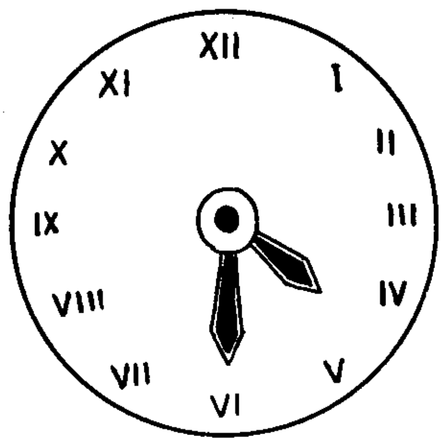
XII
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VIII
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XI

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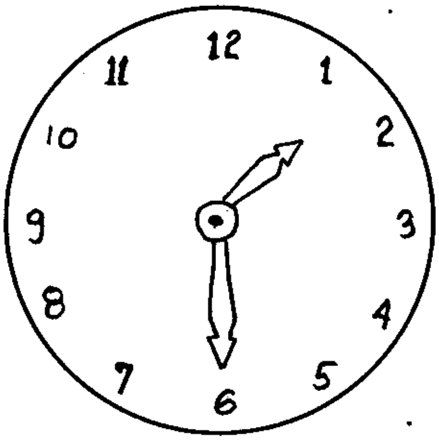
12
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4
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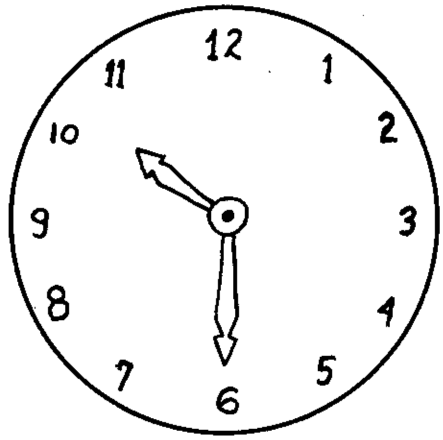
8
9
10
11

:
___


12
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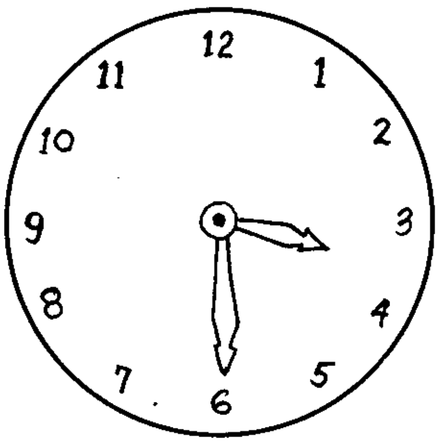
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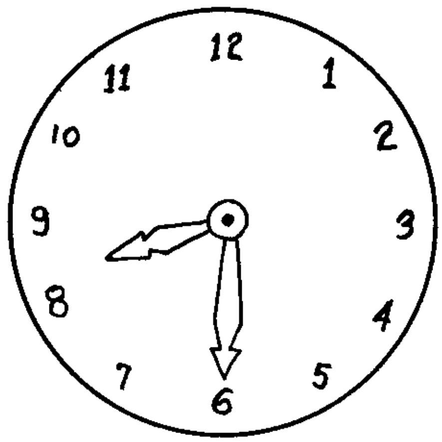
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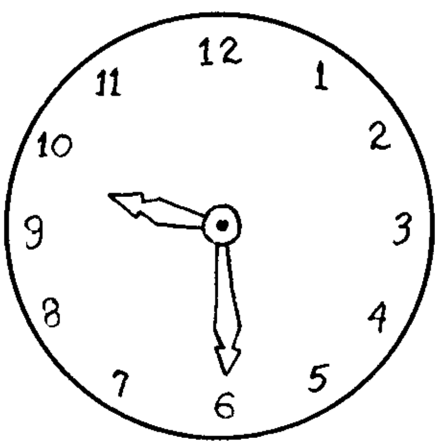
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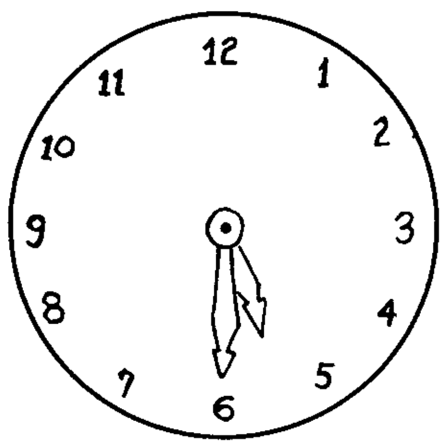
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SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Quizmo Clock set

CONCEPT: Telling time by half-hour (Arabic Numerals)

Use the demonstration clock from the Quizmo Clock set to review telling time by the half hour.

Teacher should distribute the small clocks to each child, with instructions to leave them on their desks until they are told what to do with them.

Teacher uses small cards to flash to children which say "1:00" or "2:30." (Teacher should not use any which use quarter hour, etc.)

Instruct the class to read the small card which the teacher is holding, then make their own small clocks say the same thing. If the card says 1:00, the children should set their clocks to say 1:00. Teacher can then show her demonstration clock set at the correct time, to allow the children to check their work.

Continue this way, until the class responds quickly with the correct answers.

Assign page 80 to be completed, writing the correct time under each clock.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Quizmo Clock sets

CONCEPT: Telling time by quarter hour (quarter past hour only)

Review with the class the concept of counting by five's to tell the correct time. Use the demonstration teacher's clock from the Quizmo set.

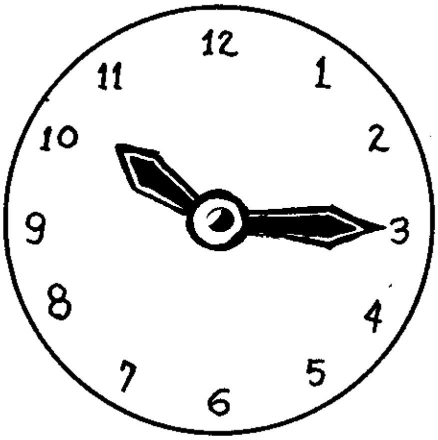
Review especially the concept of quarter-past hour, reading it as "10:15," or "4:15," etc.

Distribute the children's small clocks again, reminding them to leave them on their desk until instructions are given.

As the teacher names various times of quarter-past, the students will set their clocks to that time:

"2:15"	"4:15"	"10:15"	
"1:15"	"6:15"	"12:15"	
"5:15"	"3:15"	"9:15"	
"8:15"	"7:15"	"11:15"	etc.

Review the correct way of writing this time, on the chalkboard. Instruct the class to complete page 81, reading the time on the clocks, and writing the correct time under the clock.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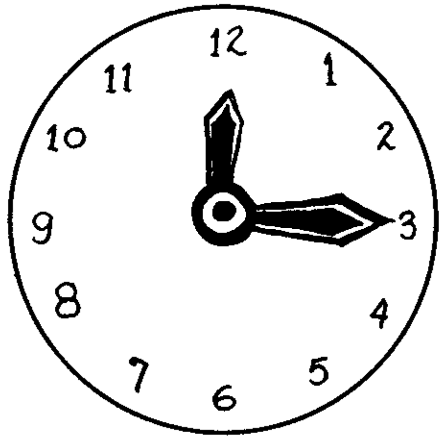
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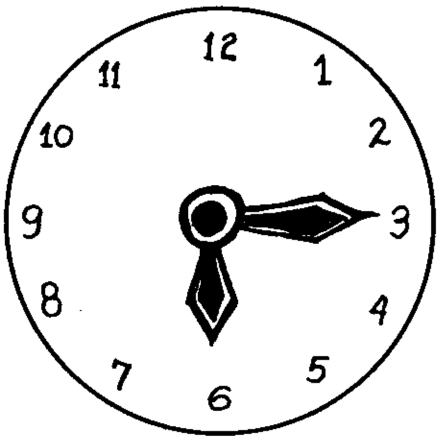
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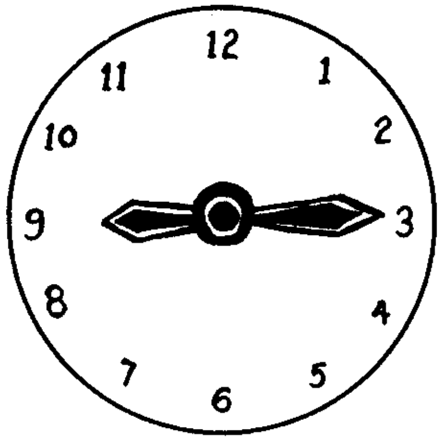
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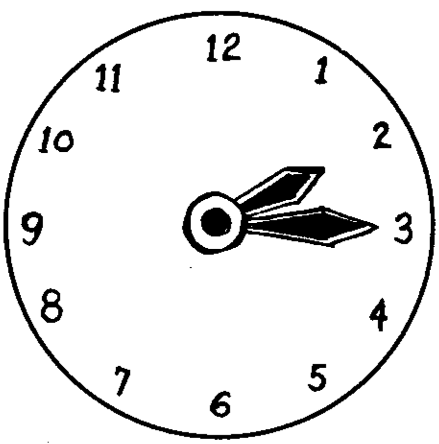
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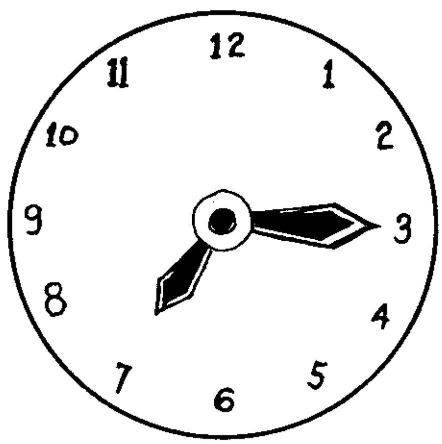
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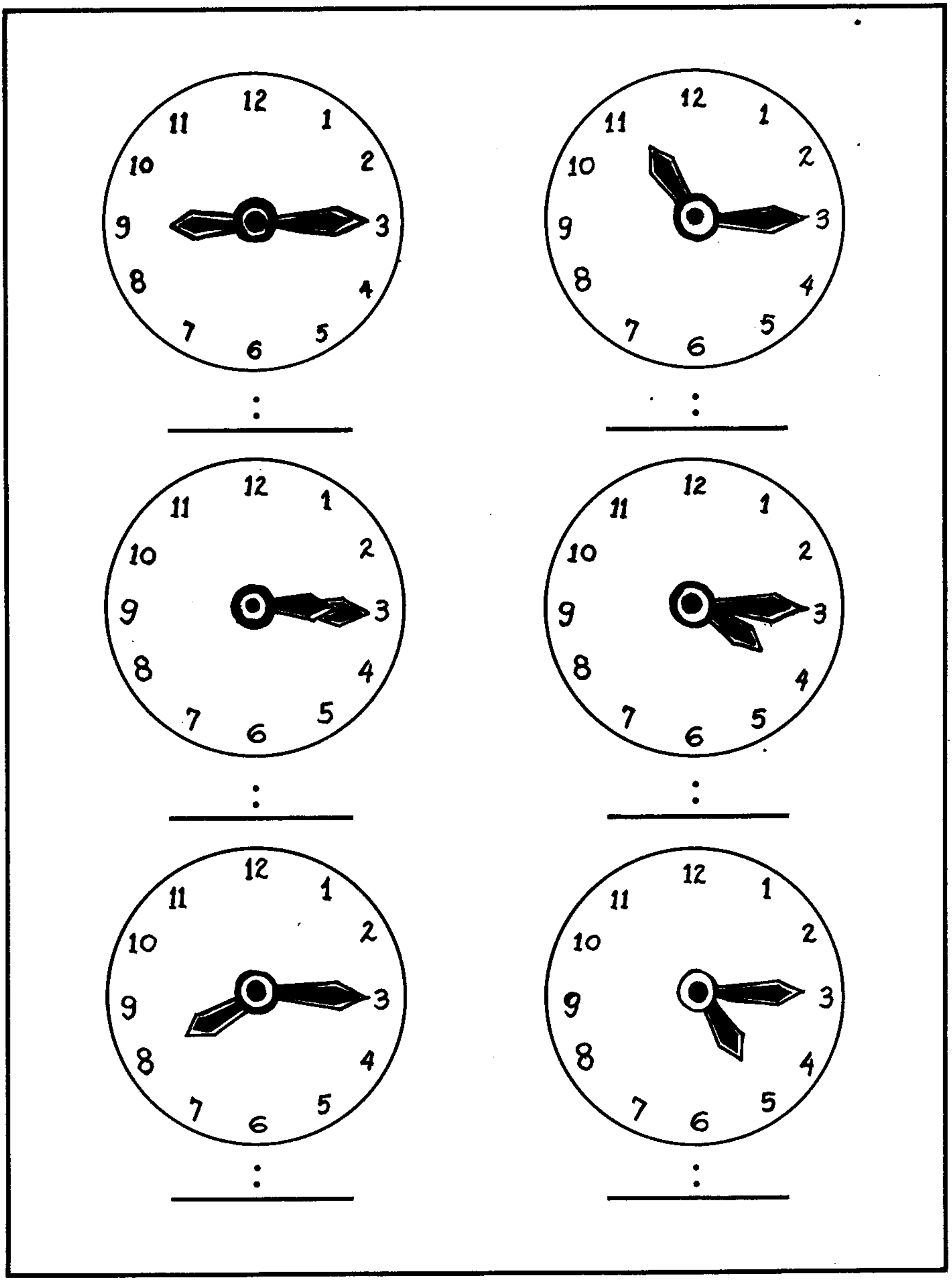


SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Quizmo clock sets

CONCEPT: Telling time by quarter hour (quarter past hour only)

See instructions given on page 81. Review as much as necessary until the children can give the correct time.

Instruct the class to write the time under each clock on page 82.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Quizmo clock sets

CONCEPT: Telling time by quarter hour (quarter before hour)

Review with the class the concept of counting by five's to read the minute hand. Use the teacher demonstration clock. Repeat several times: 1:45, 6:45, 8:45, 10:45, etc. Explain that this means 45 minutes past one o'clock, or past six o'clock, etc.

Distribute the children's clocks again. By now the children should be trained not to play with them, but to use them only when directed to do so.

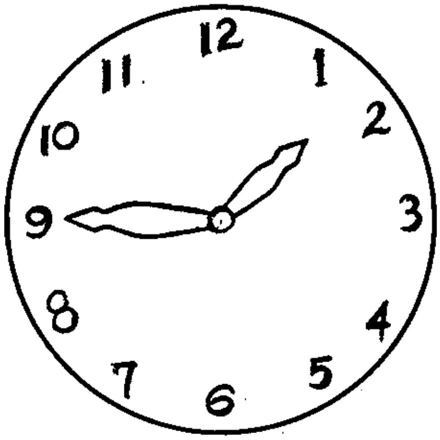
Teacher should turn her demonstration clock so the class cannot see it. Then direct the class to make their clocks say: "2:45." Teacher will also set her clock to that time, and when children are ready to show their clocks, she can turn hers for the children to check their work.

Continue with: 5:45 9:45 12:45
3:45 11:45 4:45

If you have time, review the quarter hour past:
1:15 12:15 6:15 9:15

Also: 1:30 9:00 8:45 10:00 etc.

Direct the class to write the correct time under each clock on page 83.



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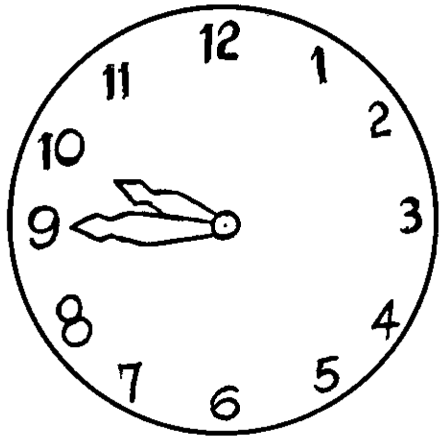

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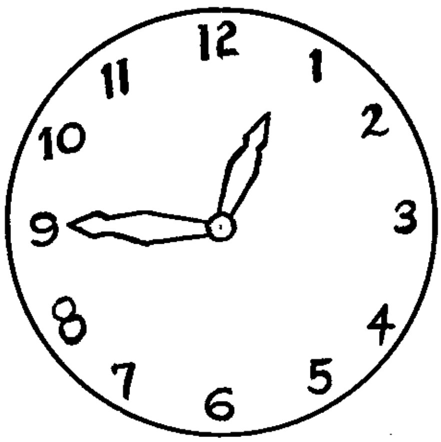

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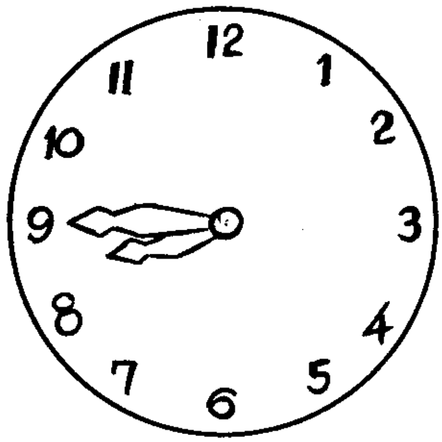

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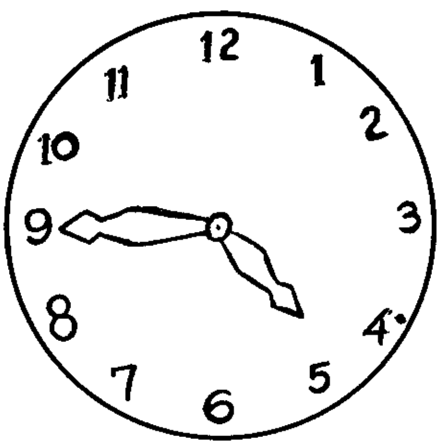

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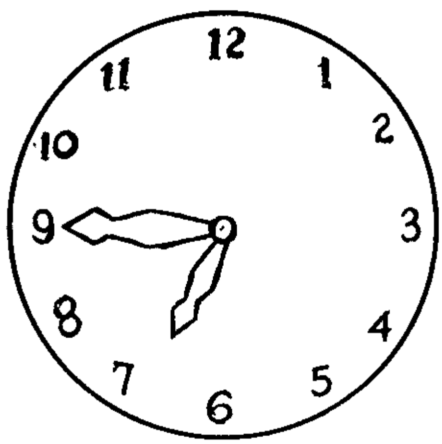

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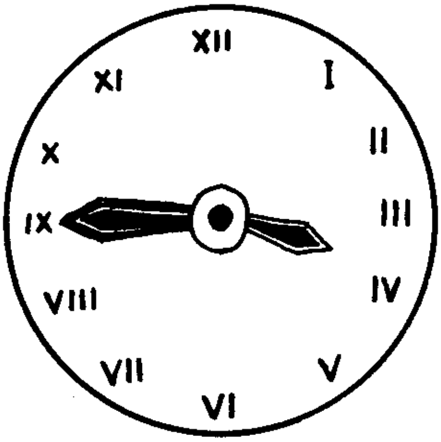
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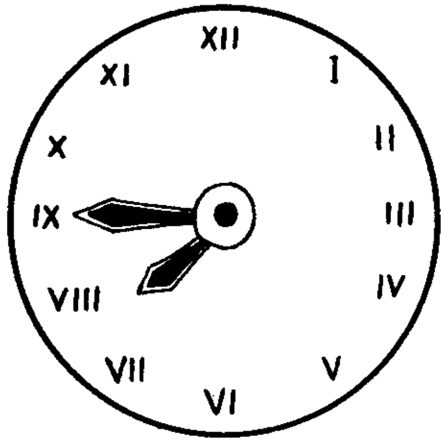
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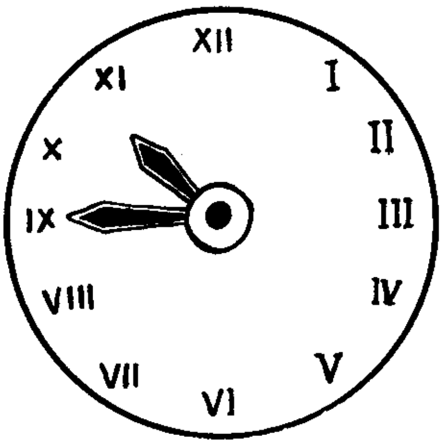
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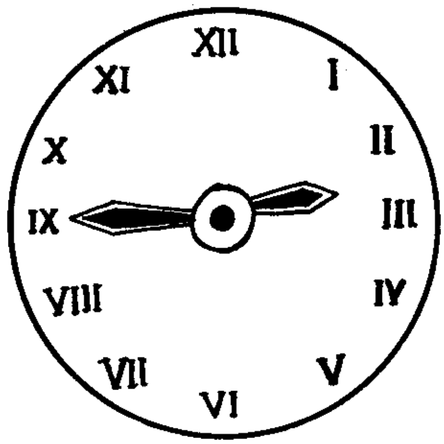
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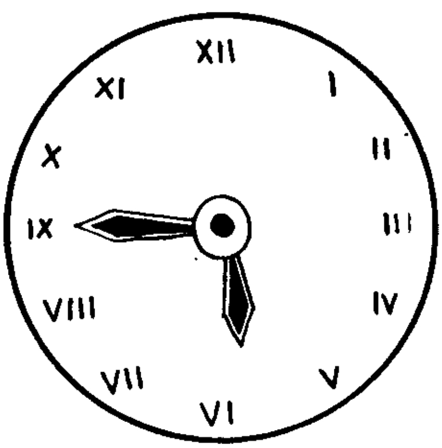
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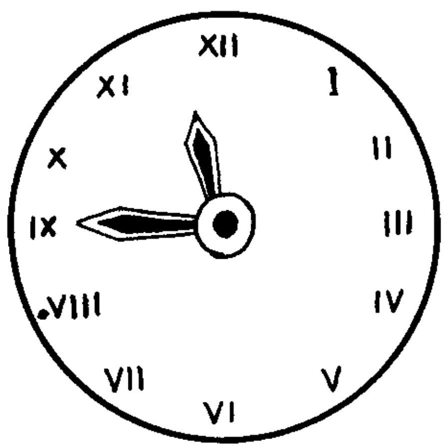
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SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Roman numeral demonstration clock

CONCEPT: Telling time by quarter hour with Roman numeral clocks

Repeat the lesson on page 83, after a review of the Roman numerals. Since the children have clocks with Arabic numerals--they will be slower to check their work from the Roman numeral clock which the teacher is using.

Continue practice on telling time by hour,
by half-hour,
by quarter past hour
and by quarter before hour

Direct class to write the correct time under each clock on page 84.

SUGGESTIONS TO TEACHERS

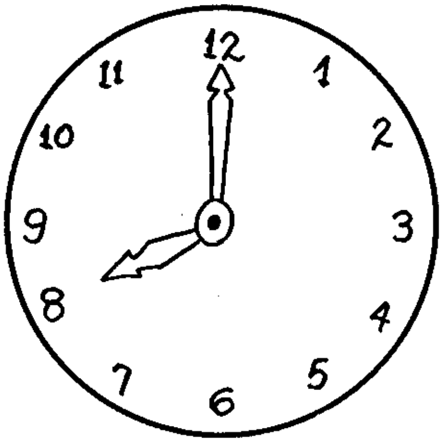
MATERIALS NEEDED: Quizmo clocks

CONCEPT: Review of telling time

Distribute the small clocks to the children for a review of telling time.

This page should be completed independently as a check to see whether child is able to tell time as taught. If class is unable to do so, repeat the last several lessons until they are able to do so.

Page 85 and 86 should be completed together. Go on to the next page.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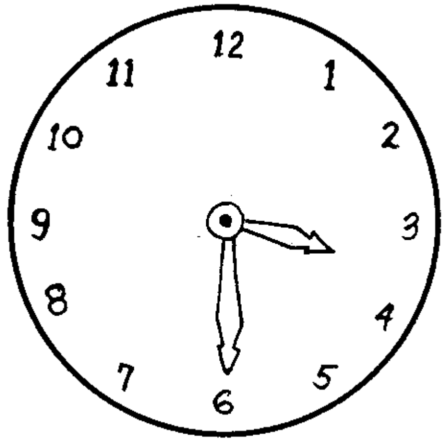
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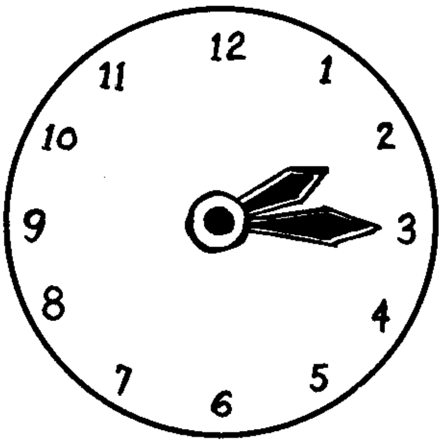
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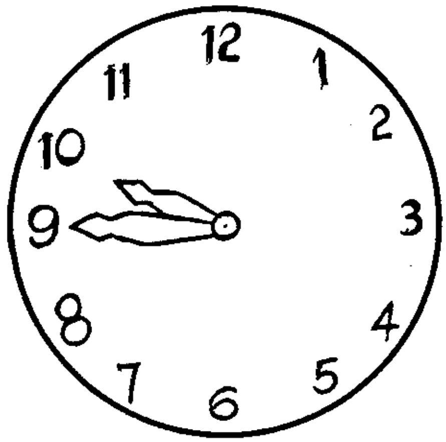
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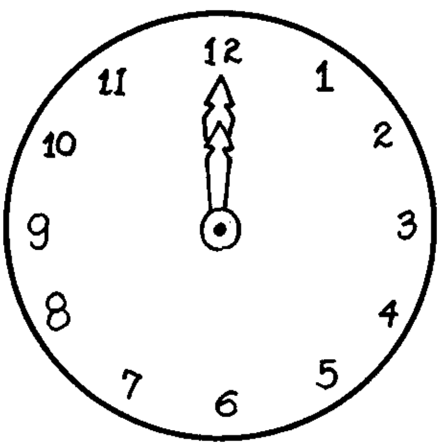
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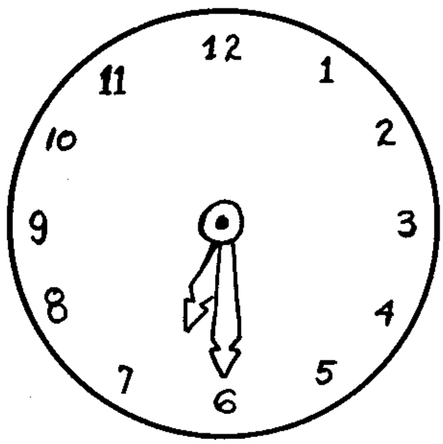
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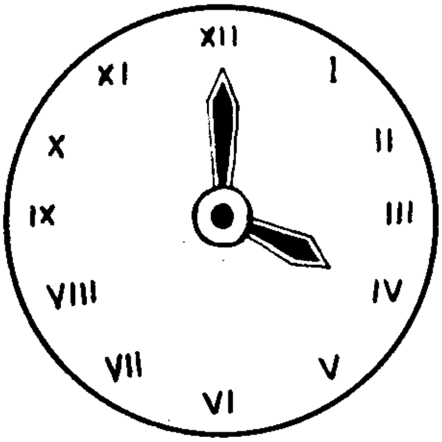
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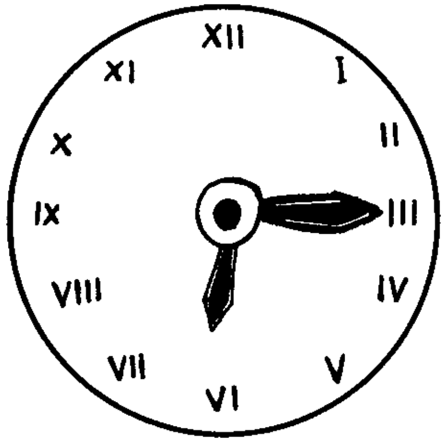
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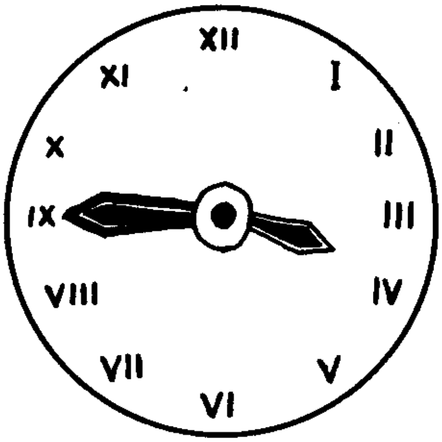
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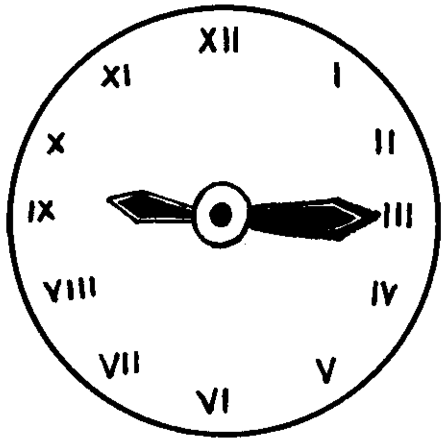
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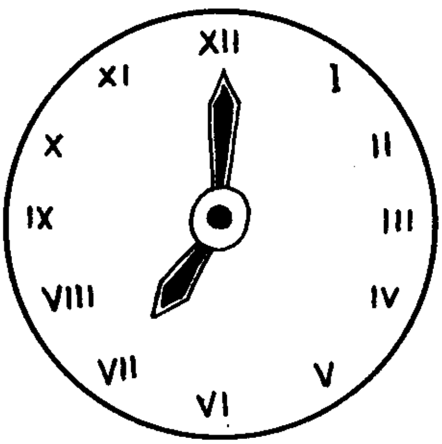
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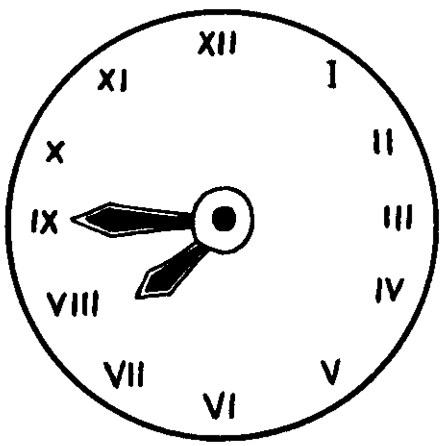
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SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Quizmo clocks

CONCEPT: Review of telling time

Pages 85 and 86 should be completed together.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Large calendar

CONCEPT: Reading a calendar

Using a large calendar (or one drawn on chalkboard) show how a calendar works.

Begin to keep a calendar for two months for practice for the class. The teacher may want to make this a part of opening exercises every morning, so that it is not overlooked.

It is best to begin the calendar regardless of the day of the month it is now. For example if it is November 12 when you are ready to begin this work, simply direct the children to write the numerals from one to twelve in the correct spaces, and continue each day from there. Some times it is good to put a large X in unused boxes. For example if November 1 fell on a Tuesday--direct the class to put an X in the first box (Sunday) and another X in the second box (Monday) so that the 1 will fall on the correct day.

The teacher can help the children to write the name of the month at the top of the calendar.

Teach the children to read down the rows also: "When is the second Tuesday?" "What is the last day of the month?" "What day of the week is the 25th?" etc.

Duminggu	Lones	Pegwana	Petlona	Apatna	Alemana	Sabadu

Dum.	Lon.	Peg.	Pet.	Ap.	Al.	Sa.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Large calendar

CONCEPT: Reading a calendar

Pages 87 and 88 will continue as one lesson. This project may take two full months to complete.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates

CONCEPT: Greater than-less than symbol (> <)

This sign will not be confusing if the children are taught that the "larger side of the sign is always near the largest number." For example:

9 > 6 but 6 < 9

These are read: "Nine is greater than six.
Six is less than nine."

Reading the problems may cause confusion to the children. But if the teacher can consistently point out that in both instances, the bigger number was 9 --and in both instances the big side of the sign is near the 9--then there should be no difficulty in marking these.

On slates dictate the examples from page 89, to be sure that the class has understood. When they are able to, direct them to complete page 89, putting the signs "greater than" or "less than" in each circle.

The children may find difficulty with ones such as the following:

10 ◯ 10

Remind the class that if both sides are the same--they are equal. Then we use an equals sign:

10 = 10

9 ◯ 6	5 ◯ 4
6 ◯ 9	4 ◯ 5
9 ◯ 9	5 ◯ 5
15 ◯ 6	9 ◯ 14
11 ◯ 14	12 ◯ 17
10 ◯ 10	15 ◯ 15
10 ◯ 15	18 ◯ 9
8 ◯ 17	16 ◯ 8

8 + 7 ◯ 15	10 + 1 ◯ 2 + 9
9 + 3 ◯ 14	5 + 6 ◯ 4 + 3
5 + 8 ◯ 10	9 + 2 ◯ 9 + 4
8 + 8 ◯ 15	7 + 7 ◯ 6 + 4
9 + 8 ◯ 17	9 + 9 ◯ 5 + 7
9 + 1 ◯ 7	6 + 6 ◯ 9 + 6
7 + 6 ◯ 14	8 + 6 ◯ 5 + 7
4 + 8 ◯ 11	9 + 7 ◯ 7 + 3
5 + 9 ◯ 11	8 + 2 ◯ 8 + 3
3 + 10 ◯ 12	7 + 4 ◯ 9 + 8

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates

CONCEPT: Greater than-less than, with addition

Review the lesson on page 89 on chalkboard and slates.

Then introduce the following on chalkboard:

$$8 + 8 \bigcirc 15$$

To solve this, we must first add 8 + 8, or we cannot tell which is bigger. Show the class how to cross out and substitute:

$$\cancel{8} + \cancel{8} \; 16 \bigcirc 15$$

Now the children can solve the problem.

Give several examples on the board, including one such as

$$8 + 7 \bigcirc 15$$

to remind the class about using equals signs.

Give practice on slates before assigning page 90 to be completed in the books.

NOTE: The right-hand column of page 90 has two addition facts to be solved before the sign can be written in the circle. Demonstrate these to the class.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates

CONCEPT: Greater than, less than, with subtraction

On chalkboard demonstrate the three steps necessary to solve these problems:

1. ~~8 − 1~~ ◯ 10 + 2

2. ~~8 − 1~~ ◯ ~~10 + 2~~

3. ~~8 − 1~~ (<) ~~10 + 2~~

Give practice work on slates before the page is assigned to be completed.

NOTE: Caution the class to watch the signs on this page, as addition and subtraction are both included--and in the same problem.

8 − 1 ◯ 10 + 2	0 + 9 ◯ 5 + 4
15 + 1 ◯ 14 + 1	14 − 5 ◯ 13 + 1
17 − 9 ◯ 6 + 3	9 + 9 ◯ 12 − 6
15 − 6 ◯ 14 − 7	16 − 8 ◯ 12 − 7
15 − 8 ◯ 15 − 7	14 − 8 ◯ 14 − 6
13 − 6 ◯ 13 − 7	11 − 5 ◯ 12 − 6
10 − 5 ◯ 9 + 4	12 − 3 ◯ 9 + 8
10 + 5 ◯ 8 + 7	7 + 4 ◯ 12 − 1

12  9=3	8  3=11
5  9=14	18  9=9
8  7=15	16  8=8
9  9=18	16  7=9
17  9=8	8  5=13
14  9=5	7  6=13
6  5=11	6  6=12
7  4=11	8  6=14

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates

CONCEPT: Missing sign (review)

This is a review of the lesson first taught on pages 69 and 70. If necessary, turn back and reteach the lesson.

Assign the page to be completed on slates first, before writing in the book. Teacher should check work on slates to be sure children are working correctly.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates

CONCEPT: Addition of three numbers

Present the first problem on the chalkboard, showing that first we add together the first two numbers:

```
  4
  1
+ 2
```

(4 + 1 = 5) --then to the 5, we add the last number 2--or 5 + 2).

This is not a difficult concept, and after a few samples, children can usually work these problems by themselves. Assign the page to be completed on slates, in order that the teacher can check for those who need additional help.

Assign page 93 to be completed in books.

4	3	4	5	4
1	2	3	2	1
+2	+4	+1	+3	+1

2	2	1	0	6
2	1	1	3	2
+2	+2	+3	+1	+1

7	8	7	6	3
3	1	1	3	1
+0	+1	+2	+0	+4

60	40	54	34
32	13	21	23
+11	+36	+31	+41
13	87	42	72
45	11	12	31
+51	+10	+22	+15
21	20	31	54
11	49	13	33
+23	+30	+44	+12

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates

CONCEPT: Addition of three numbers, in two-column addition

If the children understood the lesson presented on page 93, they will not have difficulty in transferring that knowledge to this lesson.

Remind the class again that we always add the right hand column first, and write the answer directly below that column. Then add the left column.

When the children are well able to complete problems such as the ones on page 94, they should practice reading aloud the numbers in the problems and also the answers. This is good review in random numbers.

Assign page 94 to be completed in the book, after practice drills on slates.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates

CONCEPT: Addition of three numbers, in two-column addition

Review the suggestions on page 94 for teaching this page.

10	28	39	47
29	80	60	72
+30	+ 1	+10	+10
56	65	47	38
62	32	50	70
+11	+41	+52	+61
92	40	56	42
43	47	42	52
+44	+81	+91	+82

321 453 +824	947 22 +620	423 23 +923
572 511 + 3	815 233 +750	734 842 + 13
846 322 +421	942 42 +313	100 53 + 24

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates

CONCEPT: Addition of three numbers, in three-column addition

Again review the rule that we begin to add the right hand column, writing the answer below that column. Then the middle column, and finally the left-hand column.

A simple demonstration on the board should be sufficient, since this is simply an expansion of the lesson on page 95.

If extra practice is needed, after the children have completed page 96, give drill on slates. Be careful not to include problems that use carrying (or "re-grouping").

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Addition flash cards, slates

CONCEPT: Review of addition facts, with missing addend

Review the addition facts of 11 and 12, using flash cards.

If the teacher presents the two problems together as shown on page 97, it will help the children to understand the concept.

Direct them to write on their slates:

5 + 6 = _____ and complete it.

Next direct them to write:

5 + _____ = 11

And tell the class that this is the same problem, but that we have omitted a different number. If they will look back to the first problem, they can easily see which number we left out this time.

Continue through this page in the same manner.

Assign class to complete page 97 independently.

5 + 6 = ☐	5 + ☐ = 11
7 + 4 = ☐	7 + ☐ = 11
8 + 3 = ☐	8 + ☐ = 11
9 + 2 = ☐	9 + ☐ = 11
6 + 6 = ☐	6 + ☐ = 12
7 + 5 = ☐	7 + ☐ = 12
8 + 4 = ☐	8 + ☐ = 12
9 + 3 = ☐	9 + ☐ = 12

9 + □ = 12	8 + □ = 11	7 + □ = 10	6 + □ = 12	5 + □ = 11
4 + □ = 10	3 + □ = 12	2 + □ = 11	1 + □ = 10	0 + □ = 12
9 + □ = 11	8 + □ = 10	7 + □ = 12	6 + □ = 11	5 + □ = 10
4 + □ = 12	3 + □ = 11	2 + □ = 10	1 + □ = 12	0 + □ = 11

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Addition flash cards, slates

CONCEPT: Addition facts of 10, 11, and 12 with missing addend

Review again the lesson on page 97. Give as much practice as necessary with flashcards and slates before assigning page 98 to be completed independently.

SUGGESTIONS TO TEACHERS

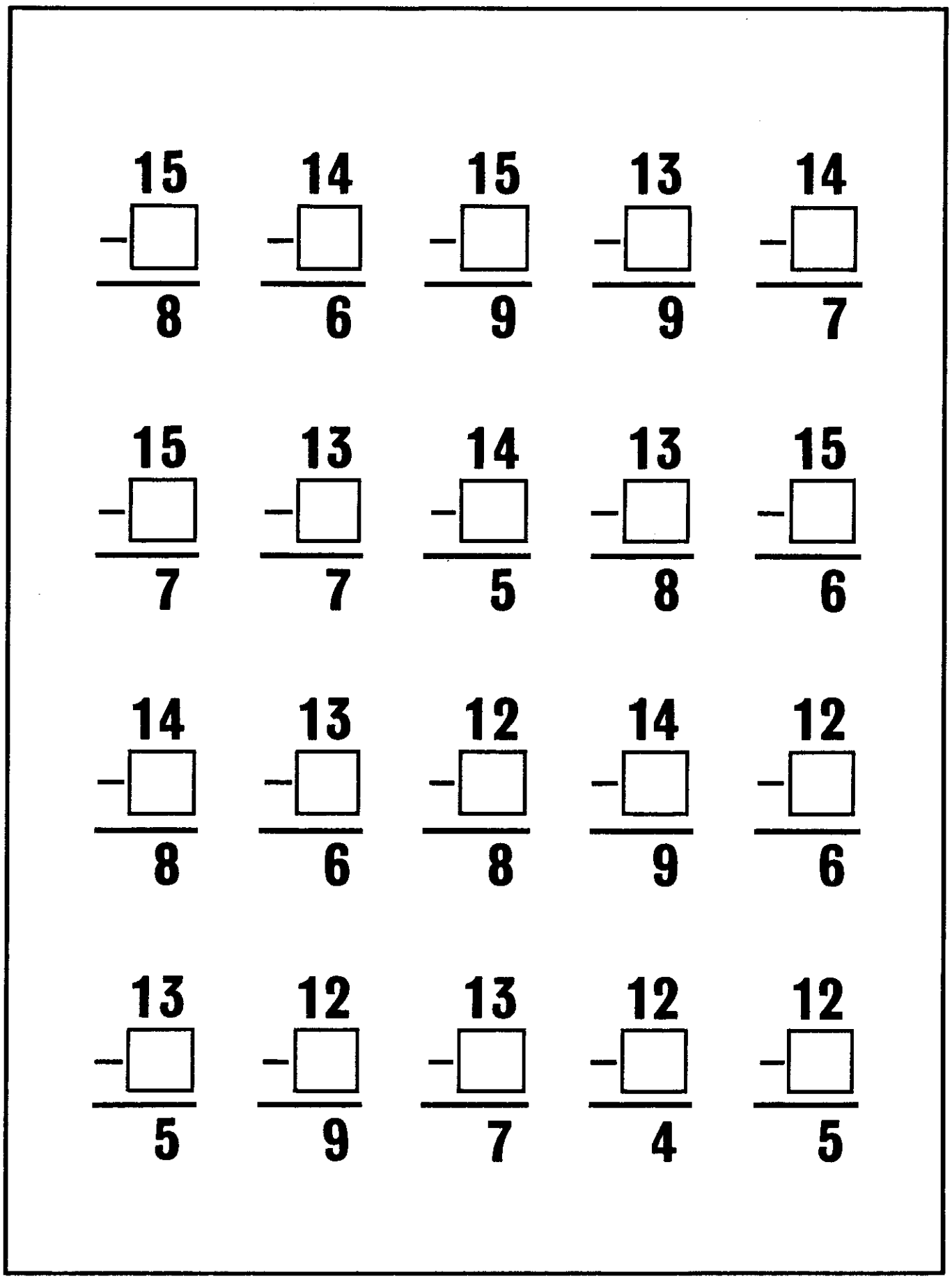
MATERIALS NEEDED: Addition flash cards and slates

CONCEPT: Addition facts of 10 through 15, with missing addend

This is a review of work presented earlier in the year. Time should be spent in practice with flash-cards and slates before assigning the page in the book.

It is important that the children know the combinations readily, and do not need to compute or count to get the answer.

9 + □ = 13	8 + □ = 14	7 + □ = 15	6 + □ = 13	5 + □ = 14
4 + □ = 14	3 + □ = 12	2 + □ = 10	1 + □ = 11	0 + □ = 15
8 + □ = 15	6 + □ = 14	4 + □ = 13	9 + □ = 15	7 + □ = 14
7 + □ = 13	6 + □ = 15	9 + □ = 14	8 + □ = 13	5 + □ = 15


15 − □ = 8
14 − □ = 6
15 − □ = 9
13 − □ = 9
14 − □ = 7
15 − □ = 7
13 − □ = 7
14 − □ = 5
13 − □ = 8
15 − □ = 6
14 − □ = 8
13 − □ = 6
12 − □ = 8
14 − □ = 9
12 − □ = 6
13 − □ = 5
12 − □ = 9
13 − □ = 7
12 − □ = 4
12 − □ = 5

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Subtraction flash cards, slates

CONCEPT: Subtraction facts of 12 through 15, with missing subtrahend

Again this is a review of work presented earlier in the year. After a thorough review of the subtraction facts with flash cards and slates, assign the class to complete the work on page 100.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Multiplication flashcards (two's)

CONCEPT: Counting by two's; multiplication by two's of two-digit figures

Review again by rote memory counting by two's.

With flashcards review the multiplication facts of two. Use slates if necessary for extra practice.

Introduce two-digit multiplication as shown on page 101: "If 2 x 2 = 4 --and then again,
2 x 2 = 4--

then it is simple to do this problem:

$$\begin{array}{r} 22 \\ \times\ 2 \\ \hline \end{array}$$

We have to begin with the right column, and write the answer under that column, just as with addition and subtraction.

On the chalkboard demonstrate the rest of the examples on the page.

Assign the class to complete the page on slates, and check the work, before assigning the page in the book.

$\begin{array}{r} 2 \\ \times\ 2 \\ \hline \end{array}$ $\begin{array}{r} 2 \\ \times\ 2 \\ \hline \end{array}$ $\begin{array}{r} 22 \\ \times\ 2 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ \times\ 2 \\ \hline \end{array}$ $\begin{array}{r} 3 \\ \times\ 2 \\ \hline \end{array}$ $\begin{array}{r} 23 \\ \times\ 2 \\ \hline \end{array}$
$\begin{array}{r} 1 \\ \times\ 3 \\ \hline \end{array}$ $\begin{array}{r} 3 \\ \times\ 3 \\ \hline \end{array}$ $\begin{array}{r} 33 \\ \times\ 3 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ \times\ 3 \\ \hline \end{array}$ $\begin{array}{r} 2 \\ \times\ 3 \\ \hline \end{array}$ $\begin{array}{r} 42 \\ \times\ 3 \\ \hline \end{array}$
$\begin{array}{r} 1 \\ \times\ 1 \\ \hline \end{array}$ $\begin{array}{r} 1 \\ \times\ 1 \\ \hline \end{array}$ $\begin{array}{r} 11 \\ \times\ 1 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times\ 2 \\ \hline \end{array}$ $\begin{array}{r} 1 \\ \times\ 2 \\ \hline \end{array}$ $\begin{array}{r} 91 \\ \times\ 2 \\ \hline \end{array}$
$\begin{array}{r} 1 \\ \times\ 3 \\ \hline \end{array}$ $\begin{array}{r} 3 \\ \times\ 3 \\ \hline \end{array}$ $\begin{array}{r} 13 \\ \times\ 3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times\ 2 \\ \hline \end{array}$ $\begin{array}{r} 1 \\ \times\ 2 \\ \hline \end{array}$ $\begin{array}{r} 51 \\ \times\ 2 \\ \hline \end{array}$

12 × 3	73 × 3	61 × 3	70 × 3
40 × 1	81 × 3	42 × 3	54 × 2
63 × 3	51 × 2	73 × 3	82 × 2
63 × 2	93 × 1	24 × 2	32 × 4

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Multiplication flashcards (three's)

CONCEPT: Counting by three's; multiplication by three's; and multiplying two-digit numbers

Review again the lesson and procedure on page 101.

Practice counting orally by three's.

With flashcards, practice the multiplication facts of three.

Together practice the multiplication procedure of two-digit numbers presented on this page.

Then assign it to be completed independently.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Multiplication flashcards (two's, three's, five's)

CONCEPT: Multiplication by two-digit numbers

This is a review page of all multiplication facts. The only problem may be with such examples as:

$$\begin{array}{r} 32 \\ \times\ 4 \\ \hline \end{array}$$

The children may tell you that they have not learned the "four's." But remind them that 4 x 2 is the same thing as 2 x 4--and that they know the answer to 2 x 4. The same thing applies to the other part of the same problem: If 4 x 3 does not look familiar to them, tell them to read it as 3 x 4, etc.

Review on slates and with multiplication flash cards as much as necessary until the children can complete this work.

93 × 3	62 × 3	93 × 2	72 × 2
81 × 3	82 × 1	30 × 8	70 × 3
84 × 2	21 × 7	11 × 3	31 × 2
31 × 5	32 × 4	33 × 2	22 × 3

$2\overline{)6}$	$2\overline{)8}$	wat:	$2\overline{)68}$
$3\overline{)9}$	$3\overline{)6}$	wat:	$3\overline{)96}$
$2\overline{)2}$	$2\overline{)8}$	wat:	$2\overline{)28}$
$2\overline{)4}$	$2\overline{)4}$	wat:	$2\overline{)44}$
$3\overline{)3}$	$3\overline{)9}$	wat:	$3\overline{)39}$
$3\overline{)6}$	$3\overline{)6}$	wat:	$3\overline{)66}$

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Division flash cards

CONCEPT: Division of two-digit numbers

On the chalkboard write:

$$2\overline{)68}$$

Tell the class that it might be difficult to divide such a large group of objects into sets of 2. But there is an easy way:

$2\overline{)6}$ and $2\overline{)8}$

We don't usually write it as two separate problems. But that is how we solve the problem.

Do other samples on the chalkboard to illustrate the procedure.

Give problems to the class to complete on their slates. Use flashcards to review their division facts.

Complete page 104.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Division flashcards

CONCEPT: Division of two-digit numbers

See procedure on page 104.

$3\overline{)66}$	$2\overline{)44}$	$3\overline{)99}$	$2\overline{)66}$
$3\overline{)96}$	$3\overline{)39}$	$2\overline{)28}$	$2\overline{)48}$
$2\overline{)24}$	$3\overline{)69}$	$2\overline{)26}$	$2\overline{)40}$
$3\overline{)90}$	$2\overline{)42}$	$3\overline{)60}$	$2\overline{)46}$

44 ÷ 2 =	66 ÷ 3 =
88 ÷ 2 =	93 ÷ 3 =
66 ÷ 2 =	63 ÷ 3 =
22 ÷ 2 =	99 ÷ 3 =
62 ÷ 2 =	36 ÷ 3 =
48 ÷ 2 =	30 ÷ 3 =
86 ÷ 2 =	33 ÷ 3 =
68 ÷ 2 =	69 ÷ 3 =
82 ÷ 2 =	96 ÷ 3 =
28 ÷ 2 =	39 ÷ 3 =

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Division flashcards

CONCEPT: Division of two-digit numbers, horizontally written

The concept taught on this page is no different from that on page 104. The one difference is the way that it will look to the children.

Help them to see that we are still dividing one number at a time, just as before. If they wish, they can write each part of the answer in the box as they complete it so they will not forget.

This page uses only division facts of two's and three's.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Division flashcards

CONCEPT: Counting by four's

The example at the top of page 107 is counting by two's. Tell the children to whisper the small number--then say the large number loudly--whisper the small number again, etc. Repeat until the children are able to hear the pattern of:

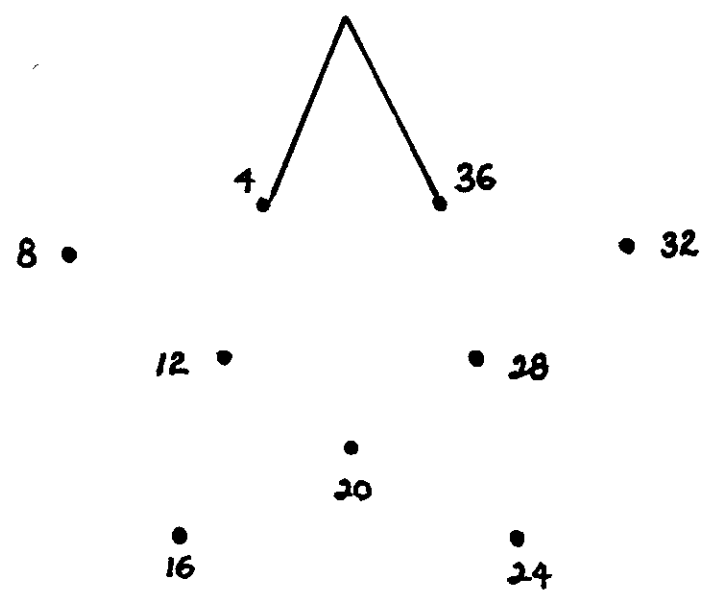
4, 8, 12, 16, 20, 24, 28, 32 and 36.

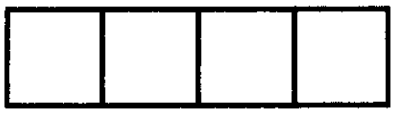
Repeat this by rote memory over and over.

Direct the children to write by four's two times in the two rows of connected boxes. Then cover all the work--and in the last row of boxes, write by four's without any help.

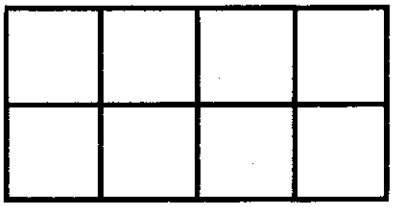
Review again how to complete the follow-the-dots picture at the bottom--beginning with 4, moving to 8, etc.

2	4	6	8	10	12	14	16	18
20	22	24	26	28	30	32	34	36

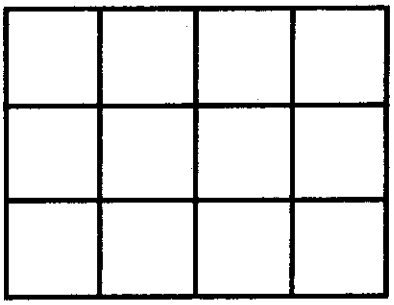




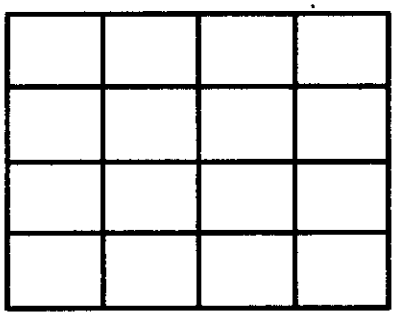
4X1=



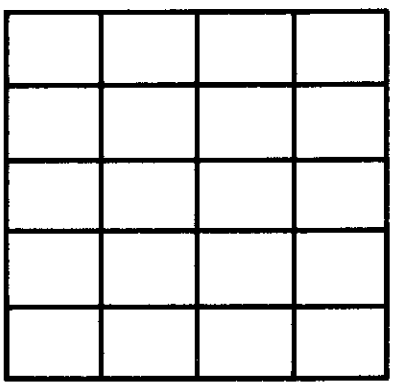
4X2=



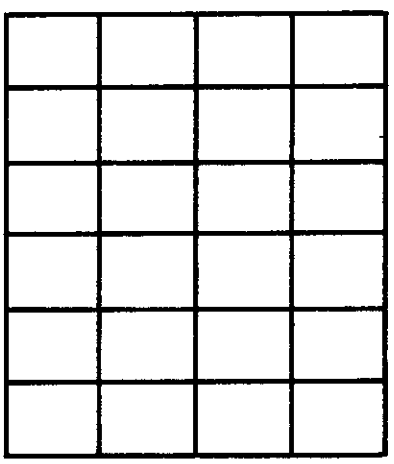
4X3=



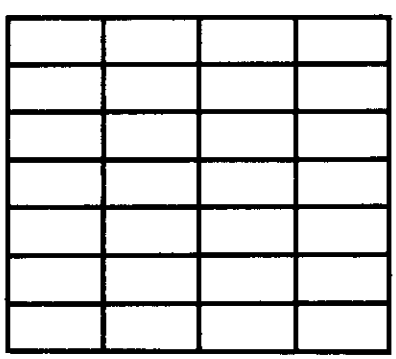
4X4=



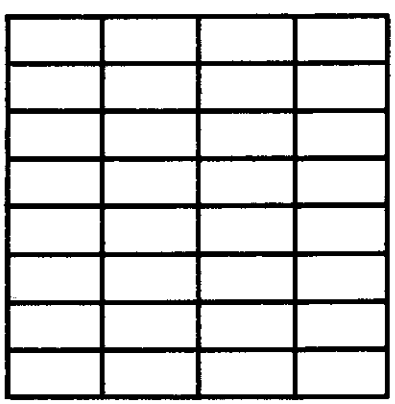
4X5=



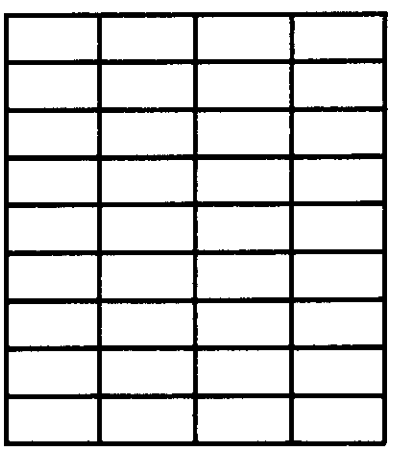
4X6=



4X7=



4X8=



4X9=

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Multiplication flashcards

CONCEPT: Counting by four's and multiplication by four's.

Review again the lesson on page 107, making certain the children can easily count by four's to 36.

Then use the multiplication flashcards of four to practice these facts. Again remind the children that 4 x 4 means the same thing as counting by four's--four times.

Give additional review on slates.

Assign page 108 to be completed. Explain that 4 x 1 means that there are four boxes and one row--How many boxes in all?

4 x 2 means that there are four boxes in a row--and two rows. How many boxes in all? Etc.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Multiplication flashcards

CONCEPT: Multiplication facts of four

Review these facts with flashcards and with written work on slates as needed.

Assign page 109 to be completed.

4 × 1	4 × 2	4 × 3	4 × 4	4 × 5
4 × 6	4 × 7	4 × 8	4 × 9	8 × 4
3 × 4	5 × 4	1 × 4	4 × 4	7 × 4
2 × 4	6 × 4	9 × 4	4 × 0	1 × 4

2 × 3	2 × 4	2 × 2	5 × 2	5 × 3
4 × 5	3 × 3	4 × 3	3 × 5	8 × 1
9 × 2	7 × 3	3 × 6	2 × 6	8 × 3
7 × 2	3 × 9	2 × 8	4 × 4	7 × 4

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Multiplication flashcards

CONCEPT: Review of Multiplication facts of two, three and four

With flashcards review all the multiplication facts taught so far. (Note that in the facts of four, the last fact taught was 9 x 4. Do not include 10 x 4, 11 x 4, or 12 x 4, unless you have previously taught these facts).

Direct the class to complete the multiplication facts presented on page 110.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Division flashcards and related multiplication flashcards

COMCEPT: Division by four's, with related multiplication facts

Review again the idea that division is the reverse process of multiplication; even as subtraction is the reverse process of addition.

Show that these facts are related:

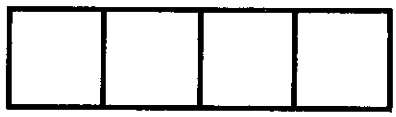
4 x 2 = 8	4 x 3 = 12
8 ÷ 2 = 4	12 ÷ 3 = 4 Etc.

Continue through the page of examples on 111.

Show the class how the boxes can be used both to multiply and to divide.

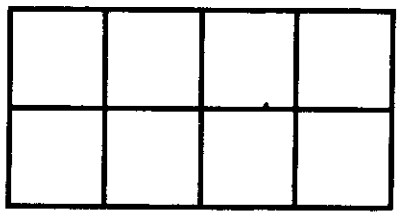
Practice on slates solving related facts.

Assign page 111 to be completed.



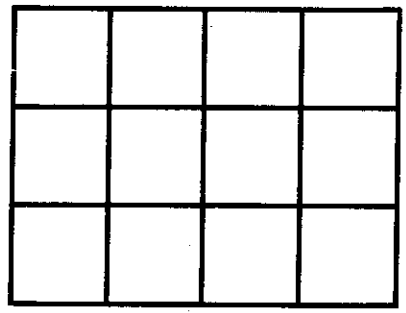
$4 \times 1 = \square$

$4 \div 1 = \square$



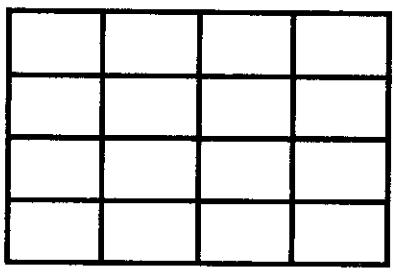
$4 \times 2 = \square$

$8 \div 2 = \square$



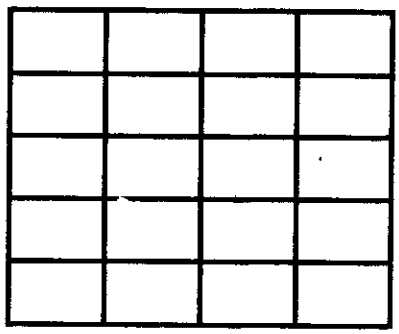
$4 \times 3 = \square$

$12 \div 3 = \square$



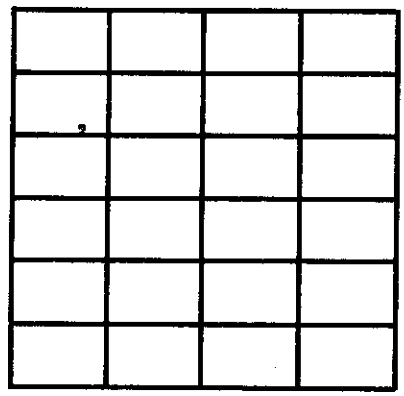
$4 \times 4 = \square$

$16 \div 4 = \square$



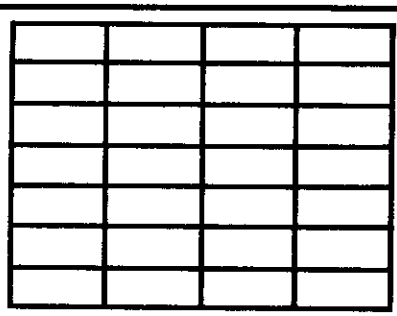
$4 \times 5 = \square$

$20 \div 5 = \square$



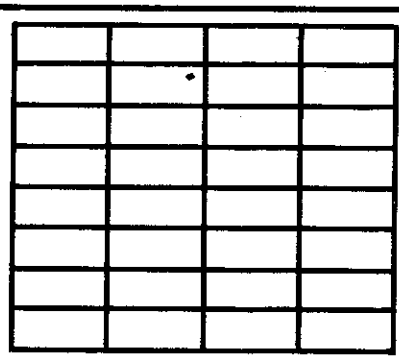
$4 \times 6 = \square$

$24 \div 6 = \square$



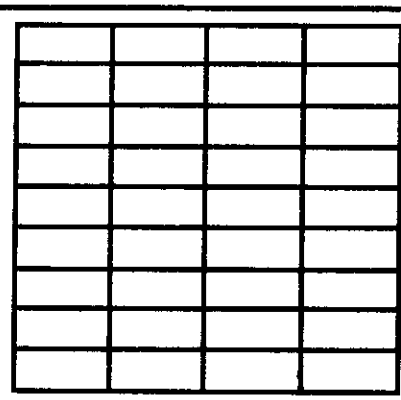
$4 \times 7 = \square$

$28 \div 7 = \square$



$4 \times 8 = \square$

$32 \div 8 = \square$



$4 \times 9 = \square$

$36 \div 9 = \square$

$4\overline{)12}$	$4\overline{)36}$	$3\overline{)24}$	$4\overline{)4}$
$4\overline{)28}$	$4\overline{)16}$	$4\overline{)8}$	$4\overline{)32}$
$5\overline{)20}$	$3\overline{)12}$	$3\overline{)36}$	$4\overline{)24}$
$2\overline{)4}$	$5\overline{)25}$	$2\overline{)16}$	$2\overline{)8}$
$5\overline{)35}$	$5\overline{)30}$	$3\overline{)27}$	$2\overline{)24}$

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Division flash cards

CONCEPT: Review of all division facts, 2, 3, 4, 5

Use flashcards or slates or any other way to drill on the division facts presented in this book.

Assign page 112 to be completed by class.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates

CONCEPT: Numerical patterns

Most children will be quick to see that this page presents a review of "ways to count." If some do not see the patterns, point out that the first set of boxes begins counting by two's, and they are to complete the boxes. Then counting by three's, by four's, by five's, by ten's, and finally by one's.

If you wish, you could dictate these patterns on slates for extra practice.

If your class is capable, you may wish to dictate an unknown pattern to them, and let them tell you what it is. For example:

6 12 18 24 etc. (They will say you "skipped five numbers between" or "counted by six" etc.)

Or: 1 2 3 __ 5 6 7 __ 9 10 11 __ etc.

or: 10 __ 30 __ 50 __ etc.

This is a useful skill in building logic.

2	4			10					

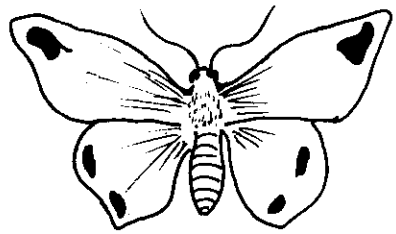
3	6				18				

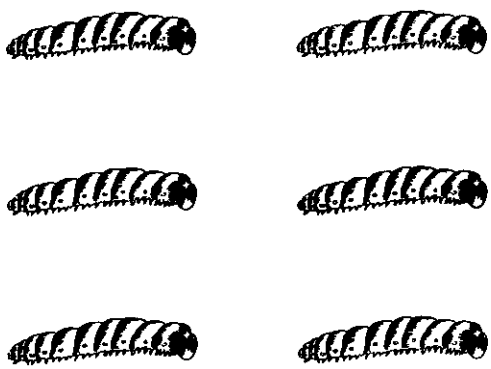
4	8					28			

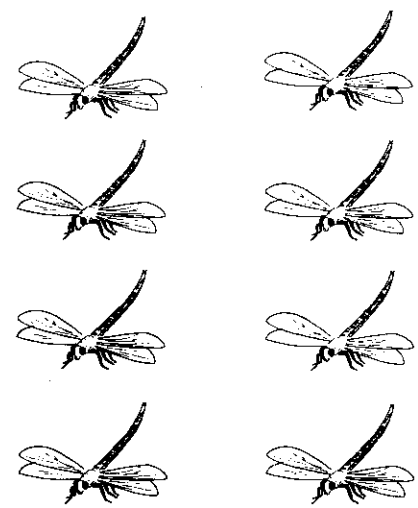
5	10			25					

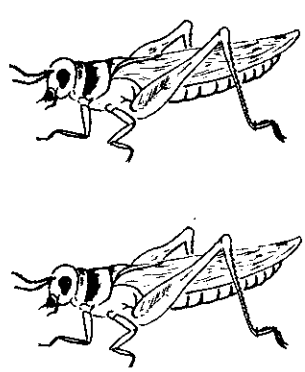
10	20				60				

1	2	3						9	









SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flannelboard with ten items

CONCEPT: Dividing by two (review).

Illustrate with objects on flannelboard how we can divide even-numbered sets by two--or put them into sub-sets of two.

The children will easily be able to do this by now. Direct them to circle each set of two in the box. Then write a problem about that set.

For example if there are four items in the box: When the students divide it into sets of two, there will be two sets. So help them to discover the problem: $4 \div 2 = 2$. etc.

Continue on through the page.

Direct the children to write the problem about the pictures in each box.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flannelboard with ten items

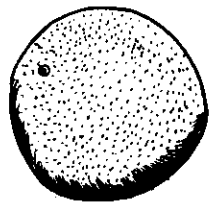
CONCEPT: Multiplication by two (review)

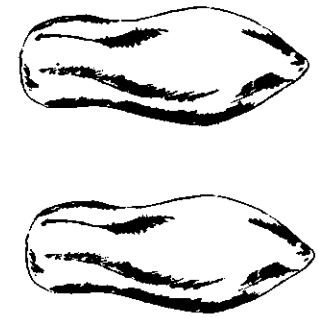
Help the class to discover the problems contained in these pictures, if we want to make multiplication problems.

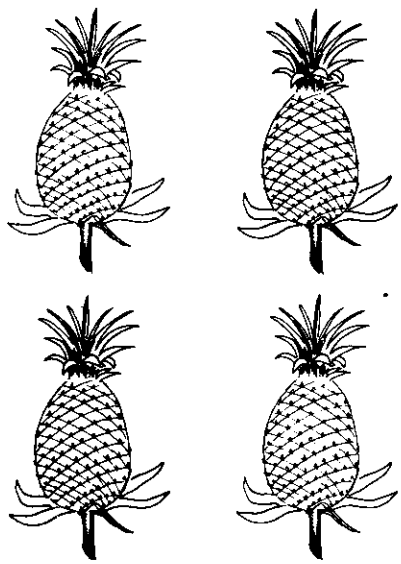
Direct them to circle each set of two in every box. Point out that if we have two in every circle, and three circles, we can write it this way:

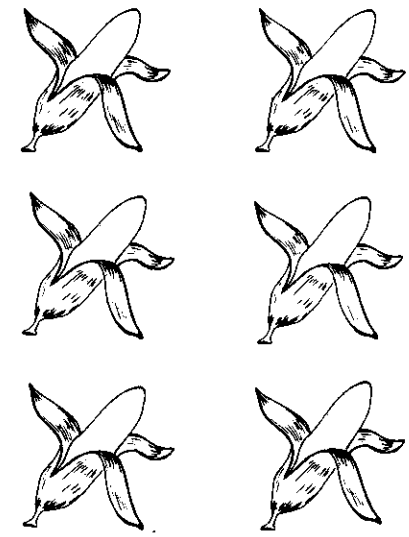
$2 \times 3 = \_\_\_\_\_$

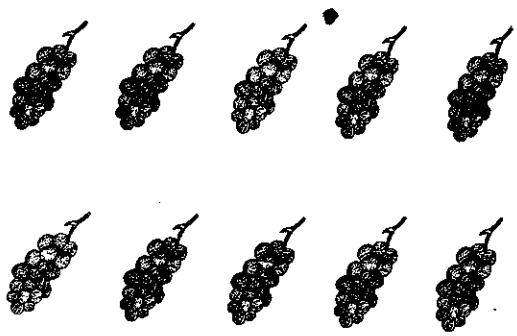
Help them to discover the multiplication facts contained in each box. They should then write the fact at the bottom of the box.

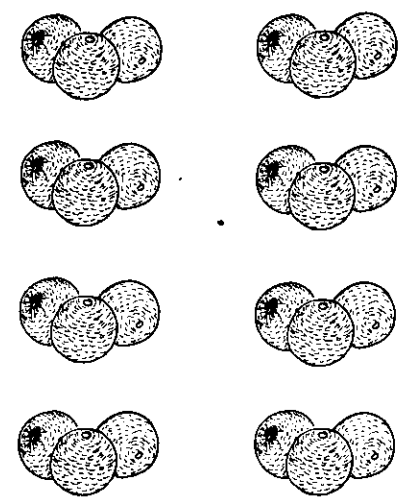


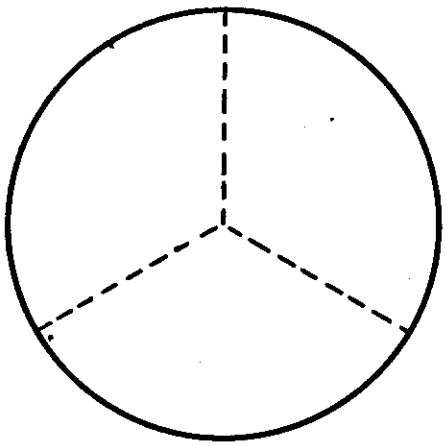


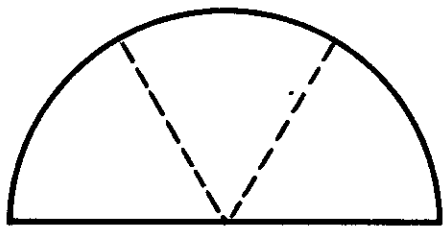


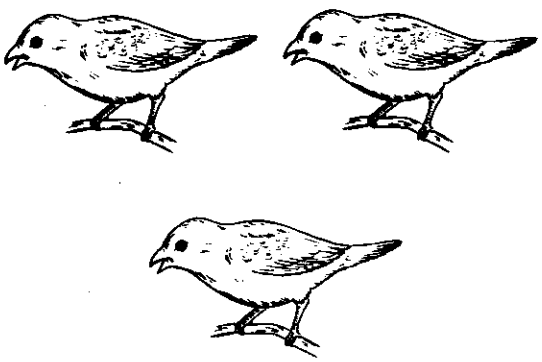


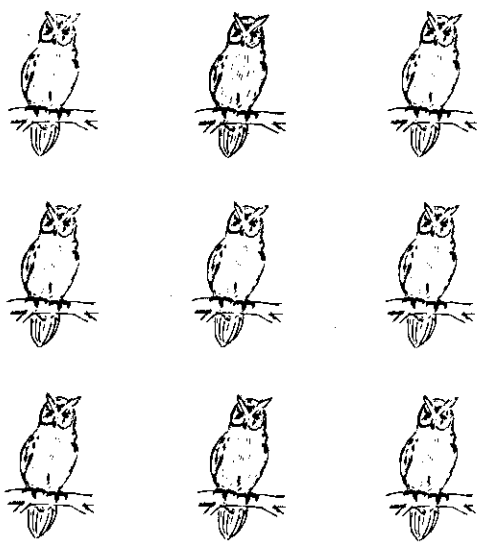


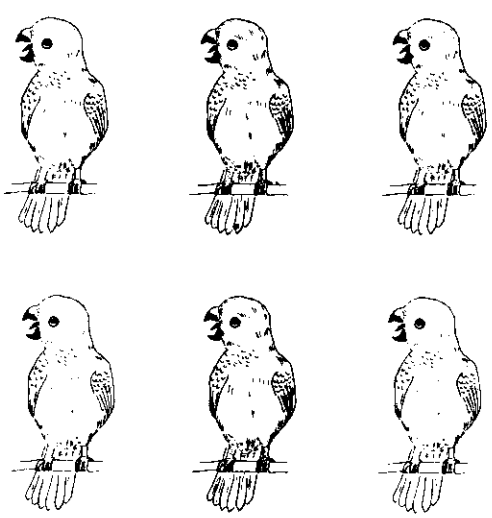


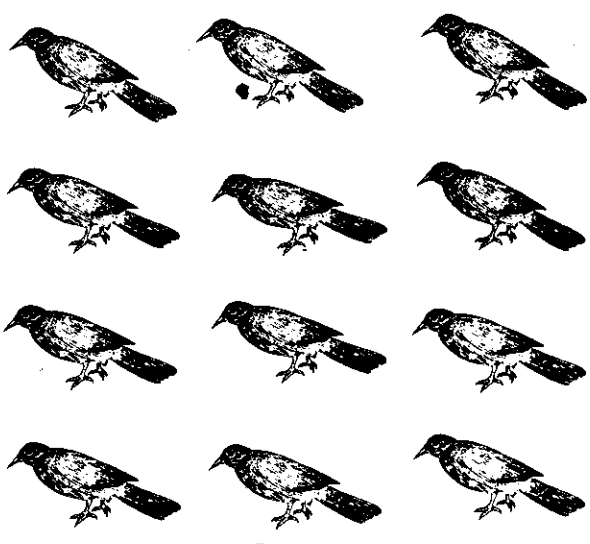












SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flannelboard and twelve items

CONCEPT: Division by three (review)

Place twelve items on the flannelboard, and ask the children to tell you how to divide those into three sets. Point out after this is accomplished that we have solved a problem:

$$12 \div 3 = 4$$

Continue with the rest of the division problems presented on this page (dividing by three).

Direct the class to circle all the sets of three on page 116.

Then help them to discover the problem they have solved in each box. (As: $3 \div 3 = 1$, $9 \div 3 = 3$, etc.)

SUGGESTIONS TO TEACHERS

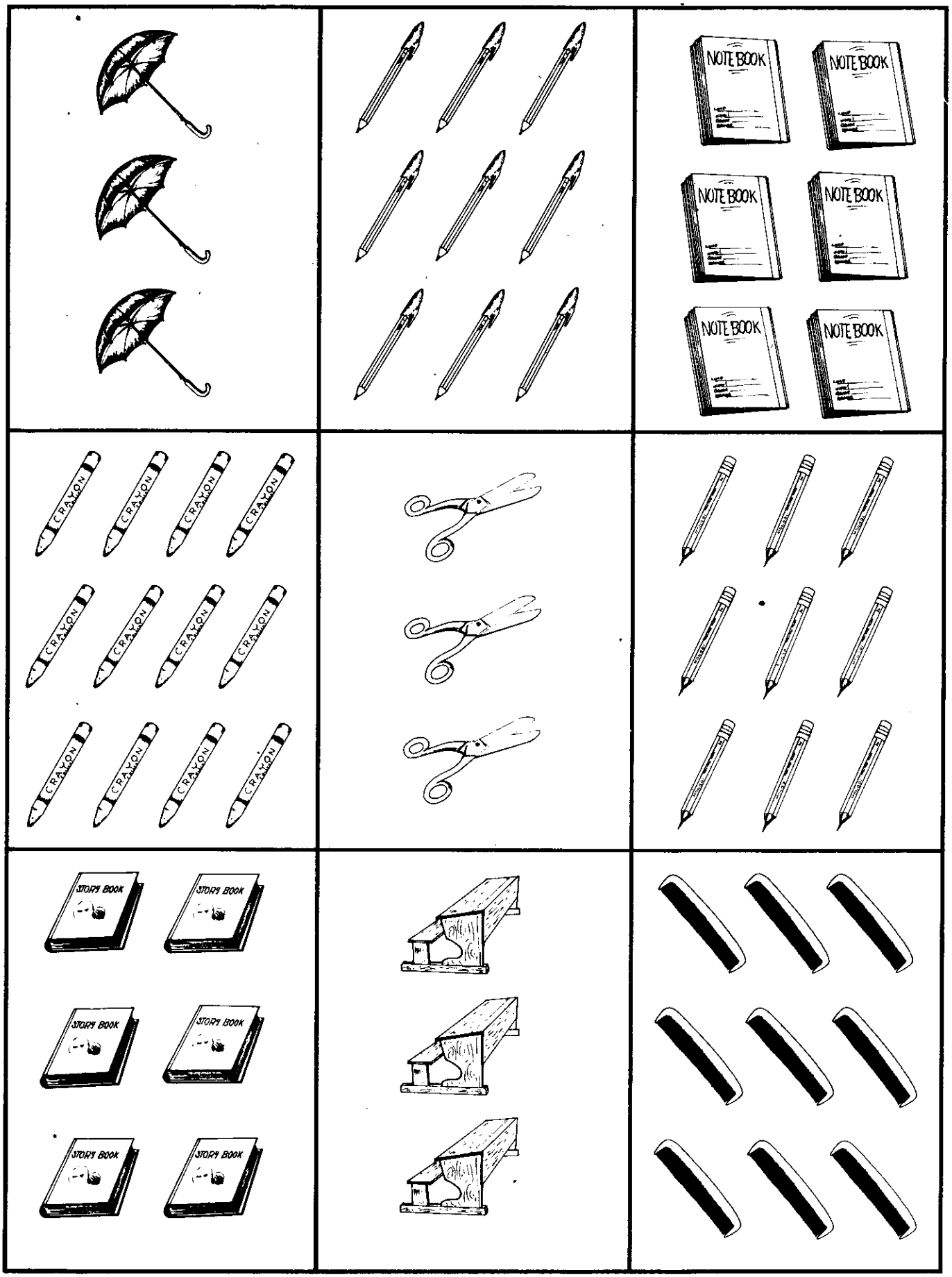
MATERIALS NEEDED: Flannelboard and twelve items

CONCEPT: Multiplication by three (review)

Again help the children to discover the multiplication problems on page 117, using the same procedure as on the last several pages.

All problems on this page will be multiplication by three.

Direct the children to write each multiplication problem in the box.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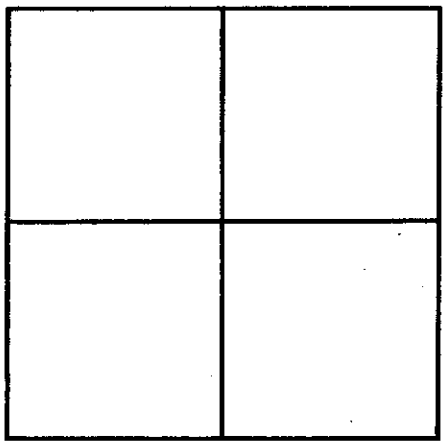
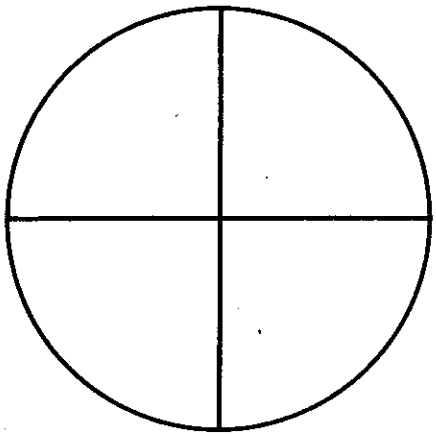
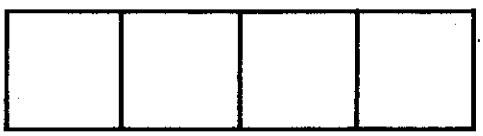
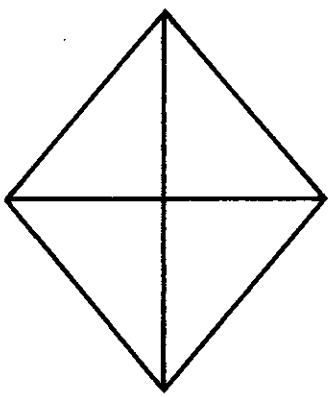
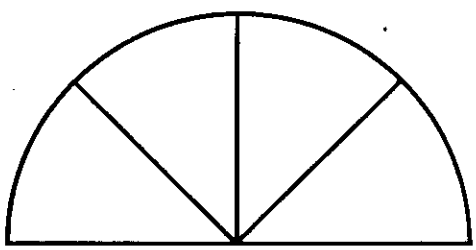
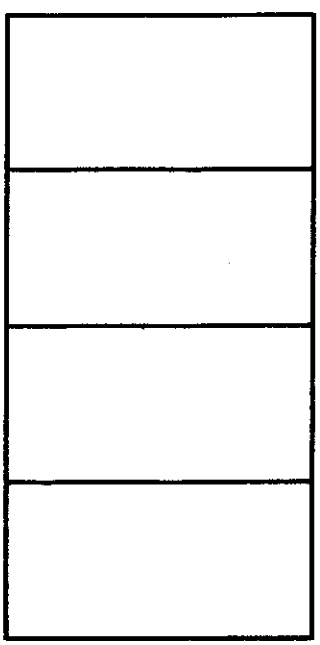


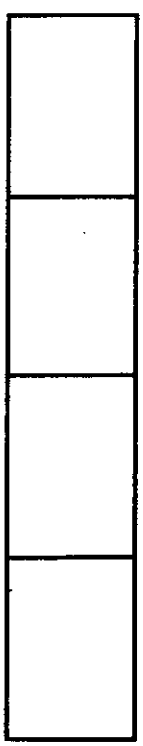


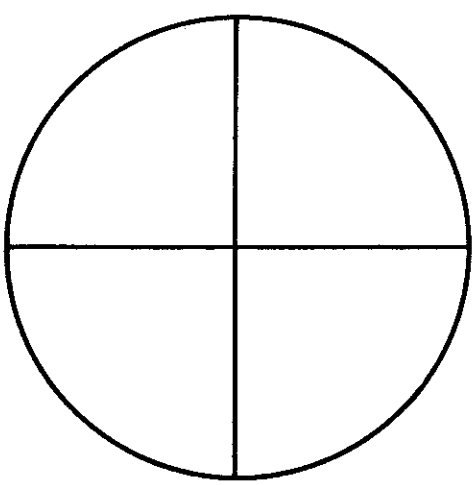












SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flannelboard, felt cut-outs of objects cut into fourths

CONCEPT: Fractions: one-fourth

On flannelboard place square which has been cut into four equal parts. Point out that this is a square cut into four pieces, or "fourths."

If we take away one of those pieces, we have taken away "one-fourth" --or one part out of four.

Continue with a circle cut into fourths, etc.

Direct the class to color "one-fourth" of every object on page 118.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flannelboard, felt cut-outs

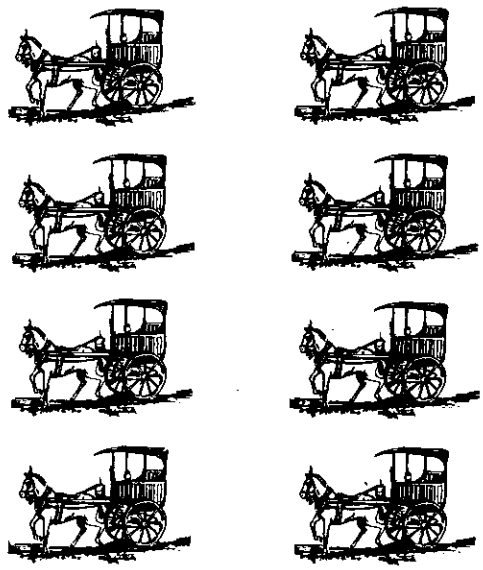
CONCEPT: Fractions: One-fourth

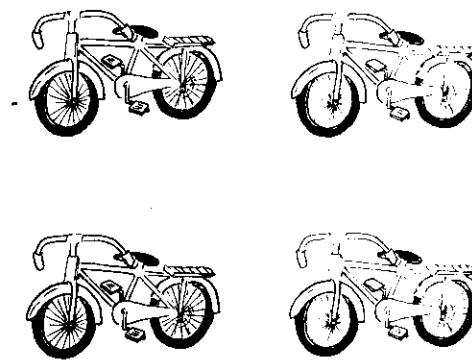
On this page each set is not divided equally into fourths, as it was on page 118.

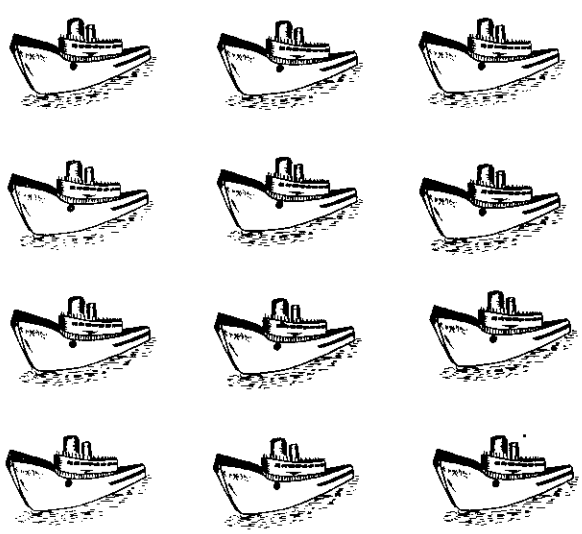
Direct the class to divide each set into fourths, by circling to make four equal sets in each box.

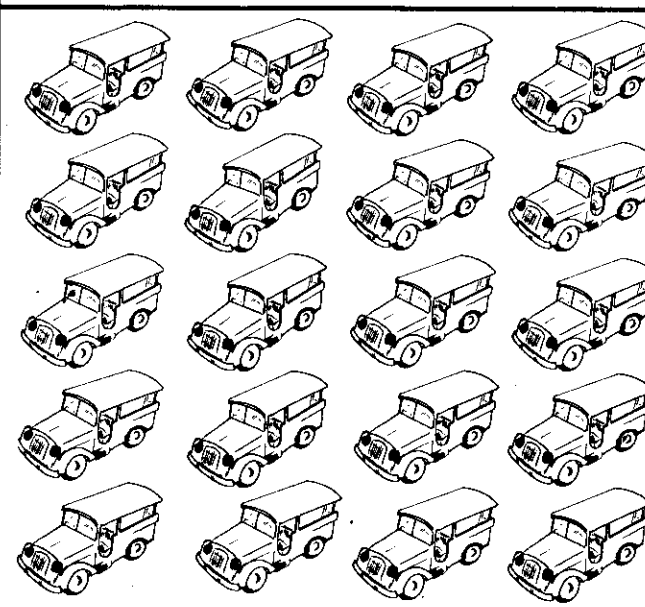
Some students will quickly relate this to division by four. If no one points out this fact, the teacher can note it.

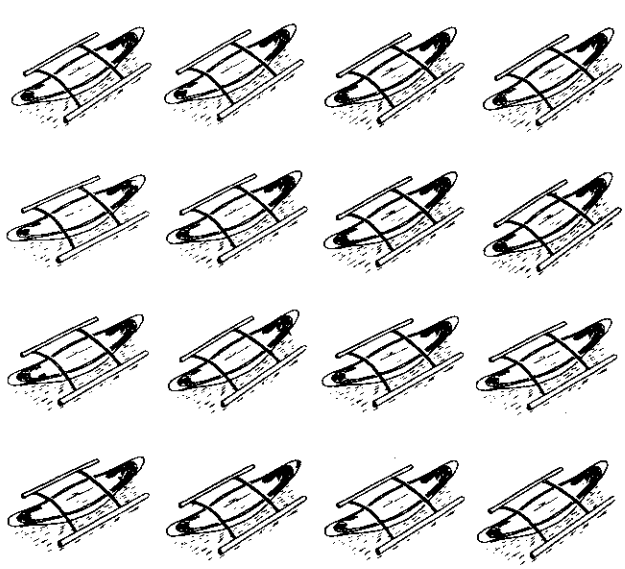
Then direct the class to color one-fourth of each set (so that, for example, in the set of 20, the student will color only 5 objects).

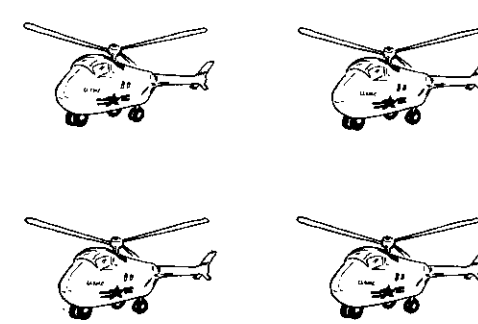


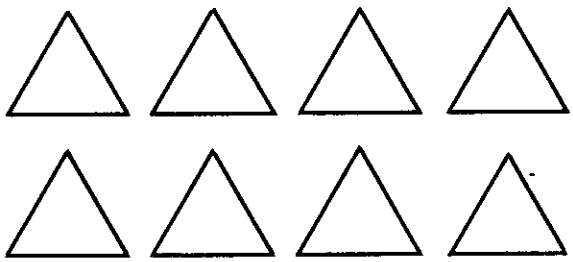




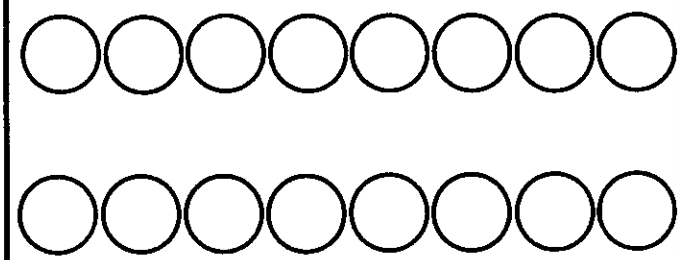




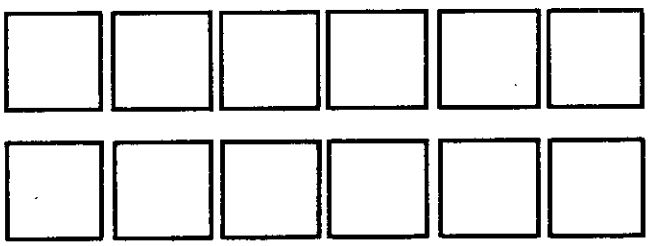




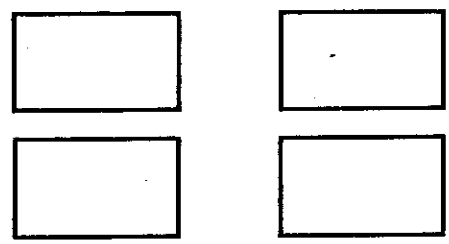
$\frac{1}{4}$



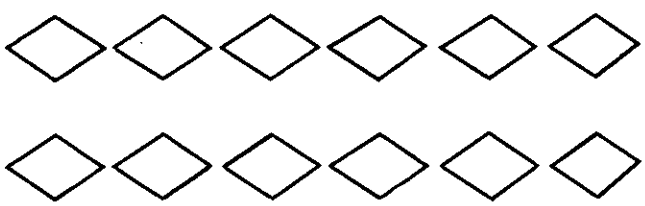
$\frac{1}{4}$



$\frac{1}{4}$



$\frac{1}{4}$



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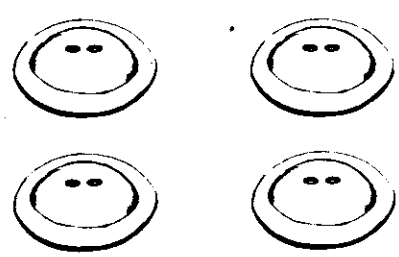
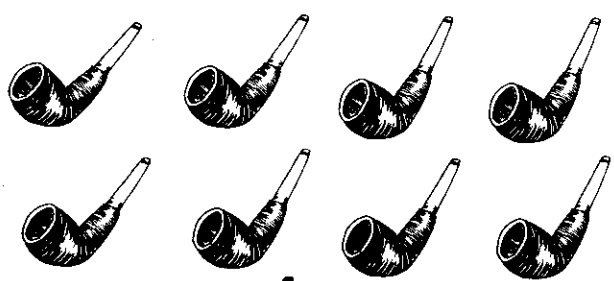
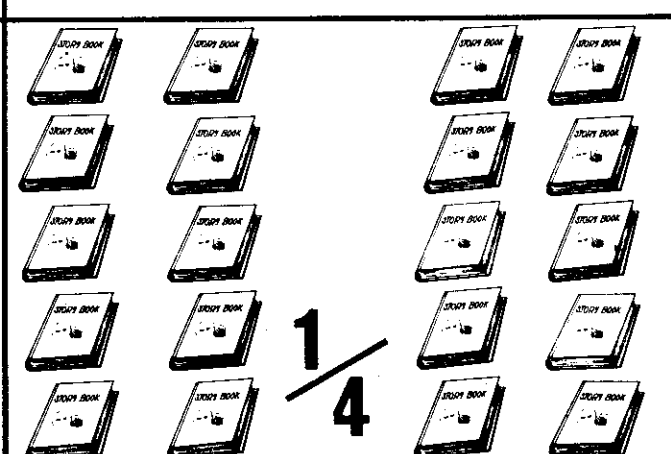


$\frac{1}{4}$



$\frac{1}{4}$



$\frac{1}{4}$

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED:

CONCEPT: Fractions: Writing 1/4

Review the lesson on page 119.

Again instruct the class to divide each set into "fourths," or four parts.

Then instruct them to color 1/4.

On the chalkboard teach the meaning of 1/4 as "one part of four."

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flannelboard, felt cut-outs

CONCEPT: Meaning of fractions, 1/4, 1/3, 1/2

Place two objects on the flannelboard, and tell the class to help you divide that set into two parts or "halves." On the chalkboard write "1/2." Explain that the bottom number tells us how many parts to divide the set into.

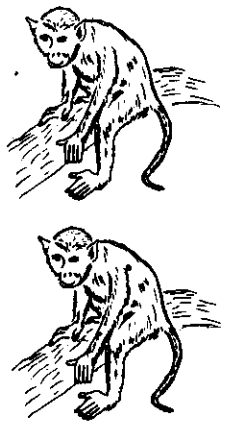
Place three items on the flannelboard. Ask the students to help you divide that set into three parts (or "thirds"). On the chalkboard write "1/3," explaining again that the bottom number tells us how many parts we will divide the set into.

Continue with the rest of the examples on page 121.

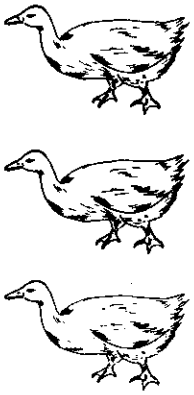
When you have finished, instruct the children as follows: "First look at the number below each set. How many parts does it tell you to divide the set into? Then divide the set by drawing circles. Do this for every problem on the page."

When the students finish that part of the assignment, then direct them: "Now look at the top part of the number. In the first box there is a 1 over 4. You were supposed to divide the set into four parts. Now you are to color <u>one</u> part. The top number in each box will tell how many parts to color."

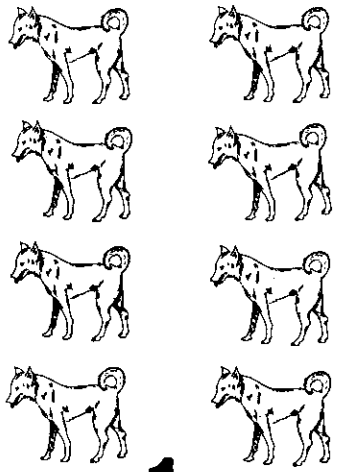
Re-read the page, to review reading the fractions: "one-third, one-half and one-fourth."



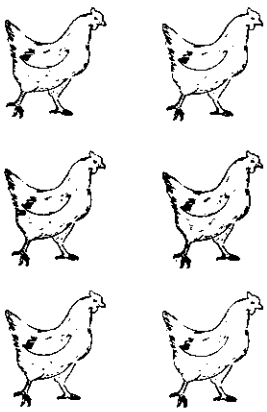
1/2



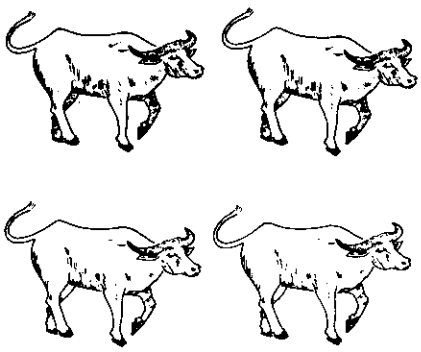
1/3



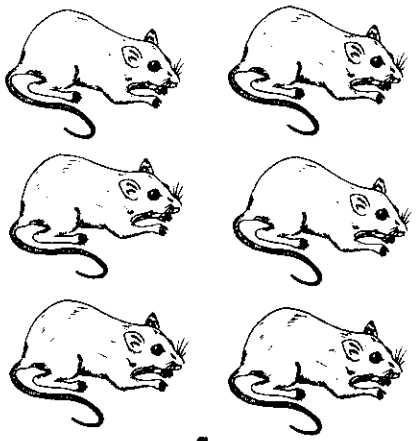
1/4



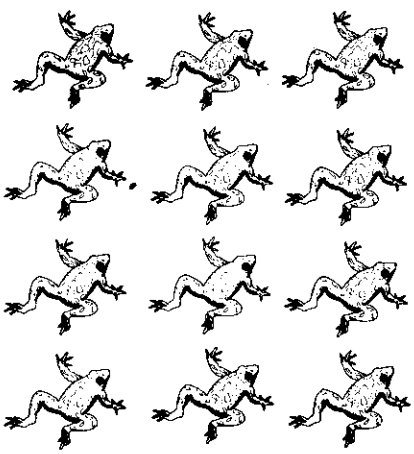
1/3



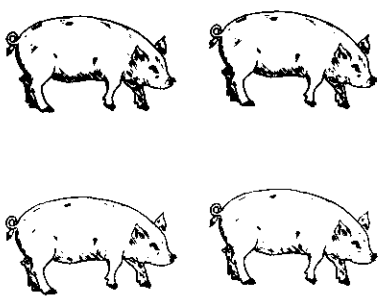
1/4



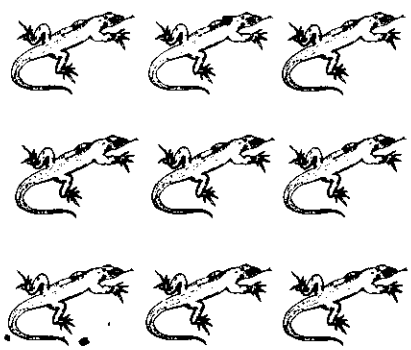
1/2



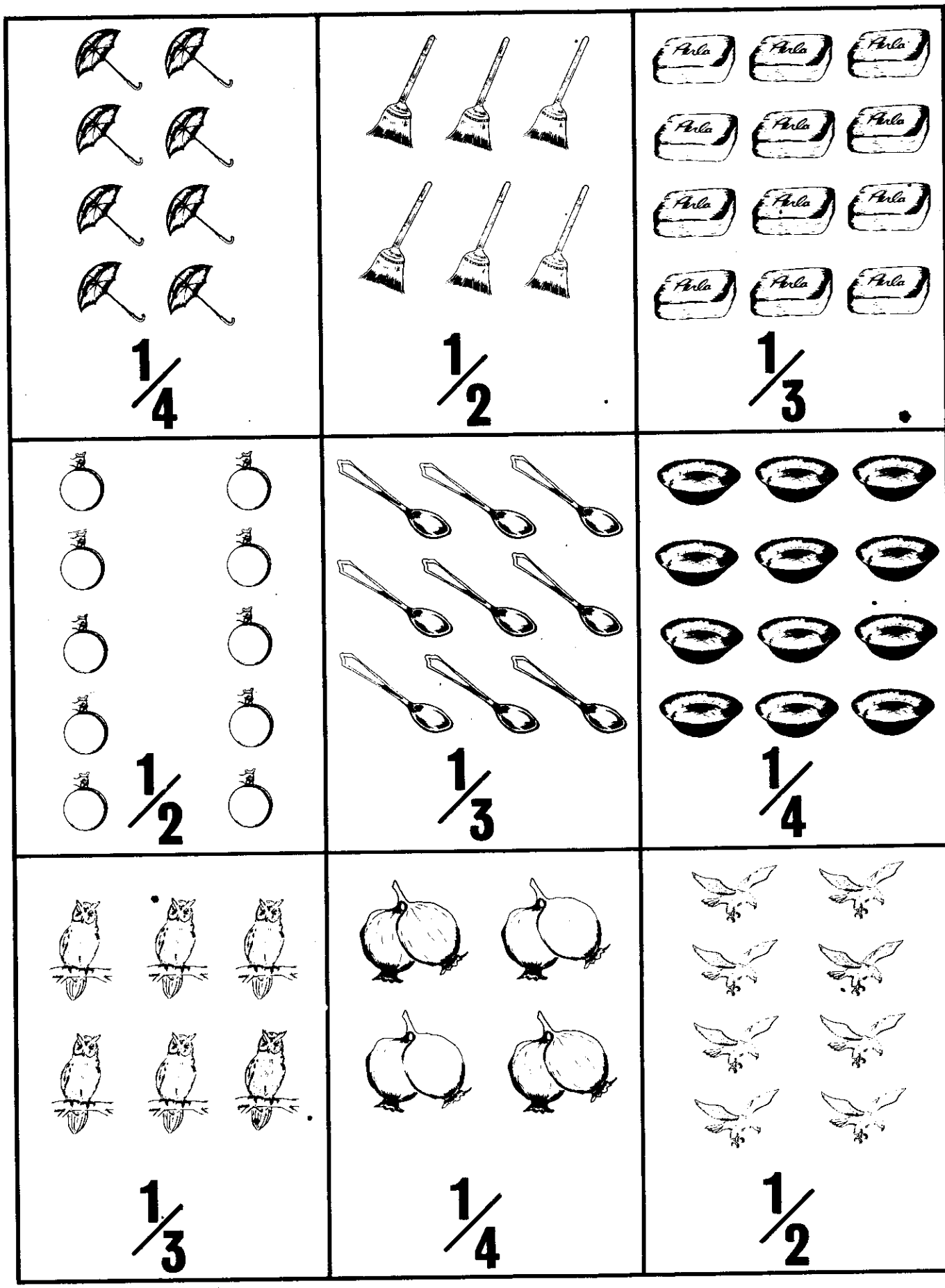
1/4



1/2



1/3


1/4
1/2
1/3
1/2
1/3
1/4
1/3
1/4
1/2

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flannelboard, felt cut-outs

CONCEPT: Meaning of fractions, 1/4, 1/3, 1/2

Repeat the lesson as given on page 121.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flannelboard coins, slates

CONCEPT: Meaning of one centavo and five centavos

Use flannelboard and place a one-centavo piece on the board. Explain that this is the "smallest" piece of money we have, meaning that it is the least in value. There are not many things to buy for one centavo.

Next put five one-centavo pieces in a row on the flannelboard. Explain that if we will put five of these pieces together, we will have the same amount of money as a five-centavo piece (and now place a five-centavo piece on the flannelboard).

If we were to go to the store with a five-centavo piece in one hand, and five one-centavo pieces in the other hand--either one would be useful to buy something that costs 5¢.

On the board demonstrate how we write 5¢. Explain that this is a short way of writing 5 Centavos. Another way to write it is ₱ 0.05.

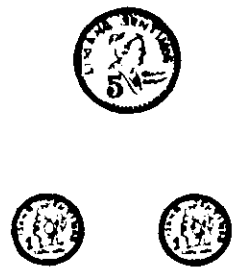
Tell the children to write on their slates how much money you put each time on the flannelboard:
3¢ 2¢ 4¢ 1¢ 5¢ etc. Be sure that they are using the symbol.

Now tell them to write it the other way:
₱0.03 ₱0.05 etc.

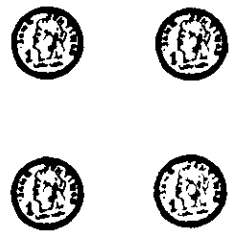
On page 123 the children are to count how many centavos are shown, then write that amount in two different ways. (Teacher, if you prefer, you could teach the ¢ sign the first day, and the following day teach the ₱ sign.)

₱0.05 5¢

₱_____ _____¢



₱_____ _____¢



₱_____ _____¢

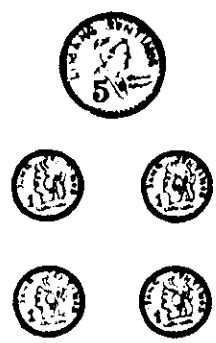
₱_____ _____¢

₱_____ _____¢

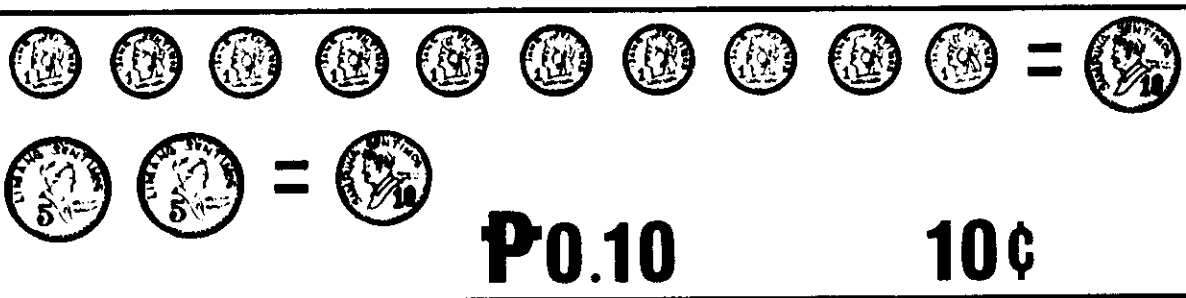
₱_____ _____¢

₱_____ _____¢

₱_____ _____¢



₱_____ _____¢



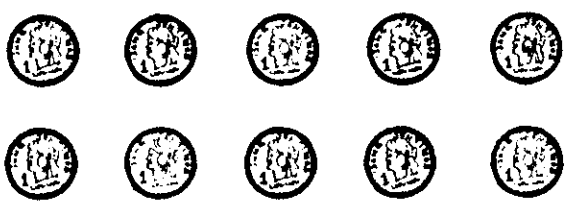
₱0.10 10¢

₱_____ _____¢

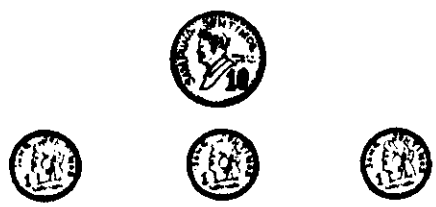
₱_____ _____¢

₱_____ _____¢

₱_____ _____¢



₱_____ _____¢



₱_____ _____¢

₱_____ _____¢

₱_____ _____¢

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flannelboard, Coins, Slates

CONCEPT: Ten centavos

With flannelboard and coins teach that there are four ways to make ten centavos:

- --ten one-centavo pieces
- --five one-centavo pieces, and one five-centavo piece
- --two five-centavo pieces
- --one ten-centavo piece

With the three coins (1¢, 5¢ and 10¢) presented so far, put various combinations of these coins on the flannelboard, and ask the children to write the correct amount on their slates.
Some of the following examples could be included:

- --5¢ and 5¢
- --5¢ and 1¢
- --10¢
- --10¢ and 5¢
- --5¢ and five 1¢
- --5¢ and three 1¢
- --10¢ and 1¢
- --5¢, 5¢, and 5¢ etc.

Again direct the class to write the amount under each set of coins. Tell them to complete all the blanks first that have the ____¢ sign. Then start over at the beginning, and complete all the blanks with ₱_____.

SUGGESTIONS TO TEACHERS

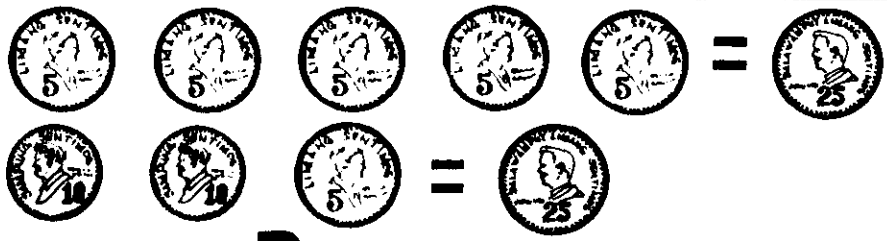
MATERIALS NEEDED: Flannelboard and coins, slates

CONCEPT: Twenty-five centavos

Introduce this lesson in the same manner as pages 124 and 123. Show the various ways to make 25¢:

--one twenty-five centavo piece
--two ten-centavo pieces, and one 5¢
--three 5¢ pieces, and one 10¢
--five 5¢ pieces
--twenty-five 1¢ pieces, etc.

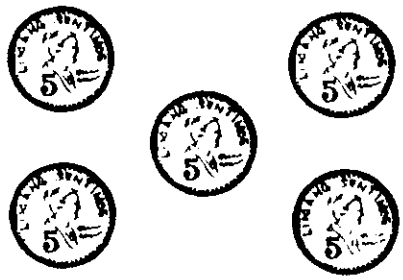
Practice on slates as before before assigning the class to write the amounts shown in each picture on page 125.



₱0.25 25¢

₱_____ _____¢

₱_____ _____¢

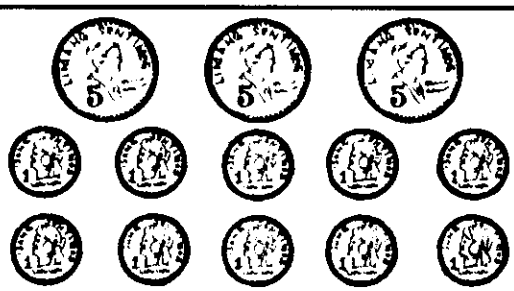


₱_____ _____¢

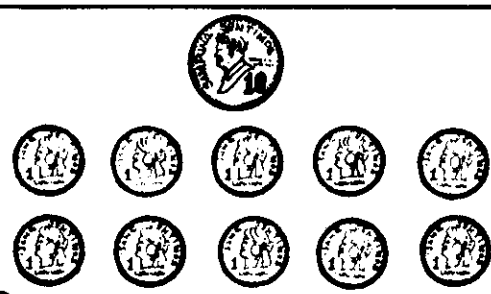
₱_____ _____¢

₱_____ _____¢

₱_____ _____¢



₱_____ _____¢



₱_____ _____¢

	₱0.25	15¢	₱0.10
	₱0.15	25¢	15¢
	₱0.12	10¢	9¢
	7¢	13¢	₱0.08
	₱0.20	₱0.15	25¢
	14¢	₱0.16	15¢
	₱0.20	10¢	₱0.25
	₱0.11	₱0.10	9¢
	16¢	₱0.15	14¢
	25¢	₱0.21	₱0.23

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flannelboard, coins, slates

CONCEPT: Review of all coins from 1¢, 5¢, 10¢ and 25¢

Put various combinations of coins on the flannelboard, asking the children to call out softly how much each shows.

Or: Draw simple objects on the chalkboard (or use flannelgraph) with the "price" of each written next to it. Call on various students to come up and put the correct coins needed to "buy" that object, on the flannelboard.

Review in various ways before assigning the children to complete page 126. They should count the coins shown in each row, and circle the number at the end of the row that tells the correct amount.

SUGGESTIONS FOR TEACHERS

MATERIALS NEEDED: Flannelboard, coins, slates

CONCEPT: Introduce 50¢ piece

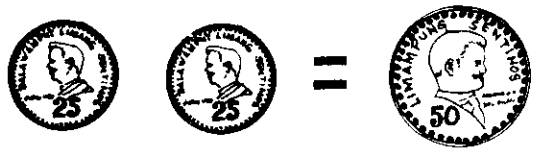
Refer to the procedure on page 124 if necessary to introduce the meaning of 50¢ piece.

Show the various ways to make 50¢:

- --one 50¢ piece
- --two 25¢ pieces
- --five 10¢ pieces
- --one 25¢ piece, two 10¢ pieces, and one 5¢
- --ten 5¢ pieces, etc.

Review all coins taught so far.

Assign the class to determine how much money is shown in each box and write it first in the blank "_____¢." Complete the page this way. Then go back to the beginning and again determine how much money is there, and write it in the other form: "₱_____."




₱0.50 50¢

₱_____ _____¢

₱_____ _____¢

₱_____ _____¢

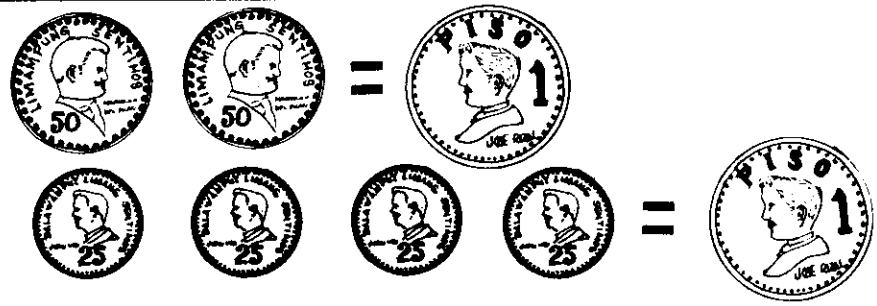
₱_____ _____¢

₱_____ _____¢

₱_____ _____¢

₱_____ _____¢

₱_____ _____¢



₱1.00

₱_____ _____¢

₱_____ _____¢

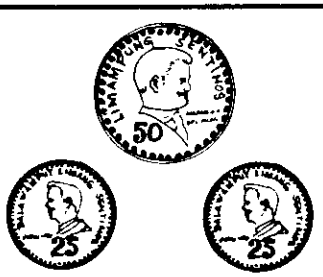
₱_____ _____¢

₱_____ _____¢

₱_____ _____¢

₱_____ _____¢

₱_____ _____¢



₱_____ _____¢

SUGGESTIONS FOR TEACHERS

MATERIALS NEEDED: Flannelboard, coins, and slates

CONCEPT: Introduce ₱1.00 piece

Refer to the procedure on page 124 if necessary to introduce the new coin.

Explain that this is the "largest" coin we have, meaning that this coin is worth more money than any of the other coins. All the money which is worth more than this is paper money.

Show the various ways to make ₱1.00:

--one ₱1.00 piece
--two 50¢ pieces
--four 25¢ pieces
--ten 10¢ pieces
--twenty 5¢ pieces
--one hundred 1¢ pieces, etc.

Assign the class to complete the page in the same way as page 127.

SUGGESTIONS FOR TEACHERS

MATERIALS NEEDED: Flannelboard and felt cut-outs

CONCEPT: Story problems - addition

With felt figures make up problems such as the ones on page 129, illustrating with objects. Children can readily solve the problems when they are able to see objects to count.

Next present problems without objects--only oral. The children's first need to help to find the numbers that are relevant in each problem.

The next need is to help to decide what they will do with the numbers: will we add? subtract? etc.

Continue this process many times, until students can easily hear a story problem and find the relevant numbers, and know what to do with them.

The children have been given help in the first two examples on page 129. In the last two problems again they have been helped in adding, but will need to find the correct numbers and solve the problems.

$\begin{array}{r} 9 \\ +2 \\ \hline \end{array}$	Siyam hen kolloway Lita. Iniddat Inana hen duwa. Kamana amin hen kolloway Lita?
$\begin{array}{r} 8 \\ +3 \\ \hline \end{array}$	Waluda hen manò da Eta. Lenàwan Amana hen tolo an Pita ya enlamongna. Kamanada hen manò da Eta?
$+\_\_$	Da Nena lemada way himbabalyan. Ummaleda hen pitu way nalpo ad Lubu ya andaat mìbaléy an dida. Kamana da Nena ad uwan?
$+\_\_$	Ah Lena, wada hen elaona way kendi. Lenàwan Ana hen éném anat agé utangén Malya hen éném. Kamana hen kendi way na-ala an Lena?

$$\begin{array}{r} 13 \\ -\ 7 \\ \hline \end{array}$$

Hempolo ya tolo hen lenolokkos Apo way buwa. Mimmana hen pitu. Kamana hen nehàba way buwa ah lokos Apo?

Enammaan Albelto hen hempolo ya opat way passek. Enlaona hen éném. Kamana hen wada?

Ah Pedro lenàwana hen hempolo ya tolo way lòto. Enlòmogna hen siyam ano. Kamana hen nehàba?

Da Mayu, hempolo ya opat hen mulada way abugadu. Lenngohna hen siyam ta apoyunda ano. Kamana hen nehàba?

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Flannelboard, felt cut-outs

CONCEPT: Story problems - subtraction

Repeat the procedure presented on page 129, keeping in mind that all the problems there were addition. Now the children are being presented with subtraction.

The first problem has been written out to remind the class of correct procedure. When children are well prepared, assign them to complete page 130.

Teacher should be available to give assistance in reading the problems if necessary.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED: Slates

CONCEPT: Story problems: addition and subtraction

Orally give story problems, stopping at the end of each, to allow children time to solve the problem on their slates.

Give some addition problems and some subtraction problems. Children often have difficulty in determining whether to add or subtract. The teacher can help by giving clues such as the following:

"If I had chickens already--and someone gave me another--I would have more, wouldn't I? Our answers get bigger as we add."

If I had chickens, and gave some away--now I have fewer, don't I? When our answers are smaller than the numbers we started with--we have to subtract." Etc.

12
− 4

Wada hen papan Lito way hempolo ya duwa hen etlogna. Hen-algawan, inissan hen ahoda hen opat. Kamana hen etlog way wada?

At Palto, lonay hen awayna te hempolo ya éha. Hen-algawan, napegsa hen udan anat mabolabol andi away. Enanap Palto ngém an yanggay pitu hen indahana. Kamana hen maid nò?

Hennag Melo hen hempolo ya duwa way omala ah enà-ala. Yadi way nan-agginawada, nambangadda hen éném te maid ano kalgéénda. Kamanada hen tommalos?

Hempolo ya éha hen ubal Leno way enammaana. Elaona hen duwa te maid ano énénda. Kamana hen ubalna way nehàba?

Ah Enak, lenàwana hen éném way lasteko. Anat omapés hen enawdina wat lenàwana ano agé hen pitu. Kamana hen lasteko way wada ah baléy da Enak?

Wada hen uman Ama way dakal. Inmulana hen walu way balat. Yadi way nawakas, inmulan agé Ina hen lema andi pengetna. Kamana hen balat way wada hen uman Ama?

Pituda hen iyAlyawan way émméy ad Lagan. Ummunudda hen pitu agé way eTonglayan. Kamana hen tatagu way émméy ad Lagan?

Waluda hen ene-epdag Malna way luwangna. Ommanàda hen éném ah hin-éh-a. Kamana hen luwang Malna?

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED:

CONCEPT: Story problems

Continue as on the preceding pages.

SUGGESTIONS TO TEACHERS

MATERIALS NEEDED:

CONCEPT: Story problems

Review the teaching procedure on pages 129 and 30. Give as much practice on slates as is necessary for students to learn the concept.

Ah Rita, walu hen penselna. Iniddat-o hen pitu. Kamana hen pensel Rita?

Ah Nola, ennalana hen walu way kollàbay ah galdin. Enalan agé Nena hen walu. Kamana hen na-ala?

Siyam hen binubùlot Ina way manò. Iniggan agé Ama hen éném. Kamana hen manò way wada ah bùlot?

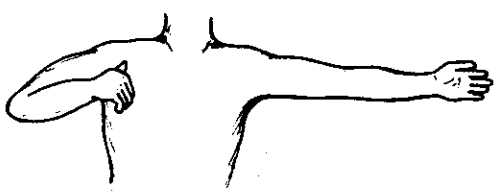
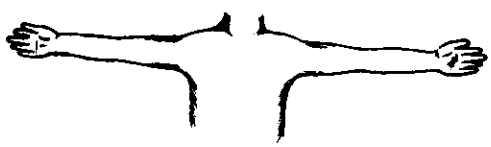
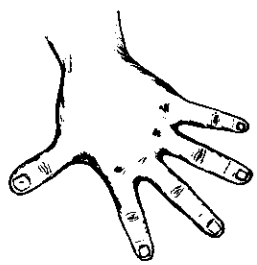
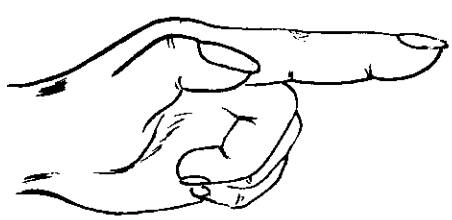
Lenàwan Mario hen hempolo way babélgam ah tenda-an. Anat agé kasen lomao hen enawdina ah lema. Kamana hen babélgam way lenàwanda?

Ah Manno dana pastolon hen hempolo way danakkal ya anat hen pitu way anakettoy way baka. Enlaon Amana hen siyam. Kamana hen nehàba?

Enammaan Mayya hen hempolo ya walu way day-at. Enan Poet hen siyam. Kamana hen nehàba?

Ah Dunya enammaana hen hempolo ya éném way hambag. Iniddatna hen walu hen andiday gagayyémma. Kamana hen nehàba?

Ah Kayat, enammaana hen hempolo ya walu way painga. Hempolo hen danakkal. Kamana hen anakettoy?

	henhudngol
	hindupa
	hindangan
	hen-attuduwan
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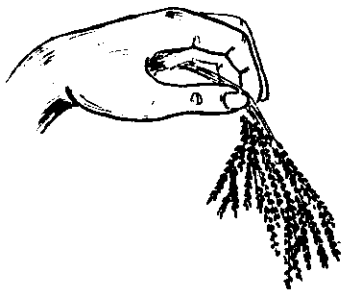

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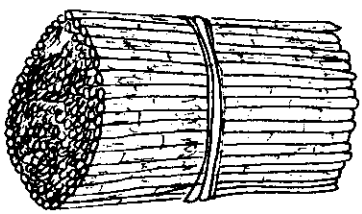

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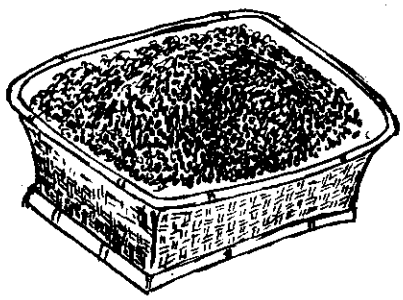

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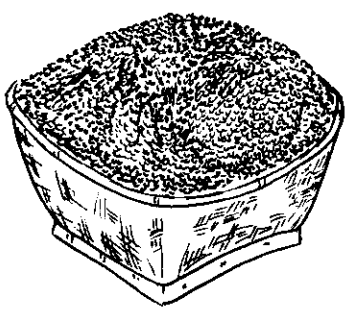

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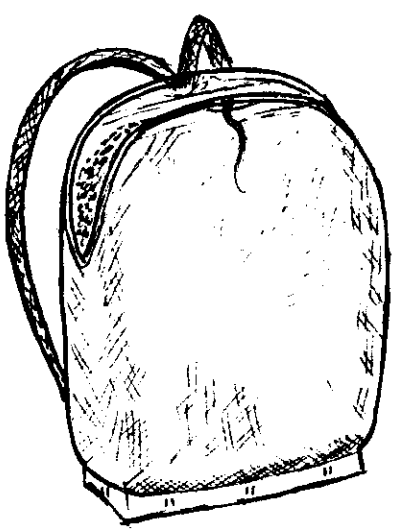

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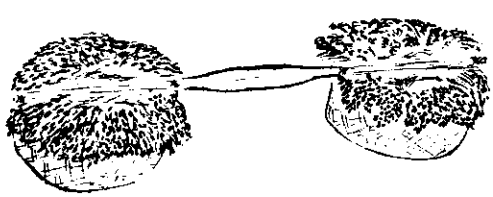

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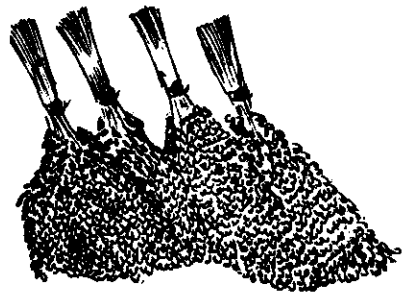

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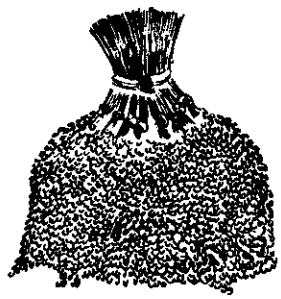

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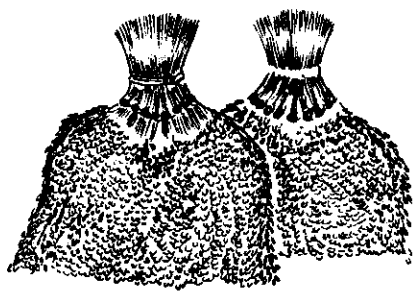

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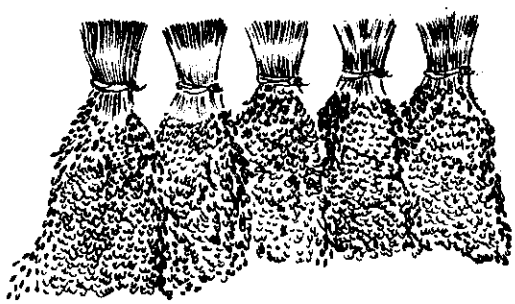

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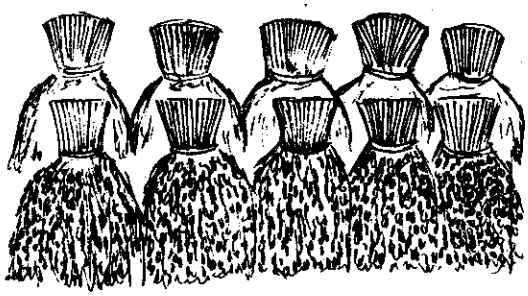

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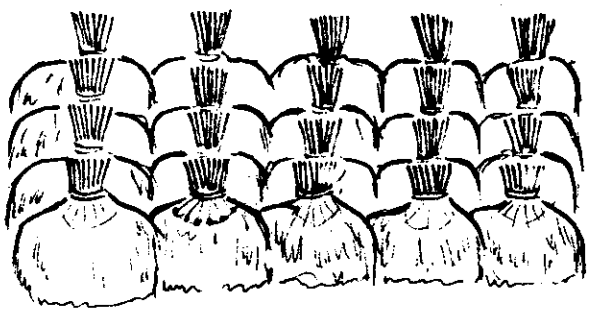
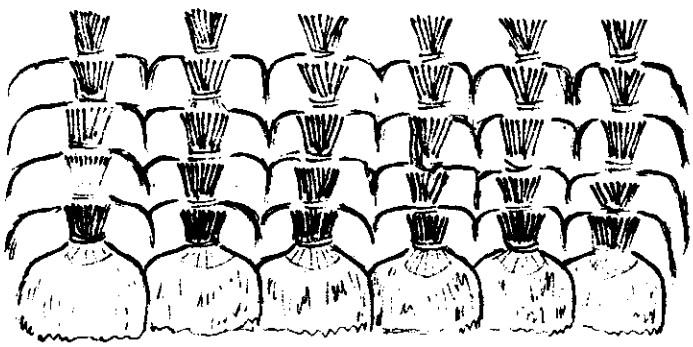


hinduldug



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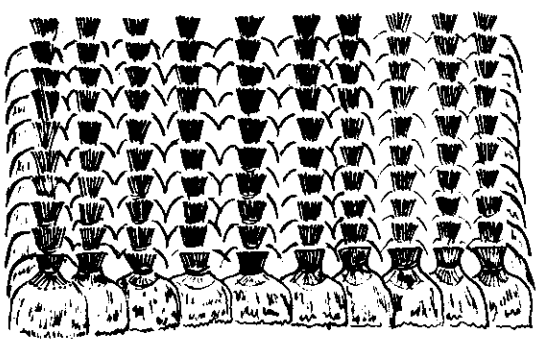

himbokal