INTERVENTION

MATHEMATICS

GRADE 5

COMPETENCY BASED EDUCATION

Submitted to the School of Education

University of Dayton

by

Sharon DiBiase

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RUNNING HEAD: Intervention

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Approved by:

Official Advisor

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INTRODUCTION OF A STATE MANDATED CBE PROGRAM INTO

THE EAST LIVERPOOL CITY SCHOOL DISTRICT

Several years ago, the General Assembly of the State of
Ohio mandated Competency Based Education (CBE). Competency
Based Education is a program to insure that students have
mastered certain skills and have met certain objectives
before moving on to the next grade level. Each school
district was given time to formulate specific tests in order
to comply with this law by 1989-90. The General Assembly
stipulated that locally developed CBE programs would be
implemented for Language Arts, Mathematics, and Reading.
The following criteria was to be met:

(a) Pupil performance objective shall be established
for Language Arts, Mathematics, and Reading.

(b) Provisions shall be made for periodic assessment of
pupil performance, including testing at least once in grades
one through four, grades five through eight, and grades nine
through eleven.

(c) Guidelines shall be established for the use of
assessment results for instruction, evaluation,
intervention, guidance, and promotion decisions.

(d) Intervention shall be provided according to pupil
needs.

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(e) Written policies and procedures shall be adopted by the board of education regarding the participation of handicapped pupils in locally developed competency based education programs. Provisions may be made for exemption of individual handicapped pupils from the requirements of the locally developed competency based education programs.

(f) Implementation of competency based education in Language Arts, Mathematics, and Reading shall begin no later than the 1984-85 school year, with full implementaion to be completed no later than the 1989-90 school year.

(g) Competency based education programs shall be reviewed and updated at least once every five years.

Refer to the minimum standards of the Board of Education of the State of Ohio as contained in Appendix A.

The East Liverpool City School District worked on the development of the local CBE tests from 1982 through 1988. Refer to the Proposed Implementation Timeline as seen in Figure 1. Various committees, on which I served, were formed, ideas were brainstormed, practice tests were given, scores were evaluated, and adjustments and appropriate changes were made.

The following are some of the procedures and practices that were decided upon and that were to be implemented:

(a) Students in grades 3, 5, 7, and 10 would be tested in language arts, mathematics, and reading.

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(b) A score of 90% or better would be considered Mastery.

(c) Test results would reflect Mastery of minimum skills at each level.

(d) Test results would be noted on each student's record.

(e) Test results would be communicated to the parents.

(f) A student who did not obtain a Mastery on any given CBE test would take part in a special CBE intervention program held during the school day.

(g) A student would have the opportunity to retake the tests during the remainder of the school year.

(h) The following strategies or practices could be used to help remediate students.

GRADE THREE

1. Individualized instruction

2. Diagnostic and prescriptive teaching

3. Computer assisted instruction

4. Adjusted instruction based on learning modalities

5. Tutoring-paper, parent, teacher, volunteer

6. Small group instruction

7. Learning centers with teacher programmed activities

8. Opportunities for additional practice and application

9. Parent contact

10. Audio-visual aids

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GRADE FIVE

1. Remedial instruction/resource/grouping

2. Independent classroom activities

3. Tutoring-teacher, parent, peer, volunteer

4. Additional assignments

5. Drill

6. Adjusted learning styles

7. Learning stations

8. Computer programmed instruction

9. Diagnostic and prescriptive teaching

10. Parent contact

11. Audio-visual aids

GRADES SEVEN AND TEN

1. Individualized instruction

2. Tutoring-teacher, peer, volunteer, parent

3. Remedial instruction/resource/grouping

4. Computer programmed instruction

5. Additional homework activities/develop resource file of

activities to practice different objectives

6. Modified instructional materials

7. Drill

8. Learning stations

9. Small group instruction

10. Diagnostic and prescriptive teaching

11. Classroom groupings

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12. Independent study

13. Parent contact

14. Audio-visual aids

(i) If at the year's end, after having had many kinds of special help, the student is still unable to pass the tests, he/she shall not be promoted. Refer to the Ohio Revised Code on Promotion and Retention as contained in Appendix B.

The impact of the local CBE program on the teaching staff beccame a priority one concern among all vested parties. The East Liverpool School District agreed to negotioate with the East Liverpool Education Association in regards to the terms and conditions of employment that would result from the impact of the CBE program going into effect. A 12 member committee was formed consisting of 4 administrators and 2 teachers from each of the effected grade levels 3, 5, 7, and 10. (I served in a dual capacity on this committee. I was one of the two grade 10 teachers represented and also was an acting East Liverpool Association representative.) This committee met from 1987-1989. Its main purpose was to focus on the added work load for the teachers and to come to an agreement regarding the implementation of the CBE program into the East Liverpool City School District.

A Joint Statement of Implementation was developed and

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accepted by both the East Liverpool Board of Education and the East Liverpool Association. Refer to the Joint Statemnt of Implementing Competency Based Education in the East Liverpool City School District as contained in Appendix C.

The responsibilities of the teachers and their respective job descriptions for inmplementing the CBE program was developed and set forth in writing. The positions and job descriptions were divided into several areas; CBE Teacher (full-time), Grade 7 CBE teacher (half-time), Teachers of Grades 3, 5, and 7, and Teachers of Grades 10, 11, and 12. Refer to the Positions and Responsibilities for Implementing The CBE program as contained in Appendix D.

My present teaching position is that of the full-time CBE Specialist and it is one of the primary responsibilities of my job to provide CBE intervention to selected students in grades three and five in the areas of language arts, mathematics, and reading. It is also part of my job description to develop intervention resource packets for the two grade levels and in all three subject areas. For the purpose of this project I am going to concentrate on the Mathematics intervention in grade five because test scores have repeatedly indicated this as a collective area of weakness among the fifth graders.

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The purpose of the intervention resource packets or lesson plans, is several-fold. The first purpose is aimed towards the regular classroom teacher's personal use with his/her students. Some teachers prefer to do the intervention part of the CBE program themselves. (However, I will still need to do any re-testing and all the bookkeeping involved.) The lesson plans can also be used by the CBE teacher in his/her instructions with the students during intervention. The lesson plans are also available, upon request, for the parents' use. Parents may contact the CBE teacher and request certain learning packets to use in helping their children. The parents will know which learning packets to request after the test results go home indicating each area the student is deficient in.

A teacher's instructional time is often already stretched to its limit and a teacher's "free time" is found in minuscule amounts, if found at all. After meetings and discussions with the teachers involved, and at their expressed requests, the first set of learning packets, that I will refer to as Traditional Lesson Plans, was developed.

The Traditional Lesson Plans are contained in Section I. They are organized by PPO (pupil performance objective) numbers. These PPO numbers are in direct correlation with the PPO items found on the grade 5-CBE Mathematics Test. A copy of this test has been included as Appendix E.

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The traditional Lesson Plans utilize the workbook and textbook concepts and problems from the presently approved curriculum. These lesson plans have been designed to be easily followed by the teacher and/or student, take little or no preparation time, and can be done in a relatively small amount of time. The Traditional Lesson Plans are intended to meet the teachers' needs and to expediate the intervention process. However, they tend to concentrate only on Bloom's first level of learning, Knowledge.

The Knowledge Level of Learning elicits factual answers, tests recall and recognition by emphasizing the following key words:

Who	Describe
What	Define
Why	Match
When	Select
Where	Which one
How	What is the one best
How much	Choose
What does it mean	Omit

It is easier to measure and evaluate a student's performance by testing for factual answers and asking for recall and recognition. But, does this method always meet the students' needs? The particular students that the CBE intervention program is geared towards have already

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demonstrated, by failing the tests, that the traditional
teaching methods have not been effective for them.
Therefore, a second set of lesson plans was developed for
Grade 5-Math. I will refer to this second set of plans as
Non-Traditional Lesson Plans.

The Non-Traditional Lesson Plans are contained in
Section II. They are organized by PPO (pupil performance
objective) numbers that also relate directly to the Grade
5-CBE Mathematics Test.

Developing the Non-Traditional Lesson Plans was at once
a challenge and an endeavor to discover something
innovative. First, it was imperative to divert from the
traditional methods used to develop lesson plans and to
think philosophically about a systematic approach to
teaching the CBE objectives by using non-traditional
teaching methods. An extensive amount of reading and
research helped me to formulate, develop, and execute my
ideas.

According to James W. Wilson, "Mathematics teachers
often state their goals of instruction to include all
cognitive levels. But then their instruction, their
testing, and their grading tend to emphasize the lower
behavior levels, such as computation and comprehension."
(Bloom, 1971) He further goes on to say that it is often
assumed that a student's performance at one cognitive level

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requires mastery of a related content at the lower levels.
But, Wilson does not find any evidence to support this
assumption. It is important to note here that it is
logical to expect "some" degree of performance from all the
students at the lower cognitive levels before successfully
progressing onto the higher learning levels of Application,
Analysis, Synthesis, and Evaluation.

In developing the Non-Traditional Lesson Plans, the
focus was concentrated on the last four higher learning
levels found on Bloom's Taxonomy as previously cited.
In these lesson plans the students are asked to make
applications to situations that are new, unfamiliar, or
have a different view, emphasizing the following:

Predict what would happen if

Choose the best statements that apply

Select

Judge the effects

What would result

Explain

Identify the results of

Tell what would happen

Tell how, when, where, why

Tell how much change there would be

Non-Traditional Lesson Plans dealing with PPO numbers,
02-Roll-A-15 Game and 10-11-Roll A Product are examples of

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the use of student application.

The students are also asked to analize, breaking down
into parts and/or forms, emphasizing the following:

Distinguish

Identify

What assumptions

What motive is there

What conclusions

Make a distinction

What is the premise

What ideas apply, not apply

Implicit in the statement is the idea of

What is the function of

What's fact, opinion

What statement is relevant, extraneous to, related to,
    not applicable

What does author believe, assume

State to point of view of

What ideas justify conclusion

The least essential statements are

What's the theme, main idea, subordinate idea

What inconsistencies, fallacies

What literacy form is used

What persuasive technique

What relationship between

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Non-Traditional Lesson Plans dealing with PPO numbers, 12-Classroom Math and 21-Fractional Mix and Match are examples of student analysis.

Going on to the next progressive level the students are asked to synthesize their findings by combining elements into a pattern not clearly there before, emphasizing the following:

Write (according to the following limitations)

Create

Make

Do

Dance

Choose

How would you test

Propose an alternative

Solve the following

Plan

Design

Make up

Compose

Formulate a theory

How else would you

State a rule

Develop

Non-Traditional Lesson Plans dealing with PPO numbers,

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26-27-Snowman Sums/Decimal Differences and 28-Exploring

Shapes are examples of student synthesis.

In the last level of Bloom's Taxonomy the students are

asked to make evaluations according to some set of criteria

and state why. Emphasis is placed on the following:

Appraise

Judge

Criticize

Defend

Compare

What fallacies, consistencies, inconsistencies appear

Which is more important, moral, better, logical, valid,

appropriate, inappropriate

Find the errors

Non-Traditional Lesson Plans dealing with PPO numbers,

01-Function Machine and 18-The Prize Is Right are examples

of student conceptual evaluation.

Students need to do problem-solving activities that

relate mathematics to the their daily lives on a level they

can understand and relate to. Using teaching methods

inclusive of only memorization and computation does not seem

as an important a factor in long-term retention as does the

use of application, analysis, synthesis, and evaluation.

Students need to discover what the problems are first before

figuring out how to solve them. Then they can go about

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solving the problems by using logic and reasoning. Students

must be able to see the relevance of mathematical concepts,

thus stimulating the students' thinking about the

usefulness of mathematical operations and processes. The

processes of conceptualizing and computing mentally are

necessary skills to see order, patterns, and relationships

applicable to every day life. A mathematical presentation

or lesson has a greater effectiveness if a student's

interest is stimulated and the lesson has value for that

student. Students have a need for the application of

realism to their specific lives and situations. Without the

"reality" of mathematics, students often view problems and

concepts in the abstract, thus creating a lack of

understanding even before a particular skill can be

introduced. How many times, as a teacher, have we heard a

student say, "But I don't understand!"

Teachers need to encourage the fullest educational

development in their students by providing students with the

necessary skills and instilling in them the confidence to

approach problem solving with curiosity, a willingness to

learn, and intellectual interest.

Education is a process that changes the learner and never

fully ceases. It is imperative to relate the actualities

of student change to those changes sought. Educators need

to continually strive to find new methods to improve

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teaching and learning. Thus, the professional growth of a
teacher is dependent on his/her ability to secure the
knowledge he/she needs to constantly improve his/her
teaching and the students' learning. It should not be our
primary purpose to simply grade and classify the students.
We need to maintain a broader view of the tasks and goals we
face as educators. We also need to be continually aware of
the consequences that social trends have on our curriculum and
educational objectives. Societal conditions and trends are
an important and useful basis for determining the
desirability of particular objectives.

According to Baldwin, "Careful consideration should be
given before instruction to what outcomes are possible,
desirable, and thus systematically to be sought." (Hersey,
1988) This is an essential step in the instructional and
evaluational processes on how to formulate maximally useful
statements of educational objectives.

In the final analysis, it is the personal responsibility
of an educator to strive to develop in his/her students
those characteristics which will enable those students to
live effectively in a complex society and to enable each
student to reach the highest level of learning possible for
him or her in any area of endeavor.

The focus and concentration of this project has been
limited to one selected area, Grade 5-Math. My research

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findings and the completed project, itself, have greatly
exceeded my expectations.

Prior to the implementation of the Non-Traditional
Lesson Plans for the ensuing school year, it could be
suggested that a teacher inservice be held for the purpose
of presenting to the staff the teaching strategies found
herein. At this inservice, various lesson plans, ideas, and
actual materials could be shared. Also, an intricate part
of this inservice would be to encourage the teachers in a
hands-on approach with application. It is my belief that
this inservice idea will be met with positive consideration
by those involved.

As time permits, it would be beneficial to develop
Non-Traditional Lesson Plans for both grade levels and for
all three of the subject areas being tested. The other
Traditional Lesson Plans have already been developed for all
the specific required areas and are presently in use.

It would be prudent to note here that I am conscious of
the fact and do realize that not all of the Non-Traditional
Lesson Plans can be utilized by everyone in all situations.
But, I do believe that something useful can be found here
for any educator and, thus, any student.

PROPOSED IMPLEMENTATION TIMELINE - COMPETENCY BASED EDUCATION

EAST LIVERPOOL CITY SCHOOL DISTRICT

Figure 1

1982 – 83	1983 – 84	1984 – 85	1985 – 86
Inservice Compliance Team and Training Information for staff	List all possible objectives Select objectives (Nov., 1983) Write first draft of all competencies M: Revise competencies Develop all CBE policies	M: Write items L: Revise competencies Develop record-keeping system Prepare administrative rules and procedures from CBE policies	M: Pilot test M: Refine test L: Write items R: Revise competencies Field test record-keeping system

1986 – 87	1987 – 88	1988 – 89	1989 – 90
M: Continue testing and refining L: Pilot test L: Refine test R: Write items Define record-keeping system	M: Continue testing L: Continue testing and refining R: Pilot test R: Refine test Review results to date for Intervention planning Implement record-keeping Develop Intervention Plan	M: Continue testing L: Continue testing R: Continue testing and refining Implement Intervention Plan Task Force to study concept of writing sample as part of Language Arts	Full implementation Effect policy on retention/graduation

CODE: R = Reading
M = Math
L = Language

"Revise competencies" activity includes deciding number of items and criteria. "Write items" activity includes some field testing.

APPENDIX A

COMPETENCY BASED EDUCATION

In compliance with the minimum standards as promulgated by the Board
of Education of the State of Ohio, the East Liverpool Board of Educa-
tion hereby endorses and authorizes a locally developed competency
based education program. While this program will not be officially
in operation with all provisions in effect until the 1989-90 school
year, the Board of Education hereby authorizes the administration and
staff to begin the development of this program so that it will be read
by that time.

STATEMENT OF MINIMUMS

The Board of Education recognizes as policy the need to establish
minimum levels of acceptable performance. However, this should in
no way infer that the Board of Education is satisfied with only
instruction in minimum and basic competencies.

These competencies should reflect the basic building blocks upon which
additional learning and successful life skills are based. However,
the Board of Education also recognizes its obligation to offer a
quality educational program which provides opportunities far above
any minimum level of performance.

Indeed it is the adopted courses of study which reflect more accuratel
the content of instruction intended for the pupils of the East Liverpo
City School District.

PUPIL PERFORMANCE OBJECTIVES

Pupil performance objectives shall be developed from locally adopted
courses of study for use in the competency based education program.
These objectives may be determined cooperatively by the staff and
administration, with input from the community as possible. It is the
intent of the Board of Education that these objectives reflect
minimum performance objectives since the goal of this program is to
establish a baseline of performance necessary for successful functioni
in academic subjects and in basic life skills.

These pupil performance objectives shall be reviewed periodically in
conjunction with revision of local courses of study to insure that
the objectives continue to reflect what is taught in the East Liverpoo
City School District.

GRADE LEVELS AND SUBJECTS TO BE TESTED

The competency based education program should be regarded as a contin-
uous program of instruction in basic objectives spanning all grade lev
of the district.

GRADE LEVELS AND SUBJECTS TO BE TESTED

The competency based education program should be regarded as a continuous program of instruction in basic objectives spanning all grade levels of the district.

However, since periodic assessments of student performance is a necessary part of this program, the following grade levels shall be used for testing to measure successful completion of these objectives.

        Grade 3: Reading, Language Arts, Mathematics
        Grade 5: Reading, Language Arts, Mathematics
        Grade 7: Reading, Language Arts, Mathematics
        Grade 10: Reading, Language Arts, Mathematics, Life Skills
Initial administration of tests at each grade level will be done during the fall of the academic year.

USE OF ASSESSMENT RESULTS

Use of the tests for decisions regarding promotion and retention are included under Board of Education Policy IKC.

Results of the competency based education program tests shall also be used by the administration to determine the appropriateness of courses of study and materials/strategies used in the instruction of the performance objectives identified for the program. In those areas where students have not demonstrated acceptable performance on these testing instruments, the administration is hereby authorized to develop recommendations to the Board of Education for correction of deficiencies necessary on a district-wide basis. The administrat. is also to monitor results of the tests to insure that the tests do, in fact, reflect the actual content of instruction as approved in the courses of study. One of the intents is therefore to utilize the results of this program to monitor and improve through careful evaluation of results the instructional program which provides for the teaching of the performance objectives.

Results of student performance on the testing instruments may indicate a need to provide a program of intervention for any students not succes fully completing the level of performance expected on the competency based education programs tests. It is the goal of the Board of Educati that remedial instruction be provided to the maximum extent possible so that all students will have the opportunity to complete successfully the performance objectives measured by the program. Since these performance objectives are designed to measure minimum levels of acceptable performance, most intervention will be handled through the regular classroom in order for additional instruction to continue. However, the administration is authorized to explore additional intervention opportunities through federal programs and/or the use of paraprofessionals or volunteers, in line with available resources.

Results of the competency based education program for each student shall be communicated to that student's parent/guardian in order that such information might be utilized in making decisions relating to the student's educational program. These guidance decisions should be made cooperatively among parent/guardian, teachers/counselors, and administrators.

INTERVENTION PROGRAMS

In designing intervention programs, it should be kept in mind that it is the goal of the Board of Education that all students master the minimum performance objectives, as identified. For this reason, intervention programs should be designed with individual student needs in mind. Instruction for each student should focus upon the individua competencies not mastered by each student. District-wide needs should not be addressed through an intervention program but instead through careful curriculum planning and revision.

REVIEW OF COMPETENCY BASED EDUCATION PROGRAM

Components of this program are to be reviewed by the administration on an ongoing review of the district curriculum and course of study. In no case, however, should the period between reviews of any one component exceed five years.

PROVISIONS FOR RE-TEST

Students not successfully passing the required level of achievement on the competency based education tests shall be given additional opportunities to complete these tests during each school year.

However, students may be tested under this program no more than three times in any one academic year unless the additional testing is recommended and administered by a member of the professional staff dealing with this student.

East Liverpool City Schools

Code: IOA
State Board of Education Standards
3301-35(B)(2) (e)

COMPETENCY BASED EDUCATION AND HANDICAPPED PUPILS

It is the intention of the Board of Education that all pupils be treated as equitably as possible. Therefore, while some exceptions must be made for identified handicapped pupils, the overall goal should be for all pupils to complete successfully the minimum performance objectives.

It shall be the responsibility of the IEP/Review/Placement team to determine the level of competency based education testing, if any, for each pupil either at the time of the review or at placement. These teams are hereby authorized to exempt pupils from the schedule of testing as outlined in Board of Eduacation Policy IO.

However, each pupil should be given the appropriate test when this team feels that the student is ready for that level of testing.

Handicapped pupils will be eligible for a regular high school diploma when they have met all requirements as specified under the Board of Education Policy IKF.

Identified handicapped pupils may receive a certificate of attendance if they have earned the necessary number of credits for graduation (see IKF) and if they have met the level of competency specified by the IEP/Review/Placement team but have failed to complete all components of the competency based education program.. Handicapped pupils receiving a certificate of attendance may be re-enrolled in order to earn a regular high school diploma.

Effective the 1989-90 school year

APPENDIX B

PROMOTIONS AND RETENTIONS

I.   Elementary Schools

    A.   There is no rule which states that a child in the primary grades cannot be transferred. If a child has been given passing grades at the end of the school year and the teacher feels he/she should not be promoted, a conference should be held with the principal and the parent before any definite decision is made. If the child has been given passing grades, it is difficult to establish cause for either retaining or transferring the child.

    B.   In making a decision on promotion, the welfare of the child shall be a deciding factor. The teacher and the principal have the final word in making such a decision.

    C.   The policy regarding promotion in grades one through five should be governed by the following:
        1.   To be promoted from the grades above the primary level a child must receive passing average in English, arithmetic, social studies, science, and spelling.
        2.   The decision to retain a child should result from a conference between the principal and the teacher.
        3.   The parents of any child in grades one through six shall be notified during the first week of the last grading period if the child's promotion is in jeopardy. Final decision can be held off until the last day of school if the child is to be retained.

    D.   The policy regarding promotion in grades six through eight should be governed by the following:
        1.   To be promoted from grade six to grade seven, a child must receive passing averages in English, mathematics, social studies, science, and spelling.
        2.   To be promoted from grade seven to eight or from grade eight to nine, a child must receive passing averages in English, mathematics, social studies, and science.
        3.   The decision to retain a child should result from a conference between the principal/designee and the teache
        4.   The parents of any child in grades six through eight sha be notified during the first week of the last grading period if the child's promotion is in jeopardy. Final decisions may be deferred until the last day of school the child is to be retained.
        5.   For a student in grades seven and eight, exceptions to 2 above may be made upon the recommendation of a committ of teachers and the principal/designee. After studying the student's record and achievement, the committee may make one of three recommendations: to promote the stude to retain the student; or to promote the student upon t successful completion of summer school.

E. The policy concerning the transfer of students from one
    grade to the next, as all other policies of public school
    education, must be determined on the basis of what is best
    for the child. The execution of the policy must have the
    same purpose. In general, a child is to be transferred to
    the next grade when it is believed that his/her ability
    is such that he/she cannot profit by remaining another year
    in the same grade. The following is the school policy on the
    transfer of students.
    1. No child is to be transferred from the first grade to
        the second grade until he/she has been retained once in
        the first grade.
    2. No child is to be transferred from the second grade to
        the third grade until he/she has been retained once in
        the second grade.
    3. In grades 3 through 8, no child is to be transferred
        until he/she is at least two years below the expected
        grade level.
    4. No child is to be transferred to another grade on comple-
        tion of summer school. This more appropriately a
        promotion.

II. High School

    A. Beginning in grade nine, a student is promoted to the next
        grade on the basis of subjects/credits rather than on the
        basis of successful completion of all academic subjects.

    B. The following is the number of credits required for advance-
        ment to the sophomore, junior, or senior classes:

        Sophomore status   -   4 credits
        Junior Status   -   8 credits
        Senior Status   - 13 credits

III. Exceptions

    A. Transfers not meeting the above conditions or exceptions
        may be made upon the approval of the assistant superintendent

IV. Promotion and competency based education programs (this section
     to be implemented at the beginning of the 1989-90 school year)

     Students in grades 3,5,7, and 10 will also complete competency
     based education programs in the fall of these academic years.

     In order to be promoted from grade three to four, from grade five
     to six, or from grade seven to eight, each student must have
     successfully completed at least 90% of the minimum performance
     objectives on two of the three areas assessed.

     Students not meeting this criteria will be transferred (but not
     promoted) only if the classroom teachers, principal, and parent/
     guardian agree that such a transfer would be in the best interest
     of the pupil. Such a transfer must also meet the requirements of
     items I-D or II-C of this policy.

Any student being promoted at these levels shall also meet the other conditions of this policy for promotion.

Students in grade ten will continue to be placed in the appropriate classes (i.e., sophomore, junior, senior) in accordance with the total number of credits earned. However, graduation requirements specify that all students must have successfully completed 90% of the minimum performance objectives on all four of the tests administered during the sophomore year. This is in addition to accumulating the required number of credit and specific course requirements for graduation.

Nothing in this section should be interpreted to mean that completing only the requirements of the competency based education program is sufficient for promotion or graduation. All other requirements must also be met since, by its very nature, the competency based education program focuses only upon minimums.

Students transferring into the district from outside this school district shall be administered the competency based education programs tests as soon as possible after entry. Students shall be required to take the test most recently administered to other students at the same grade level of that student's entry.

APPENDIX C

JOINT STATEMENT IMPLEMENTING COMPETENCY BASED EDUCATION IN THE
EAST LIVERPOOL CITY SCHOOL DISTRICT

During the 1988-89 school year, a committee authorized by the master agreement between the East Liverpool Board of Education and the East Liverpool Education Association (ELEA) met on several occasions to discuss the procedures by which competency based education (CBE) might be implemented in the East Liverpool City School District.

The CBE program has been in development since the 1983-84 school year when the entire staff participated in the development of pupil performance objectives necessary for the implementation of this program. (CBE is required by state minimum standards of the Ohio Board of Education and must be fully implemented during the 1989-90 school year.)

Since 1983-84, the work on CBE has been guided by a Task Force which has assisted in the development of appropriate examination questions and review through field testing.

In June, 1989, an implementation plan was recommended by the Superintendent and adopted by the Board of Education. Subsequent to that, the CBE Committee has met with the administration to outline and discuss various differences and areas of agreement in fully implementing this program.

This document summarizes those issues and is intended to guide the staff in implementing competency based education. It contains not only statements of belief but also recommendations for implementing the program. Copies are to be provided to all staff members and for the official file of the East Liverpool Board of Education.

1. Competency based education examinations measure whether a student has mastered certain pupil performance objectives at a given point in time. These examinations do not provide a description of the overall ability or achievement of any student. Instead, the goal is to discover if the student has mastered certain minimum requirements necessary for later learning.

It is important that all of those using the data from the CBE examinations recognize the results from a single administration of the test may not truly reflect a student's mastery of those objectives. However, it is the best measure which is available to us.

2.   Both parties agree that the the CBE program measures only
minimums and that minimums are not the desired outcomes for
students of the East Liverpool City School District.

    The Board of Education desires that students reach their
maximum potential as a result of their experiences in the school
district. The staff and administration believe and seek on a
daily basis to provide that maximum potential. It is feared that
there could be a tendency to believe that the staff focuses only
on minimum performance because of the severe sanctions provided
for failing to master the objectives. This would be the very
antithesis of what the staff and administration work to provide
for each student attending our schools.

3.   Both parties recommend to the Board of Education that it
consider revising the policy on CBE (adopted in 1984) to require
that students at grades three, five, and seven must pass all
three tests (i.e., language arts, mathematics, and reading) in
order to be promoted to the next grade level. (Currently, there
is a requirement that students in grade ten must pass all three
areas in order to graduate from high school.)

    While it is recognized that this may have been perceived as
a difficult enough goal in 1984, three points should be
recognized. First, the examinations as developed do reflect
minimum performance in most objectives. Second, current plans
call for intervention to provide additional opportunities for
students to master objectives long after initial testing has been
completed. Third, there is always the possibility that a student
might never pass an examination in one area (e.g., language arts)
and then be faced with doing so in order to graduate. It would
seem very practical to complete successfully the examination at
each level in order to avoid extensive remediation late in a
student's academic career.

4.   Test results from the administration of competency based
examinations will not be used as a method for staff evaluation.
It should be remembered that the students' knowledge when tested
early in grades three, five, seven, and ten reflect mostly what
has been taught in prior years. In addition, the method of
measurement (i.e., either passing or not passing each objective)
does not lend itself to quantitative measurement. (That is, one
cannot determine the percentile rank of any individual or group
of students.)

    Moreover, some students may have received the benefit of
special remedial programs denied to other students because of
federal and state eligibility requirements.

Because of so many variables and the fact that the CBE program does not begin to address all of the curriculum scope and sequence adopted by the Board of Education, it simply is not possible to use the CBE examination for such purposes. In addition, it is seen as counter productive to the overall goals of the CBE program.

5. The designated English Department faculty member and the designated Math Department faculty member ultimately have the responsibility for changing the record of any student from unsatisfactory to satisfactory completion of any pupil performance objective.

Normally, this updating of the record will occur as a result of direct intervention by the CBE teachers. However, it is envisioned that regular classroom teachers or other instructional staff (e.g., Chapter I or SWIM instructors) might also have observed the completion of some objective which was not previously mastered and will therefore provide written notice on a standard form to the appropriate CBE personnel.

The ELEA wishes to state for the record that it feels that all staff members should have and retain objective records of that completion. While that evidence need not be the original test questions, it should be part of some classroom assignment or quiz which verifies the successful completion of the objective.

While the administration recognizes the value of retaining that objective record as proof of completion, it stops short of requiring because of the administration's belief that a professional judgment may not always be so quantifiable. However, the administration recommends the retention of some documentation of successful completion of a previously nonmastered pupil performance objective.

6. One person at each grade level will be responsible for the administration of the competency based education examination. At the elementary level, that individual will be the CBE instructor, while the elementary and middle school CBE instructors will share those duties for grade seven. At the high school level, the designated member of the English Department and the designated member of the Math Department will be assigned that responsibility.

Teachers whose classes are being tested will assist through monitoring the class during the test administration. However, in order to achieve the greatest fairness in test administration,

only one person will be charged with the responsibility of direct test administration.

7. CBE teachers will develop resource packets for intervention of pupil performance objectives, with these packets to be available to all staff through the CBE teachers.

Part of the effort of the CBE teachers will involve developing instructional packages that could be used for students needing to master individual pupil performance objectives. These packets should be available to other staff members in order to provide additional resources for intervention. However, it is important that distribution be controlled in order to avoid a situation whereby the student will use the same instructional resource repeatedly. That control can best be exercised by the CBE teachers who develop the packets.

8. At the high school level, intervention should begin with students scheduled into intervention classes which meet during the activity periods. A staff member assigned to this duty will be relieved of both registration room and activity period supervision responsibilities.

Staff members assigned to this task will use the activity period to plan appropriate lessons and to schedule students for intervention during this time. It should be noted that this is an initial response to the intervention program at the high school level.

9. At the high school level, students who have not successfully completed all pupil performance objectives will be scheduled the following year into classes which will provide intervention assistance for credit. If a student has not completed all of the objectives at the end of the sophomore year, he or she will be scheduled into Reading, English III, or Independent Study Math (as indicated by the updated CBE records).

However, for those students needing only a few completed objectives, they will be remediated using the intervention program operated during the activity period.

Obviously, at the high school level, a "pull out" program would be even less effective than at other grade levels. In addition, students cannot be scheduled several times each semester for class changes since such a practice would make the awarding of credit extremely difficult.

Joint Statement Implementing Competency Based Education
August, 1989
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APPENDIX D

East Liverpool City School District
East Liverpool, Ohio

RESPONSIBILITIES FOR IMPLEMENTING THE COMPETENCY BASED
EDUCATION (CBE) PROGRAM

POSITION: Competency Based Education teacher (full-time)

1. Will coordinate and administer CBE tests in grades 3,
    5, and 7.

2. Arranges for the administration to score all CBE
    materials following testing.

3. Work with the building principals and regular classroom
    teachers in coordinating an intervention schedule for
    3rd, 5th, and 7th grade students.

4. Shall assist the administration in responding to
    parents' questions relating to the CBE program and
    their child's performance. The administration shall
    communicate to each student's parents the CBE testing
    results.

5. Provide CBE intervention to selected students in grades
    3, 5, and 7 as identified by results of the CBE tests.
    (This intervention will be scheduled to the maximum
    extent possible at times when students are not scheduled
    for reading, language arts, mathematics, or remedial
    classes.)

6. Maintain and update grade 3, 5, and 7 student
    records related to the CBE program. (This will include
    changing a student's record from unsuccessful to suc-
    cessful completion of any objectives.) Subsequent
    retesting will not be required for the teacher to
    make this judgment; however, the classroom teacher
    must submit to the CBE teacher in writing the standard
    form for changing the CBE record.

7. Coordinate all CBE intervention with the child's class-
    room teacher.

8. Develop intervention resource packets for use in grades
    3 and 5 in the areas of reading, language arts, and
    mathematics and may also assist at other grade levels.

9. Perform other duties relating to the CBE program per-
    formed during the normal work day as may be assigned by
    the assistant superintendent.

East Liverpool City School District
East Liverpool, Ohio

RESPONSIBILITIES FOR IMPLEMENTING THE COMPETENCY BASED
EDUCATION (CBE) PROGRAM

POSITION: Grade 7 CBE teacher (half time)

1. Will, in conjunction with the full-time CBE teacher,
    coordinate and administer CBE tests for grade seven.

2. Arrange for the administration to score all materials
    following CBE testing.

3. Work with the building principals and regular classroom
    teachers in coordinating a CBE intervention schedule for
    seventh grade students.

4. Shall assist the administration in responding to
    parents' questions relating to the CBE program and
    their child's performance. The administration shall
    communicate to each student's parents the CBE testing
    results.

5. Provide CBE intervention to selected seventh grade
    students as identified cooperatively by the classroom
    teacher, building principal, and/or CBE teacher. (The
    intervention will be scheduled to the maximum extent
    possible at times when students are not scheduled for
    reading, language arts, and mathematics or at times
    when the students are scheduled for remedial classes.)

6. Maintain and update, in cooperation with the full-time
    CBE teacher, student records related to the CBE program.
    (This will include changing a student's record from un-
    successful to successful completion of any objectives.)
    Subsequent retesting will not be required for the
    teacher to make this judgment; however, the regular
    classroom teacher must submit to the CBE teacher in
    writing the standard form for changing the CBE record.

7. Coordinate, in cooperation with the full-time CBE
    teacher, all grade seven CBE intervention with the
    child's classroom teacher.

8. Develop intervention resource packets for use in grade 7
    in the areas of reading, language arts, and mathematics.

9. Perform other duties relating to the CBE program per-
    formed during the normal work day as may be assigned by
    the assistant superintendent.

East Liverpool City School District
East Liverpool, Ohio

RESPONSIBILITIES FOR IMPLEMENTING THE COMPETENCY BASED
EDUCATION (CBE) PROGRAM

POSITIONS: Teachers in Grades 3, 5, and 7

1.   Shall assist the CBE teacher by proctoring the test.
     (Proctoring shall include assisting in monitoring
     student behavior and assisting in distributing
     and collecting tests.)

2.   Will work with the building principal and the CBE inter-
     vention teacher/teachers in coordinating a schedule for
     providing CBE intervention for students.

3.   Shall assist the administration in responding to
     parents' questions relating to the CBE program and
     their child's performance. The administration shall
     communicate to each student's parents the CBE testing
     results.

4.   Will provide instruction in the areas of CBE testing by
     teaching to the course of study in the approved
     sequence.

5.   May submit a standard written form to the CBE inter-
     vention teacher/teachers to change a student's record
     in CBE from unsuccessful to successful completion of
     objectives. (This may include written documentation
     of successful completion of objectives.)

6.   Will work with the CBE intervention teacher/teachers in
     scheduling students for CBE intervention.

7.   Will consult with the CBE intervention teachers when
     those specialists are providing CBE intervention.

scheduled by the building administration.

9. Grade 10 CBE packets will be developed prior to
   intervention by designated members of the English
   and math departments during released time.

APPENDIX E

MATH

CBE TEST

GRADE 5

TIMED

MULTIPLICATION- 3 minutes <u>only</u>. Quickly write the answer to each problem below.
(Refer to the multiple choices only if you need to refresh your memory.)

)K AT THE EXAMPLE

ample: 2   a.   4
         x4   b.   6
         ‾8̶   c.   8

3	a. 18	2. 6	a. 6	3. 4	a. 32	4. 9	a. 7:
x9	b. 27	x0	b. 1	x8	b. 24	x9	b. 5∠
‾‾	c. 24	‾‾	c. 0	‾‾	c. 16	‾‾	c. 8͟

6	a. 25	6. 4	a. 16	7. 1	a. 8	8. 2	a. 1(
x5	b. 35	x3	b. 12	x8	b. 16	x6	b. ͅ
‾‾	c. 30	‾‾	c. 14	‾‾	c. 12	‾‾	c. 1͟

5	a. 40	10. 7	a. 47	11. 8	a. 42	12. 2	a. 1ͅ
x9	b. 45	x7	b. 49	x6	b. 46	x9	b. 1͟
‾‾	c. 35	‾‾	c. 42	‾‾	c. 48	‾‾	c. 1(

3	a. 5	14. 9	a. 56	15. 4	a. 12	16. 5	a. 4͟
x5	b. 10	x7	b. 63	x4	b. 18	x8	b. 3͟
‾‾	c. 15	‾‾	c. 61	‾‾	c. 16	‾‾	c. 4(

8	a. 64	18. 7	a. 64	19. 6	a. 45	20. 0	a. 1
x8	b. 63	x9	b. 62	x7	b. 42	x9	b. 0
‾‾	c. 62	‾‾	c. 63	‾‾	c. 49	‾‾	c. 9

4	a. 35	22. 9	a. 56	23. 8	a. 14	24. 3	a. 2
x9	b. 24	x6	b. 48	x2	b. 16	x8	b. 1
‾‾	c. 36	‾‾	c. 54	‾‾	c. 18	‾‾	c. 2

7	a. 63
x8	b. 61
‾‾	c. 56

DIVISION   3 minutes only.

Quickly write the answer to each problem below. (Refer to the multiple choices only
if you need to refresh your memory.)

Look at the example: 7
                     3⟌21   a. 6
                             b. 7
                             c. 9

9⟌72
    a. 8
    b. 6
    c. 9

27. 8⟌48
        a. 3
        b. 6
        c. 9

28. 8⟌16
        a. 2
        b. 4
        c. 8

29. 3⟌27
        a. 5
        b. 6
        c. 9

5⟌30
    a. 4
    b. 5
    c. 6

31. 6⟌54
        a. 7
        b. 8
        c. 9

32. 4⟌16
        a. 8
        b. 9
        c. 4

33. 7⟌21
        a. 3
        b. 6
        c. 7

3⟌15
    a. 5
    b. 6
    c. 7

35. 6⟌36
        a. 8
        b. 4
        c. 6

36. 4⟌36
        a. 6
        b. 7
        c. 9

37. 5⟌45
        a. 8
        b. 6
        c. 9

7⟌14
    a. 2
    b. 1
    c. 7

39. 3⟌24
        a. 6
        b. 8
        c. 5

40. 2⟌8
        a. 4
        b. 6
        c. 7

41. 6⟌12
        a. 6
        b. 4
        c. 2

2⟌14
    a. 7
    b. 6
    c. 2

43. 5⟌40
        a. 9
        b. 3
        c. 8

44. 3⟌9
        a. 3
        b. 6
        c. 9

45. 7⟌63
        a. 4
        b. 5
        c. 9

5⟌25
    a. 4
    b. 5
    c. 6

47. 2⟌12
        a. 7
        b. 9
        c. 6

48. 7⟌49
        a. 7
        b. 4
        c. 6

49. 3⟌6
        a. 3
        b. 4
        c. 2

4⟌24
    a. 3
    b. 7
    c. 6

WORD PROBLEMS: Read the following word problems carefully and then solve the problems.
Find the answer and mark the correct letter on your answer sheet. (NOTE: These three
word problems will all be solved in the same way.)

1. 296 people watched the East End Red Devils play football. 275 people watched the
    North Stars play football. How many people altogether watched both teams play?

    a. 561
    b. 551
    c. 541
    d. 571
    e. 581

2. How many pizzas were sold **altogether** if the boys bought 156 pizzas and the girls
    bought 115 pizzas?

    a. 271
    b. 370
    c. 221
    d. 261
    e. 270

3. On Monday we drove 112 miles to Cleveland, stopped for lunch and then drove on
    for 218 more miles. How many miles did we travel altogether that day?

    a. 530
    b. 335
    c. 320
    d. 330
    e. 339

TGE FOLLOWING PROBLEMS ARE ADDITION.
ADD AND MARK THE LETTER OF THE CORRECT ANSWER ON YOUR ANSWER SHEET.

4.
```
   843
 + 187
```
a. 1020
b. 1030
c. 1130
d. 930
e. 1029

5.
```
   616
 + 285
```
a. 901
b. 891
c. 890
d. 109
e. 899

6.
```
   711
 + 289
```
a. 990
b. 1001
c. 1000
d. 910
e. 992

7.
```
   390
   406
 + 124
```
a. 1220
b. 920
c. 820
d. 910
e. 1020

THE FOLLOWING PROBLEMS ARE ADDITION PROBLEMS ADDING DOLLARS AND CENTS.

ADD AND MARK THE LETTER OF THE CORRECT ANSWER ON YOUR ANSWER SHEET.

8. $1.37

      +5.42

                                                   a. $7.79
                                                   b. $6.69
                                                   c. $6.80
                                                   d. $6.79
                                                   e. $6.75

9. $5.25

      +2.62

a. $7.87
b. $7.63
c. $7.77
d. $8.87
e. $7.88

10. $4.75

      +3.64

a. $8.49
b. $8.39
c. $1.11
d. $8.29
d. $8.09

THE FOLLOWING PROBLEMS ARE SUBTRACTION. (YOU MAY HAVE TO REGROUP OR BORROW.)

SUBTRACT AND MARK THE LETTER OF THE CORRECT ANSWER ON YOUR ANSWER SHEET.

11.   8764
    -   4655

a.   4009
b.   4109
c.   3109
d.   4119
e.   4209

12.   7328
    -   3247

a.   4181
b.   4091
c.   3081
d.   4180
e.   4081

13.   4734
    -   3842

a.   891
b.   896
c.   892
d.   886
e.   792

WORD PROBLEMS: Read the following word problems carefully and then solve the problems.
Find the answer and mark the correct letter on your answer sheet. (NOTE: These three
word problems will all be solved in the same way.)

14. In one season, Jim's basketball team made 898 points altogether. Jim made 385
     points. What was the difference between the points Jim made and the points the
     rest of the team made?

     a. 1179
     b. 389
     c. 513
     d. 488
     e. 479

15. We have 287 students altogether in grade five in East Liverpool. We have 147 girls.
     How many boys do we have?

     a. 140
     b. 434
     c. 130
     d. 240
     e. 142

16. Ed earned 878 points for selling candy. John earned 467 points for selling candy.
     What was the difference between the points Ed earned and the points John earned?

     a. 511
     b. 412
     c. 311
     d. 411
     e. 410

The following problems are subtraction problems subtracting dollars and cents.

SUBTRACT AND MARK THE LETTER OF THE CORRECT ANSWER ON YOUR ANSWER SHEET.

17. $4.98
    - 1.56

a. $2.42
b. $5.42
c. $3.62
d. $3.42
e. $3.41

18. $9.25
    - 7.88

a. $1.37
b. $1.67
c. $1.33
d. $2.37
e. $1.43

19. $12.67
    - 11.54

a. $1.11
b. $1.23
c. $1.03
d. $1.13
e. $2.13

WHAT IS THE CORRECTLY WRITTEN NUMBER OF THE FOLLOWING? MARK THE LETTER OF THE CORRECT
ANSWER ON YOUR ANSWER SHEET.

20.   2 thousand   4 hundred   0 tens   8 ones
       a.   3408
       b.   248
       c.   2408
       d.   0408
       e.   1408

21.   4 thousand   1 hundred   1 tens   3 ones
       a.   4113
       b.   3114
       c.   4110
       d.   4013
       e.   4031

22.   8 thousand   6 hundred   3 tens   7 ones
       a.   7368
       b.   6378
       c.   8673
       d.   6837
       e.   8637

THESE PROBLEMS INVOLVE ROUNDING.
Round to the nearest ten. MARK THE LETTER OF THE CORRECT ANSWER ON YOUR ANSWER SHEET.

23.　54

a.　55
b.　50
c.　60
d.　40
e.　　5

24.　48

a.　30
b.　40
c.　44
d.　50
e.　　4

Round to the nearest hundred. MARK THE LETTER OF THE CORRECT ANSWER ON YOUR ANSWER SHEET.

25.　501

a.　100
b.　　51
c.　500
d.　400
e.　300

26.　698

a.　700
b.　600
c.　500
d.　699
e.　790

THE FOLLOWING PROBLEMS ARE MULTIPLICATION PROBLEMS.

MULTIPLY. MARK THE LETTER OF THE CORRECT ANSWER ON YOUR ANSWER SHEET.

MATH CBE

27.
$$\begin{array}{r} 94 \\ \times 5 \\ \hline \end{array}$$

    a.   460
    b.   99
    c.   440
    d.   470
    e.   479

28.
$$\begin{array}{r} 79 \\ \times 3 \\ \hline \end{array}$$

    a.   233
    b.   237
    c.   337
    d.   82
    e.   793

29.
$$\begin{array}{r} 40 \\ \times 8 \\ \hline \end{array}$$

    a.   220
    b.   48
    c.   310
    d.   328
    e.   320

30.
$$\begin{array}{r} 51 \\ \times 6 \\ \hline \end{array}$$

    a.   57
    b.   206
    c.   305
    d.   306
    e.   316

THE FOLLOWING PROBLEMS ARE MULTIPLICATION PROBLEMS.
MULTIPLY. MARK THE LETTER OF THE CORRECT ANSWER ON YOUR
ANSWER SHEET.

31.   86   a.   90
      x 4   b. 343
                                   c. 243
                                   d. 364
                                   e. 344

32.   894   a.   1788
      x 2   b.   1798
                                   c.   1768
                                   d.   1268
                                   e.   1688

33.   8736   a.   34,934
      x   5   b.   24,944
                                   c.   43,680
                                   d.   34,844
                                   e.   34,843

WORD PROBLEMS: Read the following word problems carefully and then solve the problems.
Find the answer and mark the correct letter on your answer sheet. (NOTE: These
three word problems will all be solved in the same way.) (NOTE: DO NOT solve
these problems by addition.)

34. Bill received 710 marbles each day for 3 days. How many marbles did he have
     altogether after the three days?

     a. 2130
     b. 2224
     c. 2324
     d. 2604
     e. 2304

35. George walked 13 miles each day. He did this for 8 days. How many miles did he
     walk altogether after the eight days?

     a.   94
     b. 114
     c. 105
     d. 104
     e.   93

36. A c⁻⁻ was driven 8754 miles in one year. How many miles will it have gone
     alt_ether in 5 years?

     a. 42,262
     b. 43,770
     c. 41,362
     d. 40,462
     e. 46,252

THE FOLLOWING PROBLEMS ARE MULTIPLICATION PROBLEMS MULTIPLYING WITH DOLLARS AND CENTS.
MULTIPLY. MARK THE LETTER OF THE CORRECT ANSWER ON YOUR ANSWER SHEET.

37. $4.37
         x   5

    a. $20.85
    b. $21.85
    c. $21.75
    d. $21.15
    e. $21.84

38. $79.46
         x   2

    a. $158.98
    b. $148.92
    c. $158.92
    d. $158.29
    e. $158.68

39. $5.26
         x   3

    a. $15.78
    b. $15.42
    c. $15.32
    d. $14.50
    e. $13.25

THE FOLLOWING PROBLEMS ARE DIVISION PROBLEMS.

LOOK AT THE EXAMPLE GIVEN ON THIS PAGE.

                                  15   a. 13
              EXAMPLE: 5)75   b. 20
                                 -5   c. 16
                                 25   d. 15*
                                -25   e. 17
                                  0

DIVIDE. MARK THE LETTER OF THE CORRECT ANSWER ON YOUR ANSWER
SHEET.

40.   4)56   a. 13
                                      b. 14
                                      c. 15
                                      d. 80
                                      e. 60

41.   2)88   a. 14
                                      b. 41
                                      c. 12
                                      d. 40
                                      e. 44

42.   7)84   a. 17
                                      b. 21
                                      c. 71
                                      d. 27
                                      e. 12

THE FOLLOWING PROBLEMS ARE DIVISION PROBLEMS.

LOOK AT THE EXAMPLE GIVEN ON THIS PAGE.

EXAMPLE:

$$3\overline{)73} \quad 24R.1$$

$$\begin{array}{r} 24R.1 \\ 3\overline{)73} \\ -6 \\ \hline 13 \\ -12 \\ \hline 1 \end{array}$$

a. 21R.3
b. 24R.1*
c. 25R.1
d. 23R.2
e. 20R.3

DIVIDE. MARK THE LETTER OF THE CORRECT ANSWER ON YOUR ANSWER SHEET.

43. $2\overline{)93}$

a. 46 R 2
b. 45 R 0
c. 43 R 7
d. 46 R 1
e. 46 R 3

44. $6\overline{)77}$

a. 11 R 6
b. 12 R 5
c. 12 R 4
d. 12 R 0
e. 12 R 3

45. $5\overline{)62}$

a. 16 R 1
b. 12 R 6
c. 12 R 2
d. 12 R 1
e. 11 R 6

THE FOLLOWING PROBLEMS ARE DIVISION PROBLEMS.

LOOK AT THE EXAMPLE GIVEN ON THIS PAGE.

EXAMPLE:

$$
\begin{array}{r}
52R.1 \\
2\overline{)105} \\
-10 \\
\hline
05 \\
-4 \\
\hline
1
\end{array}
$$

a. 50R.2
b. 52R.1*
c. 62R.2
d. 61R.2
e. 48R.1

DIVIDE. MARK THE LETTER OF THE CORRECT ANSWER ON YOUR ANSWER SHEET.

46.   3 $\overline{)247}$

a. 83 R 0
b. 82 R 1
c. 81 R 4
d. 82 R 5
e. 82 R 0

47.   5 $\overline{)124}$

a. 25 R 5
b. 24 R 4
c. 24 R 2
d. 25 R 0
e. 25 R 1

48.   9 $\overline{)138}$

a. 15 R 2
b. 16 R 0
c. 15 R 3
d. 16 R 1
e. 16 R 2

WORD PROBLEMS: Read the following word problems carefully
and then solve the problems. Find the answer and mark the
correct letter on your answer sheet. (NOTE: These three
word problems will all be solved in the same way.)

49. Joe has 156 baseball cards altogether to put into his
album. He can only put 5 cards on each page. How many
pages of his album can Joe fill and how many baseball cards
will be left over?

     a.   12 R.3
     b.   200 R.2
     c.   90 R.4
     d.   156 R.0
     e.   31 R.1

50. Mary has 87 stamps altogether in her stamp collection.
She wants to give each of her friends 6 stamps. How many
stamps will each of Mary's friends get and how many stamps
will Mary have left over?

     a.   261 R.1
     b.   91 R.2
     c.   14 R.3
     d.   89 R.4
     e.   97 R.8

51. There are 129 children altogether in the cafeteria.
Each table will seat 6 children. How many tables will be
full and how many children will be left standing?

     a.   128 R.2
     b.   21 R.3
     c.   732 R.1
     d.   21 R.1
     e.   20 R.6

THE FOLLOWING QUESTIONS ARE ON MEASUREMENT. READ THE FOLLOWING QUESTIONS AND LOOK AT ALL YOUR CHOICES CAREFULLY.

FILL IN THE ANSWER SHEET WITH THE LETTER WHICH BEST ANSWERS THE QUESTION.

52.   About how long is a new pencil?

   a. 7 feet
   b. 7 inches
   c. 7 miles

53.   How far is it from East Liverpool to Calcutta?

   a. 5 inches
   b. 5 feet
   c. 5 miles

54.   About how long IS AN AVERAGE CLASSROOM?

   a. 30 inches
   b. 30 feet
   c. 30 miles

HOW IS EACH OF THE FOLLOWING BEST MEASURED?
THE FOLLOWING QUESTIONS ARE ON MEASUREMENT.   READ THE QUESTIONS CAREFULLY AND LOOK
CLOSELY AT ALL YOUR CHOICES.   FILL IN THE ANSWER SHEET WITH THE LETTER WHICH BEST
ANSWERS THE QUESTION.

55. Apples are on special for $3.39 a bag. Is this for: a.   5 ounces
                                                            b.   5 pounds
                                                            c.   5 tons

56. A train pulling ten cars filled with coal might weigh: a.   100 ounces
                                                              b.   100 pounds
                                                              c.   100 tons

57. Father bought gasoline for our car. He bought: a.   10 pints
                                                           b.   10 quarts
                                                           c.   10 gallons

DIRECTIONS: The following problems deal with fractional
parts.   Look carefully at the example given on this page and
then do the rest of the problems.   Fill in the correct
answer on the answer sheet.   Choose answer a, b, c, d, or e.

EXAMPLE: $\frac{7}{10}$ of this rectangle is NOT shaded in.   What
fractional part of this rectangle is shaded in?
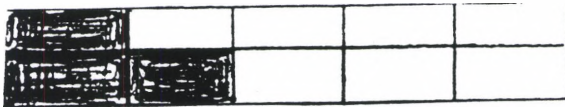
ANSWER: $\frac{3}{10}$

58. $\frac{1}{2}$ of this circle is NOT shaded in.   What fractional
part of this circle is shaded in?

a. $\frac{1}{4}$ b. $\frac{2}{2}$ c. $\frac{1}{2}$ d. $\frac{3}{4}$ e. $\frac{2}{3}$

59. $\frac{3}{4}$ of this square is NOT shaded in.   What fractional
part of this square is shaded in?

a. $\frac{1}{4}$ b. $\frac{1}{8}$ c. $\frac{3}{4}$ d. $\frac{2}{3}$ e. $\frac{1}{2}$

60. $\frac{3}{8}$ of this rectangle is NOT shaded in.   What fractional
part of this rectangle is shaded in?

a. $\frac{3}{8}$ b. $\frac{5}{8}$ c. $\frac{5}{4}$ d. $\frac{1}{2}$ e. $\frac{2}{3}$

FRACTIONS: THE 2 PARTS OF A FRACTION ARE CALLED THE DENOMINATOR AND THE NUMERATOR.
ANSWER   THE FOLLOWING QUESTIONS.

61.   What is the denominator of this fraction $\frac{4}{5}$?

   a.   4

   b.   5

62.   What is the numerator of this fraction $\frac{3}{8}$?

   a.   3

   b.   8

FRACTIONS: LOOK AT THE EXAMPLE ON THIS PAGE.   WHICH FRACTION IS LARGER, a or b?

Example: a. $\dfrac{1}{5}$ OR   b. $\dfrac{3}{5}$ Answer; b. $\dfrac{3}{5}$

FILL IN THE CORRECT LETTER ON YOUR ANSWER SHEET FOR THE FOLLOWING QUESTIONS:

63. Which is larger?   a. $\dfrac{1}{4}$ OR   b. $\dfrac{3}{4}$

64. Which is larger?   a. $\dfrac{1}{3}$ OR   b. $\dfrac{2}{3}$

65. Which is larger?   a. $\dfrac{3}{7}$ OR   b. $\dfrac{5}{7}$

FRACTIONS: Look at the example given on this page and then add the following fractions.

Mark the letter of the correct answer on your answer sheet. Choose answer a, b, c, d, or e.

EXAMPLE:
$$\frac{1}{6}$$
$$\frac{+\frac{3}{6}}{\frac{4}{6}}$$

*a. $\frac{4}{6}$ b. $\frac{3}{6}$ c. $\frac{5}{6}$ d. $\frac{1}{2}$ e. $\frac{2}{6}$

66. $\frac{1}{7}$
$$\frac{+\frac{4}{7}}{}$$

a. $\frac{5}{7}$ b. $\frac{2}{3}$ c. $\frac{1}{2}$ d. $\frac{3}{5}$ e. $\frac{1}{5}$

67. $\frac{2}{5}$
$$\frac{+\frac{1}{5}}{}$$

a. $\frac{1}{2}$ b. $\frac{2}{3}$ c. $\frac{3}{5}$ d. $\frac{3}{4}$ e. $\frac{5}{6}$

68. $\frac{4}{11}$
$$\frac{+\frac{3}{11}}{}$$

a. $\frac{2}{3}$ b. $\frac{1}{2}$ c. $\frac{9}{11}$ d. $\frac{7}{11}$ e. $\frac{3}{4}$

FRACTIONS: Look at the example given on this page and then subtract the following
fractions. Mark the letter of the correct answer on
your answer sheet. Choose answer a, b, c, d, or e.

EXAMPLE: $\frac{2}{3}$
$\frac{1}{-3}$

a. $\frac{2}{3}$ *b. $\frac{1}{3}$ c. $\frac{3}{4}$ d. $\frac{5}{6}$ e. $\frac{1}{2}$

69. $\frac{3}{4}$
     $\frac{2}{-4}$ a. $\frac{2}{3}$ b. $\frac{5}{6}$ c. $\frac{1}{4}$ d. $\frac{1}{2}$ e. $\frac{3}{4}$

70. $\frac{5}{8}$
     $\frac{2}{-8}$ a. $\frac{6}{8}$ b. $\frac{2}{3}$ c. $\frac{3}{8}$ d. $\frac{1}{2}$ e. $\frac{7}{8}$

71. $\frac{3}{5}$
     $\frac{1}{-5}$ a. $\frac{7}{10}$ b. $\frac{3}{10}$ c. $\frac{3}{25}$ d. $\frac{2}{5}$ e. $\frac{4}{5}$

DECIMALS: THE FOLLOWING ARE DECIMAL ADDITION PROBLEMS.
ADD. MARK THE LETTER OF THE CORRECT ANSWER ON YOUR ANSWER SHEET.

72. $\begin{array}{r} 6.8 \\ + 4.0 \\ \hline \end{array}$

a. 10.0
b.   4.7
c. 10.8
d. 12.3
e.   2.8

73. $\begin{array}{r} 4.87 \\ + 3.43 \\ \hline \end{array}$

a. 8.30
b. 6.53
c. 7.44
d. 1.44
e. 7.30

74. $\begin{array}{r} 84.16 \\ + 13.19 \\ \hline \end{array}$

a. 57.35
b. 71.35
c. 23.62
d. 53.79
e. 97.35

DECIMALS: THE FOLLOWING ARE DECIMAL SUBTRACTION PROBLEMS.
SUBTRACT. MARK THE LETTER OF THE CORRECT ANSWER ON YOUR ANSWER SHEET.

75. $\begin{array}{r} 6.4 \\ -3.1 \\ \hline \end{array}$

    a. 9.5
    b. 3.3
    c. 9.4
    d. 6.4
    e. 4.3

76. $\begin{array}{r} 7.9 \\ -3.0 \\ \hline \end{array}$

    a. 10.9
    b.   5.3
    c.   4.9
    d. 10.6
    e.   4.0

77. $\begin{array}{r} 84.74 \\ -33.65 \\ \hline \end{array}$

    a. 46.02
    b. 90.15
    c. 60.15
    d. 51.09
    e. 118.39

SHAPES: READ   THE FOLLOWING QUESTIONS.   READ ALL YOUR CHOICES CAREFULLY BEFORE
YOU CHOOSE YOUR ANSWER.   YOUR CHOICES ARE a. rectangle, b. circle, c. triangle, or
d. square.   MARK THE LETTER OF THE CORRECT ANSWER ON THE ANSWER SHEET.

WHAT IS THE FOLLOWING SHAPE?
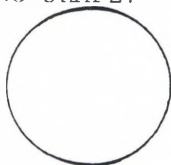
a.   rectangle
b.   circle
c.   triangle
d.   square

WHAT IS THE FOLLOWING SHAPE?

a.   rectangle
b.   circle
c.   triangle
d.   square

WHAT IS THE FOLLOWING SHAPE?

a.   rectangle
b.   circle
c.   triangle
d.   square

WHAT IS THE FOLLOWING SHAPE?

a.   rectangle
b.   circle
c.   triangle
d.   square

SECTION I

TRADITIONAL LESSON PLANS
MATHEMATICS-GRADE 5

PPO #	DESCRIPTION
01	Word problems containing two addends.
02	Addition problems with two addends 100 to 999,999.
03	Addition problems involving money not exceeding $9.99.
04	Subtraction problems in the range of 100 to 9999.
05	Word problems of not more than twenty-five words.
06	Subtraction problems involving money.
07	Writing the standard form for the numbers.
08	Rounding two and three digit numbers.
09	Multiplication problems containing factors 1-9.
10	Multiplication problems with one and two factors.
11	Multiplication problems with a factor greater than 10.
12	Multiplication word problems 1-digit by 2,3,4-digit.
13	Multiplication problems requiring regrouping with money.
14	Division problems with dividends 1-81 and divisors 1-9.
15	Division problems with 2-digit dividends and 1-digit divisors and no remainders.
16	Division problems with 2-digit dividends and 1-digit remainders.
17	Division problems with 3-digit dividends and 1-digit divisors.
18	Word problems-division of a 2- or 3-digit number by a 1-digit number.

19   Approximation of inches, feet, and miles in describing
      length.

20   Identification of the approximate weight or
      measure.

21   Identification of fractions-shaded part of an
      object.

22   Fractions-identify the numerator and the
      denominator.

23   Identification of the larger fraction.

24   Addition of fractions with like denominators.

25   Subtraction of fractions with like denominators.

26   Addition of decimals containing tenths or hundreds.

27   Subtraction of decimals containing tenths and
      hundredths.

28   Identification of geometric shapes.

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                          C.B.E.
            Intervention Resource Plan-Cover Form
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Content Area: MA
  Grade Area: 05
    PPO Area: 01

PPO Objective: WORD PROBLEMS CONTAINING TWO ADDENDS

PPO Description: Given three word problems of not more than 25 words containing
                two addends, the student will correctly solve the problem by
                adding the 2 numbers together.

Directions for the instructor:
---------- --- --- ----------
  1. Intervene with the intervention plan as presented on
the following page/s.
  2. Fill out the standard change request form and submit it
to the appropriate CBE instructor when the intervention has
been completed.

Directions for the CBE instructor:
---------- --- --- --- ----------
  1. Retest with the individual PPO before beginning
intervention to further determine a student's needs.
  2. If needed, proceed with the intervention plan as
presented on the following page/s.
  3. Retest with the individual PPO to determine mastery.
  4. Fill out the standard change request form and change
student's scan sheet from non-mastery to mastery.

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                        C.B.E.


                PPO Change Request Form
                --- ------ ------- ----
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 Building:..............................Content Area.....

Student's Name

....

Room No. ....   Grade ....

PPO No. to be changed from non-mastery to mastery ....

Submitted by .... Date ....
                (Instructor's signature)

Note: You may wish to attach any pertinent and available
      documentation to this form.

Comments:

Return this form to the appropriate CBE instructor.

....

CBE instructor's signature: ....

                Date: ....

Complete PPO No. ....

DIRECTIONS: Have the student read the following word
problems to themselves. Discuss out loud the process and
the steps needed to solve the problems.

1. During an inventory of art supplies at school, the
teacher counted 226 jars of yellow paint and 315 jars of red
paint. What is the total number of paint jars?

2. Ruth saved $5.43 . She earned $2.50 more by helping a
neighbor. How much money does Ruth have altogether?

3. There are 56 packages of pink paper and 29 packages of
blue paper on the shelves. How many packages of paper are
there in all?

4. A student sorted all the paint brushes in the art room.
There were 30 large, 43 medium, and 12 small brushes. How
many brushes were there altogether?

ANSWER KEY

(The answer key may be used by the instructor or by the student for self-checking.)

1.
$$
\begin{array}{r}
226 \\
+315 \\
\hline
541
\end{array}
$$
paint jars

2.
$$
\begin{array}{r}
\$5.43 \\
+\ 2.50 \\
\hline
\$7.93
\end{array}
$$

3.
$$
\begin{array}{r}
56 \\
+29 \\
\hline
85
\end{array}
$$
packages of paper

4.
$$
\begin{array}{r}
30 \\
43 \\
+\ 12 \\
\hline
85
\end{array}
$$
brushes

```
                          C.B.E.
            Intervention Resource Plan-Cover Form
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Content Area: MA
  Grade Area: 05
    PPO Area: 02

PPO Objective: ADDITION PROBLEMS WITH TWO ADDENDS 100 to 999,999

PPO Description: Given 4 addition problems each containing at least 2 addends in
                the range of 100 to 999,999 the student will correctly solve
                each problem.

Directions for the instructor:
---------- --- --- ----------
   1. Intervene with the intervention plan as presented on
the following page/s.
   2. Fill out the standard change request form and submit it
to the appropriate CBE instructor when the intervention has
been completed.

Directions for the CBE instructor:
---------- --- --- --- ----------
   1. Retest with the individual PPO before beginning
intervention to further determine a student's needs.
   2. If needed, proceed with the intervention plan as
presented on the following page/s.
   3. Retest with the individual PPO to determine mastery.
   4. Fill out the standard change request form and change
student's scan sheet from non-mastery to mastery.

C.B.E.

                  PPO Change Request Form
                  ___ _____ _____ ____

  Building:.............................Content Area.....

Student's Name

....

Room No. ....   Grade ....

PPO No. to be changed from non-mastery to mastery ....

Submitted by .... Date ....
                  (Instructor's signature)

Note: You may wish to attach any pertinent and available
      documentation to this form.

Comments:

Return this form to the appropriate CBE instructor.

....

CBE instructor's signature: ....

                  Date: ....

Complete PPO No. ....

Addition

Directions: The student will add the following problems. (Watch for the knowledge of, or lack, there of simple addition facts.)

1. 384
    + 565

2. 792
    + 128

3. 536
    + 85

4. 727
    518

5. 1836
    + 5192

6. 5283
    + 798

7. 6192
    + 5289

8. 5393
    + 3888

9. 827
    683
    + 173

10. 280
    831
    + 649

11. 831
    649
    + 250

12. 280
    315
    + 173

13. 471
    25
    + 21

14. 315
    317
    21
    + 5

15. 14
    15
    16
    20
    + 21

16. 5625
    9829
    + 1738

ANSWER KEY

(The answer key may be used
by the instructor or by the student
for self-checking.)

1.) 949   2.) 920   3.) 621   4.)1245

5.) 7028   6.) 6081   7.)11,481   8.) 9281

9.) 1683   10.)1760   11.)1730   12.) 768

13.) 517   14.) 658   15.) 86   16.)17,92

C.B.E.
Intervention Resource Plan-Cover Form
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Content Area: MA
  Grade Area: 05
    PPO Area: 03

PPO Objective: ADDITION PROBLEMS INVOLVING MONEY NOT EXCEEDING $9.99

PPO Description: Given 3 addition problems involving money with 2 addends and no
sum exceeding $9.99, the student will correctly solve the problems,
using the dollar sign and decimal points.

Directions for the instructor:
---------- --- --- ----------
    1. Intervene with the intervention plan as presented on
the following page/s.
    2. Fill out the standard change request form and submit it
to the appropriate CBE instructor when the intervention has
been completed.

Directions for the CBE instructor:
---------- --- --- --- ----------
    1. Retest with the individual PPO before beginning
intervention to further determine a student's needs.
    2. If needed, proceed with the intervention plan as
presented on the following page/s.
    3. Retest with the individual PPO to determine mastery.
    4. Fill out the standard change request form and change
student's scan sheet from non-mastery to mastery.

C.B.E.

PPO Change Request Form
--- ------ ------- ----

Building:...............................Content Area.....

Student's Name

....

Room No. ....   Grade ....

PPO No. to be changed from non-mastery to mastery ....

Submitted by .... Date ....
                (Instructor's signature)

Note: You may wish to attach any pertinent and available
      documentation to this form.

Comments:

Return this form to the appropriate CBE instructor.

....

CBE instructor's signature: ....

                Date: ....

Complete PPQ No. ....

Adding Money

PPO MA-05-03

Find the total amounts.

1. $ .74
   +.18

2. $ .52
   +.39

3. $ .49
   +.09

4. $ .45
   +.79

5. $ .87
   +.34

6. $ .79
   +.23

7. $ .25
   +.97

8. $ .36
   +.52

9. $ .62
   +.75

10. $ .73
    +.37

11. $ .57
    +.52

12. $ .46
    +.54

13. $ .25
    +.46

14. $ .24
    +.73

15. $ .58
    +.62

16. $ .46
    +.32

17. $ .47
    +.17

18. $ .97
    +.61

19. $ .26
    +.88

20. $ .79
    +.31

Solve the problems.

21. How much do crackers and corn cost? _____

22. How much do bread and milk cost? _____
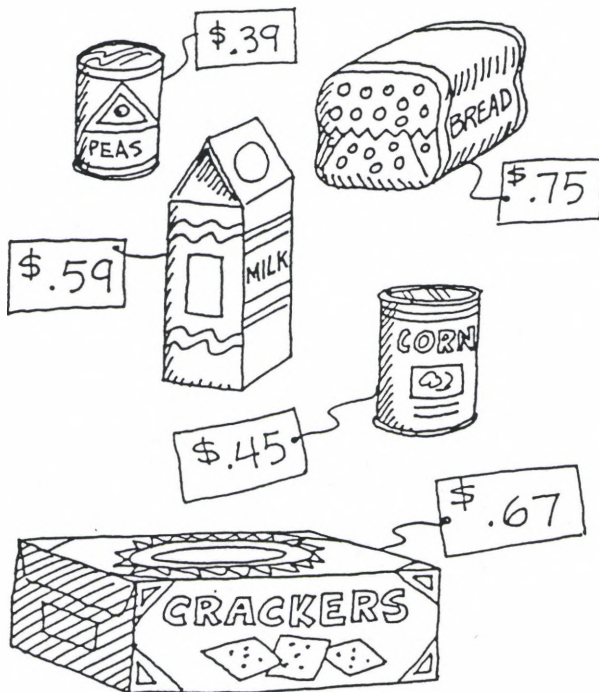
23. How much do peas and corn cost? _____

24. How much do milk and corn cost? _____

25. How much do crackers and milk cost? _____

26. How much do bread and peas cost? _____

$.39 PEAS

$.59 MILK

$.75 BREAD

$.45 CORN

$.67 CRACKERS

Problem Solving Project

Class Treasurer

It was your week to collect lunch money for your class. Here is the list you made.

HOT LUNCHES class A-1		
Day	Number of lunches	Amount
⃝ Monday	7	$ 4.55
Tuesday	5	$ 3.25
Wednesday	8	$ 5.20
Thursday	3	$ 1.95
Friday	6	$ 3.90

Use the chart to answer these questions.

1. How much money did you collect in all on

   Monday and Tuesday? _____

2. How much money did you collect altogether on

   Wednesday and Thursday? _____

3. How many lunches were ordered for the week?

   _____

4. Estimate how much money you collected for

   the week? _____

5. Add to get the exact total of money you

   collected for the week. _____

Extra

Class A-2 collected $21.00 for hot lunches last week.
How much more did class A-2 collect than Class A-1?

_____

Addition : Adding Money FRP

Directions: The student will add the following problems. (Put in the decimal point in the appropriate place and add the dollar sign to the final answer.)

1. $8.27
   + 6.83

2. $7.99
   + .34

3. $56.25
   + 7.98

4. $98.29
   +17.38

5. $28.85
   + 16.94

6. $9.45
   +1.52

7. $41.62
      2.58
     34.25

8. $50.62
     14.28
   + 27.74

9. $2.98
     1.69
   +3.00

10. $5.00
     4.00
   + 9.00

11. $ .33
      .42
   + .56

12. $1.01
     2.00
     3.33
     5.67
   + .45

③.

ANSWER KEY
(The answer key may be used
by the instructor or by the student
for self-checking.)

PAGE 1

1.) $.92   2.) $.91   3.) $.58   4.) $1.24   5.) $1.21

6.) $1.02   7.) $1.22   8.) $.88   9.) $1.37   10.) $1.10

11.) $1.09 12.) $1.00 13.) $.71   14.) $.97   15.) $1.20

16.) $.78   17.) $.64   18.) $1.58 19.) $1.14 20.) $1.10

21.)
$$\begin{array}{r} \$.67 \\ +.45 \\ \hline \$1.12 \end{array}$$

22.)
$$\begin{array}{r} \$.75 \\ +.59 \\ \hline \$1.34 \end{array}$$

23.)
$$\begin{array}{r} \$.39 \\ +.45 \\ \hline \$.84 \end{array}$$

24.)
$$\begin{array}{r} \$.59 \\ +.45 \\ \hline \$1.04 \end{array}$$

25.)
$$\begin{array}{r} \$.67 \\ +.59 \\ \hline \$1.26 \end{array}$$

26.)
$$\begin{array}{r} \$.75 \\ +.39 \\ \hline \$1.14 \end{array}$$

1.) $4.55 Mon.
  +3.25 Tues.
  $7.80

2.) $5.20 Wed.
  +1.95 Thurs.
  $7.15

3.) 7
     5
     8
     3
   + 6
   29 lunches

class
EXTRA - A-2 $21.00
          A-1 - 18.85
               $ 2.15

4.) $4.55 → 5.00
    3.25 → 3.00
    5.20 → 5.00
    1.95 → 2.00
    3.90 → +4.00
           $19.00

5.) $4.55
    3.25
    5.20
    1.95
    3.90
    $18.85

ANSWER KEY
CONT.

PAGE 3

1.) $15.10   2.) $8.33   3.) $64.23

4.) $115.67   5.) $45.79   6.) $10.97

7.) $78.45   8.) $92.64   9.) $7.77

10.) $18.00   11.) $1.31   12.) $12.46

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                         C.B.E.
              Intervention Resource Plan-Cover Form
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   Content Area:  MA
     Grade Area:  05
       PPO Area:  04

PPO Objective:  Subtraction problems in the range of 100 to 9999


PPO Description:Given 3 subtraction rpoblems with both minuend and subtrahend
                in the range of 100 to 9999 and with regrouping required, the
                student will correctly solve the problem.



Directions for the instructor:
---------- --- --- ----------
   1. Intervene with the intervention plan as presented on
the following page/s.
   2. Fill out the standard change request form and submit it
to the appropriate CBE instructor when the intervention has
been completed.

Directions for the CBE instructor:
---------- --- --- --- ----------
   1. Retest with the individual PPO before beginning
intervention to further determine a student's needs.
   2. If needed,proceed with the intervention plan as
presented on the following page/s.
   3. Retest with the individual PPO to determine mastery.
   4. Fill out the standard change request form and change
student's scan sheet from non-mastery to mastery.
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C.B.E.

PPO Change Request Form
--- ------ ------- ----

Building:..............................Content Area.....

Student's Name

....

Room No. ....   Grade ....

PPO No. to be changed from non-mastery to mastery ....

Submitted by .... Date ....
                (Instructor's signature)

Note: You may wish to attach any pertinent and available
      documentation to this form.

Comments:

Return this form to the appropriate CBE instructor.

....

CBE instructor's signature: ....

                Date: ....

Complete PPO No. ....

Subtraction with Regrouping

Be a detective and find the hidden number.
Subtract. If the difference is less than 500, color the
square yellow. If the difference is greater than 500,
color the square red.

Row

	A.	B.	C.	D.	E.
1	437 −108	895 −348	651 −125	830 −315	278 +129
2	252 −134	674 −128	372 −116	760 −231	685 −268
3	857 −628	833 −119	997 −489	873 −247	896 −579
4	671 −343	745 −426	977 −549	954 −326	658 −239
5	483 −156	774 −539	646 −339	862 −124	391 −275

What is the hidden number? _____

Subtraction

Directions : The student will subtract the following problems. (Watch for the knowledge of, or lack there of simple subtraction facts.)

1. 5035
  − 1658

2. 7154
  − 1827

3. 9254
  − 1565

4. 8630
  − 1695

5. 1995
  − 1904

6. 8708
  − 2523

7. 5386
  − 2589

8. 4132
  − 2861

9. 6580
  − 2990

10. 6683
  − 4498

11. 4325
  − 1678

12. 8340
  − 2680

ANSWER KEY

(The answer key may be used by
the instructor or by the student
for self-checking.)

Row 1   A) 329
        B) 547
        C) 526
        D) 515
        E) 149

Row 2   A) 118
        B) 546
        C) 256
        D) 529
        E) 417

Row 3   A) 229
        B) 714
        C) 508
        D) 626
        E) 317

Row 4   A) 328
        B) 319
        C) 428
        D) 628
        E) 419

Row 5   A) 327
        B) 235
        C) 307
        D) 738
        E) 116

EXTRA   1) 3377   2) 5327   3) 7689
        4) 6935   5) 91   6) 6185
        7) 2797   8) 1271   9) 3590
        10) 2185   11) 2647   12) 5658

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                         C.B.E.
            Intervention Resource Plan-Cover Form
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   Content Area:   MA
     Grade Area:   05
       PPO Area:   05

PPO Objective:   WORD PROBLEMS OF NOT MORE THAN 25 WORDS



PPO Description: Given 3 word problems of not more than 25 words, each with the
                 minuend not greater than 999, the student will subtract to find
                 the correct answer.



Directions for the instructor:
---------- --- --- ----------
   1. Intervene with the intervention plan as presented on
the following page/s.
   2. Fill out the standard change request form and submit it
to the appropriate CBE instructor when the intervention has
been completed.

Directions for the CBE instructor:
---------- --- --- --- ----------
   1. Retest with the individual PPO before beginning
intervention to further determine a student's needs.
   2. If needed,proceed with the intervention plan as
presented on the following page/s.
   3. Retest with the individual PPO to determine mastery.
   4. Fill out the standard change request form and change
student's scan sheet from non-mastery to mastery.
```

C.B.E.

PPO Change Request Form
--- ------ ------- ----

Building:.............................Content Area.....

Student's Name

....

Room No. ....   Grade ....

PPO No. to be changed from non-mastery to mastery ....

Submitted by .... Date ....
            (Instructor's signature)

Note: You may wish to attach any pertinent and available
      documentation to this form.

Comments:

Return this form to the appropriate CBE instructor.

....

CBE instructor's signature: ....

                Date: ....

Complete PPO No. ....

DIRECTIONS: Have students read the following word problems
to themselves. Discuss out loud the process and the steps
needed to solve the problems.

1.   There are 4030 students at the high school.   There are
700 students at the elementary school.   How many more
students are at the high school than at the elementary
school?

2.   At a teacher's surprise party there were 90 people.   54
of these people were children.   How many adults were at the
party?

3.   The fifth grade class had $20.39 .   They spent $12.98
for a party.   How much money did the fifth grade class have
left?

4.   Sue and Dave are playing a game at a party.   Dave has
scored 78 points so far.   Sue has only scored 59 points.
How many more points does Sue need to tie the score with
Dave?

ANSWER KEY

(The answer key may be used by the instructor or by the student for self-checking.)

1.) 3330 more students

2.) 36 adults

3.) $7.41 left

4.) 19 points

Intervention Resource Plan-Cover Form
------------ -------- ---- ----- ----

Content Area: MA
  Grade Area: 05
    PPO Area: 06

PPO Objective: SUBTRACTION PROBLEMS INVOLVING MONEY

PPO Description:Given 3 subtraction problems involving money,with no minuend
                greater than $9.99, the student will correctly solve the problem
                using both the dollar sign and the decimal in the remainder.

Directions for the instructor:
---------- --- --- ----------
   1. Intervene with the intervention plan as presented on
the following page/s.
   2. Fill out the standard change request form and submit it
to the appropriate CBE instructor when the intervention has
been completed.

Directions for the CBE instructor:
---------- --- --- --- ----------
   1. Retest with the individual PPO before beginning
intervention to further determine a student's needs.
   2. If needed,proceed with the intervention plan as
presented on the following page/s.
   3. Retest with the individual PPO to determine mastery.
   4. Fill out the standard change request form and change
student's scan sheet from non-mastery to mastery.

Subtraction : Subtracting Money

I.R.P   PPO MA-05-06

Directions : The student will subtract
the following problems. (Put the
decimal point in the appropriate
place and add the dollar sign
to the final answer.)

1. $19.56
   - 8.92

2. $46.98
   - 15.25

3. $3.15
   - 2.95

4. $57.25
   - 29.85

5. $97.59
   - 11.15

6. $9.41
   - 8.73

7. $6.03
   - 2.19

8. $5.89
   - 2.08

9. $982.65
   - 80.55

10. $4.89
    - 2.98

11. $40.67
    - 30.12

12. $1.87
    - .35

ANSWER KEY

(The answer key may be used
by the instructor or by the
Student for self-checking.)

1.) $10.64   2.) $31.73   3.) $ .20

4.) $ 27.40   5.) $86.44   6.) $ .68

7.) $ 3.84   8.) $3.81   9.) $902.10

10.) $ 1.91   11.) $10.55   12.) $1.52

```
                              C.B.E.
              Intervention Resource Plan-Cover Form
              ------------ -------- ---- ----- ----
```

Content Area: MA
   Grade Area: 05
     PPO Area: 07

PPO Objective: WRITING THE STANDARD FORM FOR THE NUMBERS

PPO Description: Given 3 statements written as x thousands x hundreds x tens
                x ones where x ia a whole number less than]0, the student will
                supply the standard form for the number presented.

Directions for the instructor:
---------- --- --- ----------
   1. Intervene with the intervention plan as presented on
the following page/s.
   2. Fill out the standard change request form and submit it
to the appropriate CBE instructor when the intervention has
been completed.

Directions for the CBE instructor:
---------- --- --- --- ----------
   1. Retest with the individual PPO before beginning
intervention to further determine a student's needs.
   2. If needed,proceed with the intervention plan as
presented on the following page/s.
   3. Retest with the individual PPO to determine mastery.
   4. Fill out the standard change request form and change
student's scan sheet from non-mastery to mastery.

C.B.E.

PPO Change Request Form

Building:................................Content Area.....

Student's Name

....

Room No. ....   Grade ....

PPO No. to be changed from non-mastery to mastery ....

Submitted by .... Date ....
               (Instructor's signature)

Note: You may wish to attach any pertinent and available
      documentation to this form.

Comments:

Return this form to the appropriate CBE instructor.

....

CBE instructor's signature: ....

                Date: ....

Complete PPO No. ....

Write the standard form for one thousand three hundred seven.
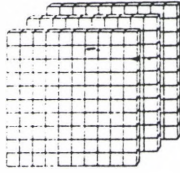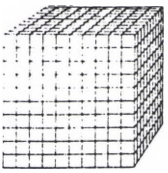
thousands	hundreds	tens	ones
1	3	0	7

The standard form is 1307.

Write the standard form.

1. 3 thousands 8 hundreds 6 tens 5 ones _____

2. 1 thousand 3 hundreds 2 tens 6 ones _____

3. 2 thousands 4 tens 8 ones _____

4. 6 hundreds 5 tens 6 ones _____

5. 5 hundreds 7 tens _____

6. 8 hundreds 2 ones _____

7. 2 thousands 3 hundreds 5 tens _____

8. 6 thousands 1 hundred 2 ones _____

9. 5 thousands 2 tens _____

10. 2 thousands 3 ones _____

11. 1 hundred 1 one _____

12. 1 thousand 3 hundreds _____

MA-05-07

Tens and Ones

Write the standard form.

1.

2.

3.

4.
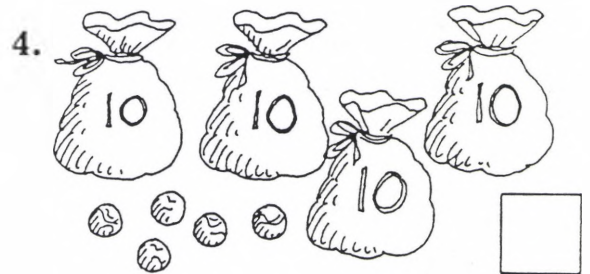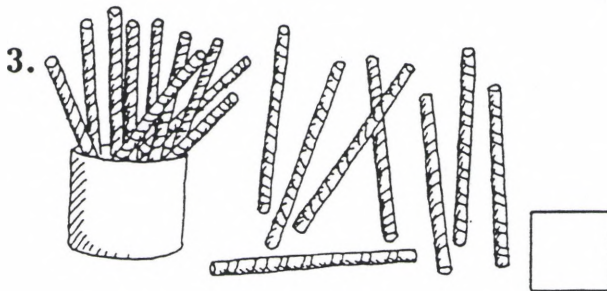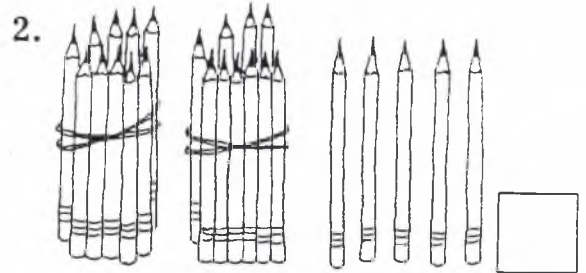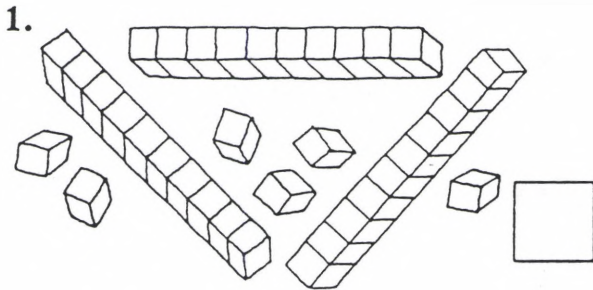
5. 3 tens 2 ones = _____

6. 5 tens 4 ones = _____

7. 2 tens 3 ones = _____

8. 8 tens 6 ones = _____

9. 4 tens 7 ones = _____

10. 7 tens 5 ones = _____

11. 5 tens 0 ones = _____

12. 7 tens 6 ones = _____

13. 6 tens 2 ones = _____

14. 9 tens 3 ones = _____

15. fifty-four _____

16. twenty-six _____

17. ninety-one _____

18. forty-nine _____

19. thirty-two _____

20. seventy _____

Match. (Write the letter in the blank in front of the number.)

_____ **21.** 15   **A.** forty-eight

_____ **22.** 84   **B.** fifteen

_____ **23.** 80   **C.** fifty-one

_____ **24.** 48   **D.** eighty-four

_____ **25.** 51   **E.** eighty

_____ **26.** 66   **A.** twenty-seven

_____ **27.** 75   **B.** fifty-seven

_____ **28.** 27   **C.** sixty-six

_____ **29.** 57   **D.** seventy-five

_____ **30.** 72   **E.** seventy-two

NAME

Climbing Higher

MA-05-07

The heights in feet of 10 famous mountains are given below.
Write each number in standard form. Then make a bar graph
using the numbers.

1. Ararat
   (Turkey)
   sixteen thousand seven hundred ninety-five _____

2. Blanc
   (France)
   fifteen thousand seven hundred seventy-one _____

3. Citlaltépetl
   (Mexico)
   eighteen thousand eight hundred fifty-five _____

4. Communism Peak
   (Soviet Union)
   twenty four thousand five hundred ninety-nine_____

5. Everest
   (Nepal)
   twenty-nine thousand twenty-eight_____

6. Kilimanjaro
   (Africa)
   nineteen thousand three hundred forty_____

7. Margherita
   (Africa)
   sixteen thousand seven hundred ninety-five_____

8. Matterhorn
   (Switzerland)
   fourteen thousand six hundred eighty-eight_____

9. McKinley
   (United States)
   twenty thousand three hundred twenty_____

10. Whitney
    (United States)
    fourteen thousand four hundred ninety-four_____
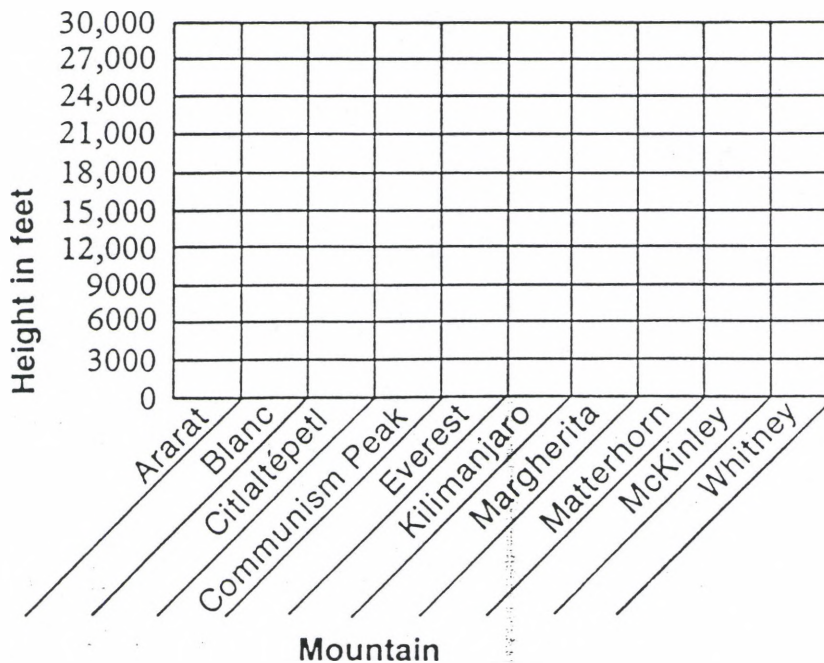
NAME _____

Reporting Population

MH - 05 - 07

The populations of the seven continents
are listed below. Write the numbers in
standard form. Then make a bar graph to
see how the populations compare.

1. Africa
four hundred seventy-two million _____

2. Antarctica
zero _____

3. Asia
two billion, six hundred twenty-eight million, five hundred thousand
_____

4. Australia
fourteen million, six hundred thousand_____

5. Europe
six hundred eighty-four million, five hundred thousand _____

6. North America
three hundred sixty-eight million_____

7. South America
two hundred thirty-nine million_____
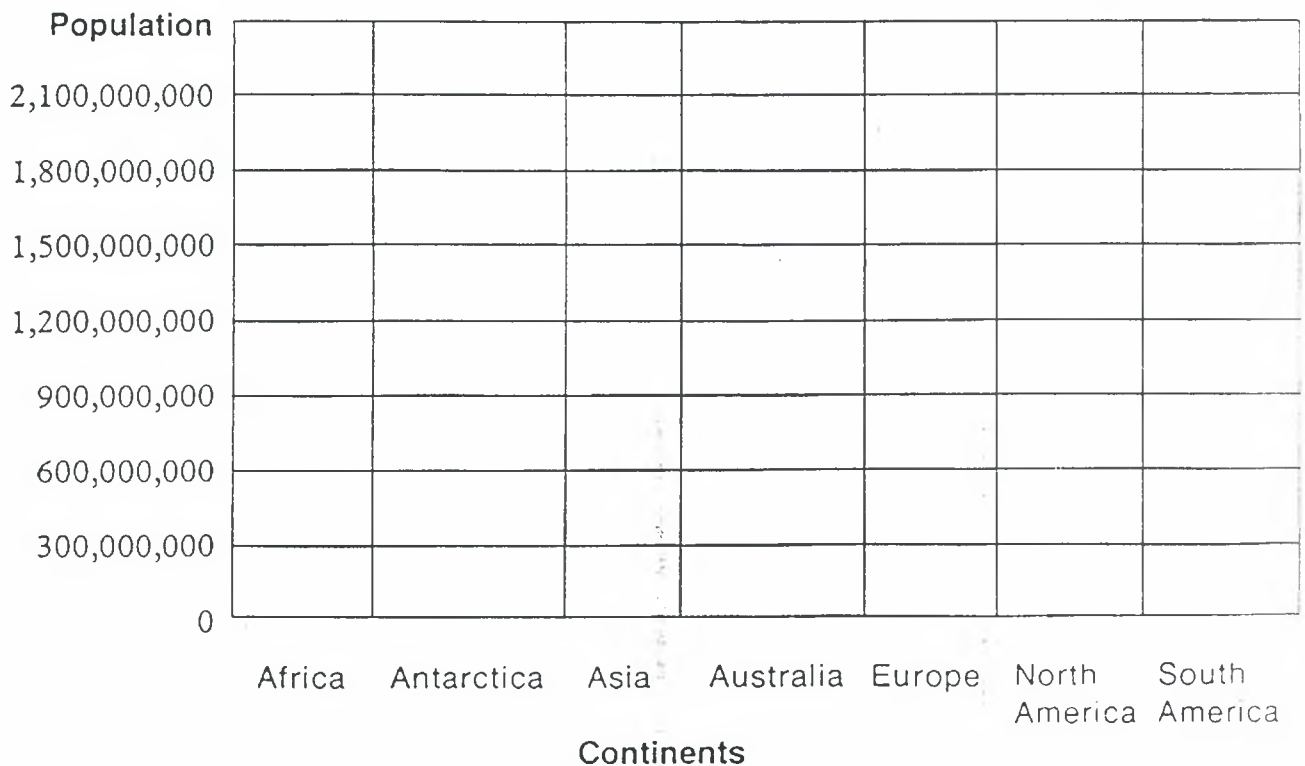
Population							
2,100,000,000							
1,800,000,000							
1,500,000,000							
1,200,000,000							
900,000,000							
600,000,000							
300,000,000							
0	Africa	Antarctica	Asia	Australia	Europe	North America	South America

Continents

ANSWER KEY

(The answer key may be
used by the instructor or by the
student for self-checking.)

page 1	page 2	Match
1) 3865	5) 32	21. B
2) 1326	6) 54	22. D
3) 2048	7) 23	23. E
4) 656	8) 86	24. A
5) 570	9) 47	25. C
6) 802	10) 75	26. C
7) 2350	11) 50	27. D
8) 6102	12) 76	28. A
9) 5020	13) 62	29. B
10) 2003	14) 93	30. E
11) 101	15) 54	
12) 1300	16) 26	
	17) 91	
	18) 49	
	19) 32	
	20) 70	

page 3
1.) 16,795
2.) 15,701
3.) 8,855
4) 24,599
5) 29,028
6.) 19,340
7) 16,795
8) 14,688
9) 20,320
10) 14,499
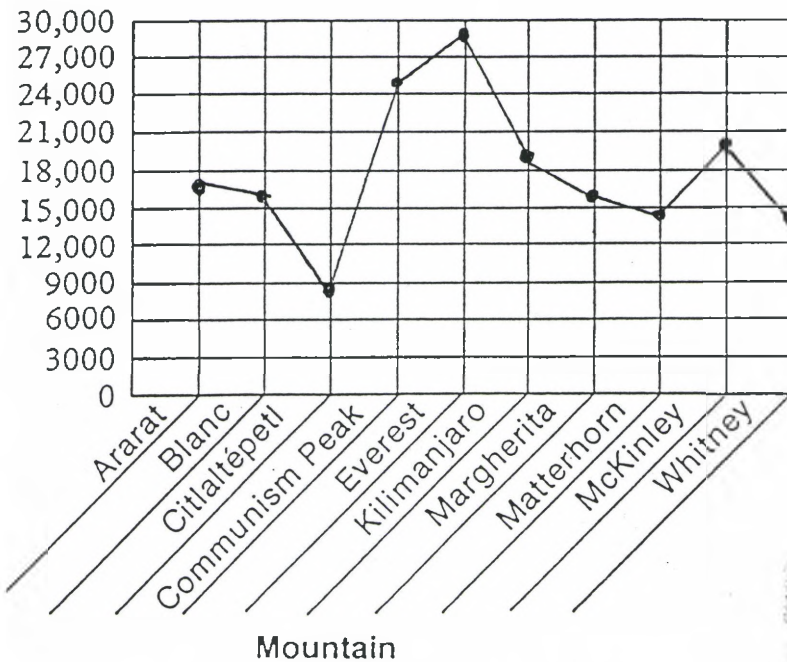
Mountain

page 4

1.) 472,000,000
2.) 0
3.) 2,628,500,000
4.) 14,600,000

5.) 684,500,000
6.) 368,000,000
7.) 239,000,000

Population							
2,100,000,000							
1,800,000,000							
1,500,000,000							
1,200,000,000							
900,000,000							
600,000,000							
300,000,000							
0	Africa	Antarctica	Asia	Australia	Europe	North America	South America

Continents

```
                          C.B.E.
           Intervention Resource Plan-Cover Form
           ------------ -------- ---- ----- ----
```
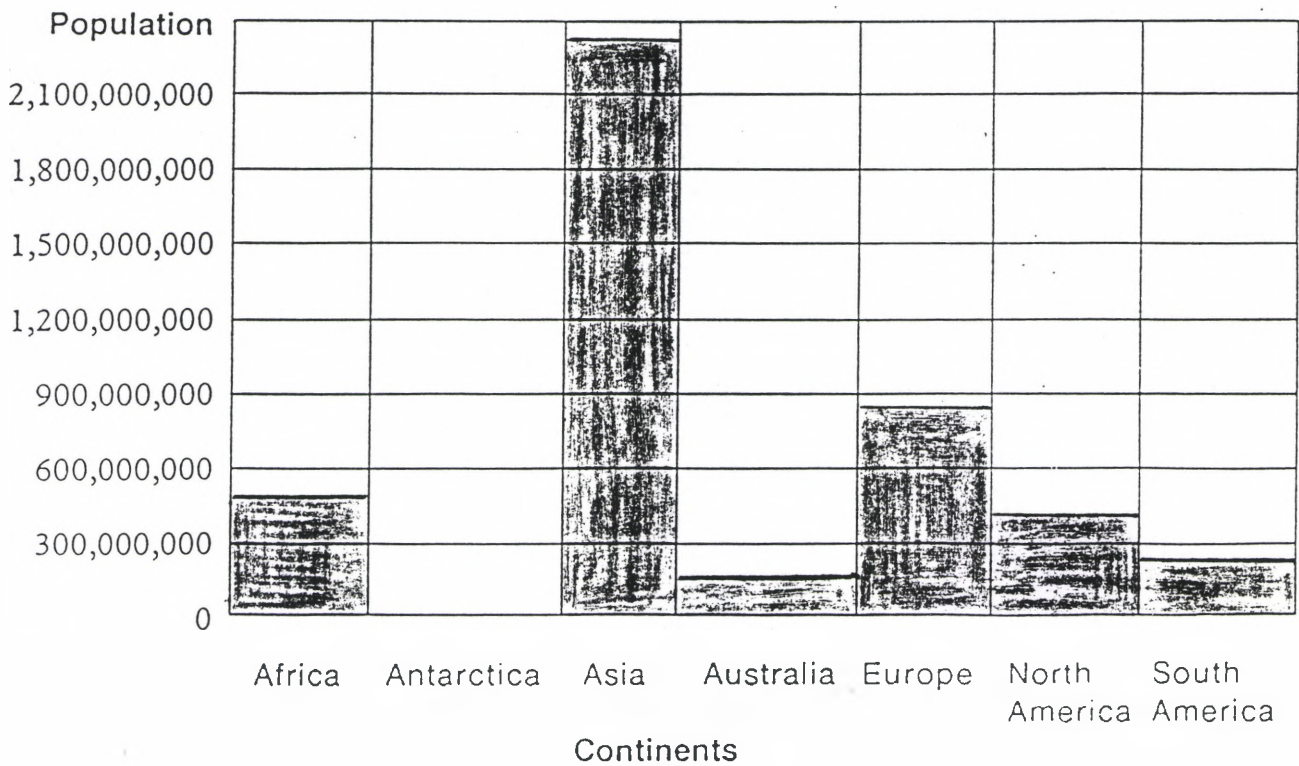
Content Area: MA
  Grade Area: 05
    PPO Area: 08

PPO Objective: ROUNDING TWO AND THREE DIGIT NUMBERS

PPO Description:Given 4 numbers, the student will correctly round the two-digit
                numbers to the nearest ten and the three digit numbers to the
                nearest hundred.

Directions for the instructor:
---------- --- --- ----------
    1. Intervene with the intervention plan as presented on
the following page/s.
    2. Fill out the standard change request form and submit it
to the appropriate CBE instructor when the intervention has
been completed.

Directions for the CBE instructor:
---------- --- --- --- ----------
    1. Retest with the individual PPO before beginning
intervention to further determine a student's needs.
    2. If needed,proceed with the intervention plan as
presented on the following page/s.
    3. Retest with the individual PPO to determine mastery.
    4. Fill out the standard change request form and change
student's scan sheet from non-mastery to mastery.

C.B.E.

PPO Change Request Form

Building:................................Content Area.....

Student's Name

....

Room No. ....   Grade ....

PPO No. to be changed from non-mastery to mastery ....

Submitted by .... Date ....
                    (Instructor's signature)

Note: You may wish to attach any pertinent and available
      documentation to this form.

Comments:

Return this form to the appropriate CBE instructor.

....

CBE instructor's signature: ....

                    Date: ....

Complete PPO No. ....

Round 78 to the nearest ten. Since 78 is nearer 80 than ~, ~~~~.
78 to 80.

```
|----+----+----+----+----+----+----+----+----+----+----→
    70   71   72  -73   74   75   76   77   78   79   80
```
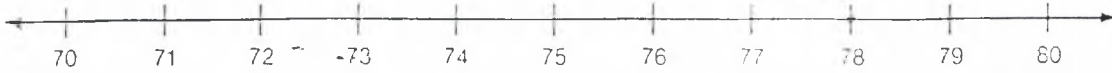
Round 450 to the nearest hundred. Since 450 is halfway between
400 and 500, round 450 to 500.

```
←----+----+----+----+----+----+----+----+----+----+----→
    400  410  420  430  440  450  460  470  480  490  500
```
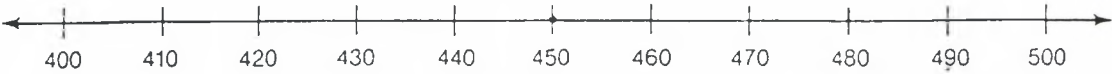
Round 5298 to the nearest thousand. Since 5298 is nearer to 5000
than 6000, round 5298 to 5000.

```
←----+----+----+----+----+----+----+----+----+----+----→
   5000 5100 5200 5300 5400 5500 5600 5700 5800 5900 6000
```
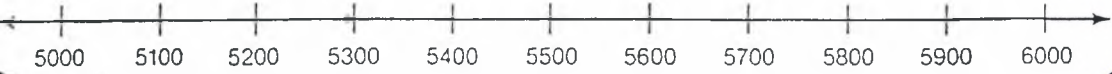
Read over carefully.

Round to the nearest ten.

1. 42 _____ 2. 85 _____ 3. 67 _____ 4. 83 _____ 5. 29 _____

6. 11 _____ 7. 46 _____ 8. 18 _____ 9. 65 _____ 10. 37 _____

11. 93 _____ 12. 26 _____ 13. 55 _____ 14. 82 _____ 15. 13 _____

16. 33 _____ 17. 89 _____ 18. 72 _____ 19. 24 _____ 20. 85 _____

Round to the nearest hundred.

21. 640 _____ 22. 381 _____ 23. 814 _____ 24. 408 _____ 25. 560 _____

26. 925 _____ 27. 750 _____ 28. 181 _____ 29. 279 _____ 30. 812 _____

31. 802 _____ 32. 362 _____ 33. 106 _____ 34. 125 _____ 35. 315 _____

36. 651 _____ 37. 263 _____ 38. 429 _____ 39. 704 _____ 40. 861 _____

41. 555 _____ 42. 916 _____ 43. 605 _____ 44. 222 _____ 45. 674 _____

Round to the nearest thousand.

46. 2813 _____ 47. 7298 _____ 48. 6650 _____ 49. 9349 _____

50. 6200 _____ 51. 8500 _____ 52. 4708 _____ 53. 7900 _____

54. 3812 _____ 55. 9099 _____ 56. 7581 _____ 57. 3496 _____

58. 1089 _____ 59. 1623 _____ 60. 8295 _____ 61. 7500 _____

62. 7821 _____ 63. 9347 _____ 64. 8078 _____ 65. 4621 _____

66. 3542 _____ 67. 5278 _____ 68. 7899 _____ 69. 6349 _____

The Roundup

Round each number to the place value given.

1. 97,625   to the nearest thousand   _____

2. 4295   to the nearest hundred   _____

3. 6502   to the nearest thousand   _____

4. 728   to the nearest ten   _____

5. 42,721   to the nearest ten   _____

6. 32,769   to the nearest hundred   _____

7. 46,492   to the nearest thousand   _____

8. 64,392   to the nearest thousand   _____

9. 42,932   to the nearest hundred   _____

10. 65,551   to the nearest ten   _____

Add your answers to find the roundup number.

11. _____

Close Call CBE MA-05-08 EXTRA PRACTICE

The Problem		Circle Your Best Estimate	Do the Problem on Your Calculator	Are You A Good Estimator? (Yes or No)
1. 38 +23		40 +20 60 or 30 +20 50	38 +23	
2. 62 +49		60 +40 100 or 60 +50 110	62 +49	
3. 16 +54		10 +50 60 or 20 +50 70	16 +54	
4. 47 +24		50 +30 80 or 50 +20 70	47 +24	
5. 28 +23		30 +20 50 or 20 +20 40	28 +23	
6. 57 +12		50 +10 60 or 60 +10 70	57 +12	
7. 72 +19		70 +10 80 or 70 +20 90	72 +19	
8. 36 +53		40 +50 90 or 40 +60 100	36 +53	

ANSWER KEY

(The answer key may be used by the
instructor or by the student for
self-checking.)

Page 1

(1.) 40   (2.) 90   (3.) 70 (4.) 80 (5.) 30
(6.) 10   (7.) 50   (8.) 20 (9.) 70 (10.) 40
(11.) 90   (12.) 30   (13.) 60 (14.) 80 (15.) 10
(16.) 30   (17.) 90   (18.) 70 (19.) 20 (20.) 90

(21.) 600   (22.) 400   (23.) 800 (24.) 400 (25.) 600
(26.) 900   (27.) 800   (28.) 200 (29.) 300 (30.) 800
(31.) 800   (32.) 400   (33.) 100 (34.) 100 (35.) 300
(36.) 700   (37.) 300   (38.) 400 (39.) 700 (40.) 900
(41.) 600   (42.) 900   (43.) 600 (44.) 200 (45.) 700

(46.) 3000   (47.) 7000   (48.) 7000   (49.) 9000
(50.) 6000   (51.) 9000   (52.) 5000   (53.) 8000
(54.) 4000   (55.) 9000   (56.) 8000   (57.) 3000
(58.) 1000   (59.) 2000   (60.) 8000   (61.) 8000
(62.) 8000   (63.) 9000   (64.) 8000   (65.) 5000
(66.) 4000   (67.) 5000   (68.) 8000   (69.) 6000

Page 2

(1.) 98,000

(2.) 4300

(3.) 7000

(4.) 730

(5.) 42,720

(6.) 32,800

(7.) 46,000

(8.) 64,000

(9.) 42,900

(10.) 65,550

) 404,000

Page 3 Extra Practice

(1.) 61
$$\begin{array}{r} 40 \\ +20 \\ \hline 60 \end{array}$$

(2.) 111
$$\begin{array}{r} 60 \\ +50 \\ \hline 110 \end{array}$$

(3.) 69
$$\begin{array}{r} 20 \\ +50 \\ \hline 70 \end{array}$$

(4.) 71
$$\begin{array}{r} 50 \\ +20 \\ \hline 70 \end{array}$$

(5.) 51
$$\begin{array}{r} 30 \\ +20 \\ \hline 50 \end{array}$$

(6.) 69
$$\begin{array}{r} 60 \\ +10 \\ \hline 70 \end{array}$$

(7.) 91
$$\begin{array}{r} 70 \\ +20 \\ \hline 90 \end{array}$$

(8.) 89
$$\begin{array}{r} 40 \\ +50 \\ \hline 90 \end{array}$$

```
                         C.B.E.
           Intervention Resource Plan-Cover Form
           ------------ -------- ---- ----- ----
```

```
Content Area:  MA
  Grade Area:  05
    PPO Area:  10
```

PPO Objective: MULTIPLICATION PROBLEMS WITH ONE AND TWO FACTORS

PPO Description:Given 4 multiplication problems, each containing a one-digit
               and a two-digit factor, the student will solve the multiplication
               problems.

Directions for the instructor:
---------- --- --- ----------
   1. Intervene with the intervention plan as presented on
the following page/s.
   2. Fill out the standard change request form and submit it
to the appropriate CBE instructor when the intervention has
been completed.

Directions for the CBE instructor:
---------- --- --- --- ----------
   1. Retest with the individual PPO before beginning
intervention to further determine a student's needs.
   2. If needed,proceed with the intervention plan as
presented on the following page/s.
   3. Retest with the individual PPO to determine mastery.
   4. Fill out the standard change request form and change
student's scan sheet from non-mastery to mastery.

C.B.E.

                    PPO Change Request Form
                    ___ _____ _____ ____

 Building:...............................Content Area.....

Student's Name

....

Room No. ....   Grade ....

PPO No. to be changed from non-mastery to mastery ....

Submitted by .... Date ....
                    (Instructor's signature)

Note: You may wish to attach any pertinent and available
      documentation to this form.

Comments:

Return this form to the appropriate CBE instructor.

....

CBE instructor's signature: ....

                    Date: ....

Complete PPO No. ....

1.

Two-Place Multiplication

Multiply. Then connect the products, in order, with
straight lines to find the hidden picture.

1.	16 $\times 6$	2.	13 $\times 6$	3.	18 $\times 5$	4.	19 $\times 3$	5.	13 $\times 7$	6.	18 $\times 4$
7.	15 $\times 5$	8.	14 $\times 4$	9.	17 $\times 5$	10.	16 $\times 3$	11.	12 $\times 8$		

★90

★82

★68

★67   ★42

91

96 ★   78★   50 ★   ★57   ★

★69

★48   80★   ★72   ★71

★62   ★56

★20

★58

★85   ★75

A Fishy Riddle

MA-05-10

How do you send a letter to a fish?

FREDDIE FISH
12 OCEAN WAY
ATLANTIC O.
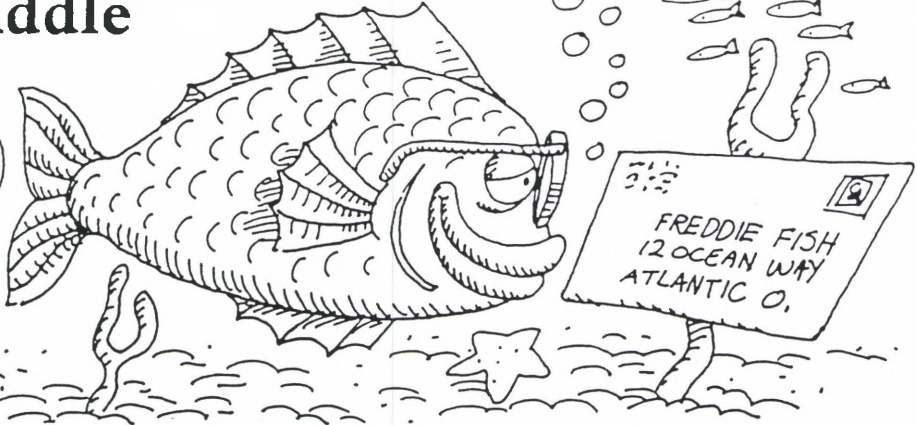
Round to the nearest ten or hundred.
Estimate the product.
Use the code to answer the riddle.

1. 72
  ×3
  [M]

2. 38
  ×9
  [A]

3. 87
  ×6
  [U]

4. 26
  ×9
  [E]

5. 49
  ×6
  [Y]

6. 65
  ×9
  [N]

7. 53
  ×8
  [H]

8. 314
  ×7
  [D]

9. 746
  ×4
  [P]

10. 466
  ×5
  [O]

11. 319
  ×6
  [I]

12. 553
  ×7
  [R]

13. 874
  ×3
  [L]

Code

—— —— ——   —— —— —— ——
300 2500 540   2100 4200 2500 2800

—— —— ——   ——   —— —— —— ——
400 1800 210   360   2700 1800 630 270

ANSWER KEY

(The answer key may be used by the instructor or by the student for self-checking.)

page 1

1) 96

2) 78

3) 90

4.) 57

5.) 91

6.) 72

7.) 75

8.) 56

9.) 85

10.) 48

11.) 96

(hidden picture on the next page.)

Hidden Picture
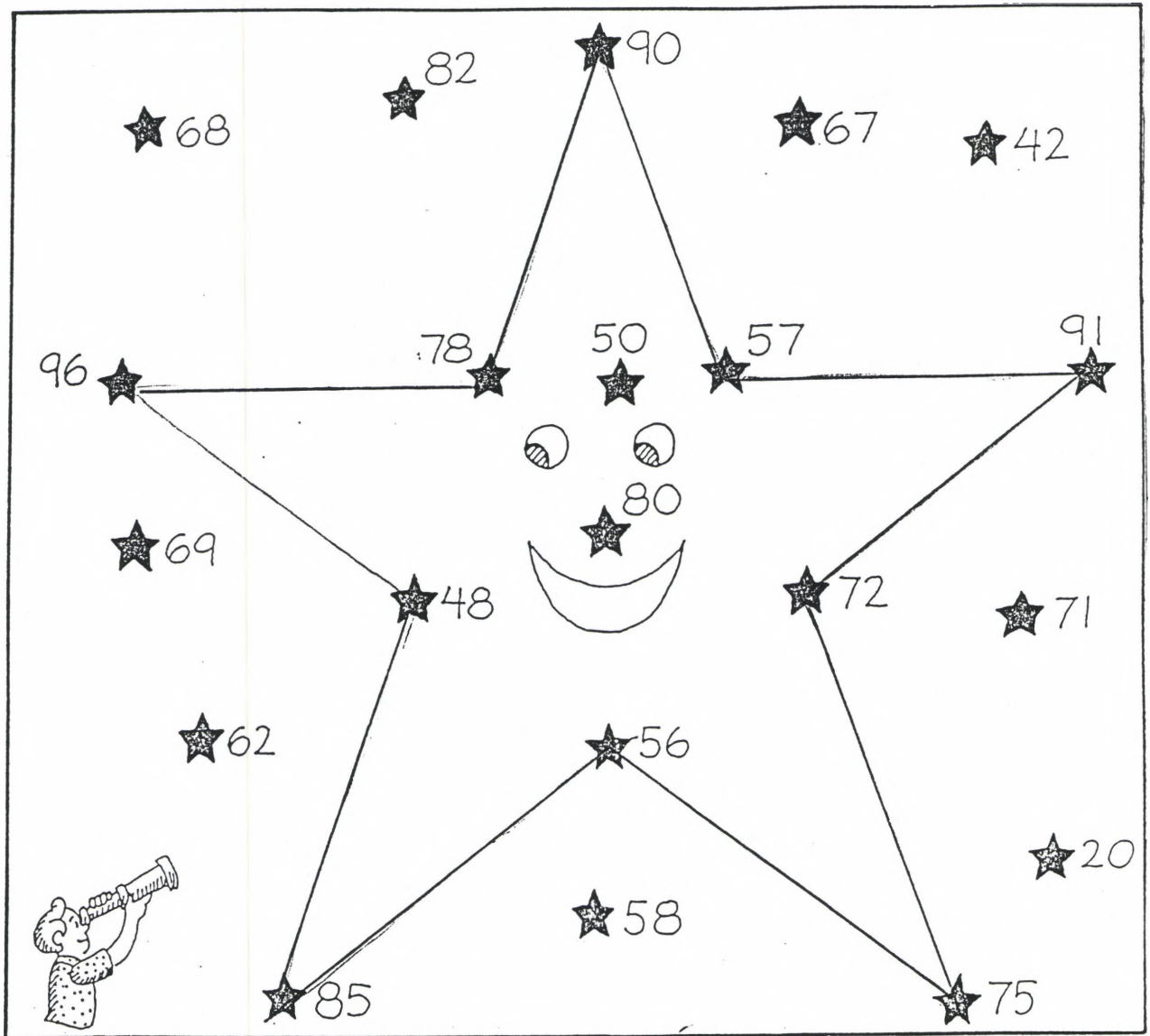
page 2

1.) 216 | M
2.) 342 | A
3.) 522 | U
4.) 234 | E
5.) 294 | Y

6.) 585 | N
7.) 424 | H
8.) 2198 | D
9.) 2984 | P
10.) 2330 | O

11.) 1914 | I
12.) 3871 | R
13.) 2622 | L

Rounded

1.)
$$72 \times 3$$
$$\begin{array}{r} 70 \\ \times\ 3 \\ \hline 210 \end{array}$$

2)
$$38 \times 9$$
$$\begin{array}{r} 40 \\ \times\ 9 \\ \hline 360 \end{array}$$

3.)
$$87 \times 6$$
$$\begin{array}{r} 90 \\ \times\ 6 \\ \hline 540 \end{array}$$

4.)
$$26 \times 9$$
$$\begin{array}{r} 30 \\ \times\ 9 \\ \hline 270 \end{array}$$

5.)
$$49 \times 6$$
$$\begin{array}{r} 50 \\ \times\ 6 \\ \hline 300 \end{array}$$

6.)
$$65 \times 9$$
$$\begin{array}{r} 70 \\ \times\ 9 \\ \hline 630 \end{array}$$

7.)
$$53 \times 8$$
$$\begin{array}{r} 50 \\ \times\ 8 \\ \hline 400 \end{array}$$

8.)
$$314 \times 7$$
$$\begin{array}{r} 300 \\ \times\ 7 \\ \hline 2100 \end{array}$$

9.)
$$746 \times 4$$
$$\begin{array}{r} 700 \\ \times\ 4 \\ \hline 2800 \end{array}$$

10.)
$$466 \times 5$$
$$\begin{array}{r} 500 \\ \times\ 5 \\ \hline 2500 \end{array}$$

11.)
$$319 \times 6$$
$$\begin{array}{r} 300 \\ \times\ 6 \\ \hline 1800 \end{array}$$

12.)
$$553 \times 7$$
$$\begin{array}{r} 600 \\ \times\ 7 \\ \hline 4200 \end{array}$$

13.)
$$874 \times 3$$
$$\begin{array}{r} 900 \\ \times\ 3 \\ \hline 2700 \end{array}$$

Hidden Code

Code

Y   O   U   D   R   O   P
300 2500 540   2100 4200 2500 2800

H   I   M   A   W   I   N   E !
400 1800 210   360   2700 1800 630 270

* If your code didn't come out then go back and look at your estimations of the products.

Content Area: MA
  Grade Area: 05
    PPO Area: 11

PPO Objective: MULTIPLICATION PROBLEMS WITH A FACTOR GREATER THAN 10

PPO Description:Given 3 multiplication problems containing a factor greater
                than 10 multiplied by a one-digit factor and requiring regrouping
                the student will multiply to find the correct answer.

Directions for the instructor:
---------- --- --- ----------
   1. Intervene with the intervention plan as presented on
the following page/s.
   2. Fill out the standard change request form and submit it
to the appropriate CBE instructor when the intervention has
been completed.

Directions for the CBE instructor:
---------- --- --- --- ----------
   1. Retest with the individual PPO before beginning
intervention to further determine a student's needs.
   2. If needed,proceed with the intervention plan as
presented on the following page/s.
   3. Retest with the individual PPO to determine mastery.
   4. Fill out the standard change request form and change
student's scan sheet from non-mastery to mastery.

C.B.E.

PPO Change Request Form
--- ------ ------- ----

Building:...............................Content Area.....

Student's Name

....

Room No. ....   Grade ....

PPO No. to be changed from non-mastery to mastery ....

Submitted by .... Date ....
                (Instructor's signature)

Note: You may wish to attach any pertinent and available
      documentation to this form.

Comments:

Return this form to the appropriate CBE instructor.

....

CBE instructor's signature: ....

                Date: ....

Complete PPO No. ....

Three-Place Multiplication

1. 425
   ×3

2. 608
   ×7

3. 513
   ×4

4. 648
   ×2

5. 214
   ×7

6. 316
   ×6

7. 212
   ×8

8. 308
   ×2

9. 409
   ×4

10. 229
    ×3

11. 614
    ×6

12. 312
    ×7

13. 503
    ×9

14. 415
    ×6

15. 827
    ×2

16. 307
    ×5

17. 413
    ×5

18. 736
    ×2

19. 428
    ×3

20. 315
    ×5

Solve.

21. Every Sunday there are 3 flights to Portland. Each plane holds 109 people. How many people can fly to Portland on Sunday?

_____

22. The airport has 4 waiting rooms. There are 116 chairs in each room. How many people can sit down at one time?

_____

23. There were 223 meals ordered for each of 4 flights. How many meals did the cooks have to make in all?

_____

24. One ticket to Dallas costs $314. How much would a family of 6 have to pay for tickets?

_____

NAME _____

There are 5 ski lifts at High Mountain Ski Bowl. Each lift can carry 342 people in one hour. How many skiers can all 5 lifts carry?

1710 skiers

MA-05-11   2.

Multiply 342 by 5.

Multiply 2 ones by 5.

Write the 0.

Remember the 1 ten.

Multiply 4 tens by 5 and add the 1 ten.

Write the 1.

Remember the 2 hundreds.

Multiply 3 hundreds by 5 and add the 2 hundreds.

$$\begin{array}{r} 342 \\ \times\ 5 \\ \hline 0 \end{array}\quad 5 \times 2 = 10$$

$$\begin{array}{r} 342 \\ \times\ 5 \\ \hline 10 \end{array}\quad \begin{array}{l} 5 \times 4 = 20 \\ 20 + 1 = 21 \end{array}$$

$$\begin{array}{r} 342 \\ \times\ 5 \\ \hline 1710 \end{array}\ skiers$$

In one hour, 1710 skiers can ride up the mountain.

Write the product.

1. $\begin{array}{r} 392 \\ \times\ 4 \\ \hline \end{array}$ 2. $\begin{array}{r} 426 \\ \times\ 6 \\ \hline \end{array}$ 3. $\begin{array}{r} 571 \\ \times\ 7 \\ \hline \end{array}$ 4. $\begin{array}{r} 809 \\ \times\ 5 \\ \hline \end{array}$ 5. $\begin{array}{r} 846 \\ \times\ 3 \\ \hline \end{array}$

6. $\begin{array}{r} 3908 \\ \times\ 5 \\ \hline \end{array}$ 7. $\begin{array}{r} 6145 \\ \times\ 6 \\ \hline \end{array}$ 8. $\begin{array}{r} 7914 \\ \times\ 8 \\ \hline \end{array}$ 9. $\begin{array}{r} 3293 \\ \times\ 7 \\ \hline \end{array}$ 10. $\begin{array}{r} 9142 \\ \times\ 9 \\ \hline \end{array}$

11. $\begin{array}{r} 7125 \\ \times\ 4 \\ \hline \end{array}$ 12. $\begin{array}{r} 3987 \\ \times\ 8 \\ \hline \end{array}$ 13. $\begin{array}{r} 2963 \\ \times\ 5 \\ \hline \end{array}$ 14. $\begin{array}{r} 5416 \\ \times\ 7 \\ \hline \end{array}$ 15. $\begin{array}{r} 3908 \\ \times\ 9 \\ \hline \end{array}$

16. $4 \times 796 =$ _____   17. $3 \times 708 =$ _____   18. $9 \times 543 =$ _____

19. $8 \times 1938 =$ _____   20. $6 \times 2470 =$ _____   21. $5 \times 2471 =$ _____

Solve.

22. The school store sold binders for $2 each. Tuesday 190 students bought binders. How much money did the school store make? _____

23. On Thursday, twice as many students bought binders. How much money was collected that day? _____
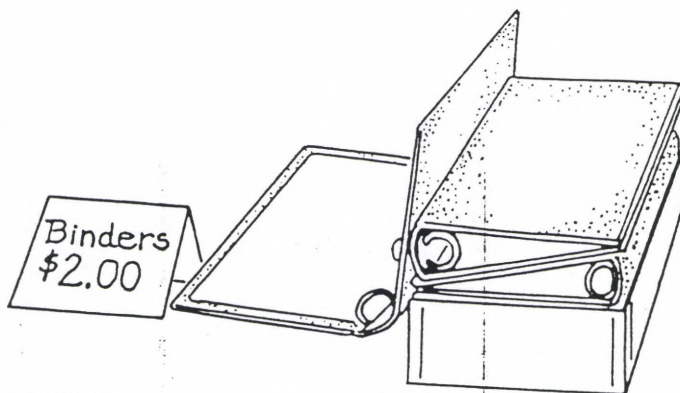
Binders $2.00

Answer Key

(The answer key may be used by the instructor or by the student for self-checking.)

Page 1

1) 1275	11.) 3684
2) 4256	12.) 2184
3. 2052	13.) 4527
4) 1296	14.) 2490
5) 1498	15.) 1654
6) 1896	16.) 1535
7) 1696	17.) 2065
8.) 616	18.) 1472
9) 1636	19.) 1284
10.) 687	20.) 1575

Solve

21.) 327 people

22.) 464 people

23) 892 meals

24.) $1884

page 2

1.) 1568
2.) 2556
3.) 3997
4.) 4045
5.) 2538
6.) 19,540
7.) 36,870
8.) 63,312
9.) 23,051
10.) 82,305

11.) 28,500
12.) 31,896
13.) 14,815
14.) 37,912
15.) 35,172
16.) 3184
17.) 2124
18.) 4887
19.) 15,504
20.) 14,820
21.) 12,355

Solve
22.) $380.00

23.) $760.00

Content Area: MA
  Grade Area: 05
    PPO Area:]2

PPO Objective: MULTIPLICATION WORD PROBLEMS 1-DIGIT BY 2,3,4, DIGIT

PPO Description Given 3 multiplication word problems involving multiplication
                of a one digit factor by a two-digit, a three-digit, a four-
                digit number, respectively, and requiring regrouping, the student
                will multiply to find the correct answer.

Directions for the instructor:
---------- --- --- ----------

   1. Intervene with the intervention plan as presented on
the following page/s.
   2. Fill out the standard change request form and submit it
to the appropriate CBE instructor when the intervention has
been completed.

Directions for the CBE instructor:
---------- --- --- --- ----------

   1. Retest with the individual PPO before beginning
intervention to further determine a student's needs.
   2. If needed, proceed with the intervention plan as
presented on the following page/s.
   3. Retest with the individual PPO to determine mastery.
   4. Fill out the standard change request form and change
student's scan sheet from non-mastery to mastery.

C.B.E.

                    PPO Change Request Form
                    ___ _____ _____ ____

 Building:.............................Content Area.....

Student's Name

....

Room No. ....   Grade ....

PPO No. to be changed from non-mastery to mastery ....

Submitted by .... Date ....
               (Instructor's signature)

Note: You may wish to attach any pertinent and available
       documentation to this form.

Comments:

Return this form to the appropriate CBE instructor.

....

CBE instructor's signature: ....

               Date: ....

Complete PPO No. ....

MULTIPLICATION: WORD PROBLEMS   I.R.P.

MA-05-12

DIRECTIONS: Have students read the following word problems to themselves. Discuss out loud the process and the steps needed to solve the problems.

1. Mary practices the piano 7 days a week for 2 hours each day. She also jogs every day. How many hours does Mary practice the piano each week?

2. 27 band members each had 9 tickets to sell for the concert. How many tickets did they have in all?

3. The cafeteria workers served 3 pancakes to each person. There were 2316 persons that went through the cafeteria line. How many pancakes were served altogether?

4. There are 457 students in the the fifth grade. Each student read 9 books this year. How many books did the fifth graders read in all this year?

NAME ___PPO MA-05-12___

Timely Problems

2.

On the first line, write +, −, ×, or ÷ to show whether you add, subtract, multiply, or divide. On the second line, write the answer.

Understand
Plan
Work
Answer
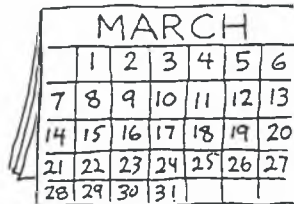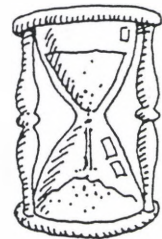
1. There are 60 minutes in 1 hour. How many minutes are there in 8 hours?

_____ _____

2. How many days are in 2 years if one year has 365 days and the other has 366 days?

_____ _____

MARCH

	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
28	29	30	31			

3. Bill went to summer camp for 35 days. There are 7 days in a week. How many weeks was he gone?

_____ _____

4. Nina's mother is 39 years old. Her grandmother is 63 years old. How much older is her grandmother than her mother?

_____ _____

5. Santos sleeps about 8 hours every night. How many hours does he sleep in 30 nights?

_____ _____

6. A puppy is 63 days old. How many weeks is this?

_____ _____

7. Paula read for 45 minutes. She spent 35 minutes washing the family car. Then she played baseball for 55 minutes. How many minutes did she spend doing these things?

_____ _____

8. Janet says she is 468 weeks old. Herb says he is 520 weeks old. How many weeks older is Herb?

_____ _____

Answer Key

page 1
1. 14 hours

2. 243 tickets

3. 6948 pancakes

4. 4113 books

page 2
1. X   480 min.
2. +   731 days
3. ÷   5 weeks
4. —   24 years older
5. X   240 hours
6. ÷   9 weeks
7. +   135 min.
8. —   52 weeks older

Content Area: MA
Grade Area: 05
PPO Area: 13

PPO Objective: MULTIPLICATION PROBLEMS REQUIRING REGROUPING WITH MONEY

PPO Description: Given 3 multiplication problems requiring regrouping involving money with one factor a one-digit number and the other factor an amount less than $100, the student will multiply to find the correct snswer, using both the dollar sign and decimal point in the answer.

Directions for the instructor:
---------- --- --- ----------
1. Intervene with the intervention plan as presented on the following page/s.
2. Fill out the standard change request form and submit it to the appropriate CBE instructor when the intervention has been completed.

Directions for the CBE instructor:
---------- --- --- --- ----------
1. Retest with the individual PPO before beginning intervention to further determine a student's needs.
2. If needed, proceed with the intervention plan as presented on the following page/s.
3. Retest with the individual PPO to determine mastery.
4. Fill out the standard change request form and change student's scan sheet from non-mastery to mastery.

```
                        C.B.E.


              PPO Change Request Form
              ---  ------  -------  ----




   Building:..............................Content Area.....

Student's Name

..........................................................

Room No. ...........           Grade .........

PPO No. to be changed from non-mastery to mastery ........

Submitted by .......................... Date ..........
              (Instructor's signature)

Note: You may wish to attach any pertinent and available
      documentation to this form.

Comments:



Return this form to the appropriate CBE instructor.

..........................................................

CBE instructor's signature: ..............................

                   Date: ...............

Complete PPO No. .........................
```

1.

How much would 8 carnations cost?
To find out, multiply $.98 by 8.

$$\begin{array}{r} \$ \ .98 \\ \times \ \ \ \ 8 \\ \hline \$7.84 \end{array}$$

Eight carnations would cost $7.84.

Multiply. Write the answer with the dollar sign and decimal point.

1. $ .37 × 4	2. $ .68 × 8	3. $ .72 × 5	4. $ .91 × 9	5. $ .39 × 6

6. $9.18
× 3

11. $2.15 × 48	12. $7.32 × 56	13. $9.05 × 32	14. $ .69 × 84	15. $ .79 × 39

16. $7.95 × 841	17. $9.25 × 537	18. $8.40 × 742	19. $22.53 × 34	20. $19.95 × 96

21. 27 × $3.39 =

22. 16 × $6.59 =

23. 20 × $9.54 =

24. 32 × $9.08 =

25. 27 × $6.95 =

26. 43 × $5.69 =

27. 418 × $2.54 =

28. 673 × $4.04 =

29. 388 × $7.27 =

30. 561 × $3.10 =

Dollars and Sense

2.

What is the total price?

1.

62¢
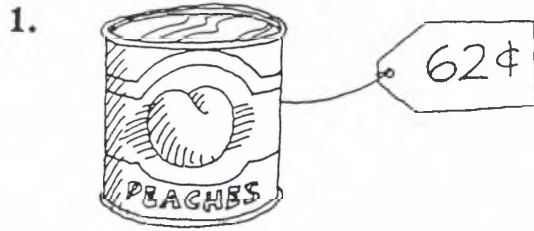
You buy 6 cans.

You pay _____.

2.

MILK

$1.08
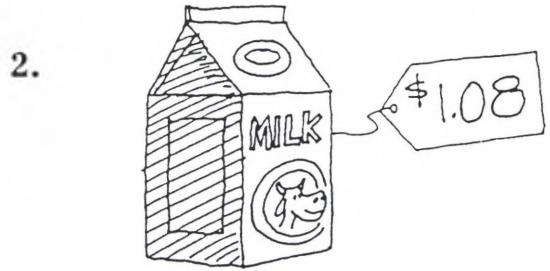
You buy 4 cartons.

You pay _____.

3.

58¢   KRISPY CRACKERS

You buy 3 boxes.

You pay _____.

4.

PEANUT BUTTER $1.26
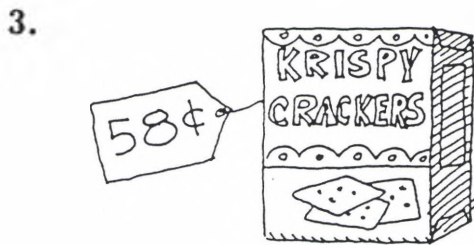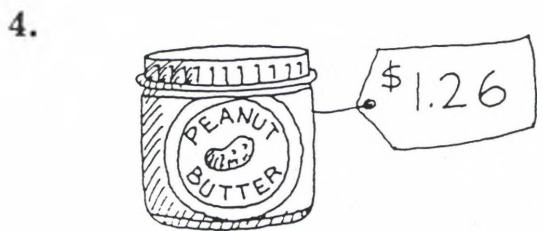
You buy 3 jars.

You pay _____.

5.

$1.16   APPLES
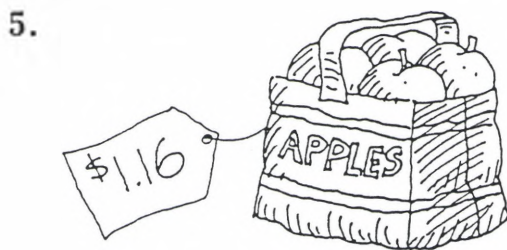
You buy 5 bags.

You pay _____.

6.

SOUP   50¢
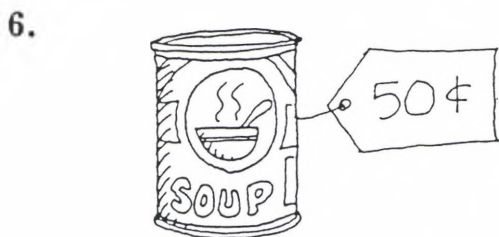
You buy 7 cans.

You pay _____.

7.

SWISS $2.17
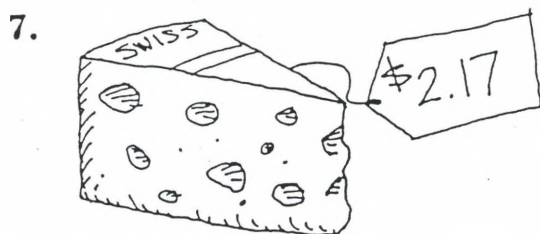
You buy 4 packages

You pay _____.

8.

IT'S A TREAT   CAT FOOD $1.24
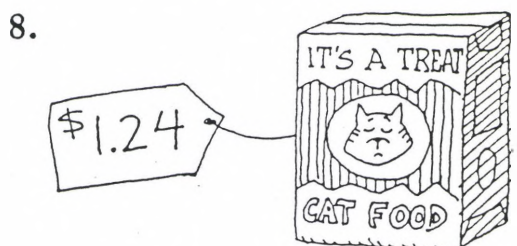
You buy 4 boxes.

You pay _____.

Answer Key (The answer key may be used by the instructor or by the student for self-checking.)

page 1

1) $1.48
2) $5.44
3.) $3.60
4) $8.19
5) $2.34 → 6.) $27.54
11) $103.20
12) $409.92
13) $289.60
14) $57.96
15) $30.81

16.) $6,685.95
17) $4,967.25
18) $6,232.80
19) $766.02
20.) $1,915.20

21) $91.53
22.) $105.44
23.) $190.80
24.) $290.56
25.) $187.65
26) $244.67
27.) $1061.72
28.) $2,718.92
29.) $2,820.76
30.) $1,739.10

page 2   Dollars and Sense

1.) $3.72   5.) $5.80

2.) $4.32   6.) $3.50

3.) $1.74   7.) $8.68

4.) $3.78   8.) $4.96

Content Area: MA
  Grade Area: 05
    PPO Area: 15

PPO Objective: DIVISION PROBLEMS-2-DIGIT DIVIDEND-1-DIGIT DIVISOR-NO RE-
                MAINDER

PPO Description: Given 3 division problems, containing a two-digit dividend and
                a one-digit divisor and having no remainder, the student will
                divide to find the correct quotient.

Directions for the instructor:
---------- --- --- ----------
    1. Intervene with the intervention plan as presented on
the following page/s.
    2. Fill out the standard change request form and submit it
to the appropriate CBE instructor when the intervention has
been completed.

Directions for the CBE instructor:
---------- --- --- --- ----------
    1. Retest with the individual PPO before beginning
intervention to further determine a student's needs.
    2. If needed,proceed with the intervention plan as
presented on the following page/s.
    3. Retest with the individual PPO to determine mastery.
    4. Fill out the standard change request form and change
student's scan sheet from non-mastery to mastery.

C.B.E.

PPO Change Request Form
--- ------ ------- ----

Building:...............................Content Area.....

Student's Name

....

Room No. ....   Grade ....

PPO No. to be changed from non-mastery to mastery ....

Submitted by .... Date ....
                (Instructor's signature)

Note: You may wish to attach any pertinent and available
      documentation to this form.

Comments:

Return this form to the appropriate CBE instructor.

....

CBE instructor's signature: ....

                Date: ....

Complete PPO No. ....

Division Facts

PPO MA-05-15

See how fast you can find the quotients.

Timed 4-5min.

1. $9\overline{)36}$ 2. $9\overline{)72}$ 3. $5\overline{)45}$ 4. $7\overline{)49}$ 5. $2\overline{)18}$

6. $8\overline{)56}$ 7. $9\overline{)81}$ 8. $6\overline{)30}$ 9. $9\overline{)27}$ 10. $4\overline{)36}$

11. $9\overline{)63}$ 12. $3\overline{)21}$ 13. $6\overline{)54}$ 14. $6\overline{)24}$ 15. $9\overline{)9}$

16. $8\overline{)16}$ 17. $2\overline{)8}$ 18. $9\overline{)45}$ 19. $5\overline{)40}$ 20. $6\overline{)48}$

21. $7\overline{)28}$ 22. $7\overline{)42}$ 23. $4\overline{)32}$ 24. $5\overline{)20}$ 25. $8\overline{)64}$

26. $8\overline{)32}$ 27. $9\overline{)36}$ 28. $5\overline{)10}$ 29. $3\overline{)12}$ 30. $7\overline{)56}$

Solve.

31. Mrs. Ramirez has 56 books. If she puts 7 books on a shelf, how many shelves will she need?   _____

32. Mark has 36 sacks of flour to put on a shelf. If he stacks 4 sacks on top of one another, how many stacks will there be?   _____

33. Tammy picked 48 tomatoes. She packed them in 6 boxes. How many tomatoes were in each box?   _____

34. Dominic bought 12 cartons of milk. The clerk put 4 cartons in each bag. How many bags did Dominic have to carry?   _____

35. Mr. Thomas paid 63¢ for 7 onions. How much did each onion cost him?   _____

Division:

Directions: Divide the following problems. There will be no remainders.

2.

1.) 4)92   2.) 5)85   3.) 4)56

4.)6)90   5.) 7)98   6.) 4)96

7.) 3)78   8.) 2)78   9.) 3)5

Answer Key
(The answer key may be used
by the instructor or by the student
for self-checking.)

page 1

1) 4	2.) 8	3.) 9	4.) 7	5.) 9
6.) 7	7) 9	8) 5	9.) 3	10.) 9
11.) 6	12.) 7	13) 9	14) 4	15) 1
16) 2	17) 4	18) 5	19) 8	20) 8
21.) 4	22) 6	23) 8	24) 4	25) 8
26) 4	27) 4	28) 2	29) 4	30.) 8

Solve

31.) 8 shelves

33) 8 tomatoes

32) 9 stacks

34) 3 bags

35.) $.09

page 2

1.) 23	2.) 17	3.) 14
4.) 15	5.) 14	6.) 24
7.) 26	8.) 39	9.) 19

Content Area: MA
Grade Area: 05
PPO Area: 16

PPO Objective: DIVISION PROBLEMS- 2-DIGIT DIVIDEND-1-DIGIT DIVISOR-REMAINDER

PPO Description:Given 3 division problems containing a 2-digit dividend and a
1-digit divisor and having a remainder, the student will divide
to find the correct quotient.

Directions for the instructor:
---------- --- --- ----------
1. Intervene with the intervention plan as presented on
the following page/s.
2. Fill out the standard change request form and submit it
to the appropriate CBE instructor when the intervention has
been completed.

Directions for the CBE instructor:
---------- --- --- --- ----------
1. Retest with the individual PPO before beginning
intervention to further determine a student's needs.
2. If needed,proceed with the intervention plan as
presented on the following page/s.
3. Retest with the individual PPO to determine mastery.
4. Fill out the standard change request form and change
student's scan sheet from non-mastery to mastery.

C.B.E.

PPO Change Request Form
--- ------ ------- ----

Building:..............................Content Area.....

Student's Name

....

Room No. ....   Grade ....

PPO No. to be changed from non-mastery to mastery ....

Submitted by .... Date ....
                (Instructor's signature)

Note: You may wish to attach any pertinent and available
      documentation to this form.

Comments:

Return this form to the appropriate CBE instructor.

....

CBE instructor's signature: ....

                Date: ....

Complete PPO No. ....

Two State Division with Remainders

/.

Divide.

1. $3\overline{)88}$ 2. $4\overline{)63}$ 3. $2\overline{)59}$ 4. $5\overline{)66}$ 5. $4\overline{)71}$

6. $7\overline{)83}$ 7. $8\overline{)90}$ 8. $4\overline{)65}$ 9. $3\overline{)56}$ 10. $5\overline{)73}$

11. $4\overline{)55}$ 12. $3\overline{)80}$ 13. $8\overline{)94}$ 14. $5\overline{)62}$ 15. $6\overline{)93}$

16. $7\overline{)81}$ 17. $2\overline{)37}$ 18. $2\overline{)77}$ 19. $3\overline{)74}$ 20. $3\overline{)59}$

21. $4\overline{)93}$ 22. $2\overline{)51}$ 23. $3\overline{)41}$ 24. $5\overline{)81}$ 25. $3\overline{)44}$
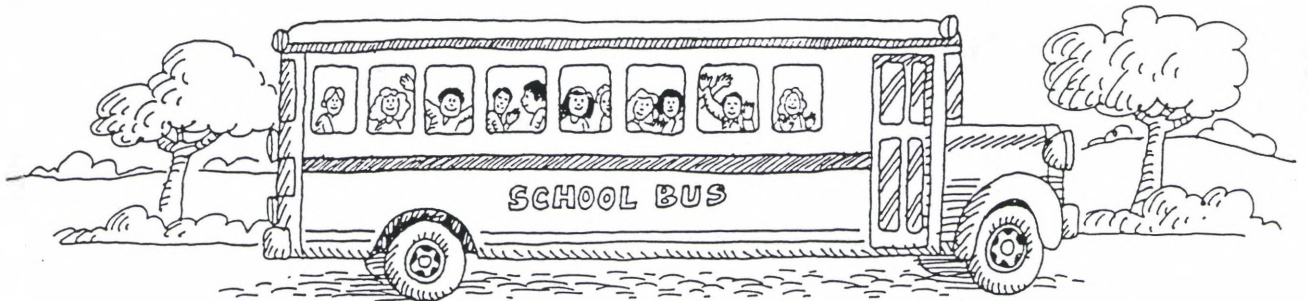
Solve.

26. A bus can carry 54 children if 3 children sit in each seat. How many seats are on the bus? _____

27. There are 3 tennis balls in a can. If you have 40 tennis balls, how many cans could you fill? _____

    How many tennis balls are left over? _____

28. Mario picked 84 apples. He put the same number of apples in each of 7 baskets. How many apples were in each basket? _____

29. Mrs. Lupus was giving a party. She made 57 cups of grape juice. Each person at the party drank 3 cups. How many people were at the party? _____

NAME: _____

PPO MA-05-16

2.

Sometimes when you divide, you need to work in two stages.
Let's divide 409 by 5.

First

Think of 5)40

Subtract 8 × 5.

$$\begin{array}{r} 8 \\ 5\overline{)409} \\ -40 \\ \hline 0 \end{array}$$

Second

Think of 5)9

Subtract 1 × 5.

$$\begin{array}{r} 81 \text{ R4} \\ 5\overline{)409} \\ -40 \\ \hline 9 \\ -5 \\ \hline 4 \end{array}$$

Divide.

1. 2)24

2. 4)44

3. 7)498

4. 6)309

5. 8)649

6. 9)459

7. 7)429

8. 6)368

9. 8)249

10. 5)57

11. 4)87

12. 3)68

Star Division

Divide. Then draw straight line to connect problems with the
same quotient.

$$5\overline{)86}$$

$$\begin{array}{r}13\,R2\\4\overline{)54}\end{array}$$

$$6\overline{)93}$$

$$4\overline{)93}$$

$$5\overline{)116}$$

$$5\overline{)78}$$

$$7\overline{)120}$$

$$\begin{array}{r}13\,R2\\7\overline{)93}\end{array}$$

$$9\overline{)119}$$

$$4\overline{)69}$$

$$8\overline{)123}$$

$$3\overline{)70}$$

$$2\overline{)47}$$

$$4\overline{)63}$$

$$5\overline{)67}$$

$$3\overline{)52}$$

Answer Key

(The answer key may be used by the instructor or by the student for self-checking.)

page 1

1.) 29 R.1   2) 15 R.3   3). 29 R.1   4) 13 R.1 5.) 17 R.3
6) 11 R.6   7) 11 R.2   8) 16 R.1   9) 18 R.2 10) 14 R.3
11. 13 R.3   12) 26 R.2   13) 11 R.6   14) 12 R.2 15) 15 R.3
16. 11 R.4   17) 18 R.1   18) 38 R.1   19) 24 R.2 20) 19 R.2
21. 23 R.1   22) 25 R.1   23) 13 R.2   24) 16 R.1 25) 14 R.2

Solve

26. 18 seats
27. 13 cans R.1 tennis ball
28. 12 apples
29. 19 people

page 2

1.) 12   2.) 11   3.) 71 R.1   4.) 51 R.3

5.) 81 R.1   6.) 51   7.) 61 R.2   8.) 61 R.2

9.) 31 R.1   10.) 11 R.2   11.) 21 R.3   12) 22 R.2

Star Division

Divide. Then draw straight line to connect problems with the same quotient.

$$5\overline{)86} = 17 R.1$$

$$4\overline{)54} = 13 R2$$

$$6\overline{)93} = 15 R.3$$

$$4\overline{)93} = 23 R.1$$

$$5\overline{)116} = 23 R.1$$

$$5\overline{)78} = 15 R.3$$

$$7\overline{)120} = 17 R.1$$

$$7\overline{)93} = 13 R2$$

$$9\overline{)119} = 13 R.2$$

$$4\overline{)69} = 17 R.1$$

$$8\overline{)123} = 15 R.3$$

$$3\overline{)70} = 23 R.1$$

$$2\overline{)47} = 23 R.1$$

$$4\overline{)63} = 15.R.3$$

$$5\overline{)67} = 13 R.2$$

$$3\overline{)52} = 17 R.1$$

C.B.E.
Intervention Resource Plan-Cover Form
------------ -------- ---- ----- ----
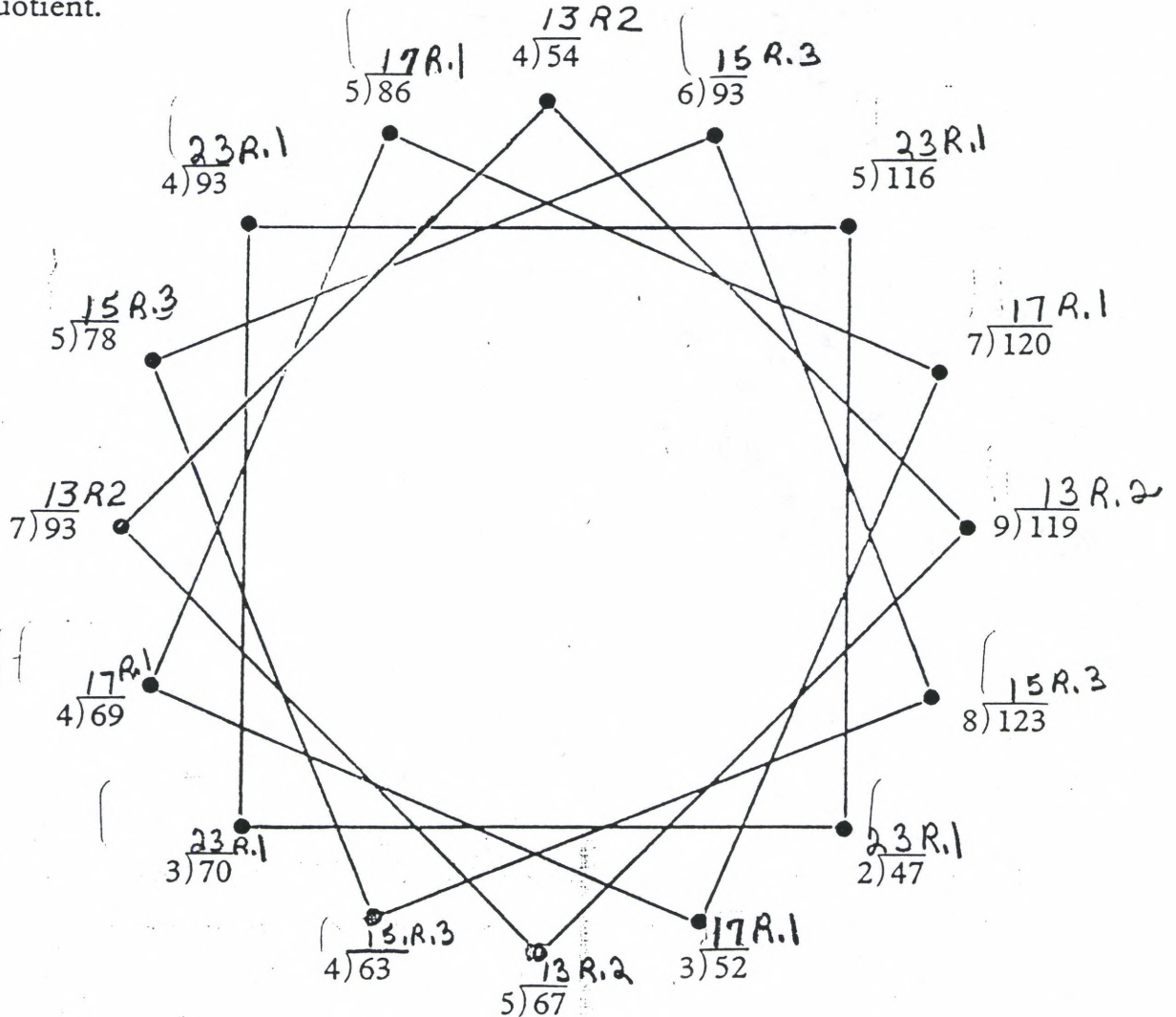
Content Area: MA
  Grade Area: 05
    PPO Area: 17

PPO Objective: DIVISION PROBLEMS WITH 3 DIGIT DIVIDEND -1-DIGIT DIVISOR

PPO Description Given 3 division problems containing a three-digit and a one-
              digit divisor written in the operational format and requiring a
              remainder, the student will divide to find the correct solution.

Directions for the instructor:
---------- --- --- ----------
   1. Intervene with the intervention plan as presented on
the following page/s.
   2. Fill out the standard change request form and submit it
to the appropriate CBE instructor when the intervention has
been completed.

Directions for the CBE instructor:
---------- --- --- --- ----------
   1. Retest with the individual PPO before beginning
intervention to further determine a student's needs.
   2. If needed, proceed with the intervention plan as
presented on the following page/s.
   3. Retest with the individual PPO to determine mastery.
   4. Fill out the standard change request form and change
student's scan sheet from non-mastery to mastery.

```
                        C.B.E.


                PPD Change Request Form
                --- ------ ------- ----



 Building:.............................Content Area.....

Student's Name

...................................................

Room No. ...........          Grade .........

PPO No. to be changed from non-mastery to mastery ........

Submitted by ........................... Date .........
                (Instructor's signature)

Note: You may wish to attach any pertinent and available
      documentation to this form.

Comments:



Return this form to the appropriate CBE instructor.

......................................................

CBE instructor's signature: ............................

                Date: ...............

Complete PPD No. ........................
```

NAME

There are 144 scouts going on a camping trip.
If 6 scouts can sleep in each tent, how many
tents will be needed?

$$
\begin{array}{r}
2 \\
6\overline{)144} \\
-12 \\
\hline
2
\end{array}
$$
Think of
$6\overline{)14}$

$$
\begin{array}{r}
24 \\
6\overline{)144} \\
-12 \\
\hline
24 \\
-24 \\
\hline
0
\end{array}
$$
Think of
$6\overline{)24}$

Twenty-four tents are needed.

Here are some examples that have been checked.

$$
\begin{array}{r}
24 \ R2 \\
3\overline{)74} \\
-6 \\
\hline
14 \\
-12 \\
\hline
2
\end{array}
\qquad
\begin{array}{r}
24 \\
\times \ 3 \\
\hline
72 \\
+ \ 2 \\
\hline
74 \ \checkmark
\end{array}
\qquad
\begin{array}{r}
56 \ R3 \\
7\overline{)395} \\
-35 \\
\hline
45 \\
-42 \\
\hline
3
\end{array}
\qquad
\begin{array}{r}
56 \\
\times \ 7 \\
\hline
392 \\
+ \ 3 \\
\hline
395 \ \checkmark
\end{array}
$$

Divide and check.

1. $2\overline{)35}$

2. $5\overline{)163}$

3. $4\overline{)279}$

4. $6\overline{)217}$

5. $8\overline{)609}$

6. $3\overline{)208}$

7. $5\overline{)272}$

8. $6\overline{)147}$

9. $5\overline{)362}$

Answer Key

(The answer key may be used by the instructor or by the student for self-checking.)

page 1

1.) 70 R.2   2.) 90 R.4   3.) 74 R.4

4.) 36 R.1   5.) 76 R.1   6.) 69 R.1

7.) 54 R.2   8.) 24 R.3   9.) 72 R.2

page 2

1.) 70 R.2   2.) 90 R.4   3.) 74 R.4

4.) 15 R.3   5.) 72 R.4   6.) 151 R.4

7.) 72 R.3   8.) 75 R.5   9.) 204 R.2

Content Area: MA
  Grade Area: 05
    PPO Area: 18

PPO Objective: WORD PROBLEMS-DIVISION OF A 2 or 3 DIGIT # BY A 1 DIGIT #

PPO Description: Given 3 word problems requiring division of a two-three-digit
                number by a one-digit divisor with a remainder, the student will
                divide to find the correct solution.

Directions for the instructor:
---------- --- --- ----------
   1. Intervene with the intervention plan as presented on
the following page/s.
   2. Fill out the standard change request form and submit it
to the appropriate CBE instructor when the intervention has
been completed.

Directions for the CBE instructor:
---------- --- --- --- ----------
   1. Retest with the individual PPO before beginning
intervention to further determine a student's needs.
   2. If needed,proceed with the intervention plan as
presented on the following page/s.
   3. Retest with the individual PPO to determine mastery.
   4. Fill out the standard change request form and change
student's scan sheet from non-mastery to mastery.

C.B.E.

PPO Change Request Form
--- ------ ------- ----

Building:.............................Content Area.....

Student's Name

....

Room No. ....   Grade ....

PPO No. to be changed from non-mastery to mastery ....

Submitted by .... Date ....
                (Instructor's signature)

Note: You may wish to attach any pertinent and available
      documentation to this form.

Comments:

Return this form to the appropriate CBE instructor.

....

CBE instructor's signature: ....

                Date: ....

Complete PPO No. ....

DIRECTIONS: Have student read the following word problems
to themselves. Discuss out loud the process and the steps
needed to solve the problems.

1.   John has 60 books to put away. He can fit 8 books on a
shelf. How many shelves will John use and how many books
will be left over?

2.   There are 27 students who want to join a basketball
team. There are 5 students on a team. How many basketball
teams can be formed and how many extra students will there
be?

3.   A large loaf of bread has 29 slices in it. How many
sandwiches can be made from the loaf and how many slices of
bread will be left over?

4.   Lee makes and sells hot sauce. He made 53 bottles of
hot sauce. He packed the sauce in boxes that hold 4 bottles
each. How many boxes did he fill and how many bottles were
left over?

Answer Key.

(The answer key may be used by the instructor or by the student for self-checking.)

1.) 7 shelves   R. 4 books

2.) 5 teams   R. 2 extra students

3.) 14 sandwiches   R. 1 slice of bread

4.) 13 boxes   R. 1 bottle

```
                         C.B.E.
          Intervention Resource Plan-Cover Form
          ------------ -------- ---- ----- ----
```

Content Area: MA
  Grade Area: 05
    PPO Area: 19

PPO Objective: APPROXIMATION OF INCHES, FEET, MILES IN DESCRIBING LENGTH

PPO Description Given 3 quotations about approximate length, the student will
                identify if the term inch, foot, mile would be the most appropriat
                in describing the length in question.

Directions for the instructor:
---------- --- --- ----------
   1. Intervene with the intervention plan as presented on
the following page/s.
   2. Fill out the standard change request form and submit it
to the appropriate CBE instructor when the intervention has
been completed.

Directions for the CBE instructor:
---------- --- --- --- ----------
   1. Retest with the individual PPO before beginning
intervention to further determine a student's needs.
   2. If needed, proceed with the intervention plan as
presented on the following page/s.
   3. Retest with the individual PPO to determine mastery.
   4. Fill out the standard change request form and change
student's scan sheet from non-mastery to mastery.

```
                         C.B.E.


                 PPO Change Request Form
                 ---  ------  -------  ----




   Building:..............................Content Area.....

 Student's Name

 ...........................................................

 Room No. ............              Grade .........

 PPO No. to be changed from non-mastery to mastery ........

 Submitted by ........................... Date ..........
                 (Instructor's signature)

 Note: You may wish to attach any pertinent and available
       documentation to this form.

 Comments:



 Return this form to the appropriate CBE instructor.

 ...........................................................

 CBE instructor's signature: ...............................

                 Date: ................

 Complete PPO No. ..........................
```

PPO MA=05-19

Inch, Foot, Yard, Mile

Complete. Write in., ft., yd., or mi..

1. A telephone book is about 11 _____ long.

2. It is about 10 _____ to my aunt's house.

3. A cup is about 3 _____ tall.

4. The Ohio River is about 1,000 _____ long.

5. A doorway is about 1 _____ wide.

6. The classroom is about 40 _____ long.

7. A railroad train may be as long as 1 _____.

8. A quarter is about 1 _____ across.

9. That man is about 6 _____ tall.

10. A jet plane can fly as high as 6 _____.

11. The dictionary is about 2 _____ thick.

12. The bed is about 2 _____ long.
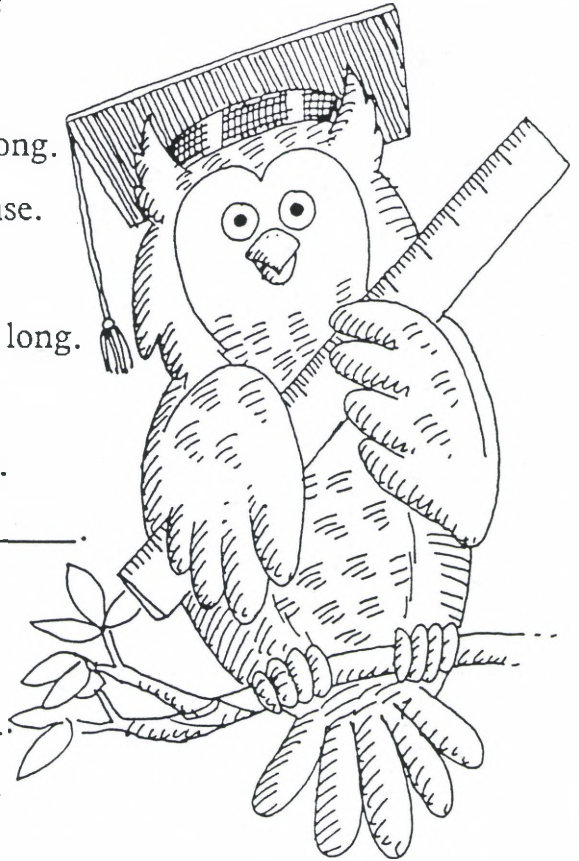
Circle the letter of the best answer.

13. Tina used _____ of string to tie the package.
    a. 15 inches
    b. 15 feet
    c. 150 inches

14. Bobby caught a fish that was _____ long.
    a. 1 mile
    b. 1 foot
    c. 1 inch

15. Sally walked about _____ to the park.
    a. 500 miles
    b. 20 inches
    c. 1 mile

16. Sam's room is about _____ long.
    a. 5 feet
    b. 5 yards
    c. 5 inches

17. I ride my bicycle _____ to school.
    a. 2 miles
    b. 2 feet
    c. 2 yards

18. The blue whale is about _____ long.
    a. 30 miles
    b. 30 yards
    c. 30 inches

Answer Key
(The answer key may used by the instructor or by the student for self-checking.)

1.) in.
2.) mi.
3) in.
4) mi.
5) yd.
6) ft.
7) mi.
8) in.
9) ft.
10) mi.
11) in.
12) yd.

13.) A   14.) B

15.) C   16.) B

17.) A   18.) B

```
                        C.B.E.
            Intervention Resource Plan-Cover Form
            ------------ -------- ---- ----- ----
```

Content Area: MA
  Grade Area: 05
    PPO Area: 20

PPO Objective: IDENTIFICATION OF THE APPROXIMATE WEIGHT OR MEASURE

PPO Description Given 3 questions about approximate weight or liquid measure,
               the student will identify the most appropriate term (ounce,
               pound, or ton and ounce, quart, or gallon) in describing the
               weight or liquid measure in question.

Directions for the instructor:
---------- --- --- ----------
    1. Intervene with the intervention plan as presented on
the following page/s.
    2. Fill out the standard change request form and submit it
to the appropriate CBE instructor when the intervention has
been completed.

Directions for the CBE instructor:
---------- --- --- --- ----------
    1. Retest with the individual PPO before beginning
intervention to further determine a student's needs.
    2. If needed, proceed with the intervention plan as
presented on the following page/s.
    3. Retest with the individual PPO to determine mastery.
    4. Fill out the standard change request form and change
student's scan sheet from non-mastery to mastery.

C.B.E.

PPO Change Request Form

Building:...............................Content Area.....

Student's Name

....

Room No. ....   Grade ....

PPO No. to be changed from non-mastery to mastery ....

Submitted by .... Date ....
              (Instructor's signature)

Note: You may wish to attach any pertinent and available
      documentation to this form.

Comments:

Return this form to the appropriate CBE instructor.

....

CBE instructor's signature: ....

              Date: ....

Complete PPO No. ....

PPO   mA-05-20

1.

2 c = 1 pt.   2 pt. = 1 qt.   4 qt. = 1 gal.

| 1 cup | 1 pint | 1 quart | 1 gallon |

Circle the most likely measurement.

A. The pebbles weigh about
2 oz   2 lb   2 t

B. The newborn baby weighs about
6 oz   6 lb.   6 t

C. The truck weighs about   9 oz   9 lb   9 t.

Circle the most likely measurement.

1. a glass of milk holds _____ 1 c   1 pt   1 qt
2. a bathtub holds _____ 30 c   30 pt   30 gal
3. the gas tank of a car holds _____ 15 c   15 pt   15 gal
4. a can of paint holds _____ 1 gal   10 gal   108 gal
5. a baby bottle holds _____ 1 c   1 qt   1 gal
6. a container of milk holds _____ 1 qt   10 qt   100 qt
7. a loaf of bread weighs about _____ 16 oz   16 lb   16 t
8. ten students weigh about _____ 60 oz   60 lb   600 lb
9. a package of meat weighs about _____ 1 oz   1 lb   1 t
10. a car weighs about _____ 300 lb   3000 lb   3000 t
11. an apple weighs about _____ 4 oz   4 lb   4 t
12. a hippo weighs about _____ 1 oz   1 lb   1 t

Solve.

13. A certain recipe calls for 7 oz of butter. The baker has 15 oz of butter. How much butter will be left over? (_____

PPO MH-05-20

Getting Measurements in Order

16 oz. = 1 lb.
2000 lbs. = 1 ton
Page 168

Write each group of measurements in order from the least
to the greatest.

1. 17 pounds   1600 ounces $\frac{3}{4}$ ounce $1\frac{1}{2}$ pounds $\frac{1}{8}$ ton

2. 4 cups   3 quarts   4 pints   3 gallons $\frac{1}{2}$ quart

3. 2 quarts   5 pints   7 cups   1 gallon   7 pints

4. 120 ounces   6 pounds.   200 ounces   2 tons   1 pound

Estimate the weight of each item. Use ounces, pounds, or tons. *Answers will vary.*

5. a dictionary

6. a twin bed

7. a desk

_____

_____

_____

8. a sofa

9. a car

10. an eraser

_____

_____

_____

Estimate how much each item can hold. Use cups, pints, quarts, *Answers will vary.*
or gallons.

11. a coffee mug

12. a mixing bowl

13. a soup bowl

_____

_____

_____

14. a kitchen sink

15. a bathtub

16. a pitcher

_____

_____

_____

NAME

What Do the Scales Say?

PPO MA-05-20
EXTRA

Use a calculator to decide which 3 things give the total weight. Circle them.

1. Total weight is 106 oz.

RICE
32 oz

TOMATOES
26 oz

CRACKERS
16 oz

Giant Size
O LAUNDRYO
SOAP
48 OZ

2. Total weight is 122 oz.

MAYONNAISE
32 OZ

MILK
64 oz

14 OZ
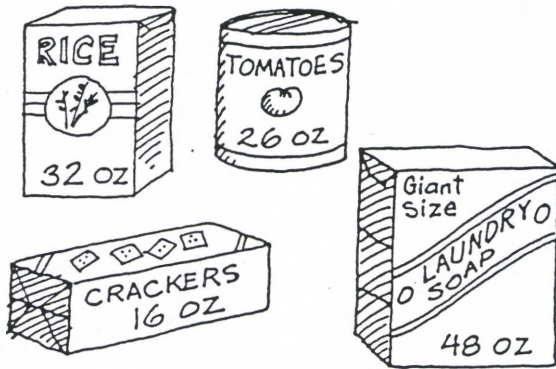
CATSUP
44 OZ

3. Total weight is 128 lb.

POTATOES
25 lb

22 lb

78 lb
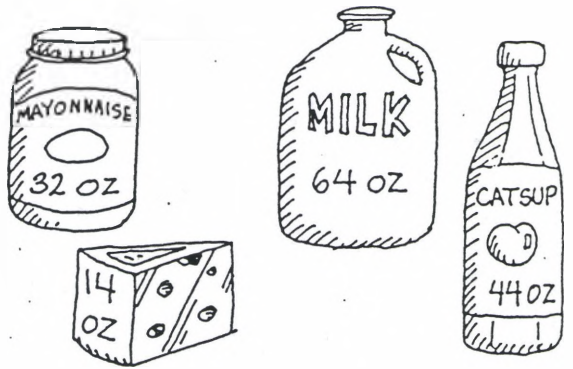
25 lb

4. Total weight is 236 lb.

67 lb

84 lb

CEMENT
94 lb.
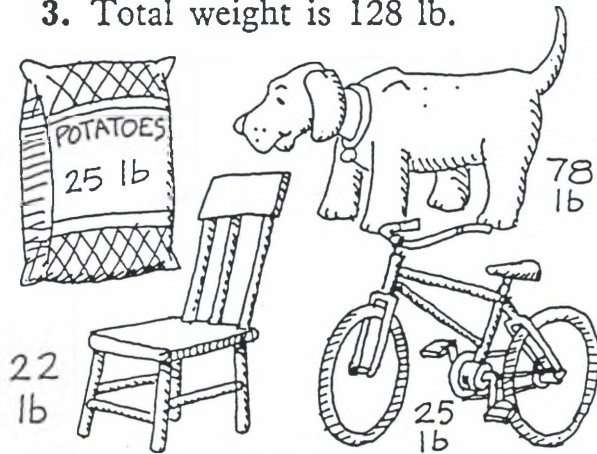
58 lb
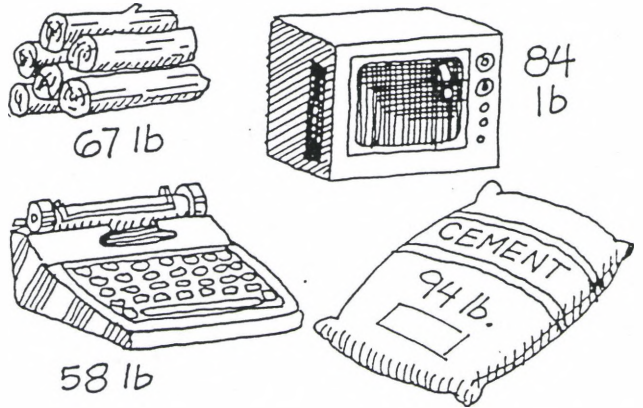
5. Total weight is 738 lb.
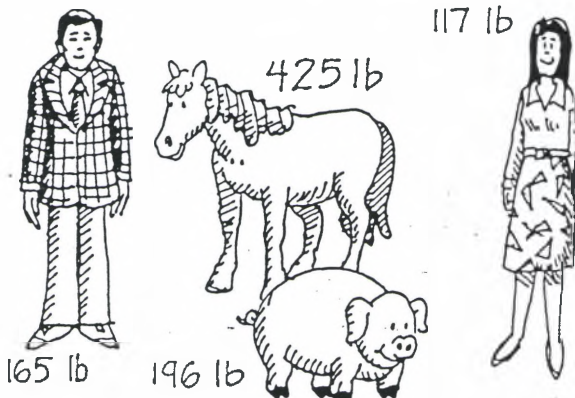
117 lb

425 lb

165 lb

196 lb

6. Total weight is 1064 lb.

486 lb

349 lb

225 lb

229 lb   OIL
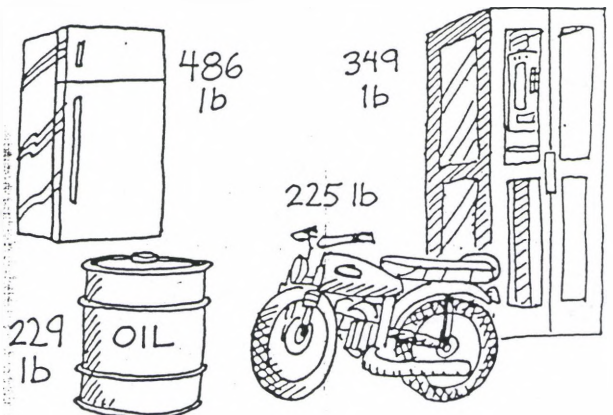
Answer Key
   (The answer key may be used by the instructor or by the student for self-checking.)
        A. 2oz.   B. 6lb   C. qt.

<u>page 1</u>
1) 1 C   7.) 16 oz.
2) 30 gal.   8.) 600 lb.
3) 15 gal.   9.) 1 lb.
4) 1 gal.   10) 3000 lb.
5) 1 C   11) 4 oz.
6) 1 qt.   12) 1 ton

<u>Solve</u> #13.) 8 oz.

<u>page 2</u>

) 3/4 oz.   1½ lbs.   17 lbs.   1600 oz.   1/8 ton
) ½ qt.   4 cups   4 pts.   3 qts.   3 gal.
) 7 cups   2 qt.   5 pts.   7 pts.   1 gal.
) 1 lb.   6 lbs.   120 oz.   200 oz.   2 ton

5.) ___ oz. or lbs. 6.) ___ lbs. 7) ___ lbs.
8.) ___ lbs.   9.) ___ t   10.) ___ .oz

11) 1 c   12.) ___ pts. 13.) 2 c
14.) ___ gal.   15) ___ gal. 16.) 1 gal.
                              cont. →

EXTRA   (Using a Calculator)

1. 32 oz   (Not
    26 oz   16oz.)
  + 48 oz
    106 oz

2. 64 oz.   (Not
    44 oz.   32 oz.)
  + 14 oz.
    122 oz.

3. 78 lb.   (NOT
    25 lb.   22 lb.)
  + 25 lb
    128 lbs.

4. 84 lb. (NOT
    58 lb.   67 lb)
  + 94 lb
    236 lbs.

5. 425 lb. (NOT
    117 lb.   165 lb)
  + 196 lb.
    738 lbs.

6. 486 lb.(NOT
    349 lb.   225 lb.
  + 229 lb,
    1064 lbs.

```
                            C.B.E.
               Intervention Resource Plan-Cover Form
               ------------ -------- ---- ----- ----


   Content Area:  MA
     Grade Area:  05
       PPO Area:  21

   PPO Objective:  IDENTIFICATION OF FRACTIONS-SHADED PART OF OBJECT



   PPO DescriptionGiven 3 pictures showing shaded parts of an object, the
                  student will identify the fraction which represents the shaded
                  part of the object or design in the picture.



Directions for the instructor:
---------- --- --- ----------
   1. Intervene with the intervention plan as presented on
the following page/s.
   2. Fill out the standard change request form and submit it
to the appropriate CBE instructor when the intervention has
been completed.

Directions for the CBE instructor:
---------- --- --- --- ----------
   1. Retest with the individual PPO before beginning
intervention to further determine a student's needs.
   2. If needed,proceed with the intervention plan as
presented on the following page/s.
   3. Retest with the individual PPO to determine mastery.
   4. Fill out the standard change request form and change
student's scan sheet from non-mastery to mastery.
```

C.B.E.

PPO Change Request Form
--- ------ ------- ----

Building:...............................Content Area.....

Student's Name

....

Room No. ....   Grade ....

PPO No. to be changed from non-mastery to mastery ....

Submitted by .... Date ....
              (Instructor's signature)

Note: You may wish to attach any pertinent and available
      documentation to this form.

Comments:

Return this form to the appropriate CBE instructor.

....

CBE instructor's signature: ....

              Date: ....

Complete PPO No. ....

do the numbers circled.

Write the fraction for the shaded part.

1. $\frac{}{3}$

2. $\frac{}{4}$

Write the fraction for the shaded parts.

3. $\frac{}{}$

4. $\frac{}{}$

Write the fraction.

5. numerator 4
denominator 7 _____

6. numerator 6
denominator 12 _____

PPO MA-0 5-21

2.

The loaf of bread is divided into four equal parts, or fourths. One fourth of the bread is on the plate. You can write one fourth as the fraction $\frac{1}{4}$.

You can also write a fraction for parts of a group.
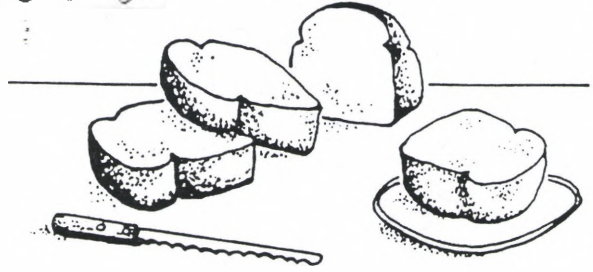
Two thirds of the breads are dark breads.

The numerator shows you the number of equal parts you're talking about.

$\frac{2}{3}$

The denominator shows you the total number of equal parts.

Write the fraction for the shaded part.

1.

2.

3.

4.

5.

6.

7.

8.

).

10.

11.

12.

.

14.

15.

16.

Answer Key
(The answer key may be used by the instructor or by the student for self-checking.)

page 1

1.) $\frac{1}{3}$

2.) $\frac{2}{4}$

3.) $\frac{8}{9}$

4.) $\frac{3}{8}$

5) $\frac{4}{7}$

6.) $\frac{4}{12}$

page 2

1.) $\frac{3}{4}$

2) $\frac{2}{5}$

3) $\frac{3}{8}$

4) $\frac{1}{6}$

5.) $\frac{3}{6}$

6.) $\frac{1}{4}$

7.) $\frac{2}{3}$

8.) $\frac{7}{8}$

9.) $\frac{2}{10}$

10.) $\frac{3}{8}$

11) $\frac{2}{4}$

12) $\frac{1}{2}$

13.) $\frac{3}{12}$

14.) $\frac{4}{12}$

15.) $\frac{11}{16}$

16.) $\frac{5}{16}$

Intervention Resource Plan-Cover Form
----------- -------- ---- ----- ----

Content Area: MA
  Grade Area: 05
    PPO Area: 23

PPO Objective: IDENTIFICATION OF THE LARGER FRACTION

PPO Description:Given 3 pairs of fractions, with each pair having like
                denominators, the student will identify which fraction in each
                pair is larger.

Directions for the instructor:
---------- --- --- ----------
   1. Intervene with the intervention plan as presented on
the following page/s.
   2. Fill out the standard change request form and submit it
to the appropriate CBE instructor when the intervention has
been completed.

Directions for the CBE instructor:
---------- --- --- --- ----------
   1. Retest with the individual PPO before beginning
intervention to further determine a student's needs.
   2. If needed,proceed with the intervention plan as
presented on the following page/s.
   3. Retest with the individual PPO to determine mastery.
   4. Fill out the standard change request form and change
student's scan sheet from non-mastery to mastery.

```
                          C.B.E.


                 PPO Change Request Form
                 --- ------ ------- ----




   Building:.............................Content Area.....

Student's Name

 ...................................................

Room No. ...........           Grade .........

PPO No. to be changed from non-mastery to mastery ........

Submitted by ........................... Date ..........
                  (Instructor's signature)

Note: You may wish to attach any pertinent and available
      documentation to this form.

Comments:



Return this form to the appropriate CBE instructor.

 ...................................................

CBE instructor's signature: .............................

                  Date: ...............

Complete PPO No. ...........................
```

Compare $\frac{1}{3}$ and $\frac{2}{3}$.

When fractions have the same denominator, compare the numerators.

$1 < 2$

so $\frac{1}{3} < \frac{2}{3}$

Now compare $\frac{1}{3}$ and $\frac{1}{4}$. To compare fractions with different denominators follow the steps below.

| Use the least common multiple (LCM) of the denominators to write equivalent fractions. |

The LCM of 3 and 4 is 12. So the __Least__ __Common__ __Denominator__ (LCD) of $\frac{1}{3}$ and $\frac{1}{4}$ is 12.

$\frac{1}{3} = \frac{4}{12}$ $\frac{1}{4} = \frac{3}{12}$

| Now, compare fractions. |

$\frac{4}{12} > \frac{3}{12}$

so $\frac{1}{3} > \frac{1}{4}$

Write $<$ or $>$ to compare the fractions.

1. $\frac{2}{6}$ $\frac{5}{6}$ 2. $\frac{4}{8}$ $\frac{6}{8}$ 3. $\frac{2}{5}$ $\frac{1}{5}$ 4. $\frac{2}{3}$ $\frac{1}{3}$

5. $\frac{2}{3}\left(\frac{?}{12}\right)$ $\frac{5}{12}$ 6. $\frac{2}{5}\left(\frac{4}{10}\right)$ $\frac{3}{10}$ 7. $\frac{2}{3}\left(\frac{6}{9}\right)$ $\frac{7}{9}$ 8. $\frac{1}{2}\left(\frac{4}{8}\right)$ $\frac{5}{8}$

9. $\frac{1}{2}\left(\frac{5}{10}\right)$ $\frac{2}{5}\left(\frac{4}{10}\right)$ 10. $\frac{2}{3}\left(\frac{8}{12}\right)$ $\frac{1}{4}\left(\frac{3}{12}\right)$ 11. $\frac{3}{12}$ $\frac{2}{4}\left(\frac{6}{12}\right)$ 12. $\frac{3}{9}\left(\frac{6}{18}\right)$ $\frac{1}{2}\frac{9}{18}$

13. $\frac{1}{2}$ $\frac{2}{7}$ 14. $\frac{3}{4}$ $\frac{5}{6}$ 15. $\frac{5}{7}$ $\frac{11}{14}$ 16. $\frac{1}{3}$ $\frac{1}{5}$

Write the fractions in order from least to greatest.

17. $\frac{2}{9}, \frac{1}{2}, \frac{1}{3}, \frac{1}{6}$ LCD $\frac{}{18}$ 18. $\frac{2}{5}, \frac{1}{2}, \frac{3}{10}, \frac{3}{5}$ LCD $\frac{}{10}$ 19. $\frac{2}{6}, \frac{1}{2}, \frac{1}{9}, \frac{2}{9}$ LCD $\frac{}{18}$

_____   _____   _____

20. $\frac{2}{3}, \frac{3}{4}, \frac{2}{8}, \frac{1}{2}$ LCD $\frac{}{24}$ 21. $\frac{5}{6}, \frac{3}{8}, \frac{1}{2}, \frac{3}{4}$ LCD $\frac{}{24}$ 22. $\frac{2}{3}, \frac{2}{9}, \frac{1}{2}, \frac{5}{6}$ LCD $\frac{}{18}$

_____   _____   _____

Riddle

PPO mA-05-23

Compare. Write < or > . Then answer the riddle by writing the letters of the greater fractions in order.

2.

How can you stop a bull from charging?

1. $\frac{5}{8}$ ☐ $\frac{7}{8}$ 2. $\frac{3}{4}$ ☐ $\frac{1}{4}$ 3. $\frac{5}{5}$ ☐ $\frac{2}{5}$ 4. $\frac{7}{9}$ ☐ $\frac{2}{9}$

  (H) (T)   (A) (I)   (K) (T)   (E) (A)

5. $\frac{3}{8}$ ☐ $\frac{8}{8}$ 6. $\frac{6}{7}$ ☐ $\frac{4}{7}$ 7. $\frac{5}{6}$ ☐ $\frac{1}{6}$ 8. $\frac{2}{5}$ ☐ $\frac{3}{5}$

  (D) (A)   (W) (P)   (A) (E)   (R) (Y)

9. $\frac{2}{6}$ ☐ $\frac{5}{6}$ 10. $\frac{3}{3}$ ☐ $\frac{1}{6}$ 11. $\frac{2}{5}$ ☐ $\frac{4}{5}$ 12. $\frac{4}{7}$ ☐ $\frac{3}{7}$

  (S) (H)   (I) (E)   (T) (S)   (C) (D)

13. $\frac{4}{8}$ ☐ $\frac{3}{8}$ 14. $\frac{4}{6}$ ☐ $\frac{5}{6}$ 15. $\frac{7}{10}$ ☐ $\frac{9}{10}$ 16. $\frac{5}{8}$ ☐ $\frac{7}{8}$

  (R) (W)   (N) (E)   (N) (D)   (E) (I)

17. $\frac{4}{6}$ ☐ $\frac{2}{6}$ 18. $\frac{3}{10}$ ☐ $\frac{5}{10}$ 19. $\frac{2}{9}$ ☐ $\frac{5}{9}$ 20. $\frac{3}{7}$ ☐ $\frac{5}{7}$

  (T) (D)   (R) (C)   (E) (A)   (S) (R)

21. $\frac{6}{9}$ ☐ $\frac{5}{9}$

  (D) (T)

WRITE THE LETTERS HERE!

____ ____ ____ ____ ____ ____ ____ ____

____ ____ ____ ____ ____ ____ !

Answer Key
(The answer key may be used by the instructor or by the student for self-checking.)

page 1

1.) $<$ 2.) $<$ 3.) $>$ 4.) $>$

5.) $>$ 6.) $>$ 7) $<$ 8.) $<$

9.) $>$ 10.) $>$ 11) $<$ 12.) $<$

13.) $>$ 14) $<$ 15) $<$ 16) $>$

17.) $\frac{1}{2}$ $\frac{1}{3}$ $\frac{2}{9}$ $\frac{1}{6}$

18.) $\frac{3}{5}$ $\frac{1}{2}$ $\frac{2}{5}$ $\frac{3}{10}$

19.) $\frac{1}{2}$ $\frac{2}{6}$ $\frac{2}{9}$ $\frac{1}{9}$

20) $\frac{3}{4}$ $\frac{2}{3}$ $\frac{1}{2}$ $\frac{2}{8}$

21.) $\frac{5}{6}$ $\frac{3}{4}$ $\frac{1}{2}$ $\frac{3}{8}$

22.) $\frac{5}{6}$ $\frac{2}{3}$ $\frac{1}{2}$ $\frac{2}{9}$

C R E D I T C A R D !

Content Area: MA
  Grade Area: 05
    PPO Area: 24

PPO Objective: ADDITION OF FRACTIONS WITH LIKE DENOMATORS

PPO Description: Given 3 problems of additions of fractions with like denominators,
                the student will add to find the correct sum.

Directions for the instructor:
---------- --- --- ----------
   1. Intervene with the intervention plan as presented on
the following page/s.
   2. Fill out the standard change request form and submit it
to the appropriate CBE instructor when the intervention has
been completed.

Directions for the CBE instructor:
---------- --- --- --- ----------
   1. Retest with the individual PPO before beginning
intervention to further determine a student's needs.
   2. If needed, proceed with the intervention plan as
presented on the following page/s.
   3. Retest with the individual PPO to determine mastery.
   4. Fill out the standard change request form and change
student's scan sheet from non-mastery to mastery.

C.B.E.

PPO Change Request Form
--- ------ ------- ----

Building:.............................Content Area.....

Student's Name

....

Room No. ....   Grade ....

PPO No. to be changed from non-mastery to mastery ....

Submitted by .... Date ....
            (Instructor's signature)

Note: You may wish to attach any pertinent and available
      documentation to this form.

Comments:

Return this form to the appropriate CBE instructor.

....

CBE instructor's signature: ....

                Date: ....

Complete PPO No. ....

Fractions : Addition

1. $\dfrac{1}{9}$
$+ \dfrac{4}{9}$

2. $\dfrac{4}{7}$
$+ \dfrac{2}{7}$

3. $\dfrac{4}{9}$
$+ \dfrac{4}{9}$

4. $\dfrac{3}{10}$
$+ \dfrac{4}{10}$

5. $\dfrac{1}{7}$
$+ \dfrac{1}{7}$

6. $\dfrac{3}{12}$
$+ \dfrac{8}{12}$

7. $\dfrac{3}{7}$
$+ \dfrac{2}{7}$

8. $\dfrac{1}{3}$
$+ \dfrac{1}{3}$

9. $\dfrac{5}{8}$
$+ \dfrac{2}{8}$

10. $\dfrac{2}{4}$
$+ \dfrac{1}{4}$

11. $\dfrac{2}{5}$
$+ \dfrac{2}{5}$

12. $\dfrac{6}{6}$
$+ \dfrac{4}{6}$

13. $\dfrac{3}{11}$
$+ \dfrac{7}{11}$

14. $\dfrac{3}{9}$
$+ \dfrac{4}{9}$

15. $\dfrac{2}{12}$
$+ \dfrac{9}{12}$

16. $\dfrac{1}{36}$
$+ \dfrac{34}{36}$

17. $\dfrac{1}{10}$
$+ \dfrac{2}{10}$

18. $\dfrac{6}{15}$
$+ \dfrac{7}{15}$

19. $\dfrac{9}{13}$
$+ \dfrac{2}{13}$

20. $\dfrac{8}{50}$
$+ \dfrac{29}{50}$

21. $\dfrac{1}{100}$
$+ \dfrac{6}{100}$

22. $\dfrac{1}{11}$
$+ \dfrac{5}{11}$

23. $\dfrac{3}{16}$
$+ \dfrac{8}{16}$

24. $\dfrac{11}{24}$
$+ \dfrac{12}{24}$

25. $\dfrac{7}{17}$
$+ \dfrac{9}{17}$

26. $\dfrac{8}{43}$
$+ \dfrac{21}{43}$

27. $\dfrac{13}{22}$
$+ \dfrac{2}{22}$

28. $\dfrac{4}{30}$
$+ \dfrac{7}{30}$

Answer Key
(The answer key may be used by the instructor or by the student for self-checking.)

1.) $\frac{5}{9}$ 2.) $\frac{6}{7}$ 3.) $\frac{8}{9}$ 4.) $\frac{7}{10}$

5.) $\frac{2}{7}$ 6.) $\frac{11}{12}$ 7.) $\frac{5}{7}$ 8.) $\frac{2}{3}$

9.) $\frac{7}{8}$ 10.) $\frac{3}{4}$ 11.) $\frac{4}{5}$ 12.) $\frac{5}{6}$

13.) $\frac{10}{11}$ 14.) $\frac{7}{9}$ 15.) $\frac{11}{12}$ 16.) $\frac{35}{36}$

17.) $\frac{3}{10}$ 18.) $\frac{13}{15}$ 19.) $\frac{11}{13}$ 20.) $\frac{37}{50}$

21.) $\frac{7}{100}$ 22.) $\frac{6}{11}$ 23.) $\frac{11}{16}$ 24.) $\frac{23}{24}$

25.) $\frac{16}{17}$ 26.) $\frac{29}{43}$ 27.) $\frac{15}{22}$ 28.) $\frac{11}{30}$

Content Area: MA
Grade Area: 05
PPO Area: 25

PPO Objective: SUBTRACTION OF FRACTIONS WITH LIKE DENOMINATORS

PPO Description Given 3 problems of subtraction of fractions with like denominators, the student will subtract to find the correct remainder.

Directions for the instructor:
---------- --- --- ----------
1. Intervene with the intervention plan as presented on the following page/s.
2. Fill out the standard change request form and submit it to the appropriate CBE instructor when the intervention has been completed.

Directions for the CBE instructor:
---------- --- --- --- ----------
1. Retest with the individual PPO before beginning intervention to further determine a student's needs.
2. If needed, proceed with the intervention plan as presented on the following page/s.
3. Retest with the individual PPO to determine mastery.
4. Fill out the standard change request form and change student's scan sheet from non-mastery to mastery.

C.B.E.

PPO Change Request Form
--- ------ ------- ----

Building:.............................Content Area.....

Student's Name

....

Room No. ....   Grade ....

PPO No. to be changed from non-mastery to mastery ....

Submitted by .... Date ....
              (Instructor's signature)

Note: You may wish to attach any pertinent and available
      documentation to this form.

Comments:

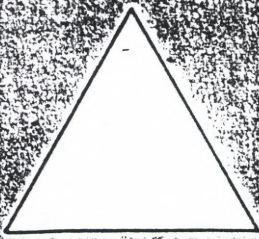Return this form to the appropriate CBE instructor.

....

CBE instructor's signature: ....

              Date: ....

Complete PPO No. ....

Fractions: Subtraction

1. $\frac{6}{9}$
    $-\frac{2}{9}$

2. $\frac{4}{4}$
    $-\frac{4}{4}$

3. $\frac{7}{8}$
    $-\frac{2}{8}$

4. $\frac{8}{10}$
    $-\frac{1}{10}$

5. $\frac{2}{3}$
    $-\frac{1}{3}$

6. $\frac{4}{5}$
    $-\frac{2}{5}$

7. $\frac{5}{6}$
    $-\frac{4}{6}$

8. $\frac{7}{8}$
    $-\frac{4}{8}$

9. $\frac{4}{7}$
    $-\frac{1}{7}$

10. $\frac{8}{11}$
    $-\frac{6}{11}$

11. $\frac{19}{20}$
    $-\frac{18}{20}$

12. $\frac{10}{13}$
    $-\frac{5}{12}$

13. $\frac{13}{15}$
    $-\frac{9}{15}$

14. $\frac{9}{17}$
    $-\frac{6}{17}$

15. $\frac{10}{11}$
    $-\frac{3}{11}$

16. $\frac{9}{14}$
    $-\frac{5}{14}$

17. $\frac{12}{16}$
    $-\frac{5}{16}$

18. $\frac{44}{55}$
    $-\frac{12}{55}$

19. $\frac{17}{18}$
    $-\frac{2}{18}$

20. $\frac{97}{100}$
    $-\frac{14}{100}$

Content Area: MA
Grade Area: 05
PPO Area: 26

PPO Objective: ADDITION OF DECIMALS CONTAINING TENTHS OR HUNDREDS

PPO Description Given 3 problems of addition of decimals containing tenths and hundreds, the student will addd to find the correct sum.

Directions for the instructor:
---------- --- --- ----------
1. Intervene with the intervention plan as presented on the following page/s.
2. Fill out the standard change request form and submit it to the appropriate CBE instructor when the intervention has been completed.

Directions for the CBE instructor:
---------- --- --- --- ----------
1. Retest with the individual PPO before beginning intervention to further determine a student's needs.
2. If needed, proceed with the intervention plan as presented on the following page/s.
3. Retest with the individual PPO to determine mastery.
4. Fill out the standard change request form and change student's scan sheet from non-mastery to mastery.

C.B.E.

PPO Change Request Form
--- ------- ------- ----

Building:................................Content Area.....

Student's Name

....

Room No. ....   Grade ....

PPO No. to be changed from non-mastery to mastery ....

Submitted by .... Date ....
                    (Instructor's signature)

Note: You may wish to attach any pertinent and available
      documentation to this form.

Comments:

Return this form to the appropriate CBE instructor.

....

CBE instructor's signature: ....

                    Date: ....

Complete PPO No. ....

NAME _____

In June, Jason was 153.25 cm tall. During the summer he grew 2.50 cm. How tall is he at the end of the summer?

To find out, add 153.25 and 2.50. When you add decimals, be sure to line up the decimal points.

$$\begin{array}{r} 153.25 \\ +\ \ 2.50 \\ \hline 155.75 \end{array}$$
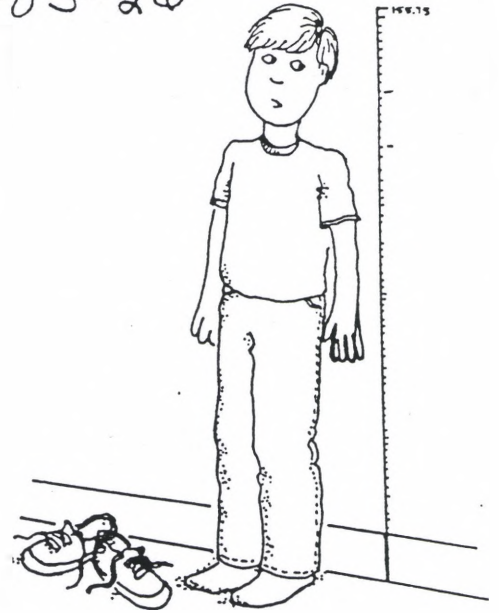
Jason is 155.75 cm tall at the end of the summer.

PPO: MA-05-26

Add.

1. $\begin{array}{r}0.5\\+0.3\\\hline\end{array}$	**2.** $\begin{array}{r}0.8\\+0.4\\\hline\end{array}$	**3.** $\begin{array}{r}7.3\\+0.2\\\hline\end{array}$	**4.** $\begin{array}{r}8.5\\+0.31\\\hline\end{array}$	**5.** $\begin{array}{r}6.5\\+1.65\\\hline\end{array}$
6. $\begin{array}{r}4.34\\+2.8\\\hline\end{array}$	**7.** $\begin{array}{r}0.312\\+0.82\\\hline\end{array}$	**8.** $\begin{array}{r}3.59\\+0.21\\\hline\end{array}$	**9.** $\begin{array}{r}12.45\\+\ 2.16\\\hline\end{array}$	**10.** $\begin{array}{r}35.6\\+\ 2.45\\\hline\end{array}$
11. $\begin{array}{r}15\\+\ 2.45\\\hline\end{array}$	**12.** $\begin{array}{r}2.6\\+11.35\\\hline\end{array}$	**13.** $\begin{array}{r}3.95\\+0.246\\\hline\end{array}$	**14.** $\begin{array}{r}14.34\\+\ 2.05\\\hline\end{array}$	**15.** $\begin{array}{r}12.04\\+\ 3.02\\\hline\end{array}$
16. $\begin{array}{r}0.535\\+2.16\\\hline\end{array}$	**17.** $\begin{array}{r}12.03\\+\ 2.004\\\hline\end{array}$	**18.** $\begin{array}{r}8.499\\+0.131\\\hline\end{array}$	**19.** $\begin{array}{r}136.25\\+\ \ 0.54\\\hline\end{array}$	**20.** $\begin{array}{r}112.11\\+\ \ 3.05\\\hline\end{array}$
21. $\begin{array}{r}116.003\\+\ \ 4.113\\\hline\end{array}$	**22.** $\begin{array}{r}96.210\\+\ 3.601\\\hline\end{array}$	**23.** $\begin{array}{r}14.016\\+\ 0.325\\\hline\end{array}$	**24.** $\begin{array}{r}155.25\\+\ 11.031\\\hline\end{array}$	**25.** $\begin{array}{r}165.31\\+\ 10.04\\\hline\end{array}$

26. $27.3 + 4 =$ _____

27. $0.31 + 36.513 =$ _____

28. $0.13 + 2.43 =$ _____

29. $5.16 + 2.043 =$ _____

30. $3 + 0.4 + 0.51 =$ _____

31. $12 + 0.3 + 1.41 =$ _____

32. $3.2 + 0.2 + 2.35 =$ _____

33. $5 + 0.6 + 1.89 =$ _____

34. $0.5 + 15.05 + 3 =$ _____

35. $98 + 8.01 + 0.62 =$ _____

Answer Key
(The answer key may be used
by the instructor or by the student
for self-checking.)

1.) .8

2.) 1.2

3.) 7.5

4.) 8.81

5.) 8.15

6) 7.14

7) 1.132

8) 3.80

9.) 14.61

10.) 38.05

11.) 17.45

12) 13.95

13) 4.196

14) 16.39

15) 15.06

16) 2.695

17) 14.034

18) 8.630

19) 136.79

20) 115.16

21.) 120.116

22.) 99.811

23.) 14.341

24.) 166.281

25.) 175.35

26.) 31.3

27) 36.823

28.) 2.56

29) 7.203

30.) 3.91

31) 2.91

32) 5.75

33) 7.49

34) 18.55

35) 106.63

) 27.3	32.) 3.2	29) 5.16	35.) 98
+ 4.0	.2	+2.043	8.01
31.3	+2.35	7.203	+ .62
	5.75		106.63

) 0.13
+2.43
2.56

34.) .5
15.05
+ 3.0
18.55

31) 1.2
.3
+1.41
2.91

) 3
0.4
+ 0.51
3.91

27.) .31
+36.513
36.823

33.) 5
.6
+1.89
7.49

```
                            C.B.E.
               Intervention Resource Plan-Cover Form
               ------------ -------- ---- ----- ----


  Content Area: MA
    Grade Area: 05
      PPO Area: 27

PPO Objective: SUBTRACTION OF DECIMALS CONTAINING TENTHS AND HUNDREDTHS



PPO Description: Given 3 problems of subtraction of decimals containing tenths or
                hundredths, the student will subtract to find the correct
                remainder.



Directions for the instructor:
---------- --- --- ----------
   1. Intervene with the intervention plan as presented on
the following page/s.
   2. Fill out the standard change request form and submit it
to the appropriate CBE instructor when the intervention has
been completed.

Directions for the CBE instructor:
---------- --- --- --- ----------
   1. Retest with the individual PPO before beginning
intervention to further determine a student's needs.
   2. If needed,proceed with the intervention plan as
presented on the following page/s.
   3. Retest with the individual PPO to determine mastery.
   4. Fill out the standard change request form and change
student's scan sheet from non-mastery to mastery.
```

NAME

The pole vaulter won the event with a jump of
5.25 meters. The second place vaulter jumped
4.80 meters. How much higher did the first
place vaulter jump than the second place
vaulter?
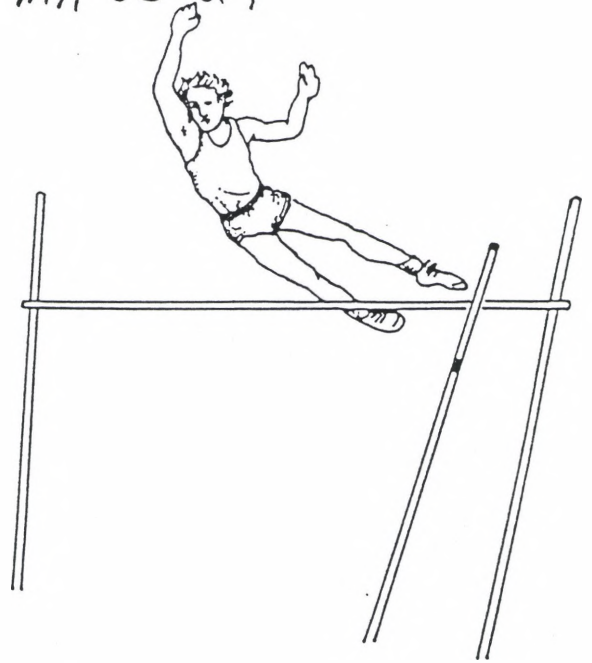
Subtract 4.80 from 5.25.
When you subtract decimals, always line up the
decimal points.

```
  5.25
− 4.80
──────
  0.45
```

The first place pole vaulter jumped 0.45 meters
higher than the second place vaulter.

Subtract.

1. 4.32 − 1.97	**2.** 5.80 − 1.92	**3.** 4.391 − 2.000	**4.** 7.820 − 3.915	**5.** 4.762 − 3.914
6. 8.900 − 2.134	**7.** 7.020 − 3.199	**8.** 5.0 − 2.8	**9.** 7.0 − 1.9	**10.** 16.00 − 9.32
11. 58.37 − 16.292	**12.** 76.80 − 21.49	**13.** 92.134 − 21.982	**14.** 96.805 − 12.600	**15.** 79.10 − 15.32
16. 86.00 − 4.93	**17.** 95.0 − 10.2	**18.** 86.300 − 5.921	**19.** 79.423 − 25.000	**20.** 86.120 − 5.984

21. $15.90 - 6.32 =$ _____ 22. $8.0 - 2.1 =$ _____

23. $5.60 - 1.92 =$ _____ 24. $7.321 - 5.000 =$ _____

25. $5.38 - 0.90 =$ _____ 26. $71.82 - 4.90 =$ _____

Answer Key
   (The answer key may be used
by the instructor or by the student
for self-checking.)

1.) 2.35   11.) 42.078   21.) 9.58

2.) 3.88   12.) 55.31   22.) 5.9

3.) 2.391   13.) 70.152   23.) 3.68

4.) 3.905   14.) 84.205   24.) 2.321

5.) .848   15.) 63.78   25.) 4.48

6.) 6.766   16.) 84.07   26.) 66.92

7.) 3.821   17.) 84.8

8.) 2.2   18.) 80.379

9.) 5.1   19.) 54.423

10.) 6.68   20.) 80.136

Content Area: MA
  Grade Area: 05
   PPO Area: 28

PPO Objective: IDENTIFICATION OF GEOMETRIC SHAPES

PPO Description:Given four pictures of geometric shapes (one each of a circle, triangle, rectangle, and square), the student will correctly identify each shape by matching the shape to the word that describes the picture.

Directions for the instructor:
---------- --- --- ----------
   1. Intervene with the intervention plan as presented on the following page/s.
   2. Fill out the standard change request form and submit it to the appropriate CBE instructor when the intervention has been completed.

Directions for the CBE instructor:
---------- --- --- --- ----------
   1. Retest with the individual PPO before beginning intervention to further determine a student's needs.
   2. If needed,proceed with the intervention plan as presented on the following page/s.
   3. Retest with the individual PPO to determine mastery.
   4. Fill out the standard change request form and change student's scan sheet from non-mastery to mastery.

C.B.E.

                    PPO Change Request Form
                    --- ------ ------- ----

  Building:...............................Content Area.....

Student's Name

....

Room No. ....   Grade ....

PPO No. to be changed from non-mastery to mastery ....

Submitted by .... Date ....
                (Instructor's signature)

Note: You may wish to attach any pertinent and available
      documentation to this form.

Comments:

Return this form to the appropriate CBE instructor.

....

CBE instructor's signature: ....

               Date: ....

Complete PPO No. ....

Name:

Mark the shapes that are alike.

1. triangle

A — ONE WAY

B — SLOW CHILDREN AT PLAY

C — YIELD

2. square

A

B — NO STOPPING ANY TIME

C

3. circle

A — STOP

B — R R

C — H HOSPITAL

4. rectangle

A — SCHOOL

B — LAKE

C — BIKE PATH

PPO MA-05-28   Date _____

page 2.

Mark the triangle.   Mark the square.

Draw the same shape and size.

Write the number.

_____ square units   _____ square units

Mark the cylinder.   Mark the cone.
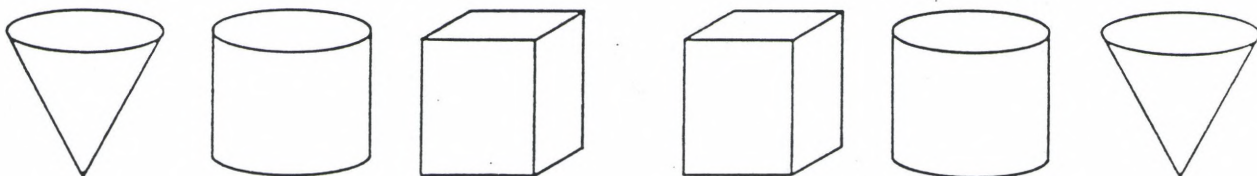
Mark the heavier object.

or   or
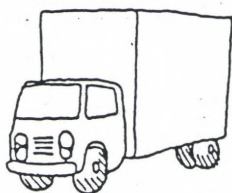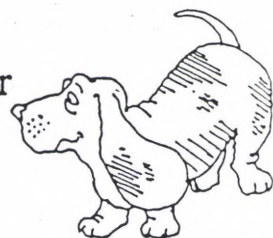
Plane Figures

1. Write how many.
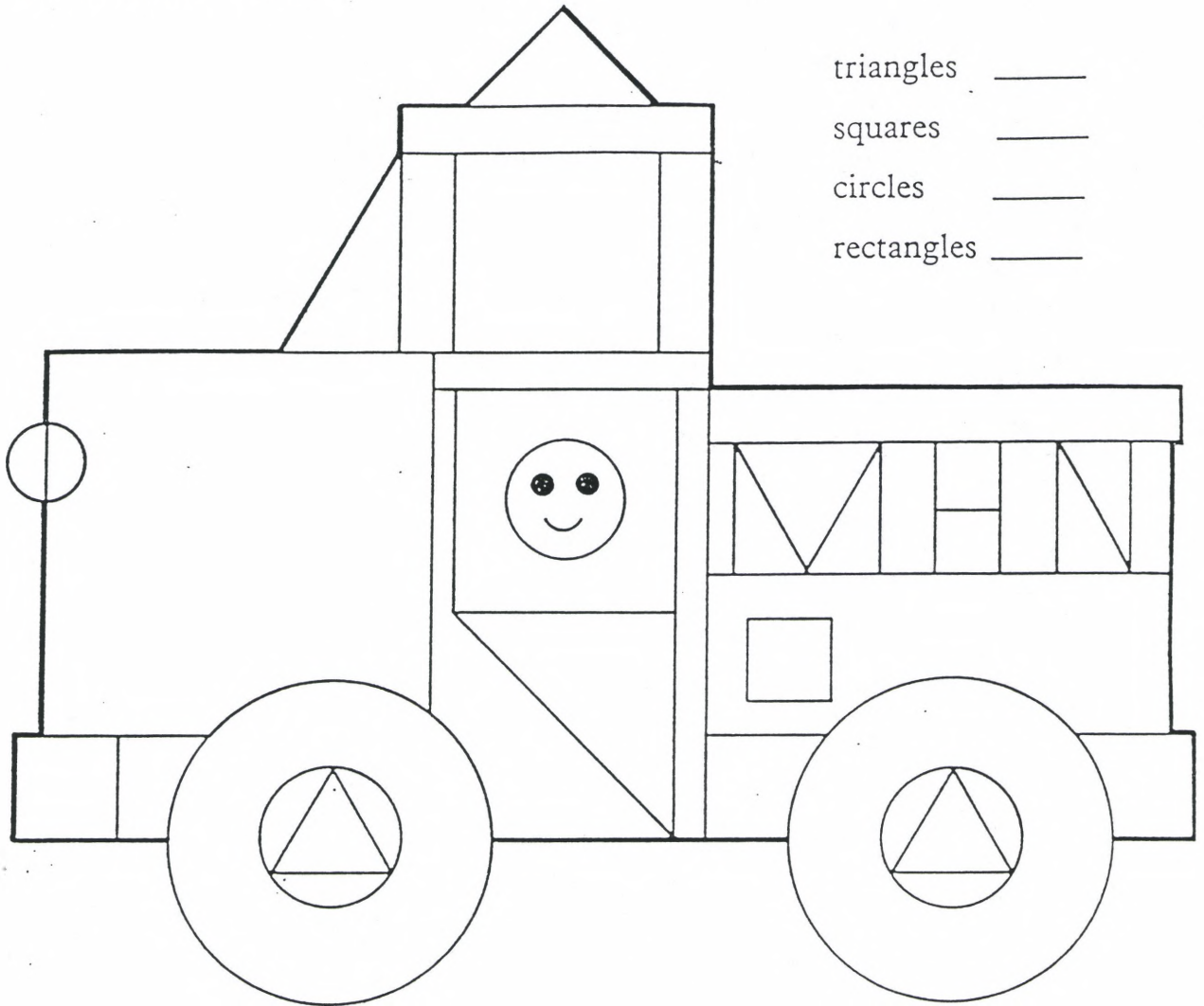
triangles _____
squares _____
circles _____
rectangles _____

2. Cut out the shapes below.
Put them together to make a rectangle. Paste it on
the back.
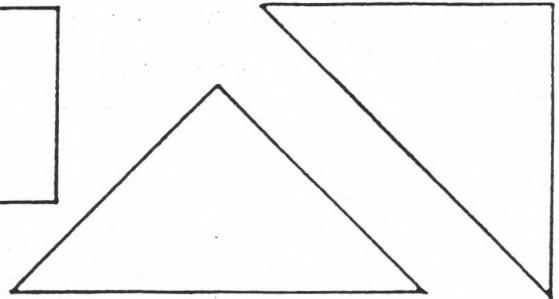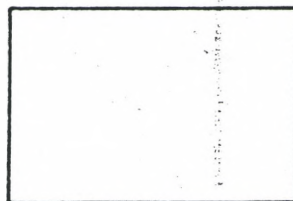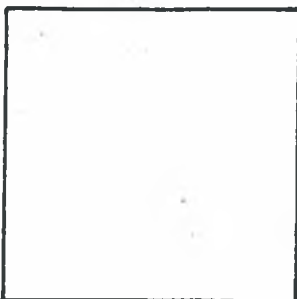
Answer Key

(The Answer key may be used by the instructor or by the student for self-checking.)

page 1

1. C
2. A
3. B
4. B

PPO MA-05-28   Date _____

Mark the triangle.
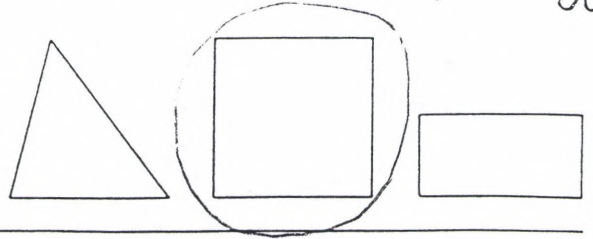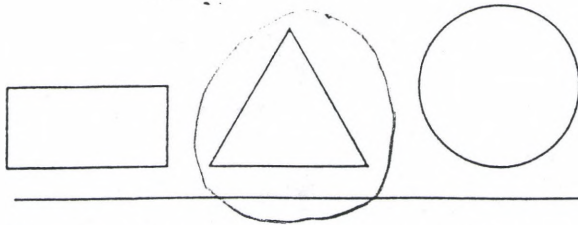
Mark the square.

Draw the same shape and size.
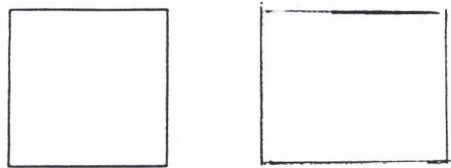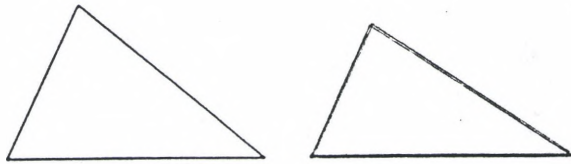
Write the number.

____6____ square units

____8____ square units

Mark the cylinder.

Mark the cone.
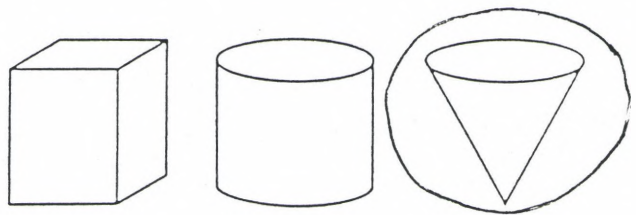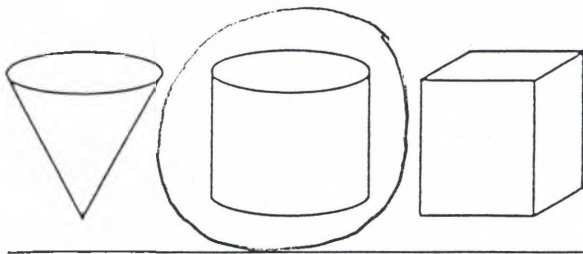
Mark the heavier object.

or
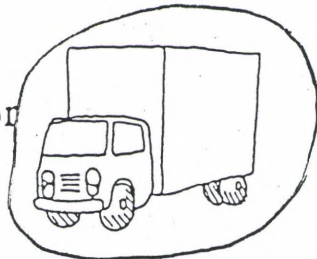
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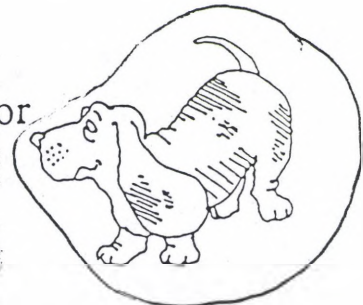
SECTION II

NON-TRADITIONAL LESSON PLANS
MATHEMATICS-GRADE 5

MA-05
PPO #   LESSON

01   FUNCTION MACHINE
          Description: Solving addition problems.

02   ROLL-A-15-GAME
          Description: Addition problems with at least
          two addends.

02   MAKE 100

02   THE GAME OF 99

03   CALCULATOR SUBTRACTION
          Description: Subtraction problems involving money.

04   CAN'T DO
          Description: Subtraction problems in the range of
          100-9999.

05-06   HIGGLEDY POPS
          Description: Word problems with subtraction
          involving money.

07   DOUBLE DIGIT
          Description: Standard form and place value.

08   ROUNDING 2,000
          Description: Rounding 2- and 3-digit numbers.

09   MULTIPLICATION RUMMY
          Description: Multiplication problems containing
          factors 1-9.

09   FACT FISHING

10-11   ROLL A PRODUCT
          Description: Multiplication problems with one
          two factors greater than 10.

12   CLASSROOM MATH
          Description: Multiplication word problems with
          larger factors.

13   SHORTCUT FOR COMPUTING PRICES
          Description: Multiplication problems with money.

CBE PPO OBJECTIVE: MA-05-01

SHORT DESCRIPTION: Solving addition problems

LESSON: Function Machine

MATERIALS NEEDED: A chalkboard and chalk

INSTRUCTIONS: Explain that a function machine takes in
numbers or other data ("input"), performs according to a
fixed rule, and gives an "output".   Draw two columns on the
board, marked "In" and "Out".   Select a secret rule (for
example, add 3).   Then have students take turns giving input
numbers to go in the In column while you record the output
numbers in the Out column.   (If a student suggests 2, you
write 5 in the Out column, and so on.)   After you have
recorded several output numbers, ask students to predict
output numbers before you write them on the board.   Record
these guesses next to the columns.   When a student thinks he
or she knows the rule, have him or her give an input and
predict the output: if correct, let him or her then
predict the output for the numbers other students are
putting in the machine.   When at least half the students in the
class think they know the rule, ask several to describe it.

COMMENTS: The willingness to guess is an important
prerequisite for problem solving.   This activity encourages
students to predict the function machine's output.
    This game can be adapted to various levels and different
needs by changing the secret rule.

CBE PPO OBJECTIVE: MA-05-02

SHORT DESCRIPTION: Addition problems with at least 2
addends

LESSON: ROLL-A-15 GAME

MATERIALS NEEDED: Two cubes with numbers 0-5 on them and
two cubes with numbers 5-10 on them.

INSTRUCTIONS: Two players try to get a sum as close as
possible to 15 (the sum may be over 15) by rolling the cubes
one at a time; they may stop rolling whenever they wish, but
may not roll any cube more than twice. Suppose Jay starts by
rolling a 3 on a 0-5 cube, followed by a 7 on a 5-10 cube
and a 2 on the remaining 0-5 cube. His total so far is
3+7+2=12. He has a 5-10 cube left to roll. Jay needs to
decide whether he should roll the remaining 5-10 cube to
improve his score or to stop rolling. (Remember, the object
is to get as close to 15 as possible.)

COMMENTS: Students learn quickly that there is an advantage
in saving a 0-5 cube for last. And besides practice in
addition, students get practice in subtracting in order to
compare scores, and in intuitive probability in deciding
whether to roll a cube and which cube to roll.
    This game can be adapted to various levels and different
needs by changing the numbers on the cubes and setting a new
sum.

CBE PPO OBJECTIVE: MA-05-02

SHORT DESCRIPTION: Addition problems with at least 2
addends

LESSON: Make 100

MATERIALS NEEDED: A blackboard and chalk

INSTRUCTIONS: Draw a circle on the board with 1- and
2-digit numbers placed randomly inside the circle.   (See the
example on the attached page.)
     Give students one minute to find pairs of numbers in the
circle that up to 100 (92+8, 37+63, 52+48).   Be sure to
include numbers that will not make up one of these pairs.
Then write different (smaller) numbers inside the circle and
have the students find three numbers that make up 100.
Give them at least two minutes for this one and tell them
the numbers may be used more than once.

An example of a number circle.

48   52
       63
   92
9
       53
   67
47   8
86   14
   37
31
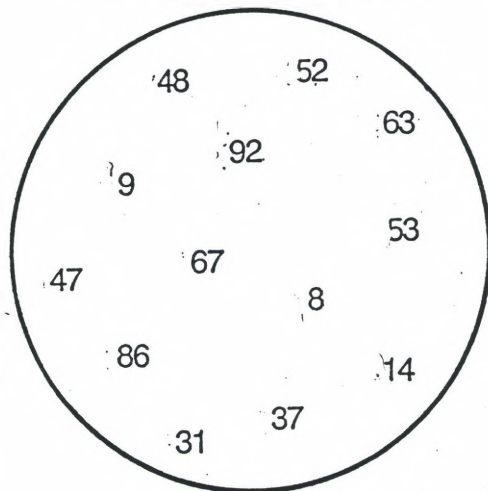
CBE PPO OBJECTIVE: MA-05-03

SHORT DESCRIPTION: Subtraction problems involving money.

LESSON: Calculator Subtraction

MATERIALS NEEDED: A calculator for each student and a
written list of several checkbook entries.

INSTRUCTIONS: Go over directions and instructions on how to
use a calculator, making sure everyone knows how to use it
properly. Let students practice subtraction by solving the
problem: "Ginny has $36 and wants to buy a bike for $45.
How much more money does she need?" Go through each step,
making sure each student has time to enter the numbers and
check the display before going to the next step. The
students are to explain orally that Ginny needs to earn $9
more before she can buy the bike.
    Now reinforce both addition and subtraction skills by
having children balance a checkbook. First have the class
work an example using dollars and cents, such as
$3.76+$4.85-$1.00. Remind students that they do not enter
the dollar sign (which is not included on the calculator),
nor the zeros in $1.00 (the calculator automatically
includes them). Now have the children find the balance of a
list of several checkbook entries, including deposits and
checks. Discuss answers orally.

CBE PPO OBJECTIVE: MA-05-04

SHORT DESCRIPTION: Subtraction problems in the range of 100-9999.

LESSON: Can't Do

MATERIALS NEEDED: 60 blank cards, 2 different colored markers, paper and pencil.

INSTRUCTIONS: Make a set of 30 cards with the higher numbers from the range of 100-9999.   This set will be the Top Number Set.   Make another set of 30 cards with the lower numbers from the range of 100-9999.   This set will be the Bottom Number Set.   (Use different colored marker for each of the 2 sets.)   Mix up the cards, but keep the 2 sets of cards separate.   Ask the students to pick a card from each set and then copy the problem down on paper and find the difference.   The Top Number card can only be used in the top position of the subtraction problem.   The Bottom Number card can only be used in the bottom position of the subtraction problem.   If the Bottom Number card is bigger than the Top Number card, the students are to still set up the problems, but instead of being able to solve them, they have to write under the line "Can't Do".

Example: 1837   Top Number Card
           -512   Bottom Number Card
           1325

            510   Top Number Card
           -730   Bottom Number Card
        Can't Do

CBE PPO OBJECTIVE: MA-05-05
                      MA-05-06

SHORT DESCRIPTION: Word problems with subtraction involving
money.

LESSON: Higgledy Pops

MATERIALS NEEDED: A large bulletin board, several old
catalogues and magazines, scissors, a marker, play money

INSTRUCTIONS: Cut out a large number of items from the
catalogues and magazines.   Staple them onto the bulletin
board.   Put price tags on them and give the store a name
(Higgledy Pops).
     Give every student the same amount of play money.   The
amount is up to you.   (eg. 1-$20 bill, 3-$5 bills, 4-$1
bills, ect.) Make up a flyer, containing a list of items
that the store is putting on sale for the week.   (Students
can make very creative flyers.)
     Students need to count their money, look at the flyer
for sale prices, purchase at least five sale items and five
regularly priced items.   They'll need to go to the bulletin
board to get all the regular prices.   The students are then
to make a list of the 10 items they bought, the regular
price on all the items, and the sale price on five of the
items.   They can only purchase those 10 items they have
enough money for.   They must purchase 10 items and no more
or less.   The the students need to:

     1.   total up their purchases.
     2.   figure the difference between the sale price and the
regular price.
     3.   subtract the amount of the savings from the total
purchase amount and record how much they saved.
     4.   subtract the total purchase amount from their play
money and figure out how much money will be left over.
Donate any money left over to the Higgledy Humane Society
and record the amount donated.

     The object is to see who saved the most money and was
able to donate the most money to the Hiddledy Humane
Society.   A student must meet both conditions to be a
winner.

COMMENTS: There won't always be a winner. Someone could
save the most money but not have donated the most money or
the other way around. If there is a winner he/she could be
made citizen of the day and receive a certificate of award.
     The activity can be adapted to various levels and
different needs by changing the amount of money given to
each student and changing the sale items and prices in the
flyers.

CBE PPO OBJECTIVE: MA-05-07

SHORT DESCRIPTION: Standard form and place value

LESSON: Double Digit

MATERIALS NEEDED: Several pairs of dice and a score sheet
for each student, consisting of a tens column and a ones
column.

INSTRUCTIONS: Divide the class into small groups and
provide each group with a die.   Each student should also
have a score sheet.   Players take turns rolling the die and
deciding to place the number rolled in either the tens
column or the ones column.   If it is placed in the tens
column, a 0 is put next to it in the ones column; for
example, a 4 in the tens column counts as 40.   The object is
to get as close as possible to 100 without going over.   When
each player has rolled the die seven times and recorded the
rolled number in one of the columns, he or she then adds up
the numbers on his or her score sheet.   The person with a
total closest to 100 wins.

COMMENTS: Both skill and chance play roles in this
activity, which also teaches place value and standard form.
     This game can be adapted to various levels and different
needs by changing the columns or adding more columns and
setting a new sum.

Example Page
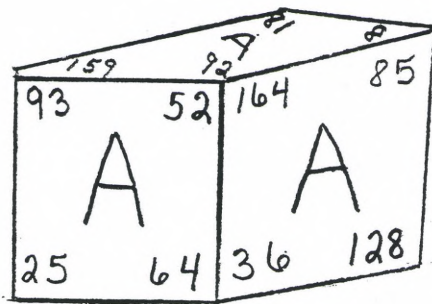
— Use a waterproof marker to write the numbers and designated letter on each cube.

(EXAMPLE PUPIL SCORE SHEET)

— Determine the number of rolls. (eg. 10 rolls)
— Keep a running total of estimated sums.

Roll
1. $84 + 42$
   $80 + 40 = 120$
2. $99 + 31$
   $100 + 30 = 130$ (250)
3. $81 + 39$
   $80 + 40 = 120$ (370)
4. $159 + 78$
   $200 + 80 = 380$ (750)
5. $19 + 31$
   $20 + 30 = 50$ (800)
6. $101 + 49$
   $100 + 50 = 150$ (950)
7. $71 + 115$
   $70 + 100 = 170$ (1120)
8. $93 + 64$
   $90 + 60 = 150$ (1270)
9. $164 + 85$
   $200 + 90 = 290$ (1560)
10. $143 + 287$
   $100 + 300 = 400$ (1960) Total

CBE PPO OBJECTIVE: MA-05-09

SHORT DESCRIPTION: Multiplication problems containing factors 1-9.

LESSON: Multiplication Rummy

MATERIALS NEEDED: 20 blank cards for each set of multiplication facts and markers.

INSTRUCTIONS: On 10 cards write the multiplication facts: 2x0, 2x1, 2x2, 2x3, 2x4, 2x5, 2x6, 2x7, 2x8, 2x9. On the other 10 cards write the answers: 0, 2, 4, 6, 8, 10, 12, 14, 16, 18. Mix up the answer cards and place them face down in a pile. Mix up the multiplication facts. Divide the class into pairs and then give each player 7 fact cards. The first player picks an answer card. If it matches a fact card in his/her hand the player keeps the answer card. If it doesn't match, the card goes at the bottom of the answer pile. Players alternate turns. The first person to have all fact cards matched with answer cards is the winner.

COMMENTS: Be sure to have enough cards so everyone can play. Prepare fact cards for multiplication tables 2-9. Have the pairs of students rotate sets of cards as they play. Let the students compete and have a Multiplication Rummy class winner.
    This game can be adapted to various levels and different needs by changing the fact cards. Also, this game can be done using division facts.
    It is more fun for the students if you use different colored markers for the different sets of fact cards. The 2 tables could be done in green, the 3 tables in yellow, etc.

CBE PPO OBJECTIVE: MA-05-09
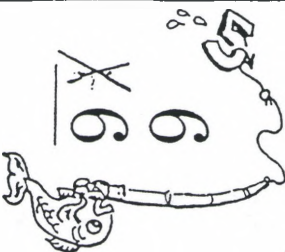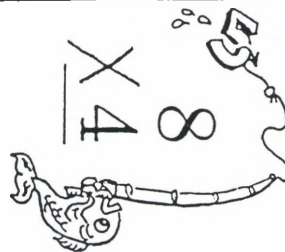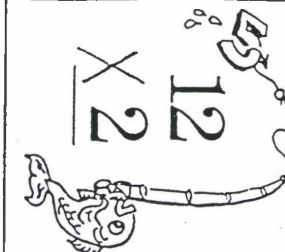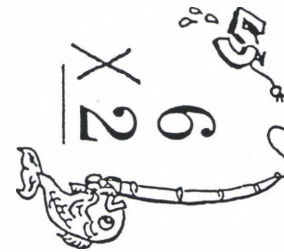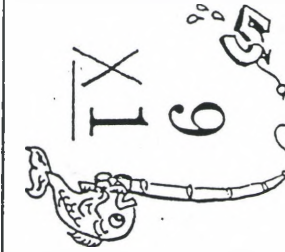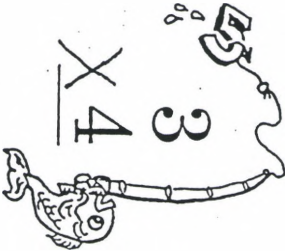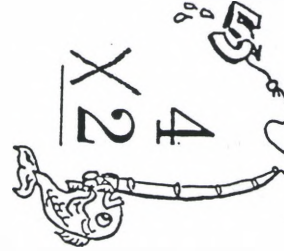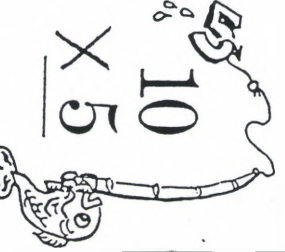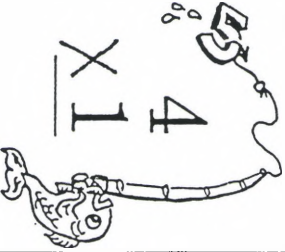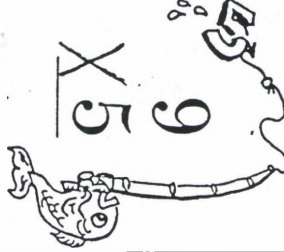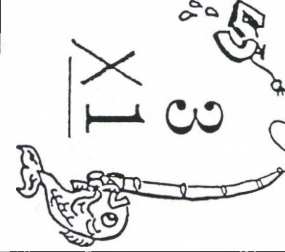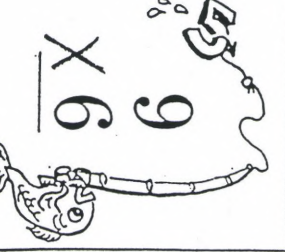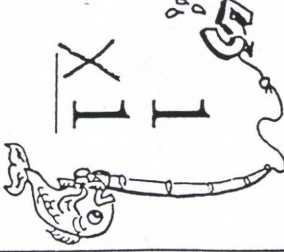
SHORT DESCRIPTION: Multiplication Facts 1-12

LESSON: Fact Fishing

MATERIALS NEEDED: A set of Fist Fact Cards for each group.
(See the example page attached.)

INSTRUCTIONS: Divide the class into groups of three.
Shuffle the cards. Each player gets four cards. Make a
stack of leftover cards. Players lay down any pairs they
are dealt. (A pair is 2 cards that have the same answer.
For example, 3x4 and 2x6 are a pair since the answer is 12
to both of them.) The first player whose turn it is asks
another player for a match to one of the cards in his/her
hand. If that player has a match, he/she gives it to the
first player. If not, the first player draws from the stack
of extra cards. A player continues his turn until he/she
does not get a match. Players continue taking turns until
all the cards are matched.

Paste onto Construction Paper. Cut out the cards. You will need to make several sets with a great variety of problems. Make sure every card has a match in each set.

6 × 6	8 × 4	7 × 3	12 × 2
11 × 2	15 × 6	6 × 2	9 × 1
10 × 3	3 × 4	4 × 2	3 × 3
10 × 5	4 × 1	9 × 5	3 × 1
9 × 6	5 × 2	1 × 1	5 × 3
6 × 5	1 × 0	2 × 2	7 × 7

CBE PPO OBJECTIVE: MA-05-10
                     MA-05-11

SHORT DESCRIPTION: Multiplication problems with one and two
factors greater than 10.

LESSON: Roll A Product

MATERIALS NEEDED: Several dice (number cubes), a pencil and
paper.

INSTRUCTIONS: Two to five people can play this game.   The
first player rolls the number cube 2 times to make a 2-digit
number.   The number the player gets on the first roll is the
tens digit.   The number the player gets on the second roll
is the ones digit.   Now, the player rolls the cube again and
multiplies this number by the previous 2-digit number.   Each
player does the same.   Then the first player rolls again.
Multiply this number by your first answer.   Each player
takes four turns in all and the player with the largest
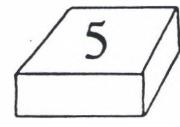product wins.   (See the attached example page.)
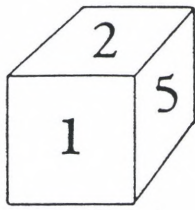
Example
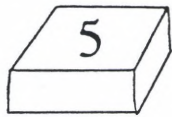
= 54
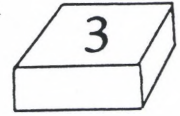
First turn: 54
                   ×3
                  ─────
                   162
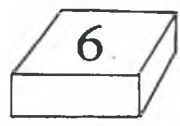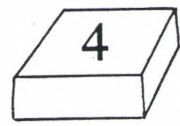
Second turn: 162
                    ×6
                  ─────
                   972

Third turn: 972
                    ×4
                  ─────
                   3888

Fourth turn: 3888
                     ×5
                  ──────
                  19,440

CBE PPO OBJECTIVE: MA-05-12

SHORT DESCRIPTION: Multiplication word problems with larger
factors.

LESSON: Classroom Math

MATERIALS NEEDED: Items such as calenders, telephone books,
world records, catalogues, newspapers, maps, and measuring
devices.

INSTRUCTIONS: Be sure to have enough materials to go
around.   Everyone doesn't need to work on the same problem
at the same time.   (Students may be paired up also.)
    Type a list of questions like these: How much does it
cost to make a 15-minute direct-dial call to Chicago on the
weekend?   How many tiles cover this floor?   If we make a
stack of all of our math books, how high would the stack be?
How many ceiling tiles were used to cover this ceiling?
What is the area of the chalkboard?   What is the area of the
top of your desk?   The teacher's desk is how much longer
than it is wide?   If you were offered 35 cents to wash one
desk in this room, how much money would you earn by washing
them all?   Count the number of school days in September and
figure how much you will be paying noon milk for this month.
Is it more or less than what you expected it would be?
    Duplicate copies of these questions for the whole class.
Don't prepare an answer sheet, but rather stress how
students work out the answers.   Suggest that students write
up solutions in a specific way.   First, they should make the
measurements or collect the data required and write this
down in a complete sentence.   Below that they should perform
the necessary computation and then write another complete
sentence containing the answer.
    A solution for the third problem might look like this:
"My math book is 2 centimeters thick.   There are 27 children
in our class.   27x2=54.   The stack of all our math books
would be 54 centimeters high."
    A solution to the eighth problem might be: "There are
31 desks in this room. $.35x31=$10.85.   I would earn $10.85
by washing them all."
    Once students have completed their work, you can discuss
each question.

COMMENTS: This activity involves common situations that
will provide students with math problems whose value to
daily life the students can readily understand.

CBE PPO OBJECTIVE: MA-05-13

SHORT DESCRIPTION: Multiplication problems with money.

LESSON: Shortcut For Computing Prices

MATERIALS NEEDED: Several current books, records and tapes
with marked prices on them.

INSTRUCTIONS: Set out the specially priced items where the
students can see them.
     Prices such as $3.97 and $4.99 are common sights in
stores. (Students will be surprised to learn that they can
be mentally computed fairly easily.) Tell students that
they are to buy three tapes costing $4.99 each. First have
them find the nearest round number to $4.99-$5.00. Ask them
to cumpute 3x$5.00 ($15.00). Now $5.00 is $.01 more than
$4.99, and they're buying 3x$.01 ($.03). Subtract $.03 from
$15.00 and you have $14.97, the total price. Have students
use the same method to find the price of four records
costing $3.97 each, and five books costing $4.99 each.

COMMENTS: Students will be surprised to learn that these
prices can be mentally computed fairly easily.
     This activity can be adapted to various levels and
different needs by changing items and prices.

CBE PPO OBJECTIVE: MA-05-14
                      MA-05-15

SHORT DESCRIPTION: Division

LESSON: Calculator Division

MATERIALS NEEDED: A calculator for each pair of students
and written lists of baseball statistics.

INSTRUCTIONS: Divide the students into pairs. Combining
the calculator and baseball statistics, such as batting
averages, can really excite students about practicing
division and averaging. Cut out newspaper sports pages'
listings of players' at bats and hits. Have the students
divide the hits by the bats (do not count walks or
sacrifices) to get each player's batting average. For
example, if a player has 63 at bats, 4 walks, and 16 hits,
compute the batting average by subtracting 4 from 63 and
dividing 16 by the answer (59). The answer , .271, is the
batting average.

CBE PPO OBJECTIVE: MA-05-16
                     MA-05-17

SHORT DESCRIPTION: Division problems with 2- and 3-digit
dividends, 1-digit divisors, and no remainders.

LESSON: Fool's Cap Mix-Up

MATERIALS NEEDED: 5 different colors of construction paper,
a marker, paper and pencil.

INSTRUCTIONS: Make several fool's caps. Write a division
problem on the outside of each cap in large print. Division
problems should have 2- and 3-digit dividends, 1-digit
divisors, and no remainders. On the inside of the caps
write the answers. (See the example page attached.)
    Set up a set of 5 fool's caps in a row in random order
on a desk in front of the class where everyone can see them.
Tell the students that the fool's caps are in the wrong
order. The students must rearrange the caps so that the
quotients (answers) are in consecutive order from left to
right. The students may use paper and pencil to solve the
problems and then volunteer to put the fool's caps in the
correct order by color.
    Check them by lying the fool's caps down and looking
inside at the answers. If correct, go on to another set.
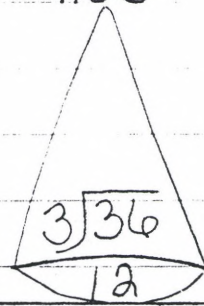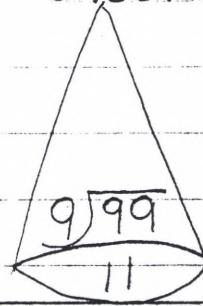If incorrect, sit the caps back up and let another student
try.

BLUE   YELLOW   RED   GREEN   WHITE
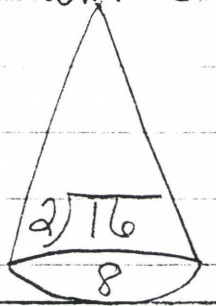
MPLE
T

$2\overline{)12}$ $10\overline{)200}$ $3\overline{)36}$ $9\overline{)99}$ $2\overline{)16}$

6   20   12   11   8
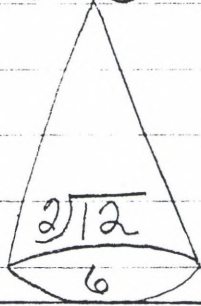
(Make sure each of the dunce caps in each set of 5 is one of each of the five different colors.)

answer to example set :

Blue   White   Green   Red   Yellow
Fool's   Fool's   Fool's   Fool's   Fool's
Cap   Cap   Cap   Cap   Cap

CBE PPO OBJECTIVE: MA-05-18

SHORT DESCRIPTION: Thought problems-division with 3-digit
dividends, 1-digit divisors, and a remainder.

LESSON: The Prize is Right

MATERIALS NEEDED: Play money

INSTRUCTIONS: Hold a contest of some sort. (eg. for ideas
on saving energy).   Set a certain amount of money to be used
for prizes (eg. $875).   (Note: The amount of total prize
money should not be evenly divisable by the number of
winners.)   Select a panel of 3 judges and let them decide
how many winners there will be and pick the winning entries.
(Each winner will get the same amount of prize money.)
Using the play money with the amount set above ($875),
divide the money equally among the prize winners.   Give the
prize winners the play money.   How much is each prize if
there
     1.   is only one winner?
     2.   is only two winners?
     3.   is only three winners?
     4.   is only four winners?
     5.   is only five winners?

     The money left over should be returned to the bank.
(Try to return the least amount of money to the bank as
possible.   Choose someone to be the banker.)
     Have several contests, choosing a new panel of judges
each time.   (Encourage the judges to choose different
students as winners each time.)   Winners may use their play
money to buy things from the banker.   (eg.- a pencil, a
sticker, an extra trip to the drinking fountain, a fun
activity sheet, etc.)

CBE PPO OBJECTIVE: MA-05-19

SHORT DESCRIPTION: Identification of the approximate weight
or measure.

LESSON: Weigh In

MATERIALS NEEDED: Tape measures, rulers, yardsticks, and an
accurate set of scales.

INSTRUCTIONS: Have students estimate a measurement of any
kind, then check to see what the correct answer is.   How
many inches tall is that person?   How many meters is it
between those two telephone poles?   How many pounds does
that book weigh?   How many more pounds do you think the
dictionary weighs? etc.

CBE PPO OBJECTIVE: MA-05-20

SHORT DESCRIPTION: Identification of the approximate weight
or measure.

LESSON: Liquid Amounts

MATERIALS NEEDED: 10-20 different and various sizes of
grocery store containers and water.

INSTRUCTIONS: Line up the 10-20 different grocery store
containers in front of the class and ask which one would
hold the most liquid, which the next most, and so on. Place
the containers in any order students suggest, and then check
their guesses by pouring water from one into another.

COMMENTS: If the containers are different enough in shape,
most of the students will be wrong about several of the
volumes. People commonly believe that tall, thin containers
hold more than they actually do, and that short, fat ones
hold less; conical-shaped containers hold less than most
people expect. By dealing with physical objects in this
way, students can develop a geometric intuition that will help
them later when they learn the geometric formulas for these
various shapes.

CBE PPO OBJECTIVE: MA-05-21

SHORT DESCRIPTION: Identification of fractions-shaded part
of the object.

LESSON: Fractional Mix and Match

MATERIALS NEEDED: Several sheets of cardboard (8" by 12" is
a good size.), construction paper, and a marker.

INSTRUCTIONS: Make several different game boards. Divide
each game board into squares of 24. In each of the squares
write a fraction, 1/4, 3/10, 2/7, etc. Make several sets of
40 playing cards. On each playing card draw a figure
divided into shaded and non-shaded sections. Playing cards
need to be the same size as the squares on the game board.
Also, make sure 16 out of the 40 cards do not match any of
the fraction squares on the playing board. The other 24
need to have a match on the playing board. (See the example
sheet attached.)
      Divide the students into groups of 3 or 4. Each group
will have a playing board and a set of 40 playing cards.
Shuffle the cards and put them in a stack. Take turns
drawing cards. The students are to match the fractional
part of the figure that is shaded in to a fraction square on
the game board. If there is no match, then put the card in
a discard pile. When there is a match, cover the fraction
on the game board with the playing card. Play until all
cards are drawn and the 24 squares are covered. Groups may
compete to see which group can cover their board correctly
in the least amount of time.

examples of playing cards:
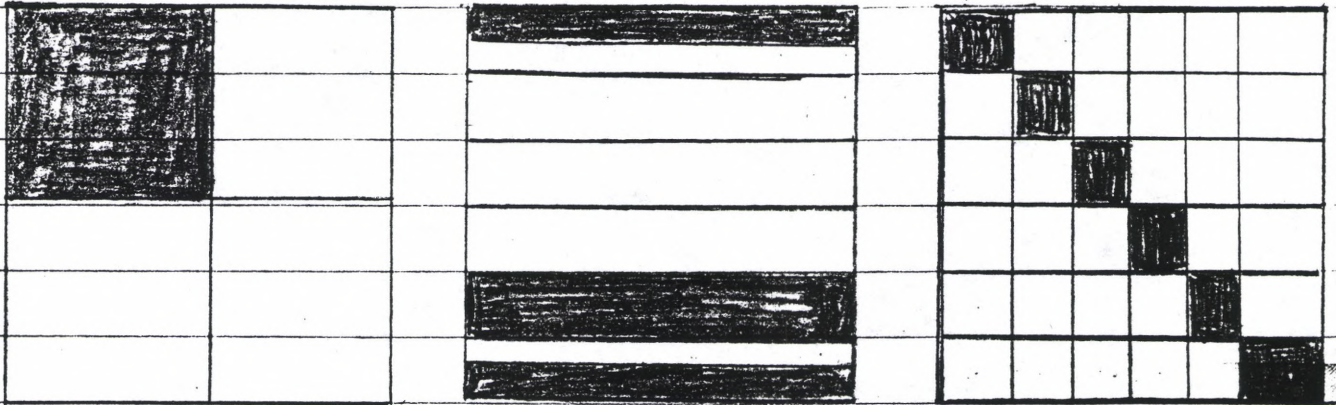
$$\frac{1}{4} \qquad \frac{3}{8} \qquad \frac{6}{36}\left(\frac{1}{6}\right)$$

2" by 2" squares are nice size. Laminate the cards and game boards for longer use. You might want to use different colors of construction paper in making the cards.

CBE PPO OBJECTIVE: MA-05-22
                     MA-05-23

SHORT DESCRIPTION: Fractions-identify the numerator and the
denominator and identify the larger fraction.

LESSON: Human Fractions

MATERIALS NEEDED: 3 different colors of construction paper,
a black marker, 2 sturdy student desks.

INSTRUCTIONS: Begin by reviewing with the students all
necessary safety precautions.
    Make 3 sets of cards.   One set of cards will be the
numerator cards on which are written numbers.   Another set
of cards will be the denominator cards on which are, also,
written numbers.   The third set of cards will be the sign
cards using more than, less than, and equal to. (We will
use the third set of cards later in the activity.)
    To help students remember which number is the
denominator, have 2 students come to the front of the room
where a sturdy student desk should be placed.   Have one
student take a numerator card and help the student stand on
top of the desk displaying the card to the class. (Please
use extra caution here.) Have another student take a
denominator card and sit under the desk displaying the card.
Now, you have built a human fraction.   Tell the students
that the denominator is always found down under the line
(desk) and that denominator and "down under", both begin
with the letter d.   Let the students take turns being
numerators and denominators. (At this point it doesn't
matter if the numerator is larger.) Use different
construction paper for each of the 3 sets.
    To advance the exercise to comparing fractions, build 2
human fractions side by side with enough space between the 2
desks for another student to stand in the middle.   The
student standing in the middle will compare the two human
fractions and choose the appropriate sign from the set of
sign cards, taking his/her place between the desks and
displaying the sign card to the class.   Let the students
take turns being sign cards, as well as numerators and
denominators.

COMMENTS: Please find attached to this lesson, examples of each of the 3 different sets of cards.

You might want to start your human fractions' activity with using only like denominator cards, and making sure that the numerator cards are always smaller than the denominator cards. Then as the class progresses, you can begin to build and compare human fractions with unlike denominators and fractions with the numerators being larger than the denominators (improper fractions).
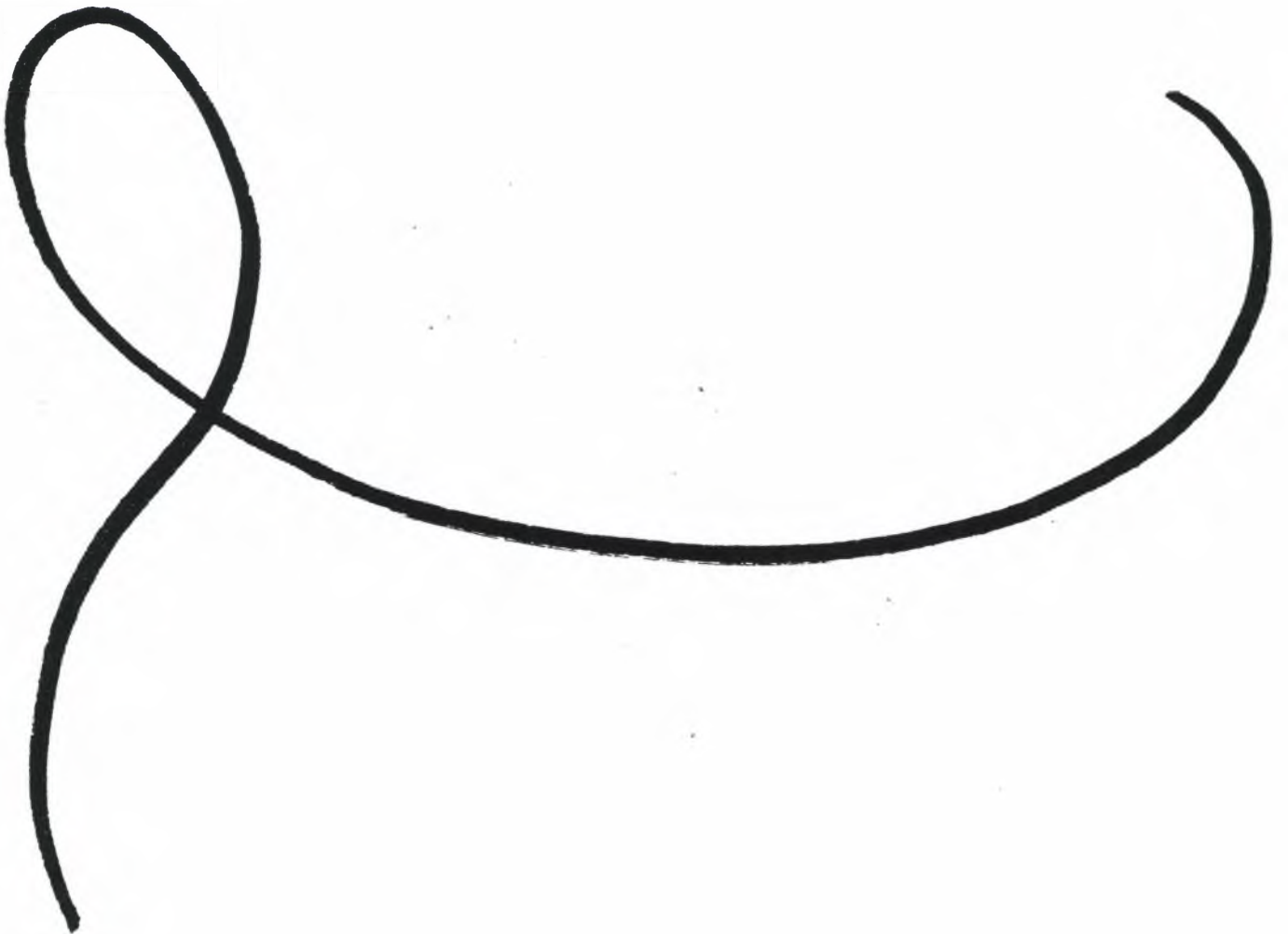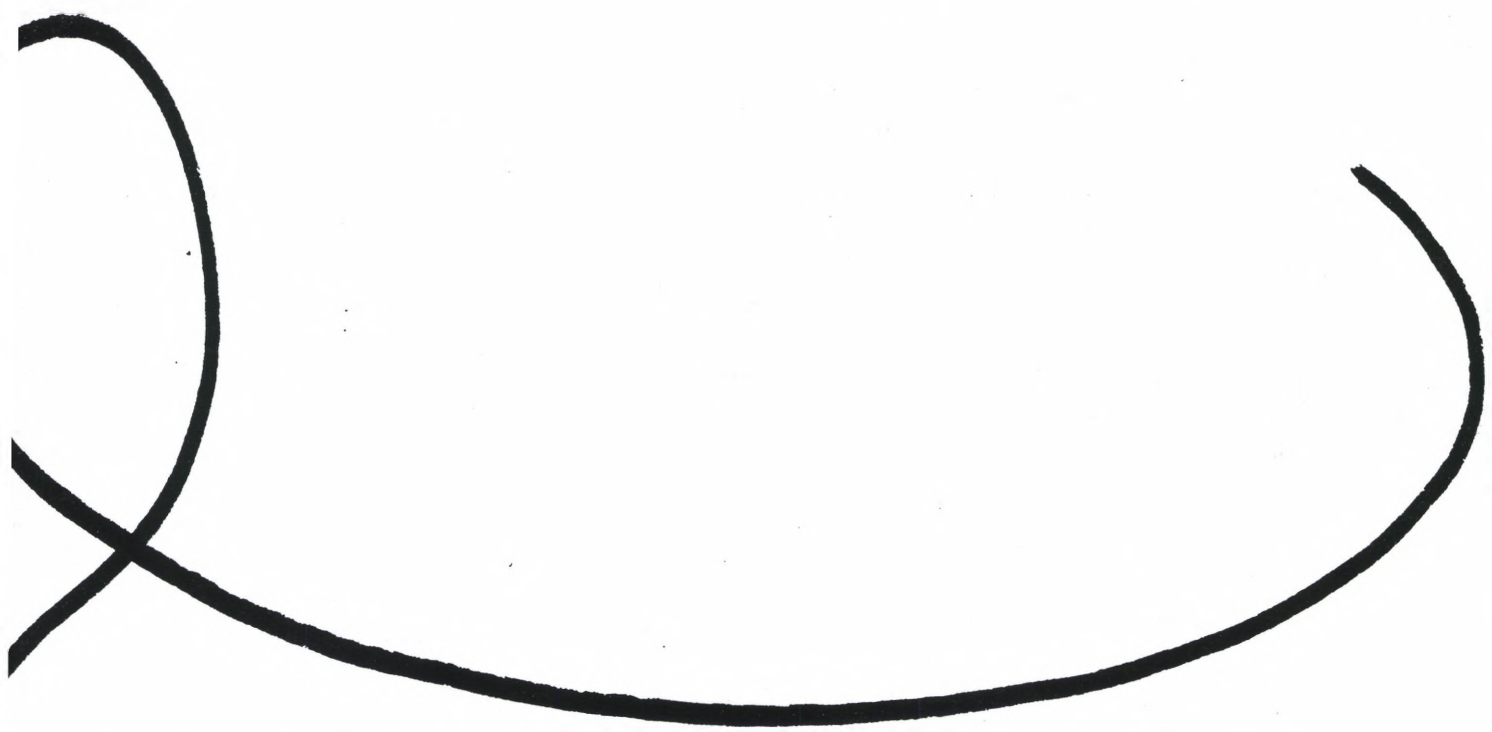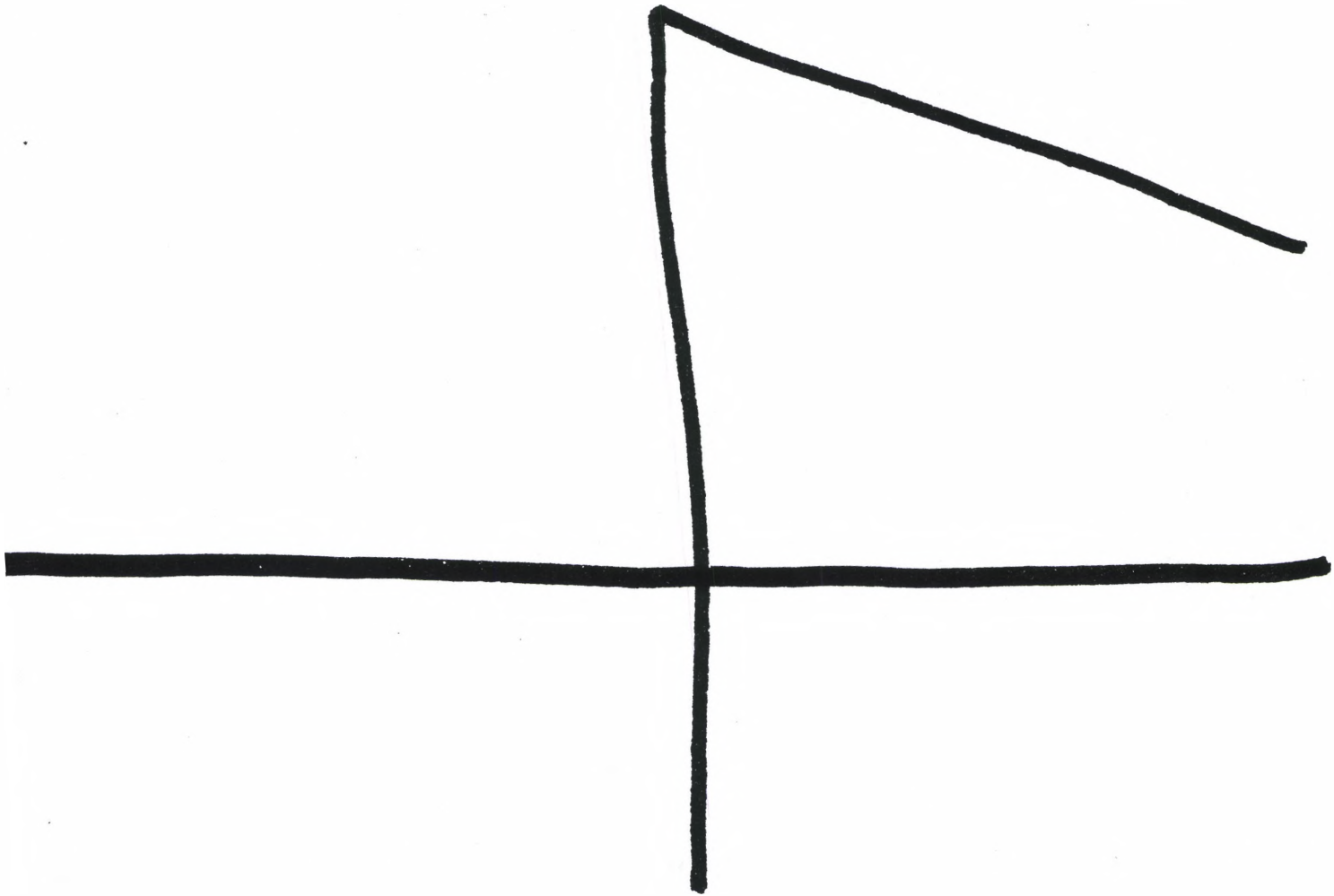
Numerator Cards
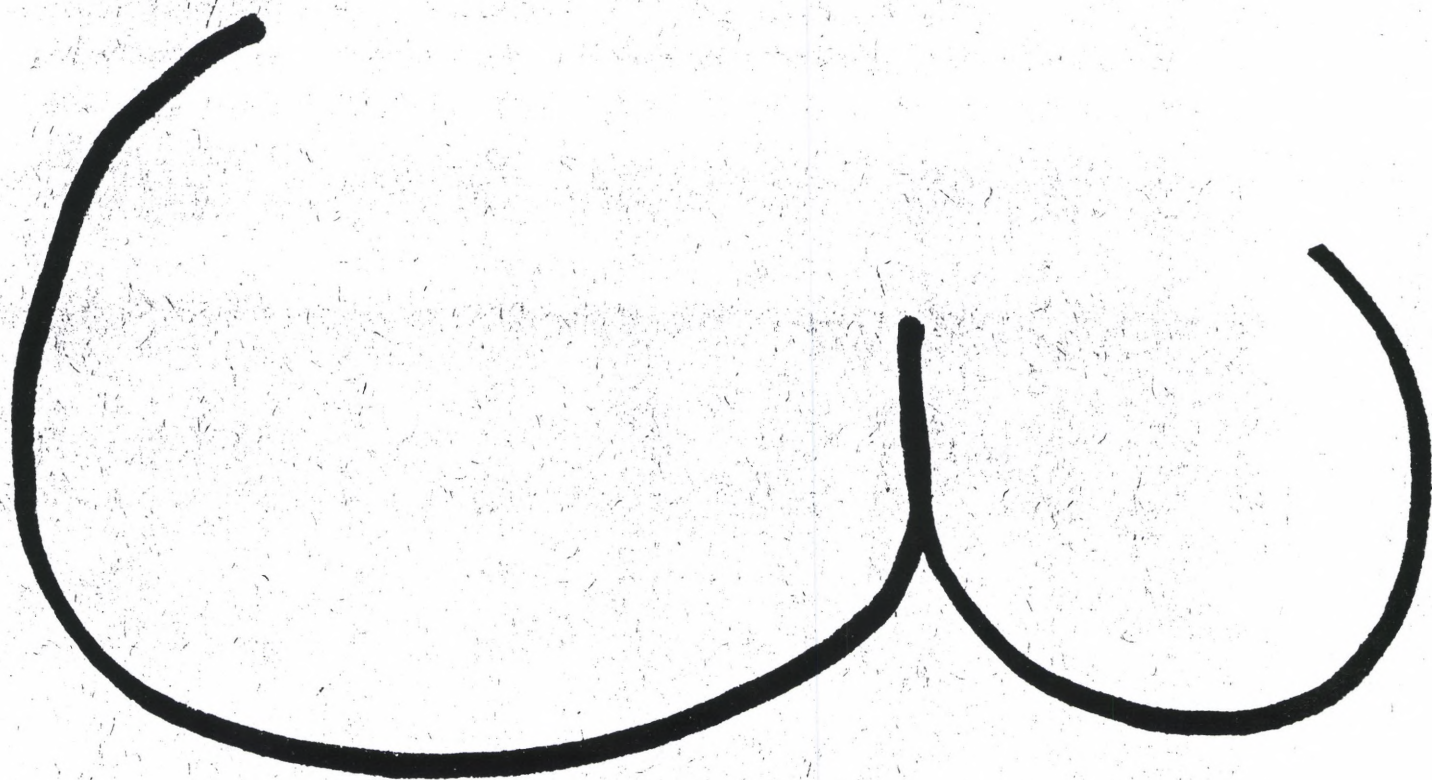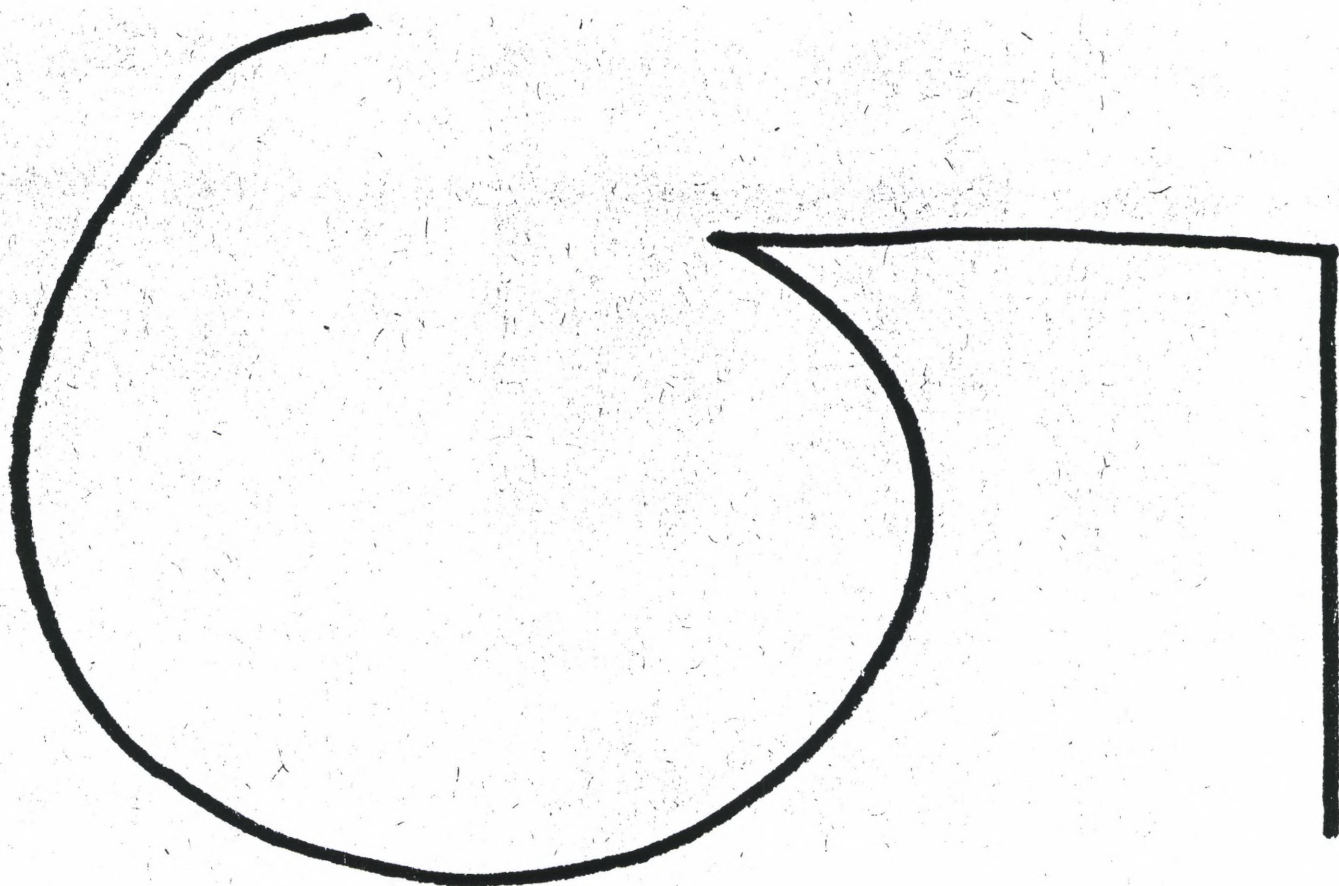
Denominator Cards
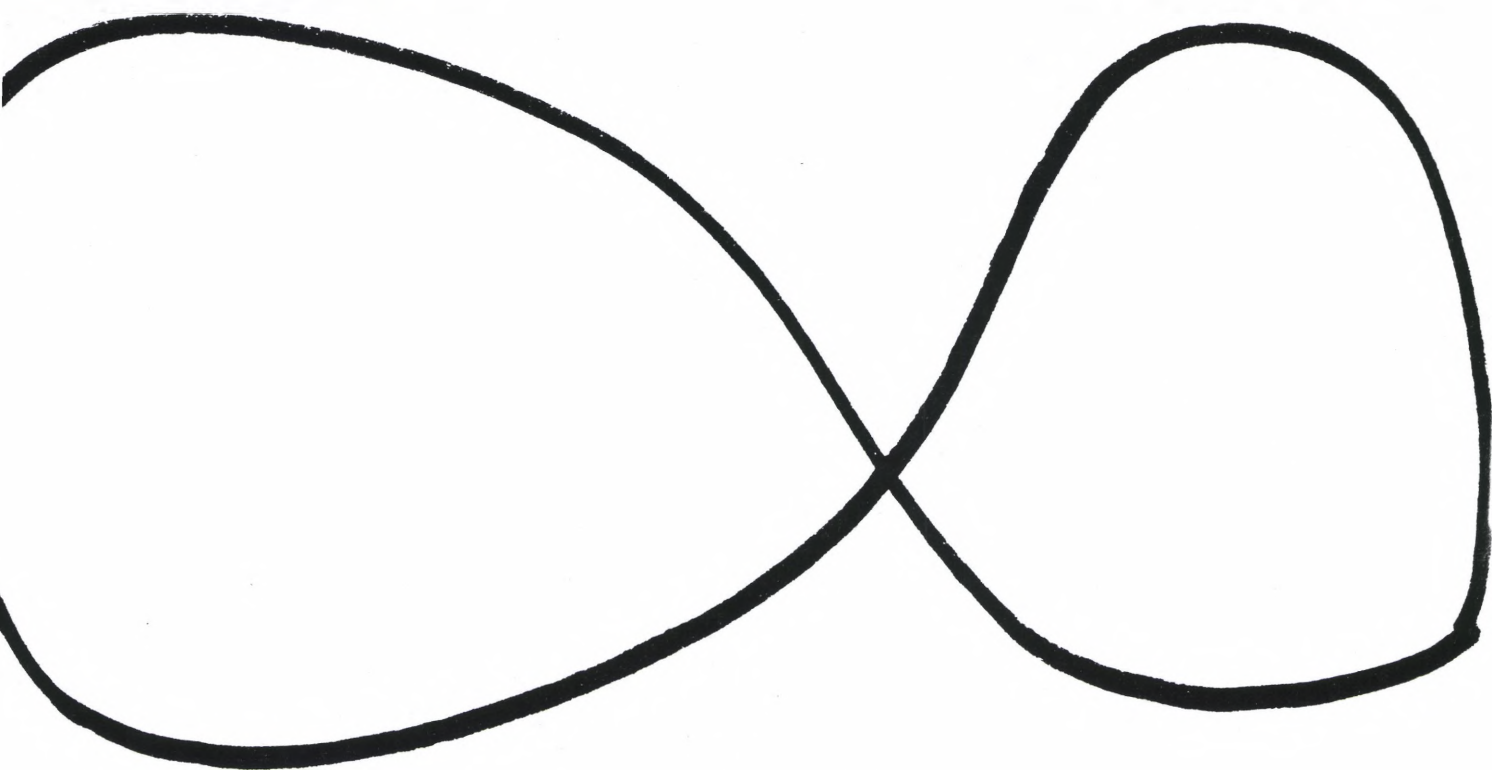
is

sign
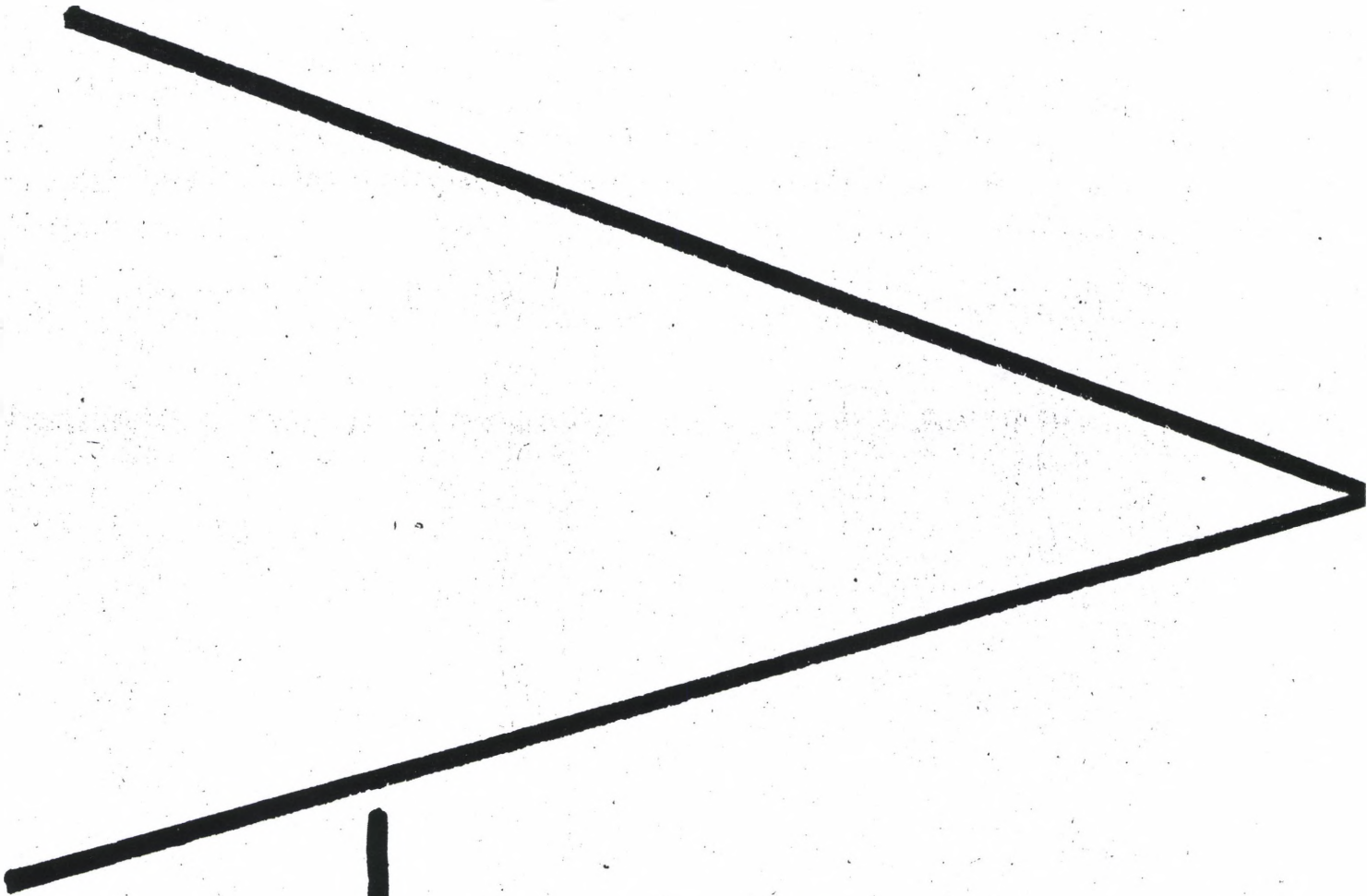cards

more
than

is

> less
than

iS

EQUAL
TO

CBE PPO OBJECTIVE: MA-05-24
                     MA-05-25

SHORT DESCRIPTION: Fractions

LESSON: Flipping A Coin

MATERIALS NEEDED: Several coins, tally sheets, a chalkboard, and chalk.

INSTRUCTIONS: Divide your class into groups of four or five students each.   Explain that they are going to flip a coin 20 times and record each time whether it comes up heads or tails.   One student in each group should serve as recorder. Before they begin, ask them to predict whether the tosses will produce more heads, more tails, or an equal number of each, and to explain why they think so.   When groups have finished tossing and recording, ask a member of each group to list its results on the board.
     Then ask: Which group had the most heads in 20 tosses? Which group had the most tails in 20 tosses?   How often would you expect heads in 20 tosses?   How often would you expect heads in 100 tosses?   (Because there are two equally likely outcomes, you would expect each outcome for half the tosses.   In 20 tosses, you would expect 10 heads.
1/2 x 20=10.)
     Continue questioning students: How many times altogether were coins tossed?   What is one-half of this number?   Out of all the tosses, how many times did heads occur?   Is this about half of the number of tosses?   Would we have needed to write on the board the number tails tossed?   Why or why not?
     How does the total number of heads and tails compare with students' earlier predictions?

COMMENTS: Students may wonder why the number of heads isn't exactly half.   Here's your chance to discuss one of the trickier ideas about probability-every toss is independent, but as the number of trials increases, the theoretical probability becomes closer to the "experimental probability", that is, to the actual experience.   In 20 tosses, one group might get 7 heads, but in 100 tosses, the number of heads should be closer to half.

CBE PPO OBJECTIVE: MA-05-24
                     MA-05-25

SHORT DESCRIPTION: Fractions

LESSON: Pineapple Math

MATERIALS NEEDED: This activity involves about 26 students.
Each student will need a soft drink can with the top
removed. (Most can openers won't remove the top from a soft
drink can, so you may need to take the cans to the cafeteria
and use a commercial-size can opener.) Also needed for each
student is a coffee can and a spoon.
     The following items and ingredients will be needed.
     1.   bags of ice
     2.   salt
     3.   several plastic drop cloths
     4.   paper or plastic foam cups
     5.   a large container
     6.   six 10-ounce bottles of orange soda
     7.   two cans sweetened condensed milk
     8.   one can crushed pineapple

A written list of problems for each student will be needed.

INSTRUCTIONS: Making ice cream in your classroom, with
miniature freezers that can be constructed by each student,
can be a great math-learning activity as well as a tasty
project.
     Begin by reviewing with students all necessary safety
precautions.   Then have each student place a soft drink can
inside a coffee can and pack layers of ice and salt around
the soft drink can.   To avoid getting ice and salt in the
smaller can, place an inverted paper cup or plastic foam cup
over the small can until the packing is completed.   Next,
pour an ice cream mix into the soft drink can and begin
stirring the mix with the spoon.   Ice cream recipes can be
found in a variety of cookbooks.   All recipes tend to freeze
in approximately 10-15 minutes.   (The pineapple sherbet
recipe is very easy to use.)
     Use the plastic drop cloths to spread under the ice
chests and bags of ice to help in cleanup.   Use the large
container to collect and dispose of the salt water after the
activity is completed.

Directions: Mix ingredients #'s 6, 7, and 8 from the list above. (You can substitute strawberry soda and frozen strawberries or other combinations as desired.)

This recipe is ideal for teaching fractions. Give students the problems that are found on the attached page, using the recipe above plus the following information:

1 10-ounce bottle of soda costs $.75
1 can condensed milk costs $.80
1 can crushed pineapple costs $1.70

COMMENTS: Be careful in disposing of salt water; it will damage lawns and plants.

You should determine the maturity level of your class before trying this activity; or you might want to do this activity in small groups, working with each group individually while the rest of the students do a related written assignment.

QUESTIONS

1. If you wanted to make sherbet for 52 people, how many ounces of orange soda would you need?

2. How much does it cost to prepare sherbet for 26 people?

3. What is the cost of the sherbet per serving?

4. How much would it cost to serve 18 people?

5. A can of frozen strawberries costs $1.51. How much would you save if you substituted strawberries for pineapple?

6. There are 16 ounces in a pint. How many pints of soda are needed to make sherbet for 26 people?

7. If the recipe only called for one can of condensed milk, how much would it cost to serve 26 people?

8. If you could only find 12-ounce bottles of soda, how many would you need to make sherbet for 52 people?

9. One ounce is equal to 30 milliliters. How many milliliters are there in one 10-ounce bottle of soda?

10. There are 1,000 milliliters in 1 liter. How many liters of orange soda does it take to make sherbet for 26 people?

Note: Any number of questions can be made up and added to this list.

CBE PPO OBJECTIVE: MA-05-26
                      MA-05-27

SHORT DESCRIPTION: Addition and subtraction of decimals
containing tenths or hundredths.

LESSON: Snowman Sums and Decimal Differences

MATERIALS NEEDED: Straight pins, sheets of white
construction paper, scissors, glue, crayons or colored
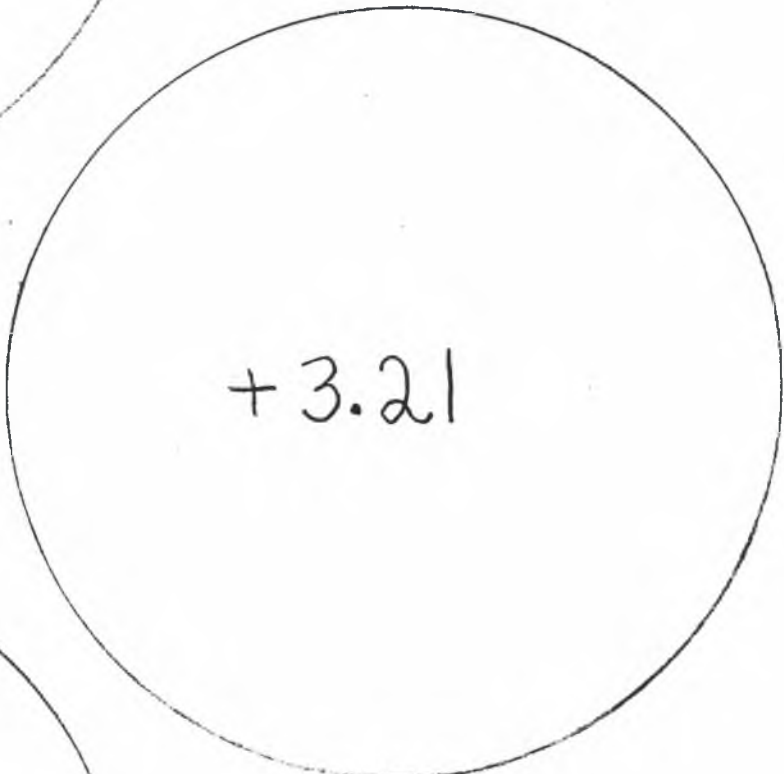pencils, and different colored construction paper.

INSTRUCTIONS: Make several sets of medium size snowballs in
groups of 3 and cut them out. (See the example page
attached.)   In one snowball put a decimal (4.87).   In
another snowball put another decimal with a plus (+) or
minus (-) sign in front of it (+3.21).   On the third
snowball put the sum or difference of the problem (8.08).
Mix up the snowballs and put them up on 1/2 of a specified
bulletin board using straight pins.   Over the top of the
bulletin board put large letters that say, "Snowman Sums and
Decimal Differences".
     Students are to take turns choosing 3 snowballs that
make a correctly answered problem.   The students remove the
straight pins, which they give to the teacher, and take the
3 snowballs to their seats.   The students then decorate and
put their snowmen together using construction paper, glue,
colored pencils or crayons, scissors, and other approved
materials.   Students are to put their names on the back of
each snowman.   After each snowman has been assembled, let
the student re-pin the snowman to the other half of the
bulletin board.   Let students do this until all the
snowballs are gone and all the snowmen are assembled.   Then,
take down the snowmen and pass them back to the students who
created them.   You can start again, having the students make
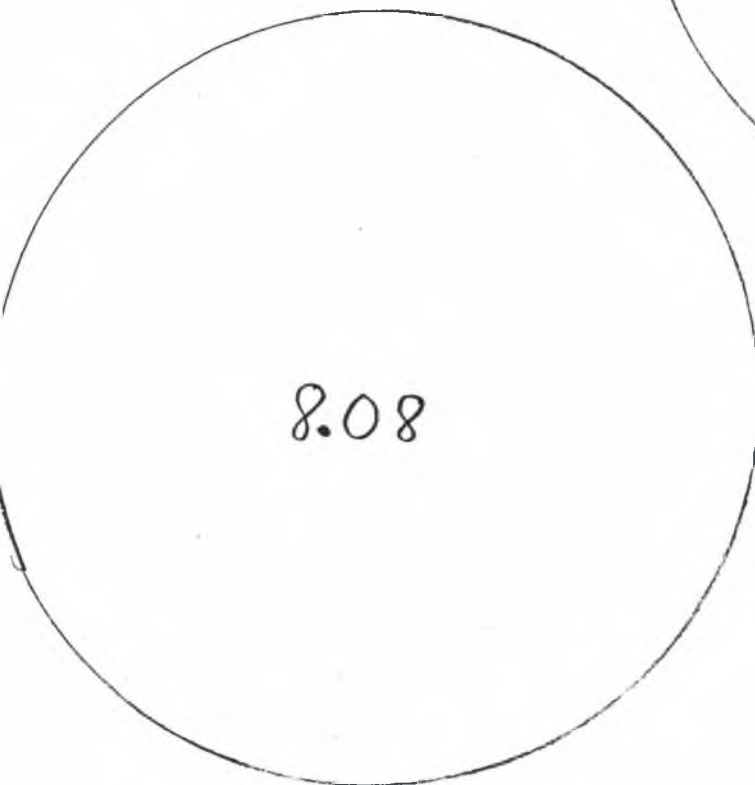up the problems that go in the snowballs.

COMMENTS: You will need a pretty good size bulletin board
for this activity.   It is a great activity for the month of
January and makes a unique bulletin board.   Also, this
activity can be used as a reward incentive by letting
pupils pick out snowballs and make a snowman after having
completed an assigned task.

4.87

+3.21

8.08

CBE PPO OBJECTIVE: MA-05-28

SHORT DESCRIPTION: Identification of Geometric Shapes

LESSON: Exploring Shapes

MATERIALS NEEDED: A cardboard cube with a different
geometric shape on each side of the cube.

INSTRUCTIONS: Let students take turns rolling the cube,
naming the shape that turns up, and finding a similarly
shaped object somewhere in the room.

COMMENTS: Students can form different shapes with yarn,
toothpicks, ice-cream sticks, blocks, and so on.   (These
activities help students relate math concepts to physical
objects.)

CBE PPO OBJECTIVE: MA-05-28

SHORT DESCRIPTION: Identification of Geometric Shapes

LESSON: Road Signs

MATERIALS NEEDED: A copy of the attached activity sheet for each student and crayons or colored pencils.

INSTRUCTIONS: Pass out an activity sheet to each student. Go over the directions and ask the students to complete the activity sheet.   As a follow up, ask the students to make their own Road Sign Shapes Bar Graph by observing and keeping track of all the road signs they see in a period of one week.   Then display the graphs.

Bus Ride

Pretend that you are on the school bus in the picture. Finish the bar graph to show how many triangles, rectangles, squares, and circles you see on the road signs.

Bar Graph
Road Sign Shapes

	triangles	squares	rectangles	circles
4				
3				
2				
1				
0				
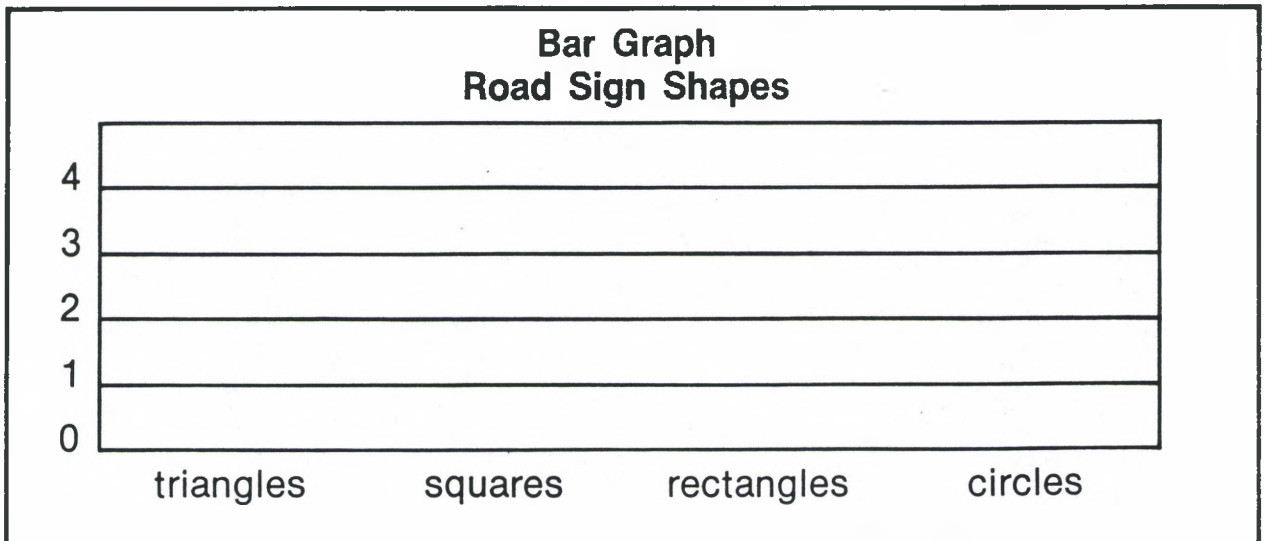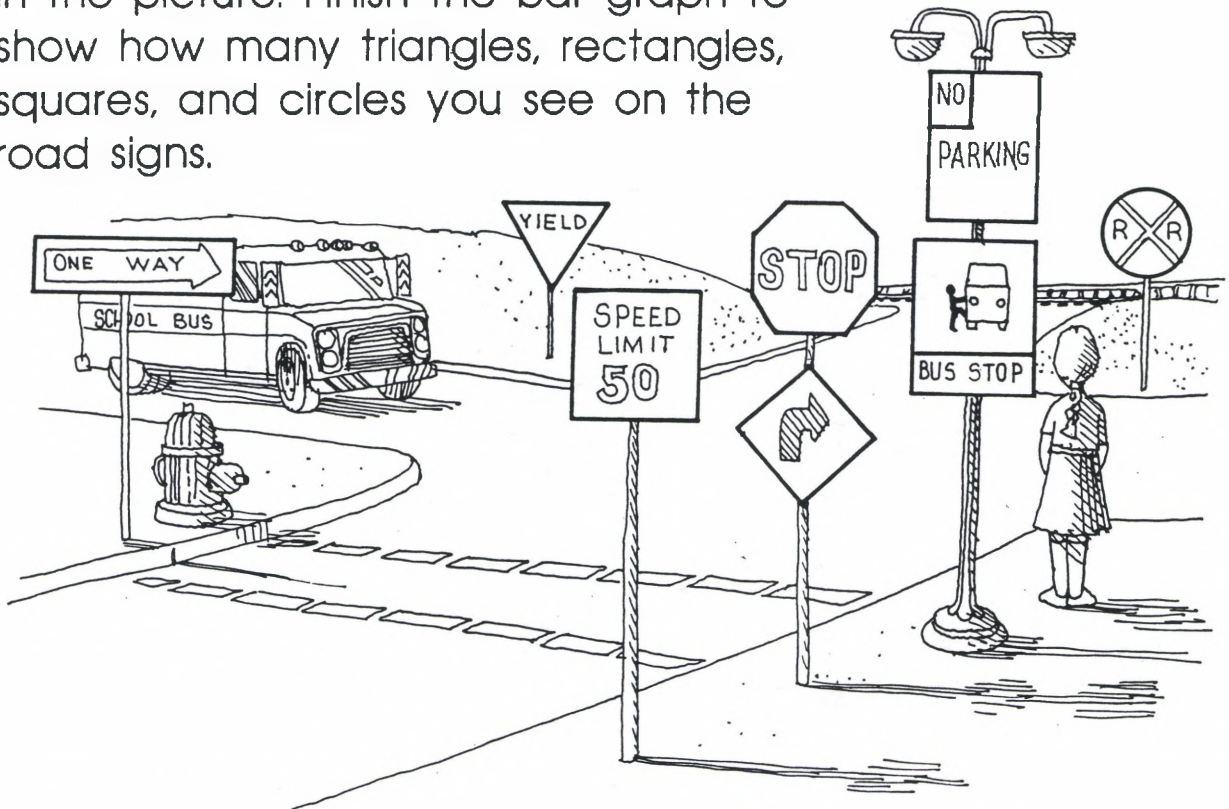
CBE PPO OBJECTIVE: MA-05-28

SHORT DESCRIPTION: Identification of Geometric Shapes

LESSON: Blind Circles

MATERIALS NEEDED: A class of students and an open space.

INSTRUCTIONS: Clear an open space in the middle of the room
(or go to the gym or outside), and gather everyone together
in this space.   Ask all students to close their eyes and
form one large circle, keeping their eyes closed; when they
have formed the circle, they may open their eyes.
     While standing in the circle, students drop hands, close
their eyes again, and this time form 2 separate circles.
Once they have succeeded in doing this and have opened their
eyes, ask them to close their eyes again, stay in their two
circles, and put one circle inside the other.   (Don't
specify which circle goes inside.)   Then ask the circles to
change places.

COMMENTS: Students will need to practice group coordination
to solve Blind Circles.

CBE PPO OBJECTIVE: MA-05-28

SHORT DESCRIPTION: Identification of Geometric Shapes


LESSON: Toothpick Puzzles

MATERIALS NEEDED: Several piles of toothpicks with at least
17 toothpicks in each pile and several buttons.

INSTRUCTIONS: Divide students into pairs.   Pass out a pile
of toothpicks and 2 buttons to each pair of students and
have them do the following puzzles found on the attached
pages.   (Possible solutions follow; the squiggly lined
toothpicks are the ones to remove.)

1. Tell the students to use 17 toothpicks to construct this figure of 6 squares. (Put a diagram of this figure on the board.)
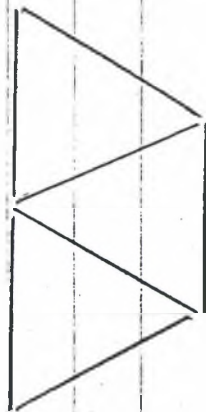
2. Tell the students to remove 5 toothpicks from the original figure and leave 3 squares.
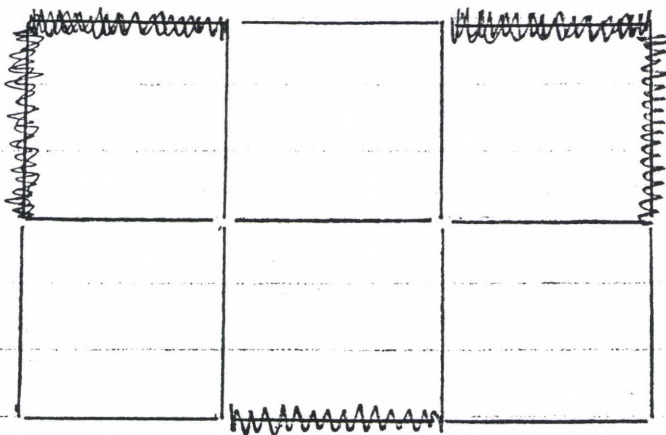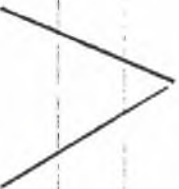
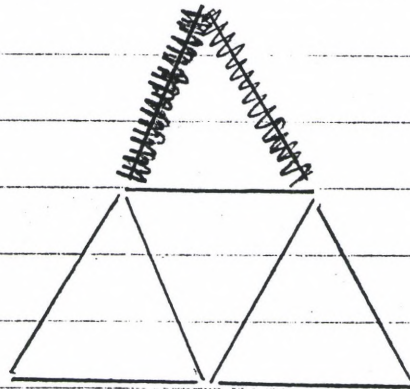3. Tell the students to remove 6 toothpicks from the original figure and leave 2 squares.
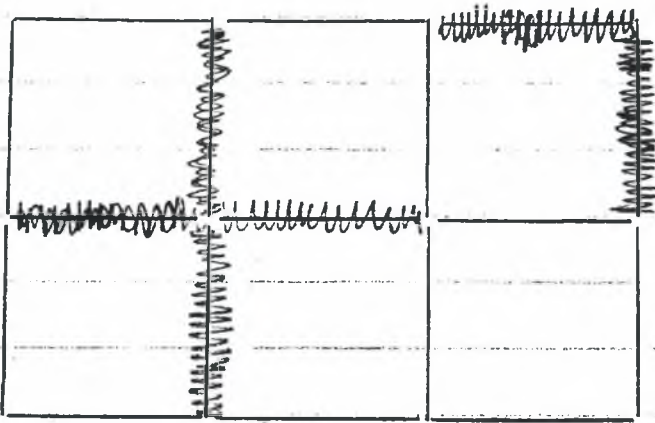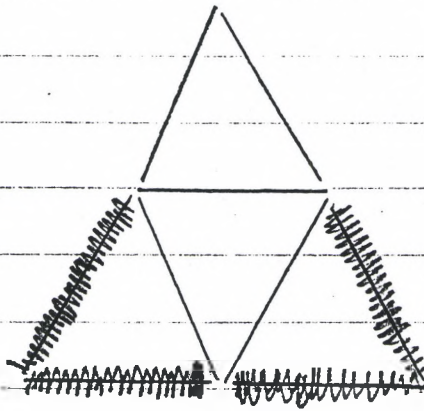
4. Tell the students to use 9 toothpicks to construct this figure of 4 triangles. (Put a diagram of this figure on the board.)
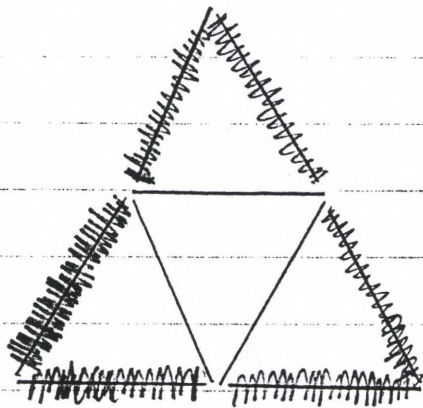
5. Tell the students to remove 2 toothpicks from the original figure and leave 3 triangles.
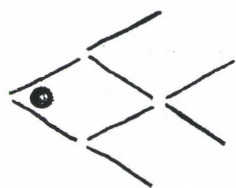
6. Tell the students to remove 4 toothpicks from the original figure and leave 2 triangles.
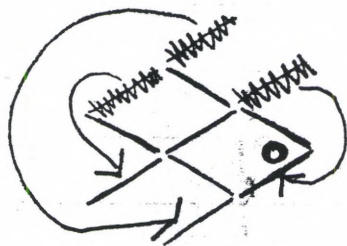
7. Tell the students to remove 6 toothpicks from the original figure and leave 1 triangle.

8. Tell the students to use 8 toothpicks and 1 button to form a fish. (Do not put diagrams of these 2 figures on the board.)

Now, tell the students to move 3 toothpicks and the button to make the fish swim in the opposite direction.

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