

MATCH UNITS

UNIQUE NEW LEARNING SYSTEMS
IN ELEMENTARY SOCIAL STUDIES



**DEVELOPED UNDER
A GRANT FROM THE
U.S. OFFICE OF
EDUCATION BY
THE MATCH BOX PROJECT
OF THE CHILDREN'S
MUSEUM, BOSTON.**

WHAT ARE THESE UNITS?

These are self-contained, multi-media units for 2-4 weeks of study. They fit easily into many curricula. Complete Teacher's Guides show how to use all materials. Units are packaged for circulation throughout a school system, as they have circulated in the Boston area during their development and evaluation. These units can be used in up to ten classes per year for five years or more. They can revitalize elementary Social Studies as the "discovery" kits have stimulated elementary science. The first 3 are now available — eligible for purchase with Federal funds.

These units are the product of the Children's Museum MATCH Box Project. "MATCH" stands for Materials and Activities for Teachers and Children, and is the main title of the U. S. Office of Education grant under which the units were developed. The title conveys the Project's approach: materials and effective ways of using them must be designed together, into flexible units responsive to the needs of teachers as well as learners.

All MATCH Project units are self-contained systems of materials and activities. They rely largely on non-verbal forms of communication between teacher and children. Activities are designed to make learning the product of the child's own actions — children learn from what they are doing rather than from what they are being told.

Multi-media materials

Each unit contains enough materials to involve a class of 30 children in a 2 to 4 week study. A unit may weigh 40-80 pounds and typically comes packaged in 2 large carrying cases. Many types of materials are supplied — films, pictures, games, recordings, film loops and projectors, models, maps, books, and others. But, most importantly, these units contain many real objects for the children to handle and use. The *Japanese Family* unit contains Japanese clothing, household decorations and implements, religious symbols — even a faithfully reproduced album from a real Japanese family. The *House of Ancient Greece*

contains reproductions of artifacts and statues — and real pottery fragments that are 2300 years old. The authenticity of these materials attracts children, engages their interest and respect.

Each unit has an underlying teaching strategy set forth in the Teacher's Guide and expressed in a series of specific lesson plans. The Guide organizes the encounter among materials, children and teacher. These encounters produce involvement from which many kinds of learning emerge. Despite the emphasis on non-verbal learning and communication, MATCH units motivate children to read.

Adaptability

Sixteen different MATCH units have been developed and tested. Many of these deal with topics already found in social studies curricula; others can serve to broaden an existing curriculum. Though most units are classified as "social studies", they are really inter-disciplinary, calling into play art, math, reading and writing skills. And while each unit has been designed and tested at a specified range of grades, it may be used wherever appropriate to curriculum, teacher and class.



**HOW ARE THEY USED IN
A SCHOOL SYSTEM?**

To exploit their potential, MATCH units should move around a school system. They can be circulated by a resource center, instructional materials center, library, Title III project, audio-visual center, or a museum with a school loan program.

Circulation and maintenance

Units have been circulated in just this way to schools in the Boston area by the Children's Museum. Unit carrying cases are compartmented, and compact enough for classroom storage. Materials are protected, accessible, easy to inventory, and simple to repack. Individual items are durable. Students respect the quality of the materials, and handle them carefully.

Packaging reflects the Museum's experience in "turnaround" — checking out each unit between uses. The Museum's School Services Department reports that careful turnaround averages about an hour per unit, allowing for complete inventory, replenishment, and possible repairs. This is an important procedure that can be carried out by an interested teacher. Audio-visual or materials centers will find the task routine.

Spare parts are available to permit each unit an estimated service life of five years and more.

Ten copies of the Teacher's Guide are provided with each unit. The extra copies are for replacement — and to permit advance planning by teachers on the circulation schedule.

Circulated in this way, a unit can be used by as many as ten classes — 300 children — a year.

Varied uses

In addition to normal classroom use, these units are effective in teacher training, curriculum development, and special education programs.

In-service training programs can use MATCH materials as examples of an innovative technique, for practice with a truly multi-media approach, in small group teaching, and in studying the design, analysis, and evaluation of teaching/learning systems.

Curriculum planners can experiment with these units in the same way, build them into new core curricula, use them as spring boards into inter-disciplinary development involving art, history, literature, technology.

Special education programs have found these units particularly effective in reaching slow learners, non-verbal children, and other special audiences. Because these units are self-contained and well organized, they can be used by volunteers, and other people not trained as teachers.



HOW ARE THEY USED IN A CLASSROOM?

A MATCH unit arrives in the classroom ready to be used. Except for such items as school supplies or 16 mm projectors, all materials needed are at the fingertips of teacher and students. And there is a complete program for using everything — The Teacher's Guide.

Teacher's Guide

The Teacher's Guide is a map to the unit. It has been designed to make the unit work, even for a teacher who may be using it for the first time. The Guide sets forth clearly the unit's content and the underlying teaching/learning strategy. The teacher is free to adopt the approach, or adapt it to her own.

The Guide contains lesson plans, classroom arrangements and procedures, background information, ideas for extending the unit. Material required for each activity is identified. Simple directions make proper repacking easy.

Teacher's role

The teacher activates the entire unit. From lesson to lesson she plays various roles — leading the class, moderating a discussion, perhaps acting as consultant to teams of students working independently. Whatever the role, the Teacher's Guide provides plans and background that keep her participation in the learning situation active and meaningful.

The materials are designed to support the teacher in any or all of these roles. There are opportunities for shared activity as well as for highly individualized instruction. When student teams are suggested, team guides are provided: there is one for each of the five classroom "families" organized in the *Japanese Family* unit, and for the teams of "archeologists" using a variety of materials to discover how people lived in *A House of Ancient Greece*. These student guides provide clues, focus activities, and permit the teacher to be a roving consultant or supervisor.



PROJECT HISTORY

The Children's Museum believes in the potential of real objects to mediate learning. This conviction, and the Museum's experience circulating materials among Boston area schools, helped to launch the MATCH Project in 1964. Under a grant from the U.S. Office of Education, the Museum set out to explore the role real objects can play in the learning process, and to discover ways of combining materials and activities into effective teaching/learning systems. The MATCH units are the result.

Development and evaluation

Each unit has been developed by a team of Museum staff members, subject matter specialists, and experienced teachers. As part of the development process, lesson ideas and materials were tried out in many schools in and around Boston. When each unit reached the prototype stage, it was formally evaluated by teachers in a number of urban, suburban and rural school systems. Teachers filed daily written reports on individual lessons and submitted careful appraisals of each unit as a whole. Specialists observed classes periodically to provide other perspectives.

The following people are familiar with the Children's Museum units, and their evaluation:

- Dr. Virginia Biggy, Assistant Superintendent, Concord Schools, Mass.
 - Miss Elizabeth Dunkman, Division of Instruction, Newton Schools, Mass.
 - Mr. Arnold Lanni, Senior Supervisor in History, Mass. Dept. of Education
 - Mr. John McNaull, Elementary Principal, Somerset Schools, Penn.
 - Dr. George Miller, Dean of Education, Lesley College, Cambridge, Mass.
 - Mr. Ray Mills, Regional Director, Appalachian Regional Instructional Materials Center, Duncansville Schools, Penn.
 - Mr. Pat Mogan, Assistant Superintendent, Lowell Schools, Mass.
 - Mr. George Moore, Elementary Curriculum Coordinator, Wellesley Schools, Mass.
 - Miss Ruth Morgan, Coordinator, Instructional Materials Center, Salinas, Calif.
 - Mr. Michael Ripton, Associate Curator of Education, William Penn Memorial Museum, Harrisburg, Penn.
 - Dr. Robert Sperber, Superintendent, Brookline Schools, Mass.
 - Miss Katherine Murphy, Teacher, Boston Schools, Mass.
- Now, after two to three years of development and evaluation, MATCH Project units have entered a new phase: production for use throughout the national educational community.

Production partner: AS&E

AS&E—American Science and Engineering—has become the Museum's partner for producing and distributing the Museum's units. Since 1959 the company's Education Division has worked with five Federally sponsored groups designing new curricular materials for elementary and secondary schools: the Physical Science Study Committee (PSSC) and the Elementary Science Study (ESS) of Educational Services, Inc.; the Secondary School Science Project (SSSP) of Princeton University; the Science Curriculum Improvement Study (SCIS) of the University of California at Berkeley; and the American Association for the Advancement of Science (AAAS) program "Science—A Process Approach."

The MATCH Project is therefore the sixth group to invite AS&E's cooperation in making innovative educational materials more widely available at reasonable prices. AS&E's experience with systems design and quality control in science programs will be applied to meet the needs of the Museum's unique units in social studies. Production versions of these units, starting with the 1968 Trial Editions, will retain the quality and authenticity that have characterized the prototypes.



HOW WELL DO THEY WORK?

Teachers who have tried and evaluated MATCH materials are very enthusiastic: 86% of the teachers who tested some of the units in 1966 said they wanted to use them again. And a disadvantaged-area teacher put it this way to the *Boston Globe* on March 20, 1968: "MATCH materials are sensational! For the first time in my life I saw children come alive."

In the classroom

Other responses from the 157 teachers who participated in the 1966 evaluation support this comment. They were asked to compare class reactions to MATCH units with reactions to similar subject matter presented through conventional materials; answers are tabulated below.

In general while using MATCH material	More than usual	Same as usual	Less than usual	No response
Class interest in subject	83%	14%	2%	1%
Class attentiveness	66	29	3	2
Apparent learning of subject matter	54	33	7	6
Spontaneous questions answered	59	34	4	3
Involvement of less verbal children	56	41	2	1
Children liked what they were doing	85	13	1	1

Furthermore, shy or non-verbal students reveal interest and ability untapped by more conventional materials. They discover their capacity to learn directly from their own investigations. Self-confidence leads to cooperation and interaction in the classroom. A teacher who completed a MATCH unit in October reported she had achieved a relationship with her class not established in other years until April.

Inevitably teachers are encouraged—they can see their students learn. In fact, only 27% of the 1966 evaluation group felt the need of a special test on a MATCH unit. And on a 5-point scale ranging from "very low" to "very high", 76% rated the success of the units as "high" or "very high". In short, teachers like the MATCH units because they work.

In a school community

Teachers share their enthusiasm. Other teachers become interested. They discuss new ways to use the units, and to adapt the MATCH approach to other teaching/learning situations. Interest and confidence in innovation grow.

Enthusiastic students generate parental curiosity—the same evaluation reports cited above indicate a consistently high level of parent interest. These units are more understandable to parents than much of the "new math" or "new science"—Japanese table manners or problems of city planning are easier to talk about. Parent-teacher dialogues develop, leading to wider community appreciation of the benefits of new educational materials. In and out of the classroom, MATCH units work to increase communication.



CONTENTS

Note: Materials shown and listed are prototypes. Based on its experience with the prototypes, the Children's Museum may modify the packaging or contents of Trial Edition units, in order to improve handling or classroom effectiveness.

Picture Pool: 36 photographs (11" x 14") mounted on heavy cardboard

Aerial Photograph: 40" x 50" view of Boston

Film: "The City" (EBF, 11 min., Color) About Chicago, with narration

Film: "People of the City" (EBF, 16 min., B&W) People's lives in Stockholm, city sounds, no narration

City Model and chalkboard: 80 wooden buildings of different functional types. Buildings magnetically attach to a tiltable plate for class viewing. Roads, etc., can be drawn on the plate with chalk

LP Record (12") City Sounds, to be recognized and interpreted

Books: various trade books about cities

3 "Magic Windows": through which children look to 'see' what is going on in the aerial photo

Large Layout of "Five Corners": used in city planning problem, and 40 desk copies for the children. (1000 are supplied with each unit for replacement purposes)

Teacher's Guide: (total of 10 supplied with each Box)

Carrying Case to store and organize materials

PRICE OF THE TRIAL EDITION

Option A — Complete unit \$525.00

Option B — Unit without 2 films \$315.00

THE CITY

Grades 1-3

"The City" is about "cityness." Its purpose is to help young children form an idea of what a city is, what happens there, how a city changes, that life and the form of the city are related. The unit is not planned to teach specific facts about cities, but rather to reveal their characteristics through lessons that generate ideas with which the children and teacher can work.

The Teacher's Guide contains a variety of lessons and suggests ways of grouping them to emphasize different themes — people and dynamics of the city, the city neighborhood, the physical city.

The City unit calls for the children to create and plan cities with model buildings, to play roles in an accident situation, to match city sights with city sounds. They analyze an aerial photograph. They make maps. As members of a neighborhood, the children confront the problem of how best to route a new highway through their part of the city. Through discussion and involvement this typically current problem becomes real to them.



JAPANESE FAMILY

Grades 5-6

Role-play with authentic materials gives a real feeling for life in a contemporary, middle-class Japanese family. The class is divided into five "families" with differing characteristics. Each "father" organizes his family, using his own Family Guide and role cards showing students how to play the part of a Japanese parent, grandparent, or child. Each family has an illustrated booklet, tracing its history back to 1860, and film loops showing the family at work and play today. These booklets and films reveal the political, social, and economic evolution of Japan, and convey the dynamic mixture of traditional and modern elements characteristic of Japanese life. The families use Instruction Charts to learn about life in a Japanese house: one group sets the table, masters eating with chopsticks, and is introduced to Japanese table manners; others learn to wear kimonos, geta and tabi, how to set up the family shrine, and how to decorate the house. Each family in turn shares its special knowledge and skills with the rest of the class. There are calligraphy brushes, ink sticks, a record of Japanese sounds, and books for all to work with—including an authentic photograph album spanning four generations of a family living in Japan today.

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Clothing and footwear: *kimonos, shoes, socks, instruction chart*

Religious objects: *statue of Buddha, bell, ancestor tablet, incense (extras supplied), instruction chart*

Decorative objects: *2 scrolls, dried flowers, vase, instruction chart*

Table and Tableware: *chopsticks, dishes, dried seaweed (extras supplied), instruction chart*

Japanese books: *magazine, comic books, poetry book with translations*

35 Calligraphy brushes, box, ink sticks (with extras)

Family Album: *authentic reproduction from a real family in Japan*

Projector: *Super-8, Technicolor, Model 510 A*

8 Film loops: *aspects of Japanese life, old and new*

Record: *12" Lp "Sounds of Japan"*

5 Family Guides: *directions to fathers for doing lessons and role cards for family members (4 extra sets supplied)*

15 Family Histories: *of the five classroom families*

Teacher's Guide: *(10 supplied with each Box)*

Carrying cases to store and organize materials

PRICE OF THE TRIAL EDITION

Option A — Complete unit \$576.00

Option B — Unit without projector \$476.50



AVAILABILITY

AS&E and the Children's Museum have scheduled 1968 production of Trial Editions of the three units described in detail in this brochure: *The City*, *Japanese Family*, and *A House of Ancient Greece*. Commercial editions of these units are now planned for 1969. They will be followed by some of the other units already developed under the MATCH Project, such as:

MEDIEVAL PEOPLE — (Grades 5–6) Using character books, costumes and props (falconry gear, psaltery, wool carders, etc.), children enact episodes in the life of a medieval manor.

NETSILIK ESKIMOS — (Grades 3–4) A seal hunt and other activities of Netsilik life are recreated through the use of authentic Eskimo tools, clothing, other artifacts, films and records.

THE ALGONQUINS — (Grades 3–4) Children savor the daily life of the Northeast Woodland Indians, scraping deerskin, hafting an arrowhead, preparing food, assembling a trap, acting out stories of spirit help.

HOUSES — (Grades 1–3) An Eskimo igloo is compared with a Nigerian mud-and-thatch house, to show how physical settings call for different ways of life. Children build a mud-and-bamboo wall, assemble an igloo, scrape deerskin.

WATERPLAY — (Kindergarten and primary grades) A water table with unbreakable things to manipulate; also, recordings, films, and stories.

MATCH PRESS — (Grades 5–6) A "publishing company" is set up with a portable press, type fonts, paper, ink, and instruction cards. Each class prints and binds its own book.

PADDLE-TO-THE-SEA — (Grades 4–6) A classic story of the Great Lakes is made real through related objects and activities — the children cooperate in creating a large mural-collage, rigging a breeches buoy, bartering trinkets for furs, launching a class "Paddle".

IMAGINATION UNLIMITED — (Grades 4–6) The child's awareness of his unique perceptions and his ability to express them are developed through the use of illustrated word cards, unusual objects, and movies.

New units — some responding to the interests and experience of schools that buy and use the first Trial Editions — will be developed and produced. The Children's Museum and AS&E will then be involved — with the schools — in the full cycle of educational innovation: research, development, trial production, use evaluation, revision, and on to new development.



Partners in Social Studies Innovation



AMERICAN SCIENCE & ENGINEERING, INC., 20 OVERLAND ST., BOSTON, MASS. 02215

THE TRIAL EDITION

Contents: Details on the materials supplied in each unit — and certain purchase options — are provided in the individual unit descriptions in this brochure. The following general provisions apply:

Replacements — Each Trial Edition unit includes a reserve supply of consumable items. Common material, such as the olive oil in *A House of Ancient Greece*, may be replenished locally. Replacements for other materials may be ordered from AS&E.

Extra Teacher's Guides — Each Trial Edition Unit includes 10 copies of the Teacher's Guide.

Ordering: Prices and price options are included in the individual unit descriptions, and on the order form enclosed with this brochure.

ESEA/NDEA Eligibility — In most States, MATCH units may be purchased with Federal funds available under Title III of NDEA, and under Titles I, II, and III of ESEA. Check local regulations to be sure.

Commercial Edition Discount — Purchasers of Trial Edition MATCH units will be offered a special discount — on a one for one basis — on every unit of the same title ordered in the first Commercial Edition.

Cost Analysis — The following table shows how circulation and repeated use affect the per pupil cost of the three Trial Edition units:

ESTIMATED PER PUPIL COSTS FOR THE USE OF MATCH MATERIALS

30 class uses (2-4 weeks per use) over 3-5 year period	Initial Unit Cost	Total Pupils (30 per class)	Cost per pupil
JAPANESE FAMILY	\$576	900	\$0.64
A HOUSE OF ANCIENT GREECE	525	900	0.58
THE CITY	525	900	0.58
50 class uses (2-4 weeks per use) over 5-7 year period			
JAPANESE FAMILY	576	1,500	0.38
A HOUSE OF ANCIENT GREECE	525	1,500	0.35
THE CITY	525	1,500	0.35

Turnaround costs. This table is based solely on the initial price of each unit and makes no provision for "turn-around" — the cost of servicing a unit between uses. Turnaround costs include the out-of-pocket expense of replacement materials, and perhaps a figure representing the time allocated to each turnaround by some member of the school staff. Such costs cannot be predicted accurately since they depend on how units are scheduled, handled, and maintained by the school that owns and circulates them. But based on its experience circulating these units, the Children's Museum estimates that normal out-of-pocket turnaround costs might range from a dollar or two for the Greek and City units to a maximum of \$4.00 for the *Japanese Family*. At these rates, turnaround would increase the per pupil costs shown above by less than \$.10 over a three to five year period.