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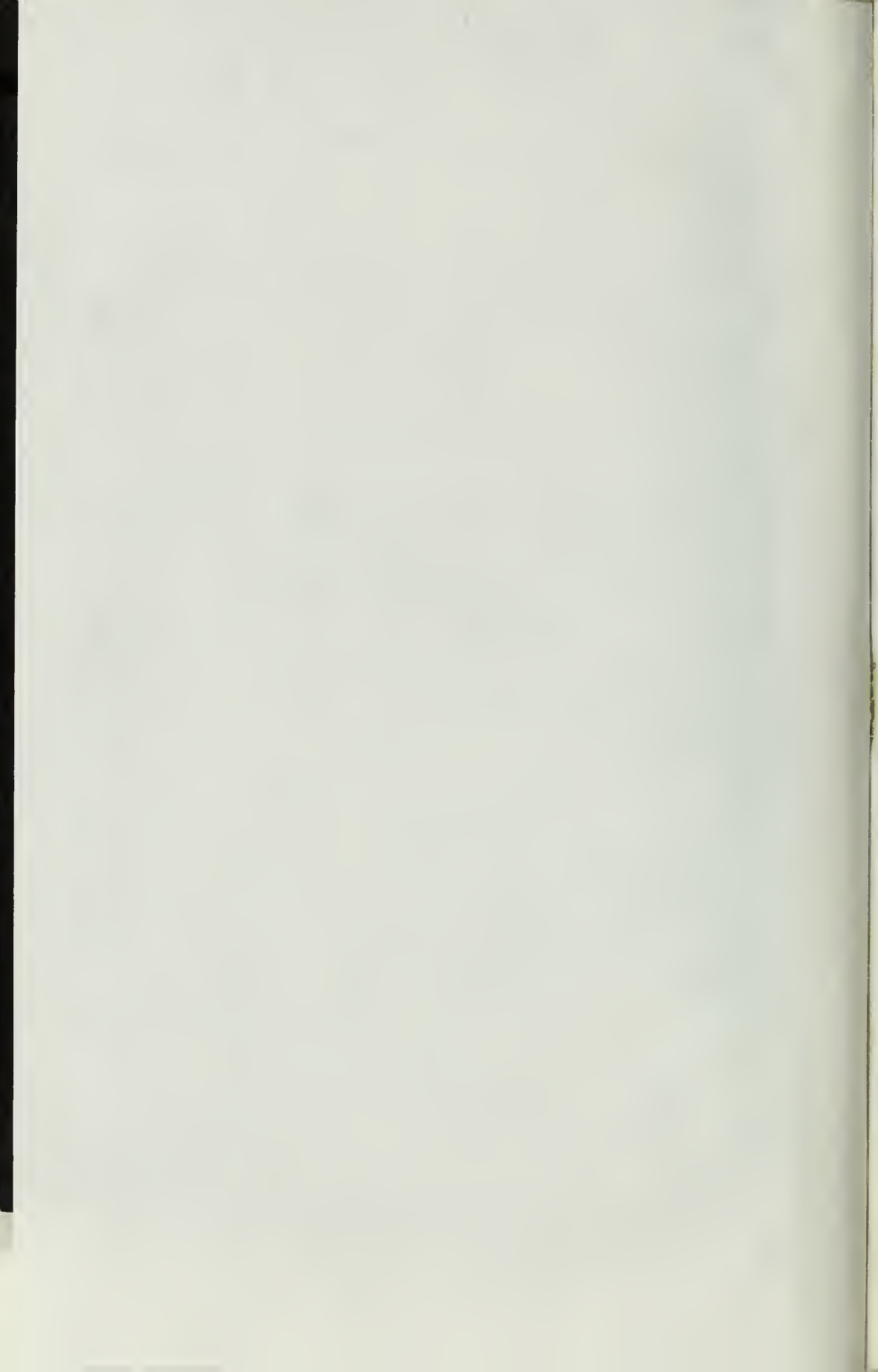
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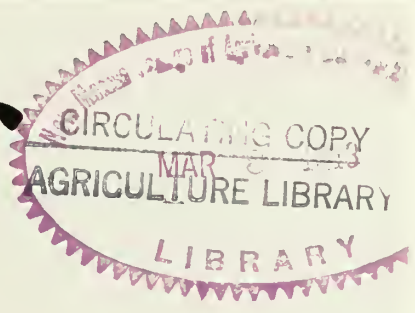


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46

Toys



That Can Be Made at Home



Children get as much joy thru sharing in the construction of their playthings and play materials as in using them. "What color shall we paint it, Jimmie?" "R-E-D!" said Jimmie. So, red it was.

Circular 546

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Grateful acknowledgment is made to co-workers on the University staff for helpful suggestions in the preparation of this material; especially to Arthur Varland, student, who ably helped in developing and in adapting many of the designs for the toys pictured in this circular and in drawing up the specifications for them; to Marshall Lind, student, who made many of the drawings; to Mr. and Mrs. L. B. Miller, Champaign, Illinois, for suggestions and for photographs on the cover and on pages 11 and 16; and to the WPA Decatur Toy Project for permission to include the toys shown on pages 8, 9, and 10, which were developed in its shop.

12.546
1915

Toys That Can Be Made at Home

By EDNA E. WALLS, Assistant Professor of Child
Development and Parent Education

EVERY CHILD NEEDS TOYS — toys that will absorb his interest, that are suited to his stage of physical and mental development, and that provide wholesome outlets for his emotions and opportunity to work and play happily with others. Very little money is required to supply a child with suitable play materials, for they can be made at home; and homemade toys can be as attractive and satisfying as the most expensive purchased playthings. Often they are more appreciated, especially when the child shares in the making.

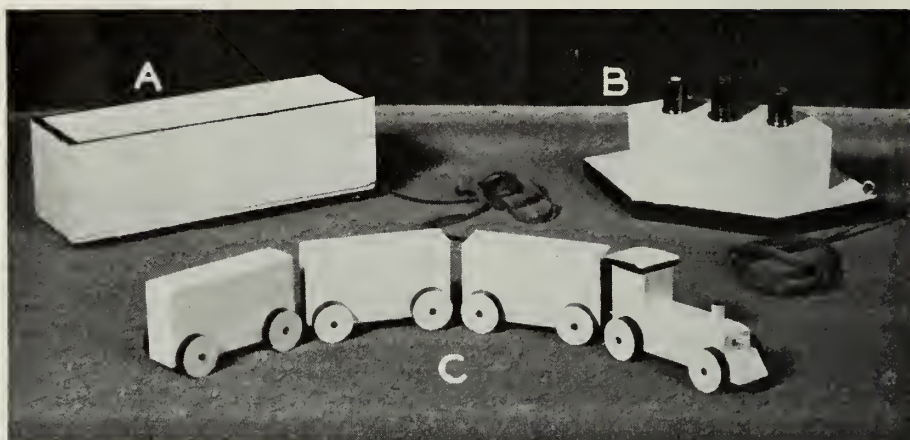
The toys pictured in this circular are easy to construct and make use only of common inexpensive materials, most of which can be picked up around the farm and home. The toys are so simple that in many cases if the materials listed are not available, other materials that are at hand can be used. Nor are expensive and unusual tools needed. A hammer, screwdriver, bench vise, coping saw, handsaw, ruler, square, bit brace with several drill bits, block plane, files, and pocket knife will do the job. Other tools such as a smoothing plane, miter box, automatic punch drill, draw knife, spokeshave, gluing clamps, and a turning lathe, altho not so necessary, help to give a better job.

Many of the toys shown on the following pages require only some pieces of wood and some glue. Others make use of cheese boxes, spools, old clock works, broomsticks, and similar common articles. A few hours spent working over these simple materials will result in toys that any child would be glad to have.

TO OBTAIN PLANS AND SPECIFICATIONS for these toys, address a postal to University of Illinois, College of Agriculture, Urbana, Illinois, indicating by name and letter the plans wanted. Order only those in which you are genuinely interested — *not more than three plans can be sent at one time.*

Some of the toys are so simple to construct that a clever worker will not need a plan, but can make them from the illustrations.

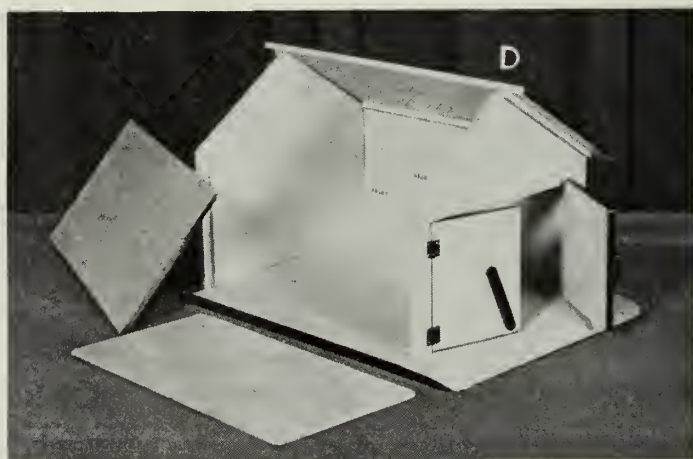
AN EXHIBIT OF HOMEMADE PLAY MATERIALS FOR YOUNG CHILDREN, including many of the toys in this circular, can be obtained for community use by addressing the State Leader in Home Economics Extension, University of Illinois, Urbana. Terms will be furnished on request.



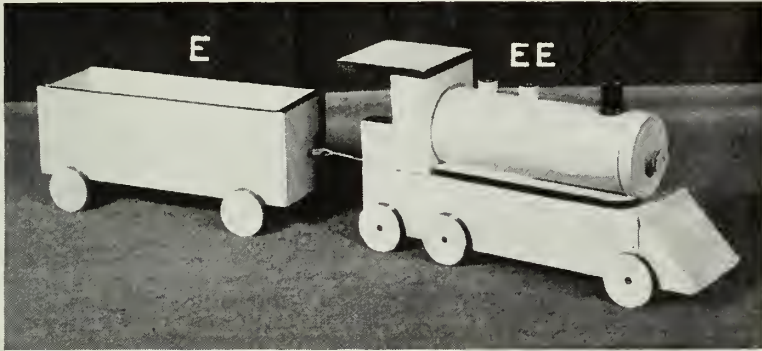
(A) Gliding box. Made from a 5-pound cheese box, 4 furniture glides, a screw eye, and a shoestring. Large enough to hold several small articles. Slides easily over the floor.

(B) Tugboat. 11 inches long, 6 inches wide. Requires 3 pieces of ordinary lumber and 3 spools.

(C) Block train. Made from several small blocks of wood, each car about $2\frac{1}{2}$ inches high and $4\frac{1}{2}$ inches long. Rolls easily on wooden wheels.

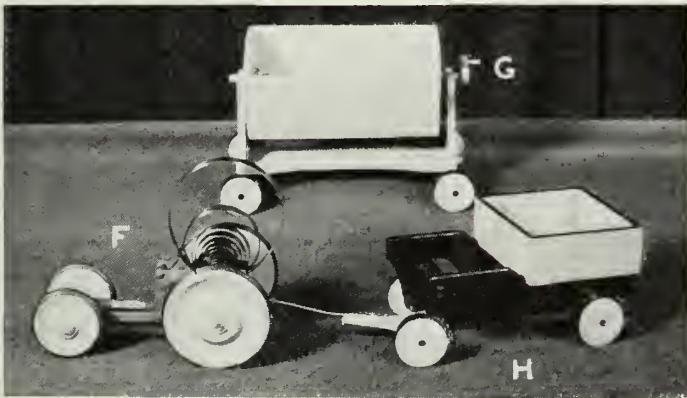


(D) Build-it-yourself garage. Base 18 by 13 inches; 11 inches high. Plywood or similar material, a few small scraps of other wood, and 4 small hinges needed. Can be taken apart and put together easily by a child.



(E) Cheese-box car. Built chiefly from a cheese box, a screw eye, and material for wheels. This and the cheese-box engine can be hooked together and pulled with a string.

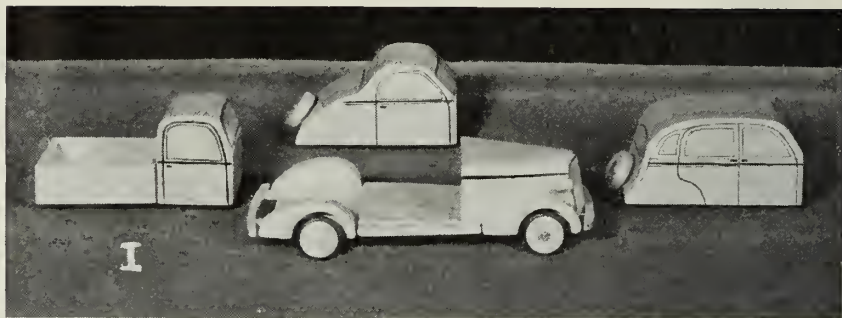
(EE) Cheese-box engine. Materials needed include a cheese box, cookie can, several pieces of thin wood such as plywood, 4 spools, and some stove bolts.



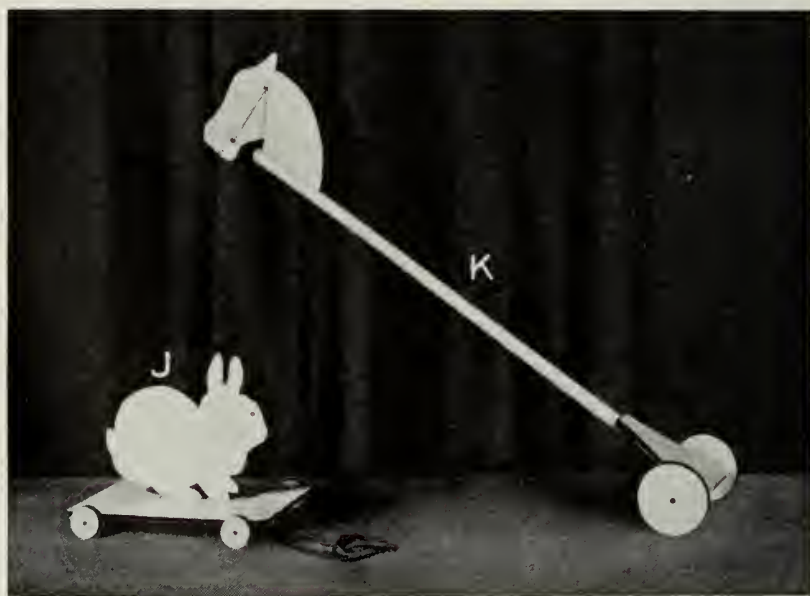
(F) Clock-movement tractor. Requires more skilful construction than some of the toys. Makes use of a discarded alarm clock, several inches of No. 9 wire, and some small pieces of metal and wood. Can be made either as a two-wheel drive or with a power pulley.

(G) Dump wagon. About 10 inches long. Box is made from plywood, other parts from scraps of wood. Box is $3\frac{1}{2}$ inches deep and can be easily tipped.

(H) Wagon with movable front axle. About 10 inches long and 5 inches high. Built chiefly of plywood or some similar wood. Front axle can be turned to either side.

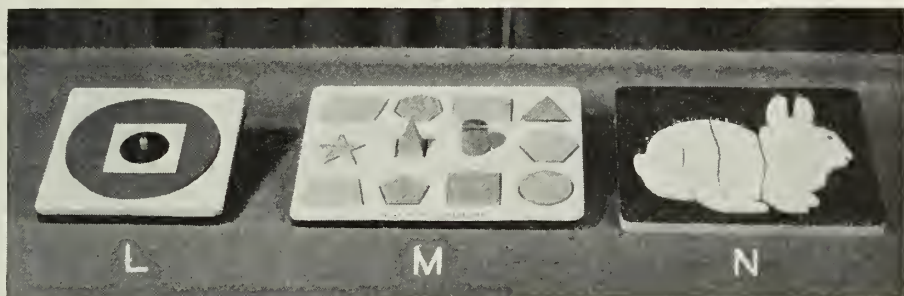


(I) Automobile chassis with three interchangeable bodies. 11 ½ inches long, about 4 inches wide. Several pieces of wood of various sizes are needed. Requires more care in construction than some of the toys shown. Will fit into garage pictured on page 4.



(J) Rabbit on wheels. Base is 8 inches by 13; rabbit is 8 ½ inches by 11—both cut from plywood or similar wood. A few other small pieces of wood needed. Full-scale pattern of rabbit included with plan.

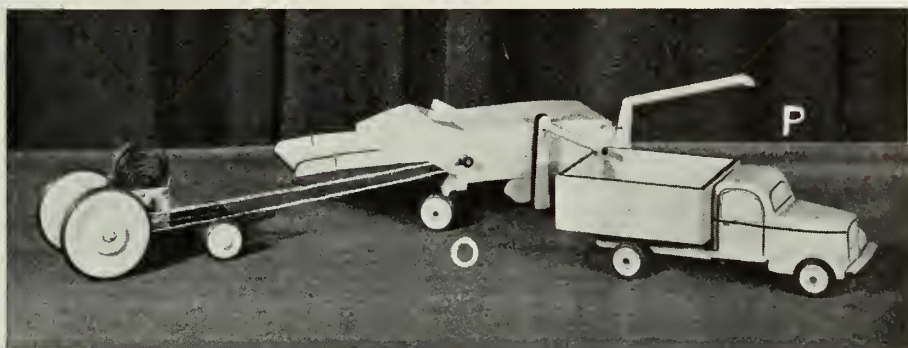
(K) Broomstick horse. Made from a broomstick, some plywood, and a few other common materials. Full-scale pattern of horse's head included with plan.



(L) Concentric rings and squares. 9 inches square. Made from thin wood such as plywood and a dowel pin. Finishing the sections in two colors provides contrast between rings and squares.

(M) Geometrical form board. 11-by-14-inch base. Cut from plywood or similar wood and 2 small blocks.

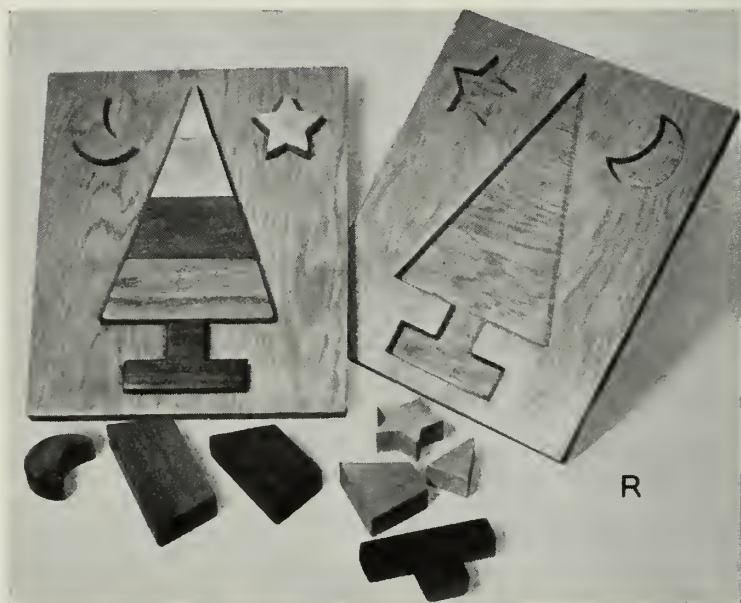
(N) Form-board rabbit. Base is $10\frac{1}{2}$ inches by $12\frac{1}{2}$. Made almost entirely with a coping saw and plywood. Full-scale pattern for rabbit included with plans.



(O) Threshing machine. 16 inches long, about $4\frac{1}{2}$ inches wide. Requires several sizes of wood and careful construction. Pulley on side can be run by a belt from clock-movement tractor. (Clock-movement tractor is described on page 5.)

(P) Farm truck. About 12 inches long, 4 inches high. Made from several pieces of wood of various sizes.

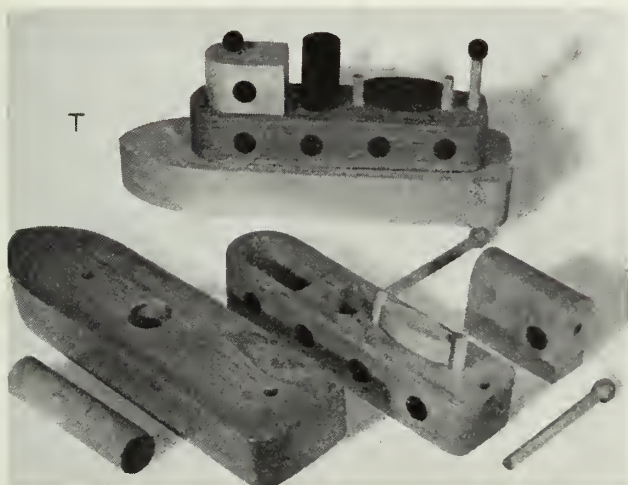
(Q) Building blocks (not illustrated). A set of about 160 blocks all cut from 2-inch material. Enough blocks to keep several children busy and provide opportunity for group play.



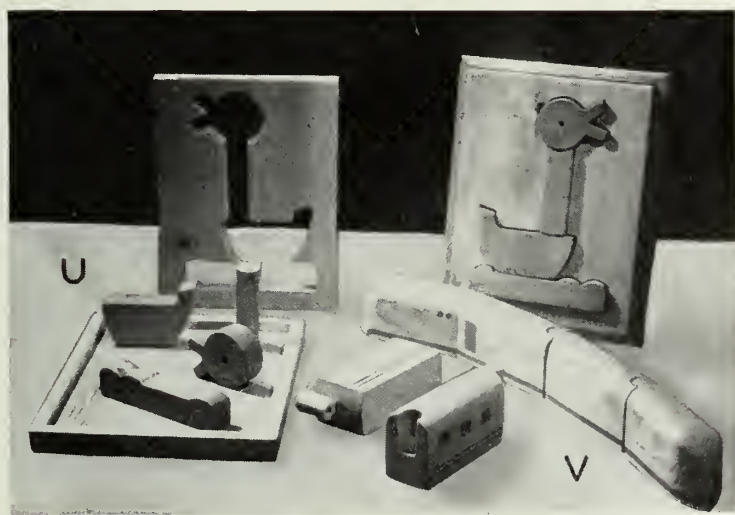
(R) Tree form board. 9 1/2 inches by 11 1/2. Requires 2 pieces of plywood or similar wood and 3/4-inch stock. For striking contrast, the blocks forming the tree and the moon and star should be cut from several kinds of wood or finished in several different colors.



(S) House form board. 11 inches by 16. Made from plywood or similar wood and some thicker wood. Should be finished in contrasting colors.



(T) Block boat. $3\frac{1}{2}$ inches wide, 11 inches long. Built from several boards, 2 wood balls, and 2 dowels. Sections are held together by dowels so the toy can be taken apart and rebuilt easily by a child.

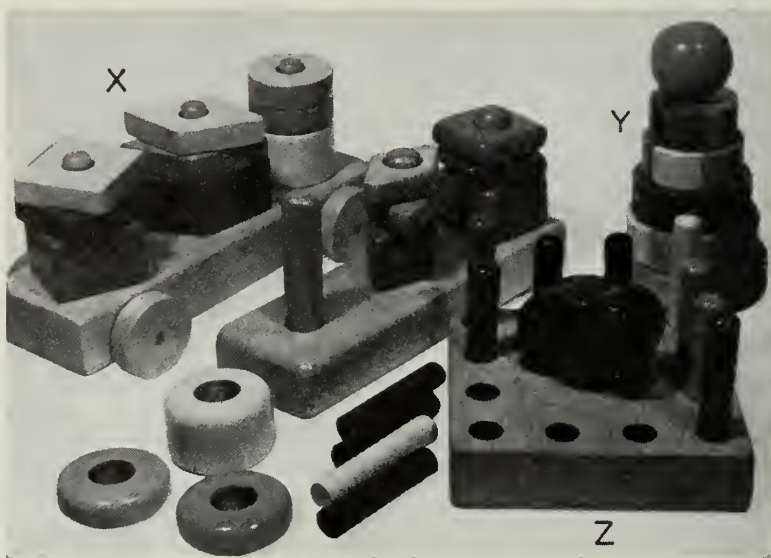


(U) Duck form block set. 11 inches high, 8 inches wide. Cut-out form of duck made from $\frac{1}{4}$ -inch plywood, other parts from $\frac{1}{2}$ -inch material. Should be finished in contrasting colors.

(V) Streamlined train. Can be made from about 30 inches of standard 2-by-4-inch lumber. Finished cars are about $1\frac{3}{4}$ inches wide, $2\frac{1}{2}$ inches high, and $5\frac{1}{2}$ inches long. Doors and windows are painted on.



(W) Block train. Each car is about 7 inches long and $2\frac{3}{4}$ inches wide. Made of plywood and standard board lumber. Cars are easy to couple together and to uncouple.



(X) Pull form cart. 12 inches long, $3\frac{1}{2}$ inches wide. Blocks can be cut from different pieces of scrap wood. Made either with wheels or without wheels as a sliding cart.

(Y) Color cone. Sections vary from $4\frac{1}{4}$ inches in diameter to 3 inches, and fit on a $\frac{3}{4}$ -inch dowel.

(Z) Elephant stockade. Base 7 inches square, 2 inches thick. Stockade requires about 5 feet of $\frac{3}{4}$ -inch doweling. Holes are large enough so the dowels can be easily taken out and put back in.

A PLACE TO USE THE TOYS

To supply a child with toys and play equipment is to meet his needs only in part. There must also be a place to use the toys.

A safe, airy playroom, or at least a corner all his own, and outdoor play space that is ample and safe are necessary if a child is to get full benefit from his toys. Only in such surroundings can a child give full scope to his creative urges and have opportunity to develop physically, mentally, emotionally, and socially. He needs a place where he can meet other children and where he can try out his own ideas without too many don'ts and other restraints.

The furniture and equipment for such a room or corner or outdoor playground can also be made at home. With a little guidance, older brothers and sisters can build most of these articles for the younger children and thus be sharing in their interests and activities. Directions for making such furniture will be found in several of the publications listed on page 15.

An airy well-lighted basement provides this attractive play space for the children. In another corner Mather has her laundry, and in an alcove Father has his tool bench. At times all use this space for playing or working together. In larger homes or in homes without a basement, an extra room on the first floor might be set aside for a play space.



ADAPTING A HOUSE TO NEEDS OF YOUNG CHILDREN

The house is the little child's first world, but unfortunately most houses are built only for adults. Little thought is given to adapting them to short arms and legs; and the child is led to depend constantly on his elders for simple services that he could and might better do for himself. Following are some minor adaptations that are not difficult to make in most houses, yet will contribute greatly to the development of the child's self-reliance and self-confidence.

Entrance hall (preferably located near outdoor play space)

Closet or low shelf and space in which to hang children's outer garments
Space for outdoor play equipment unless other space is provided for it

Bathroom

Small low bowl or low table with portable basin
Soap container conveniently placed
Small, low toilet or toilet chair
Low hooks for toothbrush, drinking cup, and comb
Low rack or hooks for face cloth and towels
Low shelves in linen closet for children's supply of face cloths and towels

Kitchen or dining room

When space is limited, a small table with adjustable height and rounded corners might be attached to the wall at a convenient, well-lighted place. Similarly, benches that fold against the wall might be substituted for small chairs.

Playroom or nursery

Well lighted and ventilated; as near as possible to the room where the mother spends her working hours
Ample well-planned closet space or low shelves in the room for blocks, books, and other work and play materials used by small children
Facilities for attaching indoor equipment, such as hooks in the doorway for a swing
Floor that is easily cleaned and *not cold*
A hinged and braced blackboard-easel may be attached low on the wall

Bedroom

When necessary could be combined with the playroom or nursery
Closet or closets with—
Low hooks and rods
Low shelves for shoes
Low shelves or drawers that are easily manipulated
Bed and dressing facilities adapted to a child's needs (*when space is limited, these may be built in*)

Living room

Low shelf or cupboard space for selected books, toys, and play materials

Stairway to second floor and basement

Low hand railing
(*Stairways, to be safe, should never be used for storage space*)

HOME EQUIPMENT NEEDS OF CHILDREN

Independence and self-reliance in such daily routines as eating, going to bed, bathing, and toileting can be developed early in the child's life if some of the furnishings and equipment of the home are adapted to his use. Most small children are also eager to help with household tasks when equipment is provided that is adjusted to their stature, strength, and ability. Following are some suggestions about furnishings and equipment for these purposes.

For eating

- Sturdy table and chairs of suitable height
- Table covering and napkins adapted to a child's use
- Substantial dishes, silver, and glassware that are easily handled

For sleeping

- Bed of correct size for each child
- Comfortable sanitary mattress of good quality
- Lightweight bed coverings that a child can easily handle
 - (When bed is of suitable size and bed coverings lightweight, the small child may learn to make his own bed and enjoy doing it)

For bathing and toileting

- Tub, shower bath, or equivalent equipment, which a child can gradually learn to manipulate with little or no assistance
- Lavatory or basin low enough to be used without help
- Sanitary stool or toilet chair of suitable size
- Individual hooks or racks for keeping toothbrush, face cloth, towels, and comb orderly and within reach
- Dressing table of suitable size and a mirror adapted to the child's height

For helping with household tasks

- Baskets, pails, and similar receptacles that are easily handled when filled
- Wagon or other device for hauling
- Desk equipment adjusted to child's stage of development
- Lightweight household tools which the child can use easily

RECIPES FOR HOMEMADE CLAY AND PASTE

Clay

- | | |
|------------------|----------------------|
| 1 cup flour | Enough water to hold |
| ½ cup salt | ingredients together |
| 3 teaspoons alum | Vegetable coloring |

When not in use, keep clay in a covered container. A little more water kneaded into the clay when the surface dries will keep it in good condition.

Paste

- | | |
|---|-----------------------------|
| 1 cup flour | 1 teaspoon benzoate of soda |
| 3 cups water | or salicylic acid |
| Prepare as for starch and boil for 5 minutes | Vegetable coloring |

PLAY MATERIALS FOR CHILDREN OF DIFFERENT AGES

In selecting play materials for children one is often puzzled to know what things are most suitable for a given age. Of course children of the same age may show great differences in the maturity of their interests, but as a rule they are very much alike in this respect.

Of twenty-five play materials tested for their interest to children two, three, four, and five years old, the following proved most attractive, according to a study made at the University of Chicago.¹ The materials are listed approximately in the order of their interest for children in these four age-groups.

| Two Years | Three Years | Four Years | Five Years |
|------------------------|-----------------------|-----------------------|--|
| *Clay or plastacene | Doll-corner materials | Assorted blocks | Assorted blocks (or Patty Hill blocks) |
| *Doll-corner materials | Clay or plastacene | Clay | |
| *Easel paints | Assorted blocks | Doll-corner materials | Crayons |
| *Assorted blocks | Dishes | Small cars | Clay |
| *Blox that Lox | Big wagon | *Balls | Doll-corner materials |
| *Hollow blocks | *Small cars | *Scissors | Balls |
| *Big wagon | Easel painting | Dishes | Scissors |
| *Dishes | *Doll | Hollow blocks | Small cars |
| Small cars | *Picture books | Large wooden beads | Hollow blocks |
| Doll | *Large wooden beads | Easel painting | *Colored cubes |
| Large wooden beads | Parallel bars | *Dump truck | Picture books |
| Crayons | Colored cubes | *Crayons | *Simple puzzles |
| Blunt scissors | Dump truck | Doll | Beads |
| Colored cubes | Hollow blocks | Books | Dishes |
| Wooden animals | | Colored cubes | *Peg boards |
| | | | Easel painting |

Stars in the first column indicate 8 play materials which might be selected from among those most generally liked by the two-year-olds tested. Items have been starred in the other columns merely to suggest additional toys that might be given as the child grows older, assuming that he has the 8 starred in column 1. Interests of children of course vary widely. The selection of toys for any one child will therefore need to be adjusted to his particular interest and individual stage of development.

¹From "Play Behavior and Choice of Play Materials of Preschool Children," by Dorothy Van Alstyne. This extract is made with the permission of the author and the University of Chicago Press.

OTHER PUBLICATIONS

A partial list of other publications on toys, toymaking, and the function of play materials is given below. Single copies of those starred (*) are free.

Association for Childhood Education, 1201 16th Street, N.W., Washington, D. C.

Uses for Waste Materials. 12p.

Make It for the Children. Working drawings and directions for making furniture, apparatus, and toys. 36p.

Children's Bureau, U. S. Department of Labor, Washington, D. C.

*Home Play and Play Equipment for the Preschool Child. Children's Bureau publication 238. 20p.

*Infant Care, Children's Bureau publication 8 (revised 1942). Includes latest information on psychological as well as physical care of the baby, and results of recent research in nutrition. 112p.

*The Child from One to Six—His Care and Training. Children's Bureau publication 30. 150p.

Iowa State College, Ames, Iowa.

*Building Habits That Work for You. 24p.

*Learning Through Play. Child development series. 20p.

*Homemade Play Equipment for Young Children. (Mimeographed) 13p.

Kansas State College, Manhattan, Kansas.

*Applying Nursery School Methods of Child Guidance in the Home. Bulletin 2 (revised 1942). 48p.

Montana State College, Bozeman, Montana.

*Toys and Play Equipment to Make at Home. (Mimeographed) 13p.

Parents' Institute, Inc., 52 Vanderbilt Avenue, New York City.

*Toys New and Different for Children of All Ages. (Mimeographed) 10p.

Play Schools Association, Inc., 1841 Broadway, New York City.

Play Materials Made from Waste. 16p.

State University of Iowa, Iowa City, Iowa.

When Children Play at Home. Child welfare pamphlets, No. 52, 16p.

Preschool Equipment. Extension Bulletin 263. 78p.

University of Nebraska, College of Agriculture, Lincoln, Nebraska.

*Toys for Children. Extension Circular 5600. 16p.

*Toys You Can Make. Extension Circular 5519. 16p.

NOT ONLY TOYS BUT AMPLE SPACE IN WHICH TO USE THEM



The children spend happy hours here with their playthings. Walls are light gray; floor, table top, and shelves are dark gray. Trimmings are red. Note slate blackboard at extreme left, which is large enough to give opportunity for arm movements when a child is drawing large objects. The shelves, made of bricks and planks of graduated lengths, invite reconstruction in different places in the room. Just now Jimmie is placing some of his own and his sister's drawings on the bulletin board, while the form-board rabbit has sister's attention.

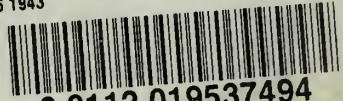




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