

SAND WORK

Instinct of
Child to dig
and play in
Earth and
Sand.

WHO has lived so many years that he cannot bring back his baby days for a moment and recall the dear delight that once he felt in playing with earth and sand?

Who does not remember the cool touch of the soft earth, the pleasant cohesion of its particles, and the ease with which it could be smoothed and patted into shape; and who can ever forget the happy days by the sea-shore, the long stretches of hard, wet beach,—fit drawing-board for giants,—and the shining white heaps above the tide-line where we played for hours together? We can hear again in fancy the scratchy whisper of the grains as they poured into our pails, and see the caves and forts and towers and battlements that we builded once upon a time.

The instinct which leads every child to dig or “grub” in the earth is almost equally general, as the Baroness von Marenholtz says, with the need of bodily movement, but it can seldom develop itself unhindered, particularly in the educated classes of society, and is often repressed as soon as it is manifested. “Thou shalt not make thyself dirty,” is the first commandment of

the maternal catechism, says the Baroness, and seldom do town-children find an opportunity to indulge the tendency which attracts them to a dust-heap for want of better material. We may be well assured, however, that the suppression of any legitimate natural instinct leads to deviations from the normal development of our nature, and robs us of the best and most appropriate means for the first education of the heart, of a means which no other can replace.

Like Antæus of old, the children renew their strength at the touch of Mother Earth, and yet we arbitrarily hold them back from this store-house of power. If the authorities should order a sand heap put in every back yard of our cities, being especially careful not to neglect the tiny inclosures around which the very poor hive together, there would be less vagabondage and less youthful ruffianism. The child must needs be busy, and lacking legitimate means of occupation he will seek out those that are unlawful.

Sand Piles
should be
provided for
all Children.

In Germany they seem to understand the needs of children better than we have ever taken time to do in America, and one of the beautiful acts of the Empress Frederick, in accordance with a suggestion made to her by Frau Schrader, was to induce the Emperor to set apart certain portions of all public parks for play-grounds, with sand hills upon them, for the little children. Any one

who has frequented the parks of the larger German cities knows what an attractive picture the children make in their busy, happy play of digging and packing and building in the easily moulded soil. And any one who has studied psychology watches with keen delight the clear, rapid expression of these children's crude impressions of the world about them.

The Pestalozzi-Froebel Haus in Berlin, of which Frau Schrader is the leading spirit, is provided with a most beautiful sand garden shaded by trees, over which all visiting kindergartners rhapsodize. This is no petty box of sand such as we in America think ourselves fortunate in possessing, but a "truly" garden, as the children say, where there are glorious heaps of sand in which they can dig with their little shovels, and which they can carry about and load and unload in their toy carts. There is no reason why all our children in this country, save those prisoners of luxury who are pent in hotels and boarding-houses, should not have a sand pile for outdoor amusement. A load of sand is not a matter of much expense, nor is a low board fence to surround it and prevent scattering, when once it is landed in our yards. One load will last several years where only a few children use it, and if no convenient tree grows near to shade the spot, a light awning would not be impossible of achievement. Into this garden of Eden we can usher the little ones,

and, provided with iron spoons, toy shovels, one or two old pails and pans and some muffin rings and scallop-tins for cake-baking, they will amuse themselves quietly and happily for hours. To be sure, if they are naughty, they will throw the sand in each other's eyes and all about the yard ; but such children cannot be trusted to be less than troublesome under any conditions, and they will probably be better contented and less quarrelsome in the sand pile than anywhere else.

“The little child,” as Froebel noted, “employs itself for a long time merely by pouring water or sand from one vessel into another alternately,”¹ and “for building and forming with sand and earth, which precedes clay work, opportunities should be afforded even to the child of one year.” Even the baby then may safely be set in the sand pile, and can play with the rest at digging, and moulding and burrowing, and pouring the grains in and out of the tin vessels.

The sand table, sand box, or sand garden, as it is variously called, seems to have been first suggested to Froebel by Hermann Sand in the Kindergarten. von Arnswald, a former pupil at Keilhau, and a devoted friend and admirer of the great educator. He writes Froebel from Eisenach, May 13, 1847 :

“DEAR, FATHERLY FRIEND: Yesterday I was engaged in studying your Sunday paper when an

¹ *Pedagogics*, page 146.

idea struck me which I feel prompted to communicate to you. I thought, might not a plane of sand be made a useful and entertaining game? By a plane of sand I mean a low, shallow box of wood filled with pure sand. It would be a kindergarten in miniature. The children might play in it with their cubes and building blocks. I think it would give the child particular pleasure to have the forms and figures and sticks laid out in the sand before his eyes. Sand is a material adaptable to any use. A few drops of water mixed with it would enable the child to form mountains and valleys in it, and so on.”¹

True to Emerson's saying that it is only an inventor who knows how to borrow, Froebel seized upon this suggestion of Colonel von Arnswald's, and the sand table has ever since been in use in the kindergarten.

It is, as commonly seen, a water-tight box about five by three feet, and at least a foot deep, is set on short stout legs with rollers and filled with sand to within two inches of the top. The box is sometimes lined with zinc, as it is often necessary to pour enough water into the sand to represent a lake, or the boundless ocean, but it can be so strongly made as to need no lining, or may have a double bottom. It may be five feet square instead of oblong, or it may be somewhat smaller

¹ *Froebel's Letters*, edited by A. H. Heinemann, page 61.

than the size mentioned, but it must be large enough for a dozen children to gather around, as it is used only for group work, and must be low enough to be convenient for little people. The sand is always kept quite damp, as it lends itself to moulding much more readily in this condition, and the particles are thus prevented from rising into the air in the form of dust.

The kindergarten, with its explanation of the universal instincts of childhood, shows us the source of the pleasure which all children take in playing with sand, and gives adequate opportunity to satisfy the universal desire in such a fashion that it may aid in real self-development. All the exercises at the sand table are coöperative, and so lead the children to feel more sensibly the pressure of those "bonds that unite us one and all, whether it be by the soft binding of love, or the iron chain of necessity." And herein lies the greatest value of the work, — that it requires coöperation ; for as Froebel says, "the feeling of community is commonly not only not early awakened, or later nourished in the child, but on the contrary is early disturbed and even annihilated." ¹

In the first exercises with the sand the children are allowed to pour it through their fingers as much as they like, to bury their hands deep in the shifting grains till not even a dimpled wrist is

¹ *Education of Man*, page 74 (Jarvis translation).

visible, and then suddenly withdraw them, making a sort of hide-and-seek play, which they especially enjoy, and which contains the element of alienation and return which Froebel dwells upon so thoughtfully in the "Mother Play." They like, too, when the sand is quite smooth, to print their open hands and finger tips and knuckles upon it, rejoicing in the ready response of the material to the lightest touch. Of course they are all this time experimenting upon heaping the sand into mountains, which they level as speedily, or raking it with Nature's five-toothed rake and smoothing it with the open palm, but now another simple exercise will be found to give the greatest joy. They may each be provided with a tray and a number of little forms, — squares, oblongs, circles, hearts, which are made in great variety for the purpose. They place these forms, which are merely rims like muffin-rings, on their trays, fill them with damp sand, then carefully withdraw them, and lo! what an array of cakes for a party! The pleasure which the play gives to babies need not be dilated upon, but there is an element of useful information in it also, in the knowledge it gives of differing forms, as well as the practice in dexterity required to fill them without scattering the sand, to press it down carefully and withdraw the little pans without injuring the baker's delicate handiwork.

Another simple exercise is garden-making, for

which the children are provided with toy rakes, hoes, and spades, which can be bought anywhere for a cent apiece, and, as they are made of iron, are indestructible. Of course the ground is properly prepared by the laborers, and then if a flower garden is to be planted, consultations are held in regard to the shape, size, and position of the various beds which are laid out, fenced with slats, and then planted with flowers that possess the magical property of blooming as soon as set out. A real garden, however, may be made in the box, if desirable; for peas, canary-seed, etc., will sprout and grow very well for a time in the wet sand.

Again, the children may mould spheres from the yielding material, calling them snowballs, cannon balls, apples, oranges, or anything they consider appropriate, and when they are using the second gift, a delightful exercise is to make group-work inventions by pressing the spheres, cubes, and cylinder into the smooth surface.

“The hands of children commence their first rough trials at building,” says the Baroness von Marenholtz-Bulow, ^{Later Plays.} “whilst digging in earth and sand. The scooping of caverns, the building of houses and bridges, forming and fashioning of all kinds (from the dirt-pies made with mother’s thimble to the proud edifices made with the contents of the brick-box, or with a pack of cards), and lastly drawing and

modeling, — all spring from the instinct of construction, the true instinct of work.”

Implanted in each child of the human race is this instinct, and the corresponding desire to make use of the materials which nature provides to satisfy the craving. The yielding sand affords the most suitable material which can be found for the purpose, far better than the clay at first, as it offers practically no resistance to hand and will. There is nothing in the kindergarten which is capable of such varied, helpful, and beautiful uses as is the sand table, and it alone, were all our other helps to child training removed, would support the claims of the system to be considered as a great educational agency. All the gifts and many of the occupations may be used in it, and in every exercise where individual powers have been strengthened, these may subsequently be devoted to the common welfare by a coöperative play at the table.

The first-gift balls and beads may be laid as garlands of flowers in the sand; the second-gift forms and beads be used for impressing inventions and for symbolic plays; the gifts from third to sixth give wonderful opportunities for building of every kind and for the illustration of stories and games, while even the sticks and rings and seeds, as Colonel von Arnswald suggested, may be laid into charming inventions on the smooth plane of sand. Many things which the child has

made in slat interlacing, weaving, cutting, folding, peas work, modeling with clay and cardboard, bead stringing, and rolled strip work may be appropriately used in the sand table, and thus be doubly blessed to the child in that they have been a pleasure to himself in making, and yet may be used for the service of others. Miss Emma Marwedel thus speaks of sand work: "Everything can be made visible on it, — the longest as well as the shortest paths, the high hill and the deep dale, all softly curved, all sharp mathematical lines, come into view in gracefully laid-out gardens. The knowledge of home, geographical sketches (even as far as the snow line and the breaking of the wind by mountain chains), climatic scenes, *e. g.*, views of Greenland and South America, windings of rivers, — all these things and many others can be executed by means of the various materials at hand in the kindergarten. Scissors, hammer, knife, modeling, cardboard, paper cutting, — all that incites the child's creative ideas comes into application."¹

Some of the above suggestions are better suited, perhaps, to the primary school than to the kindergarten, but even here we can make a beginning with geography by laying out in the sand first the kindergarten and its immediate surroundings, then the neighborhood, and lastly a simple outline of the city with its principal streets, and a

¹ *Childhood's Poetry and Studies*, page 24.

few of its public buildings. If there are mountains, rivers, and lakes in the vicinity, these may be added, and as the exercise would occupy a great many work periods, it may be left upon the table, and added to from time to time. A series of group-work plays for the entire term might be made by illustrating the homes of the "Seven Little Sisters," and prove as useful in geography teaching as in showing the brotherhood of man.

And how may the sand work aid us in the study of history? Let us consider one of the incidents of the Revolution, for instance, and see what impression we may make on the child's mind by illustrating the "Midnight Ride of Paul Revere." We suppose, of course, that the exercise is to be carried out by the older children, who have often heard the poem recited and remember its main features. The city of Boston is laid out on one side of the table, the North Church conspicuously placed among the buildings, and having a "practicable" belfry.

While one group of the children is making the city, two or three more are representing the bay with water, or glass, and placing a toy ship in it to stand for the "Somerset," swinging wide at her moorings.

Directly across the bay another group builds up the village of Charlestown, from which Paul Revere rode forth,

“with his cry of alarm,
To every Middlesex village and farm.”

A few more children construct the historic bridge across the river leading to Concord, this being a small village, with flocks of sheep asleep in its fields, and having for its main building the storehouse of clothing, food, and ammunition of the Americans.

The remainder of the class lay out the villages of Medford and Lexington, not forgetting a cock and a dog for the former hamlet, a meeting-house with a gilded weather-vane for the latter, and clock-towers for all three towns. The teacher must, of course, from her knowledge of the distance of all these places from each other and from Boston, and their relative direction, give a good deal of advice as to laying out the sand table advantageously, and she will probably also need to be consulted as to the shape of the bay and the windings of the river, “a line of black, that bends and floats.”

A number of exercises would be well spent in arranging Boston and the neighboring villages in the sand with their various buildings; in constructing the bridge and making two lanterns for the North Church tower, a row boat and oars for Paul Revere, clocks for the three villages, a weathercock for Lexington meeting-house, and in gathering together from the group-work stores a horse and rider, a cock, a dog, a flock of sheep,

and some trees. Finally when all these preparations are completed, and all the objects set in place, the poem is recited, and at the right moment Paul is rowed across the bay and stands impatient by his horse until the lanterns are hung in the tower. Then eager hands mount him and hurry him from village to village in time with the recitation, till at two by the village clock he comes to the bridge in Concord town. . . . Such is the exercise, and clear enough its value in teaching literature, history, and patriotism. What child could leave that heap of sand without a word in his heart that shall ring forevermore, and an echo in his memory

“ Of the hurrying hoof-beats of that steed
And the midnight message of Paul Revere ” ?

There are many stories, not necessarily historical, which the children enjoy illustrating in the sand. Very well do we remember an occasion when one of the authors told the fairy story of the Princess and the golden ball, at the sand table. Across years of time comes the memory of the eagerness with which the children constructed the king's palace, which was quite a wonderful sixth-gift creation, how they designed gardens, planted them with flowers and trees, laid the walks with pebbles, and finally set in the midst a silver lake represented by a broken looking-glass. Then when the golden ball (a second-gift bead) lay on the surface of the water and the

story told of the enchanted frog's appearance, and his offer to return it on certain conditions, — all was so real that the story teller herself half expected to see him emerging from the lake, and to hear his harsh croak.

In all these exercises the teacher must endeavor simply to be one of the children and not force her ideas upon the community. We are constantly, as Dr. C. C. Van Liew says, "forcing the child's representations into channels not his own, that do not express his own conceptions, and that even defraud him of his rights to individuality in error." Spontaneity of activity, which sand moulding is especially fitted to foster, will be utterly crushed if the kindergartner leads instead of follows, and it is her highest duty in these group-work exercises to keep herself in the background.¹

After a season or two's work with the sand table, a number of objects are necessarily collected, which have been bought, brought from home, or made by the children and kindergartner to embellish the work and make it more realistic. These may be wooden, china, and

Cabinets for
Sand-table
Objects.

¹ "It is very important not to force on the child, in the symbolic stage of his culture, say from four to six years of age, the ideas of others in the details of his work, for that will produce arrested development, and he will not have the vivid sense of personality that he ought to have. The kindergarten method encourages spontaneity, and thus protects the fountains of his originality." (W. T. Harris.)

tin animals of all sorts ; Swiss villages ; toy trees ; houses, churches, boats, and bridges in cardboard modeling ; houses, implements, and furniture in peas work ; tin vehicles, garden benches, railroad trains, steamers, garden tools, Noah's ark figures, sticks and pebbles for fences and walks, — a motley collection which requires much space to keep sorted and in order, and which the kindergarten closet, though it held as much as Pandora's box, would never find room for. Miss Marwedel suggested that a cheap wooden cabinet with drawers should be provided and used for this purpose alone, and that certain children should be deputed to keep the various objects in order, taking turns with the duty week by week. One of these children might be called the gardener, one the shepherd, one the architect, etc., and it would be the duty of each one to keep his material in order and know where it was to be found. The plan is perfectly practicable, and will give a glimpse of great joy to those who have hunted a half hour for a certain flock of cotton-wool sheep, known to be in existence, and yet nowhere to be found.

There is hardly a kindergarten exercise suggested in this chapter, save perhaps the first plays for babies, which would not be equally as practical and useful in the school, and could be carried out much more fully there, on account of the greater age and ability

Use of Sand
in the Pri-
mary
School.

of the children. One obstacle to the introduction of the sand table into the crowded primary school-room would be, of course, its size and the amount of space it occupies. Perhaps, however, it might be fastened to the wall with hinges, and opened and filled only when in use, which would dispose, in part, at least, of the objection. An enthusiastic teacher thus speaks of its use in the school-room: "With the sand box," she says, "the children gain permanent and correct ideas of the world in general, of the construction of houses and bridges, of habits of animals and plants. The study of geography is, through its possibilities, made a most fascinating pastime; mountains, hills, volcanoes, rivers, ponds, maps of states, counties, cities are formations in the sand, over the construction of which, little heads bend in happy thought and fingers work with joyous zeal.

"No child thus taught is ever heard to say, 'I hate geography,' for to his mind it has no associations with dull, weary memorization of the printed page, but is suggestive, instead, of scenes full of reality to the imagination, and of pictures delightful to the eye. Even the smallest children get intelligent ideas of the planet on which they live, and know more than many a grown person of the topography of the city which is their home. They map it out as a whole in the sand, and locate carefully the street and block in which they

live, not forgetting the trees in the home neighborhood, nor even the lamp-post and letter-box. Thus are habits of observation stimulated, and the walks to and from school made something more than idle wanderings."

Many teachers already use the sand for instruction in geography, and Alexander E. Frye's "Child and Nature, or Geography Teaching with Sand Modeling," will be found most helpful for this purpose.¹ The use of sand in the beginnings of history has already been hinted at, and could be developed as fully as the spirit and intelligence of teacher and children would allow. Imagine, for instance, how well Jane Andrews's story of "Ten Boys on the Road from Long Ago to Now," could be worked out, and how the ingenuity and power of planning of all the children might be devoted to picturing the homes, the life and surroundings of Kablu, the Aryan; Darius, the Persian; Cleon, the Greek; Horatius, the Roman boy, and all the other lads from Long Ago to Now.

A part of the sand table, too, might be used for botanical observations, and this has been done quite successfully. While in one portion, peas, beans, flax, and some grasses were sown, and the whole process of germination and care experienced, the other part was used for any coöpera-

¹ Another useful book of this nature is *Map Modeling in Geography and History*, by Albert E. Maltby.

tive labor. Local scenes, imitation of a park, geographical scenes of Greenland, of the Eskimo huts and the snow, scenes of South America, illustrations of the life of Robinson Crusoe, the animals being represented in great numbers, attended by their special herder, — all these were arranged according to the capacity of the children, who did all the labor in common.¹

In another school, after the story of "Little George Washington"² had been told, the children prepared the sand table, and when the older ones had traced the letters of his name and the date of his birth deep in the soft sand, the lesser ones filled them with seeds and covered them carefully. Then in a little time the whole appeared in fresh green letters, and so recalled a tale of the childhood of Washington, and proved a useful footnote to history.

Again, the sand may be used for learning the principles of architecture, for cellars may be dug, foundations laid, and walls built as in real life. A spirit-level would be of great service here, for in erecting a large building, the whole structure is likely to fall to the ground if the foundation is not properly laid, and of this it is difficult to judge with the eye alone.

Let us remember in the school, however, as

¹ Emma Marwedel, *Hints to Teachers*, page 12.

² Kate D. Wiggin and Nora A. Smith, *The Story-Hour*, page 115.

much as in the kindergarten, that the *children*, not the teachers, are to be the leaders in the work, and how far they may be trusted to be so is shown in Dr. G. Stanley Hall's wonderful "Story of a Sand Pile."¹

Some of the processes, institutions, and methods of administration and organization carried out in that load of sand could only be attained by a gradual growth in ability, and would perhaps require more time and concentration than could well be given during school hours, but in all sand plays, to quote Dr. Hall, "the power of motive arising from a large surface of interest can be turned on to the smallest part." Not only has the work this value, but it is an unexcelled teacher of social morality and of self-control, and lastly, it develops the creative instincts, which if suppressed, entail a loss of power upon the whole being of the child.

¹ *Scribner's Monthly*, June, 1888.