

5-7 Environment: learning to coexist with nature

Nature is full of fascinating elements to stimulate children's curiosity. As children grow, they might interact with nature in various ways such as picking wild flowers, growing and eating vegetables, paying attention to a tiny bug, being curious about fishes and crayfishes. By feeling nature close-by, they learn that humans are nurtured by Mother Nature and that all the living organisms on the earth coexist by receiving benefits from nature.

Growing plants

Japan is blessed with four distinctive seasons which have unique natural beauty and characteristics. In such dynamic natural climates, Japanese early childhood education has adopted growing plants and vegetables as an educational activity since the beginning of the program. For it is believed that it is a stimulating experience for children to dig the earth, plant seeds, bulbs or seedlings of the season, and closely watch the plants growing through their attentive care. It is also assumed that growing plants can develop children's interest and curiosity about natural science.

Where nature is diminishing, for example in the big cities, children can hardly see the natural growth process in which plants and vegetables sprout, blossom, and bear fruit. Through hands-on experience at kindergarten, to grow flowers and vegetables by learning a proper cultivating skill, children come to realize the power of nature and appreciate it with awe and wonder.

..... Educational goals

- **Realizing how plants grow while tending the garden, sowing seeds, and planting bulbs and seedlings.**
- **Discovering a plant's characteristics in terms of how it sprouts and grows and how it differs from other plants.**
- **Feeling an attachment to the plant and appreciating its vitality, regularity of growth, and wonder in nature, by observing one's own plant growing.**
- **Realizing the importance and difficulty of proper care and developing persistence to engage in a continuous activity, through unhappy experiences such as seeing withering or dormant plants.**
- **Feeling the pleasure of harvest and satisfaction with one's achievement, by harvesting and eating vegetables resulting from one's own care.**
- **Appreciating that the plant has come to bloom and born fruit, which is conducive to developing one's curious and inquiring mind.**
- **Becoming interested in nature and the natural law, which leads to developing scientific thinking, through discoveries and questions derived from observing the growing plant.**

Growing flowers and vegetables at kindergarten

Sweet potatoes are ready for harvest.

After shoveling the earth deeply, a child can carefully dig up the sweet potatoes with hands, trying not to ruin them.

The child is feeling the texture of earth and a sweet potato.

Children are playing by arranging the sweet potatoes in line.

They are calling the sweet potatoes as 'Daddy potato,' 'Mommy potato,' and 'Baby potato' according to the size.

They are naturally employing mathematical thinking such as size classification, sequencing, and weight comparison.

Children are playing with the sweet-potato vines.

They are skipping or wrapping their bodies with the vines.

A teacher looks satisfied with children's free imagination.

Seeing a child skipping the vines, another child who has never dared to skip now seems motivated to try.

Children are eating baked sweet potatoes just harvested from the yard.

The sweet potatoes are baked in the pile of dry leaves collected by children.

The smell of smoke, the sound of burning leaves, and anticipation of the treat –This is a wonderful experience stimulating all the children's sensory capacities.

With anticipation of its growth in mind, children are watering a plant.

They care for the plant as if it were their friend and say, 'It drank water,' and 'It looks happy.'

While taking care of plants, children realize how they grow.

A child came to his friend to show a fresh radish picked straight from the garden.

Other children approached and sniffed the radish.

They enjoyed the fresh smell of the vegetable.

Keep in mind

- Show children your cherishing and nurturing behavior to plants, which in turn will develop their attitude to take good care of plants and value life.
- The time of a year (a season) for planting or harvesting varies depending on which plant you would like to grow. Make a cultivation plan well in advance.
- Plants or flowers to show the growing process should be familiar to children. In addition, they need to be easy for children to take care of, including planting and growing.
- Place watering tools close to the children. By seeing them close by, they feel like taking care of the plants.
- While tending the plants with children, a teacher can show them the proper watering technique. Letting children water plants while observing their condition will contribute to developing children's self-control skills.
- As plants grow, the tending tasks need to be changed accordingly. To draw the children's attention closer to the plant, you can personify the plant as if it were their friend. For example, when you are giving fertilizer to the plant, you can say, 'It has grown bigger, hasn't it? I think it needs more food.'
- Understand and respond with sympathy to what children have discovered, feel excited about what they question and wonder, and try to find keys to the solutions to their questions, which are conducive to developing their scientific thinking.

Tips and suggestions

- It is refreshing to arrange natural things at kindergarten. Try to place green plants at the height of children's eyes.
- As hands-on experience about natural plants, field flowers and grasses can be introduced into children's play.
- Anything around you can serve as a wonderful growing material: you can plant fruit seeds to see them sprout, and plant vegetable roots in earth or in a watered container as hydroponics.
- Watering tools can be created by children by making holes in the bottom of empty containers.
- You can let children choose any favorite wild plants on the roadside and continuously observe their growth.
- Any empty containers and bags (jute, plastic, etc) can be used as plant pots.

Connecting with living things

Japanese kindergartens emphasize activities that involve touching and feeling insects and small animals. Rabbits and guinea pigs give you warmth and comfort when you hug them. Caterpillars and tadpoles have a short metamorphosis cycle and you can easily observe their dramatic transformation. Woodlice and ants are fun to gather. Crabs are funny - just to watch them walking sideways. Claws of crayfishes and horns of beetles are fascinating defense weapons.

Caring for diverse insects and small animals can stimulate children's quest for nature. They might initially handle small creatures roughly. However, as a teacher shows a nice and gentle attitude towards small living things, children will come to know the appropriate way to deal with each unique living thing.

Eventually, while living together and taking care of them, children develop an attachment to the small creatures as they do to their friends. To care for living things, on the other hand, involves birth and unavoidable death. It will surely become a valuable experience to think what life is and how wonderful and difficult it is. With all their available sensory abilities, children will perceive that all living species on the earth including humans are living their one-time lives.

..... Educational goals

- **Developing caring and affectionate attitudes, through touching and playing with living things.**
- **Acquiring responsible behavior through taking care of insects and small animals.**
- **Developing interest and curiosity in natural science, through emotional experiences such as being surprised, excited, touched, and impressed.**
- **Empirically discovering the biological facts and characteristics of a creature through feeding and observation.**
- **Experiencing various emotions such as joy and sadness, as well as realizing the dignity of life through encounters with a creature's birth, life and death.**
- **Realizing the food pyramids and law of nature, by witnessing a predator and its prey.**
- **Strengthening friendship ties, through cooperation and shared experiences in taking care of small creatures with friends.**

Playing with living things



Children went out to a field nearby to catch bugs.

By carefully looking into the bush, they are searching for grasshoppers and crickets.

The captive insects are carefully kept in an insect cage.

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Children caught a beetle and drew a picture of it.

Their style of drawing varies from a gigantic beetle embodying a child's exaggerated excitement to an accurate descriptive drawing based on close observation.

Children found a caterpillar in the yard and they had been feeding it in a tank. One day the caterpillar became motionless and turned into a chrysalis. Children are awe-struck by the utterly transfigured form.

A butterfly came out of the chrysalis. Children look overwhelmed in surprise and excitement. 'A butterfly was born!' says a child excitedly showing it to her friend. Through daily observation, children have learned how a caterpillar develops into a chrysalis and to a full-grown butterfly.

A crayfish which sheds skins as it grows attracts children's interest. They are fixing their eyes on the crayfish raising its claws, saying, 'It looks strong,' 'This one is bigger.'

Keep in mind

- Show your nurturing, affectionate attitude towards living things, and from this, children will learn to coexist with other living things and respect every single life on the earth.
- When keeping a small creature for an educational purpose, try to choose one which is safe and harmless enough for children not only just to look at but to touch or hug.
- A teacher may need to learn the proper care for insects and small animals from a book or from a professional.
- Before going outside to look for insects or small animals, ensure in advance that there is no potential danger in the surroundings. By setting and showing the boundary first, you may allow children to wander freely within that limit.
- Some children may find it uncomfortable to touch small living things. Try not to force them but make the child feel secure by showing yourself and other children playing with the creatures.
- Value and sympathize with children's surprise and wonder towards nature and try to share these feelings with other children.
- When a school pet died, face the fact and discuss the importance of life with children.

Tips and suggestions

- If an insect cage is not available in your situation, you can create one with used materials or empty containers.
- Hand-made teaching materials, such as a storybook and a paper puppet theater, in which a particular animal or insect appears, can raise children's awareness of living things effectively.
- The amazing, exciting experience to touch and feel a living thing can be expanded to other forms of expressive activities, including drawing a living thing and engaging in a pretend play to become a living thing.
- The responsibility for caring for living things can be shared among small groups of children. Through cooperating with each other in taking care of the pets, children will become more responsible for their behavior.
- Teach that all the organisms exist together with humans in Mother Nature and set small animals or insects free after children have observed them for a while.