**Transitional Kindergarten Tour: *Eye Spy***

Minds on! Hands On! Investigate environmental habitats in search of the unique plants and animals that make the garden their home. Explore and compare the lifecycles and physical differences among insects, birds, lizards, squirrels, and their offspring. How do these unique differences influence where animals may live? Identify the needs of all living things in California’s diverse ecological environments and learn what you can do to be a superhero for our planet.

*This is an inquiry driven tour focusing on observations using the senses of sight, hearing, touch and smell. Shown garden examples emphasize using higher level thinking skills of asking questions, identifying similarities, and comparing and contrasting key features in animals and plants-(flower & plant color, leaf shape, size & edges, smell).*

***The one hour tour offered by the Rancho Santa Ana Botanical Gardens provides Transitional Kindergarten students with an enriched natural experience to explore and learn these foundational concepts. Tour content will vary depending on the season and RSABG locations available on your tour day. Your Nature Interpreter will incorporate as many of the CA NGSS & Early Childhood standards as possible in your one hour walk.***

Highlights may include:

a. Comparisons between babies & adult birds, lizards & squirrels compared to insects (egg-larvae-adult)

b. Note different habitats in the garden- desert, woodland , oasis… (plants & soil differ)

c. Identify the basic needs that plants have- water, sun, space. Humans and others get food from plants & animals, water, space.

d. Compare shape, colors and arrangements of plant specimens. leaf surface, bark, leaf arrangement, flowers and seeds.

**Early Childhood Standards**

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| **Scientific Inquiry Strand****1.0 Observation and Investigation** | **Student Actions**  | **Student Actions** | **Garden Location** **& example(s)** |
| 1.1 Demonstrate curiosity and increased ability to raise questions about objects and events in their environment. | * While sorting different flowers and stems then gets the magnifying glass to observe it more closely.
 | * On a nature walk notice holes in the ground, “What’s there?”
 | ***Tour content will vary depending on the season and RSABG locations available on your tour day.***  |
| 1.2 Observe objects and events in the environment and describe them in greater detail. | • Observes the caterpillar, lizard, bird, plant closely and draws a picture of a caterpillar. Communicates, “It has stripes-yellow, white, and black-like a pattern.” | * Observes a plant growing & indicates the buds and roots
* describes flower color, leaf surface
 | ***Your Nature Interpreter will incorporate as many of the CA NGSS & Early Childhood standards as possible in your one hour walk.***  |
| 1.3 Identify and use a greater variety of observation and measurement tools. | Uses age-appropriate tools to pick-up and group together things.ruler, hand lens | * use a magnifying glass to observe the “lines” more clearly or use a ruler (or unit blocks) to measure its length
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| 1.4 Compare and contrast objects and events and describe similarities and differences in greater detail. | - Observes and describes what looks like… and how it is different from \_\_\_\_\_\_\_? - Contrasts a butterfly with a caterpillar ex:communicates that the butterfly can fly and the caterpillar cannot and that the butterfly has a different shape and different colors.  | * separate all the “pointy” leaves from all the round leaves or separate the big leaves from the small ones.

 Compares creases in the palm of his hand to a leaf |  |

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| **Scientific Inquiry Strand****1.0 Observation and Investigation** | **Student Actions**  | **Student Actions** | **Garden Location** **& example(s)** |
| 1.5 Demonstrates an increased ability to make predictions and check them (e.g., may make more complex predictions, offer ways to test predictions, and discuss why predictions were correct or incorrect). | Observe that the seeds will grow, and turn into plants.Observes the similar plants for differences.  | Test or observe what happens to plants placed in locationswith or without lightexperiment to test the effect of sunlight on plants, predicts… | Cuts open a fruit, observes what it lookslike inside. (see seeds) |
| 1.6 Demonstrate an increased ability to make inferences and generalizations based on evidence. | • Observes an unfamiliar animal. Notices the wings and communicates, “It is a bird. I know it because it has wings.” |  - Observes plants in highly lit and dimly lit locations and communicates that plants need light to grow |  |
| 2.1 Record information more regularly and in greater detail in various ways, with adult assistance, including pictures, words (dictated to adults), charts, journals, models, photos, or by tallying and graphing information. | • Collects information by using tally marks  | - bird & squirrel calls (listen) | rabbit, lizard or squirrel counts |
| 2.2 Share findings and explanations, which may be correct or incorrect, more spontaneously and with greater detail. | Why did the tree fall over?What is needed in order for \_\_\_\_\_\_ to grow? | plants vs humans- sunlight to make food (sugar)- we eat plants |  |

**Life Science Strand**

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| **1.0 Properties and Characteristics of Living Things** |
| 1.1 Identify characteristics of a greater variety of animals and plants, and demonstrate an increased ability to categorize them | • Observes plants and identifies the different parts (e.g., root, stem, buds, leaves).* Observes and identifies the characteristics of a ladybug (e.g., its shape, size, colors, and how it moves) and shares observations with others
 | * Contrasts butterflies with moths and communicates that butterflies are more colorful and have bigger wings
* milkweed & monarchs
 | surface is smooth, fuzzyedges are round, pointy |
| 1.2 Indicate greater knowledge of body parts and processes (e.g., eating, sleeping, breathing, walking) in humans and other animals. | We can walk with our legs and birds fly with their wings. | Explains that when the caterpillar eats, the foodgoes to its stomach, and it poops. bird droppings  |  |
| 1.3 Recognize that living things have habitats in different environments suited to their unique needs. | • build a nest. Using tweezers collects twigs and leaves in the yard: “Just like birds use their beaks.”• Sort plants & animals according to different habitats & niches | - cactus live in the desert.- Observes a spider in its web and explains- owl pellets- owls in palm tree tops & orioles in fronds |  |
| 1.4 Indicate knowledge of the difference between animate and inanimate objects, providing greater detail, and recognize that living things (humans, animals, and plants) undergo biological processes such as growth, illness, healing, and dying. | • compare stuffed animal to live animal• What happens if a child hits a bush and a flower falls off, Will the bush die? | mallard ducks & hatching eggsroly-poly plays dead but moves when released |  |

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| **2.0 Changes in Living Things** |  |  |  |
| 2.1 Observe and explore growth and changes in humans, animals, and plants and demonstrate an increased understanding that living things change as they grow and go through transformations related to the life cycle.  | * What is needed for a seed to grow into a plant?
 | Observe a tub of silkworms, point at the silkworm’s molted skin shell.Observes how a caterpillar makes a chrysalis and then emerges as a butterfly. |  |
| 2.2 Develop a greater understanding of the basic needs of humans, animals, and plants (e.g., food, water, sunshine, shelter). | • children describe their observations: wilted plants need water | shade vs full sun effect on plants color or height |  |

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| **Earth Sciences Strand** **2.0 Changes in the Earth**  |
| 2.3 Demonstrate an increased ability to notice and describe the effects of weather and seasonal changes on their own lives and on plants and animals. | • Communicates, “In the winter you wear a jacket and in the summer when it is hot, I wear shorts.” | What happens to trees in the spring compared to the winter? (buckeye, sycamore tree) |  |

***TK Teacher information from CDE Publications:***

Children learn about the content of science through active inquiry. In experiences of scientific inquiry, children actively explore and develop knowledge and understanding of scientific ideas. They make observations, ask questions, plan investigations, gather and interpret information, propose explanations, and communicate findings and ideas. (Cross Cutting Concepts and Science & Engineering Practices as described in the Next Generation Science Standards).

Children learn new content words in meaningful contexts. They readily acquire vocabulary, such as new nouns, to describe what they are observing (e.g., seeds, fins, nest, worms), and adjectives to describe and compare the properties and characteristics of objects (e.g., transparent, heavier, sticky, longer). They learn the vocabulary associated with the scientific concepts they investigate. For example, in learning about plants, they may learn words such as stem, roots, soil, dirt, buds, and petals. Similarly, in learning about habitats of animals in their natural area, they may learn words such as nest, ocean, or shelter. Children also learn terms to refer to scientific procedures such as observe, measure, predict, experiment, and discover.

In scientific explorations, children use different forms of communication to record and document information, from oral, signed, or written language (with adults’ assistance) to drawings, photos, graphs, charts, logs, and maps. Documentation is helpful for facilitating the communication skills of children. Recording in journals provides opportunities for children to express their ideas in words, and an adult can transcribe, whether in English or in the child’s home language, what children have to say. For example, children can use drawings and words to document the growth of their plant over time or the transformation of a caterpillar to a butterfly.

The foundations in Life Sciences are about core concepts related to properties and characteristics of living things and their growth and change over time. The foundations focus on children’s ability to actively explore, observe, and study the characteristics of animals and plants in the everyday environment, including appearances (insides and outsides), body parts, behaviors, habitats, and the changes and growth of living things over time. A unifying concept, across the strands of scientific content is change. Most things in nature are in the process of becoming different, or changing. All living things change over time through stages of the life cycle as they grow and develop, reproduce, and die.

In general, by the age of five, children begin to grasp the commonalities between animals and plants despite the differences in appearance. They recognize that both animals and plants, but not artifacts, can grow and increase in size over time, heal through regrowth when damaged, and die.

**Resources**: **California Department of Education (CDE).**

The detailed alignment between specific preschool learning foundations and specific kindergarten content standards in science may be found in the following documents.

*The Alignment of the California Preschool Learning Foundations with Key Early Education Resources*

<http://www.cde.ca.gov/sp/cd/re/documents/psalignment.pdf>

2012a. *California Preschool Learning Foundations*. Sacramento: California Department of Education. <http://www.cde.ca.gov/sp/cd/re/psfoundations.asp>

The [***California Preschool Learning Foundations, Volume 3***](https://www.cde.ca.gov/sp/cd/re/documents/preschoolfoundationsvol3.pdf) (PDF; 1MB) covers the skills and knowledge that children attain at around 36 months and 48 months in the domain areas of history–social science and science.

 https://www.cde.ca.gov/sp/cd/re/documents/preschoolfoundationsvol3.pdf

 **2012b. *California Preschool Curriculum Frameworks*. Sacramento**: California Department of Education. <http://www.cde.ca.gov/sp/cd/re/psframework.asp>

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| **Transitional Kindergarten Grade 1 hour Tour RSABG**  |
| **Standard (DCI)** | **Location** | **Tour Example** | **Tour Example** |
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