

Docent Notes for Children's Tours

The following script is for children, but also works well for Saturday adult general tour

The tour shouldn't last more than about 40 minutes making stops at four to six gardens to allow for travel time. Our usual route is from the Gift Shop to the Deserts areas to Bamboo then through Banana Boulevard or the Mexican garden to the Herb Garden, down Cycad stairs to the Rainforest with the option to continue down the steps to the lower pool and back up the driveway to the lawn and Cork Oaks. Pick two or three plants in an area to talk about. There is a handled container in the Larabee closet of objects to use on the tour.

The more you can involve the children, the better. Try to get them to use all of their senses. The theme for the entire tour could be:

Look Up, Look Down, Look All Around

General rules:-

I get to be the line leader, because I know where we are going. Please stay on the paths and not the ledges. You might fall and hurt the plants, especially the cactus! Please don't pick anything up unless I say it's OK because some plants are poisonous or have prickly parts. OK let's get going on our adventure today.

Remember to:-

Look Up, Look Down, Look All Around

Suggested questions or "activities" for each area. Don't think you need to do all of these. You may want to feature different plants in an area. Try to keep it short. Showing a few plants is better than too many. Children get easily overloaded.

The sentences in **red** are suggested questions to ask the children. After you have done several tours, you will work out your own favorite plants and questions.

For new tour guides, this script is one way to start. You should walk the garden by your self or with a partner, and give the tour **out loud** a couple of times without an audience, and then make it your own, with plants you want to talk about. Just a few (3) plants in each area. You are really just helping the guest begin to navigate the garden. For adults, you can mention the Larabees and a bit of history

Deserts

We are in the desert gardens. Be on the look out for little lizards.

Can anyone tell me what makes a desert a desert?

(usual answers: hot, lots of sand)

Some deserts are hot, some are cold; some have lots of sand, but what makes a desert a desert is that it is DRY. Less than 10 inches of rain a year.

If you were a plant living in the desert, how would you store water for the times when there is no rain? What can a plant do to hold on to the rain that does fall?

It can have fleshy, thick succulent leaves or roots.

Point out examples:-

- (Agaves) It can be pale gray green to reflect the sun.
- Or it can have little bitty tiny leaves that won't lose much water.

A plant can have accordion folds like this tall skinny cactus (DEMONSTRATE ACCORDION FOLDED PAPER PROP)

When the rains come, the plant slurps up lots of water

(EXPAND THE PAPER)

and when there isn't any rain, it shrinks back on itself.

(COLLAPSE THE FOLDS) or (HAVE THE STUDENTS TAKE TURNS TRYING THE ACCORDION FOLD CYLINDERS)

Desert plants grow very slowly. Desert plants also have to protect themselves against being eaten. These plants are armed and dangerous! Watch out for the thorns, barbs, and spiky ends. That's pretty good protection.

Do you think a deer would want to eat these plants?

The plants on this side of the driveway are from North and South America and the plants on the other side are from Europe, Africa or Asia. They look a lot alike but they aren't even from the same families. It is just that they developed ways of dealing with the same kind of desert conditions. Cactus and Agaves are from the Americas and Aloes and Euphorbia are from the Old World.

We've been looking down, now let's look up. Here is our friend the Dragon Tree. It's our logo here at the San Diego Botanic Garden.

How do you think this tree looks like a dragon?

(Give them a minute to respond)

Well, dragons have spikes on their backs, and they have fat legs. This tree is special. The sap inside this tree is reddish. In fact in the Middle Ages, magicians tried to sell it to people as “genuine dragon’s blood”. You could use it as a love potion. Actually it is good for staining wood. Mr. Stradivarius used it on his violins to give them a pretty red color and special sound. (Show red-orange dried leaf) (A Stradivarius viola recently sold for \$27 million)

Here is a pretty little Aloe called Aloe Vera. The leaves have a thick sticky gel inside that is good for your skin, especially for burns. But many of these other plants, the Euphorbia have sap inside that will burn your skin so watch out for them! This plant that looks like a cactus is a Euphorbia.

Now it’s time to head to the **Bamboo garden**.

Bamboo garden.

I'd like you to meet my friend Bamboo Giganteus. Isn't that a good name for this plant?

How many of you think this bamboo is a great big tree?

(GATHER THE CHILDREN IN CLOSE AND WHISPER.)

I'M GOING TO TELL YOU A SECRET, BAMBOO IS A GRASS. It's from the same family as the grass you have at home.

How would you like to cut this grass every week?

Bamboo is hollow for part of the stem and solid at the nodes. (HAVE THE CHILDREN EACH RAP ON THE BAMBOO with their knuckles AND THEN PASS AROUND THE PIECE OF BAMBOO to look at) It's very strong but lightweight.

What could you make out of bamboo?

(furniture, food, musical instruments, floors, the bench right near us.)

It is a great building material because it grows so quickly. You can even make clothes out of bamboo. (LET CHILDREN FEEL THE SPUN BAMBOO.)

Let's go and see some more bamboo. (STOP AT THE PAINTED BAMBOO)

Guess what this bamboo is called?

It is called Painted Bamboo. Isn't that a great name? It does look like someone used a paintbrush to make it pretty, but the colors are caused by a virus. The virus doesn't hurt the plant, but people think plants that have green and yellow are pretty so growers like to grow them.

Now let's see if we can find a McDonald's, a nice fast food restaurant.

Does anyone see a fast food restaurant?

(Stop at the Panda bamboo.) Here we are, this is just like a McDonald'sIF YOU ARE A PANDA!

The pandas at the zoo sometimes don't like the kind of bamboo the zoo has, so the zoo keepers can come to The San Diego Botanic Garden and cut down some of our bamboo to feed the pandas.

Some bamboos are clumpers and some are runners. (SHOW RUNNERS ACROSS FROM PANDA BAMBOO) Only plant clumpers in your garden, because runner bamboo could come up all over your garden. Runner bamboo usually has a ridge.

(LET THE CHILDREN FEEL THE SIDE OF THE BAMBOO FOR THE RIDGE.)

(OPTIONAL FOR REGULAR TOUR, NOT FOR STATION TOUR: VISIT THE FROG POND AND LOOK FOR FROGS, TADPOLES, DRAGONFLIES OR FISH. IF THE WIND IS BLOWING LISTEN FOR THE BAMBOO TO "SING" TO YOU)
(If you do stop here, consider skipping the lower pond of the rainforest for time constraints)

Subtropical Fruit Garden and Banana Boulevard.

If the bananas are yucky from a freeze, just skip on up to the Mexican garden and show off the fountain (Eagle Scout Project) and the topiaries

(IF THE BRUGMANSIA IS BLOOMING, TALK ABOUT IT HERE. GET THE CHILDREN ACROSS THE DRIVEWAY AND HAVE THEM LOOK BACK AT THE ANGEL'S TRUMPET)

What do the flowers on this plant look like to you?

The Angel's Trumpet smells really good at night because its pollinator is a moth. All parts of the plant are poisonous so look but don't touch.)

Did anyone have orange juice or bananas for breakfast?

That's great, now say hello to Miss Valencia. She is covered with oranges. A lot of good things grow on trees.

Follow me and we'll see. I'm looking for a hand.

Doesn't anyone see a hand.....of bananas?

Look up, do you see the bananas?

Bananas look kind of like fingers and together in a bunch, they call that a hand of bananas. Each banana plant will produce bananas just once and then that plant dies back, but the underground stem sends up new pups that will produce more bananas. It takes about 18 months to produce bananas. (SHOW THE FLOWERS AND HOW EACH SMALL FLOWER WILL FORM A NEW BANANA)

What could you use the leaves for?

(for wrapping a tamale or rice cake, using it as a 'paper' plate)

Just like monkeys, people depend on plants to provide food. But green plants are the only things in the world that can make their own food. A green plant can take water, sunshine and nutrients from the soil and use chlorophyll in the leaves to make food for itself and for you and me.

There are many different kinds of bananas. Some are good to eat just by peeling off the skin; some, like plantain, need to be cooked. Some turn yellow when they are ripe, and some are a blue.

Who thinks the banana plants are trees?

They sure look big enough to be trees, but they are not. The stem is underground. What you see is just a bundle of leaves. The banana plant is just a big herb, that's a cue to head for the Herb Garden.

(For general tour)

(EITHER GO TO THE HERB GARDEN FROM THE DRIVEWAY PAST THE DAISY TREE, - IF BLOOMING - OR THROUGH THE MEXICAN GARDEN to show off the fountain [an Eagle Scout Project] and the topiaries.

Are any of you in Scouts?

This beautiful fountain was done by a young man as his Eagle Scout project. When you are just a bit older, you can become volunteers in the gardens. (The station tour will start at the driveway entrance as children leave the Bananas)

Herb Garden

(The herb garden is a great place for touchy/feely and sniffing. Talk about just a few plants. If it's a small group, encourage them to go through the 'maze' several times and look at the topiaries. If the group has cameras, this is good place for a picture)

The Herb Garden is just like a great big Sav-on Drug Store. We use herbs for cooking, for medicine, to get rid of bugs, and to smell good.

If the Daisy tree is blooming mention that it was used as a bandage for cuts
Myrtle was used to make Cleopatra's bath smell good.

The roses are here because the rose hips are a good source of vitamin C.
Rosemary is good for cooking and it is supposed to be good for your memory.
Try touching several of the scented geraniums.

Have the children look at the Ficus (fig tree) and especially its enormous roots.
Open a fallen fig to show the flowers are on the inside.

We have looked at lots of herbs, now let's see some that the Native Americans used. (Top of the Herb Garden).

I need someone to help me. Who wants to be a Native American hunter?

(PICK A BOY AND HAVE HIM COME FORWARD.) Take a piece of White Sage.
The Indians used White Sage to make them better hunters. (WAVE THE WHITE SAGE AROUND THE BOY'S BODY, BUT DON'T ACTUALLY TOUCH HIM)

How would that help make someone a better hunter?

(Let the children sniff the white sage.) Well, our hunter here would smell like a plant instead of a person and the rabbits wouldn't be afraid so he would be able to capture them. It was smell camouflage.

(Perhaps have children smell the artemisia, too) This is sagebrush. The Indians used it to keep the bugs out of their houses.

If the Dutchman's Pipe on the cantina is blooming, you can show the children how it is pollinated by a fly.

Let's head down the stairs to the **Rainforest**.

(For 6 Station tour, send the students down the steps and tell them to turn to the left and listen for the waterfall as they walk past the lawn.)

Cycad Stairs

(ON CYCAD STAIRS, POINT OUT THE CYCADS.) These plants go back to the time of the dinosaurs. Feel how tough the leaves are. (BE CAREFUL, THE CYCADS SOMETIMES HAVE SHARP POINTS AT THE ENDS) The cycads were pollinated by a beetle that would crawl around and eat the pollen on the cones of the male plant and then the beetle would crawl around the female plant's cone and rest there for the night. That's the way the plant gets pollinated. The female cycad can raise her temperature about ten degrees at night so it's kind of like a motel or a bed and breakfast for the beetles.

(Cycad Stairs and the back of the lawn area is the place to make up time if you are running late on a regular tour. Butterflies are usually seen in the back of the lawn area.)

(Late summer, African Tulip tree also called the "flame of the forest" will be blooming at the top of the stairs on the left. If not in bloom, don't mention it. The large orange cup holds water and is a favorite of birds. Children in Africa use it as a squirt gun.)

Point out the skunk flower on right side of staircase.

Why would a plant want to smell bad?

So animals won't eat it. Rub the leaves if you dare. Enough said.

(AS YOU ARE GETTING CLOSE TO THE WATERFALL AND CAN BEGIN TO HEAR IT, HAVE THE CHILDREN STOP TO LISTEN)

What is that, what do you hear?

Everyone be very quiet and let's move up closer.

Come see. It's the waterfall! (LET THE CHILDREN JUST LOOK FOR A MINUTE

OR TWO) Another good photo op so allow time for picture taking.

Tropical Rainforest

Now we are in the Tropical Rainforest.
We live in San Diego.

What do you think might be missing if you try to build a tropical RAIN forest?
RAIN!!

In a rainforest, there might be 150 to 400 inches a rain a year. We only get about 10 inches.

Let's pretend we are the rain.

(HAVE ALL THE CHILDREN PAT THEIR THIGHS WITH OPEN PALMS, SLOWLY AT FIRST THEN FASTER, FASTER LIKE THE SOUND OF THE RAIN)

The rainforest has four layers of plants. Our canopy trees are Torrey Pines which you won't find in a rainforest. These beautiful trees were already here and we didn't want to cut them down so we put sprinklers up in the trees to give the other plants extra water. Rainforest plants get so much water they even have "drip tips" to help channel extra water away from them.

A rain forest gets lots of water, but the real battle is for sunlight. Every morning when the plants wake up, they have to fight for light. (PRETEND TO SHADOW BOX)

If you were a plant living in the rainforest, how could you reach the sunlight?

Did you ever sit on someone's shoulders to see a parade? Can anyone see plants on top of other plants?

Let's look up at this dead tree. The plants growing on it are piggy backing on this dead tree to get up high. The plants growing here are called epiphytes. They fight for the light. They don't hurt the plant they are attached to.

See this plant growing in the crutch of this Magnolia?

It is a Strangler Fig. When it gets bigger, it will completely cover the Magnolia and kill it. See its roots are growing above ground, working their way down.

How do you think the plant got there?

We planted it here to show how it grows in a real rainforest. In the wild, the seed would probably be planted by a bird or a monkey. The animal would eat the fruit and "poop" out the seed that might land on a tall tree and grow just like this one does.

Are the plants here the same color as the plants in the desert?

Here in the rain forest. Plants are dark green and have really big leaves.

Can you guess why these leaves are so big in the rainforest?

They are trying to trap as much sunlight as possible.

With all these great big leaves, the rainforest gives off lots of oxygen. The rainforests are called the “Lungs of the World.”

(For general tour: Decide whether or not to go down the stairs to the lower pool. If the children are restless or tired, just take them back to the gift shop/bathrooms, stopping to talk about the cork oak and woodpeckers. For station tour, send them on to next station.)

Lower Pond

(Going down the steps, caution the children to hold the handrail. The steps are usually wet. At the bottom of the steps, look back up at the water fall, point out that it is darker, less sunlight as we go down to the forest floor.)

Does anyone see a plant with really big leaves that look like an elephant's ears?

(Point out the large Elephant ear plant in the water of the middle pool)
See how big the leaves are. Remember how small the leaves were in the desert plants. In the rain forest plants are really, really big because they are trying to capture as much sunlight as possible.
Point out more epiphytes along walk to lower pool.

What could a tree frog use for a pond way up in the trees?

(Use a small brightly colored tree frog and a Bromeliad to show where a tree frog might live, in the "cup" of water made by the Bromeliads leaves. (Look for frogs and dragonflies in lower pond.)

Lower Pond

(Good place for the children to sit on the benches)
Here is an interesting plant (Point to papyrus). This is papyrus, which the ancient Egyptians used to make paper. (Show papyrus). People have always used plants for all sorts of purposes.

Does anyone see a tree with sausages hanging down from its branches?

Look up over here at the Sausage Tree. See the large seedpods? This plant comes from Africa and the elephants like to eat it. One thing a botanical garden tries to do is save plants. So we can bring this plant here to San Diego and take really good care of it, but we had to leave its best friend back in Africa. Its best friend is a BAT; the bat is its pollinator and they wouldn't let us bring that African Bat to San Diego and let it loose. So you can see that it's really better to save a plant where it was meant to grow. You can't always just move a plant and give it everything it needs.

Now look way up high. That dark green tree is a Bunya, Bunya. It is a beautiful tree, but look how big it is! When it is producing cones, we have to rope off the area because the cones weigh about 15 lbs apiece. The cone is bigger than your head. (SHOW LARGE "BALL" WITH YOUR HANDS) The Bunya, Bunya tree reminds us to ALWAYS find out how big a tree will get before we plant it in our yards.

Now I need a volunteer over by this Philodendron.
(CHOOSE A CHILD TO STAND UNDER THE LARGE LEAF JUST OFF THE
PATH)

See how this big leaf is almost like an umbrella?

In the rainforest, there is too much water. Hundred of inches a year, so the plants have big leaves to direct some of the water away from the plant. **See the drip tips at the end of the leaf?** This helps drain the water away.

(IF YOU HAVE A WATER BOTTLE WITH YOU, POUR SOME WATER DOWN ANOTHER LEAF WITH A DRIP TIP TO DEMONSTRATE)

The large leaf also shades anything under it, so another plant can't grow because it gets so little sunlight.

Let's head back up the hill. (Follow the path to driveway and head back up past the Lawn House)

Cork Oak/Canary Island Garden

Oh look, we are growing a dead tree here in the garden!

Why would we keep a dead tree in the garden? Show picture of Woodpecker.

Woodpeckers love this tree as a place to build their nest and then other birds might also use the larger holes for a nesting site when the woodpecker is finished. The small holes are where the woodpeckers have been searching for insects. Don't forget that plants furnish homes and protection for animals, as well as food.

Come on up here and look at these trees with the funny, crinkly bark. These are Cork Oak Trees. Oak trees produce acorns only once a year, but the birds have found a way to make them available all year. The birds sometimes bury acorns in the grooves of the trunk. Sometimes the birds forget the acorns and they get full of bugs. That's not a problem for the birds because they love to eat bugs. The huge trees are called granaries and can hold thousands of acorns.

These trees were planted in the 1950's. The outer bark of the tree isn't alive anymore and can be cut off just like your fingernails. About every 8-10 years the cork can be harvested. Our trees have never been harvested, so the bark is very thick.

(Pass around a piece of the cork bark.)

What does the cork feel like? Who knows something we make out of cork?

How about cork for wine bottle, to make things float, for bulletin boards, for the center of a baseball, for floors, for shoes? (SHOW SAMPLES THINGS MADE OF CORK) Cork was even used in the Space Shuttle!

(If Pride of Madeira is blooming, show these. Point out the Aeoniums and the Acanthus)

(See if the children recognize the Dragon Trees they saw earlier in the desert.)

(Mention the rest rooms and the gift shop if needed)

For general tour: THANK THE CHILDREN AND THEIR PARENTS FOR COMING AND MENTION UPCOMING EVENTS THAT THEY MAY WANT TO RETURN TO THE GARDEN TO ATTEND.