



Passiflora Ltd, Andromeda Botanic Gardens, Bathsheba, St Joseph 246-433-9384

www.andromedabarbados.com

Mission Andromeda: Discovery

Teachers' Guide with Discussion Questions (for pupils aged 4- 12)

***Teachers, this guide is intended to give you teaching material for your visit.**

Feel free to omit or simplify items or questions in this guide to fit the level and interests of your class.

Go over **Andromeda Botanic Gardens Rules** with pupils.

Stay with the group.

Do not touch the plants. Show respect to the garden and its plants and wildlife.

Some plants of the plants in the garden are **poisonous or have sharp edges. Touching plants may damage them.*

Behave respectfully and responsibly.

Follow the guidance of your teacher/minder.

Do not run.

Enjoy your visit.

Other visitors will be in the garden. Please allow them space to enjoy the garden also.

















*Each **item number** in this guide corresponds to the **picture with the same**. The pictures are intended to be shown to the pupils to help them locate items in the gardens.*

1. Show pupils the following photographs of the **Animals in Andromeda Gardens**. Read the list of animals out loud. Ask pupils to look for these animals while they are in the garden. Tell them that at the end of the visit you will ask them which animals they saw in the garden today.



Animals in Andromeda Botanic Gardens:

Hummingbird image Bradley Benskin, Dragonfly and Mongoose by Mark Brackenbury

			
Hummingbirds	Bananaquits	Anoles	Snails
			
Monkeys	Tortoises	Buck-Eye Butterflies	Monarch Butterflies
			
Caterpillars	Bees	Dragonflies	Millipedes
			
Cats	Bats	Fish	Mongoose

2. Show pupils the following picture, **breadfruit tree**. Enter the garden, walk over the bridge, turn right at the T junction and have pupils look for (it is marked with sign #2) the **Breadfruit Tree**. Many people in Barbados eat its large round fruit.

Q: In what different ways do people eat breadfruit?

Q: Name 5 other fruit from trees that we eat.



Go up the hill to the **Succulent Garden**. Have pupils look for a large tree to the right with long, fallen leaves laying on the ground. Look for a sign in front of the tree with the tree's plant label, Pandanus or **Screw pine**. People use the screw pine's leaves to weave baskets.

Q: In what different ways do we use baskets?

3. Show pupils the following picture. Have pupils look for this *different* species of Pandanus. It will be marked plant #5 in the garden.



Q. Describe this plant?

Q: How does its hard, waxy coating help the plant? (prevents it from drying out)

Q: How does its sharp prickles help the plant? (stops animals from eating it)

Q: In what ways is this Pandanus species the same as the other Pandanus species you saw? (both have a waxy coating on their leaves. Both have prickles along the edges of their leaves)

Q. In what ways are they different? (1. The first pandanus is tall, this one is short; the first pandanus has much longer leaves and the leaves are variegated (different colours).)

4. Follow the path, bearing right. Continue along the path. Show pupils the following picture.



Have pupils look for **Bearded fig** (plant #9 in the garden). It has long roots that hang from its branches called **aerial** roots. These roots will start growing trunks when they touch the ground.

Q. What do roots do for plants? (supply water and minerals, store food)

Q. What is the main function of leaves for plants? (make food for the plant using **photosynthesis** – the process of converting light into energy)

At the tree marked #13 in the garden, have pupils line up on the stones. Have the class count the stepping stones out loud together.

Q. How many stepping stones are there in all?

Walk past the **Orchard**. An orchard is a place that has fruit trees growing.

Q. Do you see any fruit hanging from the trees in the orchard?

Q. Do you see any animals in the orchard?

5. Show pupils this picture.



Walk to the ***Palm Garden #15***. Have pupils look for the ***Queen of Sheba Palm***.

Q. Describe the shape of the leaves of this palm. (rounded, fan shaped, like a hand)

6. Show pupils this image (palm with the large leaves in the top half of the photo)



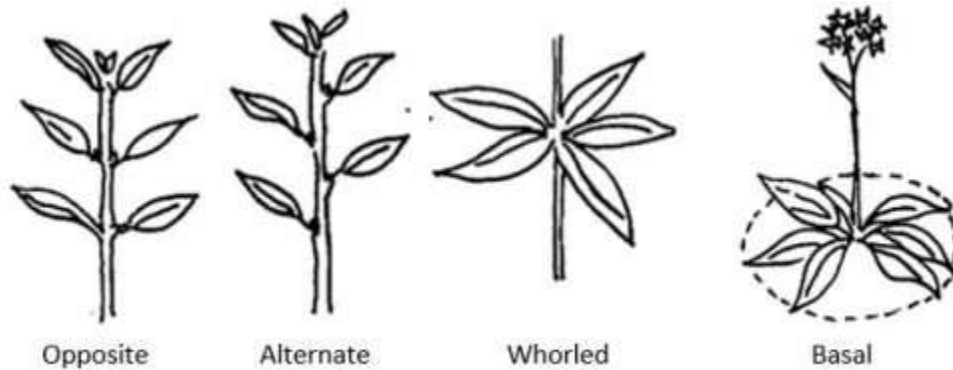
Have pupils look for the ***Red Leaf Palm***

Q. Describe the shape of the leaves of this palm.

Q. How are the two palm the same, how are they different? (same - smooth long trunks; different – shapes of their leaves, different patterns on the trunk)

7. Show pupils this picture.

1. **Arrangement of the leaves on the stem** (image from [Red Seal Landscape Horticulturist Identify Plants and Plant Requirements \(F2 – 1&2\) \(pressbooks.pub\)](#))



Continue on to the **White Garden**, near **#22**. Have pupils look there for plants with **opposite** leaves – leaves that are arranged opposite each other on the stem. Have the pupils look for plants that have **alternate** leaves – leaves that are staggered up the stem.



8. Show pupils this picture.

Continue on the path. Have pupils find **#25, ornamental banana** plant.

Q. Tell different ways in which we eat and use bananas in food we make.

Q. Where do bananas grow on Barbados?

Continue onto the **Hummingbird Zone #28** by the house.

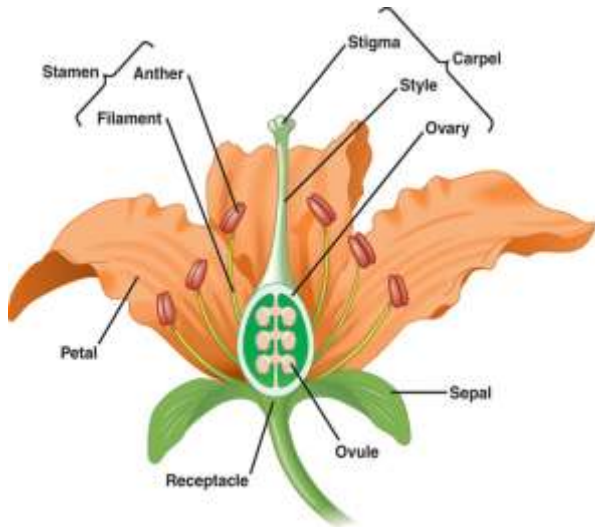
Q. What insects or birds do you see drinking nectar from flowers here today?

Nectar - a sugary fluid that plants produce as a source of nutrients for birds, insects and bats. **Nectar** is secreted by tiny microscopic cells on many parts of the flower.

9. Find a flower in the garden to teach children about basic flower parts. Show the children the main parts of the flower, and talk about the roots that are hidden underground.

Have children take turns practicing and identifying the main parts of the flower: **sepal, petal, stigma and stamen** . Talk about what each part does for the flower, modifying dependent on the age of the pupils.

1. Parts of the Flower



Parts of the Flower and Functions:

Sepal – protects the flower bud before it opens

Petal - attracts pollinators to the flower

Stamen – Males Parts of the flower. the filament and the anther. The **anther** produces the pollen and is supported by the **filament**.

Stigma - female part that collects the pollen

Style – connects the stigma to the ovary, route the pollen travels to get to the **ovary**. Known collectively as **pistil** or **carpel** as shown.

Pollination: An insect brushes against the **stamen** of the flower when it comes to a flower to drink **nectar**. It picks up **pollen**. The insect drops that **pollen** on the **stigma** of the same flower/plant (self-pollination) or a flower on a different plant (cross-pollination). This fertilizes the flower and starts a fruit with seeds growing.

Birds will tend to transfer the pollen on their bills while they feed. When bats feed from nectar, the pollen is transferred by sticking to their fur.

Gather near numbers 35-37. Look at the images at number 1 **Animals in Andromeda Gardens**. Have pupils raise hands for each animal, if they saw that animal during the visit.

Q. Which animals did you see the most?

Q. Which animals did you see the least?

10. Show pupils this picture. Finish your visit walking along the **Heliconia Walk** . Heliconia, **#38 beefsteak**. This plant may have large red and brown **bracts** (modified leaves) with tiny pink flowers hanging from them. Hummingbirds love these flowers.

Q. What facts can you tell about hummingbirds?



Thank you for visiting
Andromeda Botanic Gardens!



Andromeda
botanic gardens