Self-Guide Kit Preparation

How to Use Exploration Kit Backpacks

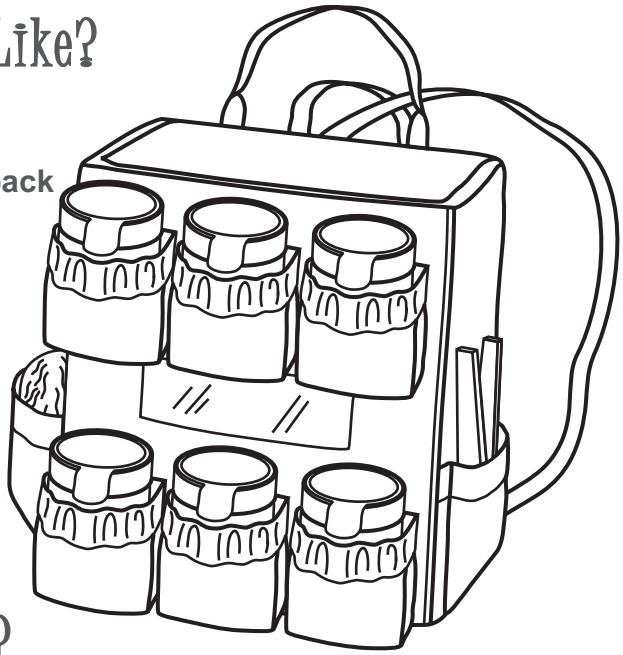
during a Classroom Field Trip

Garfield Park Conservatory

How To Use Your Exploration Kit Backpack

We have tried to make the Exploration Kit as easy to use as possible. This section will explain its contents and give you some tips on using it to maximize your visit and your students' experience.

What Does the Self-Guide Kit Looks Like?



The Kit is a back-pack containing all the materials and supplies you will need for your tour. One back-pack will have enough materials for up to 7-15 students, though the smaller the group, the more intimate the learning experience. The pack sports easily accessible pouches, and can be worn by a help-ful student so that the fun learning props can be easily accessed by the teacher. It is sturdy, fun, water-proofed, and fun to wear. We suggest students take turns wearing the kit, so everyone gets a chance to "pack a punch" of learning in the Garfield Park Conservatory!

What's Inside the Self-Guide Kit?

Below is a list of the Kit's contents. A more in-depth description of the individual items can be found on the following 2 pages.

- **Self-Guide folder (includes map and pull-out sheets)**
- **Show and Tell items and containers**
- **Clipboards for students to use for writing surface while they explore the rooms and fill out exploration work sheets.**
- **Pencils**

The Folder

The spiral folder contains a colorful pull-out map, information on the individual greenhouses, and guidance on how to use and return your Exploration Pack. We suggest that you take a moment in the lobby to familiarize yourself and your adult chaperones with both the kit and the map before you venture out into the conservatory with the students.

1 Quick-Reference Sheet

This "cheat sheet" contains a brief summary of how to use the Kit. The information has been organized as bullet points on a single page for fast reference.

2 Self-Guide Map

An easy-to-follow map to help you navigate the Conservatory and find the collection highlights covered in pull-out sheets.
**** A copy of the Self-Guide Map is available on page 6.***

3 Greenhouse Pull-Out Sheets

Individual information pages for guiding your class through each Conservatory Room.
**** A full review of the pull-out sheets is available on pages 7 through 13.***

4 Student Activity Sheets

These are sheets that can be completed by your students during your visit. The questions follow information given by the instructor during the exploration tour; therefore, as you finish exploring a room, we recommend allowing students a few minutes to complete the related questions before moving to the next room. Hand out the worksheets and clip-boards at the beginning of your tour to make the pack lighter.

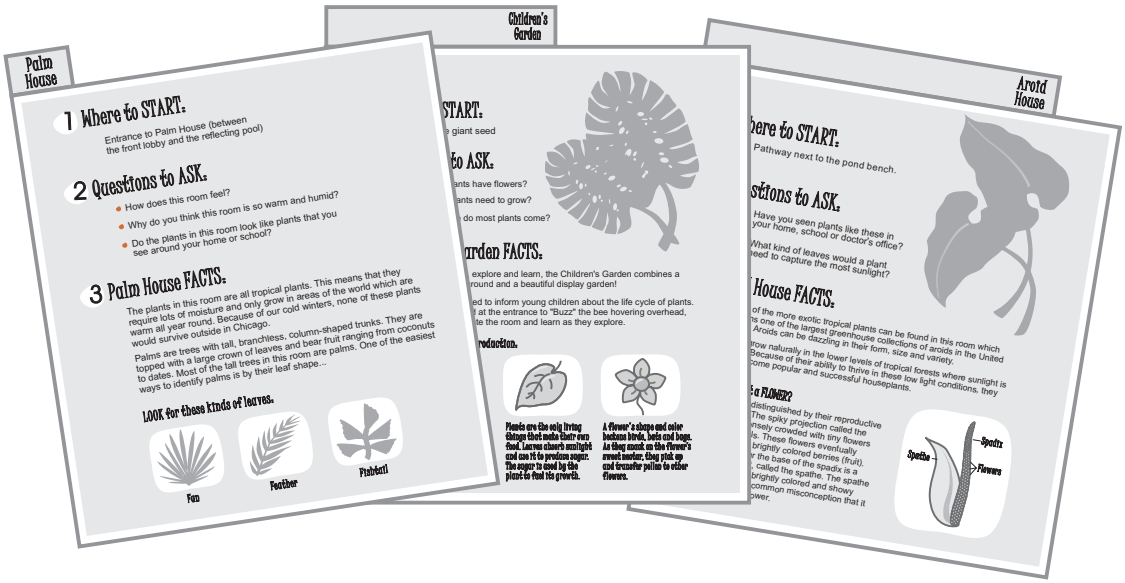
5 Check List

Think you may have left something behind? Use the checklist provided to make sure all of the contents of your Exploration Pack are returned.

6 Teacher Evaluation

We would appreciate your feedback! Please plan a few minutes to fill out the evaluation in the back of the folder and return it with your Pack. Your comments and suggestions will assist us in maintaining the highest level program.

Greenhouse Pull-Out Sheets



There is a separate pull-out sheet for each of the six rooms covered in the Exploration Kit. These sheets can serve as a guide as you navigate each individual greenhouse. Below is an explanation of their use.

**** See the following page for a diagram of the pull-out page format.***

Review

All of the information on these pull-out sheets is provided in the following pages of this pre-visit packet. We highly recommend that you review this information to familiarize both yourself and other adult guides with the high-lights of each room.

Locate

Once you have your Exploration Kit, use the map to help you locate each of the six greenhouses and their designated plants. As you enter each new Conservatory room, find the matching pull-out sheet from the folder.

Reference

The sheets are intended as reference pages for each room. Be sure to use *both sides.* The front of each will provide you with general information and concepts. On the back you will find specific suggestions on what to look for.

Icons

The green and white plant icon ( ) signifies a plant of particular interest. There is a marker with a matching icon next to the actual plant.
The green eye icon ( ) signifies a Show and Tell opportunity.
See page 5 for an explanation of this feature.

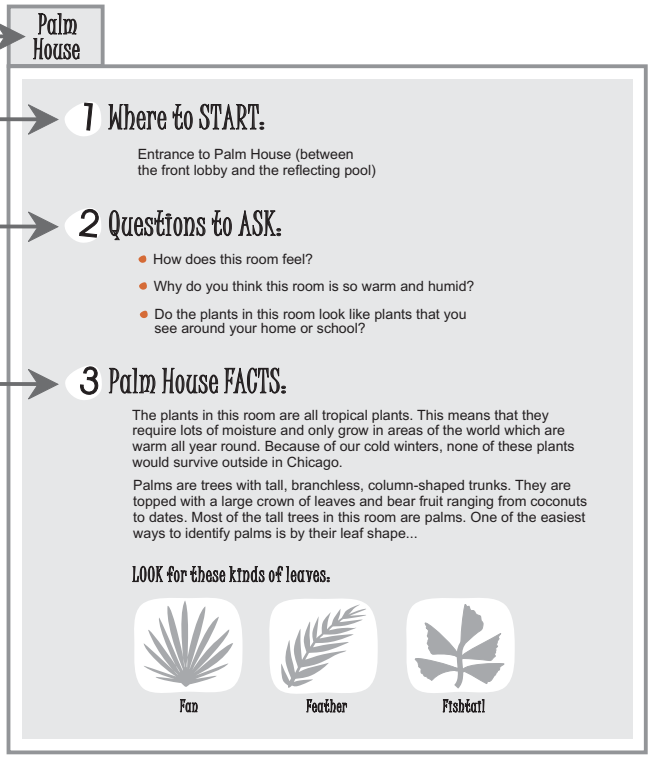
Pull-Out Sheet (FRONT)

Tabs with **ROOM NAME**

This section will give you a suggestion on **WHERE TO START** in the room.

Here are some **QUESTIONS TO ASK** your students before exploring each room.

Some general **FACTS** about the room you are exploring. We suggest reviewing before your visit and using these cards as reference sheets.

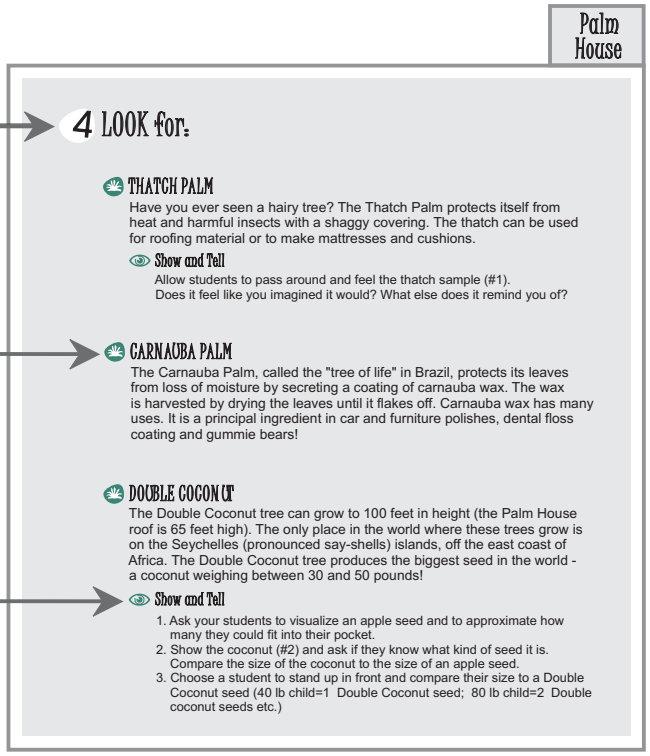


Pull-Out Sheet (BACK)

In the **LOOK FOR** section on the back of each pull-out sheet we have highlighted several key plants or room features of particular interest

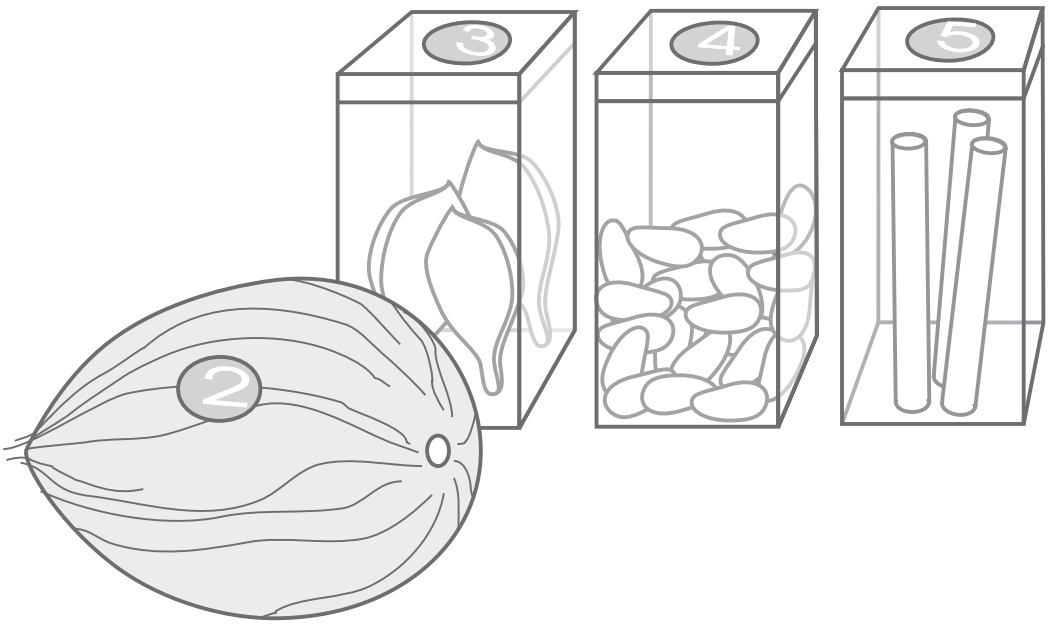
The white and green **PLANT ICON** signifies a plant in the room which has been highlighted. A marker with a matching icon next to the actual plant will help you and your students find it.

The green **EYE ICON** signifies a Show and Tell opportunity*.
* *See page 5*



Show and Tell Items

The Show and Tell items will give you and your students an opportunity to experience certain aspects of the collection up close. The green eye icon ( ) on your pull-out sheets will let you know which item or container to use and provide you with instructions for its presentation. Below is a list of the items available in the Self-Guide Kit.



1. **Thatch sample from Thatch palm**
2. **Coconut**
3. **Small magnifying glasses for use in the Fern Room**
4. **Cinnamon sticks (bark from the Cinnamon tree)**
5. **Cocoa beans from the Chocolate tree**
6. **Succulent leaves of the Jade Plant**
7. **Samples of the Trumpet Tree branches**

Map of the Conservatory with Highlights

Palm House

1 Where to START:

Entrance to Palm House (between the front lobby and the reflecting pool)

2 Questions to ASK:

- How does this room feel?
- Why do you think this room is so warm and humid?
- Do the plants in this room look like plants that you see around your home or school?

3 Palm House FACTS:

The plants in this room are all **tropical** plants. This means that they require lots of moisture and only grow in areas of the world which are warm all year round. Because of our cold winters, none of these plants would survive outside in Chicago.

Palms are trees with tall, branchless, column-shaped trunks. They are topped with a large crown of leaves and bear fruit ranging from coconuts to dates. Most of the tall trees in this room are palms. One of the easiest ways to identify palms is by their leaf shape...

LOOK for these kinds of leaves:

Fan

Feather

Fishtail

4 LOOK For:

THATCH PALM

Have you ever seen a hairy tree? The Thatch Palm protects itself from heat and harmful insects with a shaggy covering. The thatch can be used for roofing material or to make mattresses and cushions.

CARNAUBA PALM

The Carnauba Palm, called the "tree of life" in Brazil, protects its leaves from loss of moisture by secreting a coating of carnauba wax. The wax is harvested by drying the leaves until it flakes off. Carnauba wax has many uses. It is a principal ingredient in car and furniture polishes, dental floss coating and gummie bears!

DOUBLE COCONUT

The Double Coconut tree can grow to 100 feet in height (the Palm House roof is 65 feet high). The only place in the world where these trees grow is on the Seychelles (pronounced say-shells) Islands, off the east coast of Africa. The Double Coconut tree produces the biggest seed in the world - weighing between 30 and 50 pounds!

Fern Room

1 Where to START:

Fern room stairs

2 Questions to ASK:

- What do you think of when you look at this room?
- Does this environment remind you of anything?
- What kinds of animals would you imagine live in this kind of environment?

3 Fern Room FACTS:

In the time of the DINOSAURS

In 1908, when Jens Jensen designed this room, he wanted it to represent what Chicago might have looked like 300 million years ago when dinosaurs roamed the earth. Many plants in this room are considered primitive plants, or members of plant groups which grew during these prehistoric times.

What is a FERN?

Ferns are plants that have no flowers or seeds and reproduce by **spores** (tiny brown specks). Ferns come in a variety of shapes and sizes and store spores on the underside of their leaves in tiny, patterned clusters called **sori**.

Sori patterns can be fun to look for. Here are a few examples:

Parallel Marginal Scattered

4 LOOK For:

FERNS

There are many different kinds of ferns in the Fern Room. Some are small and close to the ground, some are growing on the rocks and others, like the Tree Ferns, are tall enough to walk under! To identify ferns, check the underside of the leaves for sori patterns.

GIANT DIOON CYCADS

Along with ferns, cycads are among the oldest types of plants on earth. Cycads have frond-type leaves and produce large, seed-bearing cones which resemble huge pinecones.

** The two Giant Dioons on either side of the stairs are estimated to be around 250 years old, which means they would have been alive when George Washington was president of the United States!*

SWIMMERS, SLIDERS AND CREEPY CRAWLERS

- The Fern Room pond houses two kinds of fish. The large ones are Japanese koi and the smaller are goldfish. They share the pond with our resident turtles (red-eared sliders).
- Look carefully - the rocks and mossy habitats in the Fern Room can also be home to a fascinating array of life. Search for millipedes, pill bugs and snails and then use the magnifying glasses for a closer look!

Sweet House

1 Where to START:

East end of Sweet House (next to Palm House)

2 Questions to ASK:

- What are some of your favorite types of candy?
- Where do you think the ingredients for these candies come from?

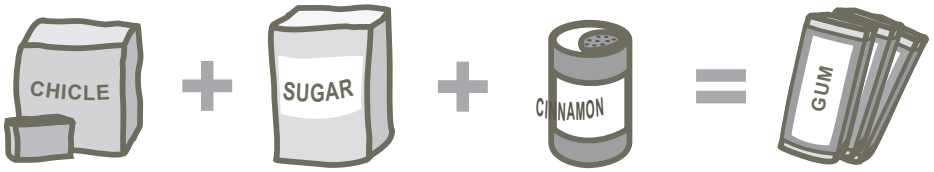
3 Sweet House FACTS:

The Sweet House contains plants that either directly or indirectly tickle your sweet tooth. These plants include: chocolate, sugar cane, figs, pineapples, coconuts, cinnamon, chewing gum, mangos, papayas, vanilla and bananas.

What these plants have in common is our enjoyment of them in candy and other sweets. The room honors an important part of Chicago's history as the Candy Capital of the World and the role of Chicago's west side in that history.

Sweet House Recipes:

Many candy and dessert recipes begin with plant products found in this room. Look at the example below and then encourage your students to seek out ingredients of their favorite treats!



Boiled sap from the Chewing Gum Tree + Sugar from sugar cane + Ground bark from the Cinnamon Tree = Cinnamon-flavored chewing gum!

4 LOOK For:

CINNAMON TREE

Cinnamon grows naturally in the wild in Sri Lanka and south-western India. The cinnamon we eat as a spice is actually the bark of the cinnamon tree which has been ground to a fine powder. Cinnamon is used as a flavoring for sweets, curry powder, incense, perfumes, dental preparations and soaps.

BANANA GROVE

The banana plant is actually an herb, not a tree. When the plant is mature, it produces one long stalk with many flowers. Each flower will become a banana, gradually bending upward as it develops. Banana plants fruit only once and are then cut down. New plants develop at the base of each mature plant.

CHOCOLATE TREE

Each season, Chocolate trees can produce up to 6,000 flowers which cover the trunk and branches. When pollinated, the flowers can become elongated pods about the size of a small coconut. Each pod contains 30 - 40 cocoa beans, the foundation for all the world's chocolate!

Children's Garden

1 Where to START:

Next to the giant seed

2 Questions to ASK:

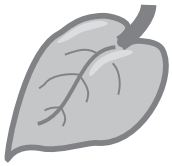
- Why do plants have flowers?
- What do plants need to grow?
- From where do most plants come?

3 Children's Garden FACTS:

With areas to play, explore and learn, the Children's Garden combines a classroom, a playground and a beautiful display garden!

The room is designed to inform young children about the life cycle of plants. From the giant seed at the entrance to "Buzz" the bee hovering overhead, students can navigate the room and learn about the birth, growth and reproduction of plants as they explore.

Each dormant seed contains a baby plant (embryo). With water, warmth and oxygen, seeds wake up and germinate. Food stored within the seed feeds the embryo as it grows.



Plants are the only living things that make their own food. Leaves absorb sunlight and use it to produce sugar. The sugar is used by the plant to fuel its growth.

A flower's shape and color beckons birds, bats and bugs. As they snack on the flower's sweet nectar, they pick up and transfer pollen to other flowers.

4 LOOK For:

SENSITIVE PLANT

The *Mimosa pudica*, or Sensitive Plant is a real trickster. When touched or shaken, its cells release water, causing the leaves to close rapidly and stems to wilt. This clever **defense mechanism** gives the plant a very unappetizing appearance to any hungry critters.

Encourage your students to gently touch or stroke the leaves and watch the show!

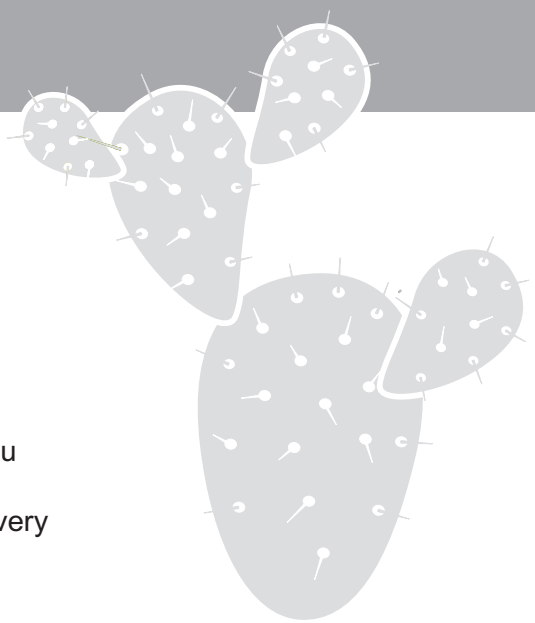
BALSA TREE

Lumber from the Balsa Tree is strong and very lightweight. Because of this, it has been an important **plant product** throughout history. Some of the many uses for this unique wood include: boxes, model airplane construction, insulation, fishnet floats and raft building.

CLIMB, CRANK AND SLIDE

The Children's Garden is the perfect place to let your students burn off some extra energy. Children can climb the giant seed (no jumping off please), turn the crank upstairs on the mezzanine to move Buzz the Bee into the giant flower, and zip down the slide!

Desert House



1 Where to START:

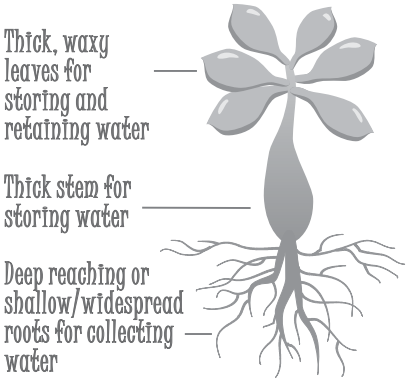
South end of Desert House
(next to the Children's Garden)

2 Questions to ASK:

- If you lived in the desert, what are some things you would need to survive?
- How do you think these plants live in places with very little water?

3 Desert House FACTS:

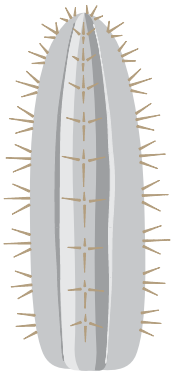
In very dry regions where water is scarce, some plants are able to survive for long periods between rainstorms. These plants, called **succulents**, have features which enable them to collect and retain as much water as possible.



All succulents have some adaptations such as thick, waxy leaves which allow them to survive life in the desert. In the case of cacti and euphorbs, spines and thorns help them endure heat and drought in a variety of ways.

Thorns and Spines:

- Protect plant from predators
- Direct rain to the root system
- Dissipate heat from plant
- Shield the plant from wind



4 LOOK For:

AGAVES AND ALOES

- Aloes and agaves can be identified by clusters of pointy, sharp-edged leaves which radiate from a central point.
- Because they bloom infrequently (every 20 - 30 years), many agaves are called "century plants".
- The juice from the aloe vera has long been used for its medicinal properties.

GIANT SAGUARO CACTUS

A 250 year old Saguaro cactus can weigh up to 6 tons and grow to over 50 feet tall, making it one of the tallest cacti in the world! Our Saguaro skeleton shows the interior vertical ribs which act like huge drinking straws, drawing up water from the roots. As these ribs fill with water, the pleats of the cactus swell, giving it a "full" look.

JADE TREE

The jade tree can store lots of water in its succulent leaves and stem, both of which are used for photosynthesis. Like many succulents, a single fallen leaf can produce roots and grow into a mature plant. Because they are easy to grow, jade trees have become very popular houseplants.

Aroid House

1 Where to START:

Pathway next to the pond bench

2 Questions to ASK:

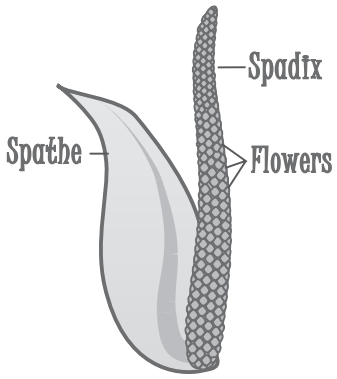
- Have you seen plants like these in your home, school or doctor's office?
- What kind of leaves would a plant need to capture the most sunlight?

3 Aroid House FACTS:

- Some of the more exotic tropical plants can be found in this room which contains one of the largest greenhouse collections of aroids in the United States. Aroids can be dazzling in their form, size and variety.
- Aroids grow naturally in the lower levels of tropical forests where sunlight is scarce. Because of their ability to thrive in these low light conditions, they have become popular and successful houseplants.

You call that a FLOWER?

Aroids are distinguished by their reproductive structures. The spiky projection called the **spadix** is densely crowded with tiny flowers lacking petals. These flowers eventually develop into brightly colored berries (fruit). Attached near the base of the spadix is a leaf-like bract, called the **spathe**. The spathe is sometimes brightly colored and showy, leading to the common misconception that it is the plant's flower.



4 LOOK For:

LEAF SIZE AND SHAPE

Plants absorb sunlight with their leaves and use it to make their own food in a process called **photosynthesis**. Because aroids naturally grow in low-light conditions, they have developed large, uniquely-shaped leaves to capture and absorb as much sunlight as possible. Encourage your students to see how many different leaf shapes they can find in this room.

TRUMPET TREE

The Trumpet Tree, native to Central and South America, can reach a height of 60 feet at maturity. With fast-growing branches and wide leaves, it spans large areas to absorb maximum sunlight in tropical forests. The hollow branches and trunk are used to make floats, gutters and trumpets and are commonly inhabited by stinging ants!

GIANT PHILODENDRON

This plant provides a great example of large, flat leaves. These are practically big enough to use as an umbrella! Aroids commonly attach to taller trees as a clever way to reach the sun. They also have two types of **aerial roots**. The short roots growing out from the stem have adhesive root hairs which attach the plant to the climbing surface. The long feeding roots can dangle at great lengths and absorb water and nutrients.

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