Providing a Lifetime of Enrichment for the Primates in Our Care
What is enrichment? The dictionary defines it as…

en·rich (ə-n-rĭch′)
tr.v. en·riched, en·rich·ing, en·rich·es
1. To make rich or richer.
2. To make fuller, more meaningful, or more rewarding.
3. To improve or enhance the quality of something.

What is primate enrichment?
Everything we do to improve the quality of our primates’ lives is enrichment. There are three essential elements of captive life that fall short when compared with what our primates would be experiencing in a wild living environment. In this forum, we are going to discuss ways in which we can enhance these areas of our primates’ lives to better meet their needs.

- Dietary Enrichment
- Environmental Enrichment
- Social Enrichment

Why is it important?
You and I have the power to affect our environment. We can turn on the television, read a book, call a friend, make a sandwich, or go for a walk. If we are bored or dissatisfied with our situation, we can change it. We have many resources available to us to enhance our lives. Our monkeys have only what we provide for them. They live where we put them. They eat what we feed them. They play with what we give them. Their needs for stimulation are very much like our own; yet they are without the ability to meet those needs themselves. They have only us. We are their sole resource for getting their needs for enrichment met. As responsible owners, enrichment of our primates’ lives is as essential as providing food and water.

What can we do to enrich the lives of the primates in our care?
This guide will discuss some practical ideas for enrichment, and stimulate your imagination to explore more options on your own.
Dietary Enrichment

Enriching the Quality of the Diet

The Wild-Living Primate Diet

Studies have proven that the diet of wild-living monkeys is higher in nutritional value than the diets of many, if not most, humans in America today.

A study done by University of California at Berkeley in 1999 of wild-living monkeys in Panama produced the following findings:

- The fruits and leaves that monkeys eat in the wild are loaded with nutrients, giving these primates a diet far richer in many essential vitamins and minerals than the diet recommended for daily consumption by human beings.

- The average 15-pound wild monkey takes in as much as 10 times more than the RDA for humans of vitamins and micronutrients such as vitamin C, calcium, potassium and magnesium.

- Young leaves from tropical trees were found to have the same profile of essential amino acids as meat, thereby satisfying the protein requirements of the monkeys.

- The wild fruits eaten by the monkeys were considerably more nutritious with more protein, more of certain essential micronutrients than the cultivated varieties found in American supermarkets.

- The sugars in the pulp of wild fruits occurred mainly as glucose and fructose, while the sugar in domesticated fruits is mainly sucrose (like plain table sugar).

- The wild fruits had higher levels of calcium, potassium, iron and phosphorus - sometimes as much as a 10-fold difference - compared to domesticated fruits.

The complete study can be reviewed at http://www.cnr.berkeley.edu/miltonlab/pdfs/kmilton_micronutrient.pdf

The Captive-Living Primate Diet

Commercial primate diet is readily available and is formulated to meet the basic dietary requirements of primates. It is a grain-based product in which soy, corn and other grains are the primary ingredients. Much of the protein in monkey chow is derived from soy. Vitamins and minerals are added to meet the daily requirements of primates. All monkey chow contains sugar, and some brands are higher in sugar than others. There are formulations available for new world and old world monkeys, leaf-eaters, growing and reproducing monkeys, obese monkeys, and the elderly. Commercial monkey chow provides a standardized diet and is an important part of
every primate’s dietary plan. Debbie Cobb of Suncoast Primate Sanctuary in Palm Harbor, FL states that one of the best ways to assure that your monkey will have a lifetime of quality care is to make sure that your monkey eats some type of monkey chow on a regular basis. Although commercial chow is essential and should be the basis of the diet, it falls short when compared to the highly nutritious diet of wild-living monkeys.

The makers of commercial primate diets provide information on nutrition and product availability on their websites.

http://www.zupreem.com/our-food/primates
http://www.marionzoological.com/food.htm
http://www.labdiet.com/primate_diet.html

The fruits and vegetables available in our supermarkets only vaguely resemble the highly nutritious fruits and vegetation consumed by monkeys in the wild. Our fruits and vegetables are cultivated to please the palates of the American consumer. We want our apples sweet, our lettuce crisp, our tomatoes firm, and our onions mild. Years of research have produced the hybrid fruits and vegetables that we have available in supermarkets today, but the process has altered the nutritional value and sugar content of the produce from its original form.

**Enriching our Primates’ Diets with Supplements**

Fortunately for our monkeys, there are many resources available to us to enrich their diets and put back some of what was lost in processing and genetic altering of crops. There are a number of good vitamin supplements on the market, some formulated specifically for primates and other zoological animals. Children’s vitamin supplements can also be used, taking into consideration the size of the monkey vs. the dosage of the supplement. The dosage of one-half of a children’s vitamin every day or every other day is typically what is given by primate caretakers. This dosage has not been studied or proven to meet all of the daily requirements of primates, but is commonly used in private care. A veterinarian should be consulted prior to starting the primate on any vitamin supplementation.

Information on some of the vitamin preparations that have been specially formulated to meet the needs of our monkeys can be found at the following websites.

https://www.dynamitemarketing.com/Order.asp?InvDispCatID=8&InvDispSubCatID=27
http://www.jefferspet.com/vionate%23174%3B-vitamin-mineral-powder/p/95/
http://testdiet.com/PDF/PrimateVitamins.pdf
http://seatabs.com/about.php
Enriching our Primates’ Diets with Replacements

Some of the nutrition lost in processing and cultivating can be replaced by putting back what was taken out. Nutritious food additives such as wheat germ and rice bran put back the natural qualities that the food contained before processing occurred. We Americans want our bread white and soft, so the wheat germ and other elements are removed from the grain in flour mills and bakeries. Likewise, Americans like white, fluffy rice thus the bran is polished off the rice before packaging. The processing involved in making commercial primate chow removes much of the fiber and natural elements as well. Sprinkling some wheat germ or bran onto our monkeys’ biscuits or vegetables can replace some of the nutrition that was lost in processing.

Consider becoming familiar with some of the following healthy foods and food additives that are available in health food stores and whole foods markets. These foods can enrich the quality of our monkeys’ diets, as well as providing variety and interest.

<table>
<thead>
<tr>
<th>Flax seed</th>
<th>Sprouted greens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flax seed oil</td>
<td>Sprouted grains</td>
</tr>
<tr>
<td>Hemp seed</td>
<td>Chia seeds</td>
</tr>
<tr>
<td>Rice bran</td>
<td>Brown rice</td>
</tr>
<tr>
<td>Oat bran</td>
<td>Raw nuts</td>
</tr>
<tr>
<td>Fish oil</td>
<td>Puffed whole grains</td>
</tr>
<tr>
<td>Wheat germ</td>
<td>Garbanzo beans</td>
</tr>
<tr>
<td>Whey protein</td>
<td></td>
</tr>
</tbody>
</table>

Below are a few websites to get you started:

http://www.rosicrucian.com/zineen/pamen043.htm
http://completewellbeing.com/article/sprouting-benefits/
http://www.wheyoflife.org/faq.cfm
http://www.arrowheadmills.com/category/beans-grains-seeds-%2526-rice
http://www.arrowheadmills.com/category/all-natural-nut-butters
http://www.arrowheadmills.com/category/puffs
http://flaxfood.com/benefit.htm
http://www.nutsonline.com
http://www.mychiaseeds.com/NutritionFactsChia.html
http://www.acaciaplant.net/acacia_fiber/acacia_fiber.html
Dietary Enrichment

Enriching the Delivery of the Food

Enriching our Primates’ Diets with Variety

Some caretakers make the mistake of thinking that if they don’t like a particular food item, their monkey does not like it either. Those who are less adventurous with their own diets, tend to limit their primate’s menu to one or two fruits or vegetables offered over and over again. There is an abundance of food available to us in our markets today. Every imaginable fruit can be obtained regardless of the season or climate. Vegetables come in every size, shape and color. Our monkeys’ wild-living relatives partake of multiple offerings from their environment; nibbling on a wide variety of leaves, sprouts, mosses, sticks, bark and bugs in their daily search for food. Just like humans, monkeys get bored with eating the same foods over and over again. By widening the variety of the foods we offer them, we are enriching their lives through their daily diet as well as ensuring that they get their needed vitamins and minerals.

Varying the Presentation

Even the familiar diet can be presented in new and enriching ways. Altering the size, shape and preparation of familiar foods can get your monkey excited about their usual meal. Instead of a sliced carrot, perhaps you will offer it grated today; or instead of the usual apple slice perhaps they will get unsweetened applesauce in a little paper cup. Their dry biscuit could be soaked in sodium-free chicken broth today. When preparing their food, stop and ask yourself, “How can I make this food different and fun?” Don’t be afraid to “kick it up a notch”. You will be surprised at the creative ideas you can come up with.

Make it Homemade

A number of recipes using monkey chow and other healthy ingredients have been developed by creative caregivers searching for ways to provide variety in their monkey’s diet without compromising nutrition or adding sugar. See the following pages for recipes, and then add your own.
Commercial Resources

The need for dietary enrichment in laboratory monkeys has resulted in a few good sources of commercially prepared treats and enrichment items. One company, Bio-Serv offers feeding devices designed to accommodate the sizes and shapes of the treats they sell. A word of caution: Don’t assume that these treats are entirely healthy just because they are made for primates. Many of the products contain sugar and should be fed in moderation. Sugar in the diet can lead to the development of diabetes in some species, particularly in the black-capped capuchin. Treats should not be fed as a substitute for a healthy, well balanced diet of monkey chow, fresh produce, protein, nuts and seeds.

There are many commercial pet foods on the market now that are made with high quality organic ingredients. Though not an adequate substitute for monkey chow, these gourmet dog and cat food products are highly nutritious and make great snacks and supplements to the regular diet. Parrots have dietary requirements that are similar to those of primates. Parrot food products come in a wide variety of flavors, shapes, and colors. These products are great for foraging, either alone or added to a foraging mix.

http://www.bio-serv.com/
http://www.zupreem.com/our-food/primates/primates-os%26E2%84%A2
http://primatstore.com/monkey_treats.asp
http://www.karmaorganicpet.com/
http://www.zupreem.com/our-food/birds
Dietary Enrichment

Enriching the Feeding Experience with Foraging

The Benefits of Foraging

Once again comparing our monkeys with their wild-living cousins, our monkeys’ feeding habits are far different from those of monkeys in the wild. Wild-living monkeys spend the majority of their time searching for food and consuming it. Foraging activities take up the largest part of their day, followed by play and social grooming. Foraging activities provide opportunities for primates in the wild to interact with one another and work together to obtain food. Foraging affords an opportunity for exercise and muscle building, which keeps the caloric intake/energy expenditure ratio in balance. Working for food, or foraging, is mentally stimulating for our captive-living primates as well. As good caretakers, we want to be sure that our monkeys eat well, so we prepare their food and serve it to them. We peel their apples, shell their nuts, and soak their biscuits. We could enhance their feeding experience by doing just the opposite—making their food harder to find and harder to eat. With the component of foraging removed from the captive primate’s environment, they are essentially left with too much time on their hands and boredom results. Foraging activities provide opportunities for our monkeys to solve problems, use tools, and strategize. The many benefits of natural foraging can be experienced by our primates with a little bit of planning and creativity on our part.

Providing Natural Foraging Opportunities for the Captive Primate

Anything that we can do to prolong the time our monkeys spend searching for their food and consuming it adds enrichment to their feeding program. Varying the placement of their food, or the containers used for feeding can result in a fun game of hide and seek for them. The game can be made more challenging as the monkey’s skills develop. Using foraging containers or devices strategically placed in the enclosure to encourage climbing, reaching and stretching to obtain the prize encourages movement and exercise. The more the monkey has to work for the food, the more stimulating and interesting the game is. Foraging can be carried out in both indoor and outdoor habitats using both natural and artificial elements. Raisins hidden under a log in the outdoor enclosure will closely resemble insects and will surprise and delight your primate. A cardboard box filled with paper shred and a few blueberries will keep your monkey busy picking through every little piece of shred so as not to miss a single morsel. Ask yourself often how you make your monkey’s food harder to eat and you will come up with many challenging foraging ideas.
Simple Homemade Foraging Ideas

Providing foraging opportunities for our primates does not have to be expensive or labor intensive. Below are a few simple things that you can make yourself that will provide hours of fun foraging activity for your monkey. You probably already have the materials needed for these activities.

**Paper Tube Foraging:** Fill empty toilet paper rolls with food and tape the ends closed with several layers of paper masking tape. Adding paper shred makes it even more challenging to find the goodies once the tube is opened.

**Sack Lunches:** Put chopped veggies or other food items in a brown paper lunch sack and tape it closed. Once your monkey learns this game, you can hide the sack and ask him to go and find his sack lunch and the search will be on.

**Ice Cube Foraging:** This is especially fun on hot summer days. Place a piece of fruit or vegetable in each section of an ice cube tray, fill with water and freeze. Toss a few out to keep your monkey friends cool while they lick their way to their food. This can be done with other containers to make different ice objects. A Jello mold made a nice frozen ring that kept our boys cool and wet all day while they waited for their orange slices to reach the surface of the melting ice.
**Natures Packages:** Some foods come sealed in their own natural containers and are lots of fun for monkeys to open. Try hard-boiled eggs in the shells, raw peanuts or other nuts in the shells, and green peas in the pods.

**Dixie Cups:** The small, bathroom-size Dixie cups are the perfect size for little hands. Try filling with applesauce or diluted fruit juice and freezing.

**Rolled and Coated:** Almost any food can be coated with natural peanut or almond butter and rolled in foraging mix (recipe on following pages).

**Carpet Foraging:** Scatter handfuls of seeds, nuts, or foraging mix over clean carpeting and watch the monkeys pick, pick, pick away. When the fun is over, just vacuum up the mess.

**Paint Roller Foraging:** Spread nut butter over an unused paint roller and roll in monkey chow crumbs, seeds, or foraging mix then let it dry. A chain can be threaded through the roller for hanging in the cage.

**Bucket Foraging:** Fill a pail with paper shred, wood shavings, or straw. Bury a few treats or food items in the shred. Attach the bucket to the side of the cage so that it cannot be dumped, and watch your monkey empty the bucket looking for the treats. This activity can be made more challenging by putting a lid on the bucket with a hole cut in it. This is especially fun with insects or mealworms.

**Container Foraging:** Almost any container can be filled with food items and sealed shut with masking tape. See how long it takes your monkey to break through the seal and get to their treats. Adding paper shred adds to the fun. Try this with 2-liter soda bottles, water bottles, infant formula cans, empty baby wipe boxes, butter tubs, oatmeal cans, gallon milk jugs,

**Sandbox Foraging:** A sandbox is a wonderful enrichment element in an outdoor enclosure. It can double as a foraging device when food items are buried in the sand. This works well with peanuts in the shell or hard-boiled eggs.
**Wading Pool Foraging:** A child’s wading pool filled with water is lots of fun on a summer day. Toss in a few food items for some foraging/fishing. Try using a few items that float, such as apple slices or raw spinach leaves, and a few items that sink to the bottom such as grapes or berries to make the activity last longer.

This list is far from exhaustive. The sky is the limit when it comes to creating simple, inexpensive foraging experiences for your monkeys.

**Foraging Devices**

There are many foraging toys and devices that can be purchased today. Only a few items will be mentioned here. Websites are listed below with additional resources for purchasing foraging devices, feeders and puzzle feeders. Many of these items can be purchased at pet stores or feed stores, but some must be ordered from companies that specialize in providing enrichment equipment to laboratories and zoos.

**PVC Feeders:** These are homemade devices made out of PVC pipe. The styles vary in size and shape, but they are all designed to hold food that is accessed by the primate through holes in the pipe. Variations in the size and spacing of the holes dictate how challenging the puzzle is. These items can often be purchased at picnics and gatherings as a number of individuals within the monkey community make and sell them. You can contact them by inquiring on the various groups and list-serves.
Dog Toys: Many items designed to enhance the feeding experience for dogs make excellent foragers for primates. These can be found in pet stores such as PetsMart, and online stores that sell pet supplies. These items come in a nearly endless array of sizes and shapes. Some favorites of monkey owners are the Tug-a-Jug, Buster Food Cube, Kongs, and Treatsie Roll.
**Parrot Toys:** Parrots enjoy and benefit from foraging activities much like primates do. There are several high-quality foraging devices designed for parrots and made from hard acrylic material. As with the dog products, these items can be purchased at pet stores and online pet supply dealers. Some favorites that are enjoyed by primates are the Rings of Fortune, Can-O-Nuts, Turn and Learn Log, and the Foraging Wheel.

![Foraging Wheel for Parrots](image1.png)

Rings of Fortune parrot forager

![Turn and Learn Log](image2.png)

Turn and Learn Log

**Specially-designed Primate Foragers:** There are a number of companies that specialize in making and/or selling high-quality enrichment devices for primates in laboratory and zoo settings. These items tend to be durable and well-designed. They also tend to be expensive, but because of their durability can be considered an investment in your primate’s happiness and well-being. Some companies, such as Bio-Serv, make specially designed treat products that fit in the foraging devices they sell. Some of the products that are frequently used by caregivers in the private sector are the Super Challenger Ball and Shake-A-Treat by Bio-Serv, and the NutraToss puzzle feeder by Primate Products, Inc.

![NutraToss by Primate Products, Inc.](image3.png)
Shake-A-Treat by Bio-Serv

Super Challenger Ball by Bio-Serv

More Resources for Specially-Designed Primate Foragers

http://www.absoluteprimate.com/
http://ace-cap.com/catalog/Enrichment-89-1.html
http://www.primatproducts.com/home.php
http://www.sanctuarysupplies.com/
http://www.animalspecialties.biz/index.html
http://www.bio-serv.com/
http://primatestore.com/
RECIPES FOR PRIMATES

RAW FOODS AND MONKEY CHOW FORMULA

Approximately 40 monkey chow biscuits (I use 5MA1-Growth and Repro)
1/2 cup raw oatmeal (not instant)
1 whole raw apple
1 whole raw carrot or 1/2 raw sweet potato
1 whole raw zucchini squash
1 scoop Bio-Chem Whey Protein (vanilla)
1 scoop Bio-Chem Greens & Whey Protein (vanilla)
2 tablespoons wheat germ
2 tablespoon ground flax seed
1 tablespoon flax seed oil
Sprinkle of cinnamon

DIRECTIONS: Wash and chop vegetables and apple into chunks. Place ingredients in blender. Fill blender half full with water. Blend on high until smooth, adding water as needed to make mixture smooth and thick. Makes approximately 64 ounces.

NOTE: I use a Vita-Mix blender that is very powerful. If mixture does not reach a creamy smooth consistency using a different blender, may try using cooked brown rice, applesauce and steamed or boiled vegetables instead of the raw foods.

FEEDING INSTRUCTIONS: For infants under 1 year of age, start by adding 1 tablespoon of Raw Foods and Chow mixture per 2 ounces commercial infant formula of choice (Similac, Enfamil, etc.) Gradually increase the ratio of Raw Foods and Chow mixture to infant formula until by age 1 year the monkey is being fed primarily the Raw Foods and Chow mixture and very little infant formula. At age 1 year, the commercial infant formula can be discontinued. Continue feeding Raw Foods and Monkey Chow Formula for life if desired.

MONKEY MEATBALLS

1 pound ground turkey or chicken
1 cup monkey biscuit crumbs, ground to powder
1 cup oatmeal, blended to a powder
1/2 cup wheat germ
1 carrot, shredded
1/2 onion, minced
1-2 cloves garlic, minced
1 small can tomato sauce
2 eggs, blended
1 teaspoon salt-free seasoning of choice (I use Italian seasoning)

Mix ingredients with hands until well mixed. Add water as necessary if mixture is dry. Form into 1 inch balls. Bake on sprayed cookie sheet for 20 minutes at 350 degrees. Makes 5 dozen meatballs.

MONKEY COOKIES

3 cups ground monkey chow
1 cup ground oatmeal (not instant)
1/2 cup wheat germ
2 TBSP ground flaxseed
2 bananas
2 sweet potatoes
1 lb. unsweetened applesauce
3 TBSP peanut butter

Mix ingredients together. Form into 1” balls and flatten with a fork to 1/4 “ thickness. Bake at 350 degrees for 20 minutes. Makes 7 dozen cookies. Note: You may add a raisin or piece of fruit to the top of each cookie if desired.
HOMEMADE MONKEY BISCUITS

Ingredients:
3 lbs cooked chicken breast, chopped
3 lbs fresh vegetables of your choice, chopped and steamed until tender
3 cups cooked brown rice
3 cups cooked quinoa
1 can garbanzo beans, lightly mashed
1 cup wheat germ
1 cup flax seed meal or shelled hemp seed (or mixture of both)
1 cup raw sunflower seeds and/or raw pepitas or other raw chopped nuts
3 eggs with shells on
2 bananas
1 can pumpkin
2 raw apples, blended until chunky/smooth, or 1 cup applesauce
5 T flax seed oil
Raw rolled oats as needed for texture
Seasonings of choice

Instructions:
Preheat oven to 350 degrees.
Toss chicken, vegetables, rice, quinoa, beans, wheat germ and seeds in large bowl with clean hands to mix. Using an electric hand mixer, blend and mix the ingredients until meat and vegetables are shredded and all ingredients are mixed together.

Wash eggs thoroughly and blend, shells and all, into a liquid and pour over ingredients. Do the same with the apples and bananas. Add canned pumpkin and flax oil. Add seasonings of choice.

Blend again with the hand mixer until all chunks of vegetables and meat are broken up. This takes awhile. May also use a large-capacity food processor if you have one.

Stir in raw rolled oats until mixture is the consistency of lumpy cookie dough. More raw oats will produce a drier biscuit; less oats will produce a softer biscuit.

Using a cookie scoop, scoop out 1-inch size mounds onto a lightly oiled or sprayed cookie sheet. Bake for 20-25 minutes until mounds are lightly browned on top and bottom. Cool on wire racks. Makes 18 dozen biscuits.

Storage and Feeding:
Must be stored in the refrigerator. Freeze any portion that will not be used within 3 days. I freeze these in bags of 3 dozen. My monkeys each eat 3 a day, and the dog likes them too, so this recipe makes a 2 week supply for our troop.

Note: Cooking the meat, vegetables and grains the day before baking simplifies the process. Making these is an all-day job, but the nutritional value for the monkeys is worth the effort.

Janice Metzger

CARROT COOKIES

2 cups carrots
2 eggs
2 cups monkey chow
1 cup rolled oats
¼ cup flax seed, hemp seed or wheat germ

Boil and puree carrots. Finely grind monkey chow and oats. Combine carrots and oats and mix until smooth. Add all dry ingredients and mix well. Roll into balls, flatten and bake.

From Monkey Moms Favorite Recipes and Treats Cookbook
The Debbie Group

FROZEN YOGURT CONES

Small sugar cones
Vanilla yogurt
Blueberries

Fill cones with yogurt. Top with a blueberry and freeze. Store in plastic bag in the freezer.
YOGRUTH POPS

16 oz. plain or flavored yogurt
¾ c. water
1 c. unsweetened fruit cocktail

Combine ingredients and pour into ice cube trays or small Dixie cups. Freeze and serve.

From Monkey Moms Favorite Recipes and Treats Cookbook
The Debbie Group

EGG CARTON TREATS

Peanut Butter
Foraging Mix (see Foraging Mix recipe)
Cinnamon

Smear each cup in a paper egg carton with peanut butter. Sprinkle foraging mix over the cups and pat down into peanut butter. Sprinkle with cinnamon. Cut cups apart to serve.

FORAGING MIX

Rolled oats
Barley
Winter wheat berries
Flaxseed
Chia seeds
Raw sunflower seeds
Sunflower seeds in the shells
Pepitas (squash seeds)
Slivered almonds
Sliced almonds
Raw peanuts
Unsweetened shredded coconut
Dried lentils
Dried split peas
Puffed brown rice (Arrowhead Mills)
Puffed Millet (Arrowhead Mills)
GrapeNuts cereal
Fiber One cereal
Cheerios
Crushed Shredded Wheat
Go-Lean cereal (Kashi)
Crushed unsalted pretzels
Freeze-dried fruit and/or vegetables
Zupreem Primate O’s
Mazuri Enrich Bits
Zupreem FruitBlend for parrots
(Other other small parrot food)

Combine any or all of the above ingredients to your liking. Use to fill foraging devices, containers and for scatter foraging.

MONKEY SNACK MIX

Raw almonds
Raw peanuts
Raw cashews
Raisins (sparingly)
Dried cranberries (sparingly)
Puffed corn (Arrowhead Mills)
Puffed wheat (Arrowhead Mills)
Unsalted pretzel twists
Cheerios
Chex cereal
Gerber Puffs
Goldfish crackers (sparingly)
Teddy Grahams (sparingly)
Zupreem Primate O’s
Karma Organic Dog Food
(Other other gourmet dog chow of choice)
Zupreem Avian Maintenance
(Other other parrot food of choice)

Combine any or all of the above ingredients to your liking. Use to fill foraging devices, containers and for scatter foraging.

JUICE POPS

1 cup fruit juice diluted with 1 cup water
Diced fruit of choice

Place fruit in ice cube tray and cover with diluted juice. Freeze and serve.

Janice Metzger
OATMEAL COOKIE BALLS

2 cups rolled oats (not instant)
½ cup whey protein powder
Cinnamon, cloves, pumpkin pie spice or other spices of choice, to taste.
½ cup raw sunflower seeds
¼ cup ground flaxseed
¼ cup unsweetened shredded coconut
½ cup raisins or dried cranberries, optional
½ cup Grape Nuts cereal, or other crushed cereal of choice
½ cup chunky peanut butter
¼ cup vanilla yogurt
2 TBSP honey

Combine dry ingredients. Mix together yogurt, peanut butter and honey. Add to dry ingredients and mix well with hands. Mixture should be the consistency of cookie dough. To make dough firmer, add more rolled oats. To make dough moister, add more water. Form into 1-inch balls and chill until firm. Store in refrigerator.

JUICE JIGGLERS

4 envelopes Knox Unflavored Gelatin
2 cups fruit juice*
2 cups water

Mix juice and water. Chill 1 cup of diluted juice until very cold. Heat 3 cups of diluted juice to boiling. Sprinkle gelatin over cold juice in a large bowl. Let stand for 1 minute. Add hot juice and stir until gelatin completely dissolves, about 5 minutes. Pour into 9 x 13 pan and chill until firm. Cut into 1-inch squares and serve.

* I use a pomegranate and blueberry blend

Janice Metzger

GELATIN FRUIT CUPS

2 envelopes Knox Unflavored Gelatin
2 cups fruit juice*
2 cups water
1 cup diced fruit or berries

Combine juice and water in a small saucepan. Sprinkle gelatin over juice mixture and let stand for 1 minute. Heat juice mixture over low heat until gelatin is completely dissolved. Cool for 15 minutes. Place berries or small pieces of fruit in small Dixie cups. Pour cooled gelatin over fruit. Chill until set then serve.

* I use a pomegranate and blueberry blend

Janice Metzger

BAKED EGG MUFFINS

1 cup cooked brown rice
1 can black beans, rinsed and drained
Or other beans of choice
2-3 diced green onion tops
1/2 cup grated cheese
6 eggs
¼ cup water
Dash of curry powder, optional

Beat eggs and water together. Add curry powder, if desired. Combine remaining ingredients. Spray mini muffin tins with Pam, or use paper liners (not foil). Fill each muffin cup ½ full with rice and bean mixture. Pour beaten eggs over mixture. Do not overfill. Bake at 325 until eggs are firm. Cool. Serve at room temperature. Store leftovers in refrigerator, or freeze.

* I use a pomegranate and blueberry blend

Janice Metzger
BANANA MONKEY BARS

2 cups ground monkey chow
2 very ripe bananas
Raisins or nuts, optional
Cinnamon or other spice, optional

Mash banana, or liquefy in blender. Add spices as desired. Mix in ground chow. Add nuts and raisins if desired. Spread out on cookie sheet and pat until firm. Bake at 350 for 30 minutes, or until lightly browned. Do not over-bake. Let cool then cut or break into pieces and serve.

Winona Morton

MONKEY CHOW COOKIES

3 cups ground monkey chow
1 cup five-grain cereal
½ cup toasted wheat germ
1 bag of boil-in-bag brown rice
1 TBSP ground flaxseed meal
3 bananas
1 jar organic unsweetened applesauce
3 TBSP natural peanut butter
2 sweet potatoes
1 tsp cinnamon

Mash the sweet potatoes, bananas and applesauce together. Add remaining ingredients. Form into 1-inch balls and place on cookie sheet. Flatten with fork until ½ to ¼ inch thick. Bake at 350 degrees for 10 minutes. For harder cookies, bake longer.

Donna Bandy
Monkey Moms Favorite Recipes & Treats
The Debbie Fund

NUTTY MONKEY BALLS

1 banana
½ cup peanut butter
¼ cup ground monkey chow
2 cups foraging mix
(See Foraging Mix recipe)

Mash banana and peanut butter together. Stir in ground chow and foraging mix. Chill one hour. With wet hands, form into balls and roll in more foraging mix. Place on waxed paper on a cookie sheet or tray. Store in refrigerator or freezer. Makes 2 dozen balls.

Sheryl Sherman
Primate Enrichment Diary

CIRCLE SANDWICHES

2 slices whole-grain bread
1 slice cheddar cheese

Using a small cookie cutter, biscuit cutter or shot glass, cut 4 circle shapes out of each slice of bread and the slice of cheese. Assemble the little sandwiches and toast until brown and cheese is melted. Cool and serve.

PASTA SALAD

1 cup cooked whole wheat pasta
1 cup chopped vegetables of choice
Dash of garlic powder
Dash of black pepper, optional
1 tsp. vinegar
1 tsp. olive oil

Toss all ingredients to mix. Chill and serve.
Environmental Enrichment

Enriching the Habitat of the Primate

The Wild-Living Primate Habitat

The wild-living primate habitat is one of ever-changing stimulation. Depending on the species, the wild monkey has a never-ending supply of trees to climb, rocks to explore, spaces to run and jump, and an amazing variety of foliage and fauna with which to manipulate and eat. The range of the wild monkey varies considerably from species to species, with the black-capped capuchin occupying an astonishing three to three and a half mile range. This ever-changing environment is impossible to recreate in a captive setting, but should be kept in mind as we create and enrich the habitats where our monkeys live.

The Captive-Living Primate Habitat

No matter how dedicated we are to habitat enrichment, our captive-living primates’ habitats are deficient when compared to that of their wild-living relatives. However, through thoughtful planning, continuous enhancement and considerable expense we can create a habitat where our primates can live healthy, enriched lives in which their needs for exercise, stimulation and relationships are met. This takes tremendous commitment and sacrifice, and unfortunately many fall short of providing a habitat which meets their monkey’s complex needs. The minimum cage size required by APHIS and AWA are much smaller than most of our primates have, and cannot come close to meeting their needs for exercise and enrichment. The state of Florida Fish and Wildlife requires minimum cage sizes of 6’ long x 6’ wide x 6’ tall. Perhaps the best guide to follow when selecting caging for our monkeys is, “The bigger the better”. Size and security are the two most important factors in the planning the habitat. However, the habitat of monkeys living in the homes of private caretakers encompasses much more than just the cage and is dependent upon many factors; some being the age and size of the monkey, the locomotion of the species, whether the monkey can be handled, the resources available to the caregiver, other animals and humans living in the home, space restraints, and the list could go on and on. The habitat of the primate includes the cage or cages that they spend time in, the environment around the cages, outdoor enclosures, exercise and play areas, free-roaming time and space within the home, and the method in which they move about between these elements.

The Elements of the Habitat

Indoor Caging. Caging is probably the largest financial investment that you will make in your monkey’s wellbeing. Primates of all species are remarkably strong for their size and require durable, well-built cages. The two most important requirements for caging are that it be secure and as large as space will allow. Many devoted caregivers give up their own living space to provide large indoor caging for their monkeys. Cage doors should be equipped with multiple latches and a key lock. All openings such as feeder doors and tunnels should be equipped with locks, or permanently secured if not in use. Monkeys are masters of escape and are always
watching for an opportunity for adventure. Wild-living monkeys seek out refuge in the jungle canopy. Likewise, our monkeys feel most secure when they are in an elevated position, so the caging should be as tall as possible to accommodate these needs. The flooring material of the cage should be easy to clean. Un-diapered monkeys may require elevated wire floors to allow for waste to fall through onto the floor or a drop pan. Caging materials vary greatly, as do their designs and features. Many owners build their primates’ caging to their own specifications, but there are many sources of caging available for purchase. Following are websites from a few of the many distributors of caging that is suitable for primates. Only the very largest parrot cages are suitable for primates, and most will require modifications to make them safe.

http://www.cagesbydesign.com/default.aspx
http://petcages4less.com/CTGY/MONKEY_CAGES.html
http://www.masonco.com/
http://www.cornerslimited.com/
http://www.priefert.com/ProductGroup/kennels-51/priefert-kennels-516/
http://www.optionsplus.com/
http://www.cats-on-line.com/
http://www.cageworks.com/cages/4
http://www.thebirdcagedepot.com/small-walk-in-aviary.html
http://www.innovative-enclosures.com/Monkey-Cages-c12.html
http://www.birdcagemart.com/Cages_By_Styles-Walk_In_Aviaries.html

An enrichment-filled primate cage built by Corners Limited
An A&E walk-in aviary makes a great indoor primate enclosure.

Safety catch available for the A&E walk-in aviary
Bronze Series caging panels by Options Plus can be configured in a number designs.

Adding additional panels enlarges the enclosure, a good option for those who want to give a young monkey additional space as it grows and matures.

Bronze Series panels enclose a play area filled with enrichment for a capuchin monkey.
The corner of a room becomes a cage for a large, strong monkey by enclosing the area with heavy-duty caging.

Monkey cage with elevated wire floor and drop pans by CageWorks.

**Outdoor Enclosures.** Captive-living primates benefit tremendously from fresh air and sunshine. Sunlight provides natural Vitamin-D, which is essential for calcium absorption and strong, healthy bones. The outdoors can provide enrichment through its ever-changing scenery. A bird perched on the fence, a lizard climbing up a wall, leaves falling from the trees, or an afternoon sprinkle can be a gift from Mother Nature to enrich your monkey’s day. Large outdoor enclosures encourage exercise through the natural activities of running, tumbling, leaping and brachiating. This type of exercise is essential for strength building, proper metabolism and stress relief. A tunnel or “doggie door” between the indoor and outdoor enclosures allows the monkey to move between the two environments at will. This ability to choose can help to reduce frustration and minimize negative behaviors associated with boredom.

Security is of utmost concern with outdoor enclosures. Entrance and exit from the enclosure should be made only through a double-door security entrance or “catch” which prevents the monkey from bolting when the door is opened. Perimeter fencing prevents anyone from getting close enough to the enclosure to make contact with the primate. Care must be taken when planning the outdoor enclosure to minimize the risk of your primate coming in contact with neighbors or passersby. ‘No Trespassing’ signs or other warning signs should be prominently posted to discourage unauthorized visits. The posting of signs does not guarantee that you would not be held liable in the event of an incident, but does show that you have performed due diligence to provide warnings.

Many of the distributors of indoor caging also manufacture and sell caging that is suitable for outdoor use. Very nice outdoor enclosures can be welded using “horse panel” wire and tubular steel. Following are some examples of outdoor enclosures for primates.
Outdoor enclosures for capuchin monkeys are secured by perimeter fencing and natural barriers.

An outdoor cage on wood decking with tunnel to indoor shelter and “lookout tower” for enrichment.
Meeting the needs of two species with two outdoor enclosures. The 6-foot octagon aviary by CageWorks with planted enrichment for a squirrel monkey; the 10 x 10 Priefert kennel with fire hose, swings and preschool toys for capuchins.

A poolside enclosure for a lucky monkey to enjoy summertime fun with her human companions. The substrate is wood decking covered with marine-grade carpeting.
Old corn cribs can be recycled into excellent outdoor primate enclosures. Pipe tunnels, hammocks and preschool toys provide enrichment.
These Priefert kennel panels are stacked two high to create a 12-foot tall outdoor enclosure. Enrichment items include preschool climbing structures and toys, as well as swings made of PVC pipe and gorilla mesh hammock.
Indoor Play Areas

The guestroom, storage room or garage becomes a playroom; a corner of a bedroom or office becomes an enclosed play area. It doesn’t matter where it is, the result is FUN! An element in your habitat where monkeys can be off-leash and caregivers can enjoy hands-on contact and interaction with them provides enrichment for both monkey and human.

Lots of windows brighten this fun playroom that features a geodesic climbing dome suspended above the floor with chain.
Enriching the Elements of the Habitat

When we are dissatisfied with the elements of our own habitats, we have the power to change them. When we are bored we can turn on the television, read a book, go to a movie, or work on a hobby. If our beds or furnishings are uncomfortable or don’t suit us, we can throw them out and get new. We can exercise when, where and how we choose. We can make choices for ourselves, and we have power over our environments. Our monkeys have only what we provide for them. They live where we put them, play with what we give them, eat what we feed them, and socialize with whoever we put in their cage with them. They do not have the power to change their environment to meet their needs. It is up to us to enrich their habitats in ways that will meet their needs for security, comfort, nutrition, exercise, mental stimulation and social interaction.

Safety First. Every element in your monkey’s habitat should be equipped with locking doors. Cage doors should have multiple latches and a key lock. Each door in your outdoor element should have a safety catch. Monkeys are a ‘flight risk’. Typically, an escapee has little else on his mind than to explore a bit, but can be easily startled by the sound of a barking dog or a lawnmower and prompted to flee blindly, becoming disoriented and lost. Indoor escapes usually involve the owners returning to discover a huge mess, but can also be dangerous if the monkey comes in contact with cleaning products, medications, or other household hazards while on the loose.

Care must be taken when selecting enrichment items. Monkeys have been injured or killed by becoming entangled in torn blankets or shredded hammocks. The use of ropes in the enclosure should be avoided as monkeys have accidentally hung themselves by becoming entangled in them. Be sure to inspect the enclosure often to make sure that cloth items such as hammocks and soft boxes are intact and in good repair. Many caregivers recommend using only hard plastic or metal cage furnishings and enrichment items to avoid this risk.

Furnishings. Providing places to perch and rest are essential in your monkey habitat. Arboreal monkeys (tree-dwellers) will feel most comfortable high in the enclosure. These needs can be accommodated through the use of hammocks, shelves, metal or plastic baskets attached to the
walls of the enclosure, tree limbs, and perches made of PVC pipe or hose. The placement of a shelf under feeding dishes provides a comfortable place for the monkey to sit to eat. Solid shelves, as opposed to wire shelves, provide a place for food to rest without falling to the floor of the cage. Some monkeys, such as the squirrel monkey, are most comfortable perching on a rounded perch instead of a flat shelf, which can cause sores under the tail.

Tree branches in the outdoor enclosure provide a natural perch for a squirrel monkey.

Shelves and perches can be attached to the bars of cages by cutting a notch in both ends of the pipe to accommodate the cage bar, and then securing it with a clamp. Shelves can then be bolted to these supports to create a comfortable resting place. Bullnose plastic shelves, such as those
used for store displays, make great solid shelves that are easily wiped off. These can be ordered from companies that sell retail store fixtures.

http://www.gershelbros.com/page132.html

Hammocks and Soft Boxes. Monkeys enjoy having a comfortable place to rest and sleep. The gentle sway of the hammock is reminiscent of the swaying of tree branches in the breeze and can have a soothing effect on the primate. Hammocks and soft boxes are available in an endless variety of designs, sizes and colors. The only limits are the imagination of the designer. Many monkey caregivers design and make their own items, and often offer them for sale. They can be purchased at events and via the internet. Inquiring on chat groups will usually put you in touch with these individuals.

An cat’s enclosed litter box is a safe soft box alternative for monkeys who shred cloth items, eliminating the concern of possible entrapment or strangulation.
Swings. Any object that can be suspended and put in motion can become a swing for a monkey! Swings can be made from any number of materials. Riding toys for preschoolers can be hung and used as swings. Plastic crates, buckets, tree branches, horse stall cables, and tires can be made into swings. Use your imagination. Many caregivers design and sell swings made of PVC pipe, hose and connectors. These swings are safe and easy to clean, making them ideal for both indoor and outdoor enclosures. The recent availability of colored PVC pipe has produced new, colorful designs. These items are often sold at picnics and meetings, and are often made available to order. Inquiring through chat groups can often put you in touch with sellers of these items.

WHEEEEEE!
A child’s snow sled hung from colorful plastic chain makes a fun flying saucer!

Spa hose swings come in all shapes

The classic sphere swing made from spa hose is an all-time favorite of monkeys everywhere
This colorful swing is made of PVC pipe and spa hose, then spray painted in cheerful colors. Plastic rings add interest and a fun ‘clacking’ sound that is made when the swing moves.

Materials needed to make this swing are 1-inch PVC pipe, 1-inch PVC hose, 2 ‘L’ connectors, 2 ‘X’ connectors, PVC adhesive, plastic rings and spray paint. All materials except the rings can be found at your local home improvement store. Durable plastic rings can be ordered from sellers of bird toy supply parts.

**Buckets.** Plastic buckets have endless uses for enrichment. They can be hung from plastic chain as swings or attached to the bars of the cage as hidey-holes. A bucket suspended on its side with a hole cut in the lid makes a great nest box for small monkeys.

Two 5-gallon buckets with the bottoms cut out can be placed end-to-end to create a tunnel; or a cool submarine with the addition of ‘portholes’ and a ‘telescope’.
**Cat Climbers.** Cat climbers made of pressboard, carpet and sisal rope can often be quite expensive in pet stores. EBay is an excellent resource for obtaining these items at more reasonable prices. Monkeys love the ‘tree-climbing’ experience that a tall cat climber offers. These items should be anchored to the wall or side of the cage for stability.

![Cat Climbers](image)

**Playground Equipment.** Oh the joy of it all! Playground equipment made by Little Tikes, Step 2 and others make ideal climbing structures for monkeys. They are durable and can be cleaned easily. These items come in a wide variety of sizes to accommodate most spaces. These toys are expensive, but can often be found used at yard sales and on Craig’s List. The investment will provide many years of enrichment for your primate.

![Playground Equipment](image)

Kangaroo Climber by Step 2

The largest climber made by Little Tikes
Swing Set Parts. These items are readily available at home improvement stores and on the internet, and can be relatively inexpensive. They can be hung from the top of the enclosure or the playroom ceiling. They are safe and durable enrichment items for monkeys.

Rock climbing holds (pictured left) can be attached to a playroom wall to create a fun climbing wall.
**Busy Boxes.** Some of the best busy boxes for monkeys are those that were manufactured in the 1980’s and 90’s, and are often available at yard sales or on EBay. They tend to be more durable than the current toys being sold today.

Consider making your primate his own custom-designed busy box with hardware attached to a polymer cutting board. Monkeys love to manipulate latches, dials, wheels and locks.

**Preschool Toys** Children’s toys come in an endless variety of sizes, shapes, colors and designs. When selecting toys, consider the size and skill level of your monkey. Interactive toys that produce light and sound are especially intriguing to our little primate friends. Used toys at a fraction of the cost of new can readily be found at yard sales, flea markets and thrift stores. Be sure to sanitize the toy thoroughly before giving it to the monkey. Safety is of primary concern with these items. Avoid items with small, removable parts or parts that can be chewed off. Toys should be made of hard plastic, not soft, rubbery materials. Cloth toys are fine for infants, but most monkeys will begin to shred these items by the time they are a year old. Monkeys become bored with the same toys all the time, so having a good supply on-hand will allow the toys to be rotated in and out of the enclosure. Monkeys may become attached to a particular toy and want it with them at all times. Caregivers should accommodate this need, as the monkey is using the toy as a tool for stress relief. The following are some especially good selections for monkey play.
Plastic Crates. ‘Milk crate’ type plastic boxes make excellent furnishings in the primate habitat. They can be secured to the wall of a playroom, attached to the bars of the cage as a toy box, and turned upside down and on their sides to provide places to rest and hide. They come in many cheerful colors and are inexpensive.

Plastic Chain. Plastic chain is used primarily for parrot toys and makes a perfect material for suspending toys, hammocks, swings and other enrichment items from the top of the enclosure. The size of the links should be 2 inches to assure that the chain cannot become wrapped around the neck and cause strangulation, as rope can. The plastic chain sold in hardware and home improvement stores is not as durable as that which is manufactured specifically for birds, and will break. The chain sold through bird supply houses, EBay and online websites is very strong and is rated for several hundred pounds. This chain can be purchased in bulk from www.axelrodco.com, but must be ordered in lots of 130 feet of each color, making it more affordable for most caregivers to buy smaller quantities from a reseller.
**Balls.** Durable balls sold for animal enrichment can be used in many ways in your enclosures. The Jolly Ball has a handle that allows it to be hung from chain. The 10-inch Best Ball can be filled with water or sand to change the way in which it rolls. The Teaser Ball is a ball within a ball that will keep your monkey busy for hours as he attempts to remove the inner ball. Preschool balls that jingle are also quite durable and are a good choice for monkeys. Infants and small monkeys will enjoy the balls with a bell inside that are made for cats.

![Balls](image)

**Natural Plantings.** A wonderful, exotic habitat can be created for the primates in your care by using natural plants for enrichment. Consideration should be given to the species you are housing. Species such as capuchins that are instinctively destructive may not be well suited to a planted environment, but species that are not as strong or not as inquisitive may cohabitate well with many varieties of flora in their habitat.

![Natural Plantings](image)
When selecting plants that monkeys will come in direct contact with, care should be taken to avoid poisonous or toxic varieties. Following is a list of ‘monkey-safe’ plants that can be used in planted habitats.

**ASTILBE (Astilbe spp.)**

**BABY’S TEARS (Soleirolia soleirolii)**

**CHINESE LANTERN (Abutilon hybridum): flowers**

**CARNATIONS (Dianthus) (PINKS): petals**

**DAHLIA: flowerhead**

**DANDELION (Taraxacum officinale): leaves, flowerhead**

**DAY LILIES (Hemerocallis sp.): flowers**

**DRACAENA spp. cornplant**

**FIcus (Ficus benjamina): leaves**

**GERANIUM (Pelargonium sp.): flowers, leaves. Other names include: Carolina cranesbill; Geranium carolinianum.**

**GRAPE (not ornamental grape ivys Cissus sp.): leaves, fruit**

**HENS AND CHICKS (Echeveria spp.)**

**HENS AND CHICKENS (Sempervivum tectorum)**

**IMPATIENS (Impatiens sp.)**

**JOHNNY-JUMP-UP (V. tricolor sp.): flowers**

**HIBISCUS, tropical (Hibiscus rosa-sinensis; Chinese hibiscus; shoebackplant): flowers, leaves. Blue Hibiscus (Algyyne huegelii): flowers**

**Hollyhock (Alcea rosea): leaves, flowers**

**KUDZU (Pueraria phaseoloides, P. thunbergiana, Fanko Puero): edible by humans, goats and cows; uncertain at this time of potentially harmful phytocompounds which may prohibit or limit intake. If fed, do so sparingly and observe effects**

**MAPLE (Acer sp.): leaves have been eaten with no apparent consequence**

**MESQUITE (Prosopis glandulosa torreyana (P. chilensis): leaves**

**MULBERRY (Morus alba): leaves**
NASTURTUM (Tropaeolum majus): flowers, leaves

PANSIES (V. tricolor hortensis (V. wittrockiana)): flowers; (Chlorophytum comosum): leaves

PEA, GREEN BEAN (not sweetpea): leaves, pods

PETUNIA (Petunia hybrida)

PHLOX (Phlox paniculata)

PINKS (Dianthus): petals

POTHOS (Epipremnum pothos aureus (Epipremnum aureum): leaves

ROSE (Rosa sp.): petals

SPIDER PLANT (Tradescantia cussonia specata): leaves (sap may be an skin irritant)

SPLIT-LEAF PHILODENDRON (Monstera): leaves - known safe for prehensile-tailed skinks

SQUASH / ZUCCHINI (Cucurbita sp.): flowers

VIOLETS (Viola spp, not African violets Saintpaulia ionantha) (PARMA VIOLET V. alba; VIOLA, TUFTED PANSY V. cornuta; AUSTRALIAN VIOLET V. hederacea; SWEET VIOLET V. odorata; CONFEDERATE VIOLET V. preceana (V. sororia); JOHNNY JUMP UP V. tricolor; PANSY V. tricolor hortensis (V. wittrockiana): flowers, leaves - known safe for tortoises

WANDERING JEW (Zebrina spp; Tradescantia zebrina): leaves (sap may be an skin irritant)

YUCCA (SPANISH BAYONET Y. Aloigolia; DATIL YUCCA Y. baccata; JOSHUA TREE Y. brevifolia; SOAPTREE YUCCA Y. elata; SPANISH DAGGER, SMALL SOAPWEED Y. glauca; SOFT TIP YUCCA Y. gloriosa; TORREY TUCCA Y. torreyi; OUR LORD’S CANDLE Y. whipplei; Y. elephantipes (Y. gigantea); Y. tilamentosa; Y. flaccida; Y. harrimania; Y. recurvifolia (Y. pendula); Y. schidigera (Y. mohavensis); Y. schottii (Y. macrocarpa)): flowers

POISON!

When using natural plantings in the primate habitat, one must become very familiar with plants that may be toxic. There are many online resources that list plants that are poisonous to humans and animals.

http://aggie-horticulture.tamu.edu/lawn_garden/poison/poison.html
http://www.poison.org/prevent/plants.asp
http://www.humanesociety.org/animals/resources/tips/plants_poisonous_to_pets.html
**Water Features.** Many species of Old World monkeys are natural swimmers and enjoy water play. Some New World monkeys will learn to enjoy water play if they are frequently exposed to it with their trusted caregivers, but many will remain hesitant of water. Pools, sprinklers, misters and fountains can be used to enrich the habitat and cool monkeys off on a hot day.

Capuchins at a picnic enjoy ‘fishing’ for goldfish in a child’s wading pool, but prefer not to get wet.
Vervets enjoy splashing and swimming in their very own pool (above). A bonnet macaque youngster is looking ‘cool at the pool’ (below).
Social Enrichment

Enrichment through Companionship

The Social Needs of the Primate

Once again examining the wild-living primate, we find that primates live in groups called troops. Some species may live in small family groups and other species, such as squirrel monkeys, may live in troops with several hundred members. Primates are very social animals with a strong sense of community and need for companionship. The troop is an organized society with a defined social hierarchy. Each individual finds their place within the social structure of the troop. For the primate, their security is in their position in the troop. Within the troop they find food sources, mate and bear young, receive protection from predators, and form relationships. The primate’s very survival depends upon the troop.

It should be no surprise to us that our captive-living primates have very complex needs for socialization as well. Like their wild-living cousins, they look to their companions for security, protection, survival and relationships. They may be housed with other monkeys through which they get some of those needs met, they may live in a family of humans that they depend on for their needs, or they may live with just their caregiver. Regardless of the size or species with which they cohabitate, the individuals that they share their lives with are their ‘troop’. Like their wild-living relatives, their survival also depends upon the troop.

One Monkey, Two Monkeys, or More?

One of the issues that private caregivers struggle with is whether or not they will provide a companion, or companions, for their primate. We wonder if our monkey needs a companion of his/her own species, and we worry that their needs are not being met if they do not have one. This is one of the most important decisions we will make on behalf of our primate and should be made carefully and thoughtfully, keeping the monkey’s best interests in the forefront. There are many factors to consider, and there is no one answer that is right for everyone. The responsible caregiver that makes the decision to keep more than one monkey does so by making an equally serious commitment to each primate that they bring into their care. Each monkey is an individual and deserves an equal share of love, attention and nurturing. Never should a second monkey be brought into home to serve as a plaything or babysitter for another. Those that make the decision to keep their monkey in a single-living environment realize that they must be everything to that monkey. They have the sole responsibility of meeting all of the monkeys needs for socialization, security, protection and relationships themselves. This can be a challenging task.

Perhaps one of the best ways for a person to make an informed decision on this issue is to spend time with a caregiver of multiple monkeys. Observing how the monkeys interact with one another and with their caregiver may help with the decision-making process.
There are situations in which keeping more than one monkey is not only preferable, but highly recommended. When a caregiver works outside the home full time and the monkey is regularly left alone each day, the monkey can experience symptoms of stress. For a monkey, being alone for long periods is like being abandoned by the troop. They may experience feelings of loneliness, fear and vulnerability. These feelings can lead to aberrant behaviors and aggression over time. In this instance, a companion can alleviate the feelings of loneliness and isolation the monkey may be experiencing, and prevent some of the negative behaviors associated with them.

In living situations where a monkey is not handled by the caregiver due to aggressive behavior or other reasons, a companion is essential to the monkey’s well-being. Monkeys need physical contact with other troop members. Grooming is a social behavior that troop members engage in daily and ritualistically. All of the benefits of social grooming are unknown, even to researchers, but we do know that it plays a role in the structuring of social order within the troop, of communication and relationships between individuals, and in alleviating both individual and group stress. The singly-housed primate that is not handled by his human caregiver has no means to get his needs met that are typically met through social grooming and interaction. A same-species companion is essential enrichment for this monkey.
The Non-Primate Companion

Many monkeys, particularly those who do not have exposure to same-species companions, enjoy the companionship of an animal of another species. This practice is used widely throughout the animal world. Many times, high-spirited and skittish race-horses will be housed with a goat or donkey companion. This relationship serves to calm them and provide feelings of security. Odd mixed-species companions are frequently featured in photos and other media. Just observing these odd pairings can give us a sense of warmth and well-being; thus it is not difficult to imagine the comfort experienced by the unusual ‘friends’. Typically monkeys that are housed with same-species companions do not tend to develop mixed species relationships, but for the singly-housed primate a dog, cat or other animal can be a wonderful substitute troop mate.

Playmates and Play Groups

The following article appeared in the monthly magazine of the Simian Society of America.

The Simian
Volume 53 Issue 10
October 2010

It’s been said that the best enrichment you can give your monkey is another monkey. But what if your lifestyle and resources prohibit the addition of another monkey to your household? Does that mean your singly-housed monkey will be deprived of social interaction with his own kind? It doesn’t have to. Consider play groups!

Recently a group of six friends and a total of 12 monkeys gathered for a weekend of monkey play at a member’s home. These friends traveled as far as 365 miles to spend 48 hours
introducing their monkeys to other monkeys and to humans in a relaxed home environment. The monkeys ranged in age from 3 months to 10 years, and were of mixed species and gender. Encounters between monkeys were always supervised and closely monitored for any signs of distress or aggression.

The following observations were made as the monkeys interacted with one another through play:

- Monkeys were most interested in others of their own species.
- Singly-housed monkeys were more reticent in play than monkeys who live with companions, often content to observe rather than participate.
- Monkeys who are dominant in their home troop were territorial over their lower-ranking companions, often posturing aggressively toward monkeys who showed too much interest in the monkeys they considered to be “theirs”, or members of their home troop.
- Older monkeys played more gently with infants than did youngsters or adolescents, displaying more parenting-type behaviors toward them.
- Monkeys were more likely to display aggression toward others of a different species than others of their own species.
- Monkeys that rank lower in their home troop tended to be less interested in interacting with other monkeys than in interacting with their own higher-ranking troop mates.
- Aggressive displays were more common between monkeys that are dominant, or higher-ranking in their own troops than between lower-ranking monkeys or singly-housed monkeys.
- Territorial behaviors involving food or toys were exhibited less often than were territorial behaviors involving troop mates.
- Dominant monkeys exhibited threatening displays towards humans whom they perceived were acting in a threatening manner toward their lower-ranking troop mates.

The weekend gathering was an excellent time of learning, sharing and socialization for the humans as well as the monkeys. Not surprisingly, conversations gravitated toward primate care, diet, health and training issues. Less experienced caregivers benefitted from the experience of long-time caregivers. More experienced members benefitted from the fresh ideas and observations of the newer caregivers.

An event such as this takes a considerable amount of planning, particularly when attendees must travel some distance to meet together. But the benefits of socialization, for monkeys and caregivers alike, can be worth the effort required. Plan a play day or gathering soon so that you and your monkeys can experience the benefits of enrichment through socialization.

The presence of multiple primates of mixed species, gender, and age can create an environment that can become unstable with little provocation. Yet by following a few simple rules and guidelines, it is possible for monkeys to participate in an enriching social encounter without incident or injury.
RULES OF ENGAGEMENT

1. **Naughty kids can’t play!** Primates with a history of aggression toward other monkeys or humans should not be socialized in a group setting without restraints.

2. **I might get bitten.** Everyone participating must understand that despite security measures, there is a possibility that a monkey could injure another monkey or a human.

3. **Know your monkey; be alert to your monkey’s stress signals.** Watch your monkey closely for signs of stress and be prepared to remove your monkey quickly if necessary.

4. **Stay calm and quiet.** Humans should speak in low, calm voices and refrain from loud outbursts of laughter during play sessions.

5. **Do not discipline or correct.** Taking disciplinary action toward any monkey in the play group is likely to put you face to face with a room full of angry monkeys. Monkeys will come to one another’s defense.

6. **Keep is short!** Play sessions should be kept short with periods of rest and snacking in between.

7. **No food.** Do not introduce food or snacks into the play area. Doing so could result in aggression.

8. **Group playmates for compatibility.** Prior to play, caregivers should devise a plan for which monkeys will play together, and group playmates according to temperament, age, sex and social rank. A play group should not have more than one dominant monkey (one who is alpha, or dominant, over his troop mates). Dominant and subordinate members of one troop should not be grouped together with other monkeys due to the likelihood that the dominant monkey will behave territorially over the lower-ranking members of his own troop. Infants should be grouped with other infants, or with older monkeys to protect them from overly rough play. Discussion of these topics and division of monkeys into compatible play groups should be decided upon prior to play.

9. **Supervise!** Monkeys should not be left to play together without supervision unless the individuals have played frequently together in the past. Be prepared to remove your monkey immediately at the first sign of aggression or distress.

---

Play dates provide social enrichment for monkeys that do not live with companions.
**The Games Monkeys Play.** Monkey companions have been observed playing organized games of tag and hide-and-seek. Playmates appear to follow structured rules for their games, and will often squabble with a player that breaks the established rules.

Caregivers of mixed-gender troops often report differences in the manner in which males and females play. Males tend to play more physical games that involve chasing, jumping and wrestling. Females tend to play more with toys, often becoming quite attached to a surrogate ‘baby’ such as a doll or stuffed animal. Females also seem to spend more time communicating with vocalizations and facial expressions. These behaviors seem to mimic those of human children at play. Mixed-gender play encounters may become naturally segregated by gender. Males tend to gravitate toward one another, as do females. The monkeys may appear to be playing together, but careful observation may show that the gender groupings are playing alongside one another, but not interacting together. Likewise, mixed-species play encounters produce similar behaviors with monkeys gravitating toward their same-species playmates.

**Monkey Communication.** Monkeys communicate with each other and with their human caregivers through vocalizations, facial expressions and body language. Different species also appear to ‘speak’ different languages. Similar vocalizations and facial expressions may have different meanings with different species groups. The ‘fear grimace’ of a capuchin may be interpreted as a friendly smile by a monkey of another species, or a threatening display of teeth by yet another.

**Social Grooming.** The primary activity of primate socialization is grooming. Grooming appears to fulfill needs for both the recipient and the initiator of the grooming session. Adult monkeys spend more time in grooming than do youngsters. No major differences in the grooming habits of males and females have been noted; however documented differences have been observed between higher and lower-ranking troop members. Higher ranking troop members tend to be on the receiving end of grooming more often than their lower-ranking companions. Lower-ranking troop members may use grooming as a means to secure protection and other favors from monkeys that rank higher in the troop.
**Bringing Home Baby**

As with human families, a new baby joining the troop is exciting, and a little frightening too. We wonder how the older monkey will react; will there be jealousy? What if the monkey doesn’t like his new sibling? Just like human families, the troop goes through a period of adjustment as each member grows accustomed to the changes. It is difficult to predict how easy or difficult the adjustment period will be. Most young monkeys will accept a new baby into the troop quickly and effortlessly; the older monkey or the monkey that has been an ‘only child’ may have a more difficult time accepting the changes in his world. However, as with human families, each individual adjusts and the new baby becomes a loved and cherished member of the troop.

In a multiple-monkey household, it is important to introduce the new baby to the dominant troop leader and secure his acceptance first. The other monkeys in the troop will follow his lead.

In the wild-living troop, babies are cherished and protected. They are the key to the survival of the species. Most captive-living monkeys will respond to infants in the same manner.

Older or dominant monkeys may take on a parental role with the youngster, often carrying the baby as the mother would or even ‘nursing’ the infant. Interestingly, this behavior has been observed in both female and male monkeys, and may continue well into the infant’s second year of life.

Care must be taken not to allow the infant to become overly bonded to troop mates to the point where the monkey-to-monkey bond is stronger than that of the monkey-to-human bond. Limiting their amount of exposure to the infant is a good idea until the infant is closely bonded to the human caregiver.
Introducing Older Companions

Introducing an adult monkey into the troop may be more challenging than the introduction of an infant. The addition of an infant to a troop is a natural occurrence in the wild, and the acceptance of the infant is guided by instinct. The addition of an adult monkey is a rare occurrence in nature. The newcomer may have to challenge a ranking troop member to gain status and acceptance by the troop. This behavior may occur between captive-living monkeys as well. Caution must be taken by the caregiver to prevent monkeys from having opportunity to injure one another as they work out the dynamics of the newly-formed troop. The introduction should be conducted slowly and gradually by caging monkeys near one another, but not within reach, while they look each other over and ‘talk’ things out. As with the introduction of an infant to the troop, the adult newcomer must first gain the acceptance of the alpha leader, then other troop members will follow his lead. In a multiple-monkey troop, the newcomer may start at the bottom of the social hierarchy, and attempt to gain status by challenging lower-ranking troop members. Skirmishes between troop members are common as the new monkey attempts to interject himself into the existing social order. Most often, scuffles within the captive-living troop are minor and the monkeys are able to resolve the situation among themselves. In some instances, the alpha leader will move in to settle a disagreement by ruling in favor of one monkey and disciplining the other. When this occurs, the winning monkey achieves dominance over the loser, if even for the moment.

Successful introduction of adult monkeys is dependent upon many factors; age, gender, temperament and, perhaps most critically, reproductive status. It may be difficult for unneutered males or sexually intact females to live together harmoniously in adulthood. These individuals are driven by instinct to be competitive. Bachelor groups of unneutered males may coexist amicably without the presence of females, as may female groups if potential mates are not available. Care must be taken to consider all factors when selecting companions for the monkeys in our homes.

Saying Goodbye

As responsible owners who are committed to a lifetime of care for our monkeys, it is inevitable that the time will come that humans, monkeys, or both will have to say goodbye to a cherished friend. Those who have experienced the death of a monkey can attest that the loss is as painful, or even more painful, than the loss of a human family member. The grieving process can be slow and debilitating. Evidence shows that primates experience feelings of grief in much the same manner as humans do. Without all of the reasoning skills possessed by humans, they may mistakenly believe that their caregiver is to blame for the death, or they may even believe that the caregiver took their companion away from them. One of our respected primate veterinarians recently suggested that a monkey be shown the body of his deceased companion so that he would know that she had died and he would not continue to search for her. The monkey refused to look at the body of his friend, but appeared to understand the concept of death and did not search for his companion or watch for her return.
Providing for the well-being of our monkey in the event of our death is part of responsible ownership. Arrangements should be made well in advance for your monkey to be cared for by an experienced caregiver whom you trust to provide the same type of life that your monkey has been given in your care. Put your plan in writing and keep it with your important papers. The designated caregiver should keep a copy of the document also. Although this is not something that any of us want to think about, provision for his care for the remainder of his life is the final and most important gift of love that you can give your primate companion.

Loss is part of loving, and grief is part of growing. The privilege of sharing our lives with these magnificent creatures that possess such a capacity for love is worth it all.

Macie - Rest in peace my precious baby
February 2006 – February 2007