



# APE ACTION AFRICA Enrichment Manual



**Please read this manual in its entirety prior to participating in the enrichment program.**

Welcome to Ape Action Africa in Mefou National Park! This manual is intended for both new and returning volunteers. If you've never worked with primates before and you're not quite sure what the term "enrichment" means as it applies to primates, this will serve as an educational guide. If you have worked with primates and are experienced in giving enrichment, hopefully this manual will provide you with new ideas for enriching activities.

The enrichment manual provides detailed information about the prescribed enrichment listed on the volunteer enrichment schedule chalkboard in the Hilton. Please follow the schedule as closely as possible, as it was created to provide a variety of enrichment to fulfill the different behavioral needs of the primates. The enrichment program is run completely by volunteers. We are the ones who make sure that it is prepared and provided to the primates, as the local staff does not have enough time in their day to take on this task. If we do not provide it, the animals will not receive any enrichment. Most volunteers consider enrichment to be one of their more enjoyable responsibilities. Hopefully, you will, too. One of the most enriching things for we human primates is to watch the non-human primates utilizing the enrichment we have made and provided. Watch them whenever you have time, as it is not only enjoyable but you will learn about their natural behaviors.

Finally, this manual is by no means exhaustive, and you are not limited to the types of enrichment contained within it. As you observe and learn more about the primates, you might come up with some enrichment ideas of your own. **However, you must present your idea, including any proposed foods that are not already being used for enrichment, for approval by the Management prior to giving it to the primates.** Failure to do so could have dire consequences on the health and safety of the primates at Mefou and will result in disciplinary action.

Please ask the Deputy Director if you have any questions about the enrichment program after reading this manual. Have fun, and don't forget to take lots of pictures and videos!



## What is Enrichment?

Enrichment is a process for improving the psychological well-being of animals in captive environments. It provides a means for animals to exhibit natural behaviors (behaviors that are observed in wild animals of the same specie).

### Enrichment:

- Provides mental and/or physical stimulation.
- Keeps animals busy, thereby reducing stress and boredom.
- Helps to prevent the onset of/ reduce the occurrence of abnormal behavior



When making enrichment, keep in mind ways to make it ***last longer*** and provide a ***significant challenge*** for the animal. It should be like a puzzle that is difficult *but not impossible* to solve. If it is too difficult, the animal might get frustrated and quit. The goal is for the animal to be interested enough to continue (to work for the food or activity) for as long as possible. The best way to learn how to achieve this is to watch some of the primates using the enrichment you have made.



## Which Animals Need Enrichment?

All of the primates at Mefou are candidates for some type of enrichment because they live in captivity and cannot perform all of the behaviors exhibited by their wild counterparts. They do not have access to a variety of flora and substrates. Even primates in large forest enclosures are limited to the flora contained within the fence line, which provide limited foraging opportunities and become depleted over time. However, it is simply not feasible or affordable to provide all of the sanctuary primates with enrichment, so we have to prioritize according to those having the greatest need.



Primates are social animals that live primarily in the forest. Any primates whose housing situation denies them of either of these should receive enrichment. The most in need are those who live in cages full-time, with primates living alone taking higher priority over pairs or small groups. If a primate is in an outdoor enclosure but lives alone, he would also require enrichment. Social groups living in

small outdoor enclosures, especially those without mature trees (e.g. Quarantine and Nursery) require enrichment as well. They do not need as much enrichment as caged animals, but they need enrichment nonetheless. That is why there is an enrichment schedule to follow, as it lists which

primates need it and what types of enrichment they should receive. The primates are listed by row, in descending order from highest to lowest priority. If, on a given day, there is not enough time or materials to provide all of the enrichment that is listed, begin with the top row and work your way down the list.



# The Enrichment Schedule

Successful enrichment programs are those that make the best use of resources (availability of volunteers and materials) in combination with prioritization of animals in need. A balance between the two provides for the most effective outcome.

	MON	TUES	WED	THURS	FRI	Sat	Sun
Sat Cages chimps + gorillas	forage bottles	PVC	forage + BOXES	PVC	bamboo bubbles	palm fruits	PVC
Sat Cages BABOONS + MANDRILLS	TROUGH	PVC	TROUGH	PVC	trough	cores / bottles	forage + palm fruit
Est Cages MONKEYS	PVC bottle Feeder	forage	PALM FRUITS	boxes/ paper	PVC/ bottle feeder	forage	bottles
NURSERY	AM: fishing logs PM: Bubbles	forage	bamboo	Forage	AM: fishing logs PM: spray bottle	forage	palm fruit boxes
quarantine	forage	AM: fishing logs PM: bubble	forage	PALM FRUITS + BOXES	forage	AM: fishing logs PM: spray bottles	bamboo
Vet Notes							
Volunteer							

Keeping an enrichment schedule is important to ensure that a variety is provided while not over-utilizing the available resources. Without variety, disinterest can reduce the inherent benefit. With too much variety, volunteer and material resources can become strained.

If volunteer availability becomes limited, then the **following priority regarding enrichment distribution should be maintained:**

- (1) Long term singly-caged
- (2) Temporarily singly-caged
- (3) Small group-caged
- (4) Large group-caged
- (5) Small enclosure (Nursery and Quarantine)
- (6) Forest enclosure

The enrichment schedule includes a row titled “vet notes”. This is where the vet will communicate any dietary restrictions or health concerns which might affect enrichment distribution.

## When and How to Give Enrichment

Enrichment is most effective when it is given outside of meal times. For animals in enclosures, it should not be given right after breakfast or too close to when they will be going back inside at the end of the day. Its purpose is to give the primates something to do during long periods of inactivity.

It is recommended that enrichment be given between the hours of 10:30am and 2:30pm. You might find it beneficial to prepare all of the enrichment after you have completed your morning duties at Quarantine and deliver it after lunch. Or, it might work better for you to deliver enrichment to some of the animals/areas before lunch and deliver the rest after lunch. Certain types of enrichment, such as bamboo, will need to be distributed immediately after preparation.



**Please note that, for your safety, you will *not* be giving the enrichment directly to the primates, with the exception of Quarantine, Nursery, the Hilton cage, and Maggie/Roo/Dobbie.** For all other areas, deliver the enrichment to the Section Head or primary caregiver for each group, and they will give it to the primates. Previous volunteers might have set up a schedule with the care staff, so you might want to ask what the current procedures are for enrichment distribution. For the chimps at Mbeme, store prepared and labeled enrichment in the food magazine prior to lunch. The caregiver who eats lunch from 12-1:30pm will take the enrichment to Mbeme and distribute it.

## Which foods are okay to use?

	Lunch	Dinner
MON	Rice + Beans	Salad + chips
TUE	Rice + Tomat	Bean/potatoe Staw
WED	Rice + Arachide	Salad + chips
THU	Rice + Choux	Pasta + Tomat
FRI	Rice + Beans	Salad + chips
SAT	Rice + Beans	Plantain Beans
SUN	Rice + Arachide	Pasta + Choux

- Foods that are on the forage list (you will find it in this manual), whether available locally or brought by volunteers. Please pay careful attention to stipulations about the foods, such as “unsalted” nuts or “low sugar” cereals.
- Foods listed as fillings for PVC pipe feeders.
- Volunteer meal leftovers, with the exception of groundnut sauce (arachide), which is too oily and fattening. When using beans, tomate, or choux, rinse well with water to remove some of the oil. See vet notes on the enrichment schedule for any primates that should/should not receive some of the more caloric items.

**Place leftover food intended for later consumption by humans in a separate container from the leftovers for enrichment use. Make sure to label the containers so others know which foods are okay to eat or give to animals.**

**Regularly check on the human produce items. If they are overripe, give them to the primates before they get rotten. Put any rotten food into the compost pit.**

**If you are not sure if it is okay to give a certain food to the primates, please ask.**

**If you would like to contribute to the enrichment food supply, it is preferred that you give a monetary donation to the Deputy Director rather than purchase food in town.**



## Leaves and Browse



We tend to give a lot of human food to primates as enrichment, which they enjoy. However, certain kinds of leaves and flowers may be just as satisfying to them. There are several varieties in the forest that are well-liked by primates. Ask the caregivers to point some of them out to you. Always ask before giving out leaves or flowers that you have picked yourself to make sure they are not toxic.

Logs make great enrichment, too, for chewing on and breaking off the bark. Rotting logs often contain insects such as termites that the monkeys love to feed on. Pieces of these logs should be placed regularly in monkey satellite cages and baboon/mandrill troughs.



Seasonal seeds and fruits should be harvested for use as enrichment when available. The large tree at the entrance to quarantine produces clusters of hard nuts that are well-liked by the primates. There are trees growing behind the nursery enclosure and near the satellite cages for Nkan Daniel's group that grow plums, which the primates love. These grow a light red color (see photo) but are not edible until they turn black.

The caregivers are also knowledgeable about these items, so feel free to ask them for information about what is growing during your stay that the primates enjoy eating.



## Palm Nuts



Some of the palm trees in Mefou Forest produce an oily fruit containing a hard nut in the center. These are highly desirable to all of the primates. They are an effective form of enrichment, as they are time-consuming to eat, and the behaviors required to acquire the nut replicates behaviors of primates in the wild. AAA buys them once a week from a local villager. They are stored in the food magazine. Take only the amount you need for any given day, as storing them in bags or closed containers will make them go bad faster. The entire amount should be used within 5-6 days.



*The center of the nut resembles a coconut.*

The monkeys enjoy eating the fruit, while the apes eat both the fruit and the center of the nut. The chimps will occasionally use rocks to crack the nuts open, which is a behavior observed in some groups of wild chimps. Adult gorillas do not require rocks; they use their powerful jaws to crack them open. The Nursery chimps have been observed wetting the palm nuts in water and then sucking out the center.



Recommended portion sizes for an individual: 1-2 for guenons of all ages and baby mandrills/ baboons/ mangabeys; 4-5 for adult mandrills/ baboons/ mangabeys; 6-8 for juvenile chimps and gorillas, and 9-10 for adult chimps and gorillas.



# Feeding Enrichment

Wild chimps spend approximately half of their waking hours searching for and consuming food. Chimps that must stay inside do not have the opportunity to work for their food, leaving them with a lot of extra time on their hands. In order to keep them busy, feeding enrichment should be provided regularly.

Primates in outdoor enclosures that are small or have no mature trees should also receive some type of feeding enrichment on a regular basis. This is to keep them busy and to minimize depletion of the forest.

## Types:

- **PVC (Polyvinyl Chloride) devices**  
*[For cages only]*
  - Pipe feeders
  - Puzzle feeders
  - Troughs



- **Frozen treats**
  - Fruits & vegetables
  - Plastic bottles
  - Ice cubes or cups



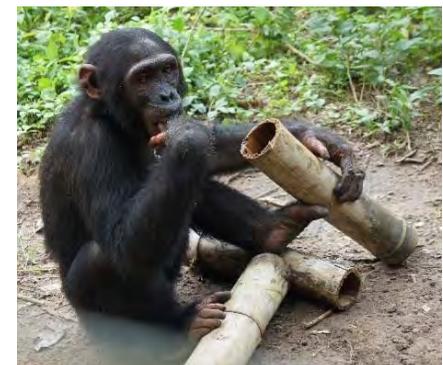
- **Foraging**



- **“Fishing”**



- **Bamboo**



## Feeding Enrichment – PVC

### Pipe Feeder:

The pipe feeders come in two sizes: 1.5” and 2”. Use the 1.5” for cages with 1-2 animals, and the 2” for 3-4 animals. Cages with more than 3 animals should have a 2<sup>nd</sup> PVC device (any type) to prevent fighting.

The PVC base is fixed permanently onto the cage front. Position U-bolts so that the U is on the inside of the cage and the screw ends and base are on the outside. Use washers and lock nuts to secure the U-bolts to the base. The PVC pipe is screwed onto the base only when filled.



Pour honey into the pipe, approximately 1/4 full, and turn it to coat the inside. Optional: add a handful of groundnuts or seeds. During mango season (in the Spring), when bees are plentiful, substitute honey with a different liquid or soft, creamy food. Examples are: peanut butter, avocado, yogurt, mashed banana, jam and ketchup. Leftover tomatoe, beans and choux also work well. Another option is cooked oatmeal, though it can be difficult to clean.

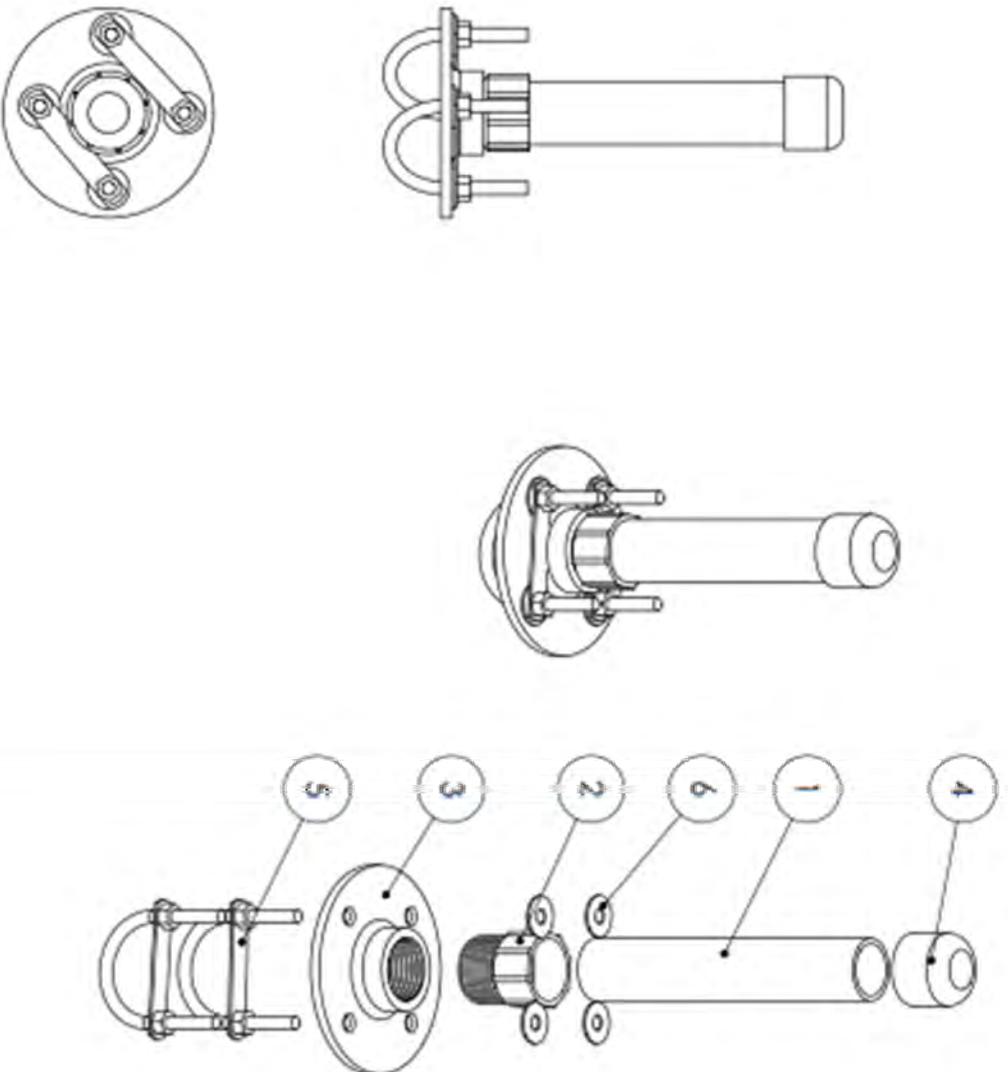
Pipes should be removed and cleaned within 24 hours. **The caregiver will remove the pipes from their bases and bring them to the Hilton to be cleaned by the volunteers.** To clean, rinse pipe and use a bottle brush to remove food debris. Soak in water containing a small amount of Pax and 10% bleach for approximately 10 minutes. Rinse well and dry before refilling, or store in enrichment shed for future use.



Make sure cages have leaves, which can be made into tools for fishing, or provide sticks (batons).

# Feeding Enrichment – 1.5in PVC Pipe Feeder

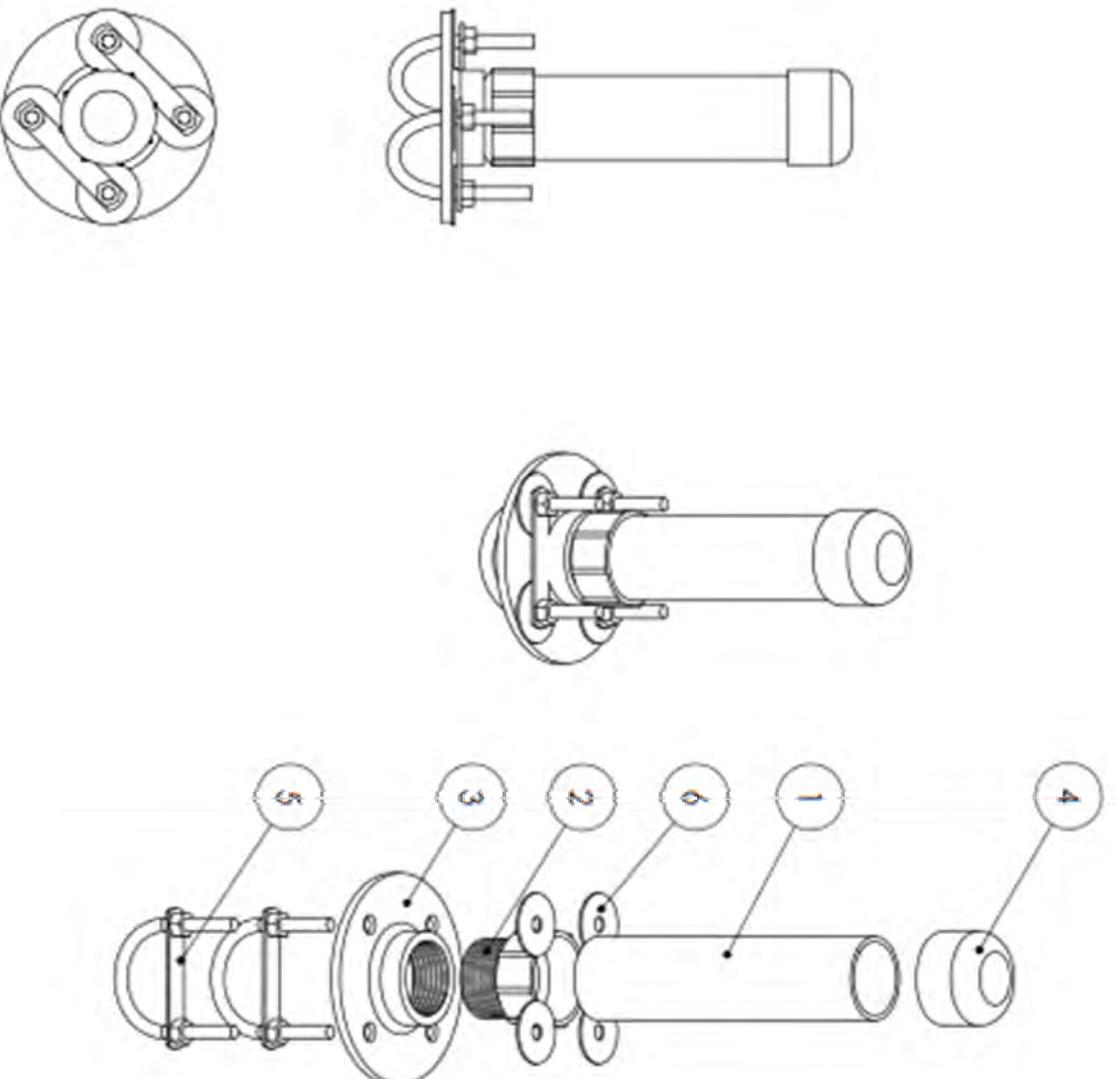
ITEM	PART NUMBER	DESCRIPTION	QTY.	Material
1	531111	1.5in X 10ft 40 DWV PIPE	1	PVC
2	PVC021091400HD	1.5in MALE ADAPTER	1	PVC
3	852-015	1.5in FLOOR FLANGE	1	PVC
4	447-015	1.5in CAP	1	PVC
5	118-114	2in PIPE U-BOLT	2	STEEL- ZINC PLATED
6	804920	5/16in X 1in WASHER	4	STAINLESS STEEL



- NOTES:
1. SQUARE CUT PIPE TO 8IN REF
  2. BOND USING PVC PIPE CEMENT
  3. INSTALL HARDWARE LOOP SIDE DOWN WITH WASHER BETWEEN BAR AND BASE

# Feeding Enrichment – 2.0in PVC Pipe Feeder

ITEM	PART NUMBER	DESCRIPTION	QTY.	Material
1	531137	2in X 10ft 40 SCH. PIPE	1	PVC
2	436-020HC	2in MALE ADAPTER	1	PVC
3	852-020	2in FLOOR FLANGE	1	PVC
4	447-020HC	2in CAP	1	PVC
5	118-081	2.5in PIPE U-BOLT	2	STEEL- ZINC PLATED
6	804930	3/8in X 1 1/2in WASHER	4	STAINLESS STEEL



- NOTES:**
1. SQUARE CUT PIPE TO 8IN REF
  2. BOND USING PVC PIPE CEMENT
  3. INSTALL HARDWARE LOOP SIDE DOWN WITH WASHER BETWEEN BAR AND FLANGE

## Feeding Enrichment – PVC



### **Puzzle Feeder 1:**

This feeder is intended for use with large monkeys (adult baboons, mandrills and mangabeys), chimps and gorillas. It hangs vertically on the outside of the cage, and is attached to the mesh by placing a padlock through the eye bolt. There are two sizes: the smaller one is made from a 3-inch diameter pipe, and the larger one is made from a 4-inch pipe. When giving to one or two primates housed together, use the smaller size. When giving to three or more, use the larger size (or use two small feeders) to prevent fighting. If giving one feeder to a small group, put additional enrichment in the cage, such as boxes, paper or forage, so that everyone can benefit.

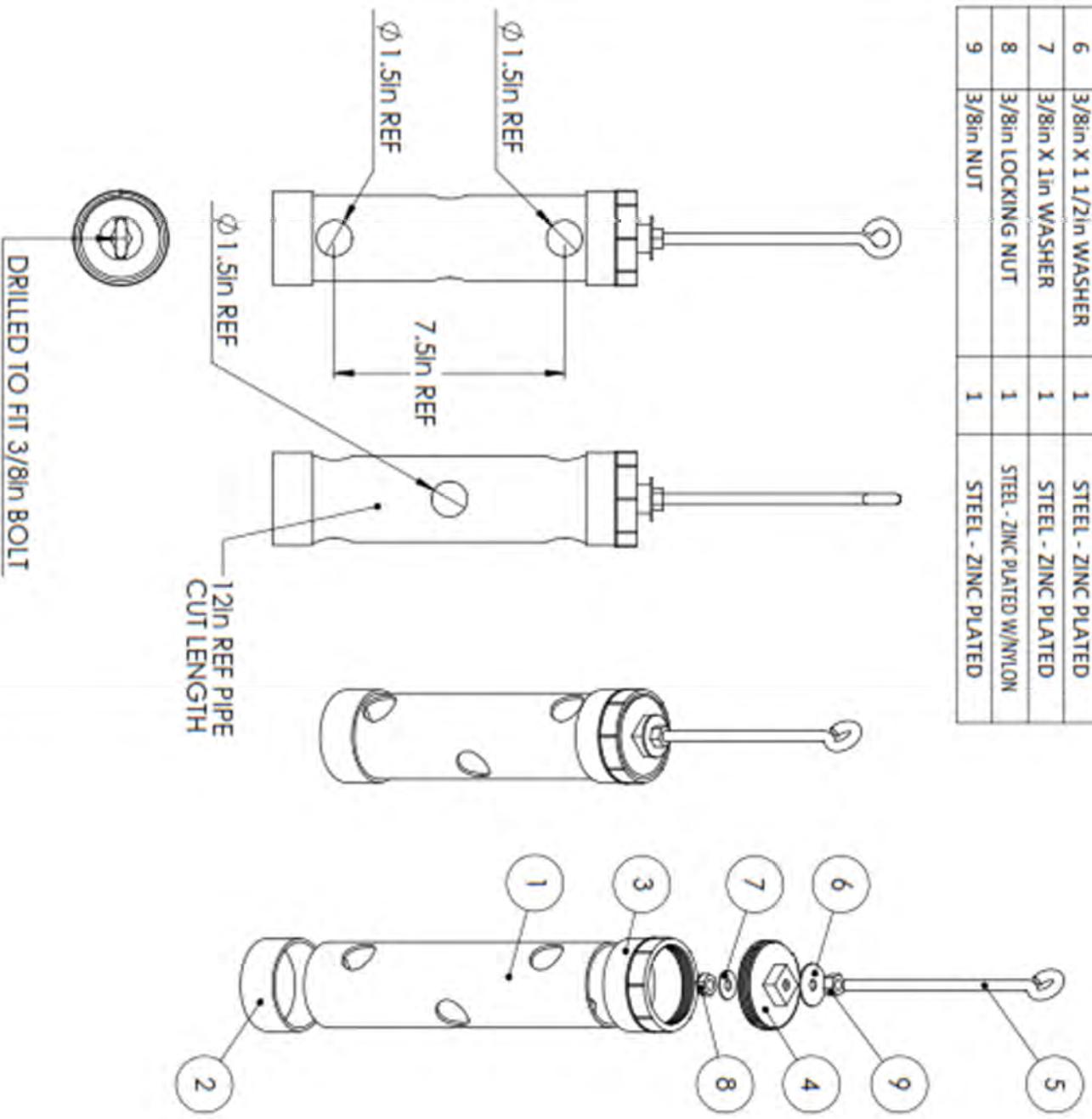
Fill feeder with popcorn or chopped fruits/vegs. Pieces should be sized such that their removal is challenging but not frustrating, and this will vary with the age and ability of the animal using it. Fill the feeder all the way to the top. Mix in leaves or small pieces of paper to bulk up the inside and to use less overall produce, if not a lot of food is available. If using popcorn, plug holes with paper or leaves to keep contents from spilling.

When first presenting the feeder, it should be hung at a height where the animal may sit or stand while using it. If this type of enrichment is new to the primates, try to observe them using it. If the animal empties the feeder quickly, make it more challenging the next time by asking the caregiver to place it higher on the mesh, requiring the animal to hang while using it. You could request that the feeder be placed on regular-sized mesh, or opt for hanging it where the mesh is smaller to make it more difficult to empty.



# Feeding Enrichment – Puzzle Feeder #1 (3in)

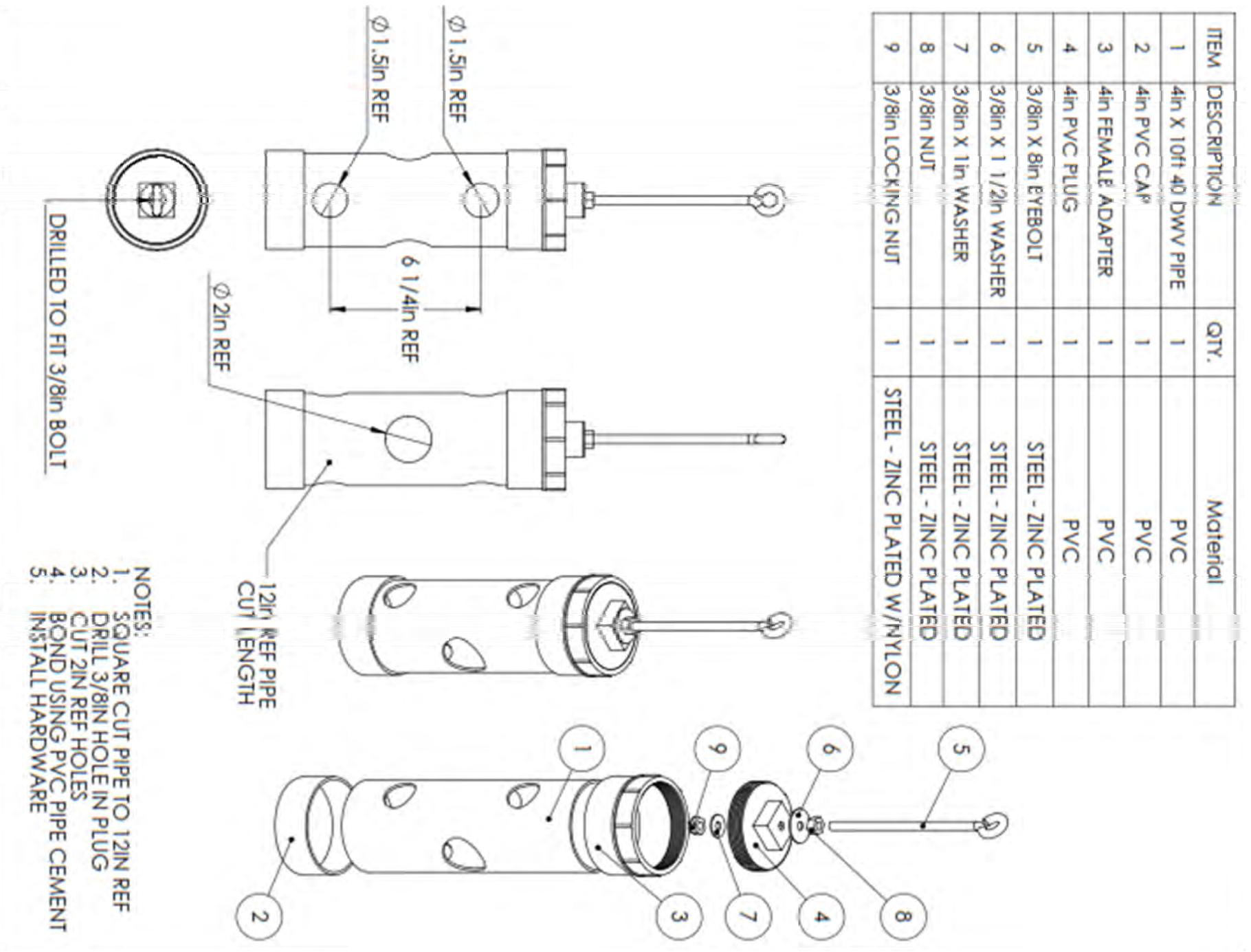
ITEM	DESCRIPTION	QTY.	Material
1	3in X 10ft 40DWV PIPE	1	PVC
2	3in CAP	1	PVC
3	3in FEMALE ADAPTER	1	PVC
4	3in PVC PLUG	1	PVC
5	3/8in X 8in EYEBOLT	1	STEEL - ZINC PLATED
6	3/8in X 1 1/2in WASHER	1	STEEL - ZINC PLATED
7	3/8in X 1in WASHER	1	STEEL - ZINC PLATED
8	3/8in LOCKING NUT	1	STEEL - ZINC PLATED W/NYLON
9	3/8in NUT	1	STEEL - ZINC PLATED



- NOTES:**
1. SQUARE CUT PIPE TO 12IN REF
  2. DRILL 3/8IN HOLE IN PLUG
  3. CUT 1 1/2IN REF HOLES
  4. BOND USING PVC PIPE CEMENT
  5. INSTALL HARDWARE

# Feeding Enrichment – Puzzle Feeder #1 (4in)

ITEM	DESCRIPTION	QTY.	Material
1	4in X 10ft 40 DWV PIPE	1	PVC
2	4in PVC CAP	1	PVC
3	4in FEMALE ADAPTER	1	PVC
4	4in PVC PLUG	1	PVC
5	3/8in X 8in EYEBOLT	1	STEEL - ZINC PLATED
6	3/8in X 1 1/2in WASHER	1	STEEL - ZINC PLATED
7	3/8in X 1in WASHER	1	STEEL - ZINC PLATED
8	3/8in NUT	1	STEEL - ZINC PLATED
9	3/8in LOCKING NUT	1	STEEL - ZINC PLATED W/NYLON



- NOTES:
1. SQUARE CUT PIPE TO 12IN REF
  2. DRILL 3/8IN HOLE IN PLUG
  3. CUT 2IN REF HOLES
  4. BOND USING PVC PIPE CEMENT
  5. INSTALL HARDWARE

## Feeding Enrichment – PVC

### Puzzle Feeder 2:

There is a modified version of the 3-inch diameter puzzle feeder. This feeder has a second eyebolt on the end cap so that the feeder may be hung either vertically or horizontally. It has holes on one side only so that food will not spill out when the feeder is hung horizontally. This feeder is good for use with animals that tend to spill a lot of their food while using the vertical puzzle feeder. It is also good for cages where food that has spilled onto the ground cannot be subsequently picked up by the animals due to mesh size.



Both types of puzzle feeders should be removed from the cage and cleaned within 24 hours. **The caregiver will remove them and bring them to the Hilton to be cleaned by the volunteers.** To clean each feeder, rinse well and use a brush to remove stuck-on food. Then, soak in water containing a small amount of Pax and 10% bleach for approximately 10 minutes. Do not leave feeder soaking for longer than 30 minutes (or use more than the recommended amount of bleach) because the metal parts will corrode. Rinse well and dry before refilling, or store in enrichment shed for future use. The next time the feeder is to be given to an animal, fill it and put leaves or small pieces of paper over the holes to prevent the contents from spilling. Then, deliver to the Section Head, who will attach it to the cage.



## Feeding Enrichment – PVC

### Puzzle Feeder 3 / Monkey feeder:

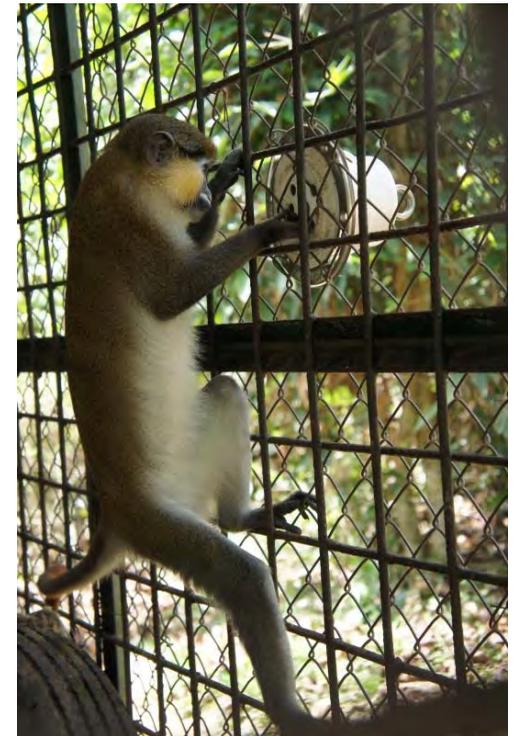
This is a small puzzle feeder intended for use with all ages of guenons as well as baby mandrills, baboons, and mangabeys. One feeder is sufficient for up to three monkeys housed together. If given to a larger group, use either two feeders or supplement the feeder with other enrichment.

The base is fixed to the outside of the cage using pieces of wire that are tied to the mesh. This part stays on the cage at all times. When providing enrichment, fill the PVC cup (which is an end cap with an eye bolt) with forage and push into the base. To remove, pull the cup out by grasping onto the eye bolt.



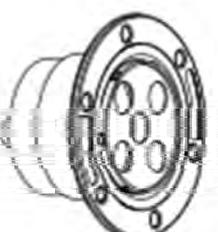
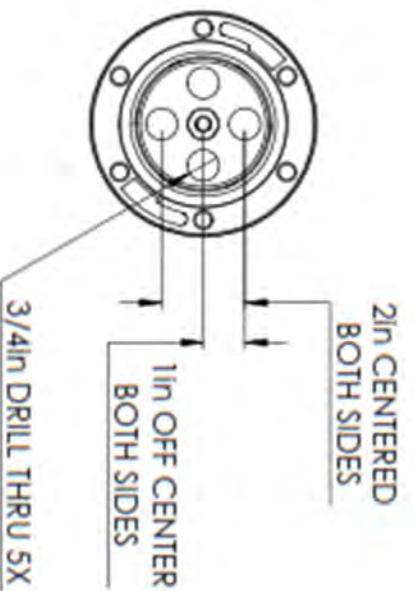
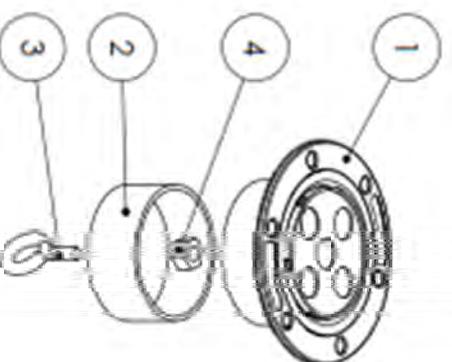
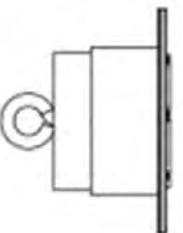
Fill the cup with small, solid items such as groundnuts, crushed popcorn, seeds and beans. Small pieces of fruit/veg may also be used. If wet foods have been placed in the feeder, remove the cup to soak it in soap/bleach solution and take a rag that has been dipped in the solution to wipe down the base of the feeder (on the cage). When using only dry foods, wipe down the base as needed.

**If there is a monkey feeder in an area other than quarantine or the Hilton cage, the caregiver will be responsible for filling and cleaning the cup. The volunteer will prepare and deliver the contents.**



# Feeding Enrichment – Puzzle Feeder #3

ITEM	PART NUMBER	DESCRIPTION	QTY.	Material
1	886-4PTM	4in FLUSH MOUNT DRAIN	1	STAINLESS STEEL - PVC
2	05979H	3in CAP	1	PVC
3	115-925	3/8in X 2 1/2in EYEBOLT	1	STEEL - ZINC PLATED
4	3-8in nut	3/8in NUT	1	STEEL - ZINC PLATED



- NOTES:
1. DRILL HOLES AS SHOWN
  2. ASSEMBLY VIA PRESS FIT
  3. INSTALL EYEBOLT HANDLE BOLT OUT

## Feeding Enrichment – PVC



### Trough:

The trough is a 18” length of 4” diameter PVC pipe with end caps that has been cut in half lengthwise. It is attached and stays fixed to the cage using two turnbuckles. When attaching the trough, select an area of mesh corresponding to the desired level of challenge. The activity will be much more challenging if the trough is placed where the mesh is quite small. However, for older or physically disabled animals, placing the trough on standard-sized mesh might provide a sufficient challenge.

Any type of food may be placed in the trough as enrichment. Cut pieces of fruits/vegs, groundnuts, seeds, popcorn, rice, beans, etc. may be used. Soft foods such as yogurt or pudding work well because they take time to remove. Be sure to provide a few leaves and sticks for scraping it up.

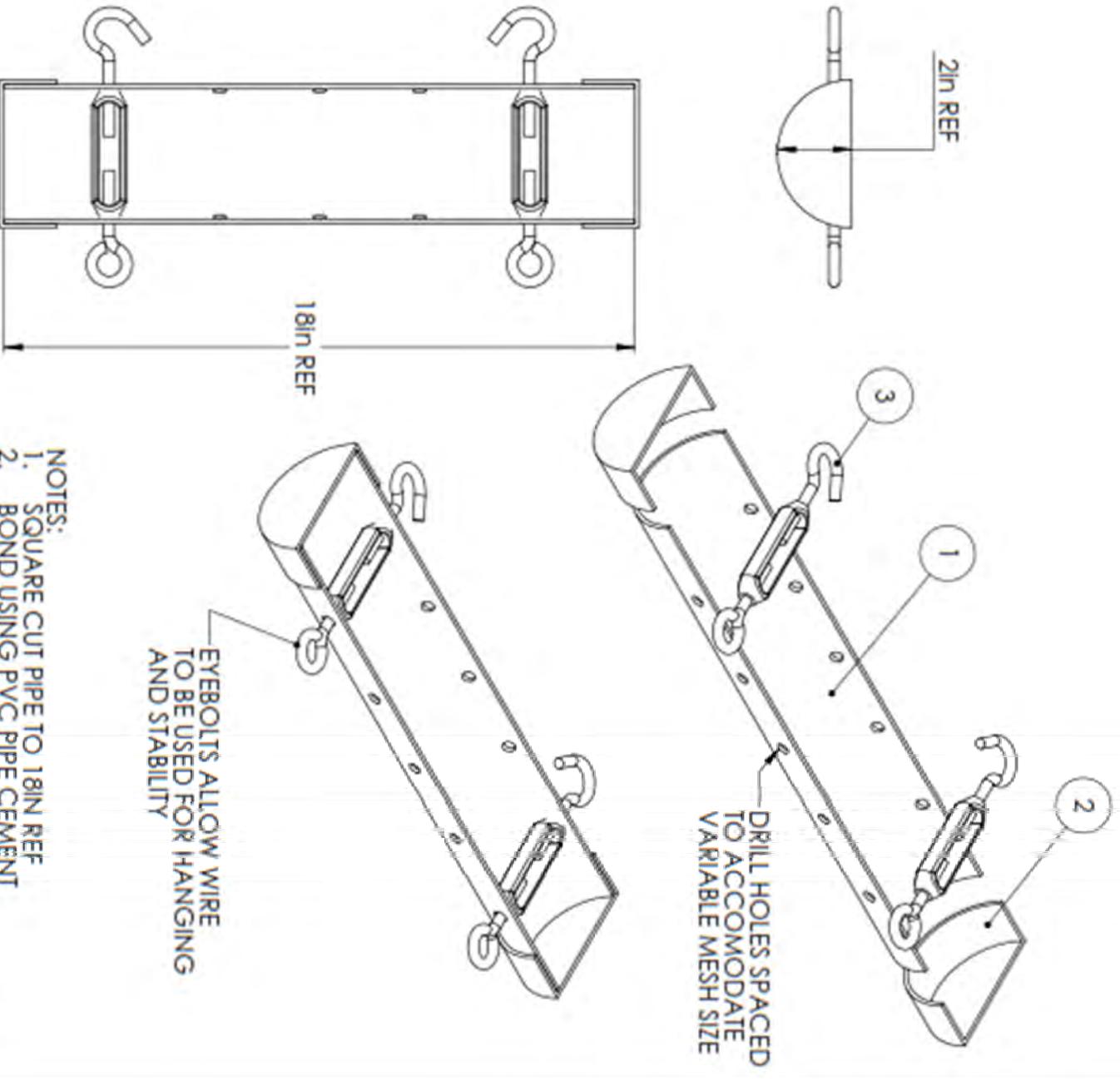


Another option is to put liquid or a combination of liquid and solids in the trough. Floating groundnuts in the liquid adds complexity. Placing water or flavored drink in the trough after an animal has been given leaves, cardboard or fruit with pits (such as mangos) encourages wadging, which is a natural behavior in chimps where moisture is sucked out of an item while placed inside the lower lip.

To clean the trough, pour a small amount of soapy water containing 10% bleach into it, and use a rag or brush to remove any stuck-on food. Pour plain water over to rinse it.

# Feeding Enrichment – Trough

ITEM	PART NUMBER	DESCRIPTION	QTY.	Material
1	531103	4in X 10ft 40 DWV PIPE	1	PVC
2	05980H	4in PVC CAP	2	PVC
3	VARIES	5/16in TURNBUCKLE W/HOOK	2	STEEL - ZINC PLATED

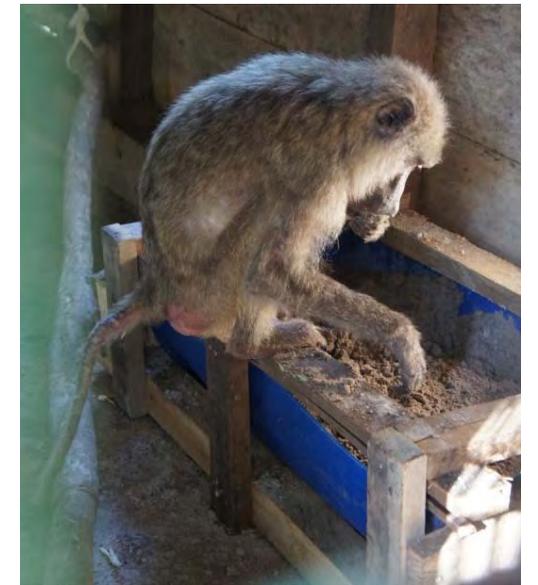


- NOTES:**
1. SQUARE CUT PIPE TO 18IN REF
  2. BOND USING PVC PIPE CEMENT
  3. CUT APPROXIMATELY 1/2 HEIGHT
  4. DRILL TWO 3/8IN THROUGH BELOW MID-LINE
  5. INSTALL HARDWARE HOOKS \$AME SIDE

## Baboon / Mandrill Trough

Baboons and mandrills forage differently than apes and other monkeys. Rather than pick off the surface of the ground, they dig through dirt looking for insects. The trough, made from ½ of a water drum with a hardwood frame, simulates this activity for baboons and mandrills housed in satellite cages. A fresh supply of sand is stored in the trough (and maintained by the caregivers). Whenever possible, small pieces of rotting wood, which tend to contain insects, should be placed in the trough as well. The caregivers will be responsible for obtaining the rotting wood for these sections.

A few times a week, volunteers will supply groundnuts to the caregivers to bury in the sand. Provide enough groundnuts for each monkey to have about 2 regular handfuls mixed into their trough. That's enough for them to forage intermittently over a couple of days.



# Forage

Primates in the wild spend a large portion of their day searching for, acquiring and eating food. The animals at Mefou are fed their daily diet, and those in cages and small enclosures have little to no opportunities to forage. Providing forage has many advantages. It promotes natural behaviors and helps combat boredom. It also diffuses tension in groups and provides a healthy distraction when individuals re-join their group after a temporary separation. Furthermore, forage is a great addition for groups being given another type of enrichment. It may help to prevent dominant animals from hoarding, and if low-ranking animals are not able to hold onto special enrichment, they are still enriched by the forage.

## Types:

### *Locally available-*

- Groundnuts (slightly broken up)
- Popcorn (crushed)
- Beans (with or without rice)
- Fruits/Vegetables cut into very small pieces
- Dried soya beans
- Sesame
- Small dried fruits (in other parts of Cameroon)



*When trying to estimate the amount of forage to bring to a group, use one handful of forage per animal as a guideline.*

### *Items from volunteer wish list-*

- Unsalted seeds- sunflower, pumpkin, etc. (shelled or unshelled)
- Unsalted tree nuts (shelled or unshelled)
- Small types of uncooked pasta (e.g. macaroni)
- Low sugar cereals (e.g. Cheerios, Corn Flakes, Bran Flakes, Special K)
- Small dried fruits (raisins, dates, cranberries, etc.)



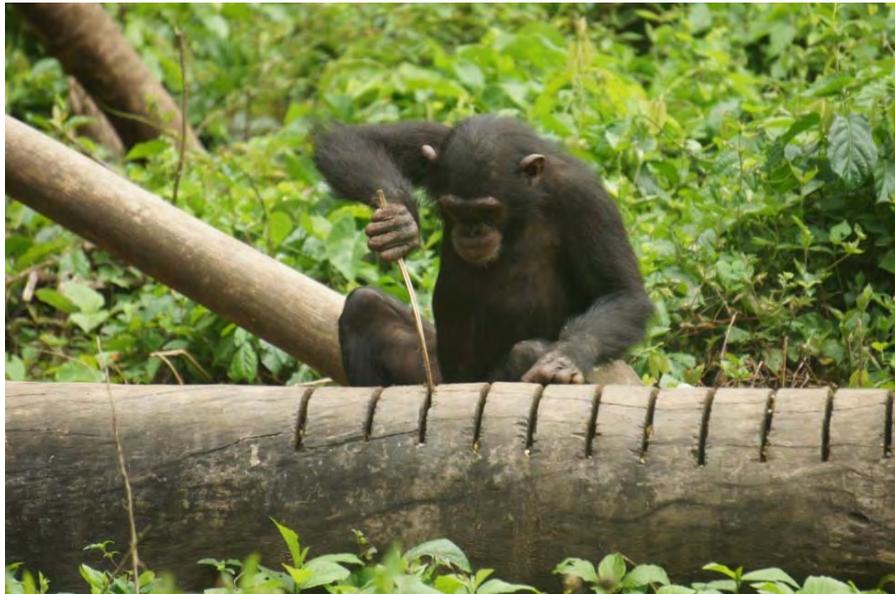
*When giving forage to animals in enclosures, throw handfuls as far as possible while walking along at least the length of one side of the enclosure. The goal is for the food to scatter over a large area so that even low-ranking animals may forage.*

## Fishing Logs



There are logs inside of nursery and both quarantine enclosures that have a series of slits across the top. The slits are very narrow for the chimp enclosures, requiring sticks or other tools to be used in order to acquire the food. The slits for the logs in the gorilla enclosure are wide enough to allow the gorillas to use their fingers to obtain the food. This is due to the fact that tool use by gorillas is not well-documented in the wild.

Fishing logs give the animals another means by which to exhibit natural behaviors (e.g. termite fishing observed in wild chimps) as well as an opportunity to work for their food.



Many of the same foods used for forage are fine to use to fill the logs. Do not use honey, as it will attract bees and become a danger for the animals. Avoid using unshelled seeds, which might be too small to be retrieved, or fruits and vegetables, which will rot and attract insects if not retrieved by the animals. Groundnuts, crushed popcorn, raisins and beans work well.



# Bamboo



There are cut pieces of pieces of bamboo in varying lengths. Some are open on both ends, while others have one end closed and the other end open. Either is fine to use. Pour in honey to coat the sides well (and add a handful of groundnuts or seeds, if desired). During mango season (in the Spring), when bees are plentiful, substitute honey with a different liquid or soft, creamy food. Examples are: peanut butter, avocado, yogurt, mashed banana, jam and ketchup.



When giving bamboo to animals in cages, provide a few thin but strong branches (batons) for them to use as tools.

For animals in nursery and quarantine, carefully throw the bamboo to the animals over the fence. You may also want to give them a few batons. This will remind them to search for additional sticks in their enclosure.

Sometimes, the bamboo is broken by the animals. These pieces then become destructible enrichment and can be left in the cage or enclosure. Pieces that are intact after use should be removed and rinsed thoroughly the following day, so that they may be re-used.



# Destructible Enrichment



## Types:

### Cardboard boxes –

Shipping boxes, shoe boxes, cardboard packaging for items such as cereal, medications, etc.



As you might already know, primates love to destroy things. Destructible enrichment provides primates the opportunity to safely destroy items, through manipulation, tearing, chewing, etc. This activity can be very enriching, and the novelty of the object's changing form as it is broken down stimulates continued interest. Destructible enrichment items must be checked to make sure they are not a safety hazard. ***Staples, tape and other adhesive materials should be removed from boxes before giving them to animals.***

Boxes can be given empty or filled with other enrichment items. When filling boxes, layers can be fun. For example, foods such as groundnuts, cut up fruits/vegs, or leftover volunteer food could be placed in a series of crumpled up newspaper pages, layered within more paper and then stuffed inside a box. Once empty, boxes often serve as toys or nest material.

***Banana boxes are stored in the container behind the kitchen.***

If large boxes are in short supply or are being given to a group, they may be cut into strips.



## Cardboard Tubes (toilet paper and paper towel rolls) –

Best for monkeys, baby chimps and baby gorillas

### Some ways to use them:

- Place food inside paper, crumple it up and put inside tube. Fold ends in.
- Fill with forage or leftover food. Fold ends in or put crumpled paper inside both ends to keep contents from spilling.
- Smear the inside with food such as avocado, banana, peanut butter or honey.



## Paper –

Newspaper, magazines/catalogs, books, used printer or note paper, parchment paper, butcher paper, paper lunch or grocery bags, etc.



### Some ways to use it:

- Plain- either in sheets or shredded
- Place food on sheet, roll up and fold the ends
- Put inside other destructible enrichment such as boxes, cardboard tubes and bottles.
- Smear with honey or peanut butter and sprinkle seeds or groundnuts over top. Roll up paper.



## Plastic bottles (water, soda, etc.) and containers –

### Some ways to use them:

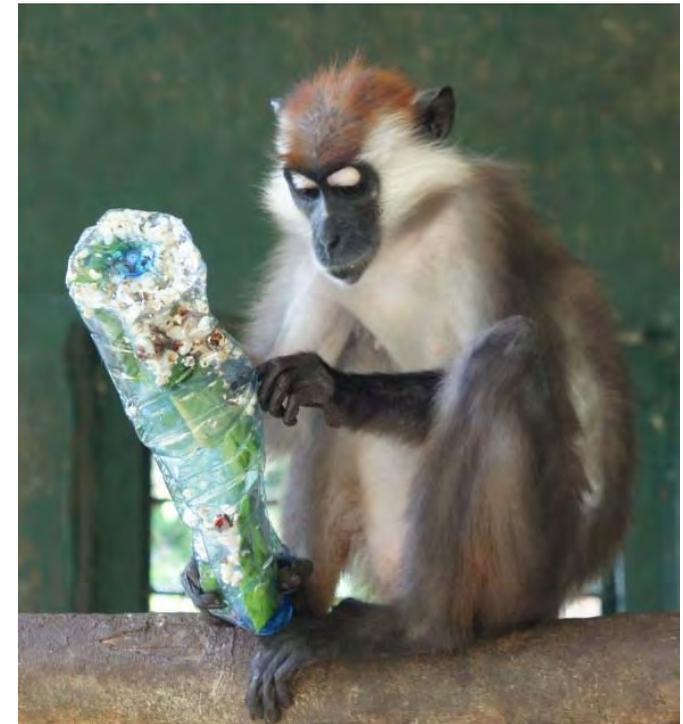
- Fill bottles with items such as forage, leaves, small sticks and/or leftover volunteer food (small amounts). If leaves are not used, small pieces of paper may be added to increase the challenge involved in removing the contents. Monkeys and young apes will work to remove the items but adult chimps and gorillas might just bite into the bottle and consume the contents quickly.
- Poke holes\* into bottles for monkeys and very young apes and fill with forage such as groundnuts, crushed popcorn or cooked beans. Leaves or small pieces of paper may be added to increase the challenge.

*\*Poke holes using a piece of rod iron that has been heated over a fire. A good time to do this is when the staff is cooking couscous. Use an oven mitt to handle the iron.*

- Fill bottles with water or powdered drink, replace cap and freeze. Cut fruits/vegs may be added before freezing. If adding produce, place bottle on its side in the freezer to distribute the contents. Plastic cups such as yogurt containers may also be used for freezing liquids.

Note: If freezing is not an option, this is a good treat to give unfrozen as well. After drinking the liquid, the primates will need to work to remove the fruits/vegs.

- Give nearly empty plastic food containers such as peanut butter. Sprinkle in some seeds or groundnuts, and provide sticks for fishing out the contents



## Non-Food Enrichment



### **Bubbles:** *For Quarantine and Nursery only*

The chimps and gorillas enjoy reaching out to touch the bubbles or try to catch them in their mouths. When animals are in the enclosure, blow bubbles through the (non-electrified) door. If they are in the satellite cages during the day, the bubbles may be blown just outside of the cages.



Volunteers are permitted to be within an arm's reach of the Quarantine animals. However, they must maintain a ***distance of 4 feet from the Nursery chimps.***

Bubble soap and wands are stored in the enrichment locker in the Hilton.

### **Spray bottle:** *For Quarantine and Nursery, and only when they are outside*

Poke a small hole in the cap of a large plastic bottle. Fill the bottle with water, point it towards the door to the enclosure and squeeze. Water will shoot out through the hole in the cap. The chimps will try to drink it, catch the spray, or play in the water. Refill the bottle as needed.

# Toys



For primates in satellite cages, toys are a great form of enrichment. Give one toy to every animal (or group) housed in a cage full-time.

**Toy rotation:** When a primate has had the same toy for a while, he might become bored and stop playing with it. It is important to keep toys novel by rotating the type of toy on a regular basis. Once every 2 weeks is a good guideline to follow. Simply bring a clean toy to a caregiver working in the area, and ask him to replace the current toy with the new one. Ask him to put the dirty one aside for you to clean and return to the enrichment storage shed.



# Sensory Enrichment

Enrichment that stimulates any of the five senses

## Mirrors

- rectangular for small monkeys
- round for large monkeys & apes

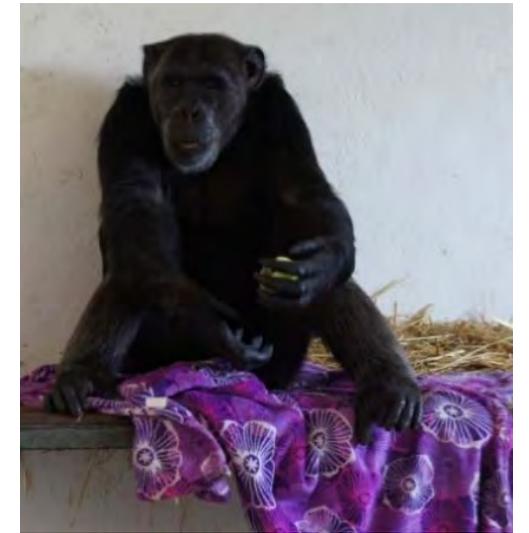


## Paint rollers

- comforting for baby monkeys to hold on to
- surface to adhere forage for picking off



## Blankets, Socks & T-shirts



## Finger-paint & Sidewalk chalk



## Herbs

- olfactory stimuli; good for monkeys
- sprinkle a small amount inside cage on wood or other surface
- use thin smear of honey to adhere to paper or paint roller



## General Feeding – Food Scatter



Although general feedings are not considered to be opportunities for enrichment, they can serve as such. Normal feeding routines include groupings of food at a central location, such as a platform or an area close to the fence (see pictures to the left).

By scattering the morning meal throughout the enclosure, the time required for the animals to obtain and consume the food increases. This translates into less time being inactive, and more time exhibiting natural behaviors. This also provides the opportunity for lower ranking members of the group to obtain a fair share of the food, and even some higher value items.



***\*\*\*The volunteers are responsible for scattering food daily in both Quarantine and Nursery.***