



# Laboratory Primate Enrichment Ideas

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# Introduction



- ▶ There are a number of items we use often in animal facilities that when finished with are thrown away. However, many of these items come in packaging that can be recycled as enrichment for our animals, particularly facilities housing primates.
- ▶ The use of recycled packaging as enrichment for primates is especially useful here in the UK because there are a limited number of suppliers of laboratory primate enrichment, with a small range of variation in the primate enrichment that is available. As well as that, the recycling of materials such as plastic and cardboard for use as enrichment, along with supplier bought products, is a great way of enriching the lives of the monkeys we work with.
- ▶ The ideas we have found to be most successful are when enrichment is used in novel and more challenging ways of presenting the monkeys with food.
- ▶ In this booklet are a number of enrichment ideas using a range of common materials found in animal facilities, that we at Cambridge have made and used over the previous year or so with our macaques, that we hope may provide other facilities with ideas on how to recycle such materials for use as enrichment.

# Plastic containers



Plastic containers of various sizes and shapes can be used to hide forage, when hidden amongst substrate and/or hung from the cage top. The primates can then reach into the containers through the openings at the top, or alternatively holes of differing sizes and shapes can be made in the sides or bottoms of the containers, ensuring that any edges are filed down so not sharp and potentially dangerous.

We use empty disinfectant or ethanol containers, ensuring that they are thoroughly rinsed out and left to dry prior to being used.



As well as simply being hung from the cage top as they are, plastic containers can be used to make more complex enrichment. Below are a few ideas for enrichment using plastic containers that we have found to be successful.

# Spin the bottle

A container attached to a broken trolley piece, (or any similarly shaped item) and hung from the cage top with padlocks. Forage is placed inside the container. The monkeys need to spin the container on the trolley piece so that the forage falls out and onto the cage floor when the container is spun upside down. Once spun, the container will return to its upright position when the monkey lets go.

To the right you can see Yaa peering into the container to see if the forage inside is worth spinning the bottle for.



# Barrel of laughs



A plastic bottle with a hole cut out on one side, and a smaller hole on the bottom for a metal rod to run through. It is hung from the cage top with a chain that runs through the metal rod. Forage is then placed inside the bottle, where the monkey can rotate the bottle around the rod until the hole is facing downwards so the forage falls onto the cage floor.

As you can see, Athos is having a barrel of laughs trying to get his hands on some peanuts.

# Kerplunk



A plastic bottle with slits cut out on both sides, and a hole cut out of the bottom. Cardboard shelves are cut and inserted through the slits. Forage is then placed on the top shelf, and in order to get the food the monkeys need to remove the shelves by pulling them out so the forage gradually falls to the bottom of the bottle, and through the hole to the cage floor.

To the left, Wurzle is demonstrating the kerplunk by removing the shelves in order.

# The Rattle



A plastic container cut in half, with a plastic ball with holes (available from most enrichment retailers) placed inside. Forage can be planted inside the ball, and the monkeys can then shake the container to cause the forage to fall out of the ball, and then out of the open lid of the container. Or, the monkey can pull the container parts apart to access the ball. Here Athos is trying to work out the intricacies of the rattle.





# Deuce



A plastic poster holder that screws together in the middle is used, with small holes cut out at the top in order to attach chains, and holes in the bottom to allow forage to drop out. Tennis balls with holes cut out are placed in each half, and filled with forage. The monkeys then need to tip the tubes so that the balls roll and the forage falls out, and onto the cage floor.

On the right, Aragorn can be seen at match point.



# The Hulk



Two plastic containers of different sizes, but the same shape, both cut in half. The halves then fitted together as in the image on the right.



The smaller container is then placed inside the larger one, and hung from the cage top with a chain running through both. Forage is placed inside the smaller container and the monkeys need to pull apart both containers to access the forage. Athos and Aragorn can be seen showing off their super-macaque strength.



# Concealed Cap



A plastic tube with the bottom cut off, with a container cap placed upside down inside, with a chain running through both the cap and tube. A handful of forage can be hidden inside the cap, which when hung from the cage top is concealed by the tube. The monkey has to then lift the tube to reveal the forage. On the right Ulysses is trying to figure out where his breakfast is.



# Free the forage

A tennis ball is placed inside a plastic container through a hole cut at the top. The container is then hung from the cage top upside down, so that the ball blocks the exit, ensuring that the container is tight against the roof of the cage to prevent the monkeys reaching in through the hole at the top. The monkeys then need to reach into the container to move the ball, allowing the forage to fall out.

Aragorn can be seen removing the blockage and freeing the forage.



# The cap-tivator

The caps from plastic containers are placed on a chain, through holes made in the center of them. The caps should be positioned with one upside down on top of one facing upwards, so that when forage is placed in the bottom cap it is hidden by the one above. The monkeys then need to slide the upper cap along the chain to reveal the forage.

You can see Athos again here, utterly captivated by the cap-tivator.



# Peanut generator



Two bottles of different sizes are used, with a makeshift container attached to the top of the smaller bottle using cable ties. The smaller bottle with the container attached is placed inside the larger bottle, and hung from the cage top with a chain running through.

Forage is placed inside the container through the small hole at the top. As the monkey moves the peanut generator, forage falls from the upper container into the smaller bottle. By lifting the larger bottle they can then access the forage through an opening in the side of the smaller bottle. Each time the monkey moves the bottles along the chain, more food is 'generated' as it falls from the upper container. Because of the way the forage falls in smaller amounts, it will keep the monkeys interested for longer.

Wicket can be seen on the right, using the peanut generator.



# The hangout

Three plastic containers with holes cut out, each filled with substrate with forage hidden amongst it, and hung from the cage top by a chain running through. Cardboard tubes are placed between the containers to stop them from moving along the chain.

Particularly useful for group housed monkeys as it enables each monkey to feed at the same time, and prevents the dominant monkey from being able to monopolize all of the forage.

On the right Yaa and Athos can be seen hanging out.



# The hanging gardens



Here we have used an old broom handle, and cut small plastic disks from plastic containers and attached them around the bottom of the broom handle in levels. The disks have small semi circles cut out of each level. A plastic container with the bottom cut off is then placed over the disks and secured to the bottom of the broom handle with chain. Forage is placed inside the container, balancing on the top disk. When the broom handle is attached to the cage top, any movement back and forth moves the forage and allows it to gradually drop down the levels of disks until it falls to the cage floor. Wurzle can be seen on the left, swinging the gardens to get his breakfast.



# Cardboard



As well as plastic containers, cardboard is another material commonly found in the animal facility. Most products ordered are delivered in cardboard boxes, including gloves and face masks. We also get our fruit delivered in a cardboard box like the one shown above. These boxes can be put into the enclosures as they are for the monkeys to destroy, or they can be filled with forage hidden amongst substrate.



Cardboard boxes can also be hung from the cage top to allow the monkeys to sit or forage inside.

Cardboard can also be used in different ways to provide slightly more complex and challenging enrichment for the monkeys. In the next slides are a couple of ideas we have used.



# Pass the parcel



Cardboard boxes of different sizes can be placed inside one another, with the forage hidden amongst substrate within the smallest box. The monkeys then need to work their way through each of the boxes in order to get to the smallest box where they can then access the forage.

The music has stopped on Tigger and Yaa.

# The cuppa



In a similar fashion to the cap-tivator, cardboard cups from water dispensers can be used, by cutting holes in the bottom and being placed on a chain hung from the cage top. Forage can then be placed inside the cups, the monkeys need to manipulate the cups along the chain in order to obtain the forage.

Here Wicket is enjoying a morning cuppa.





# Conclusion

- By recycling materials commonly found in the facility as enrichment, we have been able to provide our monkeys with novel and challenging ways of presenting food.
- We have found that by doing so, together with feeding a wider variety of forage types, the monkeys have been more active following feeding, and have anticipated feeding times with more excitement.
- We have also found that the monkeys interest is maintained for longer periods of time than when forage is scattered onto the cage floor, as it requires more effort to reach.
- In group housed monkeys, by using a number of different foraging enrichment spread throughout the enclosure, it has given the subordinate monkeys more chance of getting an equal share of food.



With many thanks to:

Aragorn  
Athos  
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