

Bromeliad Slow Insect Feeder

Concept created by Simon Fox



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Background: Bromeliads naturally occur in Lion Tamarins' home range and they search for prey within epiphytic Bromeliads using their evolved and adapted elongated hands and fingers to probe crevices, and tight spaces between the Bromeliad leaves to excavate and consume their prey. This wild natural behaviour is known as micromanipulative foraging.

General Description: Fire hose is extremely versatile enrichment material and can create an endless array of shapes and enrichment items. In this instance, fire hose has been shaped to create a bromeliad to mimic the lion tamarins and bromeliads relationship.

Aim: The aim of this enrichment is to encourage our Golden Lion Tamarins natural behaviour whilst educating the public about such behaviours and their adaptations. Other aims for this enrichment included presenting the bugs in a way to lengthen the time the animal spends feeding but also being easy to install and clean for the animal keepers.

Species: Primary use for Lion Tamarin species, however may be used for other callitrichids.

Uses: Primary use is an insect (mealworms and waxworms) slow feeder but may also be used for novel enrichment, covered in different scents, encouraging natural behaviours, micromanipulative foraging, and much more.

Known Safety Concerns: Ingestion of fire hose.

Difficulty level: Hard

Items Needed:

- Electrical wire junction box 20mm
- Conduit 20mm
- Trunking Coupler 20mm
- Hole plug 19mm
- Super glue
- Screw eye
- Carabiner
- Saw
- Fire hose (2 different colours)
- Tool to cut fire hose (heavy duty scissors/serrated knife)
- Materials to connect the fire hose:
 - Cable ties
 - Screws 16mm
- Bolts 30mm
- Locknuts (1 per bolt)
- Washers (2 per bolt)
- Drill and drill bit big enough for bolt
- Socket wrench with socket fitting bolts/nuts
- Spanner fitting bolts/nuts

Construction of stem

Using the saw cut the conduit to your desired length (60cm), superglue the rim and slide the junction box on to the top. For the bottom bung super glue the 19mm plug into the trunking coupler. Once dry slide onto the conduit (do not superglue this so it can be removed to empty and clean. Screw the screw eye into the top of the junction box and attach the carabiner.

Construction of leaves

Using your fire hose cutter, cut the dominant colour of firehose into 5 leaves of shortening lengths (for example 30cm, 25cm, 20cm, 15cm 10cm) using the design below cut on the black lines. Use the edge of the fire hose as the fold in the leaf. Make holes in the end of the tabs to thread a cable tie though.



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You will have 10 leaves in total.

Construction of flowers

Using your fire hose cutter, cut the second colour of firehose (white lightweight forestry hose works best) into 6 petal (3 pairs) of shortening lengths (for example 8cm, 6cm and 4cm) using the design below cut on the black lines. Use the edge of the fire hose as the fold in the petal.



Assembly

Drill a hole using the drill bit going straight through the conduit, 20mm from top of the bottom bung and drill a second hole going straight through directly above in the same direction. Screw in the bolt and nut through the conduit only in the bottom hole, with a washer either side and tighten with spanner and socket wrench. Starting with the longest leaf with tabs, position so the bolt is in the leaf fold and wrap the tabs round the conduit. Thread the cable ties through each tab holes to join together and tighten. Cut of any excess cable tie. Attach the corresponding length leaf (without tabs) directly opposite, screwing 16mm screw either side, so it bites into the first leaf and into the conduit. Repeat for the remaining 4 pairs of leaves, each time drilling the first hole just above the base of the V created by the previous leaves, so that the leaves are rotated 90 degrees / perpendicular to the previous leaves.

For the flowers, starting with the longest pair of petals screw one of each petal corners into the base of the V created by the previous leaves and repeat the other side. Repeat for the remaining 2 pairs of petals, each time rotated 90 degrees from the last petals, so the next petals are perpendicular to the last base of the V created by the previous leaves.

