

A close-up photograph of a lion's head and shoulders. The lion has a thick, golden-brown mane and its eyes are closed, giving it a peaceful or sleepy expression. It is positioned in front of a large, dense green tree with many thin branches. The background is a clear, light blue sky. The overall scene is brightly lit, suggesting a sunny day.

LION ENRICHMENT GUIDELINES

An example enrichment programme for captive Lions
following the S.P.I.D.E.R framework

Following the well-established S.P.I.D.E.R framework, this document outlines the steps taken to create an enrichment programme for an animal collection which included a pair of African Lions.

Setting Goals

A successful enrichment programme should be goal-orientated. These goals may be to allow and encourage natural behaviours, or to decrease the frequency of undesirable behaviours such as aggression and stereotypes. Lions in captivity, like other large carnivores, often display stereotypic behaviours including pacing and over-grooming, it is behaviours like these that may be targeted by an enrichment programme.

Behavioural goals may be specific to an individual or a group of animals. Observing groups and individuals and noting behavioural patterns, [perhaps through a behavioural ethogram](#), is important when thinking about which behaviours to target.

An example table which could be used to document specific behavioural goals.

Animal/Group	Behaviour	Encourage (+) or Discourage (-)	Enrichment Type(s)	Frequency	Comments
Individual A	Has recently begun pacing in the house during the day	-	Sensory Physical Cognitive	4+ times per week	Provide enrichment in the morning to try and keep active
Group B	Group feeding	+	Food	Once a week	Large carcass feed

Planning

Once goals have been set you will then need to plan how to achieve these goals, considering what types of enrichment are going to be used and [how frequently sessions should be provided](#). It is also important to consider and record any possible risks an enrichment session may have to ensure that all activities are safe, [‘Enrichment gone wrong’](#) is an in-depth article outlining many of the risks involved when providing enrichment.

You may want to create an [enrichment timetable or rota](#) to plan enrichment sessions. Not only will this help with documentation and evaluation, using these rotas also helps to keep activities varied and novel, reducing habituation which can decrease the effectiveness of enrichment activities. At the end of this document is an example of a 2-week enrichment rota and guide created for a pair of Lions, this was printed and laminated to allow a re-usable surface for recording enrichment sessions.

An example of a ‘catalogue’ which was used to display approved enrichment items. Each item was given a letter/number code, allowing items to be documented easier.

Item Code	Description	Image	Suitable for	Enrichment ideas
B1	Boomer Ball		Carnivores Primates Small Ungulates	Floats in water Scents sprayed/rubbed on outside
B2	Jolly Ball		Horses Small Ungulates Small Carnivores Primates	Can be hung up Scent sprayed/rubbed on outside

Enrichment ideas for large carnivores



Implementation

Once your plan has been established, provide enrichment sessions following any schedules or guidelines that have been set.

Documentation

Enrichment sessions should be documented by recording which activity an individual or group were provided and when, this could be digitally through a specific animal husbandry programme, a simple excel spreadsheet or by taking photos of enrichment rotas. Where possible, sessions should be observed in order to determine whether they were successful in meeting the set goals, as this will be needed to evaluate enrichment activities.

An example of an excel spreadsheet for a pair of Lions. The 'rating' was a quick evaluation of how successful the session deemed to be by the keeper, with '1' being highly successful, and '5' being highly unsuccessful. A score of '3' meant that there was no reaction.

Date	Enrichment	Rating
25.05.20	Meat chained to tyre	2
26.05.20	Frozen blood and yolk block	2
27.05.20	New platforms, plants, and posts in yards	1
28.05.20	Food inside large cardboard boxes	2
29.05.20	Hessian sack filled with Mongoose bedding	3
30.05.20	H4 with perfume	2
31.05.20	Food inside hessian sacks hung up	2
01.06.20	Food pieces hidden inside tyre stack	1



Evaluation

By observing enrichment sessions, it is possible to evaluate whether the enrichment has been successful in meeting goals, has had a positive or negative effect on behaviour and ultimately whether to continue, adjust or discontinue with the activity. This may be a simple evaluation, such as a success rating of 1-5, or a more complex evaluation where the level of interaction and other notes are recorded. As well as evaluating individual enrichment sessions, it may be useful to evaluate other areas of the enrichment programme, this includes whether the rotas are working well for the keepers and their targeted species, as well as periodically checking if behavioural goals are being met.

An example of an evaluation spreadsheet.

Date	Enrichment code and/or description	Enrichment type	Enrichment goal(s)	Animal reaction	Session rating	Comments
05.07.20	Cardboard carpet tube with Pony bedding inside	Sensory	Increase Activity / Reduce Stereotypy	Not observed (evidence of use)	Highly Successful	Tube has been taken out into paddock from yards, partially torn up
09.07.20	Food inside hessian sacks, hidden inside black pipes	Food	Encourage Foraging/Hunting	Not observed (evidence of use)	Highly Successful	All food consumed
14.07.20	Cinnamon and Coriander scent enrichment	Sensory	Increase Enclosure Use	Positive (goal, moderate use)	Moderately Successful	Some interaction observed with both, could put them onto an item

An expansion on the behaviour goals spreadsheet, reviewing the success of the programme in relation to a specific individual.

Date Set	Animal/Group	Behaviour	Encourage (+) or Discourage (-)?	Enrichment Type(s) to be used	Frequency	Comments	Suggested Enrichment Solutions	Date Reviewed	Comments (continue or amend?)
Jul-20	Individual A	Pacing in house	-	Sensory, Physical, Cognitive	4+ times per week	Has recently begun pacing in the house during the day	Provide varied enrichments to try and keep active during the day	Nov-20	Pacing in house stopped after beds moved in house

Readjustment

Some enrichment sessions may prove unsuccessful in that they do not meet the set goals, impact negatively on behaviour, or even cause physical harm. In these cases, the activity may need to be adjusted. These adjustments could be minor, such as changing a scent or putting an item in a different location, or the activity may need to be discontinued entirely for that individual/group. It is important to record which animals and why an enrichment item/activity has been discontinued so other keepers do not repeat the activity.



Lion Enrichment Calendar

Quick evaluation – Please try to evaluate each session by writing a number between 1 (Highly Successful) and 5 (Highly Unsuccessful) in each box

Item	Lions			
	Group/Individual A		Group/Individual B	
Tyres				
Tubes				
Hanging or tethered Food				
Cardboard				
Scent Enrichment - Enclosure				
Frozen Food Item				
Sack - Food				
Sack - Sensory				
Firehose				
Hidden Food				
Environmental Variation				
Free - Food				
Free - Sensory				
Free - Cognitive/Novel Item				
Other				

Lion Enrichment Calendar Guide

Enrichment calendar for a two-week period. Do not use each item more than once within a two-week period for the same animal(s). Write the date in the small box and any comments in the larger box. If possible, do not use enrichment from the same category on consecutive days.

Enrichment categories

Food (F)	Sensory (S)	Cognitive (C)	Physical (P)
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Tyres – Tyre-based enrichment. i.e. Food inside or chained to tyres etc. (F/C)

Tubes – Large pipes/tubes stuffed with food, animal bedding or food chained inside (F/C/S)

Hanging or tethered Food – Food items either hung up or tethered to something in enclosure (F)

Cardboard – Cardboard boxes or tubes etc. can have food inside, be scented or filled with novel items (F/C/S)

Scent Enrichment – Enclosure – Scent rubbed or sprayed onto enclosure furnishings (S)

Frozen Food Item – Frozen blood, meat, water etc. (F)

Sack – Paper or hessian sack or pillowcase etc. with food, used animal bedding or fur/wool etc. inside (F/S/C)

Firehose – Enrichment using firehose toys/items (F/S/C)

Hidden Food – Food cut up into small chunks and hidden around yards, under logs etc. (F)

Environmental Variation – Change something structural within the enclosure. E.g. move, change or add trees, logs, platforms, dens, substrate etc. (P)

Free – Food – A food-based enrichment not on the list (F)

Free – Sensory – A sensory-based enrichment not on the list (S)

Free – Cognitive/Novel Item – A cognitive-based enrichment or novel item not on the list (C)

Other – Any enrichment