



# Animal Enrichment Student Pack

This pack is aimed for students who require in depth information for course work and also for teachers to aid in their visit to Colchester Zoo.



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# The Meaning of Enrichment

In its most basic form, enrichment is providing the animal with something to do.

In the wild, animals will spend their time and energy finding and processing food, building their nests, avoiding predators, competing for mates and defending territory.

In captivity, animals are given food and water, they are safe from predators, have secure territory without rivals and are provided with mates and breeding locations.

The aim of enrichment is to increase the animals' well being by encouraging exercise, satisfying behavioural needs and optimising the level of stimulation that animals receive.

Enrichment should encourage behaviours that are appropriate for that species and that satisfy an animal's physical and psychological needs.

The following is a quote from David Shepherdson when he spoke at the 1st Environmental Enrichment Conference, which took place in Oregon in 1993:

"An enriched zoo environment is defined as one that is interesting, allows animals to perform natural behaviour, permits them to be more active, provides additional choices and increases the animals' control over their environment"

The term for enrichment carried out in a zoo is called environmental enrichment and the key point to remember is environmental enrichment should;

- Encourage natural behaviours
- Make animals active
- Provides the animal some level of choice
- Increase the control the animal has on their environment

There are also some points that need to be remembered when giving animals enrichment. It should be;

- **Cheap to replace**—zoos have limited budgets and zoo animals can quite easily damage or destroy enrichment.
- **Relevant**—the animal needs to be able to actually use the enrichment item. For example, an enrichment item that works by being hung up is useless for animals that cannot climb or fly to it.
- **Safe**—the animal shouldn't be able to injure themselves or others and it should be safe for the keepers to install and uninstall and work around when cleaning etc.
- **Stimulating**—if the animal shows no interest in the item or loses interest in it, then the item is no longer serving its purpose.



# The Types of Enrichment

Enrichment can be divided into six groups. These are:

- Physical habitat
- Food-based
- Sensory
- Social
- Novel
- Cognitive

Animals should have a mixture of the different types of enrichment when possible rather than focusing on one or two.

The following pages will look at these different types of enrichment and show examples of these types being implemented at Colchester Zoo.



# Physical Habitat

This form of enrichment refers to the enclosure the animal is kept in. When building an enclosure, the animals' needs must be fulfilled; not just in terms of having food and water, but also for the animal to perform as many natural behaviours as possible.



The sealion enclosure has a 4 metre deep salt water pool, which allows them to swim and dive.



Permanent climbing structures allow arboreal (tree dwelling) animals to climb, as well as a structure from which to add additional climbing opportunities.



Platforms offer vantage points which certain species use, such as the big cats.



The enclosure substrate (covering used to cover the floor) can allow dust baths, such as the deep sand in the elephant enclosure.



# Food-Based

Food-based enrichment is the most widely used method of enrichment as all animals require food to survive and the animals are more inclined to participate in it. The aim of food-based enrichment is to prolong feeding times and allow the animals to work for their food.

## Hiding food

This can be done by simply hiding the food around the enclosure, but can also be hidden in boxes, sacks or domestic animal toys. It makes the animal think about how to get their food, as well as increasing activity.



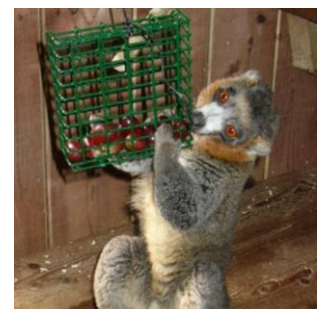
## Hanging Food

Animals that spend a large amount of time above ground can benefit from having food hung up in containers, as this encourages climbing behaviours. This can also be done for animals that spend their time on the ground to encourage activity.



## Food puzzles

This is when the animal can see and even reach the puzzle easily however actually getting the food out takes work. This prolongs the feeding experience.



## Pole Feeding

Used for the predators, such as lions and wolves. As they are unable to hunt as they would in the wild, pole feeding allows the animals to use their muscles and promotes exercise.



# Food-Based

## Whole food

This is when the food is not prepared i.e. cut up. Giving carnivores whole food in the form of entire mice or chicks and leaving scales or fur on the meat offers better nutritional content. Whole food means the animal must prepare the food themselves. It can also include whole apples and other fruits and vegetables to prolong the feeding for herbivores.



## Browse Branches

By leaving the leaves on branches, animals are provided with the opportunity to perform eating behaviours as they would in the wild, as well as making the feeding time last longer, as they pick the leaves and as not all parts will be as easy to reach.



## Scatter feeds

This is where the food is spread over a larger area. This can be done by scattering the food over the floor but also on the roof for animals that can climb. It encourages foraging behaviours and activity.



## Dispensers

Can be used to randomly release food. Can be done to release invertebrates and fruits and vegetables.





# Sensory

Sensory enrichment can encompass any of the five senses; sight, hearing, touch, smell and taste.

Olfactory enrichment that uses the sense of smell is used in the form of herbs and spices, perfume and deodorant. Animal fleece, dung and furnishings from other animal enclosures, such as logs, can also be added to the enclosure and bring in new and unique smells. The animals' food can be used to make a trail; commonly used when feeding meat, the meat is rubbed against the floor or furnishing. Smells can make the animal scent its own territory and cause exploratory behaviours.

Taste can be used in the form of lemon juice, as well as the smells used in the olfactory enrichment.

Audible enrichment (sounds) can also be played, such as a territory call to keep the animals aware of their surroundings which can help with group cohesion.

Visual enrichment in the form of mirrors can be used to encourage exploratory behaviours.

Fabric, fur and feathers are tactile enrichment and can offer different textures for the animals to experience, and broom heads are often used as scratching posts.

It should be remembered that, when giving sensory enrichment, the animals must be monitored for the first time, as animal species and in some cases individuals, will react differently and may react in a negative manner. Enrichment should be a positive experience for the animal and not cause high levels of stress or aggression.

Below are some examples of sensory enrichment.





# Social

For captive animals that are social it is extremely important that they are kept in a social unit. Within this unit, social behaviours can be seen, such as grooming, playing, even the odd confrontation can be enriching. In the wild, no animal goes through life without some aggression being displayed towards it or displaying some aggression to another individual.

Breeding behaviours, such as courtship displays and nest building, can be done when living in the correct social grouping. Communication behaviours, both vocal and visual, can be achieved from social enrichment.

Also learned behaviours can be passed on; for example chimpanzees will pass on skills such as tool use and termite fishing to the next generation.

Having different species living in the same enclosure can encourage interactions and means the different species learn each others behaviour and vocal cues.



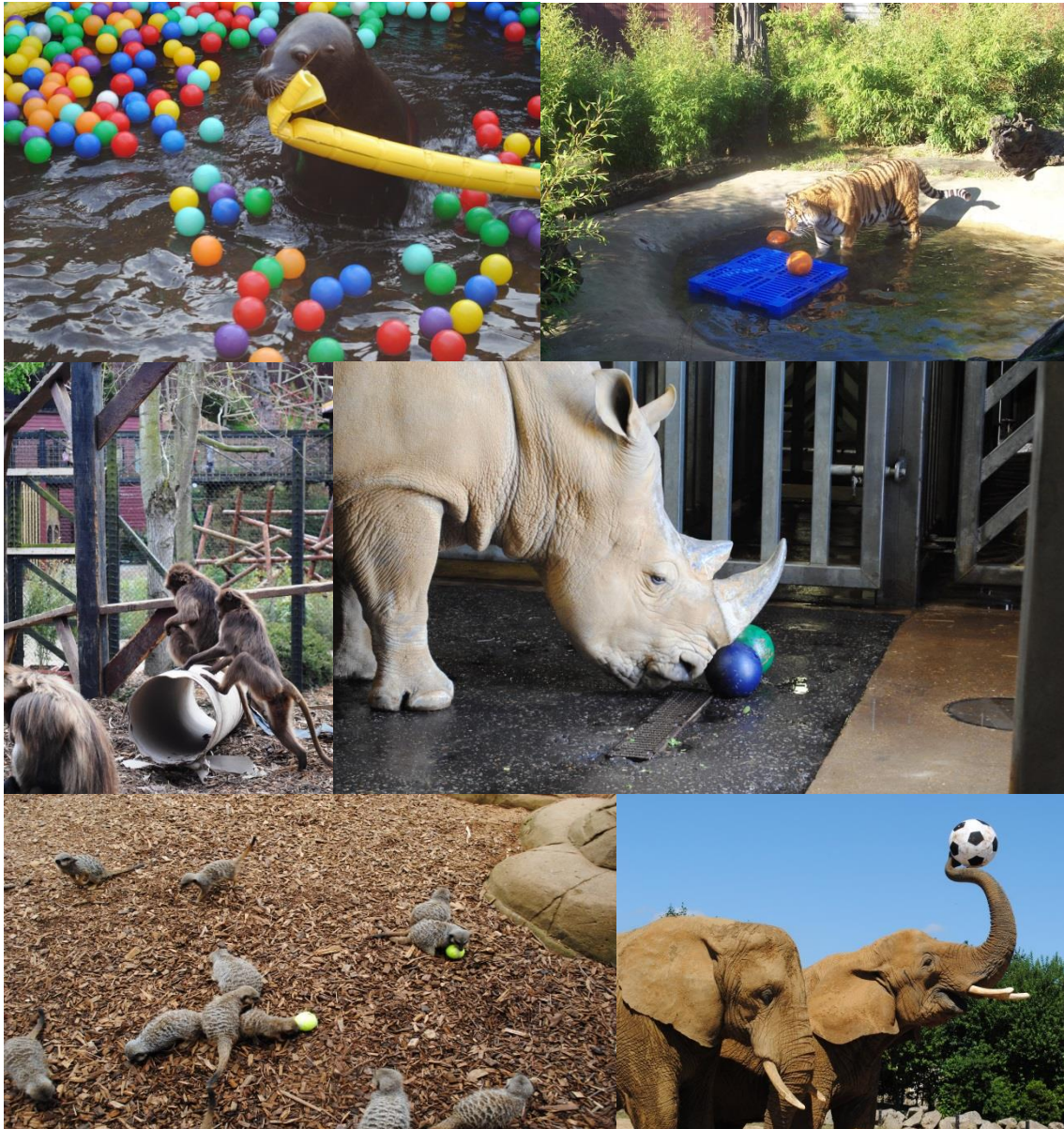


# Novel

Research within zoos suggests that any type of enrichment can be beneficial to the animal. Novel objects may not be items that the animals come across in their natural habitat but they do occupy the animal's time in a captive setting.

Novel enrichment allows the animal to investigate and works particularly well for animals that are inquisitive and for those that exhibit lots of play behaviours.

Below are some examples of novel enrichment.





# Cognitive

This form of enrichment involves providing the animal with a more advanced level of mental stimulation.

This can be achieved through training. Training is done to make the management of the animal less stressful and to reduce the need for more invasive management. For example, if an animal needs to move enclosures, rather than having to catch the animal with a net or sedating it, it can be training to walk into the transport crate.

Training also makes health checks easier to perform. Training the animal to show their teeth or paws means they won't have to be sedated for a simple check up. Animals can also be trained to accept injections for vaccines.

The process of training keeps the animal focused and provides the type of mental stimulation that they may lack due to being in a safe captive environment.

Training can be used to encourage natural behaviours such as porpoising in sealions, which is performed when evading a predator in the wild; in captivity there is no need to perform this behaviour, however it is a very good form of exercise.

The animal will be asked to perform a behaviour and will be rewarded, usually with food, when the behaviour is done. This is called positive reinforcement.

Below are some examples of animals involved in cognitive enrichment.



# Steps of Enrichment

For enrichment to be as successful as possible, there should be a clear objective and a way to make changes and improvement to the enrichment where necessary. This can be done through planning.

The procedure for planning enrichment can be remembered by using the word, 'spider'.

**S**etting Goals—What do you want the animal to do? Is it for one animal or a group?

**P**lanning—Develop ideas. Assess risks and benefits. Plan on making the enrichment.

**I**mplementing—Could be given weekly or a one off.

**D**ocumenting—Record success. Keepers' opinions. Change in animal behaviour

**E**valuating—Look at the pattern over time to see if enrichment is still fulfilling its purpose.

**R**e-adjusting—Based on gathered information, make improvements where necessary.

A point to remember is, if the same enrichment item or method is used all the time, it will become predictable and easy to do. Items should be given 'rest' days and continuously assessed and reviewed. By following the plan above, it allows this to be carried out in an easy and efficient manner.