Learning at the Zoo

Have an education lesson in the zoo classroom and:

- learn about a particular animal and its environment both naturally and in the zoo.
- look at different enclosure designs and what materials are used.
- look at enrichment toys up close. How do they work?

With a walk around the zoo

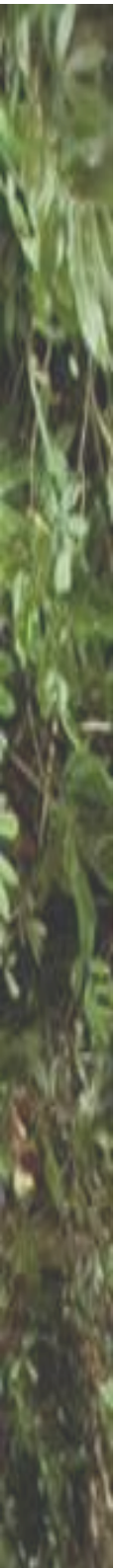
- Observe animal behaviour and how they use the environment within their enclosure.
- Identify enrichment in different enclosures
- Observe an animal and record what is important to know before designing an enrichment toy. (e.g. if it needs to be hung, is there somewhere to hang it?)

Post-visit Learning

- Use information gathered at the zoo to follow a design procedure for an enclosure/enrichment toy. Taking into account available resources.
- Carry out an individual, group or class inquiry to come up with an enrichment toy that will be able to be presented to the zoo (would be good to re-visit the zoo to see this enrichment toy tested). Brainstorm ways for improvement.
- After observing an animal design a model of an animal enclosure making sure all aspects of their behaviour has been accounted for.

Suggested Enclosure/Enrichment Inquiry Unit		
Inquiry Questions	**Activity**	**Teachable moments**
What do we know about how animals live in zoos?	Get students to brainstorm what they already know about how animals live in the zoo. Is this the same as if they were in the wild? What is the same/different? Are all zoos the same? Is each enclosure for different animals the same? Record what students know.	- How do we brainstorm? - Working collaboratively – we can learn a lot from what others know.
What would we like to find out about animal environments at the zoo / in the wild?	Get students to come up with a list of questions they would like answer about enclosures in which animals are housed at the zoo? This could be done as a class, in groups or individually. Group these questions into categories. E.g. natural environment (trees, grass area etc.), feeding, play, sleeping, interaction with other animals.	- How do we ask a good question? – Open /closed questions.
What is Enrichment?	Explain what enrichment is to students. This may be in the form of diagrams, worksheets or photos. Look at the different animal enrichment that has been designed for certain animals. Now that they know a little more about enrichment are there any more questions that they could add to their questions list. Have any of their questions been answered? Come up with a class definition of what enrichment is. E.g. Enrichment is.....	- Looking at different resources to gather information. E.g. books, internet, people, libraries, zoos etc. - How do we sum up all the information we now know?
What type of enrichment do humans need? What would it be like if we had none?	Look at a day in the life of a child at school. What types of things are put in place to make the environment enriching for us as kids? Why is it important for us to have these? What would it be like if we were only allowed to sit on the carpet each day with our arms and legs folded? What do teachers do to make school a little more interesting?	- Understanding enrichment from a human perspective.
Big Question	With all the questions that we have come up with is there a way that we can make this into a 'Big Picture' question? This could explain the process that we are going to take to come up with a final product. It may need a bit of guidance from the teacher if HOT questioning has not been covered. E.g. Explain what animal enrichment is and why it is important, examine the natural behaviour and characteristics of an animal and design and construct an animal enclosure/enrichment prototype to encourage the animals' natural behaviour and prevent boredom when it is in captivity.	- Higher Order Thinking Question

Suggested Enclosure/Enrichment Toy Inquiry Unit		
Inquiry Questions	**Activity**	**Teachable moments**
Understanding a bit about animals in zoos.	Introduce students to some of the animals they will find at their local zoo. What animal/s do you think might need enrichment? What might some of this enrichment look like? Can a bird use the same enrichment as a chimpanzee? Some students may have already done some research and have more to offer. Choose one animal they would like to design an enclosure or enrichment for.	- Being able to explain/draw a design they are visualising. - Understanding how different animals have different behaviours. - Research skills.
What can enrichment be made from?	Visit the Hamilton Zoo. Have a close look at enclosures and enrichment that is used at Hamilton Zoo. How and what is it made of? How does it work? What animal would it best be suited to and why? Could it be made from another product? Why/ why not? How is it placed within the animals' environment?	- Research skills - Using prior knowledge - Identification of materials - Logic and Reasoning
Observation of an animal and its enclosure.	It is best to choose just one animal at the zoo to study. Chimpanzee, kea, meerkat and monkeys are the most common places you can see an enrichment put into practice. Things we need to know about an animal before we can design enrichment. - What can your animal do/not do? - What is the zoo habitat that they live in? Does it have trees, water etc.? - Who lives with your animal? - What does your animal like to eat? How do they eat? Do they use hands/fingers or noses? - How does your animal move around?	- Field Trip - Observation of animal and environment
Observation of behaviour	How is your animal behaving around other animals? What is the reason for this behaviour? E.g. playing together, fighting, hiding, making noises Does this behaviour change when new enrichment is introduced? This would be a great opportunity for the children to be exposed to a keeper talk where enrichment is introduced.	- Field Trip - Observation of behaviour and how this changes



Suggested Enclosure/Enrichment Toy Inquiry Unit		
Inquiry Questions	**Activity**	**Teachable moments**
Design Criteria	What are we going to do with all this information we have gathered? Can we come up with criteria for our design? As a group, children could come up with their own enclosure or enrichment designs. Sketch their ideas and present to the group. Critique designs noting the bits that will work and those that will not. Pull ideas together to come up with a modified design. Do we need to do more research? (costs, materials etc.).	- Processing Information - Criteria – what does that mean? - Sketching - Critiquing others
Prototype/model	What process will we need to make our prototype/model? What materials, equipment, skills, expertise, and time frame will we need to be able to make this? Have we got all that we need? Where can we source it if we do not? If we don't have everything we need – can we modify it?	- Refine design based on what we can do and get.
Does it work?	Test prototype/model out and reflect on the functionality. Do there need to be any changes made? (At this point you may wish to send the design through to keepers so that they can suggest any improvements)	- Reflection
Let's see it in action	Revisit the zoo and present the enrichment to the keeper. Do they think it will work? Will it be safe in the environment? If the zoo keeper is happy to put the enrichment into the enclosure then observe what happens. What worked? What didn't work? Could you see any way for improvement?	- Field Trip - Observation
Presenting	Students present their design, their journey and what they learnt along the way.	- Presenting ideas – PowerPoint, poster, speech etc. - Peer Assessment
Reflection – Evaluation of process	What have we achieved? What would we have done differently? Have we answered our Big Question?	- Reflection - Evaluation

References and Resources - Websites

Auckland Zoo - http://www.aucklandzoo.co.nz/sites/explore-the-zoo/animal-enrichment/animal-enrichment
Information on Auckland Zoo's enrichment programme and examples of enrichment for your pets at home.

Environmental Enrichment Scrapbook - www.well.com/user/abs/dbs/eesb/
This website provides examples of species specific enrichment and asks for you to share your ideas.

The Shape of Enrichment – www.enrichment.org
This website has general information on enrichment in zoos.

Animal Enrichment - www.animalenrichment.org
The website provides general information on enrichment, how to create an enrichment programme, S.P.I.D.E.R. model as a process for enrichment projects, examples of species specific enrichment and a large number of enrichment related resources.

National Zoo - www.nationalzoo.si.edu/SCBI/AnimalEnrichment/default.cfm
This website provides an overview of what is enrichment and what to consider when designing enrichment.

Honolulu Zoo - http://www.honoluluzoo.org/support-the-zoo/environmental-enrichment-program.html
Information on Honolulu Zoo's enrichment programme, with lots of pictures and videos.

References and Resources - Books

Animals at Play: Rules of the Game - Marc Bekoff
[Picture book – Ages 8+]
In "Animals at Play", Bekoff shows us how animals behave when they play, with full-colour illustrations showing animals in action and having fun - from squirrels climbing up a tree to polar bears somersaulting in the snow.

Sniff, Swing, Swipe – Rupert Alchin
[Connected 2, 2006 – Ministry of Education]
This article is about how the Sniff, Swing, Swipe project began at the Auckland Zoo in 2001. It share some of the ideas sent in by school children.

Environmental Education in New Zealand Schools
[Ministry of Education]

National Library of NZ and local libraries will have books to help with this topic.