E·L·I·A·S

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Adult and Young

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General Information
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Language Aims:

- this module mainly focuses on increasing the children's animal vocabulary, but also begins to introduce the use of "a" and "an"

Science Aims:

- to begin making the distinction between adult and young animals
- to also point out that being 'small' does not denote 'baby'

Educator Hint:

- This module makes use of correct animal names. Remembering the large of amount of animal names can be demanding for the younger children; therefore, place the emphasis of your teaching on helping those children become familiar with hearing and comprehending the animal names, not necessarily repeating back the animal names. The older children should be more apt to vocalising the animal names, perhaps even having prior knowledge of the names; therefore, teach with the emphasis on aiding their language use and ability by repeating the names often and encouraging the children to do likewise.
- Throughout this module point out/ensure that the children begin to understand the difference between a young animal and a small animal. With young children, they sometimes think that anything small has to be a 'baby'. Use this module to build the foundation for understanding what an adult is and what is young.
- In this module the language used for a young human is 'baby' for simplicity sake. There are other variations you can introduce to your children: infant, toddler, newborn, babe, etc.
- If you would like, you can introduce the different names of adult male and female, both in animals and humans. For simplicity sake, the Session Outline has only the general names of the adults.
- If you would like to include additional material with this module, online databases can be an asset, just as this module makes use of Wiki (-pedia and -media). However, when using online databases, please ensure the accuracy of the information obtained by cross-referencing it with other sources.

Animal Information:

- Giraffe facts:
  - **physiology**
    - *body:* elongated head with 2 short horns (ossicones), long neck, body, four legs, tail, covered in a patched coat
    - *colouration:* the coat is covered in light tan\black patches varying in shape from rectangular to stared, separated by white\dark yellow lines, with the background colour extending down the legs
    - *size:* a calf is 6' (1.8m) tall when born; adult males ~18' (5.48m) tall and ~3000lbs (1360kg); adult females ~15' (4.5m) and ~2000lbs (907kg)
  - **habitat** – The giraffes occur naturally only in Africa. They can be found in savannahs, grasslands and woodlands; however, if food is scare they may move into dense forests.
  - **interesting information** – The giraffe has a special circulatory system and extra tight skin on its legs in order to help maintain a healthy blood pressure. The tail of a giraffe is the longest of any mammal species; it can grow up to 8' (2.4m) long. The gestation period for a giraffe is 14 months. (African Wildlife Foundation, n.d.; San Diego Zoo, 2010; Wikipedia, 2010)

- Snow leopard facts:

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- **physiology**
  - *body:* small rounded ears, compact head, stocky body, four legs, long tail, covered in fur
  - *colouration:* along the back and legs the fur has an off-white/gray colour with black/dark gray rosettes; throat, chest and stomach area are more cream coloured with no rosettes
  - *size:* adult weight = 60-120lbs (27-54kg); adult length (not including tail) = ; adult length (not including tail) = 3-4' (1-1.2m); the tail can be as long as the entire body, making the entire length to be around 6-8' (2-2.4m)
- **habitat** – Snow leopards can be found in central and southern Asia, throughout mountainous areas.
- **interesting information** – Very little information is known about snow leopards, such as wild population numbers and life span, because of the snow leopard's very solitary behaviour. Snow leopards can have gray or green eyes, which are not normal for large cats; most large cats have gold eyes. Snow leopards cannot roar. Gestation period ~90 days. (Defenders of Wildlife, 2010; Snow Leopard Trust, 2010; Wikipedia, 2010)

- Toad facts:
  - **physiology**
    - *body:* head and body core attached with no visible 'neck', four legs, covered in skin (poisonous and 'warty')
    - *colouration:* back, head and legs can range from green to brown, the underside can be lighter in colour
    - *size*: adult male length = 2-3" (50-80mm), adult female length = 2.5-3.5" (70-90mm), tadpoles length = 1/8-1/4" (3-6mm)
  - **habitat** – *Bufo bufo* has a wide-spread distribution, ranging through most of Europe except for Ireland and some Mediterranean islands. *Bufo bufo* can be found near water sources.
  - **interesting information** – The common toad has a very long life span, if kept in captivity they can grow as old as 50 years old. The skin of a common toad is poisonous and will irate the skin if handled. Toads are carnivorous and will eat most insects small enough to swallow, they have also been known to prey on small toadlets. (ARKive, 2009; The HCT, n.d.; Wikipedia, 2010)
- Ladybug facts:
  - **physiology**
    - *body:* larva = alligator shaped body, six legs; adult = head, abdomen, pair of elytra, six legs, two antennae
    - *colouration:* egg = yellow or bright orange; larva = typically black and orange, with various patterns of these two colours; pupa = similar to the adult colouration; adult = ranging from yellow with black spots to red with black spots, some adults may be black with either red or yellow spots
    - *size:* egg = >1mm; larva = ~2mm when newly hatched; adult = 2mm – 10mm
  - **habitat** – Ladybugs can be found worldwide. Normally, ladybugs can be found around plants with abundant aphid populations.
  - **interesting information** – Ladybugs are considered to be lucky. Mostly ladybugs feed on aphids and other vegetation-harmful insects; however, two species are known to consume plants, the Mexican bean beetle and the Squash beetle. Ladybugs are known by a variety of names; ladybird, lady beetle, ladybird beetle, etc. Ladybug eggs will hatch in ~4 days. (Bessin, 2007; Newton, 2004; Wikipedia, 2010)

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- Bearded dragon facts:
  - **physiology**
    - *body:* triangular head with a noticeable 'beard' on adult males, flattened body, long, pointed tail, four legs
    - *colouration:* colour ranging from a yellow\brown to tan with yellow and\or red highlights
    - *size:* juvenile = 3-4" long (7.9-10cm) (tail included); adult = up to 24" long (61cm)
  - **habitat** – Bearded dragons can be found naturally in Australia, with a habitat range of woodlands to deserts.
  - **interesting information** – Because of the pleasant nature and easy care of bearded dragons, they make excellent pets. The bearded dragon is aptly named, having a prominent 'beard' which can be flared when the animal is threatened or showing dominance. The incubation period for the bearded dragon is 50-70 days. (Forester & Smith, 2010; Periat, 2000)

- Flamingo facts:
  - **physiology**
    - *body:* small head with hooked beak, long thin neck, main body with large wings, two long legs, covered in feathers except legs
    - *colouration:* colours can range from mainly white with black tipped wings to bright pink with black tipped wings
    - *size:* chicks = ~3.2ounces (90g); adult height = 3-5' (91-152cm), adult weight = 4.5-9lbs (2-4kg)
  - **habitat** – The flamingo can be found in parts of Africa, Europe, Asia, Caribbean, South America. The flamingo inhabits lagoons, lakes, swamps, and shore lines.
  - **interesting information** – Nests of flamingos are made entirely of mud, which the male and female mould into a bowl. Only one species of flamingo has yellow legs, the Andean flamingo. The incubation period for flamingos is 27-31 days. (San Diego Zoo, 2010; The Wild Ones, 2000; Wikipedia, 2010)

<u>Investigation possibilities:</u>

- tadpoles and toad (Amphibian Ark, 2009)
  - all following information is based on '*Bufo bufo*' and our experiences in raising these toads, your experience may differ slightly depending on your species
    - if you are not sure about the care of your species, follow this link to learn about amphibian husbandry: http://www.amphibianark.org/resources/amphibian-husbandry/
  - *****it is very important that you inquire with local environmental authorities before you go out and collect frog\toad eggs from the local pond*****
    - ***ponds, estuaries and nature habitats may be protected and collecting frog\toad eggs from them will be illegal***
    - ***when contacting local environmental authorities, explain the activity you would like to do and ask for their assistance***
    - ***frogs are highly susceptible to pollutants, toxins, and diseases which is the reason their areas are protected***
    - ***you should never introduce a foreign frog\toad into an aquatic area, if you are allowed to capture, raise and release, make sure the animals go back to their original habitat***
  - only once you have been authorised, prepare an aquarium to hold the eggs\tadpoles
    - we used a medium-sized plastic aquarium for our eggs\tadpoles

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- if the container was used for other animals or objects wash the container well, air dry, then rinse well with only water, air dry again
- tadpoles need highly oxygenated water in order to survive, either provide a safe filtering system (make sure the tadpoles can't get sucked in!), or be prepared to change a portion of the water every day
- do not put sand or dirt at the bottom, since tadpoles may feed along the bottom and the debris will cause problems
- decorate the aquarium with real aquatic plants, the best plants to use are from the same source as to where you collected the tadpoles, you can also add stones and small rocks (if the plants and rocks come from the same area as the eggs there should be no need to 'wash' them, if the decorations are purchased ensure the objects are free from sprays, dyes, chemicals, etc.)

- add the water
  - the best source of water for the eggs\tadpoles is where you collected the eggs
  - if the source water is unavailable
    - fill a large container with tap water
    - set it in the sun for a 3-4 days to remove the chlorine, once the water is ready to be used move it to a cool area
    - follow this same procedure if more water is needed
  - fill the tank at least 4" (10cm) full with water
    - if you have a filtration system you may add more water
    - if you have no filtration system, it is important to keep the water more shallow, in order to assist oxygen saturation
    - place the aquarium in a well-lit, well-ventilated, cool area *not in direct sunlight or by a heating source*
    - if you have to provide lighting for the tadpoles, have it resemble the natural amount of light in your area (i.e. light on in the morning and off at night)
    - the temperature of the water should remain as constant as possible, and should stay cool at all times
  - add the eggs or tadpoles
  - feeding
    - once the eggs have hatched you can feed the tadpoles a high-protein fish food, we used crushed goldfish flakes
    - the tadpoles are mostly algae-eaters and will nimble on algae growing on the plants and rocks
    - the tadpoles may also eat shredded frozen lettuce
  - maintaining the tadpoles
    - keep the water clear of 'gunk' by changing the water regularly or the filter regularly
    - a bulb syringe works great for sucking the 'gunk' off the bottom
    - the plants may have to be changed if they become too water-logged and mushy
    - when changing the water, only change about a third to half of the water at a time (use the prepared water)
    - make sure that any of the objects you use to care for the tadpoles are not used for any other animal or object
  - metamorphosis
    - the growth of the tadpoles may not be uniform in all the tadpoles
    - first the back legs will appear, extending tightly along the tail, eventually becoming mobile

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- the front legs will 'unfold' down from the chest area once they are fully formed and the skin covering them abates
- once the front legs appear, terrestrial frogs and toads will need to be taken out of the water and moved onto 'land', the tadpoles should be watched very closely at this point
- in our investigation the tadpoles were naturally inclined to leave the water within 48 hours of the front legs appearing
    - to make it easier for us and the tadpoles a second aquarium was provided for the 'early-metamorphed' tadpoles
    - the second aquarium was a combination of water and land: half the aquarium was filled with about .33" (1cm) of water, the other half was a gentle upward slope of well packed moist soil
    - once the front legs appeared on our tadpoles they were moved to the second aquarium and left to naturally climb out of the water
- once the tadpoles emerge from the water they will have all 4 legs as well as their tail
- in the following days their tail will be slowly absorbed into their body
    - during this time the froglets\toadlets will not eat
- once the tail completely disappears, begin feeding insects to the froglets\toadlets
    - we started our toadlets on *micro-crickets*, since fruit flies were a little too big for them, depending on the species you may do the same
    - micro-crickets may be purchased from your local pet store
- once all the tadpoles have moved onto land decorate their new home accordingly
    - use dirt on the bottom of the container (do not use sand, it causes problems with feeding)
    - you can add small plants, rocks, tree bark, sticks, etc. for hiding places (the froglets\toadlets will appreciate lots of hiding places)
    - **it is very important to cover the container now with a screen or terrarium lid, the froglets\toadlets are able to climb out of the container!**
    - keep the air moist by misting the container once a day or so
    - room temperature was sufficient for our toadlets
- extended care
    - as the froglets\toadlets grow their food can change to fruit flies and micro-crickets
    - as the frogs and toads grow bigger the food source can increase in size, try and keep the food source size to be less than the size of the frog's head
    - eventually toads will eats insects, spiders, worms, etc.
    - *Bufo bufo* can live up to 40 years, so lots of time to observe!
    - a note of caution, if you happen to handle the froglets\toadlets, remember that some species are poisonous and may irritate your skin
- releasing the frogs\toads

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- ***you may release the frogs\toads only if the environmental authority permits you, do not release them unless you are permitted***
- the environmental authorities may want to know how the tadpoles were raised, to ensure they did not come in contact with any other species of amphibian, be prepared to answer questions
- allow the frogs\toads to grow for least one month before you release them into their original location
- release them into an area with lots of low vegetation and moisture, do not release them into the water

- ladybug investigation
  - ladybugs may be purchased from a number of places, or simply caught in a nearby garden (please ask the owners before your collect their ladybugs)
  - preparing a ladybug habitat
    - we used a small plastic terrarium for our ladybugs
    - decorate the habitat with rocks, sticks, leaves, small plants, etc.
    - cover the top of the habitat with very fine screening (we used white tissue paper and held it down with a rubber band)
    - place the container in a convenient location, but not in direct sunlight or near a heating device
  - add the ladybugs
  - feeding the ladybugs
    - a ladybug's main food source is aphids
    - we collected aphids from our infected wild rose bushes by snipping off various buds covered with aphids (make sure when you collect the aphids, that you don't hurt the rose bush)
    - add the buds and aphids to the ladybug habitat
    - depending on how many ladybugs you have collected, you may need to add new aphids every other day
  - eggs and larvae
    - ladybug eggs are bright orange groups of tiny, oblong balls and are usually laid on the underside of leaves and rocks, but they may be anywhere in the habitat
    - once the eggs hatch the larvae are very tiny and black\orange, they will eat aphids as well
    - once you have larvae the ladybug adults may be released
  - pupae
    - the larvae will find a suitable place to pupate, usually on the underside of a leaf
    - after a couple of days the adult ladybug will emerge
  - releasing ladybugs
    - ladybugs are excellent at warding off aphid infestations, and many gardeners will welcome ladybugs; therefore, phone your local greenhouse or nursery to see if they would like your ladybugs
    - release the adult ladybugs onto rose bushes or any place aphids are abundant

Craft links:

- Level 1 Session 2 (DLTK, 2010; Pearson Education Inc., 2010)
  - http://www.dltk-kids.com/animals/mfrogbag.htm
- Level 2 Session 3
  - http://fun.familyeducation.com/sculpting/recipes/37041.html
- Level 1&2 Session 6
  - http://www.dltk-teach.com/books/rainbowfish/coffeefilter.htm

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Mammal young and adult
Session 1 Level 1

Materials:

- book with pictures of adults and babies
  - check with your local library to find children's books on growing up
  - "new mothers" magazines work well for pictures
- flash cards (*F.C. 1-18*)

Words:

- MOM, DAD, BABY, PARENT, ADULT, YOUNG, ANIMAL, DOG, REINDEER, CAT, LLAMA, COW, BEAR, COATI, ORANGUTAN, MOUSE
- mammal, puppy, calf, kitten, cria, cub, pup, grow, different, same, game, play, turns, cards
- various physical features

Morning circle:

- **let's learn about us** (be prepared for 'awkward' questions about babies)
  - human babies and parents
    - using the book with pictures of parents and babies, discuss the similarities and differences
      - we used a book from the kindergarten that the children were familiar with
    - how is a baby the same as its parent
      - both have eyes, ears, hands, fingers, feet, body, head, mouth, etc.
    - how is a baby different than its parent
      - a baby is smaller, a baby cannot walk, a baby cannot talk (it only cries), babies are less 'hairy', etc.
  - how should we act around babies
    - we should be quiet with babies (even though they are sometimes loud)
    - we should to touch the baby softly
      - can we touch every baby
        - if we don't know the parent and baby, we should ask before we touch, and respect the answer
    - we should to hold the baby with both hands and be very still when we hold a baby
      - the same idea applies as with touching an unknown baby
    - discuss why should we do all these things
- **let's learn about animals** (*F.C. 1-18*)
  - animals and their 'babies'
    - **With really young children it can be confusing to learn the names of animal young; the emphasis of this session is more on learning the combinations of adult and their young then the young names. Use the young names when you have the opportunity, but don't force the children to use the correct name.**
  - use the F.C. go through the list of animals and their corresponding young
    - dog-puppy, reindeer-calf, cat-kitten, llama-cria, cow-calf, bear-cub, coati-cub, orangutan-baby, mouse-pup
    - with each animal, encourage the children to express their ideas of dislikes and likes
    - remember to emphasise that not **all** smaller animals are babies
- **let's play**
  - memory game

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- depending on the size of the group, choose an appropriate amount of cards and use them to play a game of memory, combining the young animals with the adult animals

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Names of young mammals
Session 1 Level 2

Materials:

- flash cards (*F.C. 1-18*)
- Worksheet 1
- enough safety pins for each child
- pencil crayons

Words:

- ANIMAL, YOUNG, ADULT, PARENT, BABY, MAMMAL, DOG/PUPPY, ORANG-UTAN/BABY, CAT/KITTEN, COATI/CUB, LLAMA/CRIA, BEAR/CUB, COW/CALF, MOUSE/PUP, REINDEER/CALF
- game, questions, cards, play, colour
- "This is a/an___.", "It is a/an___.", "My animal is a/an___.", "Her/his animal is a/an___."

Morning circle:

- **let's learn about us** (be prepared for 'awkward' questions about babies)
  - discuss what an adult is
    - a human *adult* is a person that has lived for at least ~18 years (use whatever legal age your country has)
    - a human adult does not have to be 'tall'
  - discuss what a baby is
    - a human *baby* is a person that has lived ~ 1 years
  - what is appropriate behaviour around babies and young animals
    - we should be quiet and move calmly
      - why?
        - if the children are having problems answering the why, make it personal for them: do the children like very loud noises or harsh movements
    - we should touch gently
      - can we touch all babies and animals/why not?
        - when discussing this, emphasise that the children should respect the answer received from the parent
    - we should hold a baby/animal with both hands and move slowly
      - why?
- **let's explore mammals** (*F.C. 1-18*)
  - adult mammal
    - introduce all of the animal adults F.C.
      - clarify any unknown animals
      - lay the F.C. face-up in the middle of the circle
  - young mammal
    - introduce matching young mammal F.C.
      - choose the most common animal, probably the cat or dog, take it out of the group, find the corresponding young picture and hold both up
      - the adult is a 'dog' and the 'puppy' is its young
        - with animals the young have different names, instead of 'baby'
    - go through all of the cards and show the adult first, give the name, then show the corresponding young and introduce the name
- **let's go deeper**
  - choose 4 (or more) animals to learn the adult/young names
    - have the children choose 4 (or more) of the adult animals and learn the young names for them

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- "This is a/an _____. It has a/an _____."

➢ **let's play**
- Which animal am I?
  - the object of the game is to figure out which animal is attached to their back
    - attach one F.C. to the back of each child using a safety pin (depending on the size of the group, either make duplicates, or have the children wait for a second round)
    - have the children mingle together and ask questions to figure out which animal they are
      - Is my animal an adult?
      - Is my animal young?
      - Is my animal large?
      - Is my animal furry?
      - etc
        - encourage them to use English
    - once the children have figured out which animal they are, have them sit down (those that are finished can help others with hints)
    - once all the children have figured out their animal, have the children tell their animal to the group
    - begin with a random child and ask them to stand up
      - ask; "Her/his animal is a/an_____. Who has the matching adult/young?"
        - if the children are able, allow them to use their own sentence: "My animal is a/an_____. Who has my matching adult/young?"
      - allow the group to answer
      - once the correct match is found have the children sit together
    - continue until all the animals are paired

➢ **let's create** (*Worksheet 1*)
- have the children draw and colour in the space provided
- the children can choose to draw whatever they desire, only stipulation is one is an adult, and one is young

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Environmental Exploration
Session 1

Materials:

- zoo keeper
- measuring stick/tape

Zoo visit:

- Previous to the visit, inquire with the zoo/farm if any animals have been born recently. Inquire if there are any special animal feeding times the children may observe.
  - if the zoo/farm has groups of animals that have pregnant members as well as newly birthed members, observe the pregnant animals first
  - the zoo kindergarten was able to observe giraffes and snow leopards, please use these as examples of activities if you are unable to observe the same animals
- **the new giraffe calf**
  - before the children enter the giraffe enclosure, remind the children of proper behaviour around new-born animals
  - also remind the children of what the pregnant giraffe cow looked like during the first visit
  - gather the children in an area that does not cause the calf stress, but close enough so the children can clearly observe
    - talk about the similarities of the calf and cow
    - talk about the differences of the calf and cow
    - to make it personal for the children talk about how tall a calf is
      - even though it is newly born it is 6' tall (183cm)
      - compare that to the children
      - compare that to a human baby
    - be prepared to answer the question of where the calf came from
- **the new snow leopard cubs**
  - before the children enter the keeper area of the snow leopards, remind the children of proper behaviour around newly born animals
  - the snow leopard cubs are still in the den and have to be viewed via T.V. monitor
    - depending on the quality of the T.V. monitor, clarify what the children can see on the monitor
    - make sure the children understand what they are seeing on the T.V., that the snow leopard is just in the other room and not far away
  - talk about why the cubs are still in the den
    - unlike the giraffe calf, the cubs are more helpless and the female prefers darker, quieter places
  - talk about the similarities of the cub and female
  - talk about the differences of the cub and female

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Toads and tadpoles
Session 2 Level 1

Materials:

- flash cards (*F.C. 19-20*)
- Jane and the tadpoles (*pages 10-17*)
- craft supplies
  - follow this link for full details
    - http://www.dltk-kids.com/animals/mfrogbag.htm

Words:

- TOAD, TADPOLE, EGG
- amphibian, swim, hop, jump, story, read, craft, glue, colour, cut, scissors, crayons

Morning circle:

- **let's explore toads** (*F.C. 19-20*)
    - the main differences between frogs and toads are the texture of the skin (frog skin is more moist) and the form of locomotion (frogs are jumpers, whereas toads either hop or crawl)
    - for consistency, we talked about toads, to prepare the children for the environmental exploration
    - if your group is going to raise frogs, please change language and pictures accordingly
  - adult toads (*F.C. 20*)
    - introduce the F.C. of the toad
      - talk about the toad: size, colour, shape, locomotion, vocalisations, etc.
      - to personalise the experience for the children, have the children vocalise like a toad, and have them move like a toad
      - allow the children to explain their idea of a toad's skin texture
      - talk about where an adult toad lives
  - tadpoles (*F.C. 19*)
    - introduce the F.C. of a tadpole
      - talk about the physical features of a tadpole
      - again, for personalisation, have the children move like a tadpole
        - encourage the children to talk about the variation in movement from adult to juvenile
      - talk about where a tadpole lives
        - how does that vary from an adult toad
- **let's read** *(story pages 10-17)*
  - story of 'Jane and the tadpoles'
    - read through
- **let's make a craft**
  - follow the link above for all instructions and supplies for this craft of a 'frog'
    - you can change the craft slightly to make the craft appear more toad-like (have a more muted colours, make warts for the skin, etc.)

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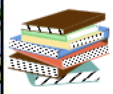
Toads and tadpoles
Session 2 Level 2

Materials:

- flash cards (*F.C. 19-20*)
- Worksheet 2
- scissors
- pencil crayons
- paper brads (paper fasteners)
  - have 5 for every child



Words:

- TOAD, TADPOLE, METAMORPHOSIS, AMPHIBIAN
- craft, cut, scissors, colour, fasten, tail, legs, body, eyes, swim, hop, jump

Morning circle:

- **let's explore toads** (*F.C. 19-20*)
    - the main differences between frogs and toads are the texture of the skin (frog skin is more moist) and the form of locomotion (frogs are jumpers, whereas toads either hop or crawl)
    - for consistency, we talked about toads, to prepare the children for the environmental exploration
    - if your group is going to raise frogs, please change language and pictures accordingly
  - an adult toad
    - talk about the toad
    - where do toads live
    - what do toads eat
    - what sound do toads make
    - how do toads move
      - what physical trait helps them move the way they do
  - a tadpole
    - talk about the tadpole
    - where do tadpoles live
    - what do tadpoles eat
    - how do tadpoles move
      - what physical trait helps them move the way they do
  - a tadpole is the young from a toad...how can they be so different
    - point out the huge variations between the adult and young
    - ask if the children have any ideas as to how the tadpole changes into a toad
      - if any child knows they can be your special helper for the day
    - bring out the completed craft and use that to help explain how a tadpole changes into a toad
- **craft time** (*worksheet 2*)
  - tadpole metamorphosis
    - colour and cut out all the pieces
    - punch holes where indicated (tail, legs, body)
    - slice along the dotted line on the tail, to allow the tail to be pulled up behind the body
    - assemble:
      - at bottom point use 1 paper brad to attach the tail
      - on the bottom left and right attach each hind leg using a paper brad
      - use a paper brad to attach each foreleg to a side

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Environmental Exploration
Session 2

Materials:

- tadpoles, their supplies and their home
- see "Investigation possibilities" at the beginning of this module for knowledge on how to raise and care for tadpoles

Animal visit:

- depending on the age of the tadpoles, whether or not they have morphed into toads yet, adjust your exploration to match what the children will see
  - it is best if the tadpoles are still young
  - this environmental exploration is a long-term exploration that the children will observe over a period of weeks/months
- **let's explore the tadpole world**
  - review proper behaviour when an animal is present
    - quiet, slow movements, respect for the animal
  - introduce the tadpoles to the children
    - talk about the aquarium
    - talk about what the children see in the aquarium
    - talk about what the tadpoles eat
      - see if the children can see any tadpole food in the water
    - talk about the variations in the tadpoles
      - some have no legs, some have 2 legs forming, a couple have 4 legs forming
      - the point of this exploration is to point out the various stages of toad metamorphosis, the more variations in tadpole growth, the better
  - encourage as many questions as possible

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Ladybugs
Session 3 Level 1

Materials:

- flash cards (*F.C. 21-23*)
- ladybug enclosure and supplies (try and bring along some aphids)
- medium-sized rounded stones
  - 1 for each child
- red, black and white children's finger paint
- newspaper or plastic table cloth
- paint t-shirts
- paint brushes
- water for used brushes

Words:

- LADYBUG, LARVA, EGG
- insect, leaf, rock, stick, branch, paint, craft, water, paint brush, hatch, pupa

Morning circle:

- In preparation for this activity, see the "Investigation possibilities" section and follow steps in preparing a ladybug enclosure.
- **all about ladybugs** (*F.C. 21-23*)
  - adult ladybugs
    - introduce the picture of an adult ladybug
    - talk about it (shape, texture, etc)
    - talk about the size of the ladybug
      - help the children to understand the picture of a ladybug is many times bigger than a real ladybug
  - ladybug larva
    - introduce the picture of a ladybug larva
    - talk about it (shape, texture, etc.)
    - talk about the size of a larva
  - ladybug eggs
    - introduce the picture of ladybug eggs
    - talk about it (shape, colour, etc.)
    - talk about the size of ladybug eggs
      - emphasise that ladybug eggs are very tiny, although easy to spot because they are clumped together
- **let's explore a ladybug habitat**
  - review proper child behaviour around animals
    - quiet, slow movements, animal respect
  - bring out the ladybug habitat
    - point out the various features of the enclosure
  - bring out the ladybug's food
    - discuss the aphids
    - add the aphids to the habitat
  - find a leaf or stone with eggs on it
    - **do not touch the eggs, you might kill the larvae inside**
    - talk about the eggs, use the enlarged picture if needed
  - find a couple larva
    - if you are very gentle, bring a couple larvae out of the habitat and allow the children to observe them either on the table or on a piece of white paper
  - find a couple adults
    - if you are gentle bring them out and allow the children to observe them move around on the table or piece of white paper

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- be prepared to have the adult ladybugs fly away if you bring them out

- **craft time**
  - prepare the crafting area by covering the tables with newspaper or plastic and setting out the supplies
  - have the children put on old t-shirts
  - paint the stones to look like ladybugs
    - paint red the entire surface of the stone
    - on one end of the rock paint a small section black, to be the head
    - use either the tip of your finger or small paint brushes to make black dots over the remaining red section
    - this craft has no legs; however, pipe cleaners are a great way to make legs (6)
  - set aside to dry
    - can be used as a door stop or paper weight once dry

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Ladybugs and larva
Session 3 Level 2

Materials:

- flash cards (*F.C. 21-23*)
- ladybug enclosure and supplies (try and being along some aphids)
- pieces of cardboard or thick construction paper
  - 1 for each child
- a selection of twigs, leaves, pebbles, flowers
- modelling clay
  - http://fun.familyeducation.com/sculpting/recipes/37041.html
  - add black paint or food colouring to change the colour of the clay to black
- sponges cut into small round shapes
- glue
- red, black and white children's finger paint
- newspaper or plastic table cloth
- paint t-shirts
- paint brushes
- water for used brushes

Words:

- LADYBUG, LARVA, EGG, INSECT, METAMORPHOSIS
- habitat, hatch, leaf, rock, stick, twig, craft, clay, paint, paint brush, sponge, glue, dry, t-shirt, water

Morning circle:

- In preparation for this activity, see the "Investigation possibilities" section and follow steps in preparing a ladybug enclosure.
- **all about ladybugs** (*F.C. 21-23*)
  - adult ladybugs
    - introduce the picture of an adult ladybug
    - talk about it (shape, texture, etc)
    - talk about the size of the ladybug
  - ladybug larva
    - introduce the picture of a ladybug larva
    - talk about it (shape, texture, etc.)
    - talk about the size of a larva
  - ladybug eggs
    - introduce the picture of ladybug eggs
    - talk about it (shape, colour, etc.)
    - talk about the size of ladybug eggs
      - emphasise that ladybug eggs are very tiny, although easy to spot because they are clumped together
  - ladybug metamorphosis
    - ask for ideas on how the children think the larva changes into a ladybug
      - if one or two children know have them as your special helper for the activity
    - what is a pupa
      - talk about the pupal stage in ladybugs
      - discuss the drastic change in body shape during the pupal stage
      - unlike the tadpoles, the children cannot see the actual metamorphosis; instead, everything happens inside the pupal casing
- **let's explore a ladybug habitat**

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- review proper children behaviour around animals
  - quiet, slow movements, animal respect
- bring out the ladybug habitat
  - point out the various features of the enclosure
  - ask the children their ideas of why the objects need to be in the enclosure
- bring out the ladybug's food
  - discuss the aphids
  - ask the children if the ladybug is a carnivore or herbivore
    - why is the ladybug a carnivore
  - add the aphids to the habitat
    - if there are any 'eaten' aphids in the habitat, point them out
      - eaten aphids appear as empty shells, almost like a tissue paper moulding of aphids
- find a leaf or stone with eggs on it
  - **do not touch the eggs, you might kill the larvae inside**
  - talk about the eggs, use the enlarged picture if needed
    - if there are any eggs that have hatched, point out the empty 'shells'
- find a couple larva
  - if you are very gentle, bring a couple larvae out of the habitat and allow the children to observe them either on the table or on a piece of white paper
- find a couple adults
  - if you are gentle bring them out and allow the children to observe them move around on the table or piece of white paper
  - be prepared to have the adult ladybugs fly away if you bring them out
  - point out that the wings of a ladybug are covered with a very hard covering
    - ask the children why the wings are covered

➢ **craft time**

- prepare the craft area by covering the table with newspaper or plastic and bring out all of the supplies
- have the children put on old t-shirts
- first:
  - hand out the clay to the children
  - have the children mould as many larvae as they have clay for
    - size isn't an issue; however, try to encourage smaller sizes of larvae
  - set aside to dry
- second:
  - decorate the cardboard/thick construction paper with pictures of leaves, rocks, twigs (or the real items)
- third:
  - using the sponges, dip one side of the sponge in the red paint, use as a stamp and 'stamp' ladybug bodies randomly on the cardboard/thick construction paper
- fourth:
  - using black paint, have the children paint on the heads, legs and spots of the ladybugs
  - set aside to dry
- fifth:
  - once everything is dry, glue the larvae onto the cardboard/thick construction paper

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Environmental Exploration
Session 3

Materials:

- ladybug habitat
- garden or rose bush park
- plastic cups or containers
    - enough for every child

Park visit:

- **ladybug relocation**
    - today the children will introduce the new larva and adult ladybugs to a new home (or the original location where the adults were found)
- **quick review and explanation**
    - briefly review the ladybugs, larvae and eggs
    - ask the children if they remember what the ladybugs eat/ what the larvae eat
    - once the correct answer has been determined ask if the children know the location of the aphids
        - which plants/flowers
    - explain that today the children are going to release the ladybugs, larvae and eggs into a garden where there are lots of aphids
- **ladybug relocation**
    - out in the garden, encourage the children to carefully locate flowers or plants with lots of aphids
    - once various locations have been found, show the children how to properly release the animals
        - gently catch an adult or larva and place in plastic cup
        - bring to aphid infested plant
        - gently turn over the cup and allow the animal to come out
    - allow each child to find a location to release a few animals
        - depending on the ability and number of children, have an adult place the ladybug or larva in the plastic cup

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Bearded dragon adult and young
Session 4 Level 1

Materials:

- flash cards (*F.C. 24-25*)
- Worksheet 3
- pencil crayons

Words:

- BEARDED DRAGON
- reptile, colour, picture, young, adult, calm, aggressive

Morning circle:

- **all about the bearded dragon** (*F.C. 24-25*)
  - introduce the picture of the adult bearded dragon
    - talk about the size, colour
    - point out the 'beard' on the reptile
      - the beard is what gives the reptile its name
      - the beard expands when the animal is aggressive or trying to impress the females
      - the beard is normal when the reptile is calm
    - the beard
      - bring your hands under your chin with the fingers hanging down
      - close your fist to symbolise a calm bearded dragon
      - extend and spread wide your fingers to symbolise an aggressive/exhibiting dragon
  - introduce the young bearded dragon
    - point out the similarities between the adult and young
    - point out the differences between the adult and young
- **let's colour** (*worksheet 3*)
  - hand out and colour the bearded dragon worksheet

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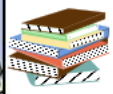
Bearded dragon adult and young
Session 4 Level 2

Materials:

- flash cards (*F.C. 1-25*)
- pencil crayons
- Worksheet 3



Words:

- BEARDED DRAGON, ADULT, YOUNG, REPTILE, EGG
- colour, hatch, eat, calm, aggressive, female, male

Morning circle:

- **review** (*F.C. 1-23*)
  - go through the previous animals and their young, include the names
  - using the F.C., play a memory game of matching the young with the adult

- **all about the bearded dragon** (*F.C. 24-25*)
  - introduce the picture of the adult bearded dragon
    - talk about the size, colour
    - talk about what the adult bearded dragon eats
      - for further exploration, ask the children how the food of the bearded dragon would differ between wild and kept dragons
    - point out the 'beard' on the reptile
      - the beard is what gives the reptile its name
      - the beard expands when the animal is aggressive or trying to impress the females
      - the beard is normal when the reptile is calm
    - the beard
      - bring your hands under your chin with the fingers hanging down
      - close your fist to symbolise a calm bearded dragon
      - extend and spread wide your fingers to symbolise an aggressive/exhibiting dragon
  - introduce the young bearded dragon
    - point out the similarities between the adult and young
    - point out the differences between the adult and young
    - talk about what the young bearded dragon eats
    - ask the children their ideas of how a bearded dragon is 'born'
      - use the F.C. for support
      - discuss what other animals hatch from hard eggs
- **let's colour** (*worksheet 3*)
  - hand out and colour the bearded dragon worksheet

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Environmental Exploration
Session 4

Materials:

- zoo keeper
- pictures of a bearded dragon if no keeper is present

Zoo visit:

- **review of proper behaviour**
  - ask the children if they remember proper behaviour around animals
    - quiet, slow movements, calm
    - to go deeper, ask 'why' the children should do what they do
  - if the children are able to handle the dragon, discuss the proper handling technique
- **inside the bearded dragon enclosure**
  - discuss what the children see in the enclosure
    - for going deeper, ask for ideas of why the objects are in the enclosure
  - see if they can spot the dragon
    - if not, why not?
- **the bearded dragon**
  - have the keeper hold (or place) the dragon in a convenient location
  - point out the various physical features of the animal
    - head, body, legs, tail
  - ask if the children can guess if it is an adult or a juvenile
    - to go deeper, ask a reasoning for their answers
  - allow the children to interact with the animal
    - if a child is scared or uncertain of holding the dragon, do not pressure the child into complying; instead, offer to hold the dragon while the child touches it or just observes it
    - be mindful of the animal's stress level, if the animal becomes too stressed place the animal back in the enclosure and observe from there

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Flamingo adult and chick
Session 5 Level 1

Materials:

- flash cards (*F.C. 26-28*)
- craft materials
  - ~4" polystyrene craft balls, enough for each child
  - ~2" polystyrene craft balls, enough for each child
  - 'googly' eyes
  - orange construction paper
  - cotton balls, 8 for each child
  - toothpicks, 2 for each child
  - white glue
  - plastic table cloth

Words:

- FLAMINGO, ADULT, CHICK, NEST
- bird, egg, hatch, craft, glue, cotton balls, eyes, body, head

Morning circle:

- as a more 'environmental' alternative for the craft:
  - for our craft we collected large round pine cones for the body, instead of the 4" balls
  - also, we collected chestnuts for the head, instead of the 2" balls
  - the only downside was connecting the head to the body; we had to use both glue and a few toothpicks
- **exploring flamingos** (*F.C. 26-27*)
  - introduce the picture of the adult flamingo
    - talk about the flamingo adult
    - size, colour, how it moves, physical features
  - introduce the picture of the flamingo chick
    - talk about the flamingo chick
    - size, colour, how it moves, physical features
    - discuss the differences between the adult and chick
- **craft time**
  - create a flamingo chick
    - first have the children pull apart, or 'fluff up', 4 balls of cotton
      - set aside the cotton
    - paint the 4" craft balls with white glue
    - lay the wet craft ball in the middle of the fluffed cotton and gently cover the craft ball with the cotton
      - ensure the entire craft ball is covered in cotton
      - this will act as the body of the flamingo chick
      - set aside to dry
    - have the children pull apart, or 'fluff up', 2 balls of cotton
      - set aside
    - paint the 2" craft ball with white glue
    - lay the wet 2" craft ball in the middle of the cotton and gently cover the craft ball with cotton
      - this will act as the head of the flamingo chick
      - set aside to dry
    - choose where to attach the head on the 4" craft ball
      - poke 2 toothpicks through the cotton into the 4" craft ball, ensure it is held fast
      - push the 2" craft ball onto the other ends of the toothpicks and adjust as desired

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- glue on 'googly' eyes
- cut out a small triangle from the orange construction paper and glue onto the head for the beak
- optional
    - roll up two cotton balls and shape in the size of wings, glue to the side of the body
- **This craft does not show the legs of a flamingo chick, since the chick will be sitting in its nest. Do point out that flamingo chicks have long legs, similar to adult flamingos.**

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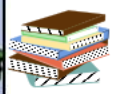
Flamingo chick and the nest
Session 5 Level 2

Materials:

- flash cards (*F.C. 26-29*)
- bucket of dirt
- piece of plywood or very thick cardboard
- small bucket of water
- old t-shirts



Words:

- FLAMINGO, CHICK, ADULT, YOUNG, BIRD, NEST
- mud, water, dirt, build, t-shirt, egg, hatch

Morning circle:

- **all about flamingos** (*F.C. 26-29*)
  - introduce the picture of the adult flamingo
    - discuss what the children see
      - point out the colour, the physical features
    - flamingo locomotion
    - flamingo feeding
  - introduce the picture of the flamingo chick
    - talk about the physical features, colour, size, etc.
    - discuss the differences between adult and chick
  - flamingo nest
    - introduce the picture of the flamingo nesting, ask the children if they can guess what the nest is made from
    - once the answer is determined, ask the children how they think a flamingo builds its nest
    - have the children mimic the actions, to build their own nest (remember to emphasise that flamingos do not have hands to help build their nests)
- **craft time**
  - make a flamingo nest
    - quickly review what a flamingo nest is made from
    - use the F.C. for support/reference
  - put on old T-shirts
  - bring out the bucket of dirt
  - bring out the plywood
  - dump out the bucket of dirt into the middle of the plywood
  - have the children touch and smell the dirt
    - what should be added to dirt to make mud
    - add enough water to create firm mud
    - push the mud into a pile in the middle of the board
  - how does the flamingo build its nest
    - it doesn't have arms or hands
    - uses its beak
  - BUT children have hands and arms, so they will use them to build a flamingo nest
    - pack down the pile of mud
    - push down the peak of the pile to create a place where the flamingo sits
    - set out in the sun to dry

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Environmental Exploration
Session 5

Materials:

- the nest made in the previous session
- zoo keeper

Zoo visit:

- previous to the day ask the zoo if you can 'donate' the kindergarten's mud nest
- **the flamingo enclosure**
  - have the children point out various features of the enclosure
    - if there are nests, point them out
    - same with eggs and chicks
  - observe the flamingos to see if any are building nests or have chicks
  - have the keeper take the kindergarten's nest and place it in the correct location
    - make sure the children know which nest is theirs (for future observations)

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Fish and review
Session 6 Level 1

Materials:

- flash cards (*F.C. 1-31, not 21 or 28*)
- craft materials
  - follow this link for all materials and instructions
  - http://www.dltk-teach.com/books/rainbowfish/coffeefilter.htm
- popsicle sticks, enough for each child

Words:

- FISH, FRY
- craft, coffee filter, colour, water, dry, popsicle stick, markers, swim, review, memory

Morning circle:

- **exploring fish** (*F.C. 30-31*)
  - introduce the picture of an adult fish
    - talk about it
    - size, locomotion, colour, physical attributes
      - ask the children if they can describe other fish
  - introduce the picture of a fry
    - talk about it
    - size, locomotion, colour, physical attributes
    - compare the adult and young
- **let's review** (*F.C. 1-31, not 21 or 28*)
  - quickly review all the pictures
  - using all the F.C., play a game of memory
    - each time a card is flipped over use the name of the adult or young, to reinforce the proper names
    - encourage the children to use the names of the adult and young
- **craft time**
  - click on the link provided and follow instructions for a coffee-filter fish
  - attach the fish to a popsicle stick

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Fish and review
Session 6 Level 2

Materials:

- flash cards (*F.C. 1-31, not 21 or 28*)
- craft materials
  - follow this link for all materials and instructions
  - http://www.dltk-teach.com/books/rainbowfish/coffeefilter.htm
- popsicle sticks, enough for each child

Words:

- FISH, FRY, EGG
- craft, coffee filter, colour, water, dry, popsicle stick, markers, swim, review, memory, gills

Morning circle:

- **exploring fish** (*F.C. 30-31*)
  - introduce the picture of an adult fish
    - talk about it
    - size, locomotion, colour, physical attributes
      - ask the children if they can describe other fish
    - talk about how a fish 'breathes'
      - point out the gills on the fish
  - introduce the picture of a fry
    - talk about it
    - size, locomotion, colour, physical attributes
    - compare the adult and young
- **let's review** (*F.C. 1-31, not 21 or 28*)
  - quickly review all the pictures
    - names and combinations
  - using all the F.C., play a game of memory
    - with each player's turn, encourage the child to give the names of the adult or young when they flip over the card
    - help with names when needed
- **craft time**
  - click on the link provided and follow instructions for a coffee-filter fish
  - attach the fish to a popsicle stick

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Environmental Exploration
Session 6

Materials:

- **all materials are optional for this exploration**
- knowledge of animals located in your local park
- magnifying lenses
- binoculars
- adult helpers

Park visit:

- **adult and young in the park**
  - ask the children if they can remember some, or all, of the animals learned in this module
  - have the children take a look around the park and see if they can spot any animals
    - once an animal has been spotted, ask the children if it is an adult or a young animal
  - divide the children into small groups, according to amount of adult help
  - point out 'exploration boundaries', areas the children stay inside or out of
  - explain that each group needs to go out into the park and look for at least three animals and/or their young
  - ask them to remember:
    - which animal they found
    - whether it was a young or adult
    - where the animal was found
    - was it a group of animals, or single
  - send out the groups
  - once all the groups have found the desired number of animals meet back in a circle at the starting point
  - have each group answer the 4 questions (see above)

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