E·L·I·A·S

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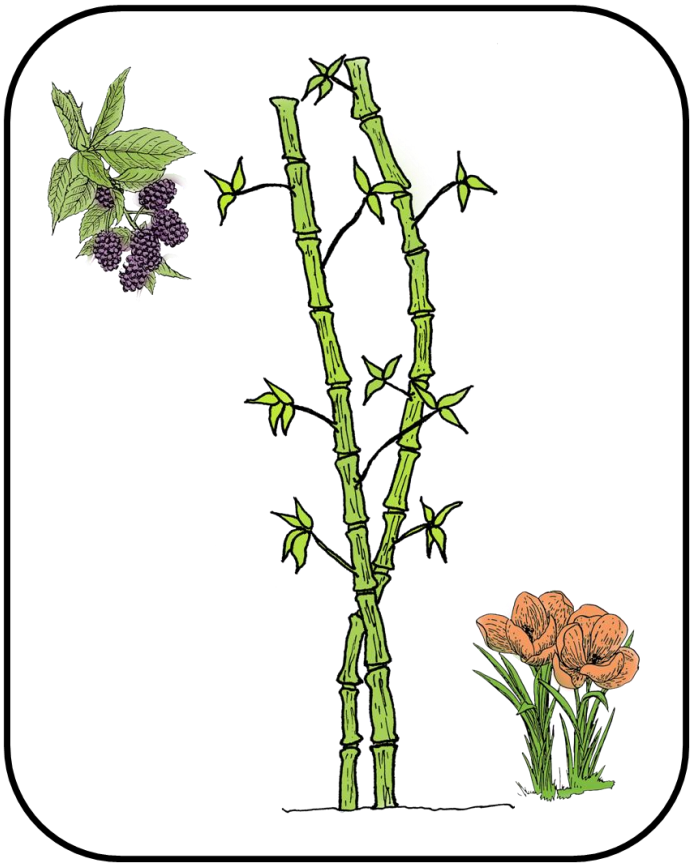
Plants



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General Information:
Plants

Language Goals:

- at the close of this module the children should be able to follow, and/or be comfortable using, simple "question and answer" English dialogues

Environmental Goals:

- at the close of this module the children should be able to identify what is a plant
  - an outstanding goal is for the children to be able to categorise the different plants explored in this module

Educator Hint:

- The overall intention of this module is to learn how to categorise, both in language and environmental concepts; therefore, engage each session with that in mind.
- 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.

Plant information:

- Tree
  - **facts**
    - a perennial woody plant, consisting of a trunk, secondary branches and a clear apical dominance
    - can either be exogenous (growing by adding a layer on the outside, under the bark) or endogenous (growing by adding to the inside of the plant)
  - **interesting information**
    - Trees are the longest living organisms on the planet, some live to be thousands of years old. Trees are extremely important in environment integrity and economic development. (SavATree, 2009; Topiary.org.uk, 2009; Wikipedia, 2009)
- Bush/Shrub
  - **facts**
    - a perennial woody plant characterised by; lacking a central trunk, multiple stems, and lower growth height
    - can be either coniferous (evergreen) or deciduous (losing leaves)
  - **interesting information**
    - Bushes and shrubs are very responsive to pruning, when pruned correctly a healthy, thick plant is the result. Topiary is an art in the sculpting of small trees, shrubs and bushes into various forms. This art dates back to ancient times. (Bushes and Shrubs, 2003; Nodis, J, n.d.; Wikipedia, 2009)
- True Grasses
  - **facts**
    - a non-woody plant characterised by; hollow stems, alternate leaves, leaves differentiated into a sheath (hugging the stem) and a blade

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- flowers of true grasses are arranged in spikelets, each having one or more florets
- **interesting information**
  - The edible seeds produced by grasses, or cereals, provide more than half of the calories consumed by humans. True grasses have been argued to be the most important plant to human economy, because of its many uses and environmental value. (Poaceae, n.d.; Wikipedia, 2009)

- Flowers
  - **facts**
    - the reproductive structure of flowering plants
    - every flower has four basic parts; petal, sepal, stamen and carpel
  - **interesting information**
    - Flowers are a very integral part of human culture; they are given as gifts of joy or sympathy, they represent various events, and they have numerous healing properties. The breeding, or genetic varying, of flowers has become a very intricate process. In many cases flowers are bred over years in order to achieve the desired fragrance, colour or shape. (Creek ThinkQuest Team, 2001; Wikipedia, 2009)

Educator Hint:

- As the children explore this module, remember to keep the basics simple with younger children. For those children who are ready to be challenged, please talk about, and point out, the similarities between all plants and have the children discuss ways to determine which is which.

Dichotomous Key Links:

- Bushes Session 2 Environmental Exploration
  - http://plants.usda.gov
  - http://www-saps.plantsci.cam.ac.uk/trees/index.htm (this is a British Website, but the key is very helpful for a variety of species)
  - http://botany.csdl.tamu.edu/FLORA/MANHART/TWIGS/key.htm

Craft Links:

- Grasses Session 3 Level 2
  - http://www.dltk-bible.com/crafts/mbasketweave.htm
    - simple paper basket craft
  - http://basketmakers.org/topics/beginners/beginnersmenu.htm
    - a website to create longer lasting baskets for more advances learners

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What are trees?
Session 1 Level 1

Materials:

- flash cards (*F.C. 1-23 & 30*)
- felt board or poster board with adhesives
- sample of tree bark
- sample of a branch
- sample of leaves
- sample of needles
- sample of nuts
    - !! if any children have an allergy please omit this section !!

Words:

- PLANT, TREE, SPRUCE TREE (x2), WILLOW TREE, CACTUS, ASH TREE
- feel, smooth, rough, colour, hard, sharp, big, small
- "It is a plant", "It is a tree", "Is a tree a plant?", "Is _____ a plant?"

Activity:

- **introduction of new vocabulary** (*F.C. 1-23 & 30*)
    - introduce the "PLANT" F.C. (*F.C. 30*)
        - encourage the children to repeat the word in English
        - point out the different 'plant' representatives on the F.C., using the general names only
            - begin to categorise what is a plant and what is not a plant
            - inquire about random objects around the room and ask if they are 'plants'
            - see if the children can pick out any classroom objects that are plants or pictures of plants
        - attach the F.C. to the felt board on the top in the middle
    - introduce the remaining F.C. (*F.C. 1-23*)
        - use random order when presenting the F.C. to the children
        - ensure each child is able to look at the pictures
        - place the pictures on your felt board in a random grouping off on the right side
    - introduce the "TREE" header (*F.C. 1*)
        - encourage the children to repeat the English word
        - introduce the concept that a tree is a plant
            - young children might not understand that a tree is a plant as well, so make comparisons of trees to other objects
            - use the TREE F.C. and attach it beneath the PLANT F.C. Ask the children, "Is a tree a plant?" Answer, "Yes" promptly. Use the TREE F.C. and go around the classroom and ask the children if the tree is… "Is a tree a girl?" "Is a tree a boy?" "Is a tree a shoe?" Keep the comparisons to extreme generalisations, and don't compare the tree to anything confusing or the children might not be able to follow. Keep

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the comparing time brief. As the last example refer back to the PLANT F.C.

- attach the TREE F.C. to the felt board under the PLANT heading creating a first column

- select the appropriate tree F.C. out of the random group (*F.C. 5-9*)
  - SPRUCE TREE (X2), WILLOW TREE, CACTUS, ASH TREE
  - attach the F.C. under the TREE heading

- **let's explore the real thing**
  - introduce each tree sample: bark, needles, nuts, leaves, roots, branches, etc.
    - talk about how it smells, how it feels, what colour it is, which part of the tree it is from
    - let all the children have a chance to touch it sample…use all 5 senses!
    - if you have the space, arrange the samples according to where they should be on a tree (roots at the bottom, leaves at the top)
- **let's be trees**
  - once all the tree F.C. are grouped correctly point to each tree, repeat the name and have the children act out being like a tree
    - have everyone stand up in a circle and explain that you are going to pretend to be trees
    - willow tree: hang your arms down and sway gently as a wind blows through
    - spruce and pine trees: stretch your arms out to the side and spread your fingers into needles
    - cactus: stand on one leg and bend the other up in a funny position, stretch your arms out a funny angles with your fingers spread to represent needles
    - ash tree: stand with your legs together, clasp your hands over your head making a circle

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What makes a tree a tree?
Session 1 Level 2

Materials:

- flash cards (*F.C. 1-23 & 30*)
- felt board or poster board with adhesives
- sample of tree bark
- sample of a branch
- sample of leaves
- sample of needles
- sample of nuts
- tree activity worksheets (*worksheet 1 and worksheet 2*)

Words:

- PLANT, TREE, SPRUCE TREE (X2), WILLOW TREE, CACTUS, ASH TREE
- trunk, branch, root, leaf, bark, needle, nut
- "This is a plant", "This is a tree", "Is a tree a plant?", "This is not a plant", "This is a plant", "Is _____ a plant?"

Activity:

- **introduce the new vocabulary** (*F.C. 1-23 & 30*)
  - introduce the "PLANT" F.C. (*F.C. 30*)
    - encourage the children to repeat the word in English
    - point out the different 'plant' representatives on the F.C., using the general names only
    - attach the F.C. to the felt board on the top in the middle
  - introduce the entire module F.C. (*F.C. 1-23*)
    - use random order when presenting the F.C. to the children
    - ensure each child is able to view the pictures
    - place the pictures on your felt board in a random grouping off on the right side
  - introduce the "TREE" header (*F.C. 1*)
    - encourage the children to repeat the English word
    - introduce the concept that a tree is a plant
    - attach the TREE F.C. to the felt board under the PLANT heading creating a first column
  - select the appropriate tree F.C. out of the random group (*F.C. 5-9*)
    - SPRUCE TREE (X2), WILLOW TREE, CACTUS, ASH TREE
    - attach the F.C. under the TREE heading
- **what makes a tree a tree** (*worksheet 1*)
  - introduce a completed worksheet
    - point out the various parts of a tree and give the English name
    - repeat the process and this time include the real samples of the tree
      - give the children a chance to handle the samples
      - arrange the samples in the correct order of a tree
    - have the children cut out the words for the parts of the tree and paste alongside the correct arrows

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- **let's make our own tree** (*worksheet 2*)
  - have the children complete their own worksheets
    - have the children colour each picture
    - cut out each picture
    - paste each picture in the correct order, making a tree

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Environmental Exploration
Session 1

Materials:

- apple seeds (enough for each student)
  - **a week before the activity fold one apple seed in moist paper towel, keep it moist all the time. Throughout the week the seed should begin to sprout. On the day of the activity show the children what the seed will look like as it begins to sprout.**
- soil
- disposable cups (recyclable)
- water
- 1 apple
- 1 knife
- 5 – 10 pieces of string

Activity:

- **preparation**
  - use the string to pre-measure 5 – 10 trees within a nearby park
  - measure the circumference of the tree trunks at waist height
  - make a map of the area so you remember which trees you measured
  - label each string indicating the matching tree
- **let's plant a tree**
  - remain at the school for the first part of the activity
    - assemble the children in an area where they can work with soil
    - bring out the apple and ask the children what it is
    - ask the children where apples come from
      - do they come from off of a chair?, a person?, where?
    - cut open the apple and point out where the seeds are located
    - bring out all the seeds and discuss them (size, colour)
    - bring out the sprouting seed and discuss what happens when a seed sprouts
    - discuss the seed needing soil
      - bring out the soil
    - discuss the seed needing water
      - bring out the water
    - act out how a seed grows into a tree, and encourage the children to be a growing seed as well
    - plant your own apple seeds
- **let's explore our trees**
  - travel out to the park
    - **if you have one very large tree to explore leave that tree to last**
  - today the children will explore the size of tree trunks and make a comparison to themselves
  - stop in front of the first tree and show the children the various lengths of string
  - have the children guess which length of string corresponds to the tree

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        - 'measure' the trunk to see if they are correct, adjust as necessary
    - lay the string on the ground in a circle and see how many children can fit 'inside' the trunk
    - repeat the steps until all the trees have been measured
    - ask the children which tree was the biggest
    - ask the children which tree was the smallest

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What are bushes?
Session 2 Level 1

Materials:

- flash cards (*F.C. 1-23 & 30*)
- felt board or poster board with adhesives
- 1 cup of fresh or frozen raspberries
- 1 cup of fresh or frozen blueberries
- 1/4 cup of sugar
- 2 spoons
- 2 bowls

Words:

- BUSH, PLANT, OLEANDER BUSH, HYDRANGEA BUSH, SAGEBRUSH, JASMINE BUSH, SASKATOON BUSH
- jam, spoon, bowl, crush, sugar, mix
- "It is a plant", "It is a bush", "Is a bush a plant?", "Is _____ a bush?"

Activity:

- **review** (*F.C. 1 & 5-9, 30*)
  - bring out the felt board and quickly review last session's "TREE"
- **introduce the new vocabulary** (*F.C. 2 & 10-14*)
  - introduce the "BUSH" F.C. header (*F.C. 2*)
    - introduce the English word and have the children repeat the word
    - again categorise a 'bush'
      - "Is a bush a plant?" "Yes."
      - "Is a bush a tree?" "No."
    - attach the BUSH F.C. in a separate column under the PLANTS heading
  - begin to separate out the 'bushes' from the plant grouping on the right side of the felt board (*F.C. 10-14*)
    - with each picture card talk about the bush (colour, size, etc)
    - the SASKATOON BUSH has berries which taste good
    - the OLEANDER BUSH, HYDRANGEA BUSH, and JASMINE BUSH all have flowers which smell very good
- **what's special about a bush**
  - some bushes produce berries
  - some berries are good to eat (emphasise that not ALL berries are good to eat and that the children should ask their parents before eating anything)
  - berries are used to make jam
- **let's make jam**
  - bring out the raspberries and blueberries and pour them into 2 bowls
  - bring out a store-bought jar of jam
    - have the children smell the jam, and perhaps taste it
    - but how does a raspberry turn into the jam?
  - ask the children if they know how the berries turn into jam
    - if you have any children who know use them as your helpers
  - show the children how to turn berries into jam

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- use the spoon to crush the berries into pulp
- have the children taste the pulp, it is quite sour instead of sweet, you need sugar
- add 2 tablespoons of sugar to each bowl
- mix well (add more sugar if needed)
- taste the jam again
- put the remaining jam in the fridge to allow it to thicken slightly
- enjoy the jam during snack time on crackers or bread

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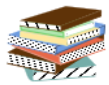
What is so special about bushes?
Session 2 Level 2

Materials:

- flash cards (*F.C. 1-23 & 30*)
- felt board or poster board with adhesives
- unfinished drawing of a bush with roots, dirt and branches(~24"X18") (not included)
- drawings of parts of a bush (*worksheet 3*)
- crayons
- scissors
- glue
- tape/stick pins



Words:

- PLANT, BUSH, OLEANDER BUSH, SASKATOON BUSH, SAGEBRUSH, JASMINE BUSH, HYDRANGEA BUSH
- branch, thorn, leaf, flower, berry, root, pencil crayon, glue, colour, cut, dirt
- "This is a plant", "This is a bush", "Is a bush a plant?", "Is _____ a bush?", "Is a bush a tree?"

Activity:

- **review** (*F.C. 1 & 5-9, 30*)
  - quickly review the "TREE" lesson from last session
    - set aside the F.C. and the TREE header
- **introduce the bush vocabulary** (*F.C. 2 & 10-14*)
  - introduce the new header "BUSH" (*F.C. 2*)
    - "Is a bush a plant?" "Yes."
    - "Is a bush a tree?" "No."
  - attach the BUSH F.C. in a separate column under the PLANTS heading
  - begin to choose the bush F.C. from the random grouping of remaining plants and add to the BUSH column(*F.C. 10-14*)
    - introduce the real name for each bush
    - point out some of the interesting features of a bush
      - some bushes have berries, some have flowers, some have thorns, etc.
- **let's make our own bush**
  - bring out the unfinished picture of a bush and make an exclamation that you forgot to finish the picture, and you need the children to help you finish the picture of a bush
  - bring out the drawings of bush parts and go through them to explain what each drawing is
  - ask the children which picture they would like to colour (they can colour more than one, depending on time and size of class)
  - colour the drawings
  - once all the children have finished colouring their pictures begin to glue them onto the unfinished picture
    - begin at the bottom of the picture and explain that a bush is in dirt

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- then show that the branches come up from the dirt
    - **this is a perfect time to show the difference between trees and bushes. Trees have 1 trunk that supports the branches overhead, whereas a bush does not have a trunk, but instead it has many branches coming right out of the ground.**
- ask for those children who have the leaf drawings to glue theirs on in the correct area of the picture
- next the berries and then flowers
- as each 'level' is glued on repeat the names of the bush parts
- finally hang the completed picture on the wall

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Environmental Exploration
Session 2

Materials:

- knowledge of the local bushes
  - http://plants.usda.gov
  - http://www-saps.plantsci.cam.ac.uk/trees/index.htm (this is a British Website, but the key is very helpful for a variety of species)
  - http://botany.csdl.tamu.edu/FLORA/MANHART/TWIGS/key.htm
- park or bushy area

Activity:

- **know the local vegetation**
  - the day before go out into the park and determine the local bush vegetation
    - if you are not sure of what species of bush are in your park please refer to the websites listed above, or consult an identification key
  - there is no set limit on the number of species explored in this lesson
- **a walk in the park**
  - at the beginning of your walk bring the children together and challenge them to watch out for bushes living in the park
    - remind the children what a bush looks like (it has many "branches" growing directly out of the earth as opposed to a single trunk, bushes tend to be shorter than most trees**not always the case**)
    - when they find a bush ask them to inform the teacher
    - once a bush has been found have all the children assemble in a group around the bush (make sure the children don't harm any other vegetation)
  - ask the children different questions about the bush
    - What colour is it?
    - Does it have needles or leaves?
    - Does it have flowers?
    - Does it have berries?
    - Does the bush have thorns?
  - give the English name of the bush
    - if the children are young or they do not understand much English you can help the children understand the bush 'name' by first asking the children what some of their names are: "What is your name?" "I am Joe." "Children, this is Joe."
    - after a few name inquiries point to the bush and say, "Children, this is a …"
  - move on to another bush and repeat the steps above
- **let's play a game**

  All Around the Bush (a variation of All Around the Mulberry Bush)
  - once you have exhausted the bush vegetation in your park assemble the children in a clearing
  - have the children hold hands and stand in a circle around you
  - inform the children they are going to pretend to be monkeys

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- you are going to be a weasel
- how to play
  - the children hold hands and walk in a circle around the teacher who is standing in the middle
  - the children sing while walking in a circle:

    All around the Mulberry bush
    The monkey chased the weasel
    The monkey thought it was all in good fun
    Pop! Goes the weasel
  - as the children sing the word "Pop" the teacher reaches out and grabs one child and brings them into the middle of the circle
  - that child now becomes part of the Mulberry bush and remains standing still in the middle of the circle
  - repeat the steps above (as the 'bush' of children grows the teacher can 'hide' among them and pop out unexpectedly)

    variations: you can substitute the new bush names learned that day for "Mulberry Bush"
    a child can be the weasel

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What is grass?
Session 3 Level 1

Materials:

- flash cards (*F.C. 1-23 & 30*)
- felt board or poster board with adhesives
- grass worksheet (*worksheet 4*)
- samples of any or all of the following:
  - bamboo, wheat stock with head, rice plant, prairie grasses, barley stock with head, oat stock with head, sugar cane
- knife or razor
  - (if there are young children present please talk about how knives are dangerous and proper use of a knife)
  - (please be careful ELIAS is not liable for any accidents that may occur)
- crayons

Words:

- GRASS, PLANT, RICE, BAMBOO, PRAIRIE GRASS, WHEAT
- knife, dangerous, careful, colour, crayons, various grass names included in the dissections
- "It is a plant", "It is grass", "Is a plant grass?", "Is _____ grass?"

Activity:

- **review** (*F.C. 1, 2, 5-14, 30*)
  - bring out the felt board and quickly review the previous 2 sessions
- **introduce grass** (*F.C. 3 & 15-18*)
  - introduce the "GRASS" F.C. header (*F.C. 3*)
    - introduce the English word and encourage the children to repeat the word
    - again categorise 'grass'
      - "Are grasses plants?" "Yes."
      - "Are grasses trees?" "No."
    - attach the GRASS F.C. in a separate column under the PLANTS heading
  - begin to separate out the 'grasses' from the plant grouping on the right side of the felt board (*F.C. 15-18*)
    - with each picture card talk about the grass (colour, size, etc)
      - the children might be confused about including bamboo (and sugar cane) with grasses
      - depending on the age and English level of the children you can discuss bamboo and sugar cane with them, pointing out why they are classified as grass (see the reference material available with this download for information)
- **let's explore**
  - introduce the samples of grass
    - with each sample relate it to the F.C. if available
    - have the children experience the sample with all their senses (with the exception of taste)

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- what colour do they see
- what does it feel like
- what does it smell like
- can you use the grass to make any sounds (rattle, whistle, etc)

- dissect the samples one by one
  - if you have a leaf sample use the knife to cut open the petiole or a vein to view the interior
  - if you have stock carefully peal back the outer layer, exposing the phloem
  - again allow the children to touch, smell, and describe what they see

- **let's create** (*worksheet 4*)
  - colour the worksheet
    - the worksheet is meant to work on fine motor skills of young children, if your children are older have them add labels to the picture and colour

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What can we do with grass?
Session 3 Level 2

Materials:

- flash cards (*F.C. 1-23 & 30*)
- felt board or poster board with adhesives
- a grass bird's nest
- a woven grass basket
- blank paper (enough for each child)
- crayons
- craft material (DLTK, 2009)
  - http://www.dltk-bible.com/crafts/mbasketweave.htm

Words:

- GRASS, PLANT, RICE, BAMBOO, PRAIRIE GRASS, WHEAT
- craft, cut, scissors, glue, paper, draw, nest, basket, eat, 'various animals'
- "This is a plant", "This is grass", "Is a plant grass?", "Is grass a tree?"

Activity:

- **review** (*F.C. 1,2, 5-14, 30*)
  - bring out the felt board and quickly review
- **introduce grass** (*F.C. 4, 15-18*)
  - introduce the "GRASS" F.C. header (*F.C. 4*)
    - introduce the English word and have the children repeat the word
    - again categorise 'grass'
      - "Are grasses plants?" "Yes."
      - "Are grasses trees?" "No."
    - attach the GRASS F.C. in a separate column under the PLANTS heading
  - begin to separate out the 'grasses' from the plant grouping on the right side of the felt board (*F.C. 15-18*)
    - with each picture card talk about the grass (colour, size, etc)
      - the children might be confused about including bamboo (and sugar cane) with grasses
      - depending on the age and English level of the children you can discuss bamboo and sugar cane with them, pointing out why they are classified as grass (see the reference material available with this download for information)
- **animals and grass**
  - what can animals do with grass
    - hand out the blank paper and crayons to all the children
    - as a group brainstorm the animal uses of grass
    - for each idea encourage the children to explain their idea, then have the children draw and colour the idea onto their paper
      - animals can eat grass
      - animals use grass to build their homes
        - bring out the bird's nest for a relation to an animal home
      - animals can hide in grass

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- **humans and grass**
  - what can humans do with grass
    - continue using the paper from above
    - as a group brainstorm the human uses of grass
    - for each idea encourage the children to explain their idea, then have the children draw and colour the idea onto their paper
      - sugar cane is used to make sugar
      - bamboo is used for a variety of things (food, furniture, household items, clothing, fishing rods, musical instruments, medicinal uses, etc)
      - wheat, oats, barley, etc are harvested and used for food
      - grass mats
      - grass baskets
- **craft time**
  - let's make our own grass baskets
    - to create a paper basket follow the link provided in the 'Materials' section
    - follow the instructions provided by the website
  - depending on the age of the children and the availability of materials you can either use real or paper to weave a basket
    - follow this link for instructions on weaving a real basket
      - http://basketmakers.org/topics/beginners/beginnersmenu.htm

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Environmental Exploration
Session 3

Materials:

- blank paper (enough for 2 for each child)
- clip boards or something hard for the children to write on
- charcoal or chalk
- glue
- a small container of soil

Activity:

- **a journey through the park**
  - observation activity
    - travel into the park and gather in an area where there are lots of trees and bushes
    - have the children sit down
    - ask the children to look around them and describe what they see
    - talk about the trees, bushes, grasses
      - encourage them to use the knowledge learned during the last three lessons
  - leaf rubbing
    - bring out a blank piece of paper, a leaf, and a piece of charcoal or chalk
    - lay the leaf on the clip board, then lay the paper over the leaf
    - without pushing too hard, use the charcoal to colour the area of paper covering the leaf
    - a 'rubbing' of a leaf should appear, including the veins and ridges
    - hand out the blank paper and clip boards to the children and have them complete a leaf rubbing
  - describing activity
    - beginning at soil level describe everything from the soil to the tops of the trees
      - soil > grasses/bushes/trees > leaves/berries/flowers/nuts
    - demonstrate how to create a picture using the vegetation (and soil) around
      - using the second blank piece of paper spread glue along the bottom of the page
      - sprinkle soil over the glue and shake off excess (use the soil from the container brought instead of digging for soil)
      - use tiny sticks to represent tree trunks or bush branches and glue onto the paper, growing out of the soil
      - glue on clumps of grass on the top of the soil
      - glue leaves onto the trees and bushes
      - glue flowers onto the bushes
      - glue nut shells onto the trees
    - hand out the glue to the children and have them complete their own picture of nature

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What is a flower?
Session 4 Level 1

Materials:

- flash cards (*F.C. 1-23 & 30*)
- felt board or poster board with adhesives
- samples of flowers: roses, daffodils, tulips, daisies, chrysanthemums, etc
- craft material
  - white paper plates (1 for each child)
  - flower pattern available with the module download (*worksheet 5*)
  - scissors
  - crayons
  - glue
  - stapler
  - elastic

Words:

- FLOWER, PLANT, TULIP, ROSE, LILLY, CHRYSANTHEMUM (or 'mums' for short), LILAC
- craft, glue, cut, scissors, crown, smell, touch, favourite
- "It is a flower", "It is a plant", "Is a flower a plant?", "Is _____ a flower?"

Activity:

- **review** (*F.C. 1-3, 5-18, 30*)
  - bring out the felt board and quickly review
- **introduce flowers** (*F.C. 4, 19-23*)
  - introduce the "FLOWER" F.C. header (*F.C. 4*)
    - introduce the English word and have the children repeat the word
    - again categorise 'flower'
      - "Are flowers plants?" "Yes."
      - "Are flowers trees?" "No."
    - attach the FLOWER F.C. in a separate column under the PLANTS heading
  - there should be only flower F.C. remaining on the side section of the felt board, yet still remove them in a similar procedure as the previous lessons (*F.C. 19-23*)
    - with each picture card talk about the flower (colour, size, etc)
    - help the children to count how many petals are on the flower
    - when finished with the card attach it in the appropriate column
- **my favourite flower**
  - bring out the samples of flowers and put them before the children
  - beginning with one flower talk about the flower
    - what colour/colours is it, how does the flower feel, what does the flower smell like, is the flower big or small
    - as you talk about the flower let all the children touch it or smell it
    - as the children react positively or negatively to the flower have the children explain why they are responding the way they are
    - continue in the same manner for all the flowers

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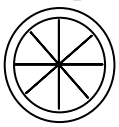
- once you have explored all the flowers ask the children what their favourite flower is
  - if the children are not able to understand you, you can act out choosing your favourite flower (use exaggerated actions and single words)
  - if a child chooses a favourite flower not explored that day encourage the child to describe it for the rest of the children

➢ **craft time** (*worksheet 5*)

- Flower Crowns
  - as preparation for the craft:
    - section the middle of the paper plate into 8 sections and cut from the middle of the paper plate to 2" before the edge, forming a brim and 8 crown spikes



  - have the children colour and cut out at least 8 flowers (*worksheet 5*)
  - glue the flowers onto the spikes of the crown, then any remaining flowers where ever is appropriate
  - depending on the number of children you can let each child choose some petals from the real flowers to add to their crown
  - using staples, attach a length of elastic to the crown which will allow the crown to sit comfortably on the child's head

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Bees and Flowers
Session 4 Level 2

Materials:

- flash cards (*F.C. 1-23 & 30*)
- felt board or poster board with adhesives
- the bee flash cards (*F.C. 24-29*)
- sample of honey
- sample of a flower (is best if the flower has a good supply of nectar)
- power point presentation of bees and flowers

Words:

- FLOWER, PLANT, TULIP, ROSE, LILLY, CHRYSANTHEMUM (or 'mums' for short), LILAC, BEE, HIVE, BEEKEEPER, HONEY
- bee waggle dance, nectar, pollen, fly, buzz, honeycomb
- "This is a flower", "This is a plant", "Is a flower a plant?", "Is a flower a tree?"

Activity:

- **review** (*F.C. 1-3, 5-18, 30*)
  - bring out the felt board and quickly review the previous 3 sessions
- **introduce flowers** (*F.C. 4, 19-23*)
  - introduce the "FLOWER" F.C. header (*F.C. 4*)
    - introduce the English word and have the children repeat the word
    - again categorise 'flower'
      - "Are flowers plants?" "Yes."
      - "Are flowers trees?" "No."
    - attach the FLOWER F.C. in a separate column under the PLANTS heading
  - there should be only flower F.C. remaining on the side section of the felt board, yet still remove them in a similar procedure as the previous lessons (*F.C. 19-23*)
    - with each picture card talk about the flower (colour, size, etc)
    - talk about what animals eat or use flowers
- **bees and flowers** (*F.C. 24-29 & optional power point presentation)*
  - all about bees
    - what sounds do they make
    - how big are they
    - what colour are they
    - do we touch them or not, and why not
    - what do bees eat
  - all about bees and flowers
    - bees eat and collect the nectar of flowers into special stomachs
    - the bees also use flowers to collect pollen, which they mix to create honey and eat later
  - all about honey
    - discuss briefly what honey is (tastes, colour, smell)
    - ask if any of the children understand how honey is made

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- if one or more children understand use them as your helpers as you go through the power point presentation

- let's look at some pictures showing how honey is made
  - 1st slide: honey comb and the final stage of honey
    - this is honey in the comb, but how is it made…let's investigate
  - 2nd slide: a wild hive and an apicultural hive
    - point out the beehives are in white boxes when humans tend to them for the gathering of honey
    - let's take a look inside a beehive to see where the bees store their nectar
  - 3rd slide: the bee inside the hive
    - when the bee returns to the hive it gives its nectar to a worker bee who deposits it into the "holes" (cells) in the comb
    - when one bee finds lots of flowers how does it tell the other bees where to find them
  - 4th slide: bee waggle dance
    - bees do a special dance called a "waggle dance" to tell the other bees where to find the flowers
    - the bee 'waggles' forward then turns to the left and circles back, 'waggles' forward again then turns to the right, then repeats the process
    - once the other bees know where the flowers are they fly out and collect their nectar, then they return and share the nectar with the worker bees
  - 5th slide: the honey comb again
    - the nectar has lots of water in it, so it takes some time for the water to 'evaporate' leaving thick honey
    - during the winter, when there are no flowers the bees eat the honey
    - or when the honey is ready the beekeeper opens the hive and cuts out part of the honey comb

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Environmental Exploration
Session 4

Materials:

- flower baskets or pots, or section of fertile soil
  - if your baskets do not have a draining system bring along small stones
- soil
- water
- gardening tools
- flower bulbs and/or flower seeds
  - if you intend to plant seeds outside ensure it is an appropriate time of year

Activity:

if the weather allows please do this activity outside
for groups of children who are learning the basics of English, take this opportunity to introduce the English names of the materials they will use
for older children take time to discuss reasons why plants need water, sunlight, soil

- **plant our garden**
  - if the baskets do not have a draining system layer the bottom ~1" thick with small stones
  - fill the flower baskets/pots half full of soil
  - moisten the soil with water and fill the remaining space in the baskets with soil
  - for flower bulbs:
    - dig a hole deep and wide enough to cover the bulb with ~.5" of soil
    - pour a little water into the empty hole
    - plant the bulb in the hole and cover with soil
    - gently moisten all the soil again
  - for large seeds:
    - use your finger to make a hole ~1" deep in patterned intervals in the soil
    - pour a little water in each hole
    - add 1 seed to each hole and cover with soil
    - gently moisten all the soil again
  - for small seeds:
    - furrow a narrow trench ~.5" deep throughout the basket/pot
    - pour a little water along the trench
    - sprinkle the seeds along the trench and cover with soil
    - gently moisten all the soil again
  - place the baskets/pots in a warm, sunny area and water regularly

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