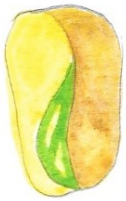
Lesson 5: Angiosperms

Notes For Parents

- This lesson will allow your child to differentiate the various flowering plants that surround them.
- It will help you to have real leaves of monocots and dicots for children to observe which will help them connect the pictures to the world around them. Grass is an easy monocot and any leaf with a midline and veins branching from it will be a dicot.
- Children are natural sorters, have children draw what they see and reiterate how to tell the difference
- A botanical garden field trip or nature walk will be necessary, but anytime you go somewhere see if you can tell whether the plant is a monocot or dicot.

Lesson 5: Monocots and Dicots

Angiosperms [*an-jee-uh*-spurm] (flowering plants) sprout and look different based on the number of their cotyledons. ***Remember, cotyledons [kot-l-ee-don] are the part of the seed that contains the food or nutrients for a the baby plant to sprout.***



2 Types of Angiosperms

1. Monocotyledons have 1 cotyledon

Mono- means 1 like monolayer, or a single layer of something.

2. Dicotyledons have 2 cotyledons ***Di- means 2***

For short we will refer to these as monocots and dicots

But how can we tell the difference?

Look at the leaves

Plants are **vascular** [vask-you-lar] meaning they have tubes inside of them that carry liquid. These tubes are similar to our veins. ***What else has veins? What do your veins carry?***

A monocot will have **parallel** [par-uh-lel] veins. Parallel is when two lines run in the same direction at the same distance apart. ***Draw parallel lines on a paper for them to see. What other things would be parallel? Have your child point our parallel lines around them. Examples include road lanes, handrails on stairs, the sides of a piece of furniture. Ask them to draw parallel lines.***

A dicot will have a leaf with a **midline** with veins branching off.

Show them a leave and identify the midline, another name for this is the midrib.

Look at the flowers

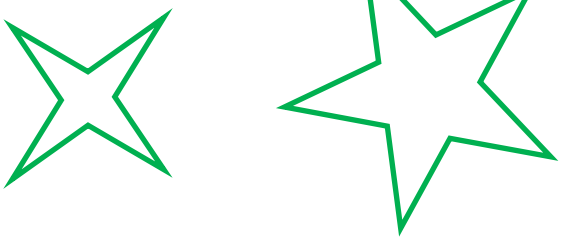
Another way to tell the difference is by looking at the plants flowers and counting the petals.

Monocot flowers will have petals in multiples of threes.

1	2	**3**
4	5	**6**
7	8	**9**

Dicot flowers will have 4 or 5 petals.

Can you count these points?



Lesson 5: Monocots and Dicots

How to spot the difference:

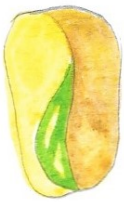
Monocot: 1 cotyledon

Corn	Garlic	Sugarcane
Onions	Wheat	Orchids
Tulips	Banana	Asparagus

Dicot: 2 cotyledons

Beans	Cacti	Daisies
Roses	Peanuts	Apple
Peas	Oak Trees	Mango

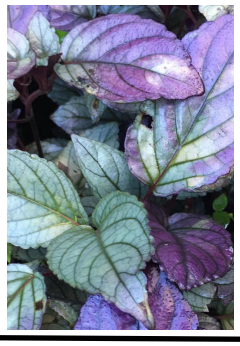
1 cotyledon



2 cotyledons

Narrow Leaf

Parallel veins



Broad leaf

Midline and network of veins

Petals in multiples of 3, 6, 9

Petals in multiples of 4 or 5

Hands on: Practice

Monocot or Dicot?

Circle the right answer under each picture

Monocot Dicot

Monocot Dicot

Monocot Dicot

Monocot Dicot

Practice:

Draw a **monocot** leaf or flower in one box, and one **dicot** leaf or flower in the second box. Then label them .

Hands on: Nature Walk ID

Nature Observation:

Take a walk through your yard, neighborhood or a botanical garden to ID angiosperms.

Look at leaves and flowers to determine if plants are monocots or dicots, tally at the bottom and see which ones you observe more of.

Monocot: 1 cotyledon	**Dicot: 2 cotyledons**
Narrow Leaf **Parallel veins** 	 **Broad leaf** **Midline and network of veins**
Petals in multiples of 3, 6, 9 	 **Petals in multiples of 4 or 5**
Monocot	**Dicot**
Total: _____	**Total: _____**