

## Classification of Species

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### Final Report

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<b>Lesson</b>	Classification of Species
<b>Institution</b>	Mohave Community College
<b>Session</b>	Spring 2021
<b>Course</b>	BIO 182 851 *
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### Exercise 1

#### 1. What is a dichotomous key? How does a dichotomous key work?

A dichotomous key generally has many choices which relate to identifying as well as classifying organisms. There are two parts of the key that describes the organisms; only one of them corresponds to the organism. the key is used to determine information about the species such as their name or family.

#### 2. List the features that are used to classify dragonflies to the family level.

Some features that are used to classify dragonflies to the family level are abdomen size, developement in the eyes, wings, leg and thoracic structure, legs, and mouth

#### 3. Were there any families in the dichotomous key that were not represented among the 10 unknown dragonflies? If so, list each family and a description of its key characteristics.

The Macromiidae which consists of characteristics of a yellow or white stripe. The wings seem stiff and short while the thorax appeared a dark color

4. Use the Internet to research a species of dragonfly belonging to one of the families in the dichotomous key. List the common name and scientific name. Denote the classification at each taxonomic level. For example, the swamp darter has the scientific name *Epiaschna heros* and it belongs to the following taxonomic ranks: domain Eukarya; kingdom Animalia; phylum Arthropoda; class Insecta; order Odonata; family Aeshnidae; genus *Epiaschna*; species *heros*.

Skimmers: scientific name -Libellula Lydia; Taxonomic Rank - Family Libellulidae; Kingdom Animalia; Phylum - Arthropoda; Class - Insecta; Order - Odonata; Genus - Libellula; Species - Lydia.

5. Describe the feeding, reproduction, and any other life habits of interest for your selected dragonfly species.

The Libellulidae feeds on animals but mainly plankton. They can easily maneuver in many directions to catch insects in mid air. They get their name "the Skimmers" due to their reproduction process; they lay their eggs in flight while skimming over the water surface

Data Table 1: Dragonfly Identification

Unknown Dragonfly	Family	Description
#1	Gomphidae - Clubtails	the stomach area is skinny and comes out towards the end of the body. the wings are clear with no pattern most of the time. its black with light yellow marks.
#2	Libellulidae - Skimmers	wings seems to be sturdy and also seem to be longer than abdomen which is also pretty thick. the wings have attractive colors.
#3	Aeshnidae - Darners	Wings almost appear transparent, unlike the skimmers, they also consist of no pattern. the have large eyes that join at the top of the head, while the abdomen appears thin and long
#4	Gomphidae - Clubtails	yellow greenish abdomen area thats also thin and wide. Wings remain clear with little color
#5	Corduliidae - Emeralds	minimal wing patter with a dirty green color abdomen.
#6	Libellulidae - Skimmers	Wings are shortern than the abdomen which is also red and thick with red wings.
#7	Cordulegasteridae - spiketails	little to no pattern on wings, yellow ring like pattern on abdomen which appears long, thin, also black
#8	Libellulidae - Skimmers	The abdomen is short than wings. The abdomen also appears a little thick but also short. Wings consists of white and black patterns
#9	Aeshnidae - Darners	Wings have no minimal pattern, while the abdomen has blue and yellow stripes. It also has big eyes at the tp of its head
#10	Cordulegasteridae - spiketails	little to no pattern on wings, yellow ring like pattern on abdomen which appears long, thin, also black

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## Exercise 2

### 1. List the features used to classify leaf types.

Some of the important features used to classify leaf types are the edges and texture appearance, number of leaves, shape and size.

### 2. List some characteristics that are shared among all of the leaves. Why are shared characteristics not included in the dichotomous key?

Some characteristics that are shared among all of the leaves are the veins in the leaves and the color. Some shared characteristics are not included in the dichotomous key because the key is mainly used to differentiate them amongst each other

### 3. Why would color not necessarily be used to identify leaves in nature?

The reason color is not so important to identify leaves in nature is because they tend to often change in color based on the time of year.

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Data Table 2: Descriptions of Leaf Types

Leaf Type	Description
Oak	The vein does not reach the top of the leaf, rounded ends that stretch out from the middle center line. the leaves appear circular
Basswood	Pointed ends with a wide an oval shape.
Elm	The ends appear to be sharp and ridged, the veins seem to stretch to the end, while the shape appears long and thin
Chestnut	The leaves appear to be in multiples of 5 that have jagged edges along the ends.
Maple	This leaf appears to consist of 5 lobes that also have pointed ends.
Locust	The ends appear smooth this time with 5 rows of leaves and 1 on top.
Ash	This one has four rows with one leaf on top. The edges on this leaf appear pointy
Pecan	this leaf consists of a long stem, 6 rows of leaves with one on top. the leaf shapes appear rather thin and small.

Data Table 3: Dichotomous Key to Leaves

Step	Description	Instruction (such as, "Go to 2") or Leaf Name (for example, Maple)
1.a.	<input type="text" value="rounded ends"/>	<input type="text" value="Oak"/>
1.b.	<input type="text" value="spiky leaves"/>	<input type="text" value="go to 2"/>
2.a.	<input type="text" value="pointy end, oval and wide"/>	<input type="text" value="Basswood"/>
2.b.	<input type="text" value="no point at end, thin shap"/>	<input type="text" value="go to 3"/>
3.a.	<input type="text" value="jagged edges, long, thin,&lt;br/&gt;and pointed ends"/>	<input type="text" value="Elm"/>
3.b.	<input type="text" value="no point at end, with&lt;br/&gt;smooth edges"/>	<input type="text" value="go to 4"/>
4.a.	<input type="text" value="sharpe teeth with multiple&lt;br/&gt;leaves"/>	<input type="text" value="Chestnut"/>
4.b.	<input type="text" value="smooth edges with only&lt;br/&gt;one leaf"/>	<input type="text" value="Go to 5"/>
5.a.	<input type="text" value="pointed ends with 5 ends"/>	<input type="text" value="Maple"/>
5.b.	<input type="text" value="smooth and rounded"/>	<input type="text" value="Go to 6"/>
6.a.	<input type="text" value="two rows of 5 leaves with&lt;br/&gt;one on top"/>	<input type="text" value="Locust"/>
6.b.	<input type="text" value="jagged and spikey edges"/>	<input type="text" value="go to 7"/>
7.a.	<input type="text" value="orded in rows opposite of&lt;br/&gt;each other with spikey&lt;br/&gt;edges"/>	<input type="text" value="Ash"/>
7.b.	<input type="text" value="smoothed edges"/>	<input type="text" value="go to 8"/>
8.a.	<input type="text" value="contain a dozen leaves&lt;br/&gt;with long stems with&lt;br/&gt;pointed ends"/>	<input type="text" value="Pecan"/>
8.b.	<input type="text" value="rounded ends with short&lt;br/&gt;stem"/>	<input type="text"/>
9.a.	<input type="text"/>	<input type="text"/>
9.b.	<input type="text"/>	<input type="text"/>
10.a.	<input type="text"/>	<input type="text"/>
10.b.	<input type="text"/>	<input type="text"/>

