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| A picture containing clipart  Description automatically generated | **Year 11 General Biology**  **Task 1 – Classification** |

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| **Name:** | **Teacher:** | **Date:** | **Score:**  / **25** |

**Assessment type:** Science Inquiry - Practical

**Conditions**

Time for the task:

* **One hour in class assessment** – Complete construction of dichotomous keys.

**Task weighting** – 4%

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**Introduction:**

The development and use of dichotomous keys make identification and communication easier and more accurate and also reflects evolutionary relationships. A dichotomy is the division of a group into smaller sub-groups. Each group contains members that share one characteristic.

There are many characteristics that may be used but the most practical is anatomical structure.

**Follow the information provided to answer the following problems**

Look at the illustrations of fruits in **Group A**.

1. In the table below, separate the fruits into two groups, give a suitable title to each group. All the fruits in one group will share one characteristic while the fruits in the second group will not have that characteristic. Write down the names of each fruit from the cards in the correct group in the table. ( 2 marks)

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| Group 1 | Group 2 |
| Title: | Title: |
|  |  |

Look at **Figure 1** below – it shows this **Dichotomy:**

All Fruits

Single seed:

Almond, Peach, Walnut, Avocado, plum

More than one seed:

Orange, tomato, apple, cucumber, quince, capsicum, bean, pea.

Next, the subgroups are further subdivided as in **Figure 2.**

All Fruits

Single seed:

Almond, Peach, Walnut, Avocado, plum.

More than one seed:

Orange, Tomato, Apple, Cucumber, quince, Capsicum, Bean ,Pea.

Hard fruit:

Almond, walnut

Fleshy fruit:

Peach

1. On the following page there is the beginning of a branching key.

**PART** of the top section is completed for you,**. i.e some fruits are missing, you are required to complete the boxes by listing any missing fruits.**

2a. Using the fruit cards from question 1 continue on with the branching key to complete the branching key and create a dichotomous key.

Ensure you write in the characteristic that you use at each dichotomy, and list all fruits that feature the chosen characteristic.

All Fruits

More than one seed:

Orange, Tomato, Apple, Cucumber, quince, Capsicum, Bean ,Pea.

Single seed:

Almond, Peach, Walnut, Avocado, plum.

Fruit divided into separate segments:

Orange.

Fruit not segmented:

apple,

Not fleshy fruit:

Almond, walnut

Fleshy fruit:

Avocado

(8 marks)

b) Look at fruits in **Group B** and try to use your key to identify them. Using a different colour pen add group B fruits to your key. (4 marks)

c) Explain how would you need to modify your key to include Lemon in the All fruits group?

( 2 marks)

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d) What would happen if you tried to identify a pear using your key? (2 marks)

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3a) Now complete the compact, numbered key below using the same fruit from **Group A**

You need to add extra numbers as you go: (5 marks)

1a Fruit with a single seed Go to 2a

1b Fruit with more than one seed Go to

2a

2 b

3a

3b

4a

4b

What are the advantages of a compact, numbered key over a branching key? (2 marks)

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**END OF ASSESSMENT**