



LOCAL ANIMALS AND FLORA

Glossary of Terms

Organisms and the environment they live in, together make up an ecosystem. The Maltese islands own different ecosystems, some which are widespread and others which are rare. The four major ecosystems found in the islands are:

Woodland

Woodland consists of trees such as Evergreen Oak and Aleppo Pines, but unfortunately only some remnants are still to be found in Malta. Such ecosystem is still present at Wardija. Buskett, largely man made, can now be considered as a semi-natural woodland. The dominant tree Aleppo Pines (Siġra taż-Żnuber), Evergreen Oak (Siġra tal-Ballut), Olive (Siġra taż-Żebbuġ), and Carob (Siġra tal-Harrub). Smaller trees and shrubs include Lentisk (Deru), Mediterranean Buckthorn (Alaternu) and Hawthorn (Żagħrun).

Maquis

This is characterized by small trees and large shrubs such as Carob, Olive, Lentisk and Bay Laurel (Rand) together with an amount of climbers including Ivy (Liedna), Smilax (Pajżana), Spiny Asparagus (Sprag Xewwieki) and Wild Madder (Robbja Salvaġġa). Maquis is typically found on the sides and bottoms of the deeper valleys and the base of cliff formations.

Garigue

This ecosystem develops on large areas of limestone. Here one finds dense, low-lying shrubs such as the Mediterranean Thyme (Sagħtar), Germander (Żebbuġija) and Maltese Spurge (Tengħud tax-Xagħri).

Steppe

This is derived from degraded maquis and garigue. Degradation occurs through various causes such as fire and overgrazing.

Introduction

This section should be worked in sixes or in any other group number. Each team is to be given a site and they have to observe it and take notes. Later these notes have to be presented in front of the other cubs and preferably produced in the form of a log book.





The flora and fauna section in the cub book has been divided into 4:

- Trees
- Plants
- Living things under stones
- Lichens

Each of the above sections will be explained separately. In the sections you will find enough information on what cubs generally observe. Sometimes it is important to have a backup (like a good book) because some of the cubs may come up with different observations.

Trees

There are certain characteristics which help us to observe and distinguish between one tree and another. The following are explanations of these differences:

Evergreen - This means that the tree has green leaves throughout the entire year. Normally this happens because old leaves are not shed until after the new foliage has been completely formed.

Small / large leaves - Everyone knows what a leaf is but cubs should consider leaves which are smaller than 5cm as small leaves and all the rest are big leaves.

Flowers / Non Flowering plants - Certain trees flower during particular times of the year. If one is lucky enough to carry out this activity in spring cubs can observe this feature.

With / without fruit - Fruit and flowering trees are very similar and what has been said above in section can also be said for fruit trees.

Tree leaves

Colour - can be dark / light green / brown.

Shape - shape varies from leaf to leaf. An exact description cannot be given so cubs should try to explain by drawing.

Texture - can be smooth or rough.

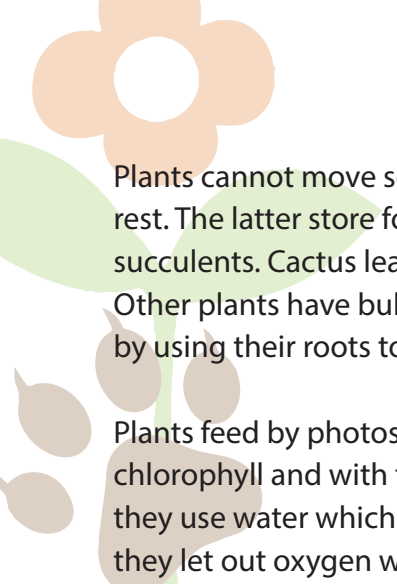
Edges - There are three kinds of edges which are: toothed edges, leaves whose edges are lobbed and leaves with smooth edges.

Veins - A vein is the strand of vascular tissues. It is the principal framework of a leaf. Some leaves have several veins but others don't.

Small Plants and Flowers

Cubs may observe that underneath trees there are non-flowering plants or flowers. Many people think that Malta is not rich in flora but in fact it is. There are about 4500 known species of plants on the Maltese islands of which 85 are endemic (found only in 1 country). The plants that grow in Malta have adapted to high temperatures.





Plants cannot move so if the weather is dry or cold some of them die due to lack of water, others rest. The latter store food and water in specially swollen leaves or stems. These plants are called succulents. Cactus leaves have spikes to protect the stems from being eaten by grazing animals. Other plants have bulbous roots where they can store water. Bigger trees have adapted to the heat by using their roots to dig down in search for water.

Plants feed by photosynthesis. In their leaves they have a green substance also known as chlorophyll and with this they transfer energy from the sun to make sugars. Apart from solar energy, they use water which is found in the atmosphere to get their organic vitamins. During this process they let out oxygen which helps other beings live.

The cubs are asked to distinguish between the non-flowering plant and the flowers and each section should be observed thoroughly. Cubs should see that:

- The plants are clustered (next to each other) or dispersed (alone).
- As regards large and small petals, non-flowering plants obviously will not have petals because they do not have flowers.
- Some of the plants may either be part of the herb family or of the shrub family. Shrubs are small bushes which normally do not flower and herbs are those plants from which we get the herbs used in our meals. Examples of herbs include fennel (bužbiež).
- Stems are the stalks that support the leaf. They help the leaf to face sunlight. Long stems should be those which measure more than 5cm. As regards leaves these have already been explained in the tree section.

Making a Plaster of a leaf

(from <http://suzyssitcom.com/2011/06/feature-friday-plaster-casting-leaves-tutorial.html>)

Equipment needed:

- Plaster of Paris
- Water
- Leaves
- Newspaper/plastic (to cover the working space)

What to do:

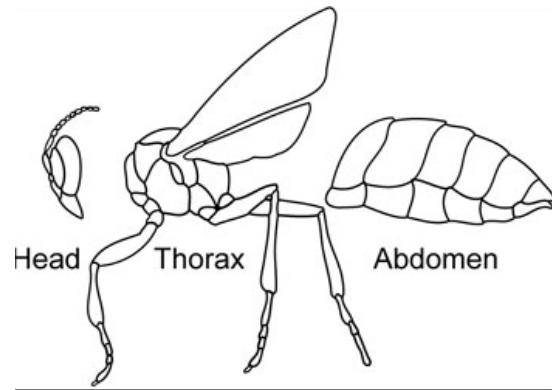
Mix the plaster of paris with water, until it has the consistency of yoghurt
Spread the plaster over the leaf. It will slide off, so you need to be persistent.
Leave it to set of at least an hour.
Peel off the leaf.



Living Things Under Stone

Cubs should follow these questions to come up with the name of the creature found:

Clue 1 - Segmented insects are normally divided into 3

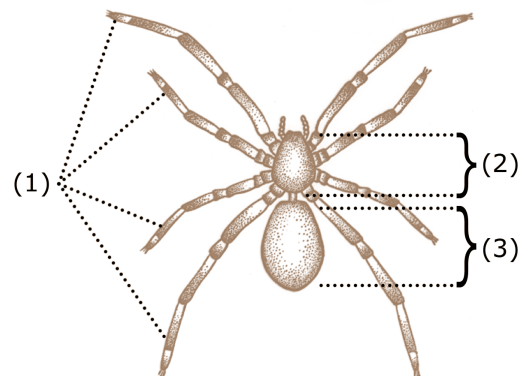


Clue 2 - Normally living creatures have legs. There are only a few which do not have legs. The earthworm and the snail are good examples.



Clue 3 - Amount of legs helps in defining whether a creature should be called an insect or not. six-legged creatures are insects. Eight-legged creatures are arachnids (eg spiders, scorpions).

1. 4 pairs of legs
2. cephalothorax
3. abdomen



Clue 4 - Creatures with more than eight legs are normally considered to have a hundred legs and are called centipedes.

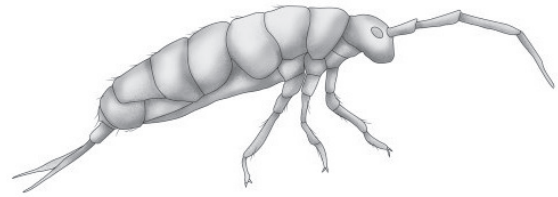


Clue 5 - Creatures can own a tail. The scorpion is one of them. Certain scorpions are poisonous.

The species of scorpion found in Malta



Clue 6 - Creatures can own wings. The springtail is an example which does not have wings.



Clue 7 - Wings can be hard or soft. The grasshopper has hard wings and the normal fly has soft wings. A lacewing is a creature with soft transparent wings.



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Clue 8 - If a creature has reached this stage without being linked to a name then the cubs should look at its pincers. Pincers are gripping tools. If a creature has pincers on the abdomen then it can be an Earwig and if it has pincers on the head it can be a beetle.



Lichens

Lichens are fungi with algal cells trapped inside them. The algae produces food by photosynthesis, which the fungus steals. They grow in greenish, grey, yellow, brown or blackish crustlike patches or bushlike forms on rocks, trees etc. If cubs observe that there is a high amount of lichens then this indicates there is no pollution. On average, lichens grow 1-2mm in diameter per year. As they grow, they can combine with other lichens, and they become the "same" lichen.



Local Endangered Animals (Endemic)

Maltese Wall Lizard – (*Gremxula ta' Malta*)

28cm. Four Maltese subspecies are known:

Maltensis (Islands of Malta, Gozo and Comino) – generally greenish and often speckled

Filolensis (Filfla) – blackish with blue or pale blue spots: the largest of the four races

Kieselbachi (Selmunett) – very variable in colour, from brown to grey with small black spots and a yellow belly

Generalensis (Fungus Rock) – reddish below, with bluish flanks

Females and young lack the bright colours of the males and are generally brownish. The male shows territorial behavior, claiming a small patch of land and threatening other approaching males. During their threat display, the males puff themselves up, tremble and raise their heads to display the bright colours below the neck. When a female approaches, the male makes similar movements, which serve to attract the female for eventual mating. This takes place in spring, soon followed by the laying of 1-2 eggs in the soil or under a stone. Eggs normally hatch between June and mid-August. Endemic to Malta and to the islands of Linosa and Lampione, where a fifth subspecies occurs. A separate race probably exists on Kemmunett. Very common.

Maltese Palpigrade – (*Palpigrad ta' Malta*)

1.2 mm. Only one specimen has so far been found, in a cave at Girgenti in 1988. Endemic and very rare.





Maltese Freshwater Crab – (Graniċ ta' l-ilma ħelu)

7-8cm. Found at Baħrija, Imthalleb, San Martin and Lunzjata Valley (Gozo), where running water is present all year round. Lives near pools and springs. Hides under stones in the water, among vegetation, or by retreating into burrows which it excavates in the mud or clay. These burrows have two openings and often exceed 50 cm in depth. The internal part of the burrow is often flooded. It forages for food after sunset. It is carnivorous and feeds on smaller animals, including snails and tadpoles. It has disappeared from a number of valleys because of drying up or pollution of the springs, and because it is often caught by humans. Up to a century or so ago, it was used by people to make soup on fasting days. It apparently caused bowel movements. The subspecies 'lanfrancoi' is endemic and very rare.

Maltese Field Beetle – (Ħanfusa tar-Raba')

16-20mm. Found in the countryside, especially in coastal areas, where it gnaws bases of plants. Endemic and very rare.

Schembri's Darkling Beetle – (Ħanfusa ta' Schembri)

6mm. Usually lives under large stones, often with another endemic species which it resembles. Described in 1979 by an Italian coleopterologist who named it after the Maltese entomologist Stephen Schembri. Endemic and scarce.

DeLucca's Moth – (Baħrija ta' DeLucca)

18mm. On the wing between late October and early February. Foodplants include various wild and cultivated species. Endemic. Common.

Maltese Ruby Tiger Moth – (Rubin)

20mm. Caterpillar feeds on Borage and bugloss. Endemic. Common.

Swallowtail – (Farfett tal-Fejġel)

35-46mm. Widespread. Produces two broods and sometimes a third. Male and Female coloration similar. Caterpillar feeds on rue and fennel. Subspecies melitensis is endemic. Common.

Maltese Slave-keeping Ant – (Nemlu ta' Kemmuna)

Worker 3mm. Lives in nests of the ant. It does not carry out nest maintenance or food gathering – a type of social parasitism found in ants. It was discovered by an Italian entomologist on Comino. Since then it has only been recorded twice. Males are not known. Endemic and very rare.





Protect Our Sea and Land

The Maltese islands are surrounded by sea water and therefore special care is to be given to our coast. Small organisms living in the sea called algae and plankton are the basic food for most of our marine life. The water along our coast is also important for recreation and is one of our main tourist attractions. Therefore, our seas need to be protected from oil spills from ships and from dumping of waste and harmful substances.

Living sustainably – this is the jargon of conservationists today in the year 2003. People speak of having a sustainable environment all the time but what does this mean? Sustainability means “to meet the needs of the present without sacrificing the ability of future generations to meet theirs” (Johannesburg Summit 2002)

In order to live sustainably all people should take care of the world; sea, land and atmosphere around us. In this section we will look at why land and sea are being degraded and what we can do to reduce such degradation.

Sea protection

Water is one of the basic needs of human life and this is why rivers and the sea have played an important part in the development of mankind. Rivers and the sea have two main purposes:

1. Supply water for domestic and agricultural use
2. Transportation

Sadly seas and rivers have also been used as dumping areas of industrial (waste coming from factories, shipbuilding yards etc) and domestic wastes (untreated sewage). Oil spills are also a major source of concern when it comes to sea pollution.

Today we are realising that pollution is a serious problem and we are trying to find solutions before it is too late.

What can be done?

New laws and regulations should be introduced in order to prevent pollution.

Governments and industries require a law to clean their own waste.

Introduction of sewage treatment plants.





Land Protection

Soil is one of the most important resources found in the world. We depend on it for most of the food we eat and without it we cannot survive. Yet each year about 75 million tonnes of soil are lost in a process known as soil erosion.

Soil erosion is a natural process but in some areas it has been increased by:

- **Deforestation** – When large areas of forests are cleared, there are no more leaves and roots to protect the soil from rainfall or run off. Thus soil is more easily blown away.
- **Overgrazing** – When too many animals are kept in one area, they eat all the vegetation and it dies off. This is like deforestation but on a very smaller scale. However the effects are the same.
- **Up and down ploughing** – farmers find it easier to plough up and down a slope rather than across it. When it rains, water flows through the channels freely downslope carrying too much soil with it.
- **Collapse terracing** – Terracing or rubble walls (ħitan tas-sejjiegħ) which are used in Malta protect soil from moving freely downslope, but still letting rain water pass through. Sometimes rubble walls collapse with the result that both rainwater and soil are lost downslope.

What can be done?

Rebuilding of rubble walls when they collapse.

Tree planting programme.

Education for citizens for them to realize soil is important.

Small dams to store water and therefore controlling water flow.

Sea pollution and land degradation is not only a threat to mankind but also and especially to living organisms on earth and marine life. Studies have shown that there was a dramatic decrease in the amount of living matter both on land and in sea. Increasing pollution means total destruction of life so we should teach our cubs that “Prevention is better than cure”.

Suggestions:

- o The Activity below is a hand-on project that can be done by the Cubs



ACTIVITY FACT SHEET



Activity: Exploring a Field



Objective: Local Animals and Flora – create a nature magazine describing your findings



Time: 45 – 60 minutes



Outline:

The Cubs are scientists sent onto an island that was discovered off the coast of Malta. They were asked to find out what type of plants and animals exists.

Depending on the size of the group, you can divide the Cubs, and each group does a different section from the Cub Book. The cubs should note down their observations (shape, size, colour, etc), and back them up using drawings and other techniques like bark rubbings or palsterring.

Then after collecting all the data, the Cubs can work together to prepare a presentation of their “discoveries” for the rest of the Pack.



Equipment: Notepad and pen per Cub
Tree: Measuring tape, paper & charcoal/pencil (for bark rubbing)
Rocks and Lichens: measuring tape/ruler
Plants and Flowers: plastic/paper bag for samples
Living things under rocks: camera



Place: A field



Group Size: Arrow Group







3rd Parties: Make sure you have permission to enter the field



ACTIVITY FACT SHEET



During the Activity:

-  – Cubs will need to communicate with each other about what they are observing. This aspect also comes out when they are preparing the presentation, and when they are making the presentation to the Pack
-  – Walking around the field
-  – The Cubs must think about what important aspects they need to report about
-  – Help the Cubs appreciate the variety that exists in nature, and that somehow or another, all of the organisms in an area help each other grow. Point out that we should do our best to preserve nature and keep it in balance.

GOLD ARROW

After the Activity:

It would be a good idea if during or after the activity you clean up the area you were in.

