

Investigating the Carob Tree through GLOBE



GLOBE TREE REPORTERS

PETER PAUL GRECH GC KERCEM PRIMARY

YEAR 6



GLOBE teacher Ms Janice Cini

GLOBE Tree Reporters Challenge

This year, the students in Year 6 embarked on an exciting new adventure by joining the GLOBE Program for the very first time, participating in the GLOBE Tree Reporters Challenge.

What began as a simple interview with a carob tree has quickly evolved into a remarkable, multifaceted project. The students have not only integrated their learning across various subjects but have also engaged in hands-on scientific activities that deepened their understanding of the natural world.

From observing the carob tree in its environment to exploring its role in our ecosystem, the project has grown into a comprehensive experience. One of the highlights has been the students' involvement in the preparation of the carob syrup, which brought a practical and delicious element to their learning journey. They also managed to observe and measure the growth of the carob plant from

a seed. This has truly marked the start of an inspiring and educational year!

All of this was made possible thanks to the dedicated efforts of several individuals who have been instrumental in guiding and supporting the GLOBE students throughout this journey.

A special thanks goes to Mr Joseph DeBrincat, the School Headmaster, Ms Ramona Mercieca, the GLOBE Deputy Coordinator, for their leadership and vision in bringing this programme to life.

We are also incredibly grateful to Ms Sheila Vella, Year 6 class teacher for her enthusiasm and commitment in integrating the GLOBE program into her classroom.

Together, this team has made this exciting project possible and set the stage for a year of discovery and growth.





The Carob Tree

Ceratonia siliqua-Species name

Carob, St.John's Bread, Locust Bean-English names

Il-Harruba-Maltese name



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KERCEM PRIMARY SCHOOL



Contents

Introduction	02
Contents	04
Interviewing a carob tree	05
Educational Outing	06
Video-Having fun under the carob tree	07
Outing photo collage	08
Information about the carob tree	10
How to plant a carob seed	11
Carob Syrup Recipe	12
Science Investigation	14
Quo Vadis poem	15
Craft: Our Carob tree	16
Findings	17
Bringing change	18
Video & Song	21
Activity Workbook	22

Part of our project was interviewing a carob tree



Interviewing a carob tree



GLOBE Tree Reporters Challenge.

Educational Outing

During this outdoor teaching and learning opportunity, our students explored the environment around them and visited places where carob trees were found.

The carob tree is endemic to the Mediterranean region and the Middle East.



Having fun under the carob tree.



InShot





The carob tree was probably introduced in the Maltese Islands many years ago around the 1490s and now considered an indigenous Maltese tree.



- It is an evergreen.
- It may grow very tall (max 15m) with elaborate branches.
- The leaves are green, round and leathery. It also produces many small female or male flowers.
- It produces edible long (about 23cm) legume pods which are initially green and then turn brown once mature. According to different traditions, the pods contain seeds and honey-like substance for which it is harvested to produce syrups or powders as a substitute for chocolate.
- Apart from being characteristic of the Maltese wild countryside, thus contributing to its conservation in the Mediterranean region, carob pods are used to produce syrup used to care for sore throats or colds.
- Protected by law.

How to plant a carob seed.

Carob trees are traditionally grown from seed. Carob seeds are collected from the fruit produced by the carob tree.

- Soak the seeds in a container with water for about 10 days.
- Choose a seedbed and spread the seeds out and put a thin layer of soil on top.
- Water a little more for the seeds to settle.
- Place the seedbed in a ventilated space and wait for them to sprout to continue transplanting.
- When you already have carob sprouts, you should transplant them into a pot so that it develops a stronger seedling.
- When the seedling is about 20 cm tall, you can move it to a selected outdoor space.



It is important to keep in mind that carob trees are slow-growing, so you must have a lot of patience throughout the process.

Gulepp tal-Harubb (Carob Syrup)

If you have access to carob pods you can easily make your own carob syrup

SERVINGS
1 litre

PREP TIME
15 mins

COOK TIME
45 mins

Equipment

- ✓ 4 x 250ml Jars with lids (sterilised)
- ✓ Roasting Tray
- ✓ Big Heavy-Bottom Pot
- ✓ Wooden Spoon
- ✓ Measuring Scale
- ✓ Fine Sieve
- ✓ Medium Heavy-Bottom Pot

Ingredients

- ✓ 1 kg Carob Pods
- ✓ 2.5 litres Water (filtered)
- ✓ 1 Lemon (zest and juice)
- ✓ 6 Cloves
- ✓ 2 Star Anise
- ✓ 1 Cinnamon Stick
- ✓ 1 kg Sugar

Instructions

1 Pre-heat oven to 160°C.

2 Thoroughly wash and drain the carob pods.



3 Snap the carob pods into pieces and place in an even layer in a roasting tray. Roast in the oven for 20 minutes.



4 Once roasted from the oven, immediately soak in the big pot with the filtered water and leave overnight.



5 The next day add the cloves, cinnamon stick, star anise and lemon to the pot. Bring to a boil and then simmer for around 30 to 45 minutes.



Follow the Carob Syrup Recipe, a traditional natural remedy full of antioxidants, offers a soothing alternative to chemical-based medicines for relieving coughs.

6 Pass the contents of the pot through a fine sieve into the medium-sized pot. Discard the contents of the sieve and boil the remaining liquid with the sugar for around 30 minutes.

You should get a thick syrup. You can decide how thin or thick you want the syrup by coating the back of a wooden spoon.



7 Bottle in sterilised jars and store in your kitchen cupboard.



MAKING CAROB SYRUP





Science Investigation:

Observing the growth and changes of a carob seed.

VADIS:



Fuq l-għolja ġeblija,
Imbiegħda mill-bqija ta' ħutha
Fil-qalb ħadranija
Tal-wied,
Ix-xwejha ħarruba,
Magħtuba
Mit-toqol tas-snin,
Qed tħares madwarha
Ħa tara
Il-għaġla tan-nies għaddejjin.

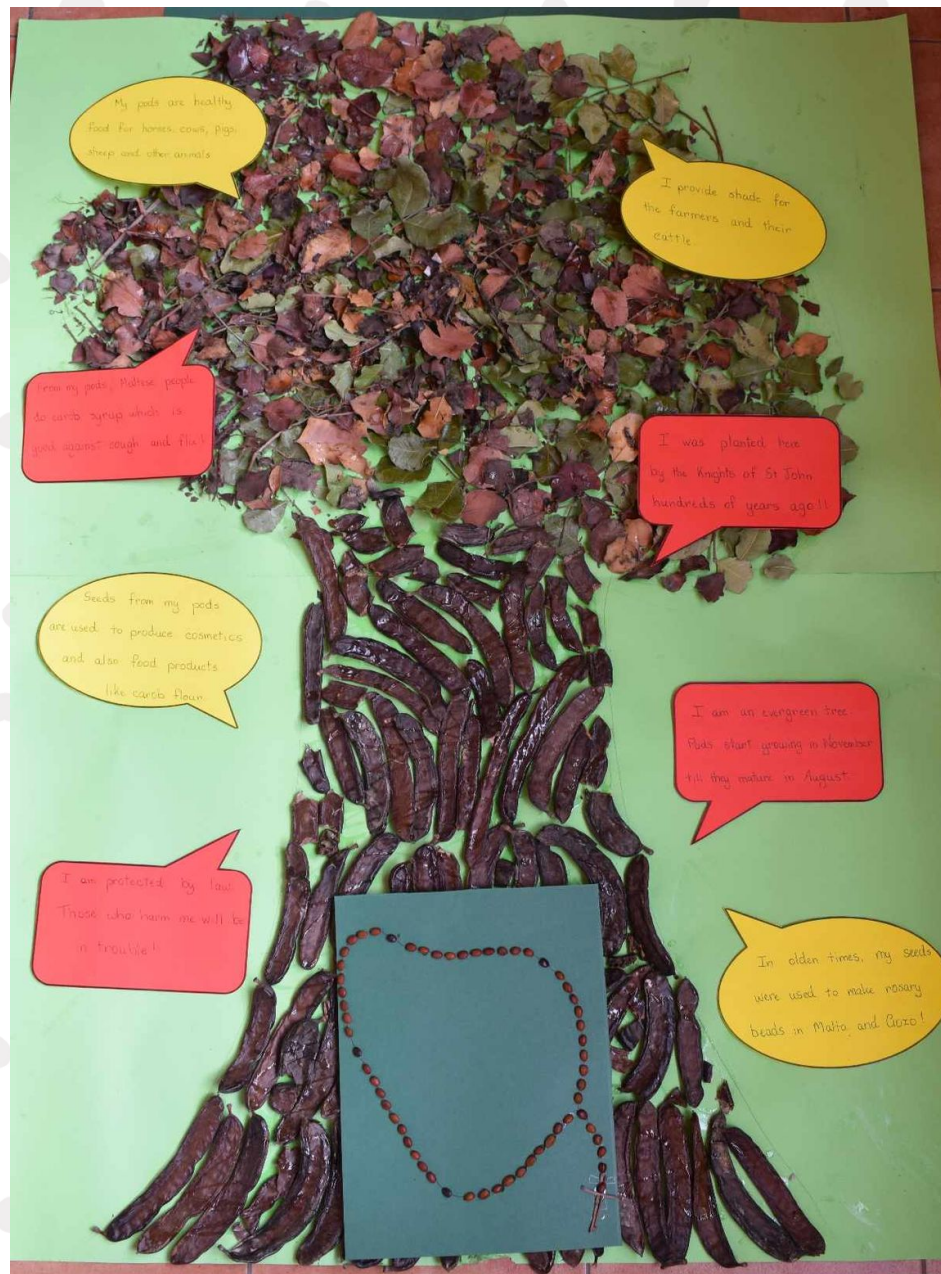
. . . U taħseb:
Kemm huma mgħaġġlin,
Fejn huma sejrjn
Għal dejjem bla sabar
Min-nieqa sal-qabar
Dal-ħalja bnedmin?
Fejn huma l-għeruq?
Qatt lilhom ma trażżan il-beww
Qatt lilhom ma tlajjem is-sħana
Għaliex fut mistrieħ
Għalihom ma hemmx,

- The late Maltese poet, Rużar Briffa, actually wrote a poem describing the age-old carob tree as an observer.
- Stationary, yet observant of the fast pace of life passing right in front of it.

Carob trees are survivors of time.

The carob tree represents time.

Linking culture with science.



Craft:

Our Carob Tree

Once the carob pods fall off the tree, they will be very mature and preparing to get bitter and rot.

We gathered some and used them in our project .

We also used fallen leaves found under the carob tree and glued the leaves and the pods into the shape of a tree.

We used the seeds to make the Rosary Beads.



Findings

Carob trees can be very old. It is with maturity and age that they get better.

The carob tree population in Malta is on the decline as conditions are challenging due to insufficient water supply, harmful insects and organisms, destruction due to natural and human impacts.



Bringing Change: Making an Impact Outside the School



In class, we managed to sprout carob seeds which were then sowed in peat collected from underneath the carob tree itself. Now, every student is taking home a carob plant, to plant in their garden or field.

"Plant a carob tree, not for yourself, but for the next generation."

This expression highlights the idea of investing in something that will benefit others in the future, even if you may never personally experience its rewards.

It reflects the values of long term thinking, selflessness and community-oriented actions.





The Carob Tree Tale

Year 6 GLOBE students

[Verse 1]

**Yo kids gather 'round let me tell you a story
About a special tree it's rich in history
Carob tree yeah it stands so tall
In dry lands all around it's got it all**

[Verse 2] Repeated x2

**Grows in the heat sun shining so bright
Its pods are sweet a natural delight
Packed with nutrients energy to spare
It's a treat that's good in chocolate or pair**

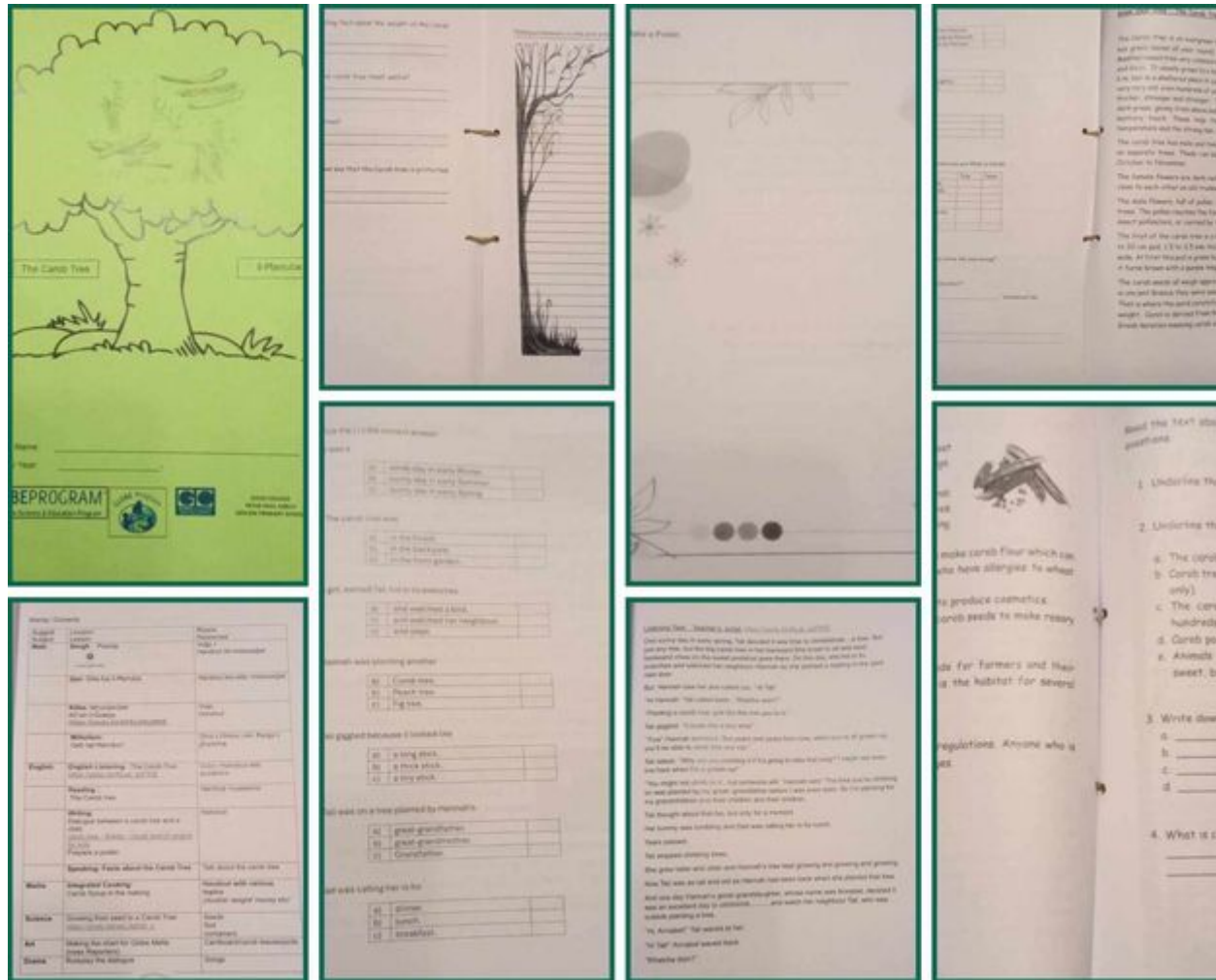
[Chorus]

**Carob trees they give and give
Nurturing land where other trees can't live
Roots dig deep in the earth they reign
Bringing life to arid lands again**

[Bridge]

**Ancient Greeks knew it well used for bread
In tough times carob kept folks fed
No caffeine no theobromine
Safe for all even your feline**

The Carob Tree Activity Workbook -Year 6



We worked on an engaging and interdisciplinary Carob Tree Activity Workbook, integrating their learning across various subjects including Mathematics, English, Maltese and Science.

Examples from the workbook

This multidisciplinary approach allowed students to actively apply their knowledge, deepen their understanding and develop both scientific and language skills in a meaningful and fun way.

Observation sheet

Observe a living thing for a period of time. Draw and label diagrams to show the growth and changes observed.

Type of plant/animal observed: Carrot Seed

Date: 11/01/24 Day: Monday Observations: 	Date: 15/01/24 Day: Friday Observations: 	Date: 19/01/24 Day: Tuesday Observations: 	Date: 19/01/24 Day: Friday Observations: 
Date: 21/01/24 Day: Monday Observations: 	Date: 23/01/24 Day: Tuesday Observations: 	Date: 25/01/24 Day: Thursday Observations: 	Date: 26/01/24 Day: Friday Observations: 

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Observation sheet

Observe a living thing for a period of time. Draw and label diagrams to show the growth and changes observed.

Type of plant/animal observed:

Date:	Date:	Date:	Date:
Day:	Day:	Day:	Day:
Observations:	Observations:	Observations:	Observations:
Date:	Date:	Date:	Date:
Day:	Day:	Day:	Day:
Observations:	Observations:	Observations:	Observations:

Weight Measuring Activity

1. An object 200g of which puts on the scales.
What number of jars is that?
How many jars are needed to make 1kg?
How many more jars are needed to make 1kg?

2. An object 500g of which puts on the scales.
What number of jars is that?
How many jars are needed to make 1kg?

3. Count how many jars of each size were needed to make 1kg.
What jars you needed? _____ jars of _____ grams.
How many jars of each size are needed to make 1kg?

1kg	
500g	
250g	

1. Draw a jar.

2. Label the jar.

3. Draw a jar.

4. Label the jar.


5. Draw a jar.



6. Label the jar.

7. Draw a jar.





8. Label the jar.

9. Complete the pattern.

200g = 

500g =  + 

5. Jars come different sizes, so we need to decide the price of every jar. Match the price to the correct jar according to weight.

150g	250g	350g	450g
			
4€	4€	3€	5€