443/3
AGRICULTURE PROJECT
Jan. - July 2025
(Declaration form)

THE KENYA NATIONAL EXAMINATIONS COUNCIL

Kenya Certificate of Secondary Education

443/3 AGRICULTURE PROJECT REPORT

DECLARATION BY CANDIDATE

This is to certify that this is a true project report of my Agriculture Project and that it contains the details of the operations.

Name of the Candidate	Index No.	Signature
Kamau Melanie Esther Nyokabi	11241001279	

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Enter the score awarded in the box below.

Agriculture Teacher | 19

MARY LEAKEY GIRLS' SCHOOL
DEPUTY PRINCIPAL
24 JUL 2025
ACADEMICS
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NAME:
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INDEX:
1124100127 9

PROJECT NAME:
grafting of avocado fruit trees (persea americana)

GROUP NUMBER:
7

INTRODUCTION.

Grafting is the practice of uniting two woody stems. One of the parts provides the base which has a rooting system while the other part is obtained from another plant. The plant with the rooting system is called a rootstock which is the lower part while the other part grafted onto the rootstock is called the scion which is the upper part. The scion has buds which develop into the required future plant. The scion and the rootstock should be compatible to form a successful union. Grafting helps to propagate clones that cannot be propagated in any other way, repairs damaged trees, shortens maturity age and many others.

IDENTIFICATION OF THE ISSUE.

Through research, we were able to identify that in our school there was scarcity of fruits. This made students or farmers to rarely eat fruits which was a disadvantage. We also identified that farmers who grow some trees take long periods of time to mature. The fruits produced are not of good quality which discourages farmers. Grafting would be the best solution as it improves the quality of fruits and increases production of these fruits. There two were the pressing issues that we identified in our school community and grafting was chosen as the best solution.

PROJECT OBJECTIVES.

1. To learn the grafting techniques.
2. To identify different types of grafting.
3. To know precautions observed when carrying out grafting.
4. To determine which grafting method is needed.
5. To produce healthy avocado fruit tree seedlings.

PROJECT DESCRIPTION.

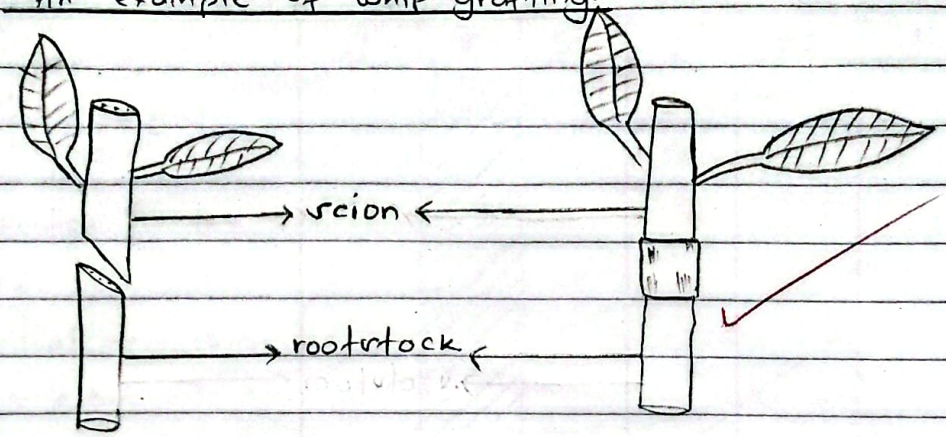
Groups were selected for the project and I was a member in group 7. The members were as follows;

1.	Member	Index numbers.
1.	Shammah Vuyanzi Vigedi	112410012 67
2	Stacie Wanjiru Wambugu	112410012 070
3.	Stella Pelis Wanjira	11241001 284
4.	Melanie Esther Nyokabi Kamau	11241001279
5.	Ivyone Wacera Muturi	11241001 261
6.	Brenda Nkatha Mwiti.	11241001282

We selected the Hass variety of avocado fruit tree species to use, as they are disease resistant are considered among the best varieties in Kenya. A suitable site was prepared and each group got twenty avocado fruit seedlings. We chose whip grafting as our method of grafting. Each member carried out grafting one one tree seedling each. We used a grafting tape, a scion, a scapel and a pair of secateurs to carry out splice grafting. We observed the precautions carefully. We made sure that the vertical cut was one inch of the rootstock as the scion and the rootstock had to be of the same diameter. We wrapped the two parts with a grafting tape tight enough for compatibility.

4/5

An example of whip grafting.



BUDGET.

Material required	Quantity	Price	Amount used.
Scapel.	6	10	60
Watering can	1	400	400
Root Stock	20	100	2000
Grafting tape	20	20	400
Scion	20	10	200
Steriliver	10 ml.	150	150
Shade net	5m x 10m.	3000	300
Rake	1	350	350
Trainer	1	1500	1500.
Total cost			8060

PROJECT IMPLEMENTATION PLAN AND TIMELINES

Activities	J	F	M	A	M	J	J
Instructions given							
Identification of the problem.							
Individual preventation of problem.							
Group preventation of problem.							
Preparation of budget plan.							
Arrival of seedlings.							
Preparation of plots.							
Training session.							
Grafting of avocado fruit trees.							
Evaluation of the Project.							
Documentation of the project.							
Watering and inspection.							
Fortnight report on the project.							
Report writing.							

PROJECT IMPLEMENTATION PROCEDURE.

Assembling of tools - we bought the materials required from reliable sources and brought them to the site to carry out grafting.

Site selection - A suitable site was selected and was prepared. The site was 1m by 1m. The site was well secured and was well shaded as it had a shade net.

Training session - we got an external trainer, an expert who taught us on the precautions when carrying out grafting and took us through the grafting practice in the different groups.

Grafting practice - when we carried out grafting, the procedure given was as follows:

1. The root stock cut should be at a pencil thick diameter.
2. The scion should be of the same diameter as the root stock, which was one inch.
3. A grafting tape should wrap the scion and the root stock together tight enough to prevent entry of moisture.
4. The union should be firm for compatibility.

Monitoring growth process - we came up with a plan for our group whereby each member would water the tree seedlings on a daily basis as they were delicate and needed enough water for growth.

Caring of plants - We watered the seedlings everyday, particularly in the morning and in the evening. Removal of weeds and cleaning of the nursery plot was done on a regular basis.

3 11

EVALUATION.

Out of the twenty avocado fruit trees, seventeen trees were able to sprout. One of the tree's stem formed a black colour and the stem became weak and it eventually dried up. We identified that it was because the scion and the rootstock was loosely tied by the grafting tape and was not able to sprout. The other two trees wilted as they lacked enough water for adequate growth. We separated these trees from the healthy ones to promote growth. We also identified that one of the trees was attacked by a crop pest because the rootstock was undesirable hence prone to getting infected with diseases but we managed to control the disease and the plant sprouted.

CONCLUSION.

In conclusion, grafting of the fruit trees was a success and indeed the best solution to solve the pressing problems we identified in our school community. Grafting increased the quantity of fruits and improved quality of fruits in our school community. We encouraged our school neighbours and the farmers to carry out grafting as it was beneficial to most fruit trees.

RECOMMENDATION.

The recommendations that we made were:

1. A healthy root stock should be used as it is disease resistant and will withstand harsh environmental conditions hence beneficial to the tree.
2. This project should be encouraged to all farmers whose trees take long periods of time to mature. This will enable them to produce high quantity of fruits hence high rate of fruit supply which will increase their income if sold.
3. That this project should be implemented in schools experiencing problems of scarcity of fruits.

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