

LCA



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SAMPLE!

Horticulture
Floristry, Fruit and Vegetables



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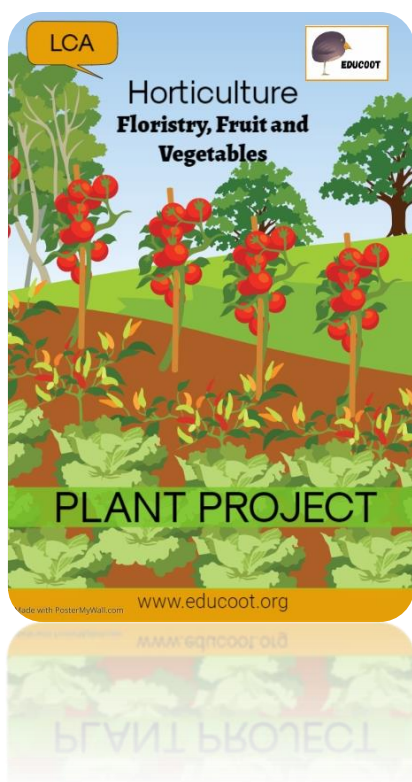
Mapping of Learning Outcomes

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Note to Students

For your Plant Project, you will be choosing a flower, fruit or vegetable to study. Keep with the same choice throughout the project.

So that you can find enough information for your project, choose something that is grown in Ireland on a large scale. It also needs to be available in a retail outlet, e.g. supermarket, garden centre, market, greengrocer, etc.



There is a Project Book, separate to this book, which you can use to fill in your answers.

There are sample answers in this book, on a variety of flowers, fruit and vegetables. Your teacher will direct you on how much information you will need to include for each section. If you need extra space, use the 'Extra Notes' page or print project pages more than once if you like.

Alternatively, you can create your own Project Book. If you do this, ensure you use clear headings and page numbers.

For your Plant Project, you will collect information from the following sources:

- A visit to a farm and/or garden centre and/or allotment and/or personal garden
- A visit from a person with expertise, e.g. horticulturist, farmer, florist, gardener, retailer, etc.
- Questionnaires (survey)
- Interviews with those working in the industry, e.g. in person, on the phone, on TV, on YouTube, etc.
- Government agencies, e.g. Citizen's Information, The Department of Agriculture, Food and the Marine, Teagasc, Food Safety Authority of Ireland, Bord Bia, Safefood, Irish Farmers' Association, etc.
- Websites of Irish farms, Irish wildflowers, Irish supermarkets
- Presentations from students in the class
- Newspapers, magazines, pamphlets and books

You will be given tuition during class time and all areas of the course will be covered. It is your responsibility to attend classes regularly and to keep up with the work. If you experience any difficulties during the course, please inform the teacher.

A. Types of Flowers, Fruit and Vegetables

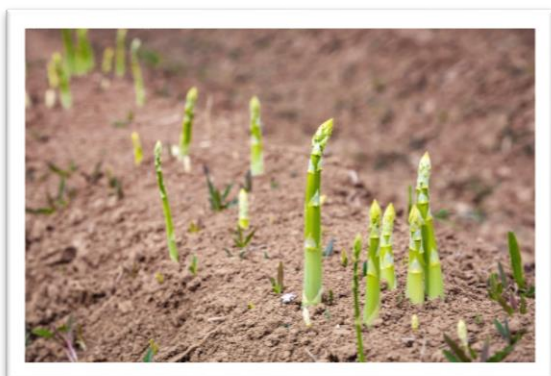
1. Name these common flowers.

Foxglove, Forget-me-not, Hawthorn, Bird's-foot trefoil, Buttercup, Daisy



B. Conditions Suitable for Growth

Plant Project



1. In your project, you will state which conditions are most suitable for your flower / fruit / vegetable to grow.

Example:

Growing Asparagus

Speak to an expert
in the field!

It is not particularly easy to grow! It's fussy about the soil it grows in and though it only crops for a little over a month, it takes up space in your vegetable garden for the whole year. It also takes three years before you get any crop!

- * It is best to buy young asparagus plants called "crowns". When you get the crowns, they need to be planted quickly as they will start to deteriorate if left out of the soil for too long.
- * Asparagus needs good fertile soil in full sun with wind protection.
- * Raised beds work well.
- * Keep the bed weed free. Then wait. And be patient. Every year, add a mulch in the autumn.
- * Asparagus produces a mass of foliage that can grow very tall and will need support to stop it from falling over.
- * Slugs are a common problem, so deal with them in the kindest way possible!
- * In damp conditions foot and root rot can be an issue – if this happens, remove the plants and destroy. Do not grow asparagus again in that spot.
- * Check that the soil that has a pH of 6.3 to 7.5.
- * To recap, this is what is needed in order for the asparagus to grow well.

<i>fertile soil</i>	<i>full sun</i>	<i>protection from wind</i>
<i>raised beds</i>	<i>no weeds</i>	<i>patience</i>
<i>mulch in autumn</i>	<i>support for tall plants</i>	<i>deal with pests, e.g. slugs</i>

2. In your class, talk about how the growing conditions of your flower / fruit / vegetable are different to the asparagus.



D. Extending the Growing Season

Plant Project

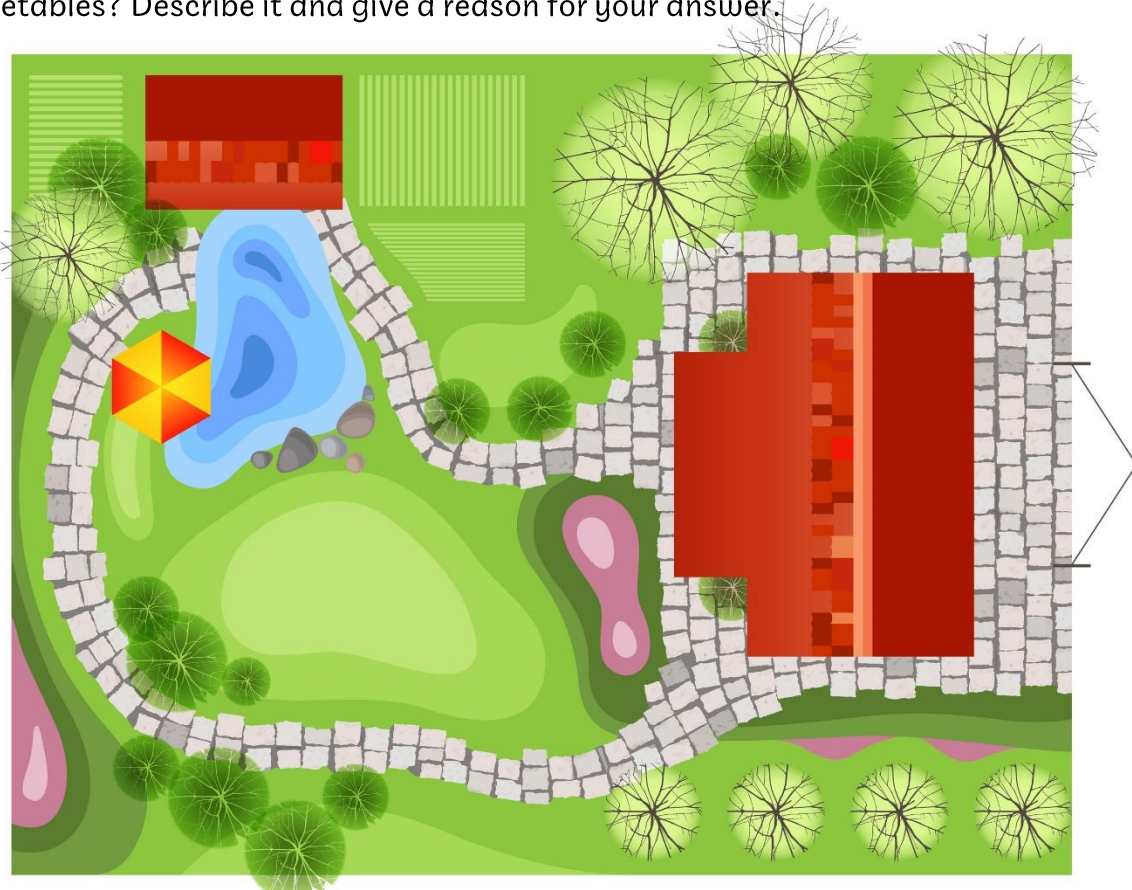
1. Here are some general tips for extending the growing season of vegetables. For your project, make this specific to your chosen flower, fruit or vegetable.

Know your garden's climate

Not only does the weather change from year to year, but small areas within your garden may differ from one another. Part of your garden could be shaded by trees or buildings, some areas may be protected from cold or wind by a fence or thick shrubs or there may be spots where frost settles.

Choose vegetables that grow best in your garden's climate. If your garden has more than one 'climate', try different varieties in different spots.

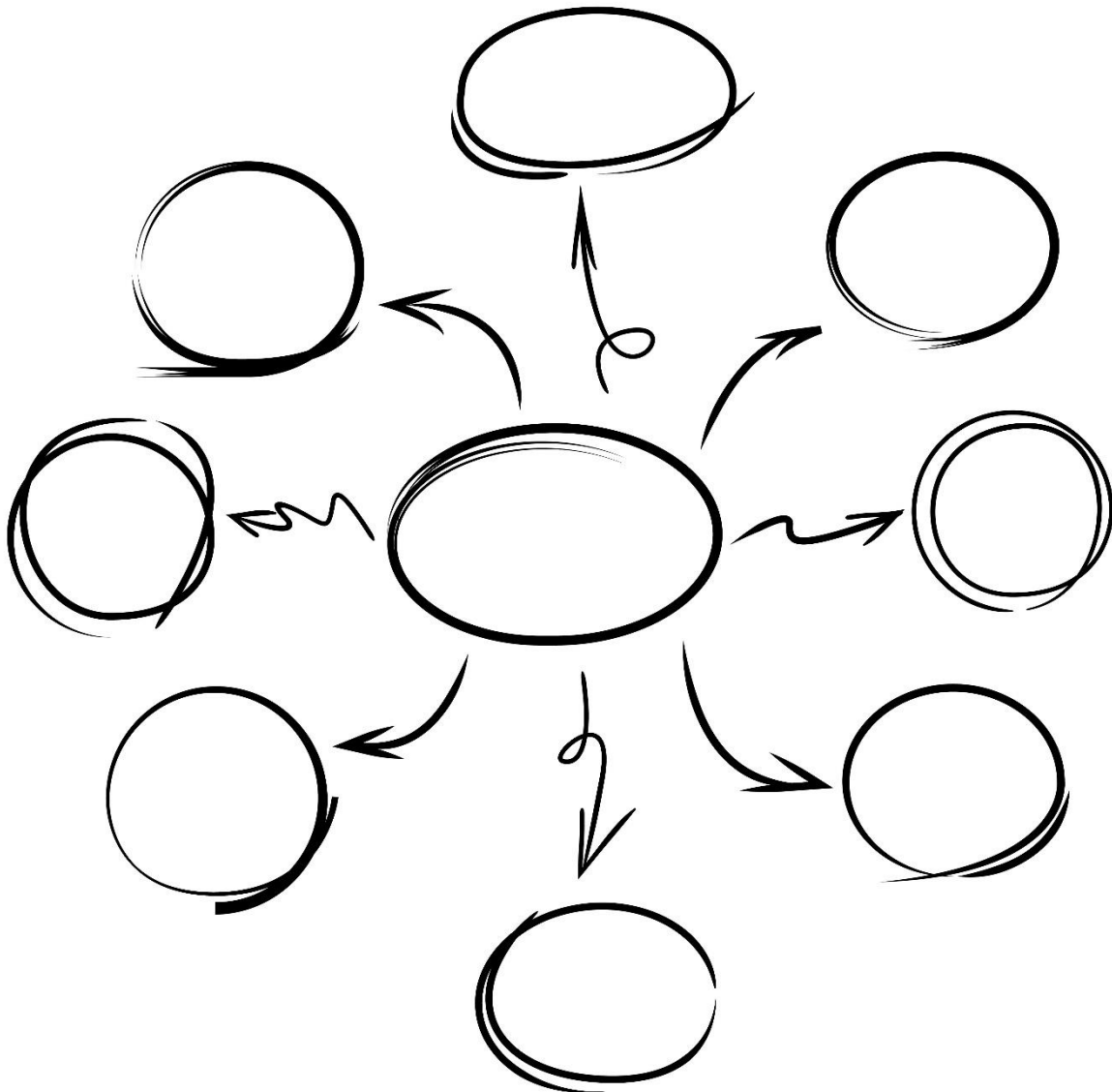
2. Look at the garden below. Where do you think would be a good place to plant vegetables? Describe it and give a reason for your answer.



9. Write some ways in which plant growth can be sped up. Use key words. (Add more circles if you need to!)

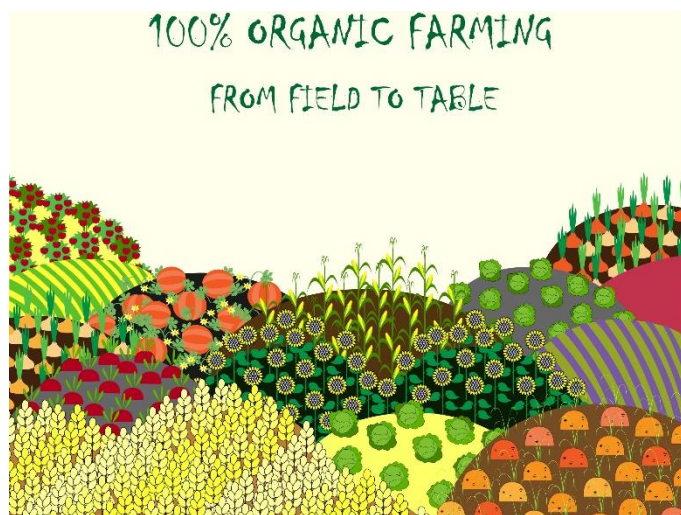
Ideas:

propagator, fertiliser, greenhouse, cold frame, etc.



10. Name the plant care systems that can be automated in a greenhouse.

The Irish Organic Association (IOA) is Ireland's leading organic certification body dedicated to certifying organic produce and products throughout Ireland.



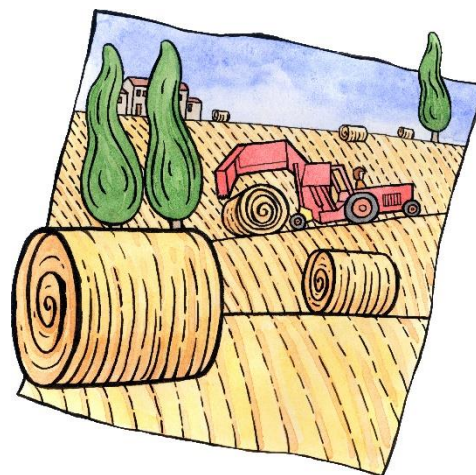
Visit the website: <https://www.irishorganicassociation.ie/>

Teagasc provides training, advice and research for those involved in organic production, and those considering converting to organic farming.

Visit the website: <https://www.teagasc.ie/>



The IFA (The Irish Farmers' Association) is Ireland's largest farming representative organisation. There is information and advice available on the website, with regards to organic farming.



Harvesting of Barley

- * Harvesting of barley occurs when it is gold in colour. It takes around 2 months for barley to grow large enough to harvest and have the largest yield of grains. When the stalks turn completely yellow, the moisture levels in the barley are lower and they are easier to cut down.
- * The moisture level of the barley should be less than 18 percent. Moisture levels can be determined by measuring the barley's weight or by using an electronic moisture metre.
- * A combine is used for large, commercial crops. Harvesting is started in the early morning when there is more moisture in the stalks since this will prevent breakage.
- * The fields are worked from one side to the other in rows so all the barley that has been planted, can be collected. The rows are slightly overlapped so that none of the barley is missed.
- * Bundles of barley are tied together after the harvest and they are allowed to dry.
- * Druing the barley will prevent diseases and rot once they are stored.



***Barley crop
before harvesting***

**Watch videos on crop
production from 'farm
gate to dinner plate'.**

3. Look online and find out the cost of a second-hand combine harvester. Write the details below.

The Food Safety Authority Ireland

There are specific marketing standards, as set out in Part B of Annex I to Regulation (EU) 543/2011 for the following products:

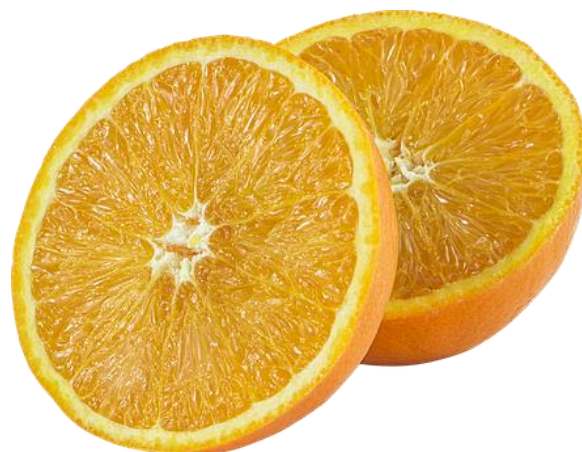


Fruit

- * apples
- * citrus fruit
- * kiwifruit
- * peaches and nectarines
- * pears
- * strawberries
- * table grapes

Vegetables and salads

- * lettuces
- * curled leaved and broad-leaved endives
- * sweet peppers
- * tomatoes



These requirements apply to the listed fruit and vegetables above which are to be supplied fresh to the consumer. Products for industrial processing are excluded.

The specific marketing standards classify the fruit and vegetables into three classes and the requirements for each class of the specific product is set out in the Annex to Regulation (EU) 543/2011.

- * 'Extra' class
- * Class I
- * Class II



3. Skim-read the regulations and visit the website for more information:

https://www.fsai.ie/legislation/food_legislation/fruit_veg/specific_marketing_standards.html

4. Look up one type of fruit in the regulations and state some of the criteria to make it a 'Class I' product:

6. Imagine setting up your fresh flowers / fruit / vegetables at a market.

Farmers' markets in Ireland have created a growth sector, which are popular with consumers looking for additive-free (often organic) produce.

Here are some benefits. You can:



- * Sell your product directly to the public
 - * Test your ideas out while having low overheads and low risks
 - * Increase turnover, without having to spend too much
 - * Have control over your pricing
 - * Build your brand and increase customer loyalty
- Here are some things to do:

- A. **Chat with a trader:** Ask about what's involved. Learn from their expertise.
- B. **Get the equipment:** You'll need to purchase, rent or borrow things like a table, scales, bags, displays, cleaning materials etc. You will also need a stall, e.g. a pop-up gazebo, a market canopy/umbrella, or a mobile trailer.
- C. **Get insured:** You will need (a) public liability (cover in case someone injures themselves interacting with your stall); (b) product liability (cover in case a consumer makes a claim, based on consuming your produce) and; (c) employer's liability (protection in case someone you employ becomes injured while working for you).
- D. **Register with your EHO:** Before selling fresh food at a market, you will need to register with your local Environmental Health Officer as a food business. The EHO will give you advice on what you need to make sure your kitchen and equipment are in compliance with health regulations.
- E. **Get a license:** If the market is taking place on municipal land (space looked after by a town, city or county council), you will need to contact the local authority for a casual trading license. If you are trading at a privately run event, it is usually not necessary to apply for a casual trading license.
- F. **Be safe:** You must, of course, be compliant with all health and safety requirements. When selling food at a farmers' market, the responsibility is with you to ensure your products are safe, and your stall is hygienic. The Food Safety Authority of Ireland is the government body that looks after all of this. See their website.

As a class, visit a market which sells fresh produce.

7. Write about your stall.

a) What are you selling?

b) What are the prices of your goods?

c) What equipment do you need?

a) What else do you need to take with you?

b) How will you get the customers' attention?



B. Pests that can Damage Crops

Plant Project

1. In your Plant Project, describe a pest that can affect the crop you are studying. Include the signs that the crop has been affected. State ways in which to deal with this pest, both a traditional and organic method.

Example: SWD

A pest that can damage soft fruit crops is the Spotted Wing Drosophilla (*Drosophila Suzukii*) SWD. It is a fruit fly or vinegar fly native to Asia.

Damage is caused by the adult female. Her serrated ovipositor allows her to puncture fruit and lay her eggs underneath. These puncture wounds become soft and sunken and can also allow secondary pathogens to infest the fruit. When the eggs hatch, the resulting larvae contaminate and feed on the fruit flesh.

This damage causes economic losses.

Current evidence suggests the pest has a preference for crops of cherries, raspberries, blackberries and blueberries.

Many wild fruit crops and trees growing in the hedgerows also act as hosts for SWD. This could include: wild blackberry, elderberry, hawthorn, honeysuckle, wild raspberry and wild cherry.



2. Write the meanings of these words:

a) serrated

b) puncture

c) pathogens

d) contaminate

e) economic

A. The Uses of Flowers

Tea

Flowers have been used to make teas for centuries. Chamomile and jasmine are examples. Flowers, leaves, and roots from a variety of other plants can be used to make tea as well. These teas often have health benefits as well as being tasty!



Chamomile tea

1. Research: Find one other tea that is made from flowers and write it below:

Medicine

There are so many medicines and drugs made from plants, but some are made from the actual flowers – not just the leaves or roots. Chamomile flowers are used in poultices for sprains and bruises as well as essential oils. Lavender flowers are widely used in aromatherapy for their calming properties. Hops flowers are used to make sedatives. Dandelions are very effective for cleaning the blood and also helping with related issues, such as anaemia. Gardenias are often used in Chinese medicine for blood cleansing, bladder problems, and physical injuries. It also helps to alleviate depression, stress, anxiety, insomnia and similar disorders.

2. What do these words mean? Write synonyms.

- a) insomnia
- b) poultices
- c) aromatherapy
- d) anxiety
- e) sedatives
- f) anaemia
- g) alleviate



Calendula is known to heal the skin from sunburn, rashes and scrapes.

A. Nutritional Value of Fruit

1. Complete the sentences:

boosting, memory, calories, Alzheimer's, diseases, tissues, fibre

- a) Fruits are low in and fat and are a source of simple sugars, fibre, and vitamins, which are essential for your health.
- b) Fruits provide plenty of soluble dietary , which helps to ward off cholesterol and fats from the body.
- c) Fruits have many antioxidants which help the human body to be protected from oxidant stress, , and cancers.
- d) They also assist the body to fight against illness by your immunity level.
- e) They help the body prevent or at least prolong the natural changes of aging by protecting from damage and rejuvenating cells, and organs.
- f) The inclusion of fruits in the daily diet helps protect you from minor ailments like wrinkling of the skin, hair loss, and loss.
- g) Fruit nutrition helps to avert major diseases like disease, colon cancers, weak bones (osteoporosis) and more.



Apricot



Passionfruit



Black Cherry



Red Cherry



Red Grapes

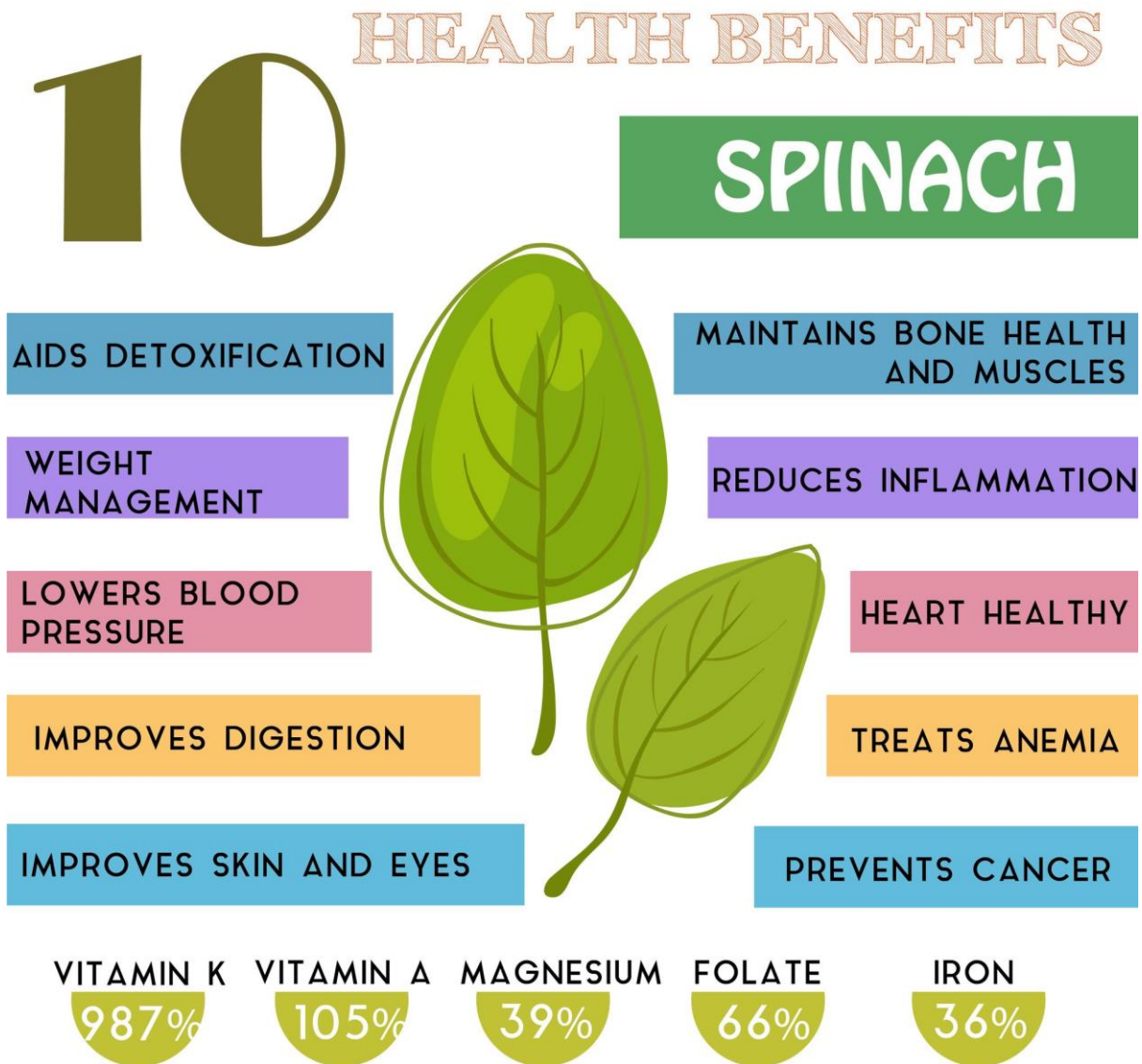


Green Grapes



Black Grapes

6. Read the infographic and complete the sentences:



Spinach can lower pressure.

It can help to maintain health and muscles.

It can help to cancer.

It can anaemia.

It can help to keep your heart .

It can improve your and eyes.

Mapping of Learning Outcomes

Unit 1: Production Methods

1. Name two types **Pages 10 to 19 (types of flowers / fruit / vegetables), PLANT PROJECT**
2. State the conditions suitable for growth **Pages 5 to 7 (things that all plants need), Page 20 (conditions for growth example), PLANT PROJECT**
3. Select the ideal soil conditions for healthy growth **Pages 21 to 22 (soil conditions example), PLANT PROJECT**
4. Devise methods for extending the growing season **Pages 23 to 28 (extending growing season examples), PLANT PROJECT**
5. Design a set of instructions for the care of a crop **Pages 29 to 32 (taking care of a crop – example), PLANT PROJECT**
6. List three differences between a large scale and a small-scale production unit **Pages 33 to 35 (large-scale productions – example), PLANT PROJECT**
7. Name the State bodies and other groups involved in the development of this industry. **Pages 36 to 38 (state and other support – examples), PLANT PROJECT**

Unit 2: Harvesting, Transport and Retailing

1. State the most suitable time for harvesting one commercially grown crop **Pages 41 to 42 (harvest time example), PLANT PROJECT**
2. List three criteria used in the selection of the best products **Pages 43 to 45 (selection of best products, standards, examples), PLANT PROJECT**
3. Select the best method of harvesting a commercially grown crop **Pages 46 to 47 (best methods for harvesting - examples), PLANT PROJECT**
4. Identify a grading system used to classify the quality of a commercially grown crop **Pages 48 to 49 (grading systems - examples), PLANT PROJECT**
5. Comment on the working of a large marketing centre **Pages 51 to 56 (retailing, marketing centre), Pages 51 to 56 (retailing, marketing centre), PLANT PROJECT**

6. List the special requirements and methods used in transporting the named crop
Page 50 (transporting example), PLANT PROJECT

7. Comment on the organisation of a retailing outlet. Pages 51 to 56 (retailing, marketing centre), PLANT PROJECT

Unit 3: Healthy Practices, Pests and Diseases

1. Draw up a list of jobs to be done to keep a commercially grown crop healthy Page 59 (jobs – example), PLANT PROJECT

2. Name one pest that could damage the crop and state a symptom caused by the pest Pages 60 to 64 (pests – examples), PLANT PROJECT

3. Give one traditional and one organic method of controlling the pest Pages 60 to 64 (pests – examples), Pages 66 to 68 (dealing with pests and diseases), PLANT PROJECT

4. Name one disease that could damage the crop and state the symptoms of the disease Page 65 (disease example), PLANT PROJECT

5. Give one chemical and one non-chemical method of treating the disease. Pages 66 to 68 (dealing with pests and diseases), PLANT PROJECT

Unit 4: Flowers / Fruit / Vegetables

FLOWERS

1. Select suitable flowers and foliage for specific uses and effects Pages 72 to 75 (uses of flowers), Page 76 (choosing flowers, foliage), PLANT PROJECT

2. Carry out simple maintenance techniques that prolong the life of cut flowers Page 77 (prolonging life of flowers), PLANT PROJECT

3. List the basic tools and equipment used in floristry Pages 78 to 79 (tools), PLANT PROJECT

4. Discuss the Art of Composition relating to colour, texture, form and scent Pages 80 to 85 (art of composition), PLANT PROJECT

5. Select the flowers and foliage available during the different seasons Page 86 (seasonal flowers), PLANT PROJECT

6. Create a composition based on a chosen theme Page 87 (composition, photographs, video), PLANT PROJECT

7. Cost the composition and compare it with a similar composition from a flower shop. **Page 88 (composition costs), PLANT PROJECT**

FRUIT

1. State the nutritional value of fruit in our diet **Pages 90 to 93 (nutritional value of fruit), PLANT PROJECT**

2. Name two Irish fruits and two exotic fruits and say where each is produced **Pages 94 to 95 (exotic fruit), PLANT PROJECT**

3. Name three ways in which fruit can be used in the daily diet **Pages 96 to 102 (fruit in everyday life, poster), PLANT PROJECT**

4. Make a poster that promotes fruit as a healthy option in our diet **Pages 96 to 102 (fruit in everyday life, poster)**

5. Outline the role of fruit consumption in the prevention of disease. **Pages 90 to 93 (nutritional value of fruit), Pages 96 to 102 (fruit in everyday life, poster), PLANT PROJECT**

VEGETABLES

1. State the nutritional value of vegetables in our diet **Pages 104 to 109 (benefits of eating vegetables), PLANT PROJECT**

2. Name two Irish vegetables and two exotic vegetables and say where each are produced **Pages 110 to 111 (exotic vegetables), PLANT PROJECT**

3. Name three ways in which vegetables can be used in the daily diet **Pages 112 to 113 (plant parts we eat), Pages 114 to 118 (vegetables in everyday life, poster), PLANT PROJECT**

4. Make a poster that promotes vegetables as a healthy option in our diet **Pages 112 to 113 (plant parts we eat), Pages 114 to 118 (vegetables in everyday life, poster), PLANT PROJECT**

5. Outline the role of vegetable consumption in the prevention of disease. **Pages 104 to 109 (benefits of eating vegetables), Pages 112 to 113 (plant parts we eat), Pages 114 to 118 (vegetables in everyday life, poster), PLANT PROJECT**