



ENGLISH HERITAGE  
EDUCATION

KS1-2

KS3

## OUTDOOR EXPLORER KIT

### Osborne

This kit will help teachers plan a visit to Osborne, Queen Victoria's cherished home on the Isle of Wight. It focuses on Osborne's grounds and gardens. Use this kit and the bookable backpack during your visit to help students get the most out of their learning.



GET IN TOUCH WITH OUR EDUCATION  
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Step into England's story

# WELCOME

This Outdoor Explorer Kit for Osborne has been designed for teachers and group leaders to support a free self-led visit to the site. It includes a variety of materials suited to teaching a wide range of subjects and key stages, with practical information, activities to do in the grounds and ideas to support follow-up learning.

All of our activities have clear guidance on the intended use for study so you can adapt them for your desired learning outcomes.

To further aid your planning, we have created Hazard Information, which you can download from the Osborne **Schools page**. Here you can also download information on our expert-led Discovery Visits and an overview of what your class can experience.

We hope you enjoy your visit and find this Outdoor Explorer Kit useful. Please ensure you have booked the backpack that accompanies this kit in advance, via the bookings team. If you have any queries please don't hesitate to get in touch with a member of our team either via [bookeducation@english-heritage.org.uk](mailto:bookeducation@english-heritage.org.uk) or on 0370 333 0606.

English Heritage Learning Team

## ICON KEY

The icons below will help you quickly identify the types of activities and information presented.



LISTEN



WRITE



SCIENCE



CHALLENGE



DID YOU KNOW?



MAP



LOOK



QUOTE



EXAMINE



MATHS



ART



INDIVIDUAL ACTIVITY



GROUP ACTIVITY

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# INTRODUCTION

All the practical things you need to know to plan your visit to explore the grounds and gardens at Osborne.

# OSBORNE

## HOW TO USE THIS KIT

This kit includes a downloadable trail that is supported by a bookable backpack for use in the grounds and gardens at Osborne.

The trail has been designed for students to explore the site's grounds to deepen their understanding of biology, ecology and how humans interact with the natural world. It should take around 120 minutes to complete but please use these resources at your group's pace.

The backpacks need to be booked by contacting the bookings team via [bookeducation@english-heritage.org.uk](mailto:bookeducation@english-heritage.org.uk) or by calling 0370 333 0606. They should be collected from and returned to staff at admissions.

### ADVICE ON PRINTING THE STUDENT TRAIL

Before you visit, print enough copies of the student trail for your class. Please print only what's needed. You may like to consider digital options too.

To print the Student Activity Trail (pages 8–21) in A5, you will need to do the following in your print settings:

1. Select size A4.
2. Select 'Print on both sides of the paper'.
3. Select 'Flip on short edge'.
4. Arrange the printed sheets in page order and fold into a booklet.

Please also make sure that students have a pencil or a pen for completing the trail. Data collected during the visit can be used in the post-visit activities.

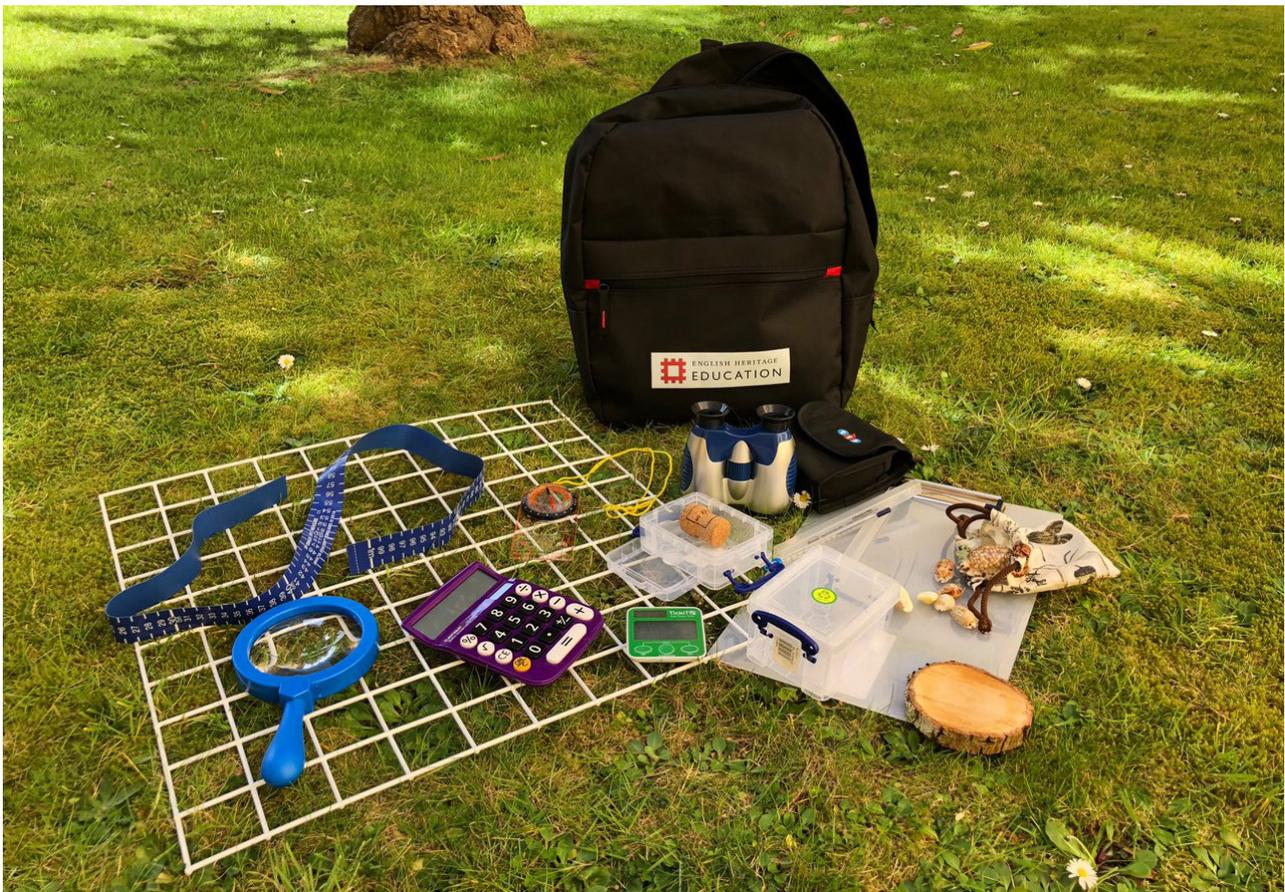
Teachers' Notes (pages 23–27) contain guidance and further information, should your students have additional questions. A glossary of terms can be found on page 28.

Continued...

## WHAT'S INSIDE THE BACKPACKS?

The backpacks have been designed to be used by groups of six students, with a supervising adult, based on a class of 30. The backpacks contain:

- A magnifying glass
- A pair of binoculars
- A timer
- A measuring tape
- A compass
- A thermometer
- A calculator
- A tree slice
- Corks
- A selection of shells
- A quadrant
- Clipboards
- Information cards to accompany the activities



The backpack with equipment, from left to right: quadrant, measuring tape, magnifying glass, calculator, compass, timer, corks, binoculars, thermometer, clipboard, tree slice and shells.

# STUDENT ACTIVITY TRAIL

EXPLORE THE GROUNDS  
AND GARDENS AT OSBORNE



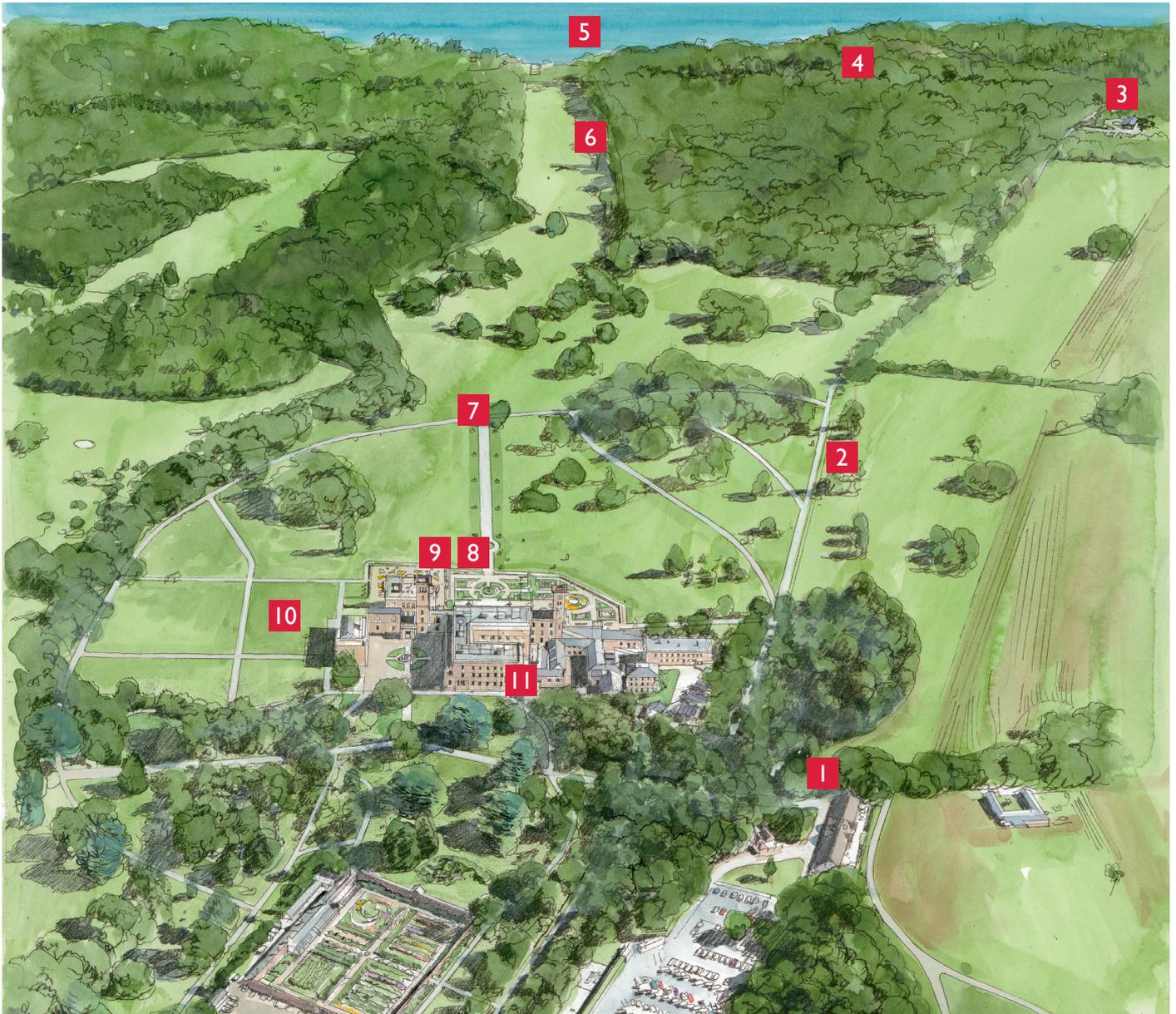
Name:



School:



# 1. MAP OF OSBORNE



- |                            |                             |                          |
|----------------------------|-----------------------------|--------------------------|
| <b>1</b> START             | <b>5</b> BEACH              | <b>9</b> PAVILION GARDEN |
| <b>2</b> CORK OAK TREE     | <b>6</b> VALLEY WALK        | <b>10</b> DURBAR LAWN    |
| <b>3</b> SWISS COTTAGE     | <b>7</b> VALLEY WALK MEADOW | <b>11</b> OSBORNE HOUSE  |
| <b>4</b> RHODODENDRON WALK | <b>8</b> SHELL ALCOVE       |                          |

Use the compass in the backpack and this map to explore Osborne's grounds. Tick off each new place as you find it, using the small square in each page header. To start, stand with your back to the 3D map and then set off!

**Direction:** North-east **Time:** About 5 minutes **Arrive:** The cork oak tree.

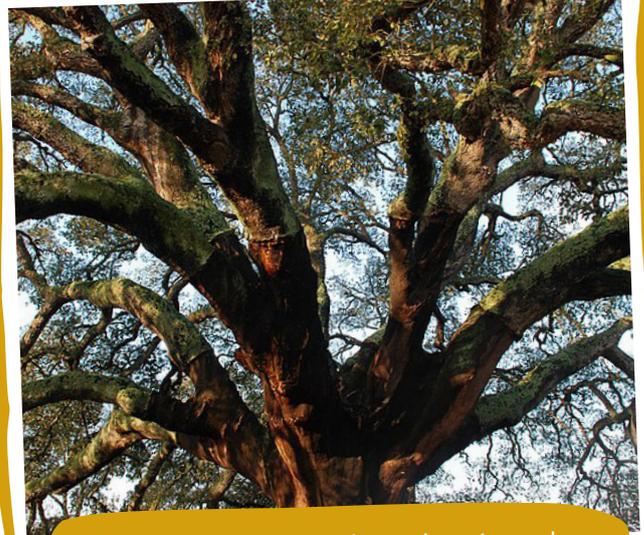


## 2. CORK OAK TREE

Find a cork oak tree (*Quercus suber*) like the one in the picture. Cork oaks have a knobby-looking **bark**.

### YOU WILL NEED:

- A pencil
- Tree slice
- Tape measure
- Calculator



These trees produce cork that makes wine corks, and even the inside of cricket balls! © UNAC

## A EXPLORE THE CORK OAK

Use your senses to explore the tree: **look** closely, **feel** the bark, **smell** the tree, **listen** to the sounds around the tree.

**Write** what you notice in the box below:



## B HOW OLD ARE TREES?

Working out the age of a tree is called **dendrochronology**.

- **Look** at the tree slice. The number of rings show how old it is.
- **Count** the rings.
- The tree **was**  years old.

**Where next?** Swiss Cottage **Direction:** North-east **Time:** About 8 minutes



### 3. SWISS COTTAGE

Around the Swiss Cottage there are nine garden plots: one for each of the royal children, who grew fruits and vegetables.

**Explore** the plots to see what English Heritage's gardeners are growing today.

#### YOU WILL NEED:

- A pencil
- Tape measure
- Your imagination
- Card 1



A photograph of the Swiss Cottage at Osborne. Prince Albert taught his children about nature here.



This plot belonged to Princess Victoria (the Princess Royal).

#### **A** PRINCE ALBERT INSPECTS

**Imagine** you are Prince Albert inspecting his children's plots. Which do you think is best and why? **Write** your thoughts here:

#### **B** HOW TALL ARE TREES?

**Find** the big fir tree.

**Use** card 1 and the tape measure to **work out** how tall the tree is:

The tree is  m and  cm tall.

**Where next?** Rhododendron Walk, then the beach **Direction:** North, then north-west along the path **Time:** About 10 minutes



## 4. ON THE WAY TO THE BEACH: RHODODENDRON WALK □

The trees and shrubbery along the Rhododendron Walk are home to lots of animals. There are wooden statues along the path that show the animals that live here.



Prince Albert lined the Rhododendron Walk with trees that come from all over the world.

- YOU WILL NEED:**
- A pencil
  - Your senses
  - Cards 2-9
  - Binoculars
  - Magnifying glass

### **A** SIGNS OF WILDLIFE

There are signs of wildlife living along the Rhododendron Walk, like nests, noises, and footprints.

**Look and listen:** what examples can you find?

**Write or draw** what you find in the box.



### **B** HOMES AND HABITATS

**Find** the statues dotted along the path that tell us about the animals that live here. Why do you think these animals have made their homes here?

**Write** your thoughts in the box.





## GATHERING DATA

All trees provide shelter for birds and animals to live in, and some, like pines and hazel trees, provide food for animals. There are often bitten hazelnuts, chewed pine cones and nibbled acorns scattered across the grounds at Osborne.



Fill in a block in the table below when you find an example as you walk along the path.

AMOUNT	10					
	9					
	8					
	7					
	6					
	5					
	4					
	3					
	2					
	1					
			Pine cones	Acorns	Hazelnuts	Other

**Where next?** The beach **Direction:** North-east **Time:** About a minute

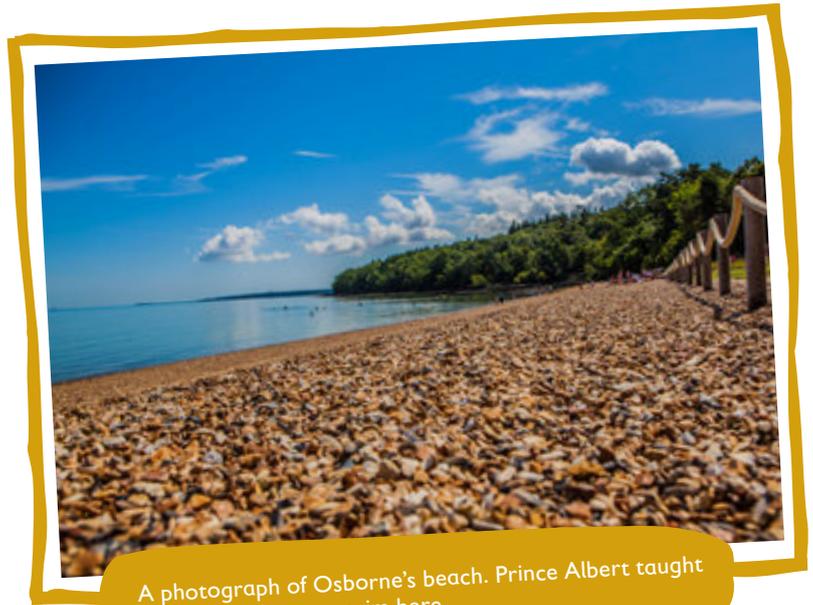


## 5. AT THE BEACH

Queen Victoria and her family enjoyed spending time at the beach. The children would swim and Victoria would sketch the views.

### YOU WILL NEED:

- A pencil
- Thermometer
- Cards 10-12
- Compass



A photograph of Osborne's beach. Prince Albert taught his children how to swim here.

## A SEASIDE PLANTS

Find examples of the plants that grow on the beach, using cards 10, 11 and 12? Today I can find:

Sea kale  Horned poppy  Eelgrass

## B SEASIDE SCIENTISTS

Scientists collect information to help them investigate the **climate** of an area. Using the thermometer in your backpack, **measure**:

Air temperature  C° Sea temperature  C°



Be very careful when measuring the sea temperature; ask the group leader for help if it is needed.

## C WHERE'S THE WIND?

Temperatures are affected by the weather. Scientists look at the wind's direction to forecast the weather.

To do this:

- **Wet** your finger and **hold** it in the air: one side of your finger will get cold. This is the direction of the wind.
- **Use the compass** to see where the wind is coming from.
- The wind is coming from:



A photograph of the clouds over the Solent on a calm, sunny day.

### DID YOU KNOW?



A wind from the north brings cooler weather. A wind from the east brings very cold weather. Winds blowing from the south bring warmer weather and winds from the west bring wetter weather.

## D WHAT'S THE WEATHER?

Using the information on this page, **write** or **draw** your answers in the boxes below.

The weather today is:

I forecast that tomorrow's weather might be:

E

## SEASIDE SKETCHING

Queen Victoria enjoyed sketching the seaside view. Sketch what you see.

Your drawing should include:

- The sea
- The beach
- Clouds
- Wildlife
- Beach plants

**Where next?** The Valley Walk

**Direction:** South-west

**Time:** About 2 minutes



## 6. ON THE WAY TO THE HOUSE: VALLEY WALK

Prince Albert and Queen Victoria enjoyed the walk from the beach to the house at Osborne. They felt it was like being abroad because the Isle of Wight has a **microclimate** which means that it is warmer than mainland England.



The trees along the Valley Walk provide privacy for Osborne and a home for animals, birds and insects.

### YOU WILL NEED:

- Card 15
- Calculator
- Tape measure

### DID YOU KNOW?

On average the UK experiences temperatures of 3.75°C in February and around 15°C in summer. On the Isle of Wight, the temperatures are, on average 5°C in February and 20°C in the summer.



It is possible to count the rings on this tree to see how old it was when it was cut down. Each ring shows one year. © Michael Gabler

### A TREE-VESTIGATOR

Along the Valley Walk, there are several tree slices: **investigate** these slices and **work out** how old they are.

The trees are ..... years old.

### B TREE-RIFIC DIFFERENCES

Use the classification grid on card 15 to **identify** the different types of oak trees along the Valley Walk.

**Where next?** Valley Walk Meadow **Direction:** South-west

**Time:** About 12 minutes from leaving the beach



# 7. ON THE WAY TO THE HOUSE: VALLEY WALK MEADOW □

The meadow is left wilder than other lawns around Osborne. This means that more creatures can live here.

- YOU WILL NEED:**
- The quadrant
  - A pencil
  - Magnifying glass
  - Cards 16-21



## **A** BUG HUNT

Work as a group to **investigate** the different species you can find here:

1. **Find** a space in the meadow.
2. **Place** the quadrant on the ground. This is your area to **investigate**.
3. Use the magnifying glass to **see** some of the smaller creatures.
4. **Record** the creatures in the box below.



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**Where next?** Shell Alcove **Direction:** South-west **Time:** 4 minutes 

## 8. LOWER TERRACE GARDEN: SHELL ALCOVE

The seashells in the alcove possibly came from Osborne's beach. In her diary, Queen Victoria wrote about how her children liked to collect seashells.



- YOU WILL NEED:**
- A pencil
  - Magnifying glass
  - Shells

### **A** SHELL INVESTIGATOR

Look at the shells in the alcove. **Pick** one of the shells from the backpack, **sketch** it and **describe** it. Use the magnifying glass to **notice all the details** in the shell. Do you see any **symmetry**?

.....

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.....

.....

.....

.....



### **B** SEASIDE PATTERNS

Find a space nearby. Work as a group to make a **pattern** with your shells.

**Where next?** The Pavilion Garden **Direction:** South-west **Time:** 1 minute



## 9. UPPER TERRACE GARDEN: PAVILION GARDEN

Victorian gardens had very formal designs. The flowerbeds were designed to be symmetrical. There are paths so the flowers can be admired from different angles.

The gardening team at Osborne work hard to keep the gardens looking their best.

In the spring and summer months, there are lots of colourful flowers blooming; and in the winter, there are still beautiful flowers to enjoy.

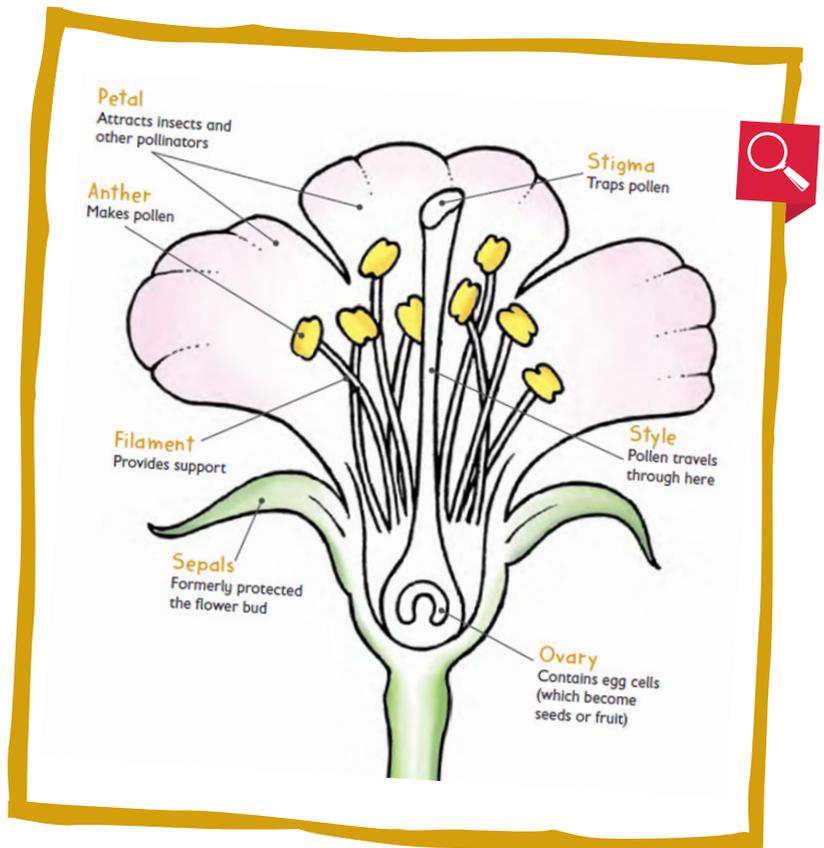


### YOU WILL NEED:

- Magnifying glass
- Your imagination
- A pencil
- Card 22

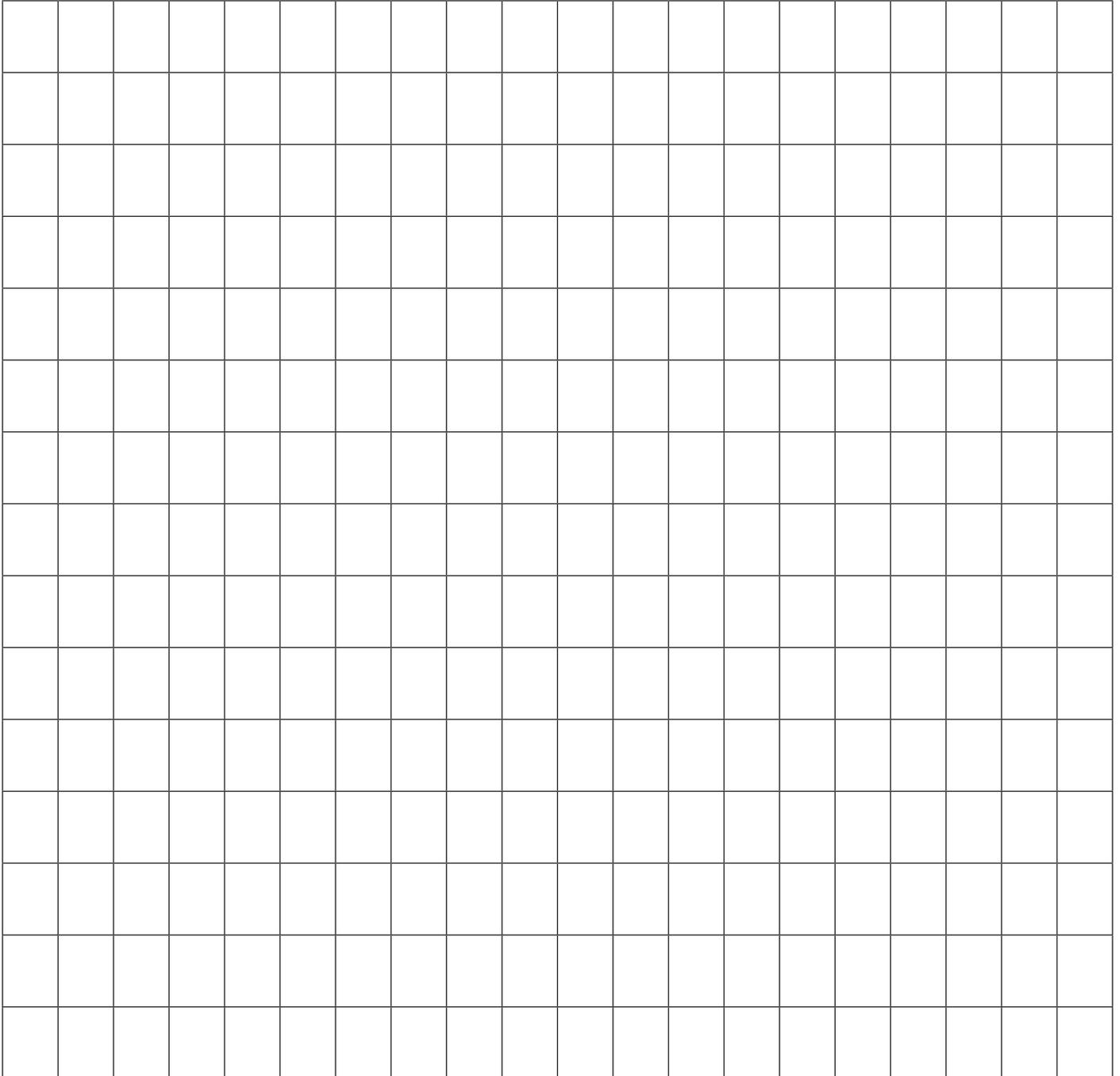
## A PARTS OF A FLOWER

Use the magnifying glass to investigate the small details of the flowers – can you find all of these features?



# B GARDEN GRIDS

Osborne’s gardeners use grids like these to plan their planting for the flowerbeds. **Look** at the patterns in the flowerbeds and **design** a new pattern on the grid. What colours do you want to see?



To reach your final location

**Direction:** North-west **Time:** 1 minute

**Arrive:** Durbar Lawn, where you can rest after all your hard work.





# FOR TEACHERS

Guidance, suggestions and answers for teachers and group leaders to guide student discussion and activities while at Osborne to help them get the most from their learning.

# OSBORNE OUTDOOR EXPLORER KIT: TEACHERS' NOTES

## WELCOME TO OSBORNE:

Suggested time: 5-10 minutes.

Before your group sets off, we suggest visiting the 3D map of the Osborne estate by admissions. This can be used to orientate the group to the different areas of the estate they will be exploring during their visit. Students may also use their maps on page 9 to help them orientate themselves and practise using the compass to work out directions.

Teachers and group leaders can use this stop as a way to introduce the key words, concepts and themes in this pack. Key words that might need explaining are in the Glossary, which can be found on page 28.

Read through this introductory text as a class and ensure that the group understand the context in which the grounds were developed:

“Queen Victoria (r.1837-1901) and Prince Albert bought Osborne in 1845. They built the grand house and designed the grounds to make Osborne an escape from the pressures of court life in London for themselves and their nine children.

Prince Albert was very involved in the designing and planting of Osborne's gardens. It has been said that he directed the gardeners from the top of one of the towers of the house, but, historians are still unsure whether this is true or not. It does suggest that Albert cared a lot about the grounds and gardens at Osborne.

Osborne has examples of the different landscapes that can be seen around the Isle of Wight, including woodland, fields and seaside, which form a delicate **ecosystem**. There is a lot of **biodiversity**, which means that there are many plants, animals and **insects** living there. Some species, like the red squirrel, are very rare in other parts of the UK. The gardening team at Osborne work with other environmental experts to preserve the Isle of Wight's unique ecosystem.”

## CORK OAK TREE:

Suggested time: the walk from admissions to the cork oak is about 5 minutes. The activities will take 5-10 minutes.

**A: Explore the Cork Oak:** Students can touch, smell, look at and listen, to investigate the tree. They may use words like 'bumpy', 'spongy' or 'soft' to describe the tree's bark. They might hear branches and leaves rustle in the wind. They may hear birdsong from birds that are nearby. Students may tap the tree trunk and describe the noise they hear.

**B: How Old are Trees?** Working out how old trees are is called dendrochronology. Counting tree rings is one way to discover a tree's age, but cutting a tree down to see the rings can destroy the tree.

Students could practice using an alternative method to work out the approximate age of any tree. Ask the students to measure around the tree trunk – you may wish to share that the measurement around a circle is called the **circumference**.

Dividing the circumference by 2.5 gives an approximate age for the tree. This is because trees grow by about 2.5cm per year. This does vary from species to species and this can be investigated further back in class.

Students may use the space on their sheets to work out their answers, or use the calculator in the pack.

### SWISS COTTAGE:

Suggested time: 10 minutes for the students to explore the garden plots and complete the activities.

**A: Prince Albert Inspects:** Encourage the students to justify why they think Prince Albert would select their chosen plot as 'best'. Students may want to consider the size, quantity and aesthetic qualities of any produce growing, or reflect on whether what is growing is part of their regular diet and something they enjoy eating. This activity may be reflected upon back in class as part of the Going to Market activity on pages 34–36.

**B: How Tall are Trees?** Please ensure that students can see card I, which demonstrates how this technique works, complete with a diagram.

The shape made is an isosceles right-angled triangle. These triangles have:

- one right angle
- two other equal angles always of 45°
- two equal sides.

The distance from the base of the tree to the person looking back to the top of the tree is equal to the height of the tree. This activity can be used to work out the height of any tree, as long as there is a clear path and a clear line of sight to the top of the tree.

### ON THE WAY TO THE BEACH: RHODODENDRON WALK:

Suggested time: the walk should take about 10-15 minutes, the activities can be done while walking, as the students will notice details as they make their way along the path.

Read through the activities before starting your journey down this path. Several of them require noticing smaller details. These tasks may be divided up among your group if required, but please ensure that the students all share their answers at the end of their journey along the Rhododendron Walk.

**A: Signs of Wildlife:** To help find the signs of wildlife, students may wish to use the binoculars to explore signs in the distance, such as nests in trees. They may also wish to use the magnifying glass to explore smaller signs in more detail.

Signs of wildlife can include:

- Food left by animals – see cards 2, 3 and 4 for examples
- Animal and bird calls – encourage the students to listen for these. There are woodpeckers in this part of the grounds so students may hear them tapping the trees.
- Fur and feathers – these may have been shed or caught on sharper parts of twigs and branches.
- Droppings (note: please only observe evidence of droppings, do not touch them):

- Bird droppings are mostly white and have a runny consistency before drying.
- Mouse droppings are small pellets, about the size of a grain of rice. They are dark in colouring and dry and gritty in texture.
- Squirrel droppings are similar to mouse droppings, but are the size of a kidney bean rather than a grain of rice.

**B: Homes and Habitats:** Students should consider what makes this area a good habitat for animals. They may notice from the wooden statues that a lot of different animals live here. Students may use cards 5, 6, 7, 8 and 9 to discuss the needs of the individual animals. Some starting points for the discussion could be: how the trees provide shelter and food, or that the area can be quiet.

**C: Gathering Data:** Each time one of the items is spotted, the students should fill in one block on the chart. Students may wish to use the 'Other' column to record other signs of wildlife they have noticed along the way. By the time they have reached the end of the Rhododendron Walk, they will have a complete chart showing signs of wildlife living in this part of Osborne.

### AT THE BEACH:

Suggested time; to do all of the activities, it should take about 15 minutes.

**A: Seaside Plants:** Use cards 10, 11 and 12 to familiarise the group with the plants before they go searching for them. Please note that the eelgrass may not be visible as it grows underwater, and visibility varies according to the weather and the sea conditions. On a calm, clear day it should be visible. Groups should not go hunting for eelgrass in the water and should stay safe and on land.

**B: Seaside Scientists:** Temperatures will vary according to the season and will fluctuate according to the time of day and the current weather. For more accurate readings, measure the air temperature first. Please be mindful when recording the water temperature; it may be that the supervising adult is the one who places the thermometer in the water for the students to read.

These temperature recordings may be used back in the classroom as part of the Climate Data activity (pages 30-31).

**C: Where's the Wind?** The wind direction is named after where the wind is travelling from; for example, a northerly wind travels from north to south. If the group would like to go deeper on this subject, use cards 13 (the Beaufort Scale) and card 14 (the cloud chart) to explore the effect of the wind on weather in more detail.

**D: What's the Weather?** Use weather words to describe the current weather and upcoming forecasts. The forecast can be general – for example, “Based on the wind direction, I think the weather over the next few days will be wetter than today because the wind is coming from the west.” Students may wish to draw their answers.

After their visit, when the students are back in the classroom, they can reflect on their predictions and see who was most accurate. Organisations like the Met Office have powerful observational tools and expert meteorologists to forecast the weather, and even then they are not always 100% accurate.

**E: Seaside Sketching:** A successful sketch should include:

- The sea
- The beach
- Clouds (if any are in the sky) students can refer to the cloud chart for help

- Wildlife, such as gulls, if they are visible
- Beach plants such as the ones described on and cards on pages 10, 11 and 12.

More detailed images may include:

- Indication of the cities that are visible
- Any boats or shipping traffic
- All of the above presented in a way that reflects the weather of the day, such as choppy waters on a windy day.

### ON THE WAY TO THE HOUSE: VALLEY WALK:

Suggested time: it should take about 15-20 minutes to reach the lower terrace garden from here, with brief stops for the activities.

**A: Tree-vestigator:** Along the Valley Walk, there are several cut sections of trees that the students can use to practise their dendrochronology skills, through either counting the tree rings or using the measuring tape technique. The students may want to compare the answers they get using the different techniques. Please bear in mind that the growth rate of 2.5cm per year is an average and there is variation between different species of tree. Some rings may appear to be thicker than others; this is due to a greater amount of moisture being absorbed in those years.

**B: Tree-rific Trees:** Students can use card 15 to explore and identify the different trees. They should be familiar with the cork oak from the activities on page 10.

### ON THE WAY TO THE HOUSE: VALLEY WALK MEADOW:

**A: Bug Hunt:** The meadow is separated from the Valley Walk by a fence. Pass through the fence. Students may spread out across the meadow in groups with their adults. Teachers may set a time limit on this activity depending on the needs of the group, we recommend about 5 minutes, but please set your time according to your group's needs and interests.

Students can use the timer in the backpacks to keep to time. Students may find a variety of minibeast through their investigation; examples of what they might find are on cards 16-21, but they may find other creatures. Please remind students to be careful and respectful of the creatures they are investigating.

Remind students not to touch the insects.

### LOWER TERRACE GARDENS: SHELL ALCOVE:

Suggested time: approximately 10 minutes.

Please ensure that students stay behind the red rope during these activities.

**A: Shell Investigator:** Ensure that students accurately reflect the shape of the shell, any visible patterns and any forms of symmetry present on the shell. Ensure that students label their shells with measurements and descriptive words. This will enable them to research what type of shell they picked when they get back to the classroom. Students may make use of several free online shell identifiers to work out which shells were used in making the mural.

**B: Seaside Patterns:** Encourage students to work together to make a pattern. They may want to recreate the shapes and patterns they can see in the mural in the alcove, or from elsewhere in the grounds. A successful pattern will make use of repetition and symmetry.

Once the students have finished making their pattern, ask them to gather up the shells and place them back in the backpack.

Please ask students to be mindful of other visitors who may want to see the shell alcove.

### UPPER TERRACE GARDEN: PAVILION GARDEN:

Suggested time: 10 minutes.

**A: Parts of a Flower:** Please note that not all parts of the plant may be visible. Encourage students to use the magnifying glass or examine another type of flower; the one in the diagram is an example. If no flowers are in bloom, this activity may be done with flowers in the classroom.

**B: Garden Grids:** Encourage students to look at the patterns they see in the flowerbeds; and to think of colours and plant species they may know. This is a tool the gardeners at Osborne use to plan out their planting; students may benefit from looking at card 22, which shows an example of their planning. Students can expand on their designs back in class, adding colours and suggestions of plants and flowers to include.

Once students reach the Durbar Lawn, they may rest after their hard work.

**Once all the activities have been completed, please place all the equipment in the backpacks and return the backpacks to admissions.**

# GLOSSARY

Below is a list of words you might come across while exploring Osborne's grounds and gardens.

**bark** – the protective outer covering of trees and other woody plants, covering the trunk and branches

**bathing machine** – a special device constructed for Queen Victoria to enable her to change into her bathing costume and enter the sea in total privacy



This is a modern photograph showing Queen Victoria's bathing machine, which was designed to give her more privacy. The bathing machine can be seen at the beach at Osborne.

**biodiversity** – the variety of plant and animal life in a particular area

**circumference** – the distance around a circle

**climate** – the weather conditions in an area over a long period of time

**coniferous** – trees that produce cones and have needle-like leaves

**coppiced woodland** – a traditional method of looking after trees, it involves cutting back trees to their stumps to promote new growth. This only works on some species of plants like hazel.

**cultivar** – a variety of plant that has been produced through selective breeding

**deciduous** – a tree that sheds its leaves annually

**dendrochronology** – the method of measuring how old a tree is

**diameter** – a straight line that passes from one side of a circle to the other, going through the centre of the circle

**ecosystem** – a complex network of organisms

**habitat** – where a plant or animal lives

**introduced** – when a plant or animal is brought to a new place from somewhere else

**insect** – a small creature with six or more legs; some of them have wings

**invertebrate** – an animal with no backbone

**irrigation** – the supply of water to plants to help them grow

**microclimate** – a climate in a small area that is different from the climate in the surrounding area

**native** – something that occurs, grows or is found naturally in an environment

**organism** – an individual plant, animal or other life form

**symmetry** – when something looks the same on one side as the other

**turning ring** – a round path that enables horses and vehicles to turn around



# POST-VISIT

Activities and information to help you extend your students' learning back in the classroom.

# IN THE CLASSROOM

## CLIMATE DATA



**KS1-2**

**KS3**

### Recommended for

KS2–KS3 (History, Science, IT)

### Learning objectives

- Reflect on data gathered at Osborne as part of your visit.
- Contextualise students' recordings through investigating historical climate data.
- Analyse data to investigate patterns and trends to draw conclusions about changes over time.

### Time to complete

Approx. 60 minutes



A photograph showing the weather from Osborne's beach.

### SUMMARY

While at Osborne, students recorded temperatures (on page 14) and noted aspects of the weather (on page 15). The Isle of Wight is a microclimate in the UK, and supports a delicate ecosystem. This computer-based activity will enable students to put their recordings of weather data into context using information collected by the Met Office. This will enable them to investigate how temperature and climate are changing over time.

Students can use this data to analyse their findings and draw conclusions from the information presented to them.

### USING DATA

To find the historical data:

Go to the Met Office website and search for 'historic station data'. Select the weather station Hurn, the closest weather station to the Isle of Wight.

Click on 'view Hurn data'. Download and edit the data, following the instructions on page 31.

Some questions you might wish to include are:

- Which are the warmest and coldest temperatures recorded? When were they recorded? Why could that be?
- Are there any patterns in the graph, such as when it gets warmer or cooler regularly?
- Is there a pattern in the temperatures getting warmer since this information was first recorded? What might be causing this?
- If the group have lots of different temperatures recorded from their visit, discuss what may have caused these variations; for example, wind chill, whether the sun was shining or hidden behind clouds.

### MORE LEARNING IDEAS

Once students have collected and analysed the data, they could write a report to reflect their findings and predict what may happen in the future based on the evidence.

# CLIMATE DATA

## TEACHERS' NOTES

In order to make this data useable in class, copy and paste the data into an Excel spreadsheet making sure that each data point goes into a different cell, then:

- Delete the columns for: af days, rain and sun hours.
- Enter the year your group visited in the YYYY column.
- Enter the month your group visited in the MM column (1 would mean January, 12 would mean December).
- In the column labelled tmaxDegC, enter the warmest air temperatures recorded.
- In the column labelled tminDegC, enter the lowest air temperatures recorded.
- Use the insert > line chart tool to create a graph showing the different temperatures as they were recorded.

The information from the Met Office only goes back to 1957, so it doesn't provide a complete picture. Explore the question 'Where might we find older examples of weather data?'

Answers may include: Weather data may be found in diaries and letters that were kept by farmers or gardeners. In Osborne's case, Queen Victoria kept diaries and she often wrote about the weather; she regularly used 'fine morning' to describe the weather at Osborne. Photographs and paintings may also provide information about historical weather data, however, these may not be too helpful due to the artistic licence the creator may have used when making their work.

# IN THE CLASSROOM

## CRAZY CATEGORIES



**KSI-2**

**KS3**

### Recommended for

KS2–KS3 (Science)

### Learning objectives

- Reflect on the biodiversity observed at Osborne.
- Consider the reasons why the biodiversity at Osborne has developed in this way.
- Explore and reflect on your local biodiversity.

### Time to complete

Approx. 60 minutes



A photograph showing a red squirrel, a species of animal found on the Isle of Wight, but is rare in other parts of the UK.

### SUMMARY

One way scientists make sense of the natural world is to categorise animals, insects and plants in order to see similarities and differences. Ask students, as a class, to discuss the biodiversity they witnessed at Osborne. Students should list all of the animals that they saw, or witnessed evidence of, referring back to their booklets from their visit. Then, in groups of four to six, they can work scientifically to consider the differences and similarities between the creatures they observed at Osborne. They should categorise these creatures in as many different ways as they can and feed back to the class what they have noticed.

### CREATING CATEGORIES

Some categories to focus on might be:

- Type of creature: such as mammal, bird or insect.
- Does it have fur, feathers or scales?
- Location creature was spotted in.
- Colour of creature.
- Number of legs.

Encourage the groups to use their imagination to think of other ways to group together the creatures and discuss how these groupings may help us to understand them better.

Ask the students to make a list of each category and which creatures fit into it.

After they have done this, invite the students to share their categories and which animals they have selected. As a class, discuss and describe any unusual categories the groups may have created. Students may have categories that overlap, or notice that some creatures fit into multiple categories. Ask your students to use this information to create a Venn diagram to reflect this.

### MORE LEARNING IDEAS

Students can use what they have noticed and recorded in the activity to create a classification grid investigating the different animals that live at Osborne.

# CRAZY CATEGORIES

## TEACHERS' NOTES

The class should work collectively to list all of the animals, birds and insects they observed at Osborne, referring to pages 12, 13 and 18 to refresh their memories if needed. As a class, they may find it helpful to define terms such as 'common', 'uncommon' and 'rare'. They might discuss if the creatures they saw could be described as common, uncommon or rare based on how many students noticed each one. As a class, discuss these findings, and make the point that a class is a small sample size, which may affect their findings. To get more accurate information, they would need a larger sample size.

Divide the class into smaller groups. Ask them to organise the creatures into different categories.

Some categories to focus on might be:

- Type of creature: such as mammal, bird or insect. Those wanting an extra challenge could break these down further, by investigating the different species they noticed.
- Does it have fur, feathers or scales? Please note: some insects may look like they have hair or fur, but this is different to hair and fur found on mammals.
- Location creature was spotted in: as a way to investigate shared habitats.
- Colour of creature: as a way to investigate ways creatures have adapted to their surroundings – did they have natural camouflage to avoid predators? Please note: there can be differences in colourisation between male and female creatures; male birds, for example, have much brighter plumage than females.
- Number of legs: this can be used to start several discussions. Can squirrels, for example, be described as having two legs or four? What do we understand insects to be? Insects have six legs; arachnids have eight legs; centipedes and millipedes are arthropods, which means they have many legs with joints. Insects and arachnids can also be described as arthropods.

# IN THE CLASSROOM

## GOING TO MARKET



KS1-2

### Recommended for

KS2 (History, Maths)

### Learning objectives

- Consider the types of produce grown and eaten in the Victorian period.
- Understand Victorian currency.

### Time to complete

Approx. 60 minutes



This photograph shows Osborne's Swiss Cottage, where the royal children would grow fruits and vegetables.

### SUMMARY

Prince Albert used the garden plots at Osborne's Swiss Cottage to teach his children about growing plants. He would pay them market value for the crops they grew.

This activity encourages students to examine the garden plots that were cared for by the royal children at Osborne, and investigate how much the children would have earned for growing their own fruit and vegetables using the worksheet on page 35.

To work out how much the produce would cost Prince Albert in today's money, we recommend using the National Archive's online currency converter.

### MAIN ACTIVITY

The class can use the booklets that they completed at Osborne and revisit the section on the Swiss Cottage. They should read the information on page 11 and discuss the themes of food production on that page.

The worksheet on page 35 contains examples of the produce the royal children grew, and how much this produce cost in the Victorian era. Students can complete the worksheet, and the answers can be found on the Teachers' Notes on page 36.

### MORE LEARNING IDEAS

Students may wish to see how much this produce would cost today; this can be explored by examining the costs of the produce at the local supermarket.

# GOING TO MARKET

Using the information at the bottom of the page, **work out** who would have earned the most money from their harvest.

	<p>3lbs of gooseberries</p> <p>1lb of radishes</p> <p>2lbs of beetroot</p>		<p>2lbs of peas</p> <p>1lb of radishes</p> <p>2lbs of artichokes</p>		<p>3lbs of potatoes</p> <p>4lbs of peas</p> <p>1lb of gooseberries</p>
	<p>1lb of gooseberries</p> <p>1lb of peas</p> <p>2lbs of radishes</p>		<p>3lbs of beetroot</p> <p>2lbs of gooseberries</p> <p>1lb of peas</p>		<p>2lbs of potatoes</p> <p>1lb of artichokes</p> <p>1lb of peas</p>
	<p>2lbs of potatoes</p> <p>2lbs of peas</p> <p>2lbs of radishes</p>		<p>1lb of artichokes</p> <p>2lbs of gooseberries</p> <p>2lbs of peas</p>		<p>2lbs of radishes</p> <p>1lb of gooseberries</p> <p>2lbs of beetroot</p>

## How much were fruits and vegetables?

A book called *Mrs Beeton's Guide to Household Management* was published in 1861. It tells us about Victorian recipes and how much these meals would cost and the prices Albert would have paid the children for their produce.

'lb' is a unit of measuring weight, it is short for pound. 1lb. is about 450 grams.

- Gooseberries are 8 farthings per lb.
- Peas are 3 farthings per lb.
- Potatoes are 3 farthings per lb.
- Artichokes are 8 farthings per lb.
- Radishes are 8 farthings per lb.
- Beetroot is 3 farthings per lb.

## DID YOU KNOW?

Victorian money was made up of farthings (f), pence (d), shillings (s) and pounds (£).

4 farthings = 1d

12d = 1 shilling

# TEACHERS' NOTES

These are the sums that students should be doing to work out who had the most profitable harvest.

**Victoria**

3lbs of gooseberries ( $3 \times 8f = 24f$ )  
1lb of radishes ( $1 \times 8f = 8f$ )  
2lbs of beetroot ( $2 \times 3f = 6f$ )  
 $24 + 8 + 6 = 38f$  or  $9\frac{1}{2}d$

**Albert**

2lbs of peas ( $2 \times 3f = 6f$ )  
1lb of radishes ( $1 \times 8f = 8f$ )  
2lbs of artichokes ( $2 \times 8f = 16f$ )  
 $6 + 8 + 8 = 30f$  or  $7\frac{1}{2}d$

**Alice**

3lbs of potatoes ( $3 \times 3f = 9f$ )  
4lbs of peas ( $4 \times 3f = 12f$ )  
1lb of gooseberries ( $1 \times 8f = 8f$ )  
 $9 + 12 + 8 = 29f$

**Alfred**

1lb of gooseberries ( $1 \times 8f = 8f$ )  
1lb of peas ( $1 \times 3f = 3f$ )  
2lbs of radishes ( $2 \times 8f = 16f$ )  
 $8 + 3 + 16 = 27f$

**Helena**

3lbs of beetroot ( $3 \times 3f = 9f$ )  
2lbs of gooseberries ( $2 \times 8f = 16f$ )  
1lb of peas ( $1 \times 3f = 3f$ )  
 $9 + 16 + 3 = 28f$  or  $7d$

**Louise**

2lbs of potatoes ( $2 \times 3f = 6f$ )  
1lb of artichokes ( $1 \times 8f = 8f$ )  
1lb of peas ( $1 \times 3f = 3f$ )  
 $6 + 8 + 3 = 17f$

**Arthur**

2lbs of potatoes ( $2 \times 3f = 6f$ )  
2lbs of peas ( $2 \times 3f = 6f$ )  
2lbs of radishes ( $2 \times 8f = 16f$ )  
 $6 + 6 + 16 = 28f$  or  $7d$

**Leopold**

1lb of artichokes ( $1 \times 8f = 8f$ )  
2lbs of gooseberries ( $2 \times 8f = 16f$ )  
2lbs of peas ( $2 \times 3f = 6f$ )  
 $8 + 16 + 6 = 30f$  or  $7\frac{1}{2}d$

**Beatrice**

2lbs of radishes ( $2 \times 8f = 16f$ )  
1lb of gooseberries ( $1 \times 8f = 8f$ )  
2lbs of beetroot ( $2 \times 3f = 6f$ )  
 $16 + 8 + 6 = 30f$  or  $7\frac{1}{2}d$

Victoria had the most profitable harvest.