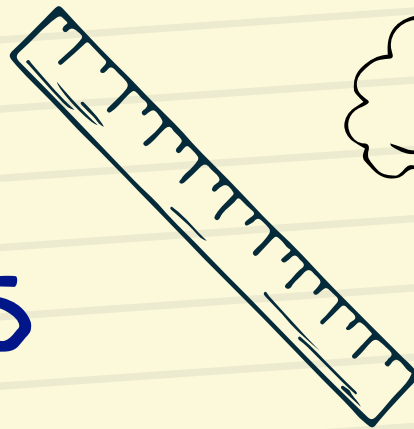


Extreme measures



Visit the parks to learn about the **range of trees** that make up our local landscapes, using **surveying and measuring techniques** to aid tree identification.

Suitable for KS2,
adaptable for KS1

Curriculum areas



Geography
Surveying



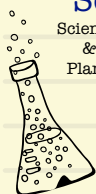
Mathematics
Numeracy
Measurements
Tabulation
Averages



English
Evaluation
discussions



Art & Design
Observational
drawing



Science
Scientific methods
& processes,
Plant knowledge



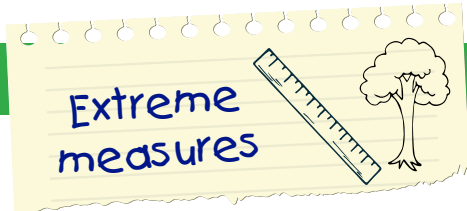
Design & Technology
Exploring
Google technology



History
Continuity and
change



Physical Education
Outdoor
exercise



Before your visit:

- Introduce the idea of visiting Kearsney Abbey to explore a landscape laid out at the start of the 19th Century in the style of Capability Brown (see **My ideal garden: Capability Brown resource sheet 1**).
- Use school computers to find the park locations on Google Maps, with the following address: Kearsney Abbey and Russell Gardens, Alkham Road, Temple Ewell, CT16 3DZ.
- Take in an aerial view of the parks using the Google Satellite Image to zoom in. Choose a route through the park and describe to a friend what you imagine you would see today while walking it.
- Set the level of zoom to capture the parkland area around the old billiards room and playground, bounded by Alkham Road, Lower Road and the lake. Print this out at A3 to use as a Landscape tree survey map for the coming visit.
- Make an initial 'tree count' survey for this area of the park.
- With much of the landscape being constructed around 1820, what units of measuring would designers and construction teams have been using at this time?
- How many imperial measures can the class name, and what are their relationships to each other? Research this on the Internet if necessary, finding their metric equivalents.

Where to go:

- Collect the **PUPILS' GREY** and **TEACHER'S BLACK RESOURCE RUCKSACKS**. Use the old billiards room as 'Base Camp' for the activities, exploring the gardens around the play area, bounded by Alkham Road, Lower Road, and the lake.

During the visit:

- Working in groups, survey a range of different tree species found in the park within the parameters set by the Landscape tree survey map.
- 
- WARNING: YEW TREES ARE POISONOUS**
- Use 'pupil dimensions' as units of measure, based on closed hand widths, pupil heights, foot lengths and long walking paces. Use these to gain approximate dimensions of the trees, using the following techniques:
 - o **Tree canopy span** – use long equal paces to walk in a straight line from one edge of the tree canopy to the other, passing closely to the trunk.
 - o **Tree height** – working in pairs, one person stands by the chosen tree, while the other stands well back to observe how many pupils it would take to stack up on each other to reach the height of the tree.

TIP – While standing back use a thumb and finger measure with arm held out straight to act as a scale to count the stacking.

- o **Trunk girth or circumference** – count how many closed hand widths it takes to go full circle around a given tree (approx. 1.5m from the base).
- o **Trunk diameter** – stand reasonably close to the trunk and measure the diameter in straight steps.
- Log each tree surveyed on the Landscape tree survey map with a number, tabulating the dimension results on worksheets.
- Use the **Tree identification resource sheets 1 and 2** to identify the trees chosen in the survey.
- Each pupil chooses one tree to make a series of close observational drawings – recording the overall tree shape, any leaves, flowers, fruits or nuts, and bark texture – culminating in an artist's annotated study sheet for the tree. Support the drawn work with photos.
- Bearing in mind that the park was designed around 1820, which trees look as if they date from the park's inception? What would the landscape have looked like when the park was new?

After the visit:

- **Measure** each pupil's height, closed hand span, and long pace in metric dimensions. Use these as **factors** to translate the tree measurements from human dimensions to metric data.
- Take the class's metric information for the range of trees surveyed, and place the trees in order sequences based on smallest to greatest values.
- Work out the **range, mean, median and mode**, for each data sequence.

Resources during visit:

- Use on-site **PUPILS' GREY RESOURCE RUCKSACKS** for clipboards and waterproof mats in case of rain and **Tree Identification resource sheet 1 and 2**.
- You will also need the **TEACHER'S BLACK RESOURCE RUCKSACK** for the same items, plus 'Collins Complete Guide to British Wildlife', and **Tree identification resource sheet**.
- **School to supply:** drawing and writing materials (pens/pencils and paper).
A3 printouts of the Landscape tree survey map sourced from the Google satellite image taken at school.
A4 printouts of the **Tree identification resource sheets 1 and 2**.



Curriculum links:

Geography:

- Develop contextual knowledge of the location of globally significant places – both terrestrial and marine – including their defining physical and human characteristics and how these provide a geographical context for understanding the actions of processes.

- Understand the processes that give rise to key physical and human geographical features of the world, how these are interdependent and how they bring about spatial variation and change over time.
- Collect, analyse and communicate with a range of data gathered through experiences of fieldwork that deepen their understanding of geographical processes.
- Interpret a range of sources of geographical information, including maps, diagrams, globes, aerial photos and Geographical Information Systems (GIS).
- Communicate geographical information in a variety of ways, including through maps, numerical and quantitative skills and writing at length.

Mathematics:

- Become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.

- **Reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- Can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

English:

- Use discussion in order to learn; they should be able to elaborate and explain clearly their understanding and ideas.
- Comprehension (both listening and reading).
 - Articulate and justify answers, arguments and opinions.

- Consider and evaluate different viewpoints, attending to and building on contributions of others.

Art & Design:

- Produce creative work, exploring their ideas and recording their experiences.
- Become proficient in drawing, painting, sculpture and other art, craft and design techniques.
- Know about great artists, craft makers and designers, and understand historical and cultural development of their art forms.

Science:

- Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.
- Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.
- Are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

Design & Technology:

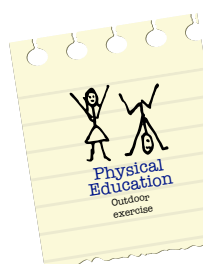
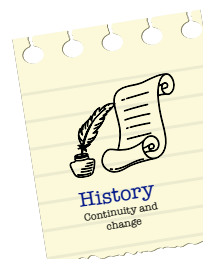
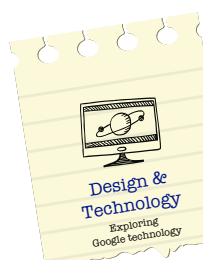
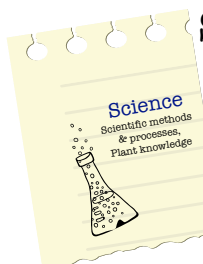
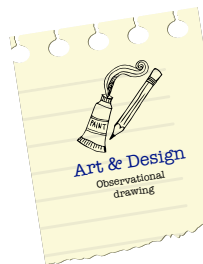
- Develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world.

History:

- Understand historical concepts such as continuity and change, cause and consequence, similarity, difference and significance, and use them to make connections, draw contrasts, analyse trends, frame historically valid questions and create their own structured accounts, including written narratives and analyses.

Physical Education:

- Are physically active for sustained periods of time.
- Lead healthy, active lives.



Resource Sheet - Kearsney Parks Sketch Map

