



Education Pack



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Welcome

We welcome you to Pembroke Castle.

This education pack is designed to support a self-led visit to Pembroke Castle, to enrich learning beyond the classroom and help you make the best use of the learning opportunities available here.

We hope you find the information useful and enjoy a memorable visit with us.

Our mission

"Pembroke Castle's aims are to conserve and protect this magnificent ancient monument for present and future generations and to inform and enthuse our visitors in respect of the Castle's history in a safe and accessible way."



Our learning offer

To ignite interests, stimulate passions and increase confidence we offer:

- Open access to a labyrinth of passageways, spiral stairways, towers, turrets, wall-walks, battlements, tunnels, open spaces and views.
- The opportunity to discover a barbican, gatehouse, keep, dungeon, cave, chapel, hall and much more.
- Exhibition rooms with tableaux's, models of Pembroke Castle through time and reconstructions of banquets and battles.
- A Great Map of Wales to explore Wales and its history in a unique way.
- Colourful castle staff members from centuries ago who reveal more about their daily life at earlsandstaff.com
- Audio and video encounters with five of the Earls who held Pembroke Castle.
- A guided tour to bring the history of the castle to life.
- Welsh language guided tours, interpretation, audio and resources.
- Optional brass rubbing activities at the Brass Rubbings Centre to create a unique memento to take home.
- On and off-site activity suggestions with links to the curriculum, to enrich and extend your learning experiences.
- An Information Pack crammed with useful facts, resources and images.

How to use this pack

This education pack has been designed to complement a visit to Pembroke Castle and aims to inspire confidence and creativity when undertaking self-led exploration. The pack contains a variety of activity suggestions and learning opportunities to undertake before, during and after a visit.

The activities are centred around the 'Six Areas of Learning and Experience' (AoLE) in the new curriculum for Wales:

- Expressive arts
- Health and well-being
- Humanities
- Languages, literacy and communication
- Mathematics and numeracy
- Science and technology

The activities can be used across the key stages and support a fully immersive study or provide ideas for you to 'pick and choose' from for a fun day out - the choice is yours!

The activities make specific links to the current National Curriculum for Wales and a cross-curricular map to highlight those connections is included. Reference to the new Areas of Learning and Experience is also made in anticipation of a resource update in the future.

We hope that with the support of this pack you approach a visit to Pembroke Castle with confidence and enjoy a rewarding experience with us.



Information Pack

A detailed Information Pack about the castle can be downloaded separately from our website, **pembrokecastle.co.uk**.

The Information Pack contains a range of useful material about the castle for use with your pupils. It includes: a brief history, timeline, a glossary, stories, a tour of the castle with useful prompts, a map, information about defensive features and much more.

We encourage you to make use of it, as pupils will benefit from having some background knowledge about the castle before they visit. The material contained within it is designed to be easy to disseminate and adapt to meet the needs of the group you are working with and your topics. A guidebook is also available to purchase from the gift shop.

Our commitment to the Welsh language

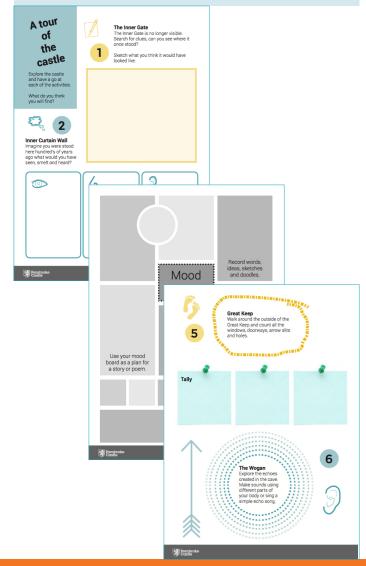
We have Welsh language guides, interpretation and audio. The Education Pack and Information Pack are also available in Welsh, to ensure that those who speak Welsh can follow all aspects of the curriculum through its' medium, and in different contexts.

Worksheets

We have a selection of optional worksheets available to download separately. They are designed to be as flexible as possible and add to your pupils' learning experience.

They include the following:

- writing frames
- biography frame
- moodboard
- · sheild template
- arch window template
- scavenger hunt



Planning your visit

Booking

Please book a visit by contacting Jenny directly on **01646 681510** and select option 5 'group bookings'.

Or you can email her at info@pembrokecastle.co.uk.

We are happy to discuss your requirements and any additional needs, and look forward to welcoming you and your pupils.

Health and safety

We want your visit with us to be comfortable and safe, and our site is regularly risk assessed to ensure this. We provide you with a risk assessment upon booking, and you can also download a copy directly from our website.

Teachers and group leaders are responsible for carrying out their own risk assessment prior to the visit in accordance with individual schools educational visits policy, and health and safety obligations. We are happy to support you with this.

During your visit look out for signs with a young William Marshal guiding a rather clumsy knight around the castle. Use the signage of William to safely navigate any hazards as you explore the castle.





Accessibility

We hope that all visitors to the castle have a worthwhile experience, but appreciate that the very nature of the castle grounds means that some parts are inaccessible to some of our visitors, particularly wheelchair and pushchair users. There is uneven ground, steep steps, narrow passageways, low lighting and drops in places, all of which may cause some difficulties.

Please don't hesitate to contact us for any help and guidance on your accessibility needs, or any other aspect of your visit.



Organising your day

No two visits to Pembroke Castle are the same and will depend upon your group and the activities you have chosen to do.

The following timetable illustrates how you may like to organise your day with us.

- 10.00am Arrival, welcome, safety briefing and introduction to Pembroke Castle.
- 10.15am Session 1 Explore the Great Map of Wales
- 10.30am Session 2 Guided Tour and Brass Rubbing Centre
- 11.30pm Session 3 Explore the Castle
- 12.00pm Lunch.
- 12.30pm Session 4 Guided Tour and Brass Rubbing Centre
- 13.30pm Session 5 Explore the Castle
- 14.15pm Depart.

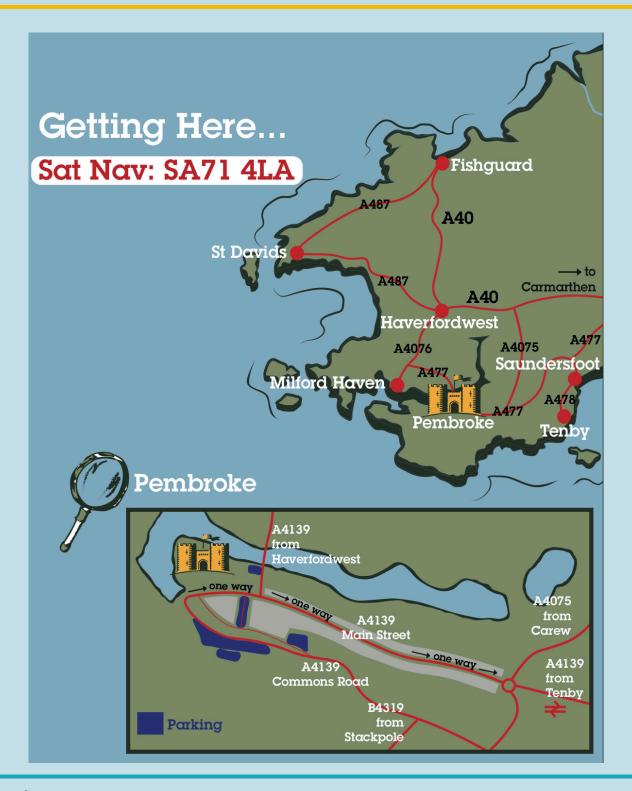
If you are visiting with a group larger than 25 we recommend that you split them into two smaller groups for the Guided Tour and Brass Rubbing Centre sessions. The groups can then swap their activities.

We also recommend that if you organise your class into smaller groups before you arrive, this will make best use of the time and space available. Your chosen activities as you explore the castle can then be undertaken on rotation.





How to find us



Contact

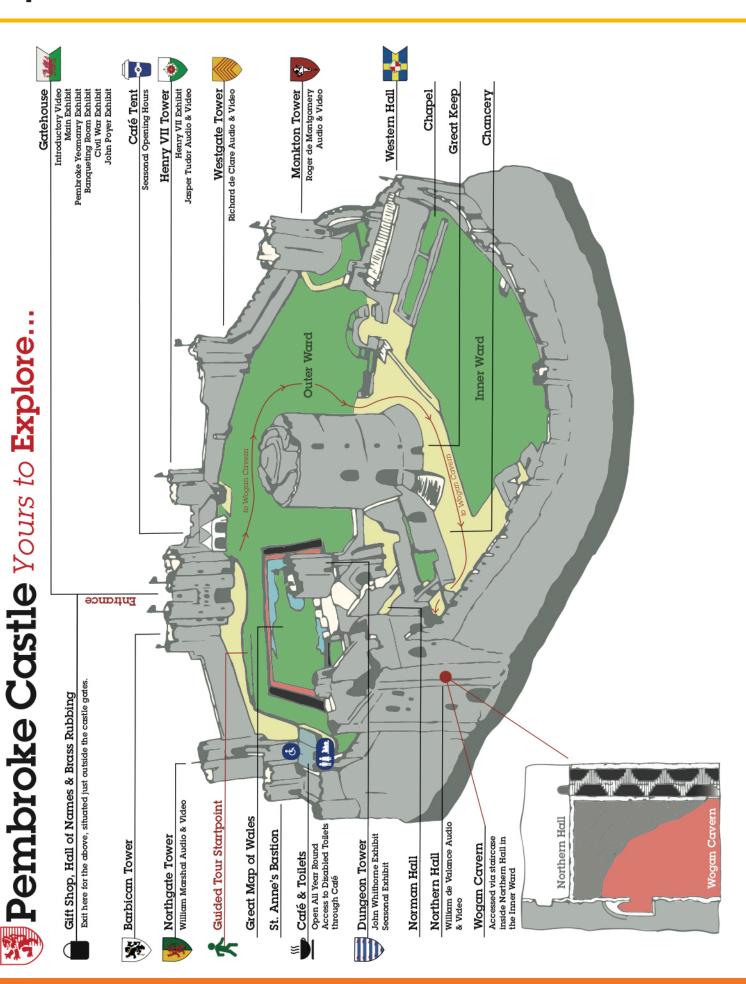
Jenny Shaw

Pembroke Castle Pembroke Pembrokeshire SA71 4LA Tel: 01646 681510

E-mail: info@pembrokecastle.co.uk



Map of the castle





Practical information

Opening hours

We are open to education groups throughout holiday and term time. For opening times and special events please check our website, **pembroke-castle.co.uk**

Admission and prices

We offer a special rate for UK school groups booked in advance.*

Primary School £2.00 per child

Secondary School £2.00 per child

Children under 3yrs FREE

Supervisory Staff FREE

Guided Tour (max. 25 per tour) £25.00

Brass Rubbing (max. 30 per session)

£1.50 per child

*Unfortunately, we do not offer special rates for home educators.

On arrival

If you are arriving by coach your driver can make a brief stop directly outside for a safe drop off. There is also public parking close by and a bus stop directly outside the entrance.

Once on site, groups are asked to line up outside the ticket office / gift shop whilst the leader registers the group. A member of our staff will then welcome you all onto the grounds.

Storage

To ensure your visit is as comfortable as possible we can store your bags and coats and have a designated area for this.

Lunch facilities

Please feel free to use the picnic benches dotted around the site for your packed lunch and you are welcome to picnic anywhere within the grounds. We don't have an indoor space for lunch, however in inclement weather we can suggest a number of sheltered places to eat in comfort.

Toilets

Toilets are accessed via the cafe in St Anne's Bastion. Disabled toilets and baby changing facilities are at ground level with no steps. Please supervise toilet visits at all times.

Gift shop

The gift shop stocks a variety of reasonably priced souvenirs should you wish to use it, for example pencils and erasers cost 50p. It can be found inside the ticket office. If a visit to the shop is not for you we can provide a gift bag for each pupil containing Pembroke Castle souvenirs for an additional cost of £3 per pupil.

Feedback

We always strive to provide a high quality service as well as a memorable and enjoyable day. We welcome your feedback, and would love to hear from you about your day with us.



Pembroke Castle and the Curriculum

To support your planning the following information highlights links to the curriculum.

Writers in training

Programme of Study for English

- Explore issues through role play
- Listen to others, ask questions and respond
- Write with a clear purpose
- Use appropriate vocabulary.

Mighty mathematics

Programme of Study for Mathematics

- Use a range of measuring skills; time, directions, angles
- Use a range of geometry skills; lines, symmetry, patterns
- Use a range of number skills; estimating, checking.

Test the technology

Programme of Study for Design and Technology

- Use information to generate ideas
- Develop and communicate ideas in a variety of ways
- Evaluate and develop designs
- Have opportunities to be creative, innovative, work independently and in groups.

Artists in residence

Programme of Study for Art and Design

- Experiment with and examine the methods used by other artists, craftworkers and designers from different: periods, places and cultures
- Investigate made objects and environments
- Develop ideas and experiment in a sketchbook
- Work in different contexts.

What's the big idea

Programme of Study for History

- Identify differences between ways of life at different times
- Identify significant people and describe events within and across periods
- Identify the ways in which the past is represented and interpreted
- Study the daily life of people living in the Age of the Princes
- Select, record, and organise historical information
- Ask and answer questions about the past.

Programme of Study for Geography

- Study living in their local area
- Describe the causes and consequences of how places and environments change
- Carry out investigations of 'geography in the news', topical events and issues in the local area and the wider world
- Communicate findings in a variety of ways
- Ask and answer questions.

Toilets through time

Programme of Study for History

- Use timelines to sequence events
- Use appropriate key words to estimate, measure and describe the passage of time.

The curriculum in Wales is changing and we will update this resource to take this into account. The update will illustrate how the rich and varied learning experiences available to pupils through a visit here relate to each of the '6 Areas of Learning and Experience'. The update will also highlight links to the '3 Cross Curriculum Responsibilities', and provide a framework that explores how a visit contributes to the 4 purposes:

- Ambitious, capable learners
- Enterprising, creative contributors
- Ethical, informed citizens
- Healthy, confident individuals



Guided tours

Enrich your visit with a lively and engaging guided tour, delivered by one of our friendly and knowledgeable team. Each guided tour lasts around an hour and includes:

- A brief history of the castle.
- A tour of the castle.
- Castle design in relation to attack and
- defence.
- An introduction to the Great Map of Wales.
- A taster of what life was like in the castle.

The tours can also be adapted and include tailored themes such as:

- Medieval times
- The Tudors
- William Mashal and the Magna Carta
- The Civil War and the Siege of Pembroke

Please let us know your preferences when booking and we will do our very best to accommodate them.

When pre-booked, the guided tours cost £25 for groups of 25 pupils.



Go digital

The castle grounds has free wi-fi which enables you to make the most of our interactive interpretation. As you explore the castle you can connect directly with Pembroke's rich history and past inhabitants.

Hold your smart phone or tablet to the QR codes next to the life-size depictions of the castle's medieval inhabitants, and access 'first hand' accounts about the daily lives of the servants, soldiers and officials via earlsandstaff.com.

There are four trails to enjoy - The Earls, Meet the Staff, Call My Bluff and the Great Map of Wales.

The Earls – hear the five great Earls of Pembroke boast about their achievements and gossip about their kings.

Meet the Staff – explore the Inner Ward and find ten characters who lived, worked or languished in Pembroke Castle at different times.

'Call My Bluff' – see the answers to our quiz about medieval life located on one of the picnic tables by the Great Map.

The Great Map of Wales – find out about the symbols on the map, and watch a time-lapse film of it being painted in September 2014.





Our exhibitions

During your visit enjoy the exhibition rooms which portray life as it would have been through the castle's history. The exhibitions combine sculpted figures, set-work, mural paintings, graphic panels, lighting and a triggered audio sequence, to recreate some of the most important scenes in the castle's history.

Our exhibitions include:

- The stories of the many Earls of Pembroke and their importance to Welsh and British history, from the Norman Lord Roger de Montgomery who established Pembroke Castle in the 11th Century, the "Greatest Knight" William Marshall who reconstructed Pembroke Castle in Stone and built the Great Keep in the 13th Century, to Jasper Tudor whose nephew Henry VII was born here in the mid 15th Century.
- Replica models of Pembroke Castle throughout the centuries demonstrating how the Castle was constructed and developed into what we see today.
- A medieval banquet, hosted by William de Valence in the mid 13th Century.

- A depiction of the birth of Henry VII in 1457.
- A dramatic depiction of a bloody battle during the Civil War between Cromwell's troops and John Poyer's Pembroke Royalists.
- The moment John Poyer discovered his fate following the defeat of his army in 1649.
- Prisoner John Whithorn in the medieval basement dungeon.
- The history of the Pembroke Yeomanry.

Interpretation panels

You will find interpretation panels around the castle that reveal the story of the site.

We encourage you to use them as part of your day if appropriate to your group. The text is accessible for a range of abilities and the photographs, images and graphics reveal further information and facts.





Brass Rubbing Centre

A trip to the Brass Rubbing Centre can be included in your visit at a cost of £1.50 per pupil, and is a wonderful opportunity to undertake a unique ancient art activity resulting in a souvenir to take away with you. Learn rubbing techniques from our resident expert, find out about ornate brasses and where they were found, and discover what they can tell us about the past.

Please allow approximately 45 minutes for this session.

AoLE: Expressive Arts and Humanities

Follow-up in the classroom

Pupils could:

Create a display

Brass rubbings can be hung, framed or mounted for display in the classroom as evidence of your visit or wrapped to give as a gift.

Expert for the day

Pupils could use their newly acquired brass rubbing skills to teach younger pupils in school. They could be an 'expert for the day' and lead a brass rubbing activity in school or local community.

Collect and experiment

Pupils could collect their own rubbings in a sketchbook and search for interesting patterns and textures:

- on memorials, plaques, monuments, statues etc
- in nature leaves, bark, shells, firs etc

- on buildings wood, brick, tiles etc
- on objects in the classroom paper clips, coins, soles of shoes etc

Experiment with fabrics, colours, positioning on the page, layering and more unusual objects. Use a range of media such as crayons, pastels and charcoal.

Create a collage

Build up textures, patterns and colours on a page - there are no rules or limitations. This could be surrealist rather than an accurate reproduction. When you are happy with your collection, cut out random shapes from your paper. These shapes can be joined together with the whole class to create a large collage. The collage could be arranged randomly or in the shape of an arched window for a stained-glass effect.

Pupils could also:

- Find out more about the brass they chose at the Brass Rubbing Centre.
- Write instructions on 'How to do a Brass Rubbing', or a list/poster of the 'Dos and Don'ts of Brass Rubbing'.

Remember that excessive rubbing can damage some material and you will need to seek relevant permissions before undertaking some of the tasks.





The Great Map of Wales

Our Great Map of Wales provides a unique learning experience where pupils can physically interact with the history and geography of Wales beneath their feet.

AoLE: Humanities, Mathematics & Numeracy, Health and Wellbeing

Geography

Explore Wales (The coast, geographical knowledge.)

Walk the coastline. How many steps does it take altogether? Stop and call out when you reach the following coastal towns: Swansea, St. David's, Fishguard, Aberystwyth, Bangor, Holyhead, Conwy, Llandudno.

Play a 'Simon Says' find game. E.g. Simon says find Pembroke Castle. Simon says find Cardigan Bay, The Irish Sea, Cardiff etc.

Point and Face (8 compass points, position and direction.)

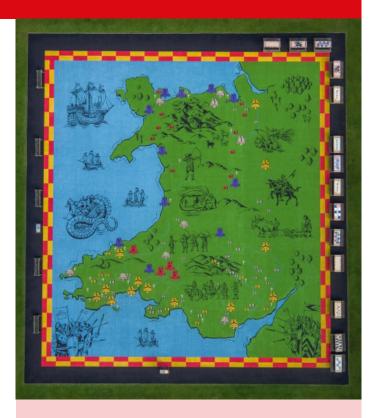
Stand in a space and face:

- North...South...East...West.
- South West...North Fast...etc.

Stand in a space and point towards:

- Home...School...etc
- Scotland...Ireland...England.
- Cardiff...Edinburgh...London...Belfast...
 Dublin.
- America...Arctic...Antarctic...Australia... etc.

Invite pupils to imagine what they would see if they looked through a telescope in the direction they are facing or pointing.



How big is Wales? (Estimating, measuring, distance.)

You don't need equipment to measure Wales, you can use your body and its parts instead.

Estimate and measure the length and width of Wales at its longest and widest using your:

- Handspan
- Feet
- Stride
- Forearm

Investigate

How many pupils does it take to reach across Wales? (toe to toe, hand to hand, elbow to elbow etc.)

How many pupils can you squeeze into Anglesey?

How many pupils does it take to reach across Wales laying head to toe and side by side?



The Great Map of Wales continued...

History

The map of medieval Wales shows castles built during the long power struggle between native Welsh Princes and the Norman Kings and Marcher Lords.

There are hundreds of castle and abbey ruins in Wales. The map shows 125 of them.

- Yellow castles were built by the Norman 'Marcher Lords' to hold south Wales.
- The castles with chevrons are featured in the 'Lords of the Southern March' story.
- Red castles were built by the native Welsh Princes to resist invasion. The castles with crowns are featured in the 'Princes of Deheubarth' story.
- Purple castles were used by Anglo-Norman Kings to exert royal authority. The castles with helmets were part of Edward I's invasion of north Wales.
- White castles were built by other leaders or at other times. The castles with helmets were part of Edward I's invasion of north Wales.
- Crosses represent significant religious buildings or ruins. The four Norman medieval cathedrals and the three abbeys built by the Princes of Dehuebarth are named.

Let's get moving

Follow the instructions (*Physical activity, geographical vocabulary and listening skills.*)

- Dip your toe in the Irish sea.
- Touch any city or town.
- Swim the Bristol Channel.
- Stand in two countries at once.
- Hop to your house.
- Skip along the border.
- Walk the coastline.
- Gallop from Pembroke Castle in South
 Wales to a castle in North Wales.
- Sit down on top of a mountain range or hill.
- Tiptoe towards the sea.
- Leap over a castle.
- Star jump from the North coast to the South coast, and back again.
- Link arms from Pembroke to Llandudno.





Pre-visit activities

Prepare pupils for a visit and enrich learning experiences.

Learn the lingo

On page 22 of the Information Pack you will find a glossary relating to Pembroke Castle. Cut along the dotted lines and jumble up the words and their meanings. In pairs or small groups challenge pupils to match them correctly. The glossary can also be used in a variety of other ways:

- Cover the definitions and search for them in books and dictionaries.
- Invent your own humorous meanings.
- Mix up the words and re-arrange them in alphabetical order.
- Find another meaning for each word.
- Sort the words and their meanings into groups or themes.

Plan your visit

Involve pupils in planning the visit. They could:

- Research the castle venue facilities, accessibility etc.
- Plan the journey how far away are you? How will you get here? How much will the travel cost? Which is the best value?
- Agree a code of conduct what is expected?
- Plan the activities, including risk assessments what would you like to learn when you get here?
- Draft and write the letter to parents informing them of the trip what information needs to be included? What will you need to bring on the trip?

Special delivery

Arrange for a package to be 'delivered' to the classroom that contains a selection of objects/artefacts linked to Pembroke Castle. The objects should stimulate pupils' curiosity and prompt discussion. As you unpack the objects, encourage pupils to ask questions about what they reveal. A new topic, a special visit? Objects could include: postcards, a map, leaflets, a coat of arms, shield, scroll, tunic or masons' hammer etc.

For a small fee we can provide you with a 'loan box' of objects to help you introduce Pembroke Castle or a castle topic to your class. Please let us know when booking if this is something you would interested in.

In the know

Steer thinking and organise questions with a K - W - L (Know - Want to know - Learned) session. Brainstorm: What do I know about Pembroke Castle? What do I want to find out? Create a list, chart or mind map of your discussions and ideas. At the end of your project or visit plan time to reflect, and think about: What have I learned?



Set the scene

Bring castle themed stories and poems to life during your visit. If pupils have written castle inspired stories or poems bring them along and read them during your visit. Use the castles' echoes, dramatic light and magical landscape to add mystery and atmosphere as you read aloud. The castle would also make an ideal place to retell historic tales about Welsh myths and legends - you could tell a tale from the Mabinogion.

And..action!

Use the castle as a unique venue to perform a play or a scene from a play you have created. Draft, write and rehearse your play in class before you visit and use the castle as a backdrop for the performance. You could do a dramatised performance of an ancient myth or legend, or create a story of your own from scratch.

All dressed up

Why not dress up and spend your day with us in character? You could visit as an Earl, Henry VII, a mason or castle worker.

Resource recommendations

You don't necessarily need specific equipment for your visit and you may decide not to bring anything with you. Many of the activities can be adapted to ensure no resources are needed. But you may wish to bring along: a digital camera, drawing materials, measuring equipment, a smartphone or tablet or a torch.





Writers in training

Pembroke Castle is the setting for many fascinating stories that have shaped the history of Wales. Today it still inspires creative ideas. With its maze of tunnels, dramatic scenery and atmospheric mood, Pembroke Castle is the ideal location to spark ideas for a range of writing projects.

AoLE: Languages, Literacy and Communication

Stimulating stories

In the Information Pack you will find a number of captivating stories relating to the castle and its history. From the castle siege to an amazing story of survival, each one reveals Pembroke Castle's fascinating past.

Pupils could use the characters in on of their own stories. Or write a diary entry as one of them.

In the mood

Poets and writers will use the senses to express a mood in a story or poem. Talk with the pupils about how the castle will affect their mood in different ways. It may lift their spirits, it may spook them. Their senses will influence how they feel about each place in the castle and as they move around, their five senses will trigger a mood or emotion.

Invite pupils to use their senses to collect and capture words and ideas as they embark on a sensory trail around the castle. Create a mood board to express how the castle makes them feel. Record words, take photographs, sketch and

doodle. Does the castle atmosphere make them think of a particular colour? Use this colour to influence the mood board. Use the words and ideas to inspire story and poetry writing in the classroom.

Visit Pembroke Castle

Ask pupils to create a brochure, leaflet or guidebook for Pembroke Castle to persuade people to visit, and guide them as they explore. During your visit gather interesting facts and information about the castle. Pupils may want to take photographs or video footage. They may like to sketch some of the features found here. Ask pupils - what information needs to be included in the brochure?

Meet the Earls

There are many clues around the castle that reveal the lives of the five great Earls of Pembroke. Invite pupils to choose one and find out more about them and create a biography or fact file. They could also retell the Earls story in their own words.

Use the biography frame in this resource as a planning sheet, and write 'A Biography of the Earl of Pembroke' to tell the true story of his life. Pupils may need to undertake some extra research about them.





Writers in training continued...

Family motto

Most families would have a motto on their family coat of arms or shield. Mottos are a quick and easy way for a family to declare their guiding principle. They are like motivational slogans or hashtags, e.g. Keep calm and carry on and #daretodream. You will find a lot of mottos relating to the castle.

John Poyer - "Fate is against me." Henry VII - "God and my Right" Robert de Montgomery - "Fortune favours the brave"

Countries, regions and towns have mottos too.

Wales - "Cymru am byth" "Wales forever"
Pembrokeshire - "Strength from unity"
Pembroke - "We serve as one"
And sports teams.

Wales National Football Team -"Gorau Cwarae Cyd Chwarae" "Best Play is Team Play". Or a special motto for Euro 2016 - "Together. Stronger"

Invite pupils to invent their own family or personal motto, slogan or hashtag. One that represents them and the way they live their lives.

Roving reporter

If pupils could interview one of the Earls what would they ask? Imagine they have shadowed them for the day. Encourage pupils to talk about what happened and what the Earl said. Write up the interview as a 'world exclusive'. Include a headline, picture and quotes.

Follow-up in the classroom

Pupils could:

Plan time to create their 'Visit Pembroke Castle' brochure, leaflet or guidebook using the information gathered during their visit. You may wish pupils to continue with research and the website is a great place to start, **pembroke-castle. co.uk.** Pupils could collect persuasive language, plan the design layout and colour palette, and create a logo too. Encourage pupils to think about their audience, are they writing for adults or children?

It's party time

Hire pupils to plan an event to celebrate the birth of baby Henry, castle style. There are many ways to celebrate a special event or person - a magnificent feast in the Great Hall or a parade through the town. Encourage them to make a list of things they will need and how much things will cost. Create posters, leaflets or a newsletter to advertise it. Write invitations/emails/letters to local people and dignitaries to come along too. Why not host party and recreate the Great Hall in school.

Under siege

Take on the role of one of the castle workers during a siege and:

- Use a thought tracking technique to create an inner monologue.
- Take the 'hot seat' and in the castle workers voice answer questions from the class about what is happening.
- Develop and act out a conversation between your character and a neighbour in the town about your thoughts on the siege after is has ended.
- Repeat the above activities, this time take on the role of a family member.

Pupils could also:

- Write scripts for conversations between different characters in the castle discussing their role in the siege for others to act out.
- Write different scenes showing castles workers preparing for a siege or in the days after a sign has ended.



Mighty mathmeticians

The castle is alive with shapes, numbers, angles and patterns. Maths is everywhere, and it can tell us a lot about the castle and what may have happened here in the past.

AoLE: Mathematics and Numeracy

Conduct a castle survey

Estimate and measure to find the:

- thickest wall
- highest window
- widest doorway
- highest wall
- narrowest window
- biggest window
- deepest fireplace
- widest arch

If you don't have any measuring equipment invite pupils to use their body and its parts instead. How about using handspan, feet, stride or forearms? Pupils could create a table for their results.

Ask pupils - What do your measurement reveal about the castle?

Where did you find the thickest wall? Why was it built this way? Can it tell us anything about what was kept within the walls?

Where did you find the biggest windows? What does this reveal about who may have lived or worked there? Do the measurements tell us about the castle's defences?

Castle statistics

Ask pupils to search for more numbers as they explore the castle.

- Tally the number of arrow slits in Monkton Tower or Henry VII Tower.
- Count the number of steps in each

- flight of stairs, then altogether.
- Calculate the total number of battlements.
- Add up the number of fireplaces, windows and garderobes.

Trigonometry challenge

The Great Tower is roughly 25 metres high. Challenge pupils to check. If you view the top of the Great tower at a 45-degree angle, the height of the tower and the distance you are from it are about the same.

Walk away from the tower and at regular intervals bend forward and view the tower through your legs (the angle that is formed as you look between your legs is about 45 degrees). Stop when you are just able to see the top of the tower from your upside-down position. Measure the distance along the ground from the tower to you. This is roughly equal to the Great Tower's height.

Go the distance

Investigate the distance from the Great Gatehouse to...

- ...the Dungeon Tower
- ...the Great Tower
- ...the Great Map of Wales
- ...the Chapel
- ...North Turret
- ...Monkton Tower
- ...Henry VII Tower

In the nick of time

Invite pupils to investigate how long it would take an attacker to reach certain parts of the castle from the Great Gatehouse. Remind them, an attacker may not take the quickest route, and once within the castle walls would move with caution. Can they remain undetected as they creep carefully around the castle? Don't forget to start the stopwatch!



Test the technology

Science, engineering and technology are at the heart of castle design and early engineers and masons were skilled castle builders.

AoLE: Science and Technology

Mission materials

Encourage pupils to identify and make a record of the different materials found around the castle. Describe their properties and function. Ask pupils – is there another material that could be used instead? Which material is missing? Take a closer look. Its wood! A wooden castle stood in the area of the Inner ward and wood was used for doors, stairs, floors, ceilings, scaffolding and everyday objects like bowls and tools. But how do we know that wood was used around the castle? Holes!

Wood detectives

Invite pupils to explore the castle searching for clues of how and where wood was used. Holes provide a useful clue.

- Joist holes in the stonework for the wooden beams that support the floors.
- Putlog holes in the stonework to support scaffolding.
- Pivot holes near the entrance for the drawbridge to be lowered and raised.
- Holes by doorways could be for wooden drawbars or door bolts.

So, how do we know that wood was used around the castle? Ask pupils to create a 30 second presentation that proves that it did.

Arches in action

Arches are everywhere. They are practical, decorative and very, very strong. Put pupils into pairs to test the forces at work in arches. Ask them to - stand opposite each other and form an arch by putting your palms together at shoulder height. Lean towards each other and carefully slide your feet back as far as you can. Ask pupils - can you feel compression (pushing)? Where in your body? In an arch, weight is transferred to the abutments on each side in the same way.

So, the arches around the castle are doing a great job supporting the weight of the mighty fortress. In fact, the arch can support more weight than a pillar. Here's how it works.





Test the technology continued...

Pembroke Castle has many arches of different shapes and sizes. Ask pupils to draw three that are very different from each other. Label the drawings noting the size, structure and function of each. Look at the materials used, the size and shape of the individual parts and think about how they hold together.

In a spin

When you walk up the spiral staircases around Pembroke Castle you move in a clockwise direction. When you walk down you move in an anti-clockwise direction. Invented for warfare the narrow space of the spiral stairs made it difficult for an invading army to manoeuvre up into the castle, especially when carrying a sword in the right hand.

Invite pupils to explore the spirals around the castle by climbing, moving and turning with them. Pupils could count the number of steps, the number of turns and half turns they make, or the number of rotations. Can they recognise when they are moving in a clockwise or anti-clockwise direction?

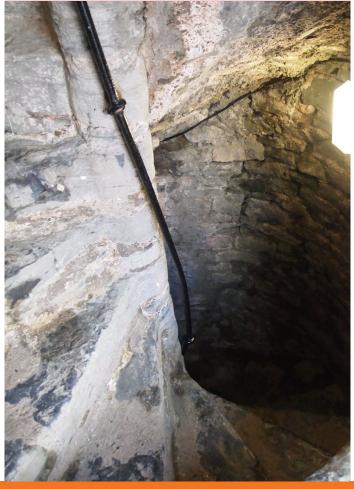
Follow-up in the classroom

A visit to Pembroke Castle can spark ideas for a range of scientific experiments and design and technology projects. The list below is just the beginning:

- Design, make and test a working portcullis or drawbridge. Construction kits such as Lego, Knex and Meccano are great to test your ideas.
- Design the 'Perfect Castle'. Research castle design and draw a detailed plan of your 'perfect castle'. Label its features. Is it defensive or homely or both? Perhaps you could add a

modern feature to your design.

- Test the strength of arches of different shapes and sizes by building models. Use the sketches made during your visit to help with this and answer the question - how strong is an arch bridge?
- Conduct a set of experiments that test the characteristics of wood.
 How does wood change when it is; frozen, immersed in water, buried in mud, heated, hit or dropped? Repeat the experiments with stone. What do you notice?
- Create an invention that could change the lives of people living the castle. Think about: hygiene, light, weaponry, defence etc.





Artist's in residence

Castles have been inspiring artists, musicians, dancers and filmmakers for centuries. They can be impressive, atmospheric, dramatic and romantic and are still a riot of colour, light, pattern and texture.

AoLE: Expressive Arts

Far reaching views

The view from the top of the keep is truly impressive. When you get to the top and have got your breath back, encourage pupils to think about what the view would have been like many years ago. Talk about how it may have changed over time. Has anything changed in their lifetime? Sketch the view as an 'artist's impression' of what it may have looked like in the past. Or without moving their pencil off the page of their sketchbook draw the horizon as it is now, creating a townscape.

Undertake a horizon scavenger hunt - Find something: wet, tall, smelly, dangerous, familiar, loud, busy, important, expensive, beautiful, calm, natural, old, man-made and colourful. Find the tallest, oldest, newest, ugliest, prettiest building.

Living the dream

As each Earl of Pembroke moved into the castle they put their own stamp on it. Renovating, expanding and improving. The Information Pack has more details about how the Earls of Pembroke changed the castle over time. Ask pupils to imagine what changes they would make if they became the next Earl of Pembroke. What would they add or remove? Ask them to sketch their 'dream castle'. Choose one room inside their 'fantasy home' and plan how they would design and decorate it to

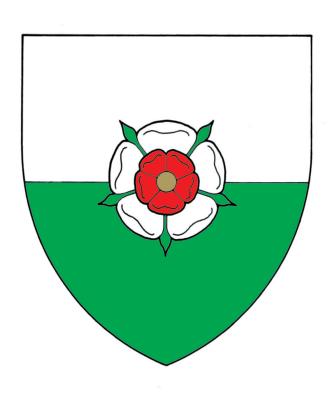
show their interests and tastes.

Abstract impressions

Encourage pupils to look at the structure of the castle from different angles and heights, searching for geometric shapes, lines and angles within it. They could use a viewfinder to focus on smaller areas and create observational sketches on site to inform abstract inspired art projects in the classroom.

Heraldry

Heraldry was devised so that knights could be identified on the battlefield. The shield was an important part of a knight's armour but it also made up a key part of his heraldic design. Spot the shield designs around the castle and gather ideas for your own. Choose your favourite colour combinations and sketch your ideas on the shield template provided in the worksheet pages.





Artist's in residence continued...

Observational challenge

The castle is full of fascinating sights. Find a comfortable spot around something that has caught your eye. Fold a piece of A4 paper in half and in half again. Unfold and use the four boxes created by the folds for each of the following 'Observational Challenges'.

- 1. A quick freehand sketch.
- 2. A 3D perspective.
- 3. A continuous line drawing draw the outline without taking your pencil off the page.
- 4. A detailed close-up of a small section of your chosen object.

Artist's impression

Artist's impressions are used to help us visualise the past. In history, they are used to bring to life something we can no longer see. They are based on ideas, research and knowledge.

Discuss what it would have been like here while the castle was being built? Who would you have met? What would they be doing?

Invite pupils to sit and sketch an artistic impression of a busy day building the castle. Use what you know about castle buildings to help you.

Follow-up in the classroom Pupils could:

- Investigate Paul Klee. He was a 20th Century abstract artist and his 1928 painting called 'Castle and Sun' is an expression in abstract art. Find out more about Paul Klee and use his abstract 'Castle and Sun' painting to inspire your own. Pupils could trace shapes, fill them in with colour using water resist crayons or oil pastels and then wash over the page with watercolour or watery paint.
- Create a shield with their heraldic design painted on it. Shields could be large, made from cardboard and used as props in castle plays and stories.
- Probe the question Who was JMW Turner? He liked to paint out in the open and visited many parts of Britain for inspiration. He painted Pembroke Castle in 1829. Invite pupils to find out more about JMW Turner and his painting of Pembroke Castle. Can they recreate it using his technique?





What's the big idea?

As you explore the castle you will be walking in the footsteps of people from the past and absorbing a long and vibrant history. A visit to Pembroke Castle will rouse many questions but it will also provide an opportunity to kickstart finding answers too.

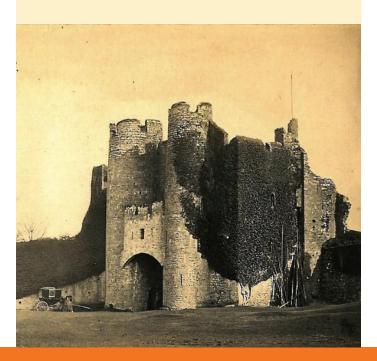
Choose one of the following historical and geographical enquiry questions and encourage pupils to use their castle visit to seek answers to some of the 'big questions'.

AoLE: Humanities

The Big Questions

Castle care

- Why is Pembroke Castle still standing? How has it survived for so long? Is it indestructible?
- Should castles be left in ruins or rebuilt?



The Civil War - 1642-1648

- Could anyone or anything have stopped the Civil War of 1642 - 1648 from taking place?
- What role did Pembroke and the people of Wales play in the Civil War of 1642 - 1648?

Business as usual

 How do tourists effect Pembroke Castle and the town?

Water watch

- How did the castle get its water and how was it used?
- Why are some castles surrounded by water?

Just the job

- Who had the worst castle job? Why?
- Who had the best castle job? Why?





What's the big idea?

The Big Questions

Castles in the sky

- What impact did the building of Pembroke Castle have on the local area and local people at the time? Would they have supported it? What impact does the castle have on the area and its people today?
- Why did people build castles?
- Why did people stop building castles?

In the wars

- Is it true that all problems in Pembroke Castles history were solved with warfare and fighting? Is it ever ok to use violence?
- How would you plan your attack of Pembroke Castle?

A sought after location

- Does the physical geography of a place really matter when deciding where to build a castle?
- Was Pembroke Castle built in the best place? Why build it here?

Find the evidence

 What was it really like to live here as a child in the Tudor period? Was it as tough as the books say?

Similarities and differences

- Are all castles in Wales the same?
 Were they built using the same techniques?
- How have castles changed and why?

Prove it

 Is it possible to prove a historic event took place? How can you find out about an event that took place in the past when you weren't even there? Did it really happen?

Size matters

- Why is the castle so big?
- Does a castles size matter?

Top tips for a successful enquiry

- Choose a good question. Involve pupils in creating and asking their own.
- Conduct research and fieldwork.
 Your castle visit could provide a good opportunity to do this.
- Reflect, make judgements and draw conclusions. What have you found out?
- Communicate your answers as a poster, report, presentation or brochure.





Toilets through time

If you lived in a castle in the past how would you have coped with the toilets? People did wash, bathe and clean their teeth but it was difficult for them to keep clean and get rid of waste safely. They knew little about the connection between sanitation, germs and disease.

AoLE: Health and Wellbeing, Humanities

Gruesome garderobes

Ask pupils the following question. If you lived in the castle what would you miss the most? Electricity or toilets? Take a vote and discuss why they voted the way they did. As you explore the castle find as many toilets (or garderobes) as you can. The castle had a lot of them - 17 can still be found (the Information Pack castle tour points out where many of them are).

The garderobes at Pembroke Castle were open shafts that emptied just outside the castle walls. They weren't always private either, did you find the two seater garderobe? Oh, and there was no toilet roll. Just imagine - they were cold, dark, damp, stinky and the whole castle shared them. Ask the above question and vote again. Has anybody changed their mind? Discuss why?





Germ inspectors

Remind pupils about what we know about germs today. Ask them - does it matter if we don't wash our hands after going to the toilet?

Invite pupils to inspect the garderobes around the castle and compare them with our toilets today. Ask them - what is the same? What is different? Ask pupils to suggest how they might be improved for the castle inhabitants.

Think about what is missing - water, sinks, flush, soap, light, windows, plumbing, toilet roll, doors etc. They could make a note of their ideas or sketch them.



Toilets through time continued...

Follow-up in the classroom

Germ busters

Pupils could:

- Write and illustrate a germ-busting rules poster to go on display around the castle to promote good hygiene practices.
- Design an information leaflet for castle workers filled with good hygiene advice.
- Write a formal letter to the castle constable persuading him to make improvements to the garderobes in order to keep the castle clean and healthy for its occupants.
- Design a castle bathroom for the everyday castle worker. The challenge is you can only use materials available at the time.
- Research the history of castle hygiene. Write a list of castle 'hygiene myths'.

Privy probe

Have you ever wondered how the garderobe got its name? Why a toilet is called a toilet? Who invented the first flushing toilet? How a toilet works? Pupils could research the history of the toilet and create a 'Toilet Timeline' as a poster or factsheet. Don't forget to research garderobes and add garderobe facts to the timeline.

Why learn about toilets?

They keep us healthy and learning about them adds a global dimension to your classroom. There are 2.5 billion people (two fifths of the world's population) without safe toilets. In fact, more people have a mobile phone than a toilet. The following websites provide further information.

WaterAid

WaterAid is a charity providing safe water to some of the world's poorest communities and has a host of resources for schools relating to sanitation and hygiene. Learn about how clean running water, good sanitation and hygiene practices are essential to improve health, livelihood, dignity, overall wellbeing and achieving aspirations. wateraid.org

Global Goals

In September 2015, the United Nations launched global goals, a series of ambitious targets to end extreme poverty and tackle climate change for everyone by 2030. Goal 6 is to ensure availability and sustainable management of water and sanitation for all. globalgoals.org

And don't forget it's World Toilet Day on the 19th November.



