

Llandudno Bay



Bae Llandudno

Join us on a walk to explore this history stretching back through time. The walk takes about an hour.

This trail highlights just a few of the town's geological features. You may well discover some of your own. Hopefully it will also whet the appetites of those with an interest in local history, and show how the development of the town and the geology are closely linked.

The geology you can see in Llandudno can be viewed at different scales. The local scenery, the stones of the buildings, and the crystals and fossils within the rocks of the buildings, all provide an insight into the variety of geology around us. We will look up, down and straight ahead at small, medium and large-scale features.

Although the original old dwellings on the Great Orme were constructed only of local limestone, the buildings of the town were constructed from a much wider range of materials. Some of the decorative stones come from as far afield as Norway, with others coming from all parts of Britain.

Y creigiau y byddwch chi'n eu gweld o gwmpas Llandudno:

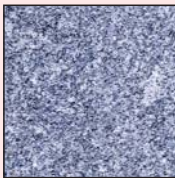
The rocks you will see around Llandudno:

Creigiau gwaddod: Mae'r rhain wedi eu gwneud o dywod, silt, llaid, cerig o gweddillion planhigion ac anifeiliaid. Fe'u dyddodwyd ar wely moroedd ac afonydd neu ar ffurf twyni mewn diffeithdiroedd ac, ymhen hir a hwyr, wedi iddynt gael eu claddu dan bentwr o greigiau eraill, cawsant eu cywasgu a'u smentio gan greu'r creigiau gwaddod a welir heddiw.



Sedimentary rocks are made of sand, silt, mud, pebbles, and fragments of plants and animals. These were deposited in seas, rivers or as dunes in a desert, and, eventually, after burial beneath a pile of other rocks, are compressed and cemented into the rocks we see today.

Creigiau igneaidd: Ffurir y rhain wrth i graig dawdd (magma) grisialu. Caiff magma ei wthio ar hyd gwendidau yng nghramen y Ddaear, gan ddod i'r wyneb weithiau yn ystod echdoriadau folcanig.



Igneous rocks are crystallised from molten rock (magma) which is forced into weaknesses in the earth's crust, sometimes coming to the surface as volcanic eruptions.

Creigiau metamorffig: Mae'r rhain yn greigiau igneaidd neu waddod sydd wedi cael eu newid gan wres a/neu wasgedd. Er enghraifft, gall carreg laid newid i fod yn llechfaen, a chalchfaen yn farmor.



Metamorphic rocks are igneous or sedimentary rocks that have been changed by heat and/or pressure. For example, mudstone can be changed into slate, and limestone into marble.

'Creigiau gwneud': Mae'r rhain yn cynnwys briciau, a gynhyrchir drwy bobli clai, ac hefyd choncrit.



'Man-made rocks' include clays, which have been baked to form bricks, and also concrete.

Photography by Stewart Campbell, John Underwood & Rhian Lewis.

The sheltered North Shore, with its curving promenade, is sandwiched between the limestone headlands of the Great and Little Ormes ('Orme' is Scandinavian for sea serpent). The flat land on which the town was built is low-lying and was originally marshy and often flooded.

The Mostyn family planned Llandudno town as a Victorian seaside resort 150 years ago. It has steadily developed and now attracts visitors from all over the world.

The Great Orme



Ymunwch â ni ar daith i archwilio'r wedd yma ar hanes sy'n ymestyn yn ôl mewn amser. Mae'r daith yn cymryd oddeutu awr.

Mae'r daith hon yn pwysleisio dim ond rai o nodweddion daearegol y dref. Y mae'n dra phosib y byddwch yn dangarford nodweddion eraill drosoch chi eich hunan. Gobethio y bydd hefyd yn codi awydd ar y rheini ohonoch sydd â diddordeb mewn hanes lleol, gan ddangos y cysylltiad agos sydd rhwng datblygiad y dref a daeareg.

Beth yw RIGS?

Gall Safleoedd Ddaearegol/Geomorffolegol o Bwysigrwydd Rhanbarthol (Regionally Important Geological/Geomorphological Sites) fod yn unrhyw safleoedd, ac eithrio Safleoedd o Ddiddordeb Gwyddonol Arbennig, a gaiff eu gwarchod oherwydd eu pwysigrwydd addysgol, ymchwil, hanesyddol neu esthetig.

Grwpiau RIGS

Gall unrhyw aelod o'r cyhoedd a chanddo ddiddordeb mewn cadwraeth Treftadaeth y Ddaear ymuno â grŵp RIGS. Mae'r grŵp yn dewis y safleoedd sydd wedyn yn cael eu gwarchod gan awdurdodau lleol. Gyda chydweithrediad perchenogion, datblygir rhai safleoedd at ddefnydd addysgol neu gan y cyhoedd.

What are RIGS?

Regionally Important Geological/Geomorphological Sites (RIGS) are any sites, excluding SSSI (Sites of Special Scientific Interest) that are protected for their educational, research, historical or aesthetic importance.

RIGS Groups

Any member of the public with an interest in Earth Heritage conservation can join a RIGS group. They choose sites which are then protected by local authorities. With the co-operation of the owners, some sites are developed for educational or public use.

Os hoffech ymuno â grŵp RIGS yn yr ardal hon, cysyllter â:

If you would like to join RIGS in this area, please contact:

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Mae Cyngor Cefn Gwlad Cymru yn cefnogi sefydlu Safleoedd Ddaearegol/Geomorffolegol o Bwysigrwydd Rhanbarthol.

The Countryside Council for Wales supports the establishment of Regionally Important Geological Sites.

Cynhyrchwyd gyda chymorth Cynllun Taliadau Bychan Gronfa Amgylcheddol Hanson



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Gellir gwerthwrogi daeareg Llandudno ar wahanol raddfeydd. Tirwedd y fro, y cerrig adeiladu, a'r cristialau a'r ffosiliau sydd i'w gweld yn y meini y codwyd yr adeiladau ohonyn nhw, maen nhw i gyd yn rhoi cip ar amrywiaeth y ddaeareg o'n gwmpas. Byddwn yn edrych ar i fyny, ar i lawr ac yn syth o'n blaenau at nodweddion bach, canolig a mawr.

Er mair calchfaen lleol yn unig a ddefnyddid i godi'r hen dai gwreiddiol ar Benygogarth, cai amrywiaeth o ddefnyddiau eu defnyddio at bwrsas codi adeiladau'r dref. Daw rai o'r meini addurnol o lefydd mor bell i ffwrdd â Norway ac eraill o wahanol rannau o wledydd Prydain.

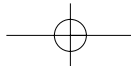
Mae'r taeth gogleddol cysgodol, a'i bromenad crwm, yn swatio rhwng pentiroedd calchfaen Penygogarth a Thrwyn y Fwch. Gair Sgandinaidd sy'n golygu "saffi" yw "Orme", sy'n rhan o enwau Saesneg y pentiroedd. Mae'r tir gwastad y codwyd y dref arno ar lefel isel, arferai fod yn gorslyd ac fe gai ei foddlin gyson.

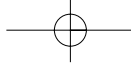
Caodd Llandudno ei chynllunio yn dref lan môr Ffictoraidd gan deul'r Mostyn 150 o flynyddoedd yn ôl. Mae wedi datblygu'n raddol oddi ar hynny a bellach mae'n denu ymwelwyr o bedwar ban byd.

Eglwys Methodistiaid Sant Ioan St. John's Methodist Church



Cerdded drwy'r gorffennol:
Taith ddaearegol o amgylch Llandudno
Walking through the past:
A geological trail around Llandudno





Oes yr Iâ Diwethaf

Last Ice Age

CAINOSŌIG
Y Cyfnod Trydyddol
Cwaternaidd

Quaternary
Tertiary
Millions of years ago

CAINOSŌIG
Y Cyfnod Trydyddol

Quaternary
Tertiary

CAINOSŌIG
Y Cyfnod Trydyddol

CENOZOIC
Cretaceous
Extinction of Dinosaurs 65

MESOSŌIG
Jwrasig
Adar Cyntaf

MESOSŌIG
Jurassic
First Birds

MESOSŌIG
Triasig

MESOSŌIG
Triassic

MESOSŌIG
Permaidd

MESOSŌIG
Permian

PALEOSŌIG
Carbonifferaidd

PALEOSŌIG
Carboniferous

PALEOSŌIG
Defonaidd

PALEOSŌIG
Devonian

PALEOSŌIG
Silwraidd

PALEOSŌIG
Silurian

PALEOSŌIG
Ordofigaidd

PALEOSŌIG
Ordovician

PALEOSŌIG
Cambriaidd

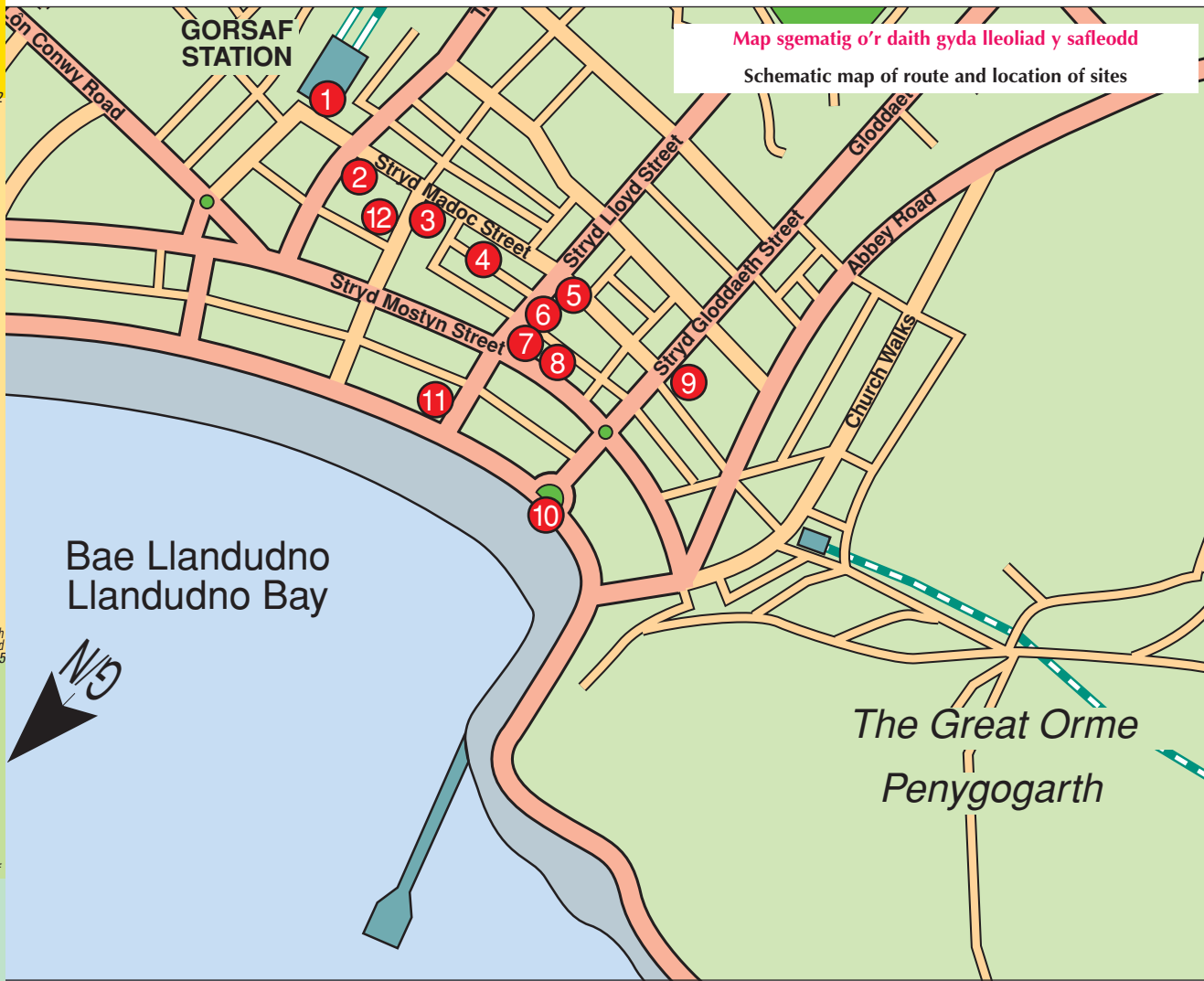
PALEOSŌIG
Cambrian

CYN CAMBRIAIDD

PRE
CAMBRIAN

3400
Criegiau hynaf ym Mhrydain

3400
Oldest Rocks in Britain



Map sgematig o'r daith gyda lleoliad y safleoedd
Schematic map of route and location of sites

1 Yr Orsaf

Mae'r ffordd wrth fynedfa'r orsaf wedi'i phalantu â blociau hirsgwar a elwir yn sets. Cawsant eu llunio o graig igneaidd fân grisialog, dywyll a chaled a gloddiwyd yn chwael Penmaenmawr. Ers talwm, arferid gwneud defnydd mawr o sets wrth baratoi ffyrdd.



Edrychwch i fyny'r stryd tuag at glogwyni calchfaen Penygogarth. Cafodd haenau'r calchfaen eu gogwyddo a'u codi uwchlaw lefel y môr gan ddaeargrynfeydd amser maith yn ôl.

The Station

The road at the entrance to the station is paved with rectangular blocks called 'sets'. They were shaped from hard, dark, finely crystalline igneous rock from the quarry at Penmaenmawr. Sets were used extensively in the past as road paving. Look up the street to the limestone cliffs of the Great Orme. The rock layers were tilted and uplifted above sea level by earthquakes long ago.

2 Siop trin gwallt 'Just Jents'

Ar waelod blaen y siop mae slabiau o graig gaboledig ddu a elwir yn larvikit, craig igneaidd fras grisialog wedi'i mewnfurio o Norwy. Sylwch sut y caiff y golau ei adlewyrchu gan y crisialau o ffelsbar, mwyn tra chyffredin mewn creigiau igneaidd.



'Just Jents' hair salon

At the base of the shop front are slabs of black polished rock called larvikite, a coarsely crystalline igneous rock imported from Norway. Notice how the light reflects from the crystals of feldspar, a mineral commonly found in igneous rocks.

3 Y Cafn Ceffyl

Lluniwyd hwn o un blocyn hirsgwar o wenithfaen. Math o ffelsbar yw'r crisialau mawr, pinc. Gall y graig gael ei naddu a'i chaboli, er ei bod hi'n galed iawn. Wrth i chi gerdded heibio i'r popty, sylwch ar y gwahanol greigiau yn llawr y fynedfa.

The Horse Trough

This was made from a single rectangular block of granite. The large pink crystals are also a type of feldspar. The rock can be carved and polished, even though it is very hard. As you pass the bakery notice the different rocks in the floor at the entrance.



4 Broceriaid Yswiriant Gott a Wynne

Yn ôl pob tebyg daw'r llechfaen llwyd, deniadol ar flaen yr adeilad hwn o un o chwaeli llechi gogledd Cymru. Mae'n gwrthsefyll y tywydd, ar gael yn lleol ac yn hawdd i'w drin. Mae'r llechfeini hyn dros 400 miliwn o flynyddoedd oed.

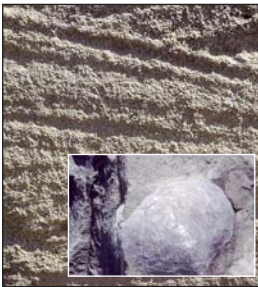


Gott and Wynne Insurance Brokers

The attractive grey slate fronting to this building probably comes from one of the quarries in North Wales. It is weatherproof, available locally and easy to handle. These slates are over 400 million years old.

5 Canolfan Gristnogol Emmanuel

Codwyd yr adeilad o dywodfaen melyn, sydd dros 300 miliwn o flynyddoedd oed ac yn dyddio o'r cyfnod Carbonifferaidd Uchaf. Mae'r gwynt a'r glaw wedi treulio'r graig gan greu rhychau crwm ar hyd y planau haenu gwreiddiol lle nad yw'r sment rhwng y gronnau tywod mor dda. Cludid y tywodfaen o chwaeli yng ngogledd-ddwyrain Cymru.



Ceisiwch gael hyd i gregyn ffosil diddorol yn y blociau o galchfaen, a gloddiwyd yn lleol, sy'n ffurfio'r waliau o amgylch y ganolfan.

Emmanuel Christian Centre

This building uses yellow sandstone, which is over 300 million years old, from the Upper Carboniferous period. The wind and rain have worn curved grooves along the original bedding where the grains are not so well cemented together. The sandstone was transported from quarries in north-east Wales.

Look in the locally quarried limestone forming the walls surrounding the centre for any interesting fossil shells.

6 Neuadd y Dref

Wyneb o friciau sydd i lawr ucha'r adeilad ac o amgylch y ffenestri ceir calchfaen gwyn gwahanol iawn ei olwg. Mae'r balwstradau pen mur a'r muriau isaf hefyd wedi eu codi o galchfaen, a ddaeth o Portland yn ne Lloegr. Yn wahanol i'r calchfaen lleol, mae'n hawdd torri'r calchfaen hwn yn siapiau gwahanol. Codwyd yr adeilad yn 1902.



The Town Hall

The building has a brick faced upper storey with contrasting white limestone around the windows. The rooftop balustrades and the lower walls are also of limestone, brought from Portland in southern England. This limestone can be easily cut into different shapes, unlike the local limestone. The building dates from 1902.

7 Banc y National Westminster

Cafodd yr adeilad trawiadol hwn, sy'n dyddio o 1867, hefyd ei godi o garreg Portland. Mae'r rhes waelod o flociau yn wahanol; gwenithfaen crisialog golau yw'r meini.

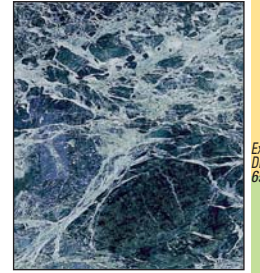


National Westminster Bank

This imposing building, dating from 1867, is also built from Portland stone. The lowest course of blocks is different, and is pale crystalline granite.

8 Bwydydd Fferm

Ar flaen y siop fodern hon mae slabiau o graig werdd dywyll a golau. Ffurir y graig igneaidd brin hon, sy'n dwyn yr enw sarff-faen, yn ddwfn y tu mewn i'r Ddaear. Mae creigiau tebyg i'w gweld ar benrhyn Lizard yng Nghernyw ac ar Ynys Môn.



Wrth i chi gerdded ar hyd y stryd edrychwch ar Fanc Halifax. Fedrwch chi weld dau fath o wenithfaen o wahanol liw?

Farm Foods

This modern shop is faced with slabs of mixed dark and light green rock. This rare igneous rock, called serpentinite, is formed deep inside the earth. Similar rocks can be found on the Lizard Peninsula in Cornwall and on Anglesey.

As you walk along the street look at the Halifax Bank. Can you see two different coloured granites?

9 Capel y Methodistiaid

Cafodd yr addoldy hwn, a godwyd yn 1905, ei adeiladu'n bennaf o dywodfaen coch a ffrufiwyd mewn diffeithdir. Gall y tywodfaen, sy'n brigo rhwng Abergele a Phrestatyn ac yn Nyffryn Clwyd, gael ei dorri'n flociau yn rhydd. Defnyddiwyd calchfaen llwyd golau, lleol ar gyfer y muriau rhwng y tywodfaen.



Os ydych chi'n ffansio paned o de, beth am ymweld â chaffi palmant Claire lle mae wynebau'r byrddau wedi eu gwneud o farmor. Roedd y graig atyniadol hon unwaith yn galchfaen, sydd wedi cael ei newid gan wres a gwasgedd.

Methodist Church

This place of worship, constructed in 1905, is built mainly of red sandstone formed in a desert. The sandstone, which is common further east, and in the Vale of Clwyd, can be easily cut into blocks. Local limestone of light grey colour has been used for the walls between the sandstone.

If you fancy a cup of tea, how about a visit to Clarie's pavement café where the tabletops are made from marble? This attractive rock was once limestone that has been changed by heat and pressure.

10 Y Gofeb Ryfel

Codwyd y gofeb o wenithfaen crisialog golau yn 1928, er cof am y rhai a laddwyd yn ystod y Rhyfel Byd Cyntaf. Ble welsoch chi'r math yma o graig o'r blaen?



War Memorial

This was built of pale crystalline granite in 1928 in memory of those who lost their lives during the First World War. Where have you seen this type of rock before?

11 Gwesty St George

Dyma'r gwesty hynaf ar lan môr Llandudno ac fe'i cwblhawyd yn 1854. Mae balwstradau o wenithfaen pinc a llwyd o boptu grisiau'r fynedfa.



St. George's Hotel

This is the oldest seafront hotel in Llandudno and was completed in 1854. The entrance steps have pink and grey granite balustrades.

12 Eglwys y Santes Fair

Mae nifer o wahanol fathau o ffosilau yn y calchfaen yn muriau'r eglwys. Faint gallwch chi eu gweld?

St. Mary's Church

There are several different kinds of fossils in the limestone in the church walls. How many can you see?

Dyma ddiwedd y Llwybr. Gobeithio eich bod wedi mwynhau'r daith a'ch bod wedi dysgu ychydig mwy am ddaear Llandudno a pha mor bwysig ydyw i'w warred! Here the Trail ends. We do hope you enjoyed the walk and hopefully you have learnt a little more about the geology of Llandudno and why it is so important to conserve it!

