
A Young Fossil Hunter's Field Guide

*The easiest fossils to find, and exactly where to look for them
on the North Yorkshire coast*



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Quick Start

Before you head out:

- Check the tide times: before you leave home. Know when low tide is. Aim to leave the foreshore at that time.
- If the tide cuts you off: do not run. Move inland, find high ground, and call 999.
- Wet rock is slippery: wear boots or shoes with a good grip. Flip-flops are dangerous on the foreshore.
- Stay away from the cliff face: cliff falls happen without warning, even on a calm day.
- Keep children close: within arm's reach at all times on the rocks.
- Hammers are for adults only: if you use one, children should face away and stand well back. Always wear goggles.

Your First Fossil Hunt Mission

Start at Redcar. Tick each one when done.

☐

Go to Redcar at low tide

☐

Find a gryphaea (devil's toenail)

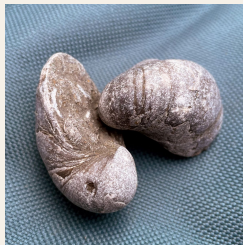
☐

Find a piece of belemnite

☐

Photograph something you cannot identify

What you're looking for:



Gryphaea



Ammonite



Belemnite



Jet

Before You Begin

A note on this guide. Most fossil guides tell you that fossils can be found all along this coast if you look carefully enough. This is true. It is also not very useful. This guide tells you specifically where to go, what you will find there, and when to visit. The aim is not that you just know what to look for. The aim is that you go home having found a fossil.

This guide is written for fossil hunters of any age: intended to be read aloud to younger children and followed independently by older ones. The North Yorkshire coast has been drawing geologists and naturalists for around two hundred years. People have been finding these fossils and giving them names for far longer: the snakestones and thunderstones of the folklore sections predate any geological understanding by centuries. Scientists are still discovering and cataloguing fossils from this coast today.

What is a palaeontologist?

A palaeontologist is a scientist who studies ancient life through the fossils it left behind. The word comes from the Greek: palaios (ancient), ontos (being), logos (study). When you pick up a fossil and ask what it was and how it lived, you are doing palaeontology.

Words worth knowing. Fossil: anything preserved from ancient life. Specimen: a single example collected or noted for study. Matrix: the rock surrounding a fossil. Suture line: the join between a chamber wall and the outer shell in an ammonite. Guard: the bullet-shaped calcite body of a belemnite. Valve: one half of a bivalve shell, such as gryphaea.

Each fossil entry has three sections: the natural history; Folklore, covering the old names and practical wisdom that accumulated before science caught up; and Observe, with instructions for what to look for when the specimen is in your hand.

Before You Go

Wet rock is slippery. Any wet rock on this coast should be treated as potentially slippery, whether or not it appears to have a covering of algae or sea greens. Rock that has been submerged by the tide, or is damp from spray, can offer almost no grip even in flat-soled boots. Footwear with good grip is not optional. Do not cross wet rock with children unless you are confident of the footing.

Tides.

Find your low tide time before leaving home: tide table apps and websites are the most reliable source. Plan to leave the foreshore at that time. The tide turns at low water and the lower sections become impassable faster than most people expect on this coast. Arrive as early as you like given that departure time. Two hours gives a good survey. More is rarely wasted. If you are cut off by the tide, do not attempt to outrun it on exposed rock. Move inland immediately, find higher ground, and call for help (999 in an emergency).

Weather and the cliffs.

After rain, cliff falls happen without warning on this coast. Do not stand directly below a cliff face, however stable it appears. After heavy rainfall or frost, wait a day before visiting cliff-base sites. The fossils will still be there.

Before You Go (continued)

Hammers.

If you bring a hammer, bring a geologist's rock hammer: hardened-steel, flat-faced. A domestic claw hammer can shatter or skid unpredictably. Safety goggles are not optional: rock fragments travel at speed and stone dust causes lasting eye damage. Do not hammer anything fixed to the cliff or bedrock; on SSSI-designated land it is illegal. What to look for: nodules and concretions in the shale: oval or rounded lumps, often a slightly different colour or texture to the surrounding rock, sometimes with a white calcite rim. These sometimes contain fossils. How to split them: find the flattest face or any visible seam and strike firmly once, rather than tapping repeatedly; a clean strike along a seam is far more likely to produce a clean split than a series of small blows. Be honest with yourself about the odds: it is a lottery whether anything is inside, and a second lottery whether the split goes clean and the fossil survives. Many collectors leave nodules alone for this reason. When splitting, children should stand well back and face away. Hammer work is for adults; the decision to split a nodule should always be an adult's.

How much to take.

Take what you will genuinely keep, study, and remember. If you have collected more than you intend to keep, leave the excess somewhere visible above the high tide mark: this is a long-standing tradition on fossil beaches and many a collector's best finds have started as someone else's surplus. Three good specimens learned well are worth more than a bag of twenty half-identified ones.

Beach access.

Access to individual beaches can be restricted at times due to cliff instability or path repairs. Check before you set off. If you arrive to find a beach closed, the others along this coast are not far: any of the locations in this guide makes a good alternative.

How to Look

Your eye is not calibrated for this yet. It takes approximately twenty minutes on a shale beach before your brain begins to distinguish fossil from pebble automatically. Do not be discouraged if the first stretch produces nothing. You are learning to see.

Look at wet rock.

A wet surface shows structure that dry stone conceals. Suture lines, fossil wood grain, plant impressions: all appear more clearly when the rock is still damp. Carry a small spray bottle if the tide is out and the rock is drying.

Look for difference, not for shapes.

Rather than searching for something that looks like an ammonite, look for anything that looks different from the rock around it: a different colour, a different texture, a repeated curve or line where the matrix has none. Your brain will learn to filter these signals faster than you expect.

Turn the light to your advantage.

Raking light, sunlight coming in at a low angle, reveals surface relief that overhead light conceals. In the late afternoon or early morning, even a modest specimen casts a shadow. Bring a small torch for the underside of boulders.

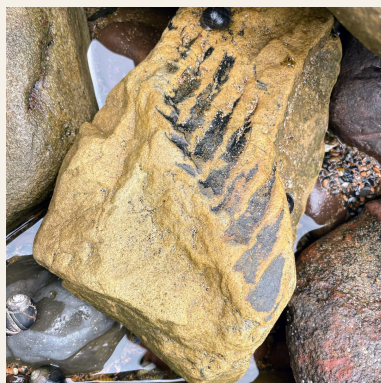
Slow down.

The people who find the most are not the people who cover the most ground. They are the people who stop the most. Pick a section of foreshore and check it thoroughly before moving on.

How to Look (continued)

Fossils in the bedrock. If you find a fossil that is still part of the rock and cannot be collected, photograph it from several angles and record its location using the what3words app, which gives every three-metre square on earth a unique three-word address. Download the app before you leave home. Whitby Museum will make good use of both the photograph and the reference.

Plant fossils. Impressions of fern fronds and leaf stems appear in shale on this coast, particularly in cliff-fall blocks at Saltwick and Runswick Bay. They rarely survive extraction intact; photograph them and note the location. If the imprint is clear, a geologist may be able to recover it properly.

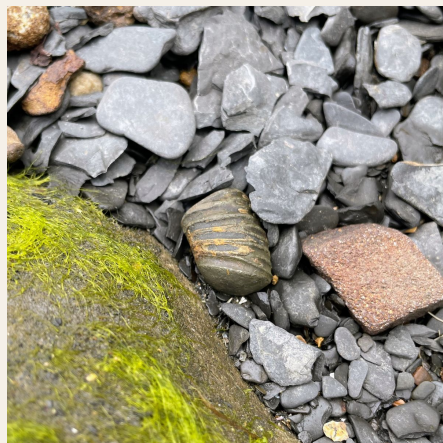


Plant fossil impression on sandstone

When to visit. Autumn and winter are the best seasons for serious hunting. Storm waves strip fresh material from the foreshore and expose beds that are buried in calmer months. The lowest tides, which reach parts of the foreshore inaccessible in summer, occur most reliably in autumn and spring. Redcar and Runswick Bay produce good results at any state of the tide in any season. For Robin Hood's Bay and Saltwick, check tide tables carefully regardless of season and favour visits after a period of rough weather.

Before leaving the beach, tick these off:

- ☐ Find a fossil
- ☐ Complete a record sheet for your find (back pages of this guide)
- ☐ Photograph, or sketch, something you cannot identify



The ammonite is the signature fossil of this coast. It lived in a warm shallow sea that covered this land during the Jurassic period, moving through the water much as a nautilus does today, drawing in water and expelling it to move, riding the currents in its coiled shell. The shell was divided into chambers; the animal occupied only the outermost. As it grew, it sealed each old chamber behind it and built a new one. The fine lines tracing the surface of the shell are suture lines, recording the boundary between each chamber wall and the outer casing. They are the ammonite's autobiography, written in stone.

Folklore.

Whitby people called them snakestones for centuries before any scientist gave them a Latin name. The legend held that St Hilda drove serpents from the clifftop and petrified them as they fell. You will sometimes find carved heads on the coil ends, added by Victorian fossil-sellers to make the story more convincing. The creature that lived inside the shell was a cephalopod, cousin to the squid and octopus, as far from a serpent as the sea allows.

Observe.

Follow the spiral from the centre outward with one finger. The curve does not change its proportions. Each new whorl is the same shape as the last, only larger. This is a logarithmic spiral; it is also present in the nautilus shell, in the arrangement of seeds in a sunflower, in the curl of a wave. Find the suture lines along the outer edge. They may look like small waves. Each one marks a wall the animal built and then sealed behind it as it grew.



The belemnite is not the whole animal. It is the guard, the internal skeleton that sat at the rear of a creature shaped roughly like a squid. The animal had tentacles, ink, and eyes, and swam in the same Jurassic sea as the ammonite. What we find on the beach is the hard bullet of calcite that formed inside the mantle: dense, heavy for its size, frequently marked with fine parallel lines that record the structure of the original mineral. Belemnite guards are among the most common fossils on this coast and among the most overlooked, easy to pass over as ordinary pebbles until the weight and the shape stop you.

Folklore.

They were called thunderbolts and thunderstones along this coast and through most of Britain. The belief was that they fell during lightning storms, which would explain why so many appeared on freshly washed beaches after a storm. They were kept in stables to protect horses, set into butter to stop it going rancid, and carried as good-luck pieces for centuries before any naturalist observed that the cliffs were full of them. The thunder explanation was reasonable with the information available. It was simply wrong.

Observe.

Pick up a belemnite and roll it between your fingers. It is heavier than a pebble the same size. Look at the flat broken end: where the calcite crystal has been cleanly exposed, you may see a radiating pattern of fine lines spreading from the centre like a star, and concentric rings around them, like a very small tree cross-section. These are the growth layers of the original mineral. Hold it to the light; a good specimen shows a slight translucence at the tip. This animal could change colour and squirt ink. You are holding part of its internal skeleton.



The gryphaea is an extinct oyster, and it is one of the easiest fossils on this coast to find once you know its shape. The larger valve is curved and gnarly, with a pointed beak that hooks back toward the centre in older specimens. The smaller, flatter valve served as a lid. What survives on the beach is most often the large valve alone: dark, heavy, with clear ridged growth lines running across it. Gryphaea lived on the sea floor in the early Jurassic period in large colonies, filtering food from the current. The beach at Redcar produces them in exceptional numbers. The Zetland Lifeboat Museum on the seafront there sometimes offers specimens found on the beach outside, free of charge.

Folklore.

They were carried in pockets across the north of England for centuries in the belief that they prevented rheumatism. The name devil's toenail needs no explanation once you have held one. What is harder to explain is why the hand keeps returning to it: the curved shape sits naturally in the palm and the thumb finds the growth ridges without being asked. It has been suggested that this may be one of the earliest fidget objects on record. It is unclear whether the constant handling contributed to the rheumatism claim. Fossil hunters are often found with one in a coat pocket long after the day's searching is done.

Observe.

Find the beak: the pointed tip of the large valve, curled back toward its own centre. Run a thumbnail along the growth lines from beak to outer edge; you can feel them as distinct ridges. Turn it over and find the inner surface: a smooth bowl with an oval muscle scar near the centre, where the animal's body was attached. This is where the oyster sat. The genus has been filtering food from shallow seas since before the earliest Jurassic. The one in your hand is from the very beginning of that span.



A fossil becomes pyritised when iron-rich water moves through the sediment during fossilisation and replaces the original shell material with iron pyrite, molecule by molecule. The result is immediately recognisable: a golden sheen where there would otherwise be dull stone. Ammonites are the most frequently found in this state on this coast, but belemnites, bivalves, and other shells can all be pyritised, and any specimen showing this golden finish is worth picking up. These are found principally in the alum shale exposures, and their preservation is frequently exceptional: the finest surface details outlined in a dull gold that catches the light at certain angles with considerable force. They are among the most beautiful objects this coast produces and among the most fragile: pyrite oxidises when exposed to air and moisture, and an untreated specimen can deteriorate within years.

Folklore.

Alchemists prized iron pyrite above most other minerals, believing it contained gold in an unfinished state, nature's own work arrested before completion. A pyrite fossil, with its golden surface and its impossible age, would have been considered an object of considerable power in any century before the sixteenth. The science has moved on. The object has not. If you find one worth keeping, seal it in a dry environment with a small desiccant packet. It will not last a shelf unprotected.

Observe.

It is heavier than you expect. Hold it in full sunlight and turn it slowly: the surface flashes at certain angles, then dulls, then flashes again. Look at whatever surface details are present: ridges, edges, the structure of the original shell. The golden finish follows every contour exactly, as if the fossil has been cast in metal rather than preserved in stone. This is iron pyrite. It has looked like gold for somewhere between 145 and 200 million years.

Three dark materials are found on this foreshore and are worth knowing apart. Fossil wood (lignite): dark brown-black, fibrous, with grain running in one direction, and noticeably light for its size. Coal: heavier, more uniform, no visible grain. Jet: the rarest and most valuable of the three. The streak test separates them decisively. Draw the specimen across unglazed porcelain or a pale stone floor tile. Fossil wood leaves a pale brownish mark. Coal leaves black. Jet leaves a warm brown or orange-brown. Weight confirms it: jet is remarkably light, fossil wood lighter still, coal is the heaviest of the three. Jet is found on this foreshore, most reliably between Whitby and Saltwick Bay, and most often after storms have shifted the shingle.

Challenge. Can you find jet?

1. Is it black or very dark brown? If not, it is not jet. Move on.
2. Does it feel cold and heavy like the stones around it? Then it is probably a stone or coal. Set it back.
3. Does it feel slightly lighter and warmer than expected? You may have found fossilised wood. Test it further.
4. Streak test: Scrape it firmly across rough sandpaper (80-grit works well) or a rough pale rock. Black streak — coal. Dark brown — lignite (fossilised wood: all jet is lignite, but not all lignite is jet). Chocolate or ginger brown — possibly jet.
5. Rub test: Rub one face briskly on cotton or wool clothing for a minute. Jet slowly develops a shine. Coal does not.

No field test confirms jet with certainty. Only an expert can. The jet jewellers in Whitby and Whitby Museum can both give you a verdict if you think you have something worth checking.

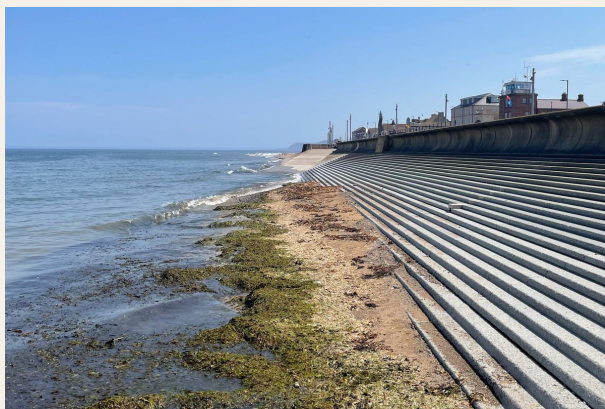
Folklore.

Jet beads have been found in Bronze Age burial mounds across Britain. Roman craftsmen sent it south from this coast. When Queen Victoria wore it in mourning, the workshops of Whitby numbered over two hundred. Meanwhile the fishermen of Whitby had been burning the darker lignite from the same cliffs as a practical fuel for centuries. Both materials came from the same ancient Araucaria forests: the difference between them is one of compression, time, and whether it will take a polish. The streak test was known here long before anyone wrote it down, passed between hands in transactions whose details are entirely lost.

Observe.

Run a thumbnail along a fossil wood fragment: the original tree's grain sometimes still runs in one direction. For a suspected jet piece, rub a small area briskly on your sleeve. If it develops a gleam, run the streak test. A brown or orange-brown mark, combined with a weight lighter than coal of the same size, means you may be holding something people on this coast have valued for four thousand years. The streak test is the oldest practical geology on this beach.

Redcar



Listed first for good reason: gryphaea are almost guaranteed here in number, on any visit at any state of the tide. At low water the wave-cut platforms are covered with them. Washed specimens also collect at the base of the beach steps and can be found even near high water. Ammonites, belemnites, bivalves, and other Jurassic fossils do occur, though less reliably than gryphaea. After severe winter storms, the shifting sands sometimes expose the stumps of a submerged ancient forest: waterlogged wood up to ten thousand years old, preserved since long before the sea reached this far. These are not stone fossils but genuinely ancient organic wood, and the exposure is not guaranteed; it depends on recent storm activity and sand movement. The Zetland Lifeboat Museum on the seafront houses the oldest surviving lifeboat in the world, sometimes offers gryphaea from the beach outside free of charge, and entry is free.

Parking: Pay and display on High Street.

Toilets: Moore Street, next to the RNLI Museum.

Distance: 2 minutes from the on-street pay and display to the beach.

Pushchair: Steps down to the beach, as pictured.

Where to Look
Saltwick Bay



East of Whitby, accessible on foot from the cliff path. Ammonite and belemnite fragments are almost guaranteed; intact specimens likely. Wherever pebbles have gathered, search them. At low tide, head right toward the small shipwreck; the rock pools around it hold belemnite and ammonite fragments in good numbers. The wave-cut platform shows belemnites lying in the surface of the rock: observe and photograph these but do not attempt to extract them. Whitby jet is findable here after storms. Saltwick falls within the North Yorkshire Moors SSSI. Access to the beach can change: check before visiting.

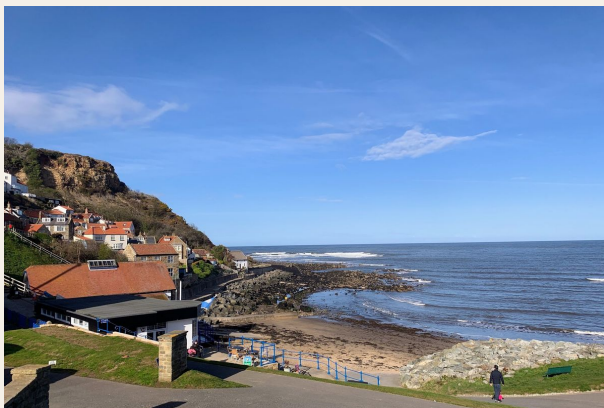
Parking: Free spaces on the lane just before the caravan park, fills quickly in summer.

Toilets: None at this location.

Distance: 10 minutes on a winding path down to the beach, steep in places.

Pushchair: Not suitable for pushchairs.

Where to Look
Runswick Bay



Head to the northern end of the beach. The wave-cut pavement there shows ammonites and belemnites in the surface of the rock and is worth a careful look. The SSSI designation applies only to the cliff face and rock scar to the north of the village; loose material elsewhere on the beach can be collected freely. Do not attempt to extract fossils from the bedrock pavement. Shale fragments in the shingle concentrations yield ammonites and belemnites, some fragile, some robust. Plant fossil impressions appear in cliff-fall shale slabs: photograph these; they rarely survive extraction intact.

Parking: Pay and display above the beach.

Toilets: Above the Sandside Café.

Distance: 5 minutes on a steep road from the car park down to the beach.

Pushchair: A pushchair can be managed, but the road is steep in both directions. Hang on tight on the way down; rather more effort on the way back up. Consider the return journey before you set off.

Where to Look
Robin Hood's Bay



A beautiful bay and worth visiting for its own sake. The beach near the village will turn up ammonite and belemnite fragments on most visits. The productive fossil areas however, the wave-cut platforms on the north side of the bay, are accessible only at low spring tides and are genuinely hazardous. They are not suitable for young children. Do not attempt the platforms without checking tides carefully, wearing boots with good grip, and ensuring children are closely supervised. Fossils here are a probable bonus, not a guarantee, and the visit is worthwhile regardless.

Parking: Old Station pay and display at the top of the village.

Toilets: Yes, at Old Station car park.

Distance: 15–20 minutes from the car park into the village and down to the beach. Steep in places, though less so than Runswick.

Pushchair: The hill into the village is steep. A pushchair is possible with care, but it is a long way down and a long way back. It's quite common to see parents carrying toddlers all the way back to the car park!

Where to Look
Inland: Kirkdale Beck



The streams cutting through the Howardian Hills run over Jurassic limestone and, in the right conditions, expose fossilised shells in the riverbed. The key condition is dry weather: several consecutive dry days are needed for the water level to drop enough to expose the bedrock. After a wet week this will not be possible. Hodge Beck at Kirkdale is one accessible example: follow the footpath beyond the church for a few minutes and the beck cuts through limestone below. Better observed than collected. St Gregory's Minster at Kirkdale, just beside the path, is worth the visit in its own right: an Anglo-Saxon church built around 1060, with a sundial above the south doorway dated to around 1055 and an Old English inscription naming the man who rebuilt it. Edward the Confessor was on the throne when it was carved.

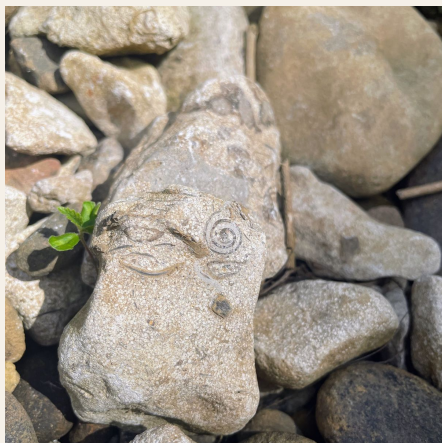
Parking: Church car park at St Gregory's Minster (small, free).

Toilets: None.

Distance: 5 minutes along the footpath down the left-hand wall of the graveyard to Hodge Beck.

Pushchair: Possible, but the meadow path can be overgrown in summer and very muddy in winter. Manageable rather than ideal.

Inland: Kirkdale Beck
What to expect



All these specimens from Hodge Beck at Kirkdale, found in loose material in the riverbed after a dry spell. The fossils here are embedded in pale Jurassic limestone rather than the dark shale of the coast; they are smaller and more varied, and the stone splits differently. Worth the walk.

If You Find Something Unusual

This coast has produced ichthyosaurs, plesiosaurs, and dinosaur footprints. Most of them were found by people who were not looking for them. If you find something that does not match anything in this guide, the procedure is always the same.

Photograph it in place. Before you touch it, take several photographs from different angles, including one showing its relationship to the surrounding rock and one with something to indicate scale: your hand, a coin, a boot. A specimen photographed in place is scientifically ten times more valuable than the same specimen lifted and carried home.

Note the location precisely. The what3words application gives every three-metre square on earth a unique three-word address. Download it before you leave home. A what3words reference is more precise and more easily communicated than any description, and Whitby Museum will find it useful. Note also whether the find is visible at all tides or only at low water.

Contact Whitby Museum. The Sutcliffe Gallery at Whitby Museum holds one of the most significant regional fossil collections in northern England. Staff can identify unusual specimens. They will not tell you off for finding it. They will be pleased you reported it.

Most unusual finds turn out to be unusual pieces of common fossils. These are worth reporting too. The record of what comes from which section of this coast is still being compiled.

Take It Home

Cleaning.

Rinse sea-collected specimens in fresh water and allow them to dry slowly, not in direct sunlight, which can cause rapid temperature change in calcite specimens and promote cracking. Remove loose, soft matrix with an old toothbrush; a wooden skewer or cocktail stick will shift shale without scratching the fossil surface. Hard matrix is a different matter. Most of the stone surrounding a fossil on this coast is harder than it looks, and picking at it with the wrong tool causes damage that cannot be undone: chipped ribbing, broken suture lines, a surface that looked perfect in the field and arrives home scratched. If the fossil is worth preserving properly, a fossil preparator with specialist tools is far less likely to damage it than you are. Whitby Museum can advise on preparation, and some specimens are better left partially in matrix than damaged trying to free them entirely.

Pyrite specimens.

Pyrite fossils oxidise when exposed to moisture, which can cause a specimen to crumble within years. Seal in an airtight container with a small silica gel packet and inspect annually. For a quick shelf-ready fix, a thin coat of clear nail varnish will slow deterioration. For longer-term care, Renaissance Wax applied with a soft brush will protect without affecting appearance.

Display.

A shale slab with multiple specimens displayed flat shows more than individual pieces set vertically. Label each: species, location, date. A school exercise book kept alongside serves the same purpose and makes the collection useful rather than merely decorative.

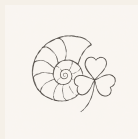
What you cannot keep.

Whitby Museum accepts donations of specimens that meet their collection criteria. Returning something to a collection where it will be properly stored and available to study is a reasonable outcome.

What Next

The North Yorkshire coast does not run out of things to show you. Each visit finds different material exposed, different light on the rock, a different tide uncovering a different section of foreshore. All of the fossils in this guide are a beginning. They are the most commonly found, not the most commonly remarkable. The same coast has produced ichthyosaur skeletons, dinosaur footprints, and ammonites large enough to need two people to carry. None of these required a professional. They required someone who slowed down and looked.

Slow down. See more.



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Museums Worth Visiting

Whitby Museum, Pannett Park.

The fossil collection here is one of the most significant regional collections in northern England: marine reptiles, fish, plants, and ammonites from this coastline, many collected by people walking the same beaches this guide covers. A visit before or after a day on the foreshore calibrates the eye considerably. You see what the fragments you find belong to. Free entry for children.

The Rotunda Museum, Scarborough.

Designed in 1829 specifically to display geological strata, with direct involvement from William Smith, the geologist who produced the first geological map of Britain. The building is circular, designed so that rock strata could be displayed around the walls in their correct order. The fossil collections include marine reptiles. If you want to see an ichthyosaur from this coast, this is the place to come.

Zetland Lifeboat Museum, Redcar.

The Zetland, built in 1800, is the oldest surviving lifeboat in the world. The collection upstairs includes large ammonite fragments from the Redcar foreshore. Free entry. Worth combining with a foreshore visit: the gryphaea on the beach outside are among the most abundant on this coast.

Yorkshire Museum, York.

The palaeontological collections here are substantial, covering Jurassic marine life from this coastline in depth, with specimens of a quality rarely seen outside national collections. For a day that combines foreshore in the morning with a museum in the afternoon, this is an excellent pairing.

Guided fossil walks.

Whitby Museum runs seasonal guided fossil walks on the foreshore with expert leaders. For children visiting for the first time, a guided walk is the highest-probability route to finding a named fossil in good condition. Check the museum website before planning any visit to the coast: the walks are often bookable in advance and fill quickly.

Make Your Own Necklace



The belemnite's bullet shape and dense calcite make it an ideal material for drilling. This is the same necklace people on this coast have worn for centuries: a bootlace and a stone from the beach.

What you need.

A belemnite with no visible cracks, at least three times the width of your drill bit. A variable-speed drill or Dremel. Two diamond-tipped drill bits: one pointed (to start the hole) and one of consistent diameter matching your bootlace. A clamp or vice with cloth padding to hold the fossil still. A small spray bottle or jug of water. A bootlace, approximately 70 cm.

Make Your Own Necklace (continued)

Method.

Secure the fossil firmly in the clamp; any movement during drilling risks cracking. Choose your entry point near the top of the thicker end, where the shell is deepest.

Set the drill to its slowest speed. Place the pointed bit on the entry point and begin. Apply no downward pressure: the weight of the drill is sufficient. Let the bit do the work. Spray or pour water onto the drilling area continuously; the water keeps the bit from overheating and the fossil from cracking. Do not allow the drill area to dry out.

Once a shallow pilot hole is established, swap to the wider bit and continue, always slowly, always wet. When the bit emerges from the other side, stop. Use the wider bit briefly on both sides of the completed hole to smooth the edges, so the hole sits cleanly and does not snag the lace. Allow the fossil to dry completely before threading.

Threading.

Thread one end of the bootlace through the hole. Position the fossil at the centre. Tie a simple overhand knot on each side of the fossil, close against the shell. These stop the fossil sliding.

The knot.

Fixed length: bring the two ends around behind the neck and tie them together, adjusting length before fastening.

Adjustable (sliding knot): lay the two ends parallel but pointing in opposite directions, overlapping by about 15 cm. Take one end and wrap it three times around both cords, then pass it back through the loops you have just made and pull firm. Repeat with the other end, working in the opposite direction. Pull the two knot ends apart to tighten the necklace; push the knots toward each other to loosen.

If the sliding knot is not making sense from this description, search "sliding knot necklace" online. A two-minute video will show what words cannot.

Your Fossil Hunt Checklist

Fossils to find:

- | | | |
|--------------------------|----------------------------|----------------|
| ☐ | Ammonite | <i>page 8</i> |
| ☐ | Belemnite | <i>page 10</i> |
| ☐ | Gryphaea (Devil's Toenail) | <i>page 12</i> |
| ☐ | Pyrite Fossil | <i>page 14</i> |
| ☐ | Jet | <i>page 16</i> |
-

Places to visit:

- | | | |
|--------------------------|-----------------------|----------------|
| ☐ | Redcar | <i>page 18</i> |
| ☐ | Saltwick Bay | <i>page 19</i> |
| ☐ | Runswick Bay | <i>page 20</i> |
| ☐ | Robin Hood's Bay | <i>page 21</i> |
| ☐ | Inland: Kirkdale Beck | <i>page 22</i> |
-

Something unidentified:

- | | |
|--------------------------|--|
| ☐ | Found something you cannot identify? Photograph it, note its location in what 3 words, and complete a record sheet for it at the back of this guide. |
|--------------------------|--|

Use the record sheets on the following pages to log each find.

Fossil Hunter's Record Sheet

Date: _____ *Location:* _____

Weather: _____ *Low tide:* _____ *High tide:* _____

Fossil found: _____

Sketch:



Notes:

Fossil Hunter's Record Sheet

Date: _____ *Location:* _____

Weather: _____ *Low tide:* _____ *High tide:* _____

Fossil found: _____

Sketch:



Notes:

Fossil Hunter's Record Sheet

Date: _____ *Location:* _____

Weather: _____ *Low tide:* _____ *High tide:* _____

Fossil found: _____

Sketch:



Notes:

Fossil Hunter's Record Sheet

Date: _____ *Location:* _____

Weather: _____ *Low tide:* _____ *High tide:* _____

Fossil found: _____

Sketch:



Notes:

Fossil Hunter's Record Sheet

Date: _____ *Location:* _____

Weather: _____ *Low tide:* _____ *High tide:* _____

Fossil found: _____

Sketch:



Notes:

Fossil Hunter's Record Sheet

Date: _____ *Location:* _____

Weather: _____ *Low tide:* _____ *High tide:* _____

Fossil found: _____

Sketch:



Notes:
