



AHNE Bryniau Clwyd  
Clwydian Range AONB

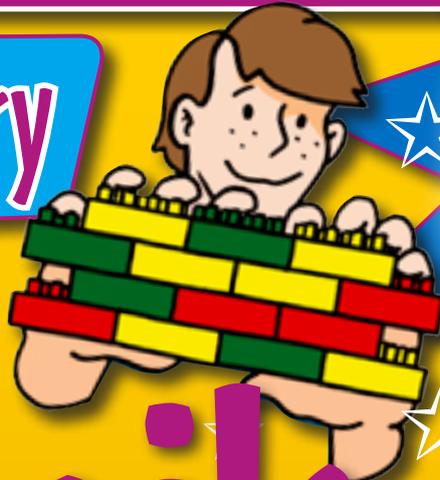


# EARTH SECRETS TRAILS

*Unearth the secrets in the forests*

## Follow Dazzle's Story

Look through the CRYSTAL in your backpack to see the world as Dazzle does!



# Trails

# Puzzles

# GAMES



## DISCOVER EarthCaching!



at Coed Moel Famau  
and Coed Nercwys



Comisiwn Coedwigaeth Cymru  
Forestry Commission Wales

# Welcome Secret Earth Seekers!



## YOUR CHALLENGE

Solve the puzzles at COED MOEL FAMAU (page 5) to return Dazzle to the rainbow or unearth the secrets of the COED NERCWYS PUZZLE TRAIL (page 7).

All you need is this action-packed ACTIVITY BOOK and a GPS PUZZLE SEEKER and you're ready to go!

AND REMEMBER!

Complete the puzzles for either trail to CLAIM A PRIZE from our EARTH SECRET'S TREASURE CHEST!

## Using the GPS Puzzle Seeker



First take it outside – you can do this at Loggerheads Country Park, Coed Moel Famau or Coed Nercwys.

**1** Press and hold the POWER button



Wait for the GPS to find the satellites – the screen will say **READY TO NAVIGATE**

Press the PAGE button **FOUR** times to reach the **MENU** page

Use the UP & DOWN buttons to the **WAYPOINTS** tab and press OK

**2** Either select 'LIST ALL' and use the UP & DOWN to go to C for COED NERCWYS or M for COED MOEL FAMAU.

Or Select 'FIND NEAREST' and the GPS will show you the closest puzzle.

COED MOEL FAMAU puzzle places are listed MFI to MF7, and COED NERCWYS are listed CNI to CN8.

**3** Use the UP & DOWN to go to your chosen puzzle point and press OK.

**4**



The next screen should have **GO TO** selected press OK

**5**



Now you're on your way! Just follow the arrow in the circle, it will lead you to the puzzle point. The distance counts down to get you close to the puzzle point (within 5m).

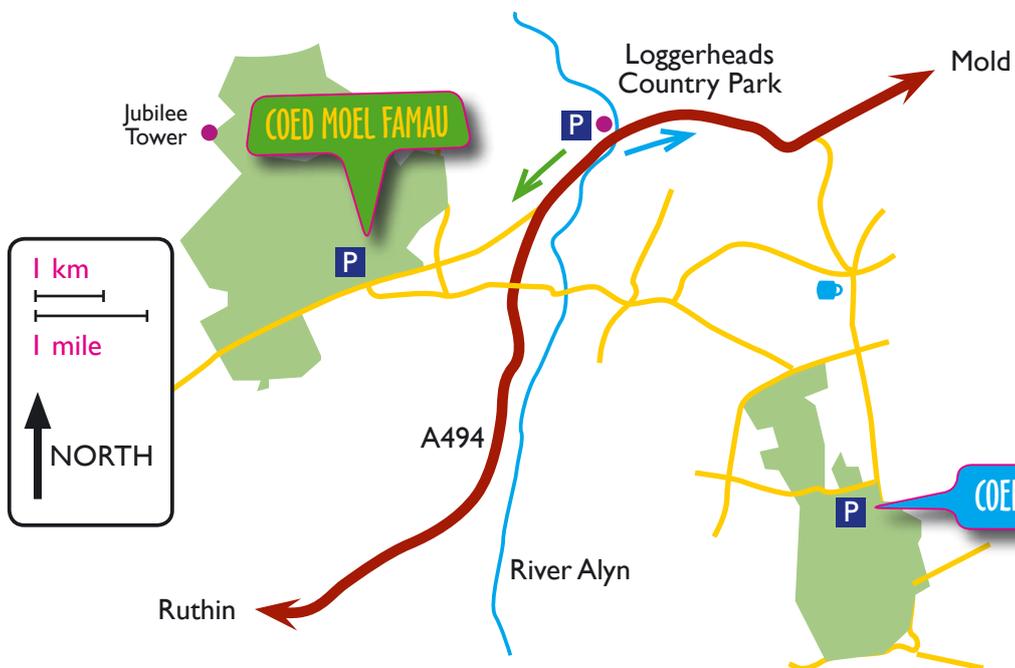
**6**

When you have completed a puzzle, go back to the menu (step 1) to find the next puzzle point.

### Quick tips

- The GPS only works when you are moving
- It works best with a clear view of the sky - you may lose the signal in the car or under trees
- The PAGE button moves you between pages. Keep pressing to go through the menus to get to one you want.
- If it all goes horribly wrong, just switch off and start again.

Now get caching!



Where  
you're  
going

## Directions from Loggerheads Country Park

For COED MOEL FAMAU (1.9 miles - 5 minutes Sat Nav  $53^{\circ} 8'25.33''N$   $3^{\circ} 14'24.84''W$ )  
Turn right out of Loggerhead Country Park onto the A494. Take the second right after less than a mile signposted Tafarn y Gelyn and Moel Famau. Go straight on and continue for half a mile. Coed Moel Famau Forestry Commission car park is on the right. Please note you need £1.00 for parking.

For COED NERCWYS (3.4 miles - 8 minutes Sat Nav  $53^{\circ} 7'29.58''N$   $3^{\circ} 10'10.56''W$ )  
Turn LEFT onto the A494.

After 0.9 miles take third RIGHT just past 'Eagles Crawford' coach depot onto Glyndwr Road. Turn left at the Owain Glyndwr Inn following the road round a sharp right to reach a cross roads on Ffordd Glyndwr. Go straight on following Ffordd Cae Newydd taking the first right. Coed Nercwys car park is on the left.

## EarthCaches in the Clwydian Range Area of Outstanding Natural Beauty

### What are EarthCaches?

EarthCaches are special places to explore in the landscape with remarkable geology, views, or stories. An Iron Age hillfort might be one, or a stream, bridge, quarry or monument. There are EarthCaches at special places of interest along Offa's Dyke Path National Trail, the Dee Valley Way and the North Berwyn Way.

### How do I find them?

You need to own, borrow or hire a hand held GPS unit. With this you can download the coordinates for all the Clwydian Range caches from [www.geocaching.com](http://www.geocaching.com). Alternatively you can follow the link from the AONB's website [www.clwydianrangeaonb.org.uk](http://www.clwydianrangeaonb.org.uk)

There are all kinds of caches hidden in and around the Clwydian Range AONB. If you hire a GPS from Loggerheads Country Park the Earth Seeker Trails are already loaded for you.

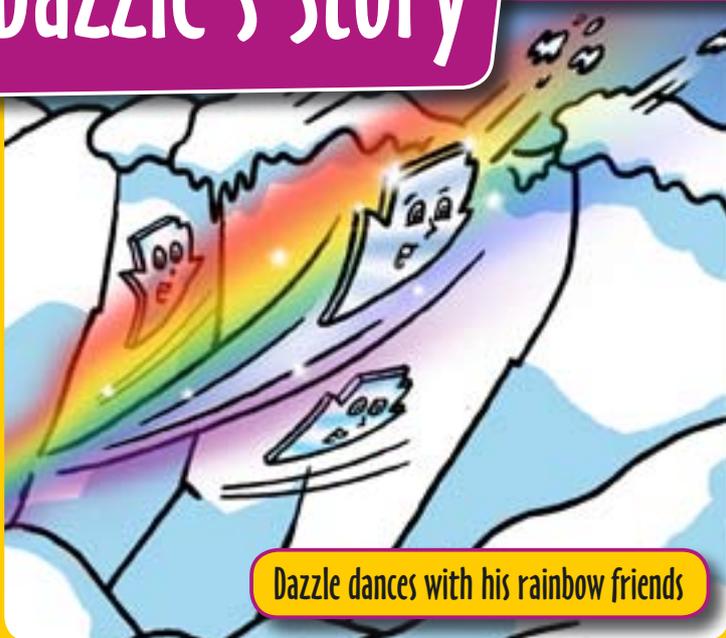
### Caching all over the world!

EarthCaching is great fun for all the family! It is part of a world-wide, high-tech treasure hunt called Geocaching. Through Geocaching you will find some of the most rewarding, beautiful and interesting places in the world. Go online and see if there's a cache near you!

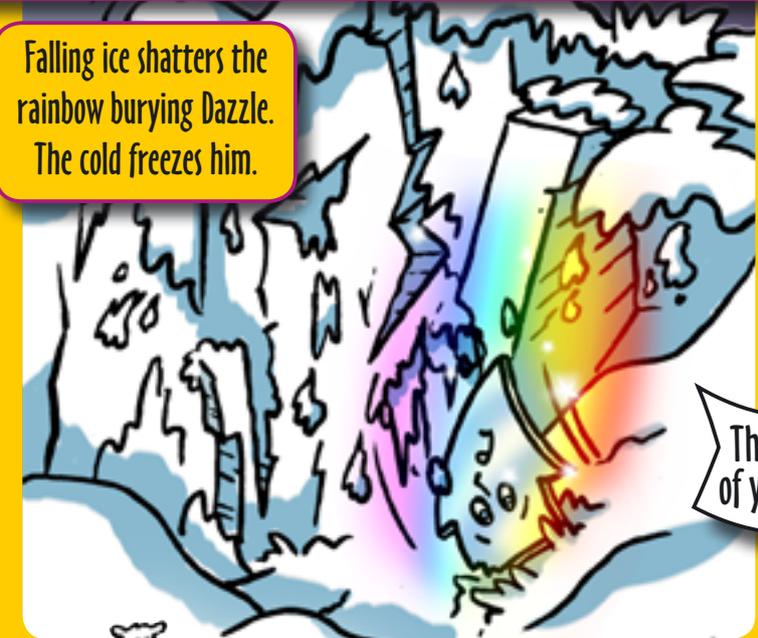


# Dazzle's Story

Dazzle is a chip of dancing rainbow-light. He was made by the sun.

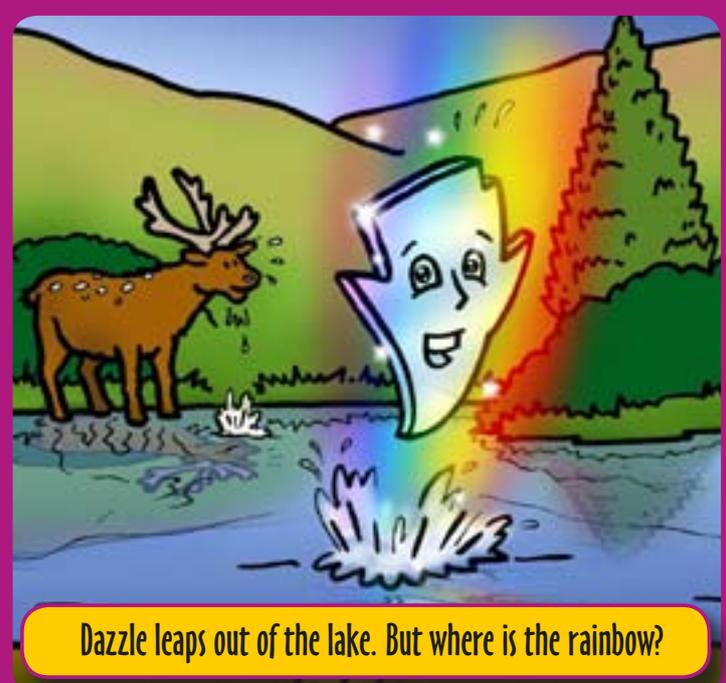


Dazzle dances with his rainbow friends



Falling ice shatters the rainbow burying Dazzle. The cold freezes him.

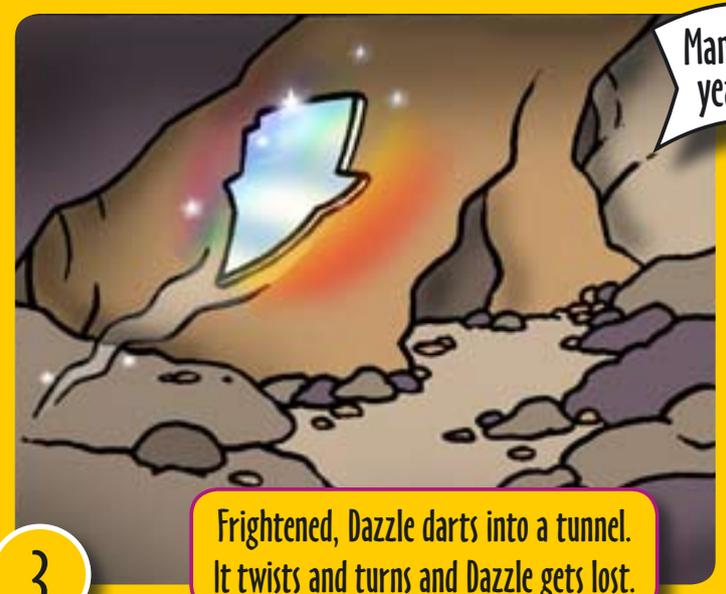
Thousands of years pass



Dazzle leaps out of the lake. But where is the rainbow?



It's dark. The only light Dazzle can see is the glow of a camp fire in a cave.



Many, many years pass

Frightened, Dazzle darts into a tunnel. It twists and turns and Dazzle gets lost.



Dazzle finds a waterfall and dives in. The bubbling waters wash him out of the cave...

Dazzle is free at last

sun shining on the glittering ICE of the huge glacier that made this valley. This is his story . . .

Dazzle wakes up in a deep, cold lake, made from the melting ice, called a 'kettle hole'.

lands  
ers pass



Dazzle streaks in  
startling a family  
in a cave!  
They shout and wave  
their hunting spears!

Dazzle dances with the  
glittering splashes of the  
mountain stream, but he  
misses his rainbow home.

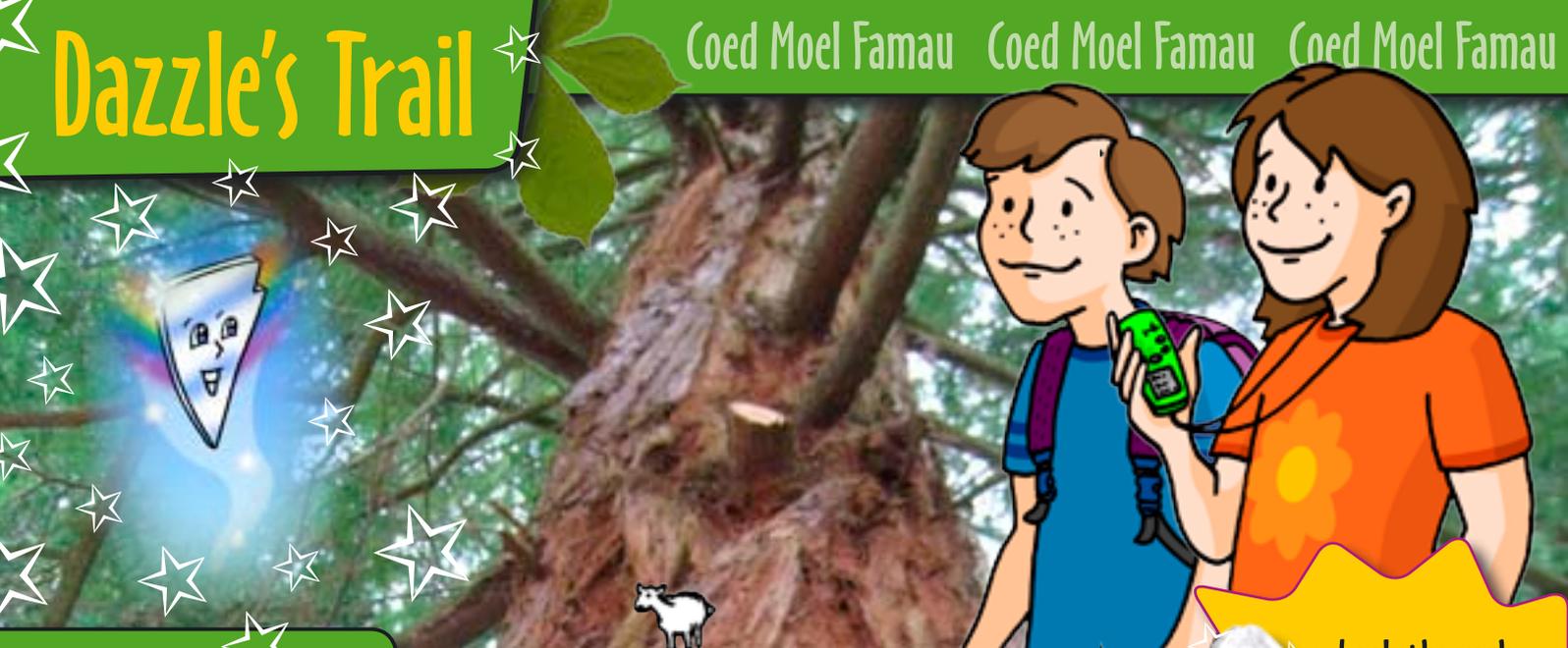
Help Dazzle find  
his way back  
to his rainbow  
home by solving  
the puzzles over  
the page...

le is  
t last!



# Dazzle's Trail

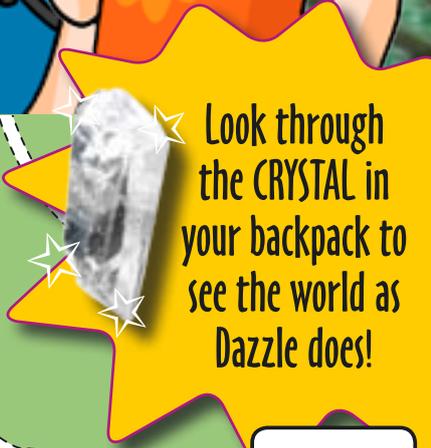
Coed Moel Famau Coed Moel Famau Coed Moel Famau



## Welcome!

To help Dazzle find his way back to the rainbow you need to summon special EARTH MAGIC. There are five puzzles around Coed Moel Famau. Solve the puzzles, find the Secret Pool and chant the magic spell to send Dazzle back to the rainbow. Please stay on the paths.

Go back to Loggerheads to claim your TREASURE from our special TREASURE CHEST.



Look through the CRYSTAL in your backpack to see the world as Dazzle does!

## MF 1 START



## MF 2 DAZZLE'S BRIDGE



This playful little stream didn't shape this wide valley. What did?

**CLUE** - It made all the rocks in the water smooth as it ground out the valley floor?

**TASK** - Pick up a small rounded stone from the stream bed

Set your Puzzle Seeker to MF3

## MF 3 THE TALL SOFT TREES



Tall American softies; what makes these trees so different from the other trees planted or growing naturally in the valley? In California where they grow naturally, they can live to be 4000 years old and grow to 115 metres high. Fossils of the ancestors of these trees prove that they grew in Britain hundreds of millions of years ago.

Do you know what these trees are called?   E     W     D  

**CLUE** - What colour is their bark?

**TASKS** - Touch the bark, how does it feel?

Now set your Puzzle Seeker to MF4

5



### MF 4 CARVED BENCH

This bench has been shaped to look like something you might find growing here. Question - What shape is the bench?  
-----

TASK - Find one like it and take it with you

TASK - Look down the valley, what shape is it? Does it look like the letter U or V?

Now set your Puzzle Seeker to MF5



### MF 5 THE BLACK BIRD

The bones of Ice Age animals have been found in caves near here, but no birds have been found.

Task - Circle the name of the animal that lives in the heather of Moel Famau today?

WOOLLY RHINO REINDEER GROUSE WOOLLY MAMMOTH WOLF CAVE BEAR

Now set your Puzzle Seeker to MF6



### MF 6 THE RIPPLE POOL

Pools like this often form at the snout of glaciers. Look at the ripple marks in the mud in the bottom of the pool. Ripple marks are often found in rock fossils showing they were once river or sea beds. What force washed the mud into the pool - Gravity? Erosion? Magnetism?

Write the word here -----



### The Final Clue

Fill in the missing word in the rhyme by taking the first letter from each of your answers and unscrambling them.

Icy crystals, glittering bright  
Dazzle the air with rainbow light  
But even rainbows need to fear

The powerful ice of a \_ \_ \_ A C \_ \_ \_

### MF 7? THE SECRET POOL

Take the first letter of the answer to the Final Clue, and add it to MF7 to find the Secret Pool. Is it MF7G, MF7E or MF7M? Make sure you get it right or you'll walk in circles!



To return Dazzle to the rainbow...  
Once you have found The Secret Pool, stand on the bridge and drop your stone into the stream, and say this rhyme out loud :

Icy crystals, glittering bright  
Dazzle the air with rainbow light  
With this rhyme and a splashing stone  
Send Dazzle back to his rainbow home

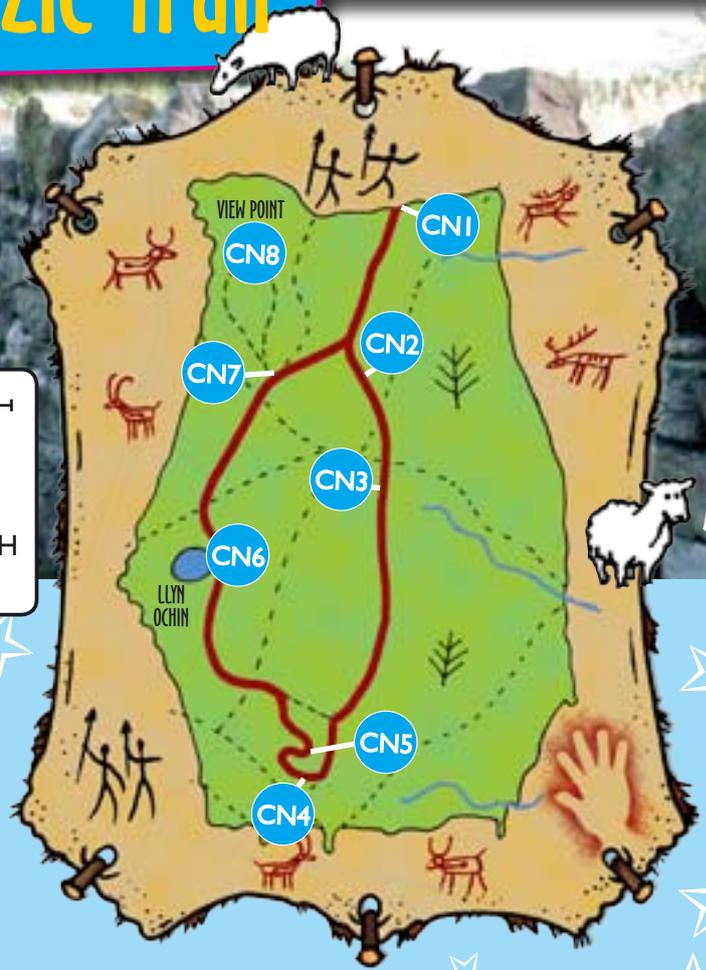


Set your Puzzle Seeker to MF1 to return to the start.



# The Coed Nercwys Puzzle Trail

Coed Nercwys Coed Nercwys



## Welcome!

Explore this amazing forest to find bendy rocks, bits of beach, giant ponds made by ice and lead mines. Use your Puzzle Seeker to find each waypoint and complete the puzzles. Then go back to Loggerheads to claim your EARTH TREASURE from our special TREASURE CHEST. After you've completed the last puzzle point follow the Puzzle Seeker to enjoy the view point at CN8. Please stay on the paths.

## START

Set your Puzzle Seeker to CN1 to start

CN1

This car park wall is made from MUD! Millions of years ago, it was squashed and squeezed to make rock.

Help Lewis the slug race up the wall, avoiding the dangers

Wall of MUD



start here

7

Now set your Puzzle Seeker to CN2 to find the next puzzle

CN2

# Bendy ROCK?

Can rock bend?

Pick up a piece of rock from the quarry -  
Can you make it bend?

Some things bend a lot.

Some things bend a little.

And some things bend and snap!

What made this rock bend?

Eighteen thousand years ago a thick sheet of ice crept slowly across the land, covering it. Its incredible weight slowly dragged across the rocks, bending them as they went.

What bends? try bending a banana, a pencil, Lego, modelling clay or some other stuff.

Try this at home

Make a row of Lego bricks or Duplo and put another on top. Keep adding layers until you have four or five. See what happens when you bend them.



Roll out three different colours of modelling clay. Cut them to the same length and thickness and stack them one on top of each other. Bend them.

Which is most like the bendy rock of the quarry?

A: Lego strips bend but break like the rocks in the quarry



baaa!

# Home on the Hill

Who lived here?

Join the dots and colour in the picture.

He's lost some sheep!

How many can you find in this comic?

Follow the wall up the hill to find the old shepherd's house.

What does 'Cyn y Coed' mean?



CN3

# Wave from the hill

CN4

Find the beach!

Hunt along the right-hand side of the path.

Can you find sand and small round pebbles in the bank at the edge of the path?

These show that, although today we are high up on Nercwys Mountain, this was once a beach!

The pebbly sand was dropped by waves hundreds of millions of years ago.

Pick up a pebble and take it with you to show you found the beach.



CN5

# BRONZE AGE VIEW



This view hasn't changed much since the last Ice Age thousands of years ago. It would have looked a lot like it looks today to the Bronze Age people who built the burial cairn.

Tick the modern things can you see in this view?

- Wind farms
- Roads
- Cement factory
- Electricity pylons
- Your house



CN6

# ICE POND

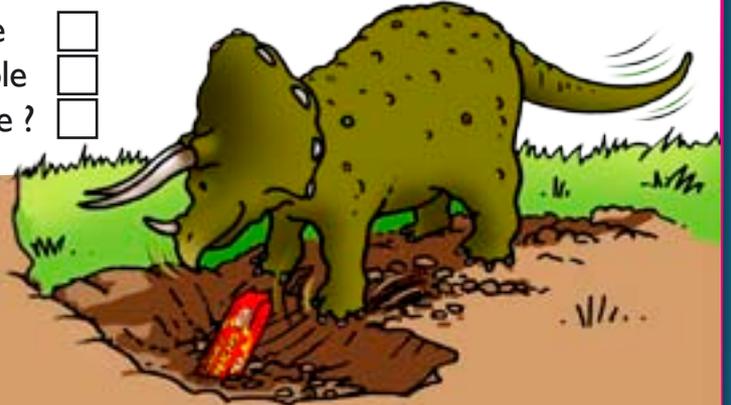
What made Ochin Pool?  
A great big digger?  
Dinosaurs digging for biscuits?  
A huge block of melting ice?

A gigantic river of ice called a 'glacier' dropped a chunk of ice bigger than a house. It melted and made this pool.

Is it called a

- Kettle hole
- Tea pot hole
- Mouse hole ?

Today it's a great place to see wildlife.



A: Glacial lakes like this are called Kettle Holes because of their steep sides



CN7

# The Riddle of Pant Du

Pant Du is one of many lead mines in this area. But silver was mined here as well. It was a busy mine, with several shafts.

Read the poem and see if you can guess where the silver and lead came from.

## The silver in the sea

In the shallow surging sea  
shoals of fish move endlessly  
Glittering and shining scales  
catch the light like silver nails  
The spiky teeth of coral reefs  
keep their secrets underneath

Miners digging underground  
went deeper and deeper 'til they found  
rock so rich in silver ore  
they kept on digging more and more  
dropping shafts all over here  
'til all the silver'd disappeared



A: Look again at the poem's title. The silver and lead was formed over millions of years by a chemical reaction between sea water and limestone.

Can you find SILVER in this word search?

I	S	L	V	E	S
I	E	I	R	I	L
R	L	E	L	S	I
I	R	V	S	E	V
R	E	L	V	E	S
R	V	I	L	R	E

Find the words in the clues

P	E	B	B	L	E
I	R	N	E	L	C
D	E	E	N	A	I
A	V	W	D	W	O
E	L	T	T	E	K
L	I	S	O	O	P
O	S	I	L	V	P

The snail climbed the \_\_\_\_\_

Heavy ice made the rocks \_ E \_

A \_\_\_\_\_ is a smooth round stone

A c \_\_\_\_\_ is a pile of rocks

\_\_\_\_\_ melted to make Ochin Pool

You boil water in a \_\_\_\_\_ l \_\_\_\_\_

Pant Du was a lead and S \_\_\_\_\_ mine

Which word is missing?



Set your Puzzle Seeker to CN7 to go back to the start