

# LLANBADOC GEOLOGY TRAIL

## QUIZ

Welcome to the trail that keeps your mind on the ground. We hope that this little quiz will help you think about this amazing planet spinning through space without making your head spin **too** much !

The trail starts in Llanbadoc car park but there is also a car park at Cefn Ila to do part of the trail. It will help if you can download our leaflet (QR code on the information board).



Starting in Llanbadoc car park. **1** on the map.

There is a picture of a famous man on the information board who was born not far from here. What was his name? (1)

You can't miss the river Usk running by the car park. Which direction is it running in, North or South? (Hint: the sun is in the south around midday) Or you could look at the map. (1)

Some rocks are older than others, and some are made in different ways. On the geological map the different rocks are in different colours. What are the rocks on the other side of the river called? (Hint: there is a colour in the name) (1)

Leave the car park and follow the trail. BE VERY CAREFUL CROSSING THE ROAD. Stop when you have crossed the main road and are on the footpath. This is marked **2** on the map. There are some rocks to look at.

What colour are they- brownly red or greeny brown or blue grey? (1)

The river carries sand and mud down to the sea, and sometimes the river floods and the sands and muds build up on the flood plain. If mud makes mudstones , what do sands make?(1)

Lime comes from little creatures with shells that dissolve over time and enough lime in a rock makes it a hard limestone.

These rocks contain little white fossil corals. Can you spot them?(1)

These rocks were laid down in flat layers in the sea. Are they flat like a bed or are they nearly upright?(1)

Walk up past the next stile. You are walking on top of a cliff, high above the river. ③ on the map

How high do you think it is? 2,10,or 30metres? Hint : rugby posts are about 15metres high(1)

The cliff is very steep **don't go too close to the edge**. The rocks we are on are OLDER than the ones down below on the other side of the river. What might have happened?(1)

When big pieces of the earth's crust (called tectonic plates)collide, the land can get pushed up. You are standing on a dome of older rocks surrounded by younger rocks . It looks a bit like a leaf on the map. It is called the --- -----(1)

Keep walking along the ridge ④ .

What can you see that has sails but never goes to sea?(1)

Walk up the field past the twin electricity poles. There are two gates to cross at the top. ⑤ ⑥

We are crossing the top of a little valley, but is there a river in it? (1)

Sometimes the plates are pulled apart and cracks form. They are called faults.  
There is one between the two gates and you have just crossed it .Can you see it?(1)

Walk up the next 2 fields to the next gate. There are lovely views on a nice day to the south. ⑦

The sea that the rocks beneath us were formed in was closing up and as the sea got shallower more limestones and sandstones were formed. They tend to form the higher ground here. Why?(1)

Go straight down the lane and cross a road to the gate into Cefn Ila and stop at the rocks you can see on the drive.

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Are they nearly upright? (1)

What colour are they?(1)

There are small fossils of shells in these rocks. A picture of one of them, called a brachiopod is on our trail marker. The shells are dissolved out but the little holes remain. There are loose stones to look at Did you see any? I point for yes.

Go back down the drive and follow the trail to the tubular bells.

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The craggy rock off the path is completely different to the mudstones on the drive.

Can you draw the fossil bit you can find there?(1)

10 Walk on the trail path to the top. Here you can go across to the woodland and get the path back into Usk, or you can walk to the walled garden before going back on the same path to the Llanbadoc or Cefn Ila car parks

Questions for the walled garden route:

Go into the walled garden. Can you find another small area of the same rocks as you saw on the drive? (1)

You walk past a hut. What is it?(1)

Questions for the woodland route:

When you get out of the woodland cross the field to the middle of the field and look at the view. 11

The mountain called the Sugar Loaf looks like a volcano but it isn't.

A glacier flowed between this and the mountain to the left, west, called the Bloreng in the last ice age 20,000years ago. What is a glacier?(1)

Walk back to Usk and look at the reddish rocks of the bridge. What are they called again?(1)

The End. Answers on the next sheet.

## ANSWERS

### Location 1 Llanbadoc car park

Alfred Russel Wallace, co-proposer of the theory of Evolution (with Darwin)

South

Part of the Old Red Sandstone Formation

### Location2

Blue grey

Sandstone

They are mostly in the lower right hand corner but give yourself a mark for any fossil that you see.

They are nearly upright- it's proof that these rocks have been moved by huge forces, in this case being folded up.

### Location3

30m high.

The fact that the old rocks are up here must mean they have been pushed up since they were laid down, or the younger rocks were pulled down. Or both.

The Usk Inlier

### Location4

You can see it and its painted white.

### Location 5 and 6

No there's no river. Faults weaken the rocks and they wear down more easily, even if there's no river to do it.

No- faults are usually deeply buried and you rarely see a dramatic crack at the surface.

### Location7

Sands are mostly tougher rocks and limestone is used for cement so you can see why it might be tough to wear them down. Mudrocks are usually softer. So they are worn down more easily and often form the low lying land.

### Location8

No. They aren't flat either, and they are younger than the rocks at location2. They probably moved on the fault after the dome formed.

Softer. They break quite easily

Greeny brown

If you didn't see them, this is what they might look like



### Location9

Any shape that looks like a donut will do.

### Walled Garden route

It's by the old greenhouse

Bat house

It was a (maternity )hospital

### Main trail route

Glaciers are rivers of ice that move very,very slowly.

You're crossing the fault again.

Old Red Sandstone.

