BBC LEARNING ENGLISH

6 Minute English

Did Taylor Swift fans cause an earthquake?

This is not a word-for-word transcript.

Phil
Hello. This is 6 Minute English from BBC Learning English. I'm Phil.

Georgie
And I'm Georgie.

Phil
If you're a 'Swiftie', that's a fan of pop star, Taylor Swift, her music **rocks your world**.

Georgie
I like that phrase, '**rock your world**', Phil. It means that something makes your life enjoyable, right?

Phil
Well, yes but actually no, Georgie. I mean, Taylor Swift *literally* rocks the world! At a recent concert in Edinburgh, as part of Taylor Swift's 'Eras' tour, her fans' energetic dancing literally moved the Earth, with seismic activity usually associated with earthquakes detected four miles away!

Georgie
Yes, it's hard to believe, but in this programme we'll be hearing about the 'Swift-quake', a powerful force like an earthquake coming not from nature, but from a pop concert! And, as usual, we'll be learning some useful new vocabulary as well.

©British Broadcasting Corporation 2024

Phil
Great. But first I have a question for you, Georgie. Actually, Taylor Swift's Edinburgh show wasn't the first music concert to trigger seismic waves. In 1992, the band Madness caused two earthquakes that saw local residents evacuated from their homes. But at which London venue did the concert take place? Was it:

a) Hyde Park?
b) The Royal Albert Hall? or
c) Finsbury Park?

Georgie
I'll guess the concert was held at the Royal Albert Hall.

Phil
OK, Georgie, I'll reveal the correct answer at the end of the programme. Following Taylor Swift's Edinburgh concert, seismologists Emma Greenough and James Panton from Cardiff University, wanted to see if the same thing would happen at Taylor's concert in Cardiff. Seismologists are scientists who study earthquakes and seismic waves. Emma and James set up their equipment to monitor and record ground motion as the concert got started, as James explains here to Marnie Chesterton, presenter of BBC Radio 4 programme, 'Inside Science':

Marnie Chesterton
Tell me about the **peak** on this graph that you're seeing, and what that actually corresponds to.

James Panton
In this top graph of the red wiggly line, we're looking at the ground velocity in essentially metres per second. So, that's the velocity that the ground is vibrating up and down.

Marnie Chesterton
So, this is literally people stamping up and down.

James Panton

©British Broadcasting Corporation 2024

Yes, so this is all of the energy combined from the 73,000 people in the stadium, jumping **in unison** and stamping **in unison**.

Marnie Chesterton
James, the British Geological Survey recorded 23.4 nanometres of movement in Edinburgh. What's that actually mean?

James Panton
So, what that means is that they recorded the ground **flexing** up and down by a distance of 23 nanometres.

Georgie
James's equipment recorded seismic movement when Taylor Swift started to sing. Her hit song, *Cruel Summer*, created a **peak -** the highest point - in the graph which James's machine was drawing. The peak was made by thousands of Swifties jumping up and down **in unison,** together and at the same time, creating something like a mini earthquake.

Phil
The seismologists measured a ground movement of 23 nanometres. That may not sound much, but remember this is the earth itself actually **flexing** or bending without breaking.

Georgie
So, the ground is shaking, music is blasting, and thousands of fans are dancing. But does this qualify as an earthquake, scientifically speaking? Here's James Panton and Marnie Chesterton again for BBC Radio 4's, Inside Science:

Marnie Chesterton
James, impressive as this is to see coming up on your seismograph, this is not **the same league** really as an earthquake.

James
No, definitely not. There have been some people who have tried to convert the energy output from concerts into a local magnitude scale to make it **comparable**

©British Broadcasting Corporation 2024

to an earthquake, and when that's happened, we find magnitudes that are generally less than one.

Phil
Sadly, the answer to Georgie's question is 'no' – the Taylor Swift concert wasn't technically an earthquake. Marnie says the concert was **not in the same league**, an idiom meaning not nearly as good or important as something else.

Georgie
Yes, the energy created by the music's sound waves and thousands of fans jumping *did* move the earth, but not in a way that's **comparable**, or similar, to a real earthquake. By definition, an earthquake must break the earth's crust, and is caused by either the movement of tectonic plates or a volcano. Officially, Taylor Swift didn't cause an earthquake, but for the Swifties it probably felt like one!

Phil
All of which brings us back to my question, Georgie. I asked you about another earth-shattering concert involving the British band, Madness, but where in London did the show take place?

Georgie
And I guessed it was The Royal Albert Hall.

Phil
Which was the wrong answer, I'm afraid, Georgie. In fact, the concert happened in Finsbury Park. OK, let's recap the vocabulary we've learned in this programme starting with the phrase, **rock your world**, meaning that someone or something has a positive effect on you, making your life enjoyable.

Georgie
A **peak** is the highest point of something.

Phil
When things happen **in unison**, they happen together, at the same time.

Georgie

©British Broadcasting Corporation 2024

To **flex** means to bend without breaking.

Phil
If you say something is **not in the same league** as something else, you mean it's nowhere near as good or important.

Georgie
And finally, the adjective **comparable** means similar in size, amount, or quality. Once again, our six minutes are up, but remember to join us again next time for more trending topics and useful vocabulary, here at 6 Minute English. Goodbye for now!

Phil
Bye!

©British Broadcasting Corporation 2024

VOCABULARY

(someone or something) rocks your world
someone or something has a positive effect on you, making your life enjoyable

peak
the highest point of something

in unison
together, at the same time

flex
bend without breaking

not be in the same league
(idiom) not nearly as good or important as someone or something else

comparable
similar (in size, amount or quality) to something else

©British Broadcasting Corporation 2024