



Geological time

Rock layers

Andrew Bell:

It's been said that the history of rocks is like the history of war: "vast periods of boredom interspersed with short episodes of terror". Actually in the rock most of the time is not in the body of the rock itself but in the gaps between them. And let's have a look at this little bit in here. We've got, it's all grey rock, this little bit is a lighter greeny grey, happens to be a bit sandier, that bit is a bit finer, a bit muddier, there's a sharp gap in here. Now how might those formed. Well I'll show you. Going to make some rocks here in the back garden and I want you to concentrate as I do it on how long each event takes. They're going to be a bit different from the ones we've just seen.

Some wet sand, some water now I'm going to shake it up, now start watching. In just a few seconds the sand has settled out and I'm sure you can see a layer of sand forming at the bottom there. If we let enough time past the muddy bit is going to settle out as well. Now the ml, Jd is starting to settle out but it's going to take several days perhaps a week for the water to clear. Nonetheless, we're forming a layer of mud on top of the sand. Now event number 2, I'm going to add some more sand. I asked you to think about how long each of these events took. Now the two sands the bottom one and the top one settled out in seconds. The very thin muddy layer in the middle took much longer, days to settle, But the real time is between the two pourings of the sand. I could have put the second sand in days, weeks even years later for all we know. And it's just the same in rocks, when we look at rocks there is much more time in the boundary between two rock units than there ever is in the actual rocks themselves. So in layered rocks like these limestones, there's far more time represented by the boundary here, than there ever is the limestone underneath or the limestone up above