

Developing pupils' knowledge throughout a scheme of work

By Emily Maule

Scaffolding builds pupils' skills and confidence and helps them to realise that they can use their prior knowledge to move forwards. I like to always provide some form of scaffold, but as we go through a scheme, the guidance becomes less as pupils build confidence.

when introducing a new or abstract idea in a scheme of work, I always ensure that these are supported with clear and concrete examples, to support pupils' understanding. For example, when teaching pupils about a collision plate margin, they learn that two tectonic plates of comparable density collide and buckle. As an abstract concept it makes little sense to pupils learning this for the first time. However, when presented with the cartoon of two cars of similar sizes in a head-on collision, showing both car bonnets crumpling, pupils are then immediately able to understand what is happening with the collision plate margin. And then, knowing that tectonic plates can be imagined as cars in collisions, they then have an understanding of the concept which they can use to predict what might happen at the margin between other tectonic plates. And I think that sometimes, the more creative you can be with the illustrations, the more likely it is pupils will remember the illustration.

Another favourite example from a different scheme is used when teaching about air pressure. Pupils (and teachers!) often find the global atmospheric circulation system difficult to get their head around, with the behaviour of air pressure and the resulting weather particularly challenging. To help illustrate how air pressure affects weather I use an example that always makes pupils laugh and so helps them remember. I've even seen pupils discretely re-enacting the illustration in exams! I ask them to imagine they have a puppy on the table in front of them and I ask them to visualise themselves with their hands above the puppy, moving their hands in an upwards direction away from the puppy, as I tell them that their hands represent the air. Following some questioning they can tell me that upwards moving air and the resulting low pressure that is applied to the puppy, makes for unstable weather, as demonstrated by the wriggling and moving puppy. I then ask them to imagine they are applying downward pressure to the puppy and ask them how high pressure will affect the puppy – and usually they are able to say that the puppy will stop moving as much, and so see how high pressure creates stable weather conditions that are not moving or changing. It is a bit of a silly illustration but definitely helps pupils visualise how air pressure affects the weather conditions.