KS3 Geography. Richard Hammond's wild weather

How does a thermal form?

NARRATION: Almost all our planet's heat is provided by the sun. If you're looking to unlock the secrets of the weather, the heat coming from up there is not as important as when it's coming from down there, from the ground.

I know it sounds unlikely but it's all to do with the fact that the sun heats the Earth unevenly. Sand gets hotter than water. Tarmac gets hotter than sand. Concrete gets hotter than grass. And these differences produce pockets of warm rising air called *thermals*, which drive winds and create clouds.

But how can you see that effect for yourself? Well, with a quarry, five vehicles' worth of kit, and two specially built metal tables. These tables are going to be our hot ground. Because they're dark in colour they should soak up lots of heat from the hot sun. And to make sure they get hot enough, we're going to give the sun a little help.

TO CAMERA: To be perfectly clear, my ambition here is not to actually make weather with this. I'm not hoping for a little square cloud overhead. The theory's right, it's just the scale is a bit small. What I will be doing, is creating that rising column of air - that thermal - which is part of the weather, and it is something I will be able to show you once I've got it established.

NARRATION: So, let's do all that, fire up the gas, and get me up above the tables so you can see the effects of our home-made thermal for yourself.

Now, normally a paper helicopter would just spin slowly to the floor. But it doesn't. It hovers.

TO CAMERA: Fly! Oh, there you go, there you go, there you go!

You can see how we've created a thermal down there and the helicopters that catch it are flying in that column of rising air.

NARRATION: The updraught is enough to hold the helicopters in place. Just as they do naturally with clouds, raindrops and hailstones. But as the heat coming off the metal table increases the helicopters begin to climb...

TO CAMERA: Oh, yeah!

NARRATION: Until they're disappearing out of sight, just like a real thermal. They can stretch up more than 1,500 metres - high enough to influence our weather.