

## Climate Change

### **Voice-over 1:**

Planet Earth is warming up. It's a worry for many. Political leaders have made it their priority and are trying to establish ways in which to combat the problem.

### **Voice-over 1:**

Climate change: we know it's taking place, but how exactly does it happen?

### **Maggie Aderin-Pocock:**

Climate change is caused by, er, levels of greenhouse gases...carbon dioxide, water vapour...in the atmosphere, and they trap heat within the atmosphere. So what I'm trying to do is set that up in these two bottles. Say these bottles represent two different planets. Bottle one has a higher concentration of carbon dioxide in the atmosphere, and bottle two is normal atmospheric air, just like we know here on Earth.

### **Maggie Aderin-Pocock:**

What I want to do is inject some carbon dioxide. Now, carbon dioxide is very, very easy to make. If you just take sort of bog-standard vinegar, which is what I've got in here, and then you mix it with baking powder, what you do is you get a chemical reaction. That is releasing carbon dioxide.

### **Maggie Aderin-Pocock:**

So now what I'm doing is I'm trapping that gas and feeding it into this bottle here. So I'll get that going... See? All boiling up; lots of carbon dioxide going into this bottle. So this bottle is, erm, a bottle, or, or planet, with a higher concentration of carbon dioxide.

### **Maggie Aderin-Pocock:**

Now, when we talk about climate change, we're talking about energy coming in from the sun and heating up that gas. I want to do it in a controlled manner, so I've got these two lamps here. So these lamps represent the sun.

### **Maggie Aderin-Pocock:**

What I'm hoping is that both of these bottles are starting off at the same temperature, but if I leave it running for a few minutes with the lamps, the added carbon dioxide will make this bottle go up in temperature a lot more than this bottle.

### **Voice-over 1:**

It's clear: a few minutes are enough to establish a difference in temperature which reaches three degrees. Our planet's doing exactly this, just on a grander scale.

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