Engineer Inside

Hints and Tips

Make a Rainbow Challenge

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Hi everyone, my name is Phil. I'm part of the outreach team at WMG, at the University of Warwick.

Today's challenge is about making a rainbow and my first tip to you is to think about where you've seen a rainbow before. You've seen them after rain, you've seen them outside.

But have you ever seen a rainbow somewhere else? Maybe on the surface of a screen or maybe on oil on water.

Maybe you've ever looked at pens and seen what happens when they get wet and see the colours come out separately and split up. It's not just blue anymore, there's lots of colours.

I trained as a chemist originally. My first thought was about whether there are any reactions – any chemicals or liquids – we could use to make a rainbow.

Then I thought a bit more and I decided that my idea that I'm going to test will be to try and split sunlight. It's made of white light, so that's all the different colours of light mixed up. I'm going to try and split white light up into different colours.

What we need to do is bend light and bend the different colours of light differently.

Now, what have you ever seen that bends light? Maybe something that makes an image bigger, or wonky. Maybe a hall of mirrors at a fairground, or a telescope, or some binoculars. But a little trick I can show you is if you use a glass of water (I'm just going to pop that there) I can carry on presenting this hints and tips section upside down.

Phil has placed a glass of water between the camera and himself which causes a reflected image of Phil to appear on screen as if he was upside down inside the glass of water.

The glass of water is bending the light and changing the way that we see the image. I'm going to try and use that to make the light split up and show us the rainbow.

I hope that you can find something around your house to help you make a rainbow.

My biggest tip is that if you can see a weak rainbow, you can try and make it a bit brighter or make it show up a bit more by getting rid of any other light that is shining in the area. Maybe you could close some blinds or put some black paper down – black will show the colours more vibrantly. Or even use filters on your phone!

Hopefully you can find a rainbow in your home. Good luck!