

## Questacon Science Squad Activity – Temperature layers

The video for this transcript can be found on the Questacon Science Squad website at:

<http://sciencesquad.questacon.edu.au/activities>

### Transcription from video:

*(Sound of bubbles popping)*

David: G'day I'm David from the Questacon Science Squad and today I've got a great demonstration that's all about hot and cold.

*(Camera pans to the table).*

You need:

- two bottles, one with hot water in it and one with really cold ice water in it
- food dye, red for the hot, blue for cold
- a stand to stick your bottles on about this size for bottles this size and
- a big bucket of water

Now the bucket of water you use is going to be different depending on how big your bottles are, so your bottles need to fit in it.

*(Camera zooms in on David).*

Alright, this is what you do: grab your stand and put it down the bottom of your bucket just like that, there we go in the middle.

*(David puts the stand in the bottom of the bucket - in the middle).*

And then take your food dye, put a few drops of the blue in the cold one there, that's plenty.

*(David squirts a few drops of blue dye into the cold water).*

A few drops of red in the hot one.

*(David squirts a few drops of red dye into the hot water).*

Give them both a bit of a swirl around.

*(David swirls the cold water around).*

Let them mix, invert it a few times, beautiful.

*(David inverts the cold water whilst holding the open top).*

Try the same with the hot. Make sure it's not too hot if you're gonna do that because you will burn yourself. There, that should be fine.

*(David inverts the hot water whilst holding the open top)*

Alright, now comes the difficult part, you've got to get these bottles into the water, lying down on their sides like that without losing too much of the liquid from inside them.

*(Camera zooms in on David).*

We'll try the cold water one first, so in you go, just like that holding it in there.

*(David places the cold water on its side on the stand in the water).*

And the hot water one can go next to it.

*(David places the hot water on its side on the stand in the water).*

Now if you leave it for a few seconds, let's have a look at what the blue and the red water is doing. Blue water is sinking all the way down to the bottom, but that hot red water is rising up to the top and it's going to keep on doing this for a little while to come.

*(Camera zooms in on the bottles in the water).*

So if you want to find out more about how to do this experiment or why it's happening like this you can head on down to the Questacon Science Squad website. I'll see you next time.