

Questacon Science Squad Activity – Nappy soak

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: How's it going? I'm David from the Questacon Science Squad. I was walking around Science Squad headquarters the other day, and I found a pile of these on Tim's desk. Now, I'm not too sure what they were doing there, but I decided it was about time we did a scientific experimentation with nappies.

(Camera pans to the table).

You need:

- some nappies
- some salt
- some water
- some jugs and
- a few beakers.

So take your nappy and cut it open, just like this. down the middle.

(David cuts down the middle of the nappy).

And what I want you to do is take out all that stuff that's inside the nappy, all that stuff that's responsible for absorbing all the urine and all that kind of stuff. There, that's it.

(David shows inside of the nappy).

Take that out and put it into a beaker.

(David grabs at a beaker with nappy stuffing in it).

Then I want you to do the same thing with another nappy put that into another beaker, you can label that one beaker A

(David grabs at another beaker labelled A).

And the same thing into a third beaker called beaker B.

(David grabs at a beaker labelled B).

Then comes the water, I want you to get three containers. One container's going to have nothing but fresh water in it.

(David grabs at a container marked Fresh Water).

Solution B over here, oh A sorry, is going to have, really concentrated salt water in it.

(David grabs at a container marked Solution A).

So I want you to get as much salt as you can, pour it in there and stir it around 'til no more dissolves.

(Camera pans to David).

In the third one, it's got slightly less salt in it

(David grabs at a container marked Solution B).

So you're going to have poured some of this really concentrated salt water into this one and diluted it to make up about a litre.

Alright, so the next thing we're going to do is pour these three different solutions into our three different beakers and see which one absorbs more water.

We'll start off with solution B over here, oh no, we'll start with solution A actually. Changing minds, nothing wrong with that. So pour it in, little bit at a time.

(David pours some of Solution A into beaker A).

You can see as soon as the water touches the edge, it starts getting dissolved, by the, all that stuff that's inside the nappies. You can use your spoon to pour it around and mix it around, make sure all the water gets to all the different parts of the nappy.

(David pours more solution and stirs it).

There we go. Still going. Oooh, it's looking pretty wet in there, isn't it?

(David picks up the beaker to show the wetness).

There's still a fair bit of water walking around. We can probably pour a little bit more in, but that's about it.

(David pours more solution in and stirs it).

So we've hardly put any water in from solution A into the nappy and it's still really, really soggy.

(David picks up Solution A to show the level of liquid).

Now let's try it with solution B, there's less salt in this one remember. Alright, so you're gonna pour some of solution B on the nappy, it gets dissolved, or not dissolved, it gets absorbed by the nappy pretty quickly.

(David pours some of Solution B into beaker B and stirs it).

There we go, a little bit more. So you should be looking at how much water is getting absorbed by each one of these nappies.

(David pours some more solution in and stirs it).

See it's still pretty dry there. Little bit more.

(David pours some more solution in and stirs it).

Oh now it's turning a bit mushy. So we've used about the same amount as, well a little bit more than solution A, but it's look a lot drier.

(David picks up beaker B to show the dryness).

Now we come over to our fresh water. Let's have a look and see how much fresh water our nappy can dissolve, oh absorb, I keep on saying dissolve, maybe my brain's starting to dissolve, I don't know. So pour in the fresh water into our nappy in fresh water. There we go. Give it a bit of a stir around.

(David pours the fresh water into the last beaker then stirs it).

As you can see it's puffing up, it's taking up lots of room here, but it's still looking really dry. So you can pour some more in.

(David pours some more water into the beaker and stirs it).

It's forming kind of, oh there's gel, kind of substance, taking up lots of room. So you can see, as soon as I pour this fresh wash in to this container, it basically just disappears down into the nappy and turns into this kind of light but dry gel.

(David pours some more water into the beaker and stirs it).

And we've used up heaps of the water already, and still dry, see how much more we can get in there.

(David picks up water to show level then pours more in and stirs).

That's disgusting, isn't it? Absolutely filthy, imagine walking around with this attached to you all day, it'd be absolutely terrible. Still more!

(David pours more water in and stirs it).

This is about all that our beaker can hold at the moment. So as you can see, we've used a lot of fresh water up here and it looks like our nappy can still absorb some more, we've just run out of space in our beaker.

(David shows level of water in container).

Now if you want to find out how this works and why our nappy absorbs a lot more fresh water than salt water, you're going to have to visit the Questacon Science Squad website. I'll see you next time.