Podcast**:** Imagine This

Episode Title: How is water made clean to drink? Imagine This transcript

Duration: 11’ 55”

[ABC Kids podcast sting – This is an ABC podcast]

*[Sprightly classical music begins]*

**Nij:** Hello, my name is Nij, and today on Imagine This, I'm going for a run next to my favourite river!

*[Footsteps running alongside a gentle stream of water]*

**Nij:** *(out of breath)* and I'm getting a little thirsty...

**Kid 1:** Have some water!

**Nij:** Yeah, good idea, but I can’t find a tap or a bubbler anywhere. Maybe I can have a drink from the river…

**Kid 2:** Noo!

**Nij:** Well, how about a little sip from that puddle?

**Kid 1:** No!It’s dirty

**Kid 2:** It might make you sick

**Nij:** What about that one? It looks pretty fresh

*[Small splash of water]*

**Kid 1:** No! Its dirty!

**Nij:** Ah yes and that’s what today’s question is all about

**Kid 2**: Hi my name is Ella, and I want to know how is water made clean to drink?

**Nij:** How do we *clean* water?

**Kid 2:** I don’t know

**Nij:** A scrubbing brush?

**Kid 1:** No

**Nij:** Shampoo?

**Kid 2:** No

**Nij:** *(laughing)* A loofah?

**Kid 1:** *(laughing)* No!

**Nij:** Well, how?

**Kid 2:** We filter it

**Kid 1:** Because there’s viruses and dirt

**Kid 2:** There are some sort of special chemicals we use and it goes through the tap water

**Kid 1:** And it comes out fresh

**Nij:** I reckon we should talk to my friend Dr Anna Rigosi, she’s a water scientist and knows lots about clean drinking water. Let’s go say hello!

*[Music ends on a bright flourish. A doorbell chimes and a door swings open]*

**Nij:** Hi Anna

**Anna:** Hi Nij, hello kids

**Kid 2:** Hi Dr Rigosi

**Kid 1:** Hi Anna

**Kid 2:** Hi Anna

**Nij:** We have a question for you, but first can I please have a glass of water? I’m really thirsty!

**Anna:** *(laughing)* Of course!

*[Tap turns on, water fills a glass. Nij has a few quick sips]*

**Nij:** Wow, that’s so much better. Thank you

**Anna:** Prego! So, what was your question?

**Nij:** How is water made clean enough so that we can drink it?

**Anna:** How about we imagine we’re drops of water so we can take the great water journey together

**Kid 1:** Yeah!

*[Magical transformation into raindrops begins]*

**Nij:** I’m going see-through!

**Anna:** I’m all wobbly

**Nij:** And I’m shrinking!

*[Rain drops fall and thunder rumbles]*

**Kid 2:** Pitter patter pitter patter

**Nij:** I’m flying! No wait, I’m falling! Ahhh!

**Kid 1:** I’m wet, I’m soaking, I’m falling

**Kid 2:** Weeee!

**Nij:** Looks like we’re falling into a huge lake. Hold on everyone!

**Anna:** We’re coming in for a wet landing

**Nij:** Get ready for a splash! Wee!

**Kid 1:** Wahoo!

*[There’s a splash as Anna, Nij and the kids fall into the water catchment area. There are frogs croaking and insects chirping, with birds calling in the distance]*

**Nij:** Look at all this water!

**Anna:** Yes, it’s enough for a whole city to drink!

**Kid 2:** Where does it come from?

**Anna:** Well, this is called a water catchment area

**Nij:** Ah cos they *catch* the water

**Anna:** Yes, from rivers and lakes, rain from the sky and even water that sits underground

**Kid 2:** Ew there’s bird poo in here

**Kid 1:** And a frog

**Nij:** Ew! We’re dirty water!

*[All laughing]*

**Anna:** Of course, it comes from nature! There’s dirt and sand and mud

**Nij:** We can’t drink this!

**Kid 2:** Ahh! There’s a fish!

*[Water splash]*

**Anna:** Don’t worry, the fish won’t make it into the taps. The first step of cleaning water to drink is getting all these big bits out

**Kid 1:** How?

**Anna:** Follow the stream

*[Water movement and the sound of a drain gurgling]*

**Nij:** I can feel us being pulled down

**Kid 2:** It’s like we’re going down the drain!

**Anna:** Yes, we’re heading into the water treatment plant

**Kid 1:** Woah that a big pipe

**Kid 2:** It’s sucking us in!

**Nij:** We’re going through a net. Feels kinda nice!

**Anna:** This makes sure the big stuff stays out and just the water comes in

**Nij:** Here we go!

*[Sucking drain gets louder and there is a flourish of water movement and bubbles]*

**Anna:** Here we are, in the sedimentation tank!

*[There is no sound except a few stray bubbles]*

**Nij:** Anna, there’s nothing happening

**Anna:** Exactly. Sedimentation is when you let water sit still. After a while, all the dirt and sand sinks to the bottom

**Kid 1:** And clean water is on the top?

**Anna:** Well, it’s clea*ner*, but it’s not clean drinking water yet. After sedimentation, the water is much clearer

**Nij:** Yeah look, the water is changing colour – it’s clear at the top and dark at the bottom

**Anna:** Exactly, the clear water is taken from the top of the tank and moved to the next step

**Nij:** Where to next?

**Anna:** Filtration! Come on

*[There is another flourish of water movement and bubbles]*

**Nij:** *(straining)* I can’t move! We’re stuck!

**Kid 2:** We’re stuck in sand!

**Nij:** Yeah, there’s tonnes of it

**Kid 1:** Eee! This is sticky

**Nij:** Didn’t we just get rid of all this?

**Anna:** Yes, but this sand is special. It’s being used to *filter* the water

**Nij:** How is sand cleaning the water?

**Kid 2:** Because of the small gaps, maybe the water will sink all the way down

**Kid 1:** The bad stuff sticks to the sand and it drops down then you can drink it

**Anna:** Yes! The sand is really, really fine. That means each grain is very small, almost like powder. As the water moves through the sand, all the teeny tiny bits of dirt get stuck, but the water can move through it

**Nij:** Anna, can we drink it now?

**Anna:** Almost! There’s just one thing left to take out, and it’s the smallest part

**Nij:** What’s that?

**Anna:** All the microscopic bacteria! Come on, let’s wiggle through this sand and head onto the last stage

**Kid 2:** What is it?

**Anna:** Disinfection!

*[There is another flourish of water movement and bubbles]*

**Nij:** Now this water is clear

**Kid 1:** Crystal clear!

**Anna:** Yes, all the steps we’ve been through have done a great job at all the yucky things we don’t want to drink. Now the last step is disinfecting it

**Kid 2:** The dirt has a lot of microbes and germs which get all absorbed into the water

**Anna:** Exactly. They can make you sick so, a chemical called chlorine is added to the water to kill all the bad germs

**Nij:** Chlorine – that’s what goes in swimming pools

**Kid 1:** Yes

**Kid 2:** Chlorine is in the pool

**Nij:** Yeah, and you’re not supposed to drink pool water

**Anna:** There’s too much chlorine in a swimming pool to drink. But here in a water treatment plant, much less is added to the water. And, if the water is very clean at this stage, you don’t have to add much at all

**Kid 2:** Where does it go now?

**Anna:** In our cities, it’s sent out to all the taps across thousands of kilometres of pipes

**Nij:** Can we drink it now?

**Anna:** Yeah!

**Nij:** Woohoo!

*[Slurping and sipping sounds in the water]*

**Nij:** *(laughing)* I’m drinking myself!

*[Kids laugh]*

**Nij:** Where else does this water go?

**Anna:** Well, it’s not just kitchen taps - it’s showers, garden hoses and even toilets

**Kid 1:** What?!

**Nij:** After all this work cleaning it? It’s just getting flushed down a toilet!?

**Anna:** That’s why it’s important to use water wisely. C’mon there’s one last stop on our drinking water journey

*[There is another flourish of water movement and bubbles. Outdoor farm noises fade in – cows mooing and dogs barking]*

**Nij:** Hey! We’re on a farm

**Kid 2:** Hello cows!

**Kid 1:** Hello sheep

**Nij:** What do cows have to do with drinking water?

**Anna:** They have a lot to do with it!

**Kid 2:** What do you mean?

**Anna:** Because the way we use *land* has a big effect on water!

**Kid 1:** How?

**Anna:** Well, fresh water comes from lots of places.

**Nij:** Yeah, it can melt on snowy mountains and then run down into rivers and lakes

**Anna:** It can come from the ground under our feet

**Kid 2:** And from the sky too

**Kid 1:** From rain

**Kid 2:** And hail

**Kid 1:** And snow

**Anna:** It’s all connected in a great big water cycle

**Nij:** Does all of that water become drinking water?

**Anna:** It can become drinking water, but every step on the water’s journey, it can get mixed with lots of things you don’t want to drink.

**Kid 2:** Like what?

**Anna:** Like fertilizer from big farms like this one, or plastics and other chemicals that end up in our waterways

**Nij:** Yuck we don’t wanna drink that

**Kid 1:** It’s bad

**Anna:** There are so many amazing ways to clean water but the best thing we can do, is make sure our water *stays* clean in the first place.

**Kid 2:** Use less plastic

**Kid 1:** Clean up the rubbish

**Kid 2:** Use less oil

**Anna:** And there are others too. Like eating fruit and veggies that are in season and that don’t have to travel too far to get to your plate

**Nij:** Wow, farms, oceans, the supermarket! Drinking water is connected to so many things!

**Anna:** Yes, and it’s all the same water.

**Nij:** Yeah, we can’t *make* more water

**Anna:** It keeps moving through the water cycle

**Kid 1:** Water falls down as rain, and it flows down rivers, maybe in pipes into the ocean. Then it gets heated up then it becomes clouds and falls as rain again

**Anna:** That’s why it’s so important we take care of the world’s water

**Nij:** Thanks, Anna!

**Kid 2:** Thanks very much for having us

**Kid 1:** Thanks Anna

**Kid 2:** Bye

**Kid 1:** See you

**Anna:** Ciao!

**Nij:** Ciao

*[Farm noises fade under bright classical music]*

**Nij:** So, the water that comes out of the tap

*[Faucet squeaking on]*

has been on a long journey. From rain in the sky

*[Rain falls and thunder rumbles]*

Or water in a winding river

*[Sound of rushing river]*

All the way to a water catchment area to be cleaned and treated. First, the water is cleaned with screens to get the sticks and leaves out

**Kid 1:** … and the little fishies

**Nij:** Next, it’s left to sit still so all the dirt and mud sinks to the bottom

**Kid 2:** Sedimentation!

**Nij:** Then it’s pushed through very fine sand

**Kid 1:** It’s a filter!

**Nij:** to catch any tiny particles. Next, chemicals are added, like chlorine, to kill any germs that could make us sick

*[Sound of dissolving chemical]*

Until it’s ready to go through thousands of kilometres of pipes,

*[Clanking pipes]*

All the way to the taps in your home

*[Water glass being filled, a shower turns on, and a toilet flushes]*

But that’s not the end of the story, because it’s a cycle

**Kid 2:** The water cycle!

**Nij:** The water we use goes back into nature

*[Sound of bird calls and insects chirping]*

We have to look water and all the land it passes through, from skies

*[Thunder rumble*s*]*

to seas

*[Waves crash]*

to fields

*[Cow moos]*

to the tap

*[Faucet tightens off as music ends]*

Imagine This is an ABC Kids listen podcast, hosted by me Dr Niraj Lal. A big thanks to Dr Anna Rigosi, and all the kids on the show. Today’s episode was recorded on the Gadigal, Wurundjeri, Kaurna, Dharug and Noongar Nations. Written and produced by Soumia Bella with sound design by Que Ngyuen, our senior producer is Emma Gibbs. For more great podcasts to play, music to move, and stories and soundtracks for sleep - download the ABC Kids listen app. Free from your app store.