

Transcription of Science Time video – Under the Sea

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

<http://canberra.questacon.edu.au/sciencetime/>

Transcription from video:

BJ: Hi! Welcome to Questacon's Science Time. My name's BJ.

Dion: And I'm Dion.

[Dion waves]

BJ: And today we're talking about under the sea.

[Dion nods his head]

Come and join us.

[Music playing]

[Science Time logo]

[Singing]

Wake up sun and moon, it's Science Time, it's Science Time.

Wake up skeleton, it's Science Time, it's Science Time.

At home in the bathroom, when we're swimming there is science,

Outside at the playground, in the sunshine, there is science.

Wake up.

[Video showing children doing various activities]

[Science Time logo – Title, "Under The Sea"]

BJ: Hi, welcome to Science Time. What are we talking about today?

Child: Under water sea.

BJ: Under the sea! And animals that live under the sea. But before we start talking about animals, there's a question that I want to ask everybody. Who here has been to the beach?

[Children say collectively]

Children: Me!

Dion: I have.

[BJ, Dion, and the children all raise their hands]

BJ: Yeah

[Laughs].

Child: I have.

Child: I have.

BJ: Hands down.

[BJ looks at the camera]

Have you been to the beach? I love going to the beach. Who has seen the waves on the beach?

Child: Me!

BJ: Yeah?

Child: Me.

BJ: Who likes swimming and splashing in the water?

[BJ uses her hands to demonstrate swimming and splashing in the water]

[Children say collectively]

Children: Me.

BJ: Yeah? Yeah, do you? Oh! I love swimming in the water.

Child: I like building sandcastles.

BJ: Building sandcastles? Who likes building sandcastles?

[BJ raises her hand]

Child: Me!

BJ: Lots of fun.

Child: I like building sandcastles too.

BJ: Excellent.

Child: And we have fun(?).

Child: Building sandcastles, too.

BJ: Oh! Do you...

Child: And I like swimming.

BJ: You like swimming. Do you know, the water that's at the beach, the water out there.

[BJ sweeps her arms in an outward direction]

We call that the sea, or the ocean, and there's lots and lots of water in the ocean. And there's lots of oceans all over the world, and in the ocean animals live in the ocean, lots and lots of different animals. I'm going to ask you to put up your hand if you can tell me an animal that lives in the water. At home, can you think of an animal that lives in the water? So who's got their hand up? You've got your hand up.

[BJ points to a child]

What's an animal that lives in the water?

Child: A shark.

BJ: Sharks! Who likes sharks? Yeah, snap, snap, snap.

[BJ stretches out her arms and makes the shape of crocodile mouth snapping]

[Dion holds up a picture of a shark]

[Camera zooms in on the picture of a shark]

BJ: This is a great photo of a shark. Oh, lovely. Now, who has...?

Child: Like that.

[Child is pointing to something behind BJ]

BJ: Just like that. Yeah, there's pictures of sharks. We've got one here.

Dion: Can you see this one I've got?

BJ: Do you see that picture there?

[BJ points to the picture Dion is holding]

Now, what... oh, you've got your hand up well. What's another animal that lives in the sea?

Child: A crocodile.

BJ: Well crocodiles live in water, don't they? Mostly they live in rivers, yeah but they do like water, and they also snap, don't they?

[BJ stretches out her arms and makes the shape of crocodile mouth snapping]

What's another animal that lives in the sea? What's another animal?

[BJ points to a child]

Child: Maybe a fish.

BJ: Fish! Fish live in the sea, lots and lots of different fish. Come and look here, look at the picture that we've got here.

[BJ points to the picture Dion is holding]

Dion: Do you know what this fish is?

[Camera zooms in on the picture of a fish]

BJ: Who can tell me what this fish is?

[Children say collectively]

Children: Nemo!

- BJ: Yeah, well done. Hands down everyone. It's a clown fish, just like Nemo was a clown fish, wasn't he? And they swim in the ocean.
- Child: And talk on the ocean.
- BJ: There's lots and lots of different sorts of fish. Now, here was another animal here – can you say it big and loud, what was your animal?
- Child: Dolphin.
- BJ: Dolphins! I love dolphins. Look, I've got a picture here of a dolphin.
[BJ points to the picture Dion is holding]
[Dion holds up a picture of a dolphin]
[Camera zooms in on the picture of a dolphin]
- Child: I like (indistinct word – over talking – 3: 43).
- BJ: Dolphins swim in the water, and they like to jump, and splash, and play.
- Child: I like starfishes.
- Child: What else goes in the sea?
- BJ: Well done. Hold on, just over here, this person's had their hand up for a while. What's another animal... ooh, listening – shh – listening.
- Child: This is almost a dangerous shark in the world.
- BJ: What is it?
- Child: The great white.
- BJ: Oh, the great white shark! That was the shark picture we showed you before was a great white shark.
- Dion: That's very big.
- BJ: There's lots of those around Australia, isn't there? What's another animal we haven't talked about yet? Oh, an octopus. Sitting down. Let's have a little chat – hold on just a moment. Listening.
[BJ laughs]
OK. Now sitting on our bottoms, sitting on our bottoms.
- Child: A crab!
- BJ: Sitting down for a moment. Let's just have a chat about octopus, and then we'll talk about other animals. Here is a picture of an octopus.
[Dion holds up a picture of an octopus]
[Camera zooms in on the picture of an octopus]
I've got a question – how many legs does an octopus have?
- Child: Eight.

Child: Eight.

Child: Eight!

BJ: Eight? Well, we better count to make sure. So let's all count together. You sit on your bottom. Ready?

[Child counting]

Child: One...

BJ: Well, ready, we'll count – you point while we count. OK, ready?

Dion: (Indistinct words – over talking – 4: 52) help us count together. Ready?

BJ: [BJ and children count together, while BJ points to the picture] One, two, three, four, five, six, seven, eight! Eight legs. That's a lot of legs, isn't it?

Child: Frank(?) is eight years old.

BJ: Really? And octopus, they do, they live in the sea. Wonderful! And lots of other animals live in the sea as well.

Child: Like whales.

BJ: Whales! Whales live in the sea. And there's lots of different sorts of whale. A humpback whale will live in the sea. Hold on. Shh! One at a time; sitting down.

Dion: Sitting on your bottoms everyone. What we'll do now is we'll show you a picture of an animal, and I want you to tell me if you know the name of this animal that's in front of us here.

BJ: Good idea! OK.

Dion: Ready? So what sort of animal do you think this might be?

[Camera zooms in on the picture of a seahorse]

Child: Seahorse.

[Children say collectively]

Children: A seahorse.

BJ: A seahorse! And look, it's got a little curly tail there.

[BJ points to the seahorse's tail]

Seahorses are beautiful.

Child: Also a very dangerous (inaudible – over talking – 5: 50).

Child: Look, like my curly hair. See?

BJ: Lovely. Sitting down. Now, there's lots of dangerous animals under the sea as well, like a manta ray, or a stingray. There's another fish we're going to show you now, another fish picture. Who knows what this fish might be? Does anyone know?

[Dion holds up a picture of a puffer fish]

[Camera zooms in on the picture of a puffer fish]

Child: A blow-up fish.

BJ: Oh, a blow-up fish, that's a great guess.

Child: A puffer fish.

BJ: It's called a puffer fish. Now this is what it looks like before it blows up really big

[BJ points to the picture Dion is holding]

and it swims around, minding its own business, until it gets a little bit scared, and if it thinks another animal is going to eat it, then it protects itself. And how does it protect itself?

Child: It puffs up.

Child: It grows big.

BJ: It blows up big like a balloon!

[BJ spreads her arms out wide]

And this is what it looks like.

[BJ points to a picture that Dion is holding of a puffer fish]

[Camera zooms in on the picture of a puffer fish]

BJ: Can you blow up big like a balloon?

[Everyone pretends to blow up like a balloon].

Whoa, that's very big! That's very big! And when they're big they scare the other animals away. So this is how they protect themselves from getting eaten by other animals. Look what we've got here. Look what Dion has.

[Dion is holding a puffer fish]

Child: It's the skin from the puffer fish.

BJ: It's the skin from a puffer fish.

Dion: You be very careful.

BJ: Now, it's very, very prickly and sharp, so later, when we're looking at this with our mummies and daddies, we'll be very careful when we're touching it. But look how big it is? Well done, sitting on your bottom sweetheart. Now, we're very lucky, today we've borrowed some things from the National Zoo and Aquarium, our friends from there, and they're the ones that lent us our big puffer fish.

Child: But they lose their skin, and then find it... they grow another skin.

BJ: Excellent. Now, there's another animal that protects itself under the sea, this animal uses a big shell to protect itself.

Child: Turtle!

[Children say collectively]

Children: Turtle!

BJ: A turtle, yes! Now we have a picture of a turtle here, do you see this lovely picture?

[BJ holds up a picture of a turtle]

Child: Yes.

BJ: And Dion has something special to show us.

Child: A turtle shell!

BJ: Look how big this gorgeous turtle shell is!

[Camera zooms in on the turtle shell in Dion's hands, as a child strokes the shell]

Child: (Indistinct words – over talking – 7: 59).

BJ: Yes. Sitting down on our bottoms; sitting down.

Child: It ducks down into its shell.

Dion: So can you shuffle back for me? Shuffle back to the edge of the (indistinct words – over talking – 8: 06).

BJ: Now, we call it a turtle shell. Do you know another name for this is a carapace?

[The word carapace appears on the screen]

Can you say that word with me?

[BJ, Dion, and the children speak together]

Carapace. Yeah. And it's very hard. Listen. Listen.

[BJ knocks on the shell with her knuckles; two children also knock on the shell with their knuckles]

Child: I can't see.

BJ: It's very hard. Here you go, wiggle back a little bit so everybody can see. There we go. Can you see now?

Child: Can I look inside?

Dion: Can you see? It's quite big, isn't it?

Child: Can I look inside?

BJ: And – sitting on our bottoms – let's have a look inside. Can you turn it around, Dion?

[Dion turns the turtle shell around]

Look what we've got here.

[BJ points to the shell]

Child: A bone.

BJ: This is the backbone of the turtle. And the bone is connected to the turtle, and the shell, and the carapace, or shell, grows out of the bone. And you see there's bits of bones here.

[BJ points to the bones on the shell]

A little bit like our ribs.

Dion: Can everyone feel your ribs? Feel your chest? So you can feel the bones in your chest.

BJ: Do you feel that, your ribs?

[BJ places her hands on her ribs]

Dion: And that's what you can feel.

Child: But on the turtle it's on the back of it.

BJ: It is. Yes, it is. And we've got a backbone, haven't we?

[BJ points over her shoulder to her backbone, and nods her head]

Just like the turtle does.

Child: Yeah.

Child: My backbone moves.

BJ: Does it? Now the turtle uses its carapace to protect itself from other animals. What does it do if a big predator animal's coming along to eat it? What would it do?

Child: (Indistinct words – 9: 19) shell.

Child: It climbs into the shell.

BJ: It would hide. Who can hide like a turtle in its shell? Ooh!

[Everyone scrunches up small and pretends to hide in their shell like a turtle]

Ooh, ooh, ooh.

[BJ pops her head out and looks around her]

Ooh, ooh!

Child: And it jumps in.

BJ: Oh, that's exactly what they do.

[BJ laughs]

Well done. Sitting on our bottom now, because I've got something special to show you; so staying on our bottoms, are we ready? Turn your body around so you can see what I'm doing.

[BJ stands up]

And I'm going to ask the camera, come over and have a little bit of a look what I've got over here. Are you ready at home, boys and girls? Watch this!

[BJ lifts a cover off a tank that has turtles in it]

Oh! Look what we've got here!

[Camera zooms in on the turtles swimming in the tank]

We've got two turtles. During our free time we'll be able to have a closer look at these turtles, but you can see they've got their flippers, or their webbed feet.

[BJ flaps her hands].

To help them swim and these ones are called eastern longneck turtles, because they've got a really long neck.

[BJ rubs her finger up and down her neck]

Can you stretch your neck out really long?

Dion: Come on, let's stretch our neck.

[Dion and the children are stretching their necks]

BJ: Ooh! That's what they look like. You can see them there, can't you?

[BJ laughs]

[Camera zooms in on the turtles swimming in the tank]

So we'll have a closer look at our turtles during our free time. So come back and sit down. Is everybody ready to have a play?

[Children say collectively]

Children: Yeah!

BJ: Yeah? Ready, set, go! Go have a play.

[Music playing and camera showing children doing various activities]

[Singing]

We are gonna learn about the world we live in, it's Science Time, it's Science Time.

We are gonna play, it's fun experimenting, it's Science Time, it's Science Time.

At home in the kitchen, when we're cooking, there is science,

Outside in the garden, in the night sky, there is science.

Wake up, sun and moon, it's Science Time, it's Science Time.

Wake up skeleton, it's Science Time, it's Science Time.

Wake up butterfly, it's Science Time, it's Science Time.

Wake up (indistinct word – 11: 33), it's Science Time, it's Science Time.

Dion: So while everyone else is playing, we're going to visit the National Zoo and Aquarium, and see a big animal that lives under water.

[Science Time logo]

Dion: So hi, boys and girls, here we are at the National Zoo and Aquarium. We're here with Renee, who works here. Now at the National Zoo and Aquarium there are lots of tanks filled with all sorts of different animals that live in the water. So what type of animal is this, Renee?

Renee: This is a tawny nurse shark.

[Renee is rubbing her hand over a shark in the water]

It's a bottom dwelling shark.

BJ: A shark? Wow!

Dion: Very, very cool. Now I've noticed this tawny nurse shark doesn't have very big teeth, why is that?

[Video showing sharks swimming]

Renee: No. What he actually does, he sucks up his food, so in the wild these guys go around to all the rocky outcrops and they suck up the crustaceans, and all the fish

[the shark makes a sucking noise]

ooh, did you hear that guys? That's him sucking up the food, and I've got a squid here as well

[Renee holds up a squid]

so squid and other fishes. Let's see if he sucks up this squid for us?

[Renee holds the squid, and the shark turns and sucks it up]

Dion: Ooh!

BJ: Oh! Cool!

[The shark makes a sucking noise]

Renee: Did you hear that? That's pretty cool, isn't it?

Dion: Really cool.

[Dion nods his head and smiles]

BJ: So it's like a big super dooper straw, sucking it all up.

Renee: That's exactly it, extremely powerful suction these guys.

BJ: And he's so cool. I see you patting it; do you think we can have a little pat?

Renee: Absolutely. Have a pat just on the top here.

[Renee pets the shark on the top of its body]

Dion: Wow!

[Dion and BJ reach out and pet the shark]

Renee: Now, how does he feel?

Dion: Wow! Very rough actually, a bit like sandpaper.

BJ: Yeah.

[BJ nods her head]

Renee: That's exactly it. They have this really rough skin; it's a really protective layer.

BJ: Wow!

Dion: Now where do the tawny nurse sharks live?

Renee: These guys are around Australia, they live in the northern parts of Australia, so in the tropical waters around Queensland and the Northern Territory.

BJ: Fantastic. Now he's also got really small eyes, can he see very well under the water?

Renee: No, he does have small eyes, but he doesn't use these primarily to see, he uses these amazing sensory smell organs at the front of his mouth, as well the vibrations in the water from other fish. So they have, sharks have a lateral line, and all fish do as well, so what they use, they pick up the vibrations from other animals and other fish using these lateral lines.

BJ: Wow, so they've got lots of senses to help them find food.

Renee: Super senses. Absolutely.

Dion: Now what's the difference between a fish and a shark?

BJ: Yeah?

Renee: The main difference is actually their skeletal structure. So a shark is made out of cartilage, and you find cartilage in our noses and our ears

[Renee points to her nose and her ear]

so try and feel that.

[Everyone feels their noses and their ears]

BJ: OK.

Dion: Can you feel your nose?

BJ: And it's a bit flexible, isn't it? It wobbles.

Dion: It is.

- Renee: Very flexible, and it's really light as well. So these guys use it to be able to swim through the water.
- BJ: OK.
- Dion: Now, there are lots of sharks in this tank, what other sharks are there here in this tank?
- Renee: We also have some blacktip reef sharks, and we have a couple of shovel nosed rays as well that sit on the bottom.
- BJ: Fantastic.
- Dion: And are these are all Australian sharks as well?
- Renee: These are all found in Australia.
- BJ: Now, there's lots of different sharks in Australia, is there?
- Renee: There's lots of sharks. In total there's around 350 sharks in the oceans.
- BJ: Three hundred and fifty different sorts of sharks?
- Renee: Different sorts of sharks.
[Renee nods her head]
- BJ: Wow!
- Dion: That's a lot!
- BJ: *[Laughs]* Yeah.
- Renee: It is.
- BJ: Now, do you have any other animals in this big tank?
- Renee: We do. We have our Queensland grouper.
- BJ: Is that that really big one?
[BJ spreads her hands wide]
- Renee: That is.
- Dion: He's a really big fish.
[Video of the grouper]
- Renee: Now, the Queensland grouper is actually the largest bony fish on the coral reef.
- BJ: Oh.
- Renee: Yeah. It can get to around 600 kilos.
- BJ: So is this one full grown? Is that as big as it's going to get?
- Renee: No, not at all.
- BJ: No?

Renee: So, they get to around 2½ metres in length.

Dion: Wow!

BJ: Wow! That's huge!

Dion: That is a big fish.

BJ: *[Laugh]* So Renee, do the sharks breathe the same way as people do?

Renee: No, they don't.

[The shark makes a sucking noise]

We breathe with absorbing the oxygen in the air.

BJ: Uh-huh.

[Nodding her head]

Renee: What these guys do is they have gills, so they absorb the oxygen in the water by passing through those gills.

[Camera zooms in on the shark's gills]

Dion: So are they those things in the side of the shark there?

[Dion points to the shark's gills]

Renee: Yeah. If you have a close look, can you see them?

[Renee points to the shark's gills]

BJ: Yeah. And they're opening and closing; is that then passing water through?

[Camera zooms in on the shark's gills]

Renee: That's exactly it. So what he's doing at the moment is he's drawing in water through his mouth, and it's going through and past his gills and coming out the other side.

BJ: And then they get all the oxygen from the water?

Renee: They do. So they absorb that oxygen straight out of the water.

Dion: Wow!

BJ: That's cool.

Dion: Well there are lots of different fish here at the National Zoo and Aquarium to have a look at. You should come have a look; it's a lot of fun! So we're going to go back up then and have a look at what we're doing at Science Time now.

BJ: Thanks, Renee.

Renee: That's OK.

[Science Time logo]

BJ: Here we've got two animals. What animal is this one?

[BJ holds up a blow-up dolphin toy]

[Collectively]

Children: A dolphin!

BJ: A dolphin. What animal is this one?

[BJ holds up a toy shark]

[Collectively]

Children: Shark!

BJ: A shark. Now, the dolphin and the shark, they look a bit different, don't they?

[BJ and Dion hold up the dolphin and the shark toys]

There's some things that are the same about dolphins and sharks, and there are some things that are different. Hands up, hands up if you can tell me what looks the same about our dolphin and shark?

Child: They have the same tail.

BJ: The same tail! Very similar. They've both got curvy tails like this. [BJ points to the dolphin's tail]

Child: But that one's like this.

[Child points to the dolphin's tail]

BJ: Well done. Sitting on your bottom. Sitting on your bottom.

Dion: So sitting on your bottom everyone. Sitting on your bottom. There we are.

Child: They've both got big fins!

BJ: Hold on just a moment! But their tails, the dolphin has a sideways tail, and the shark has an up and down tail. Do you know they swim differently with their tails? A shark will go from side to side like this.

[BJ moves the toy shark's tail from side to side]

Child: This one goes

[child moves the dolphin in an up and down motion].

BJ: And the dolphin goes up and down.

Dion: It goes up and down.

BJ: So they swim a bit differently. What did you say?

[BJ points to a child]

Child: Um, they have both flippers.

BJ: They both have fins, don't they? Come and sit on your bottom.

Dion: So sitting on your bottom; sitting on your bottom for me.

- BJ: They have a... oh, sitting down; wiggle over.
- Dion: This is called a dorsal fin. Can everyone say dorsal fin?
[Collectively]
- Children: Dorsal fin.
- BJ: Dorsal fin. Yep, you're right, they've both got a fin on top of their bodies, and that helps them swim through the water.
- Child: But they're different.
- BJ: But they're very, very different, dolphins and sharks. Do you know...
- Child: Well, they have the same pointy nose.
- BJ: They both have a pointy nose. But do you know they breathe very, very differently. A shark – sitting on your bottom – a shark is a type of a fish, and it breathes like a fish. Water comes in its mouth, or past its body, and here we've got gills
[BJ points to the gills]
and the water comes out the gills and they get their oxygen, their air, from the water.
- Child: And then they eat things.
- BJ: But dolphins are quite different. They get their air just like you and I do! They have to come up to the top of the water,
[BJ sucks in a breath of air]
take a big breath – can you take a big breath
[BJ sucks in a breath of air]
and then go back under the water again.
[Children take a big breathe and hold it in, then breathe out]
So a shark is a fish, but a dolphin is a mammal, just like you and I. So they breathe air just like you and I do. Do you know there's another difference? Inside they're very different. They have different skeletons. A mammal has a skeleton just like you, so the dolphin skeleton is made of bone, just like yours is. But a shark skeleton is made of something called cartilage.
Now we've got cartilage; our ears are made of cartilage. Can you feel your ear? Can you feel it's a little bit wobbly and flexible?
[Children feel their ears]
And also your nose; your nose as well – can you feel your nose?
[Everyone feels their nose]
- Dion: Can you feel your nose?

BJ: So it's not as hard as bone. Yeah, so their skeleton is made of cartilage, just like the shark, not like us, not like the dolphin, made of bone. There's one other big difference.

Child: That one goes side to side.

[Child points to the dolphin's tail]

BJ: Yeah.

Dion: It does. Sitting down for me.

BJ: One other big difference is smelling. Do you know sharks have an excellent sense of smell? Do you like smelling things? [Children nodding their heads in agreement] Yeah? They can smell really, really well. But do you know dolphins have no sense of smell. Dolphins don't smell anything. Do you know they taste the water with their tongue, so instead of smelling, they taste.

So sharks and dolphins, there's things that are the same, but there's a lot of things that are different. Hands up if your favourite is the shark?

[Some children raise their hand]

Child: My favourite is the dolphin.

BJ: And hands up if your favourite is the dolphin. [Some children raise their hand]

Child: Mine is the dolphin.

BJ: Yeah. Yeah. I love both sharks and dolphins! So here we go, let's swim away. [BJ holds up the toy shark and pretends to swim away] "Bye dolphin!" Swim, swim, swim, swim, swim, swim, swim, swim, swim!

Now, Dion and I have something for you to take away with you today. First we have our parent information sheet. Lots of activities you can do, and boys and girls at home you can download this activity sheet and do some of the stuff at home. [Camera zooms in on a picture of the information sheet] And we've also got a colouring in sheet! [Camera zooms in on a picture of the colour in sheet] Now on this colouring in sheet, that you can download at home as well, what animals have we got here? What one's this one?

[Collectively]

Children: Shark!

BJ: Shark? Oh! And a big one here, what's the biggest animal in the ocean?

Child: A dolphin.

Child: Whale.

BJ: A whale. Yeah. And we've got fish, and seahorses, lots of animals for you to colour in. But can everyone look now at the boys and girls at home, and

can we all say to the boys and girls at home – oops, sitting on your bottom,
sweetie – can we say, give a wave, and say, “Bye!”

[BJ waves]

Dion: Everyone waving.

[Dion waves]

[Collectively]

Children: Bye!

[Children waving]

Dion: Bye! See you next Science Time.

[Waving]

BJ: See you next Science Time!

[Waving]

Come and get a colouring in picture.

[Music playing and singing in the background]

BJ: Questacon Science Time is held at Questacon in Canberra, Tuesday to
Friday, during school terms. Bookings are essential. For further
information go to our website at questacon.edu.au. See you next Science
Time.

[Credits rolling]

[Music playing]

[Singing]

At home in the kitchen, when we're cooking, there is science,

Outside at the playground, in the sunshine, there is science.

Wake up.

[End of audio]