

## Transcription of Science Time video – Moving Toys

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

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

### Transcription from video:

BJ: Hi, and welcome to Questacon Science Time. my name's BJ.

Dion: And I'm Dion.

*(Waving)*

BJ: And today we're talking about moving toys. Cool. Come with us.

Dion: Let's go.

*(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.

*(Science Time logo – Title, "Moving Toys")*

BJ: Today we're talking about moving toys – toys that can move in different ways. Have a think about the toys that you've got at home; do you have any toys that can move?

Child: I do. I have a moving troll with a (indistinct words – 0:59).

BJ: A moving troll?

Dion: Is that what you have? What did you have?

Child: Yeah.

Dion: Wow!

BJ: Cool! Wow! And how does it move? What do you do to make it move?

Child: There's buttons that make it move.

BJ: It's got buttons, and it's like a remote control?

Child: And it can do (indistinct word – 1:13).

BJ: Oh, wow!

Child: I got car(?).

Child: I got lots of tractors.

Dion: What have you got? A monster truck did you say?

Child: What? No.

Dion: No? What did you have?

Child: I got (indistinct words – 1:19).

Dion: Oh, moving toys.

BJ: Oh, excellent! Excellent! Does anyone...

Child: We have a car.

BJ: Do you?

*(BJ looks at the camera and talks to the children at home)*

And does anyone have any cars at home? Do you have any toy cars maybe?

*(A child raises her hand)*

Yeah? Yeah, you do?

Child: I have a car that moves when you go round and round, it goes.

BJ: OK, so you sort of pull it back and then it goes forward? Cool. I've got one... oh, and do you have a toy that moves?

*(BJ points a child)*

Child: And you pull it backwards.

BJ: And you pull it back and you let go, and it drives away. That sounds really fun. One of my favourite toys is really good at moving. Here we go. What's this toy?

*(BJ reaches behind her and pulls out a ball from a box of toys)*

*(Children say collectively)*

Children: A ball.

BJ: A ball. Who else has got a ball at home? Do you have a ball at home?

*(Camera zooms in on the ball, as BJ points to it)*

*(Everyone raises their hand)*

*(Children say collectively)*

Children: Me. I do.

BJ: Yeah? Yeah? Excellent.

Child: I have lots of balls.

BJ: You've got lots of balls? Hands down.

Child: I got lots of balls.

BJ: Excellent. Hands down. Now, balls are really good at moving in different ways, but this ball here, is this moving?

*(Camera zooms in on the ball in front of BJ)*

Child: No.

BJ: No. It's quite still, isn't it? How do I make my ball move?

Child: Push it with your hand.

BJ: Oh OK, so I push it with my hand. And if I push it with my hand, what will the ball do? It will move.

Child: You'll have to try.

BJ: I should try it, shouldn't I? Should I experiment?

Child: Yes.

BJ: How do we think the ball's going to move when I push it with my hand?

Child: Because you push it and it moves on.

BJ: Because I push it and it will move along? OK, well let's experiment. So I'm going to push it to you.

*(BJ points to a child on her left)*

You ready? So I'm going to push the ball all the way to you, and watch what the ball does. Are you ready? I'm going to push it with my hand. OK, ready? Push.

*(BJ pushes the ball with her hand, and the ball rolls toward the child, and the child pushes the ball back towards BJ)*

Hey! It... oh, well done.

Dion: Well done.

BJ: It rolled across the floor. So when I push it, I give the ball lots of energy, and it rolls across the floor. Well done. So balls are really good at rolling. Is there any other way I can move my ball? What's another way that balls can move?

Child: Kick it!

BJ: I could kick it. OK, well shall I? I'll try. So I'll just get up. So, if I kick it, so again I kind of push it with my foot, can't I?

*(BJ demonstrates kicking the ball with her foot)*

So if I push it with my foot, it's just like pushing it with my hand. So are you ready? I'm going to push it to you, kick it to you this time.

*(BJ points to a child)*

Ready? So I'm going to push with my foot.

*(Camera zooms in as BJ kicks the ball with her foot, and the ball rolls towards the child)*

There we go. Can you push it back to me? Big push.

*(Child pushes the ball back to BJ)*

Oh, well done. That was great.

Dion: Good work.

BJ: Good rolling. Excellent. So I can push it with my hands, I can push it with my foot, how else can I make my ball move?

Child: Use it by doing this.

*(Child demonstrates kicking the ball with his foot)*

BJ: There's different ways I could kick and push it with my foot. What about bouncing? Can balls bounce?

*(Children say collectively)*

Children: Yes.

BJ: Yeah, balls are really good at bouncing. What action do I need to do to make the ball bounce?

Child: Throw it and then it just bounces, then it goes right back up again.

BJ: OK, so throw it up, and then it will come down and bounce, and then come back up again? You think? Shall we test it? Shall we try it?

Dion: Let's test it.

BJ: You ready? OK, so I'm going to throw it up.

*(BJ throws the ball up in the air, and the ball comes back down and bounces, then BJ catches it in her hands)*

Hey, fantastic! So I throw it up and it bounces, and comes back up again.

*(BJ throws the ball up in the air, and the ball comes back down and bounces, then BJ catches it with her hands)*

Child: And you know when you do it (indistinct words – 4:26), when you do it, it nearly touches the roof, it bounces back up high.

*(Child demonstrates the ball bouncing high with his arms)*

BJ: If I did a really high throw, then the bounce would be higher. You're right.

Dion: It might hit the roof, you're right.

BJ: Yes. Another way I can bounce, so I can throw it up, I can push it up.

*(BJ throws the ball up in the air and catches it as it comes back down)*

Oop, up and down.

*(BJ throws the ball up in the air and the ball bounces on the ground, and then she catches the ball in her hands)*

Child: (Indistinct words – 4:41) you can do with a ball, you bounce it on your head.

BJ: I could. I could bounce it on Dion's head.

*(BJ bounces the ball on Dion's head)*

How's that? That looks good.

*(BJ and Dion laugh)*

Or I can bounce it down as well, can't I? So if I push the ball down, push up, it will bounce as well.

*(BJ bounces the ball in front of her and catches it in her hands)*

So I can push it down; I can push it up; I can push it along the ground; so there's lots of different ways our ball can move. Do you know, I can even spin my ball as well? What action do you think I'll need to do to make the ball spin around?

Dion: What does BJ need to do?

BJ: What action do I need to do? What do you think?

*(BJ points to a child)*

Child: You need to spin your hand on the ball.

BJ: Spin my hand on the ball? OK. Ready?

Child: But I can really do it really good.

BJ: Can you?

Child: Yeah.

BJ: Well I'll have a turn, and then you can have a turn later if you like. So watch; I'm going to turn my hand just like you suggested. Ready?

*(Camera zooms in on BJ spinning the ball)*

Hey! Hey, that spins well.

Child: That's good. I can do it really good.

BJ: Here you go you have a turn; you show me how you can spin it.

*(BJ hands the ball to the child and the child takes the ball)*

Child: I just do this, then it goes.

*(Child places both his hands on the ball, and spins the ball)*

BJ: Hey, you did it with two hands. Show me again.

*(Child places both his hands on the ball, and spins the ball)*

Oh, I like that!

Child: Can I have a turn?

BJ: Good spinning. Here we go, roll it back to me, and we can all have a turn in a moment. Here I've got two toys.

*(BJ holds up a wooden block in one hand, and a tennis ball in the other hand)*

What's this one?

*(BJ holds up the tennis ball)*

*(Children say collectively)*

Children: Ball.

BJ: What's this one?

*(BJ holds up the wooden block)*

*(Children say collectively)*

Children: Block.

BJ: A block. Now, how do we make the ball roll again? What action do we need to do? We need to push it, don't we? Yes. So if I push the ball it will roll.

*(BJ pushes the ball with her hand to make it roll)*

But what's going to happen if I push the block? Will it roll?

Child: No.

Child: No.

BJ: No?

Dion: Maybe not.

Child: See what if you try.

BJ: How about we try and find out. Yeah, yeah. So we'll experiment. Ready? I'm going to push the block, see what happens.

Dion: Watching carefully.

*(BJ pushes the block with her hand)*

BJ: Oh! Did it roll?

*(Children say collectively)*

Children: No.

BJ: No. How did the block move when we pushed it? What did it do?

Child: Slides.

BJ: It slides. Yeah. So the ball rolls, but the block slides.

*(BJ rolls the ball with her hand, and slides the block with her other hand)*

Why? Why doesn't the block roll?

Child: Because it can't.

Child: Because it's a rectangle.

BJ: It's a rectangle. Yeah. And what were you going to say?

*(BJ points to a child)*

Child: Because it's not rolling.

*(The child turns her hand in a rolling action)*

BJ: Because it's not rolling. It's not the same shape as the ball, is it? The ball is a nice round shape, so it rolls really well.

*(BJ rolls the ball with her hand)*

But the rectangle doesn't roll, does it?

*(BJ pushes the wooden block with her hand)*

No. It slides. Well done. So even though we do the same action they move in different ways. Talking about moving, last toy before we go and play, what toy is this one?

*(BJ reaches behind her and brings out a toy truck)*

Child: A truck.

*(Children say collectively)*

Children: Truck.

BJ: A truck.

Dion: Hands up, does anyone have a truck at home? Has anyone got a troy truck?

Child: I do.

BJ: Yeah?

*(Children raise their hands)*

Child: I got green, yellow and truck.

Child: I have a truck.

BJ: You have a toy truck? Yeah, yeah.

Dion: You might have big trucks at home as well.

BJ: And how does the truck move? What does it do?

Child: You slide it.

BJ: I slide it? So what action do I need to do?

*(BJ demonstrates pushing with her hands)*

Child: Push.

BJ: I push it. So when I push the truck...

Child: There's wheels. There's wheels on it.

Child: It moves.

BJ: I was going to ask you – what part of the truck moves when I push it?

Child: The wheels!

BJ: The wheels!

Child: Ouch!

BJ: Oh, I got you then, didn't I? So when I push the truck it will roll, and what part of the truck is moving?

*(Camera zooms in as BJ pushes the truck back and forth)*

Child: The wheels.

Child: The wheels.

BJ: The wheels – the wheels move because they're round, and round things are really good at rolling.

*(BJ spins the wheels on the truck with her finger)*

*(Science Time logo)*

Excellent! So we have lots of things to play with in Science Time today, so find your grown-up, and go and explore the room.

Dion: See what you can find.

BJ: Ready, set, go! Off you go.

*(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.

Dion: We've got a really exciting moving toy here at Questacon. Come and have a look.

*(Science Time logo)*

Hi boys and girls, here we are today at Questacon's Gravitram, our massive moving toy. Now when we look at moving toys we look at a couple of different things. Do you remember what they were? Well what we're going to look at is the action first of all, how we make the toy move. We also need to look at what parts move, and also how they move as well.

So the first thing we need to do is turn on Gravitram. Come with me. So we've got a special key to turn on Gravitram, and the keyhole is down this way. Follow me.

*(Dion bends down to the ground)*

Now what we need to do with the key is we've got to put it into the keyhole and turn it. And Gravitram starts to move.

*(Dion inserts and turns the key)*

*(Video showing how Gravitram works)*

So now that we've turned Gravitram on, let's have a look and see what bits are moving. Can you see which bits are moving?

*(Video showing balls moving around inside Gravitram)*

Yeah, the balls. They're moving all around Gravitram. Now what shape are the balls?

*(A bell sounds)*

Yeah, they're round, which helps them roll all around. But they're not just rolling; they're also doing other things. See?

*(Video showing balls moving around inside Gravitram)*

Watch really carefully. These balls are about to bump into each other. There's also this ball here.

*(Video showing balls moving around inside Gravitram)*

It's sitting and waiting for another ball to help it move again. There's this ball here, it's spinning.

*(Video showing ball spinning around inside Gravitram)*

But it's not just the only thing that's spinning in Gravitram, there are also cogs. Can you see a cog?

*(Video showing a cog moving round inside Gravitram)*

This cog here is spinning and carrying the balls all the way to the top of Gravitram, so that from the top they can roll all the way down to the bottom again. Gravitram is lots of fun to watch. So next time you come to Questacon, how about you try and have a look at Gravitram and see what different parts are moving. Let's go back to Science Time and see what everyone's up to.

- BJ: This is one of my favourite moving toys that we've looked at today, Dion, and everyone, I love this one.  
*(Camera zooms in on the toy in front of BJ)*  
Now these are called cogs, and they spin around. And you know I can make this one here spin around without even touching it.  
*(BJ points to the cog at the end of the toy)*  
How do you think I can do that?  
*(Camera zooms in on the cogs of the toy)*
- Child: You spin this.  
*(Child points to a handle at the end of the toy)*
- BJ: I spin this?  
*(BJ points to the handle)*  
And what will happen if I spin this around? What will happen?
- Child: It will spin that one, and then that one, and then that one, and that one, and that one, and that one, then that one.  
*(Child points to each adjoining cog of the toy)*
- Dion: Good work.
- BJ: OK! So if I spin this one, it will make this one spin.  
*(Camera zooms in on BJ pointing to the cogs of the toy)*  
That will make that one spin, and this one will make this one spin, that will make that one spin, all the way to the end.  
*(Camera zooms in on BJ pointing to the cogs of the toy)*  
Is that how you think it's going to work? Oh, let's experiment shall we? Shall we experiment and see if it works? So I'm going to spin this one around and watch what happens to the other cogs. Ready?  
*(BJ turns the handle and the cogs begin to spin)*  
What's happening?
- Child: Spinning.
- Dion: They're spinning.
- BJ: They're spinning! And look at this one at the end, its spinning and I'm not even touching it.  
*(BJ points to the cog at the end of the toy)*  
So the energy from me spinning the handle around is transferred to this one, that moves this one, and it moves that one, all the way up the line.  
*(BJ points to the different cogs of the toy)*

And the last one's moving without me even touching it. And I can move it the other way too, I can go backwards – forwards, and backwards, round and round.

*(Camera zooms in on BJ moving the handle forwards and backwards, and the cogs of the toy move around)*

I love this one. I could play with this for hours. There we go. So the spinning cogs. Now Dion and I have some things for you to take away with you today. We've got – grown-ups, we have our parent information sheet with some activities that you can do at home.

*(BJ holds up the parent information sheet)*

*(Camera zooms in on the parent information sheet)*

Some great websites that we discovered all about moving toys. Now this is also online, and you can download this from our website. And kids, your picture today, different moving toys.

*(BJ holds up the colouring in sheet)*

This one here is a little toy on a wagon, and the wheels – you see the wheels on the wagon?

*(Camera zooms in on the colouring in sheet)*

Dion: Sitting on your bottoms. Sitting on your bottoms.

BJ: And what's this toy?

*(BJ points to a spinning top)*

What's this one here?

Child: Ice cream.

BJ: It looks a bit like an ice cream, does it? And what did you think it was?

Child: A spinning top.

BJ: A spinning top.

Dion: A spinning top, good work.

BJ: Yeah, it's a spinning top, and then you can spin that around, and you can colour these any colour you like. Again, these are on our website, you can download them at home. So before we go though, we're all going to look at the boys and girls at home, and can we wave to the boys and girls and say, "See you next Science Time."

*(Dion and BJ look at the camera and wave to the boys and girls at home)*

*(Children turn and wave to the boys and girls at home)*

Dion: See you next Science Time.

BJ: Bye!

*(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](http://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.