

Junior Journal 65



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Contents

Articles

- 2 Moving Your Body *by Naomi Arnold*
- 8 Moving with Technology *by Naomi Arnold*
- 26 Moving Pictures *by Ant Sang*

Activity

- 14 Make a Moving Puppet *by Fifi Colston*

Poem

- 18 Bouncing the Beat *by Serie Barford*

Story

- 20 Super Huhu *by Sarah Johnson*

Ministry of Education



MOVING YOUR BODY

by Naomi Arnold

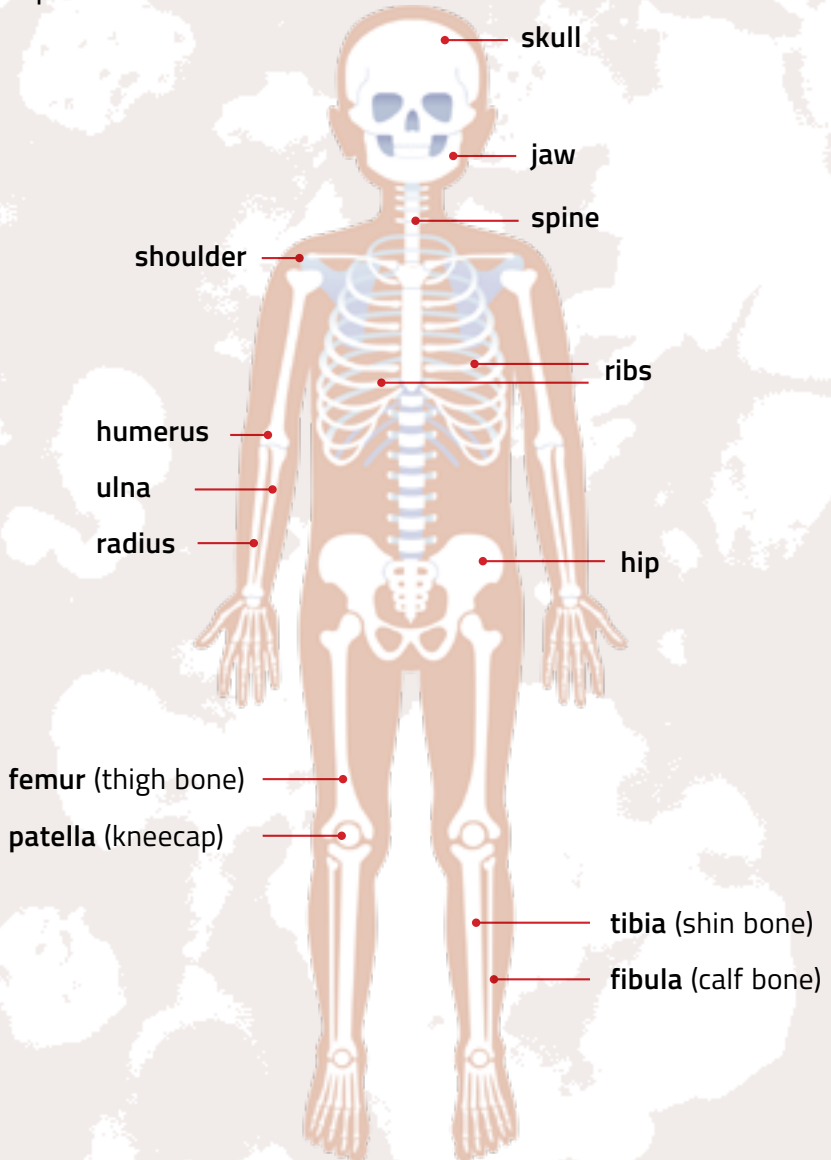


What did you do when you woke up this morning? Did you sit up, climb out of bed, and walk to the bathroom? Did you eat your breakfast, brush your teeth, and get dressed? If you did any of these things, you probably moved your body without thinking about it.

Under your skin, your bones and muscles work together. They make sure you can stand up, sit down, and move your legs and arms. Your bones and muscles even allow you to smile and open and shut your eyes.

THE BONES IN YOUR BODY

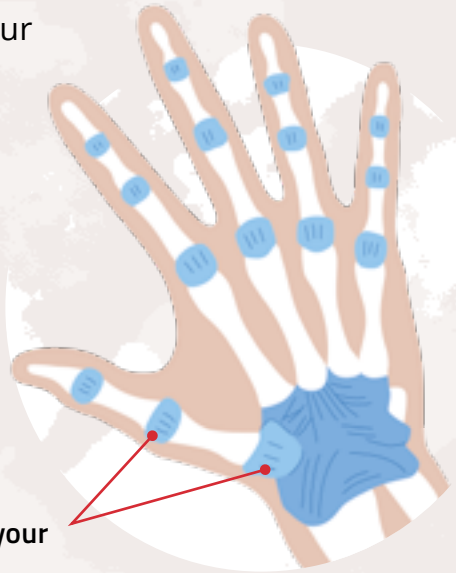
Let's start with bones. In the adult human body, there are 206 bones! Your bones are joined together to form your skeleton. Your skeleton supports your whole body and helps it to move.



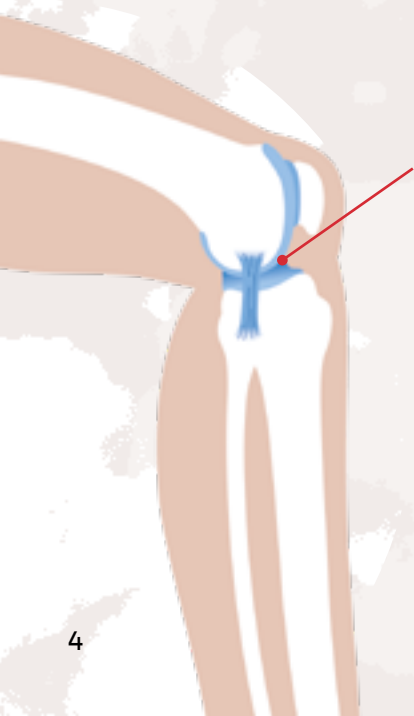
JOINTS

The places where your bones meet are called joints. At these joints, stretchy bands called ligaments join your bones together. Ligaments allow you to bend and move your bones in different directions.

Hands are made up of twenty-seven bones joined together. Wiggle your fingers. Make your fingers into a claw like a monster. Now open them out again. The stretchy ligaments around your finger joints hold your bones together and allow your fingers to bend.



Ligaments join your bones together.



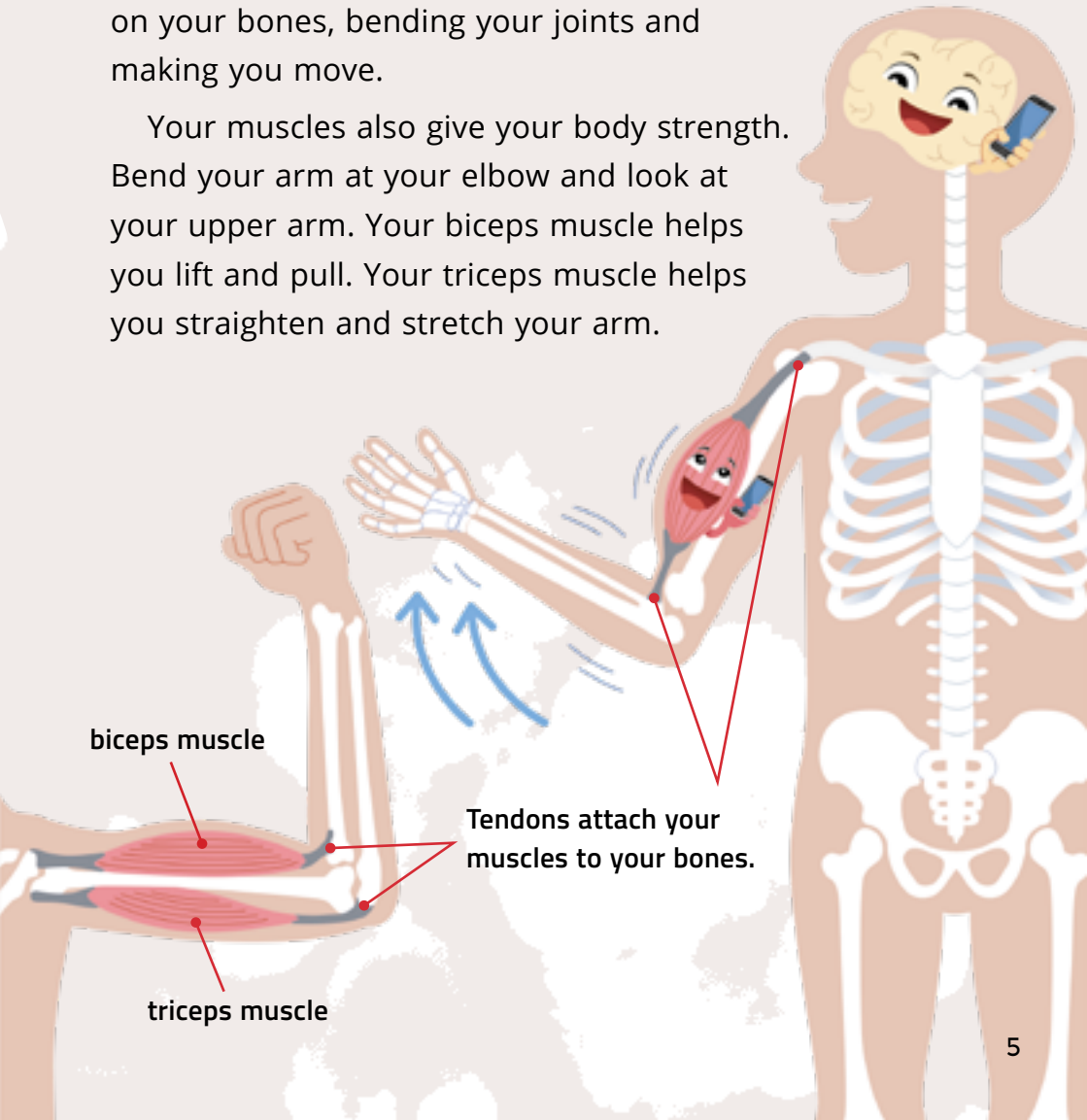
Without joints, you couldn't move. Try to walk without moving your knee joints. Or try to write without bending your elbow or bending your fingers to hold the pen.

MUSCLES

You need muscles as well as bones to make your body move. You have more than 600 muscles in your body! Your muscles are attached to your bones by tendons.

Your brain controls your muscles by sending signals to them. When your muscles get a signal, they pull on your bones, bending your joints and making you move.

Your muscles also give your body strength. Bend your arm at your elbow and look at your upper arm. Your biceps muscle helps you lift and pull. Your triceps muscle helps you straighten and stretch your arm.





WHEN SOMETHING GOES WRONG

Your bones and muscles work together to make you move. But bones and muscles can be damaged if you have an accident. Muscles and ligaments can tear, and bones can fracture (break).

If you fracture a bone, you will usually go to hospital. You'll have an X-ray so the doctor can see the break clearly. They will make sure the bone is put back in the right position and then protect it with a cast made of plaster. The cast stops the bone moving while the broken ends of the bone grow and heal.



If you hurt a muscle, ligament, or tendon, you might need to see a physiotherapist. Physiotherapists are experts in how the body moves. They know how to use exercises and other treatments (physiotherapy) to help people who are injured or disabled. Exercises help heal the damaged part and make it work properly again.



If you have an accident, your body will try hard to fix what's wrong. If you get medical care and rest, your body can usually heal itself. Then your bones and muscles will be ready to start moving again!



Moving with Technology

by Naomi Arnold

We can move our bodies in many different ways. We can walk, run, or ride. We can pick up and carry things. We can build and dig. We can write and draw. Many of the things we can do with our bodies can also be done using technology such as tools and machines. Tools and machines can help people do jobs more quickly, easily, and safely. They also allow people to do things that are too hard for one person to do on their own.



Tongs and tweezers

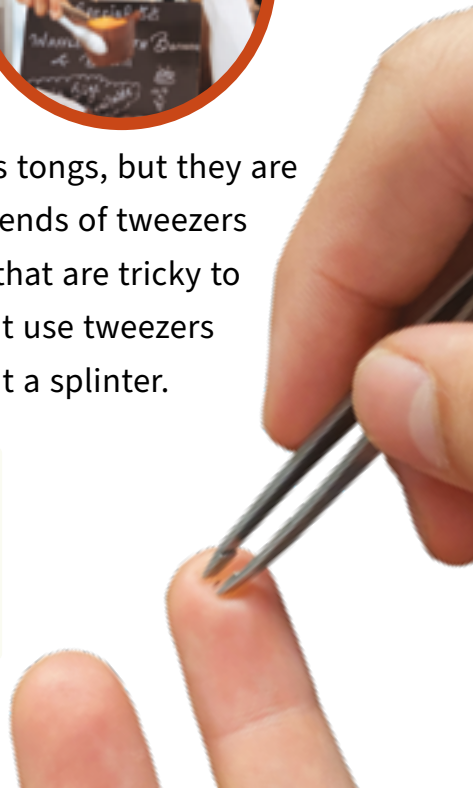
Tongs and tweezers are simple tools made of metal or plastic that help us pick up things. We can use tongs to pick up hot food or to serve salad. People who sell food also use tongs so they don't touch the food with their fingers.



Tweezers have the same shape as tongs, but they are much smaller. You can squeeze the ends of tweezers together tightly and pick up things that are tricky to manage with your fingers. You might use tweezers to pick up something tiny or pull out a splinter.



People such as jewellers or chefs sometimes use tweezers to pick up and carefully place small or delicate objects.



Diggers

Have you ever scooped up sand at the beach and put it in a bucket? Or helped dig up soil in a garden and tossed it into a wheelbarrow? When you do these types of actions, you are making the same movement as a digger.

A digger is like a giant metal arm. It has joints like our shoulders and elbows and a bucket on the end like our scooped hands. But a digger is much bigger and stronger than a human arm – and it can move huge loads.

A digger is controlled by a driver who sits in the cab.





Robotic arms

A robotic arm is an artificial arm that can be controlled using a computer. Robotic arms are often used in factories.

Robotic arms working in a car factory

Robotic arms are also used by doctors in hospitals to help do difficult operations. Doctors can put cameras and different types of medical tools on the robotic arms.

A medical robot being used in a hospital



Prosthetics

Prosthetics are artificial body parts. Sometimes people are born with body parts missing, or people may lose or damage a part of their body because of illness or an accident. Often the missing part can be replaced by a prosthetic.



This boy has been fitted with a prosthetic leg.

Most prosthetics are made from light, strong metals or plastics. Some prosthetics are made to look like body parts, and sometimes they are designed for other purposes.

Some prosthetics are powered by robotics. This makes the prosthetic move like a real body part.



This prosthetic is specially designed for running.



This man has a prosthetic arm.

This prosthetic hand is powered by robotics.



Machines, tools, prosthetics, and robotics are just some of the ways that technology helps us to move.

Make a Moving Puppet

by Fifi Colston

Find out how to use split-pin paper fasteners to make a puppet that moves.



You will need:

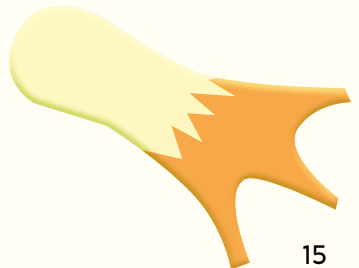
- cardboard
- a pencil and felt-tipped pens (or paint, crayons, or coloured pencils)
- scissors
- small split-pins (19 mm)
- a hole punch or sharp pencil
- odds and ends to decorate your puppet (things such as wool, ribbon, stickers, glitter, or scraps of fabric).

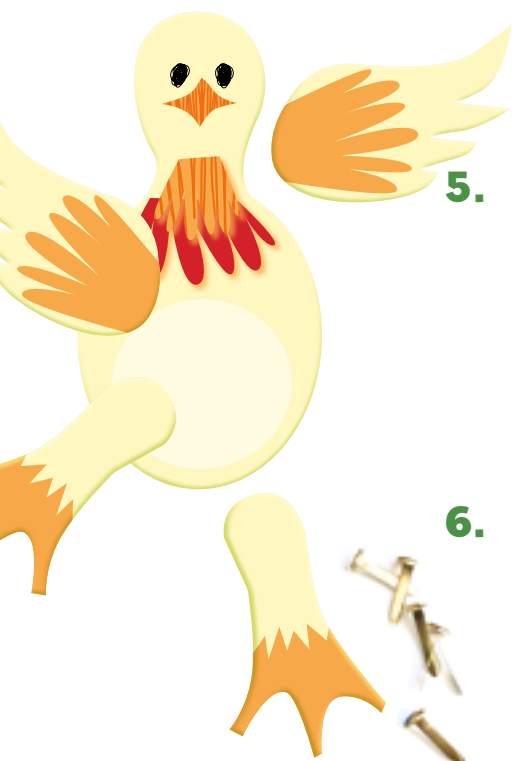




What to do:

1. Choose a creature to make. This activity works best with creatures that have pairs of moving parts (such as arms, legs, or wings). You could copy one of the puppets shown here or design your own creature.
2. Draw a head and torso (the main body part of your creature) and then its arms and legs (or wings) onto cardboard.
3. Colour in the parts and decorate them.
4. Cut out the parts.





5. Put the body parts together to check how they will be connected and where you will need to make holes. If something doesn't look right, this is the time to adjust the parts you have made.

6. Make holes in the body and the other parts using a hole punch or a sharp pencil.

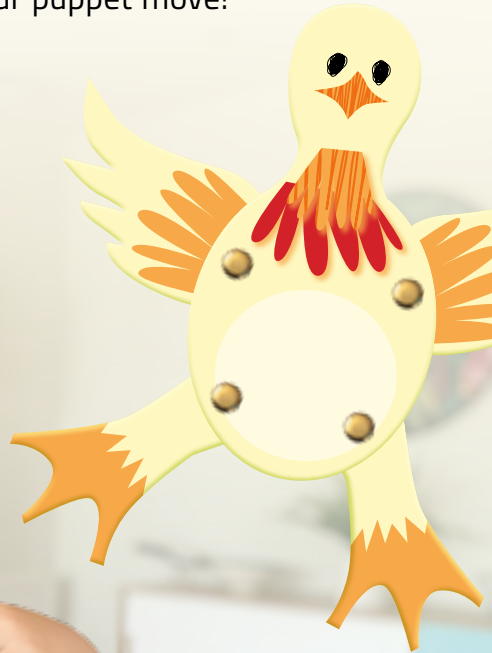




7. Fix the smaller pieces to the back of the body with the paper fasteners. To do this, push the split pins through from the front and open them out flat on the back. The pieces should move freely.



8. See how the split pins let your puppet move!



BOUNCING THE BEAT

The wooden slit drum
talks in double beats.

Rat-a-tat

Rat-a-tat

We're counting the beats.

Fetu shouts,

“Tulolo!”

Heads bow.

We bend forwards,
fingers press the floor.

Fetu shouts,

“Nofo!”

We sit up straight,
hands on knees,
fingers splayed like starfish.

Fetu shouts,

“Sauni!”

We're ready.

Rat-a-tat

Rat-a-tat

Knees bounce the beat,
flat hands
clap,
cupped hands
clap.



'ava: a drink made from the root of the 'ava plant

fau: fibre from the bark of the fau tree that is used as rope



We're paddling canoes.
Heads tilt
up,
down.
Shoulders roll
forwards,
back.

Rat-a-tat

Rat-a-tat

Knees bounce the beat.

We're weeding gardens,
flying like manumea.

Rat-a-tat

Rat-a-tat

Knees bounce the beat.

We're mixing 'ava,
wringing out the fau,
flick,
slap,
clap,
tap,
bend and turn.

We're dancing the sāsā,
cross-legged on the floor.

Rat-a-tat

Rat-a-tat

Bouncing the beat.

manumea: a large pigeon, the national bird of Sāmoa

sāsā: a group dance from Sāmoa

Serie Barford

illustration by Phillip Paea

Super Huhu

by Sarah Johnson



Grace and her friends were up in the treehouse at Ata's place. Grace had put them there by using her superpower – she could teleport people. Grace's friends had superpowers, too.

So, how did they get superpowers? Well, last summer, a very strange thing had happened. Ata, Tomu, Zala, Grace, and Ji-ho had been playing outside when a ball of green light appeared in the sky. It hovered above them and then rose into the sky and disappeared.

Over the next few weeks, the friends discovered they could do things other kids couldn't. Ata could hear things far away, Tomu could blow enormous breaths, Zala could make people forget things, Grace could teleport people, and Ji-ho got a huge surprise when he went swimming and discovered he could turn into a shark! At first, the friends weren't very good at using their superpowers. They needed to learn how to control them, so they went to the treehouse, where no one could see them, to practise.

Tomu was feeling grumpy. "What good are our superpowers anyway?" he grumbled. "What's useful about being able to do this?" He blew a big breath, "HUUUFFFF!"

At that exact moment, a huhu grub poked its head out of a hole in a nearby branch. Tomu's breath blew straight into its open mouth. Instantly, the grub swelled up to the size of a hippopotamus. The branch cracked, and the tree started to creak and sway ...



"Get that bug away from here!" shouted Ji-ho. "The tree's going to fall down!"

"OK, OK," said Tomu. He took another big breath and blew. The giant grub flew out of the tree and hurtled through the air. "That's got rid of it," he said.

“Hmm,” said Grace. “But where will it land?”

“Shhh,” said Ata. “I can hear something.” He frowned in concentration. “Someone’s calling for help. It’s coming from the school. Grace, we need to get down there.”

One by one, Grace teleported the friends to the school. They landed on the school field. Right away, they could see what the problem was. The giant huhu grub had landed on the school roof. Its huge, flabby body had spread and flopped all over the windows and doors.



“Help!” cried a muffled voice. “Help!”

“It’s Ms Cronk!” said Ji-ho. “She’s trapped inside the school.” Ms Cronk was the school principal.

“What’s she doing here on Saturday?” said Tomu crossly.

“It doesn’t matter why she’s here,” said Grace. “We have to get her out!”

“How?” asked Zala. “That grub is huge.”

“It’s too big for me to teleport,” said Grace. “Tomu, you need to blow that grub off the roof.”

“And then what?” asked Ata.

“And then blow it into the sea,” said Grace.

“Right,” said Ji-ho. “Tomu, you get the grub moving, and Grace, you teleport us to the beach. Let’s go!”

Tomu blew hard. The huhu grub slithered off the school roof and onto the playground. He blew again, and it rolled out of the playground and down the steep hill that led to the sea. The grub began to gather speed. By the time it reached the bottom of the hill, it was rolling so fast it flew straight over an ice-cream truck, bounced on the sand high into the air, and then landed in the sea. Splash!



Ji-ho was in the sea, waiting. As soon as the grub hit the water, Ji-ho transformed into a shark and bit the huge grub on its tail. Holding on to the tail tightly, and using all his strength, he dragged the grub far out to sea.

Ji-ho's friends on the beach could see the grub's huge body bobbing off into the distance. They watched it grow smaller and smaller until it completely disappeared.



A few minutes later, a shark's fin broke the surface of the water and moved quickly towards the beach. There was a lot of splashing, and then Ji-ho appeared from the waves.

“Phew!” exclaimed Ata. “Thank goodness we got that sorted.”

Grace teleported them all back to the school. Ms Cronk was standing in the playground. “Kia ora, tamariki mā,” she said. “I’ve just had a very frightening experience. I was inside, then suddenly everything went dark. There was something covering the windows and the door was blocked. I couldn’t get out. It was a huge monster! We need to warn people about it!”

“I don’t think we do, Ms Cronk,” said Zala gently. She looked into Ms Cronk’s eyes and smiled. “I think you should just forget about it.”

Ms Cronk looked confused. She stared up at the school roof and scratched her head. Then she looked at the five friends. “Oh, kia ora, tamariki mā. It’s a lovely day,” she said. “I’ve just come to school to do some work. I’d better get started.” She turned and went back into the building.

“Our superpowers are useful after all,” said Grace. “Together, we saved Ms Cronk.”

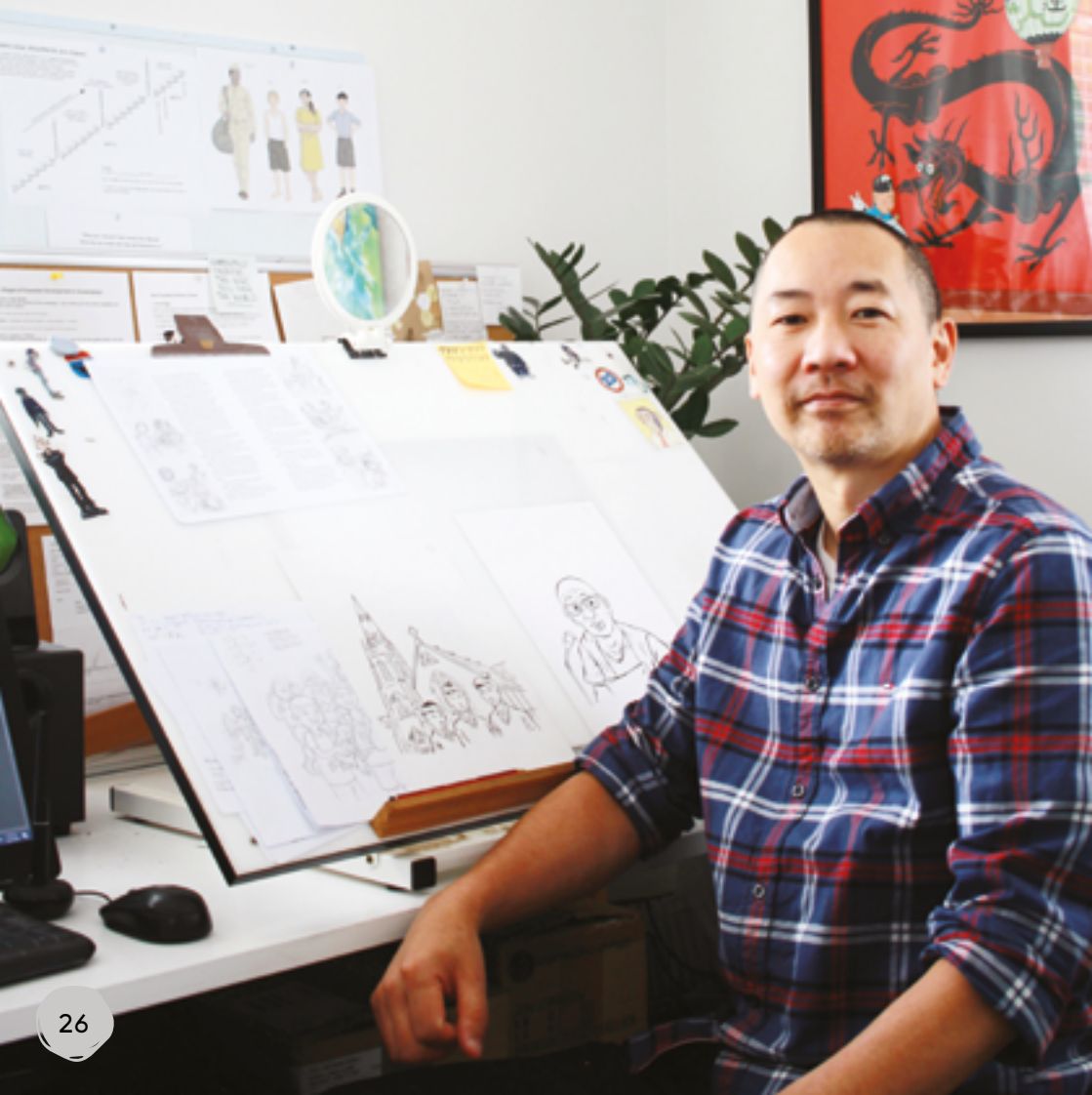
“And what’s more, she’ll never know it was us,” smiled Zala.

“Now that is a superpower!” laughed Tomu.



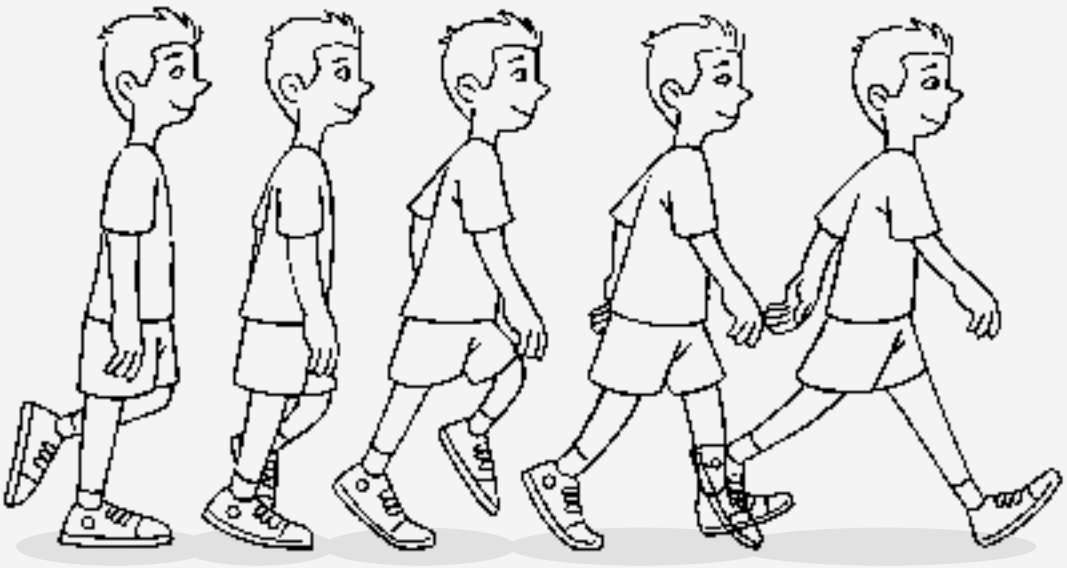
MOVING PICTURES

by Ant Sang



Ant Sang is an illustrator. He often illustrates comics. In this article, Ant explains how he creates “moving” pictures.

I love working as an illustrator. An important part of my job is showing movement in my pictures. When we watch cartoons on television, we see things moving. These are called animated cartoons. They are made up of lots of individual drawings that flash by one after the other – twelve to twenty-four pictures every second – so it looks as if the characters and objects are moving.



That’s how animated cartoons work, but there are also ways you can show movement in a single picture on a page. I’m going to tell you about some ways I show movement in my pictures.

Speed lines

Look at this picture. It seems like the car isn't moving.



1

Now look at this picture. I've added "speed lines" (or "movement lines"). They make it look like the car is moving along the road.



2

If I make more changes, I can make it look as if the car is travelling much faster.



3

Dust clouds

If I draw a dust cloud behind someone, it looks as if the person is moving in the opposite direction to the dust cloud. The bigger the dust cloud, the faster the person seems to be moving.



Jagged edges

Jagged edges along a person's back, together with speed lines, make it look as if they are moving so fast they're a blur!



Distortion

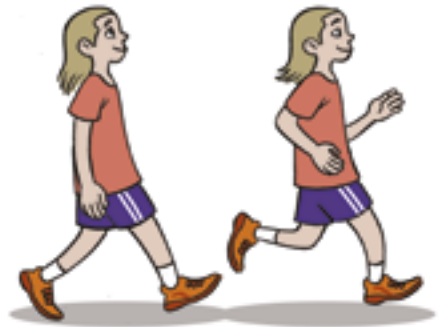
Distortion means to change the shape of something. If I draw wheels as ovals or draw faces, arms, and legs that are stretched and twisted, these make it look like something is moving very fast.

(I've also used distortion on the wheels of car 3 on page 28.)

Body position

Have you noticed that when someone is walking, the position of their body is different from when they are running? I can use the position of the body to show how they are moving.

Another way to do this is to exaggerate the position of the body.



(I've drawn his legs stretching much wider than they would in real life.)

Multiple figures

Showing someone (or something) many times in the same picture is another good way of showing or suggesting a series of movements.

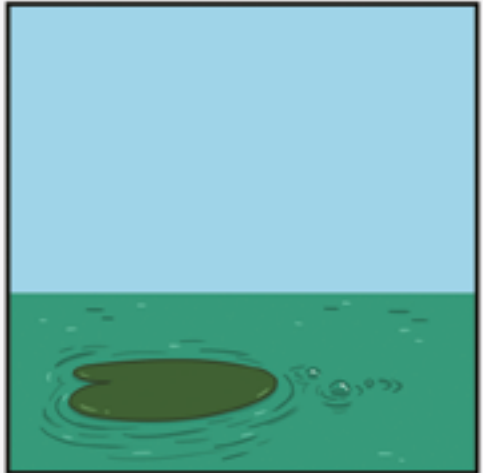


Multiple panels

The boxes around each picture in a comic are called panels. Each panel shows a moment in time. By placing one panel after another, you can tell a story. When two panels are next to each other, we imagine movement by seeing the differences between the panels and thinking about what must have happened in between the two pictures.



Now it's your turn! Try using some of these ideas in your own drawings. You could show a frog jumping, a bird flying, or a fish swimming in the sea – or something else. You could draw more than one picture or draw a picture that shows more than one thing moving. You might like to draw some comic panels that show movement.



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TITLE	GUIDED READING LEVEL
Moving Your Body	Purple 2
Moving with Technology	Purple 2
Moving Pictures	Purple 2
Bouncing the Beat	For shared reading
Super Huhu	Purple 2



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Moving Your Body



Moving with Technology



Moving Pictures



Bouncing the Beat



Super Huhu

