



COPE

.....  
Be ready for disasters!  
.....

# VOLCANOES

By Martha Keswick +

Mariko Jesse +

Timothy Sim



## What are natural hazards ... and disasters?

Forces of nature that happen with little warning and occur all over the world, such as earthquakes, tsunamis, floods, landslides, tropical cyclones (and other storms), storm surges, heatwaves, wildfires, droughts and volcanic eruptions. When these **natural hazards** pose a threat to humans or the environment they can lead to **disasters**, and cause destruction in a community.

## What are volcanoes?

A volcano is an opening in the Earth's crust that allows magma, volcanic ash and gases to escape. Magma is rock so hot that it is molten, and liquid. When the magma reaches the surface of the Earth it is called lava, and pours out of the volcano, along with the gases and ash. Volcanic eruptions can be dangerous and deadly, producing pyroclastic flows, volcanic bombs and ash clouds. They can also trigger earthquakes, tsunamis, mudslides and lahars.

**The World Meteorological Organization** and its partners help countries to prepare for and respond to volcanic eruptions.

*COPE will teach you how to be  
ready for volcanic eruptions!*







## Be ready for disasters – Volcanoes

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Mariko Jesse & Timothy Sim  
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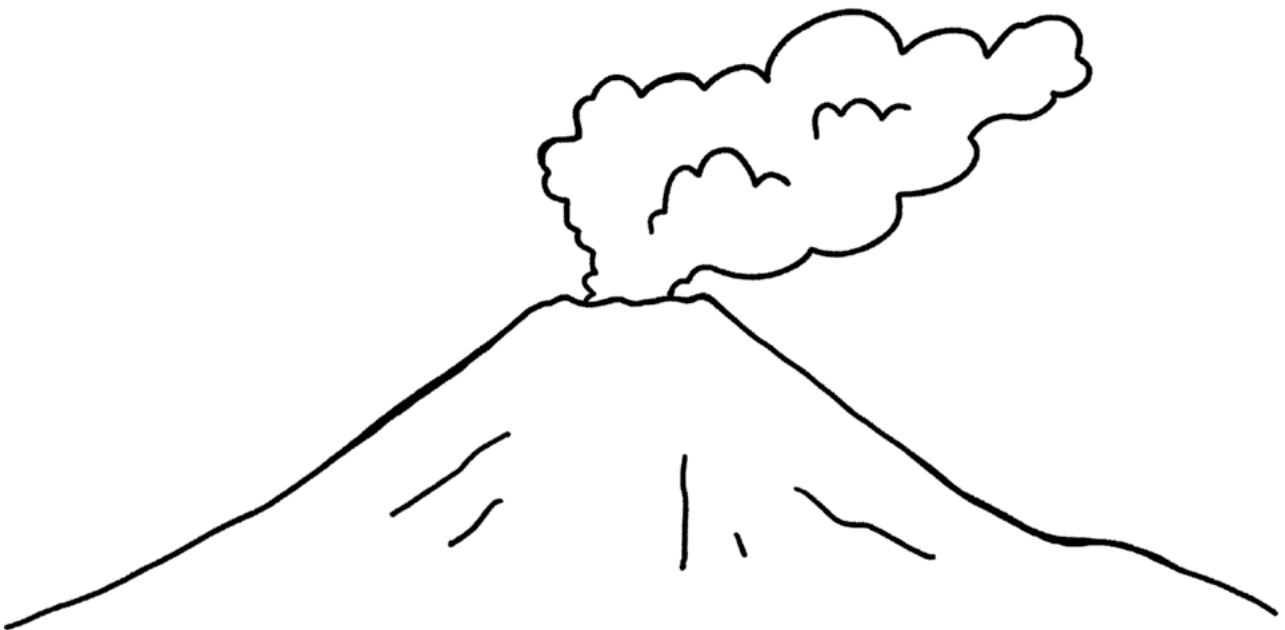
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# VOLCANOES

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Who is Grand Mistress Fu?

A famous Chinese martial arts teacher and founder of the Mount Emei Wushu School. Grand Mistress Fu, also known as Shifu, is disciplined and tough yet has an enormous heart. She narrowly escaped death as her school collapsed during the Wenchuan Earthquake in May 2008 and has since dedicated her life to Disaster Risk Reduction.



What is The COPE Academy?

An international disaster hub, hidden in Sichuan Province, set up by Grand Mistress Fu. The COPE Squad – Candy, Ollie, Ping and Eddy are teenage orphans who were plucked out of their care homes to live at The COPE Academy and trained to be disaster risk reduction agents.



Sense THE SNAKE

A beautiful 25-year-old python. Sense has a special gift for predicting disasters. Grand Mistress Fu feeds her mice every month.

Rescue THE DOG

A huge 8-year-old Kunming Wolf Dog, Rescue tracks missing people. His favourite hobby is catching flies.



# The COPE Squad



**Candy**

**THE CARER**

12 years old from Kranshoek, South Africa, Candy is kind, strong, lively and loves playing drums and hula-hooping. Her role is to care for vulnerable groups affected by disasters such as children, elderly or disabled.

*Disaster Experience:*  
*Wildfires*



**Ollie**

**THE SCIENTIST**

13 years old from Christchurch, New Zealand, Ollie is clever, popular, sporty and loves astronomy and rugby. His role is to understand weather patterns, climates and ecology.

*Disaster Experience:*  
*Earthquakes*



**Ping**

**THE NETWORKER**

12 years old from Hong Kong, Ping is practical, chatty, creative and loves cooking and Wushu. Ping is the networker and spokesperson within the COPE squad.

*Disaster Experience:*  
*Floods*



**Eddy**

**THE ENGINEER**

12 years old from Bahia, Brazil. Eddy is curious, witty, chilled out and loves Lego and skateboarding. Eddy is a talented engineer focusing on the safety of buildings.

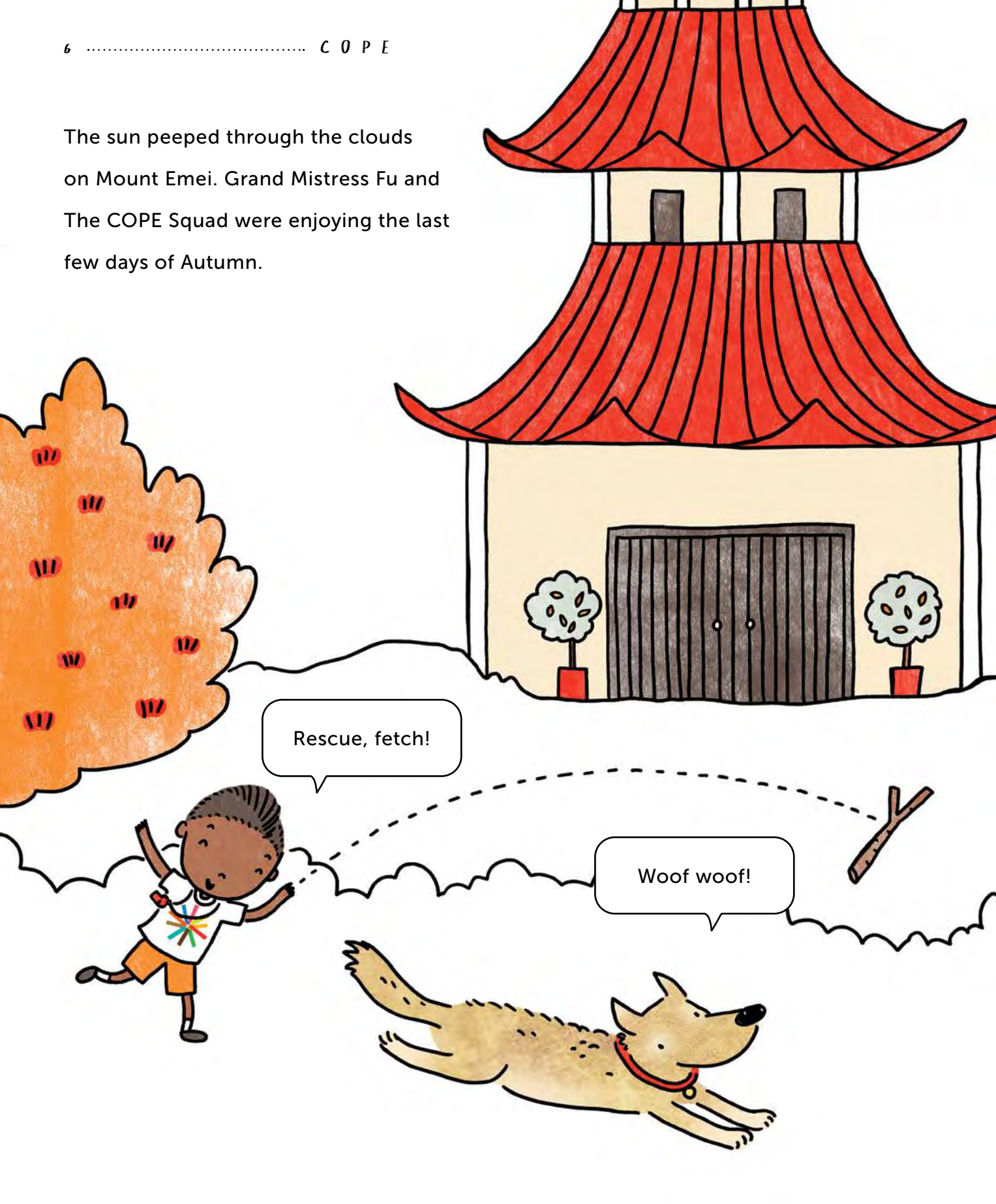
*Disaster Experience:*  
*Landslides*



**COPE Signs**

Since Eddy is hearing impaired, COPE sometimes chat using the Brazilian sign language, LSB. Can you spot the signs for **volcano**, **ready** and **champion**?

The sun peeped through the clouds on Mount Emei. Grand Mistress Fu and The COPE Squad were enjoying the last few days of Autumn.



Rescue, fetch!

Woof woof!



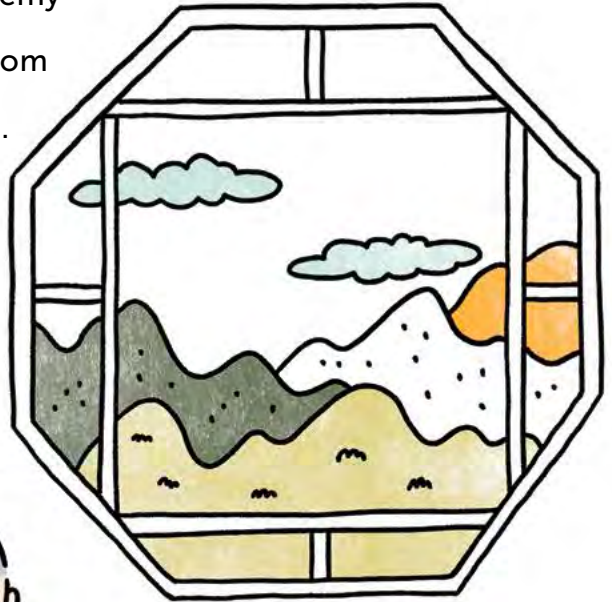


Ollie, your highest score ever

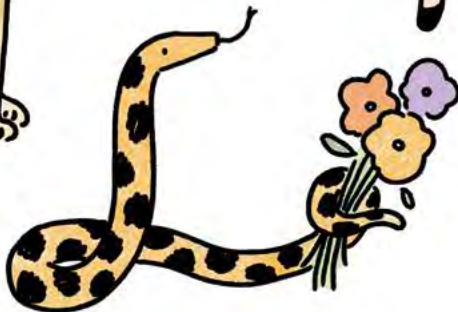
87, 88, 89 ...

Awesome!

There was a buzz of excitement at The COPE Academy as two *Volcanologists* were visiting from *The University of Oxford, UK.*



Now, COPE, let's get organized for our guests. Candy, put these flowers in a vase.



Eddy, bake a plum cake for tea. Ollie, tidy up.  
Ping, prepare the interactive classroom.

Yes, Shifu!



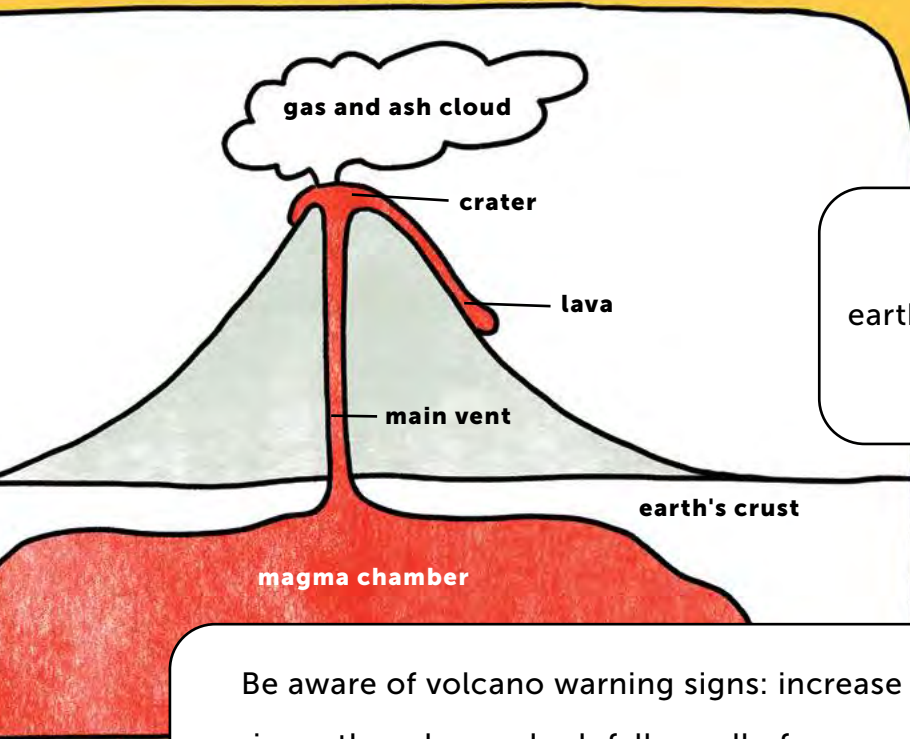
Today we will learn what to do before a volcanic eruption ... and focus on the key message —

**LISTEN. PREPARE.  
STAY AWARE!**

Watch out for volcano updates.

Prepare a survival kit.





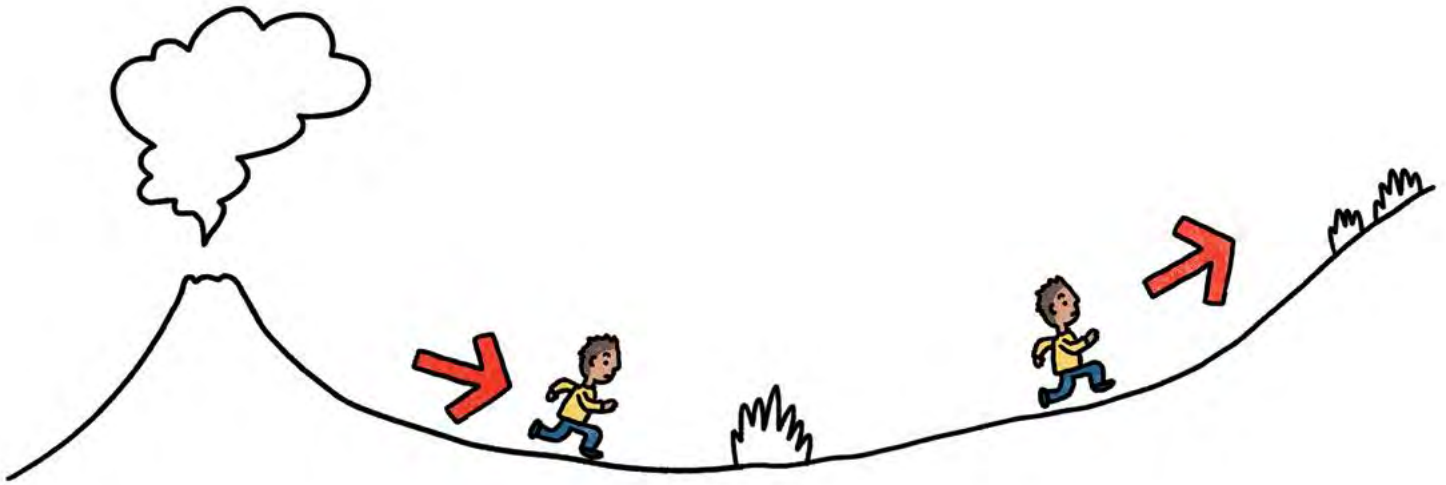
Unlike other hazards such as earthquakes, volcanoes give us some warning before they erupt.

Be aware of volcano warning signs: increase in earthquakes and ash fall, smell of gases, warming up of streams or other ground water, clouds changing shape, rumbling sounds.



Make an *evacuation plan* with your family.

AND DURING A VOLCANIC ERUPTION?



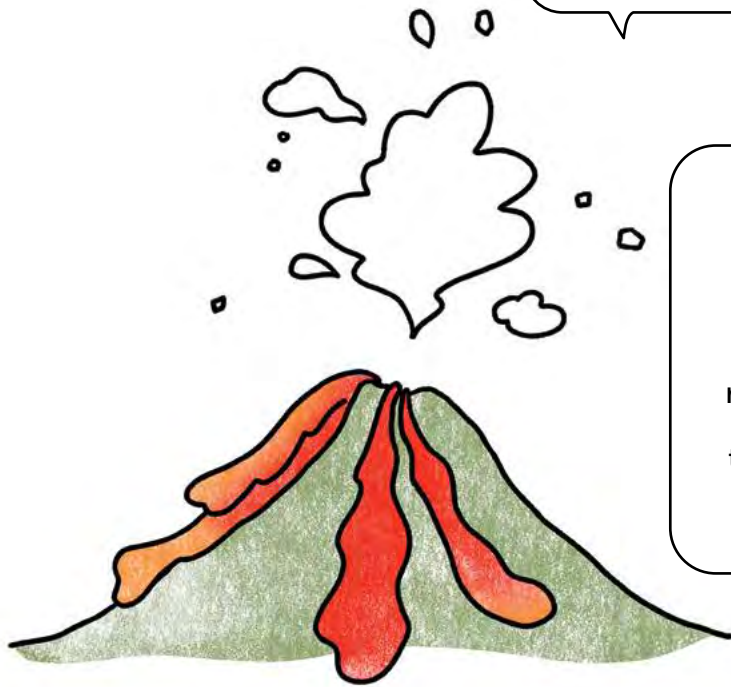
Follow the evacuation plan.  
Move away from the volcano  
as fast as possible.

Try to stay out of low lying  
areas such as valleys.

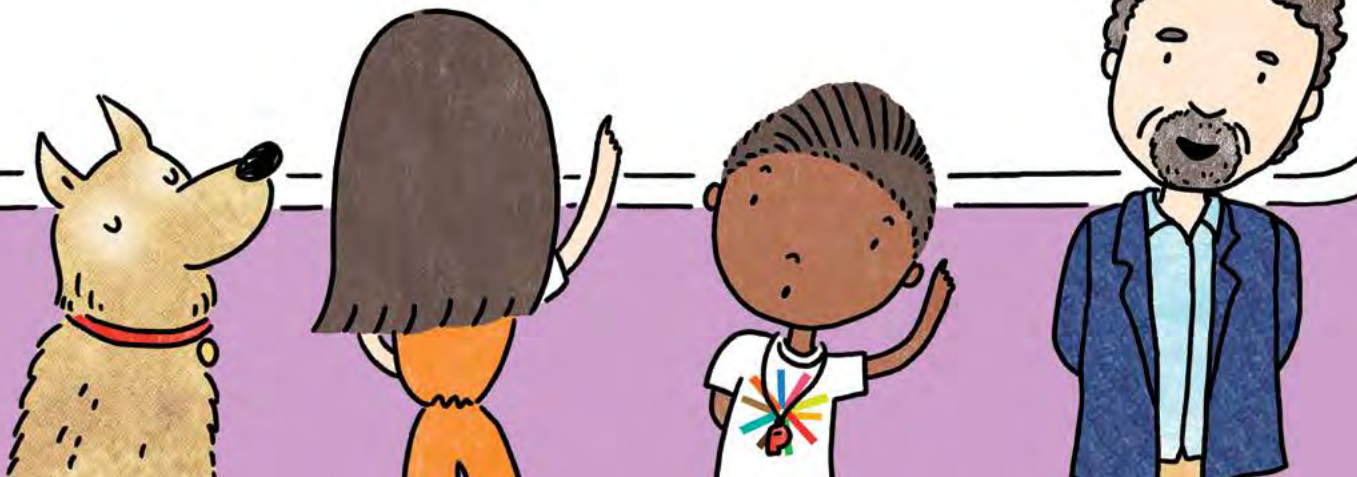


Watch out for falling ash and rocks, lava, lahars, volcanic gases and pyroclastic flows.

Keep calm.



Did you know that the **pyroclastic flows** are the fast-moving, blistering hot torrents of rock, gases and ash? The **lahars** are the slurries of water and rock fragments, like rivers of concrete.



HOW ABOUT AFTER A VOLCANIC ERUPTION?



Keep listening to the authorities. Only return home or start clearing up when it is safe.





Wear a **mask**, **gloves** and **goggles** to clear up ash and debris.



Great job COPE!  
**Listen. Prepare.**  
**Stay aware!**



Seal up cracks in your home to keep the outside air from coming in.





Let's spread the word.

Destination  
**MOUNT MERAPI,  
INDONESIA!**

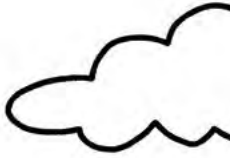




Seatbelts on? Over!

We're off, over!

Woof woof!



Grand Mistress Fu landed carefully near Yogyakarta,  
on the slopes of the volcano.

Brrrrrrrr. It's colder than I thought.



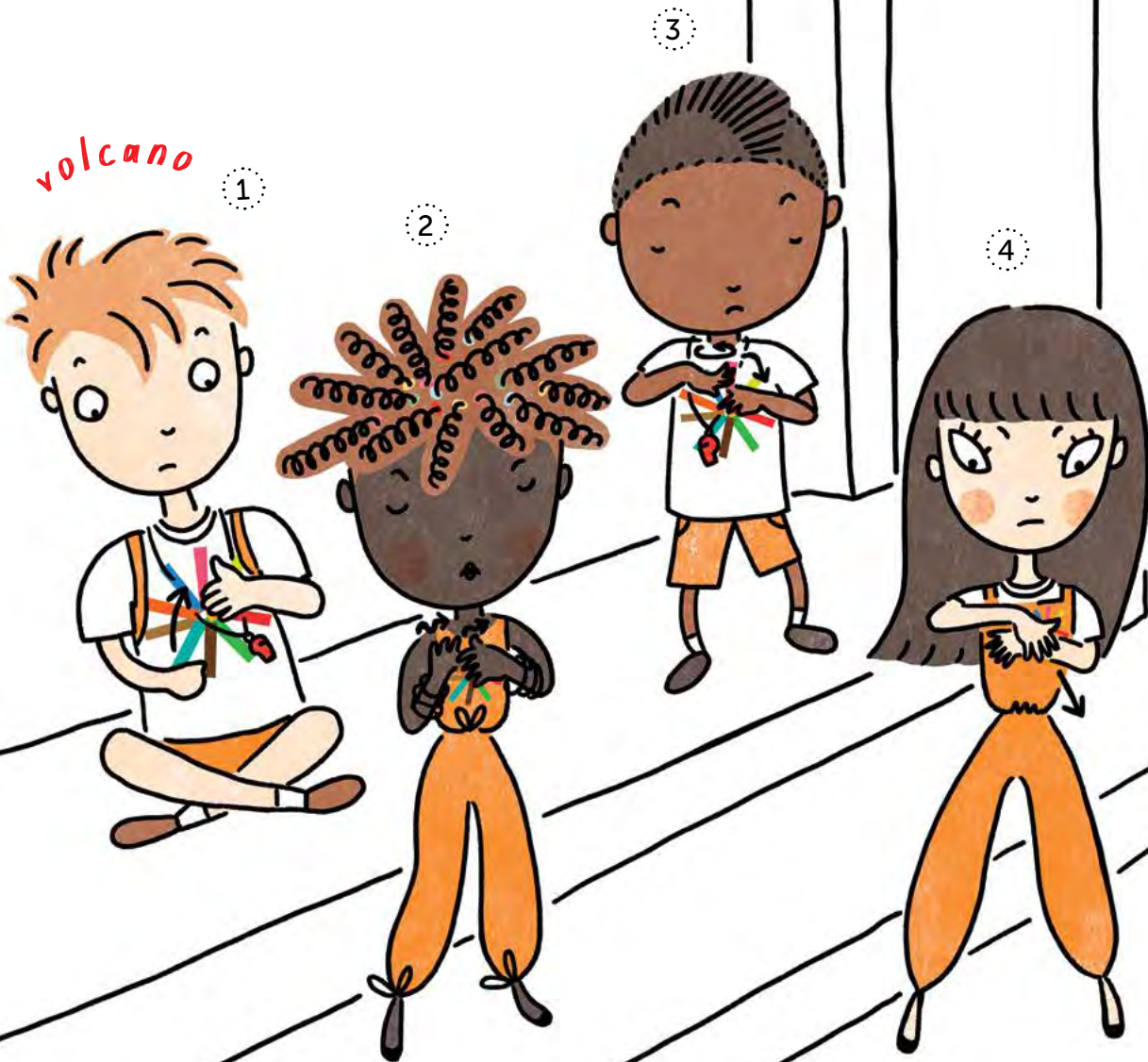


Merapi is a *stratovolcano*, and one of the *most active* in the world.

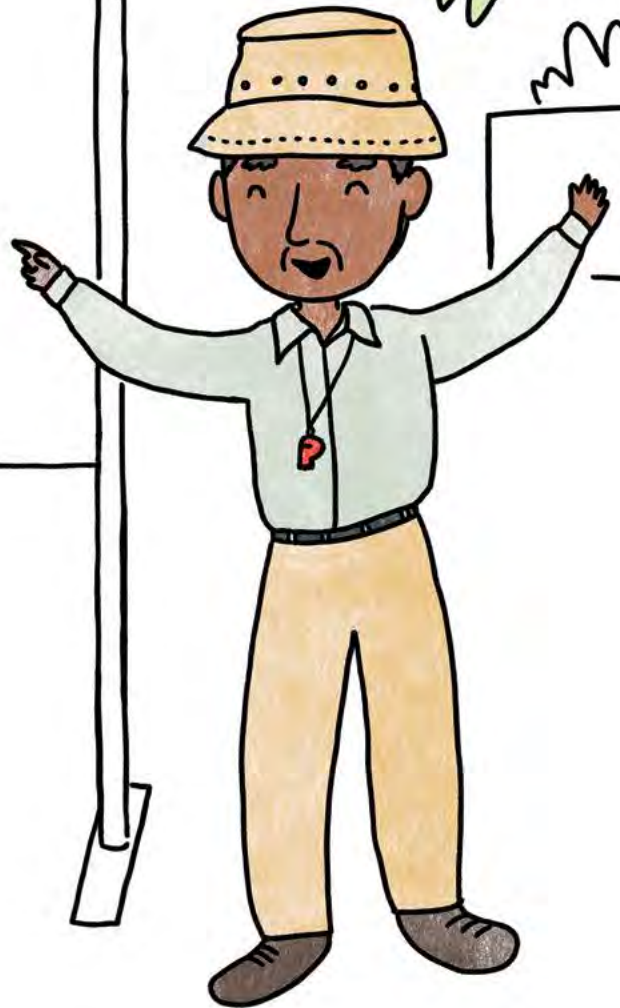
So powerful!

COPE met a famous geologist who taught them about the *Indonesian Volcano Alert system.*

Merapi's status was now on Yellow = Alert.



Merapi is seen as sacred, the home of ancient spirits. The local gatekeeper has a special relationship with the volcano and can detect tiny changes in its activity. He will *ring a wooden clapper* to tell villagers when to evacuate.

**AKTIF****Normal****WASPADA****Alert****SIAGA****Stand by****AWAS****Caution**

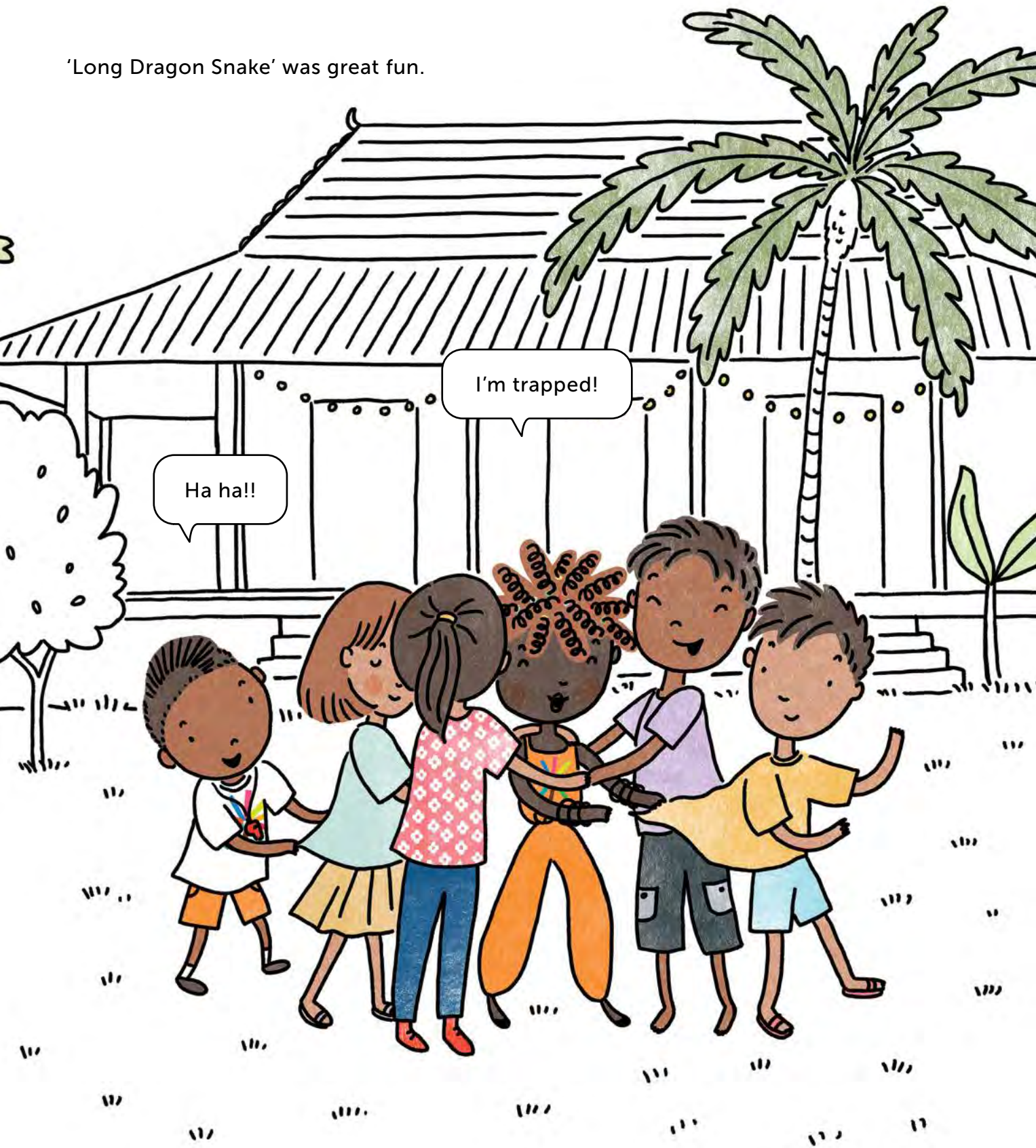
COPE stayed in a homestay.

They settled in, playing 'Rock, Paper, Scissors'.





'Long Dragon Snake' was great fun.



Ha ha!!

I'm trapped!

The next morning COPE set off early visiting schools all over the country.

Selamat! We are COPE!

Are **YOU** ready  
for volcanoes?

Always listen to the authorities.

Remember the *warning signs*.  
The sulphur gases can smell like burnt matches.



Work on an evacuation plan with your family.  
Don't forget your pets!

Tell your parents and all your friends –

**LISTEN. PREPARE.  
STAY AWARE!**



COPE showed kids how to pack  
*volcano survival kits.*

Use the tape to stop ash  
coming in through windows.

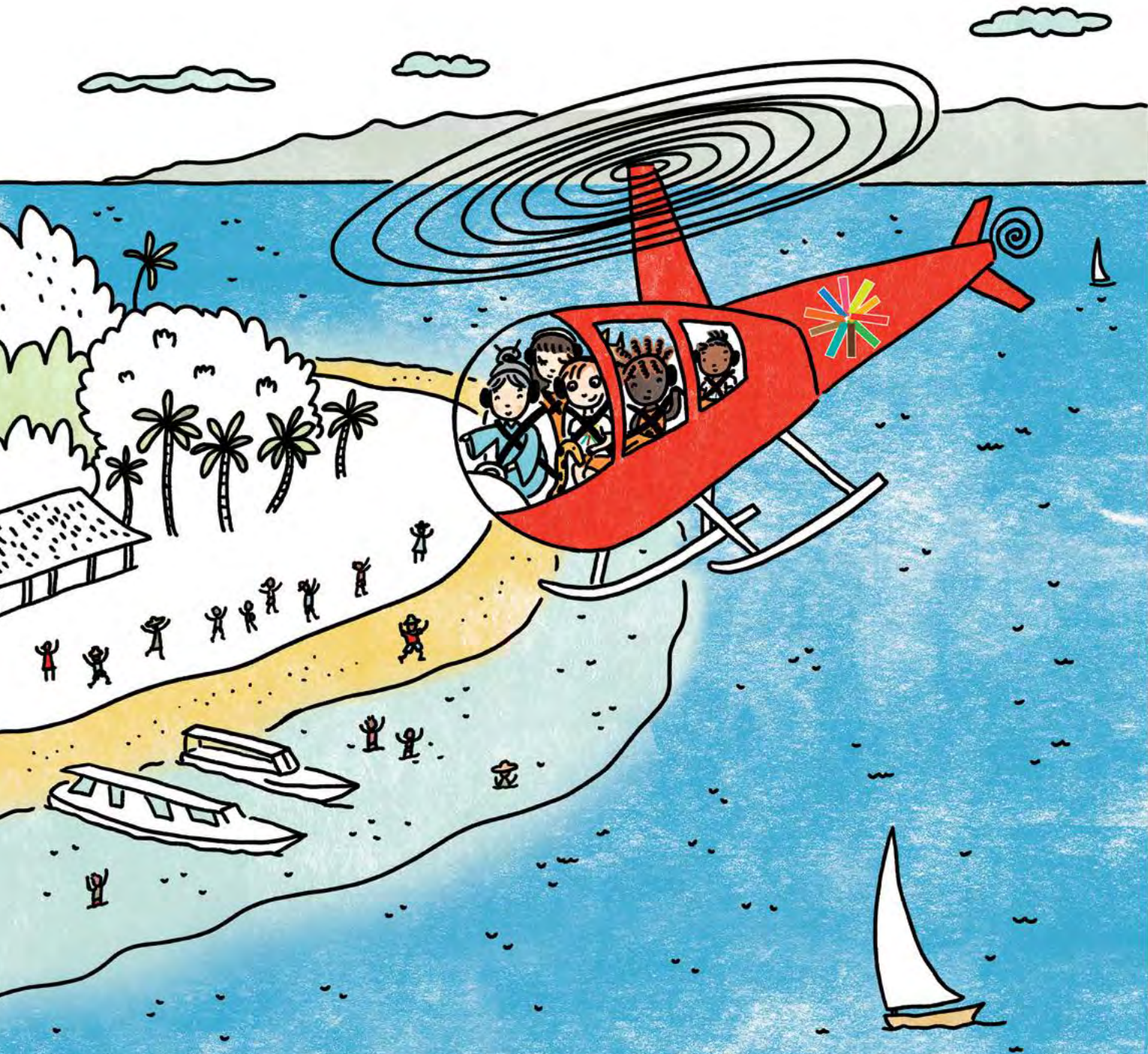


Eddy met a boy who was also hearing impaired. They chatted using *American Sign Language*.

My house is outside the 3 km evacuation zone, but I can clearly see Merapi when the weather is good. I always have my survival bag packed, just in case.



Well done. You are a true *COPE Champion!*



COPE hopped from island to island, spreading the key message –  
**LISTEN. PREPARE. STAY AWARE!**

COPE took some time out to go surfing in beautiful Bali.



They enjoyed eating Nasi Goreng and Soto Ayam.



Back in Merapi there had been an increase in *small earthquakes.*

The volcano alert was raised to Amber = Stand by.

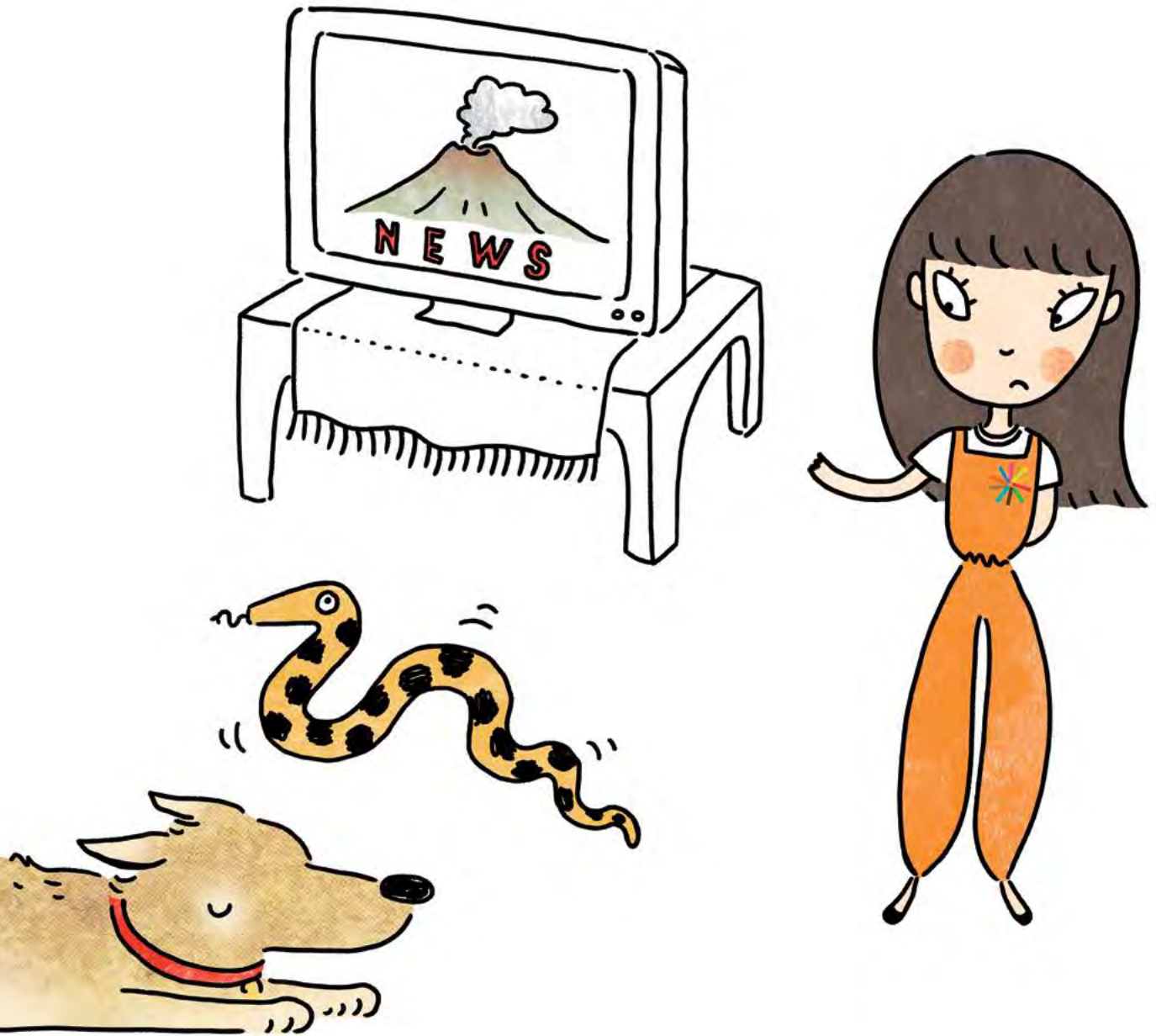
Everyone was glued to the news.

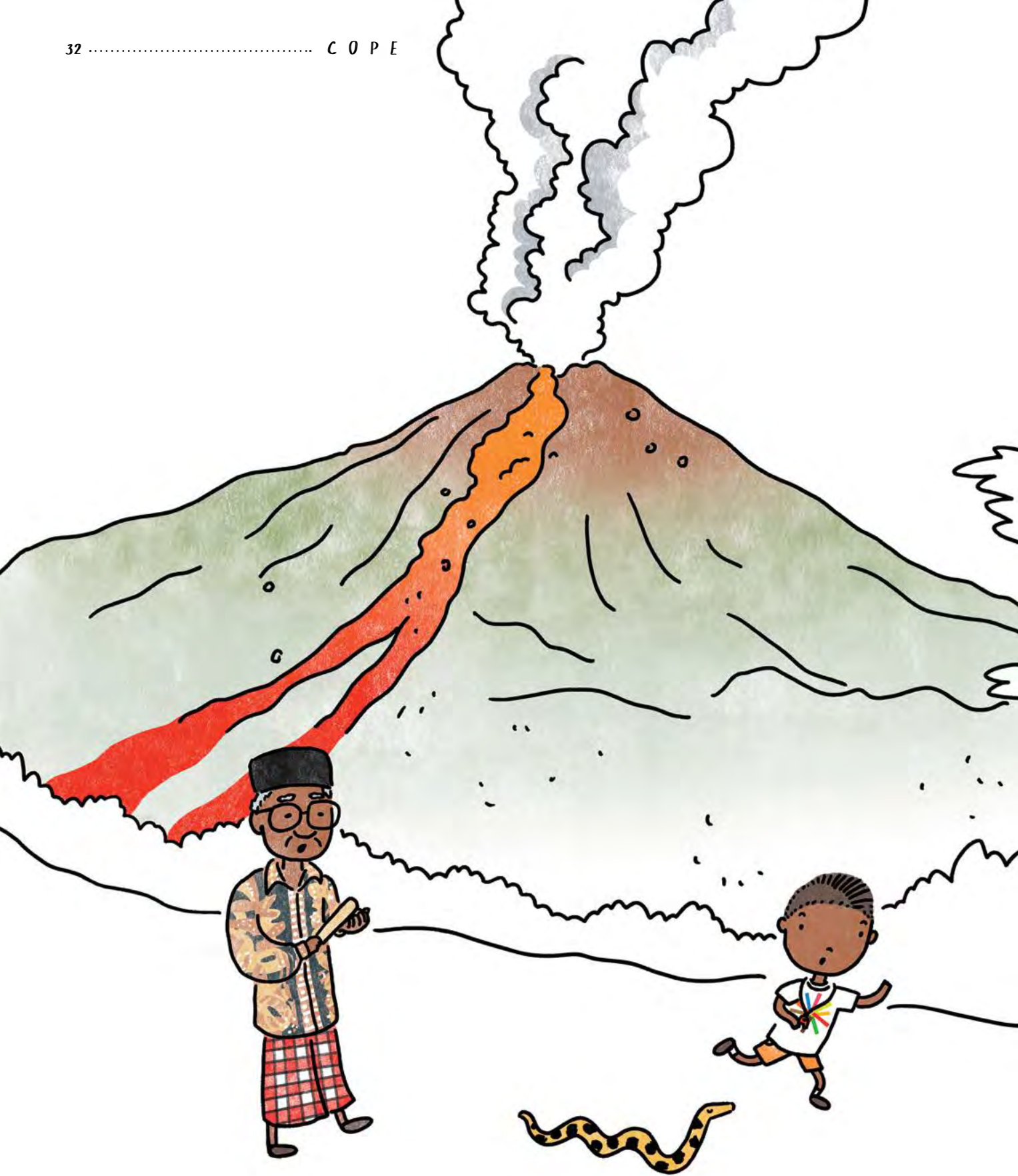


Let's be ready.



That afternoon, Sense was restless. There was a tremor and a noise like *thunder*.





Merapi was erupting, belching hot clouds and ash high into the air.

Blocks of red hot lava tumbled out of her crater.

The clapper rang out through the villages.



COPE moved *vulnerable groups* to the temporary shelters.

Ollie carried a baby girl. Candy pushed a boy in a wheelchair.

Eddy helped a man with his motorbike.

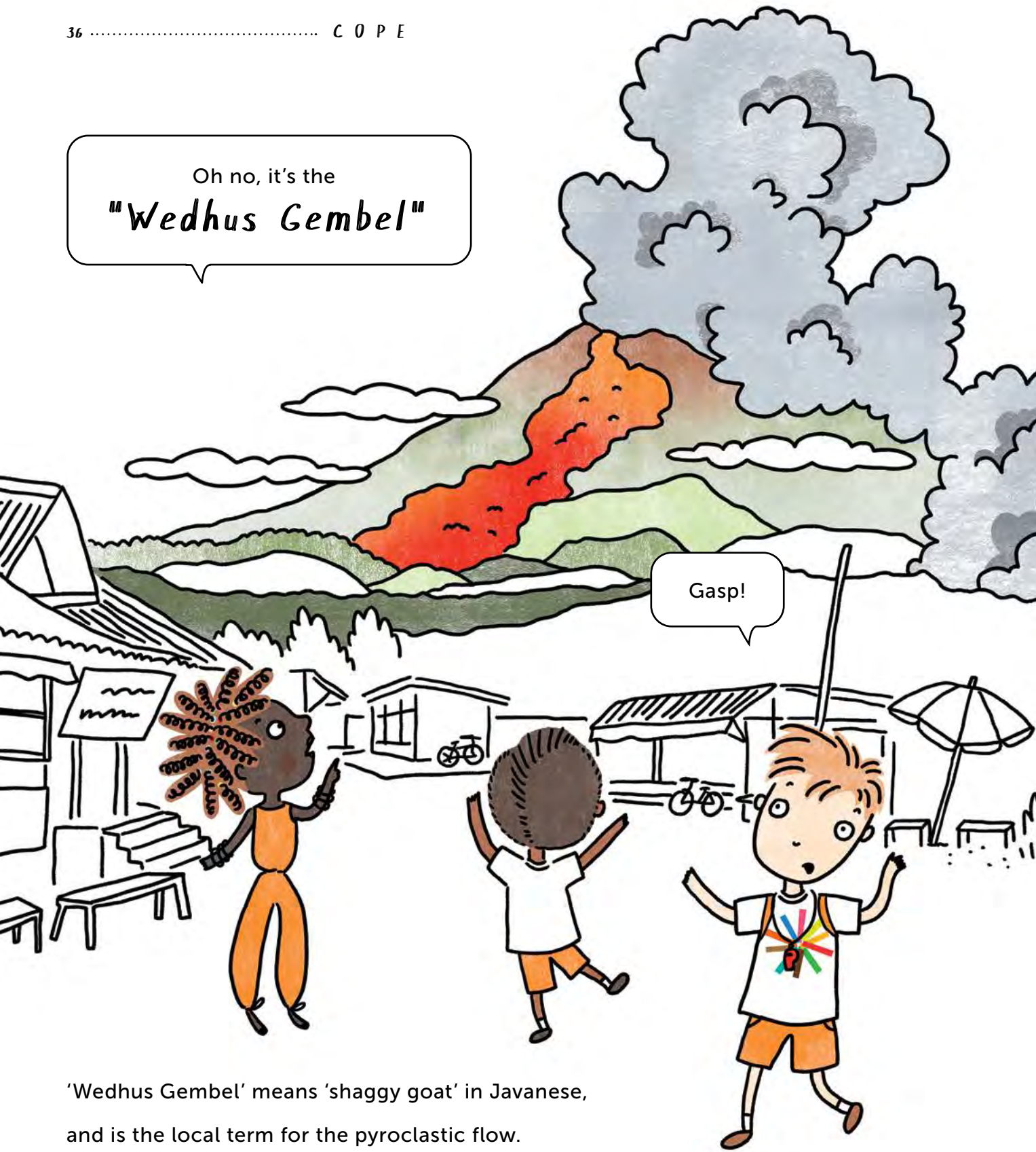


Ping guided a pregnant woman through the streets. Rescue took care of an abandoned puppy. COPE made sure to

**LEAVE NO ONE BEHIND.**

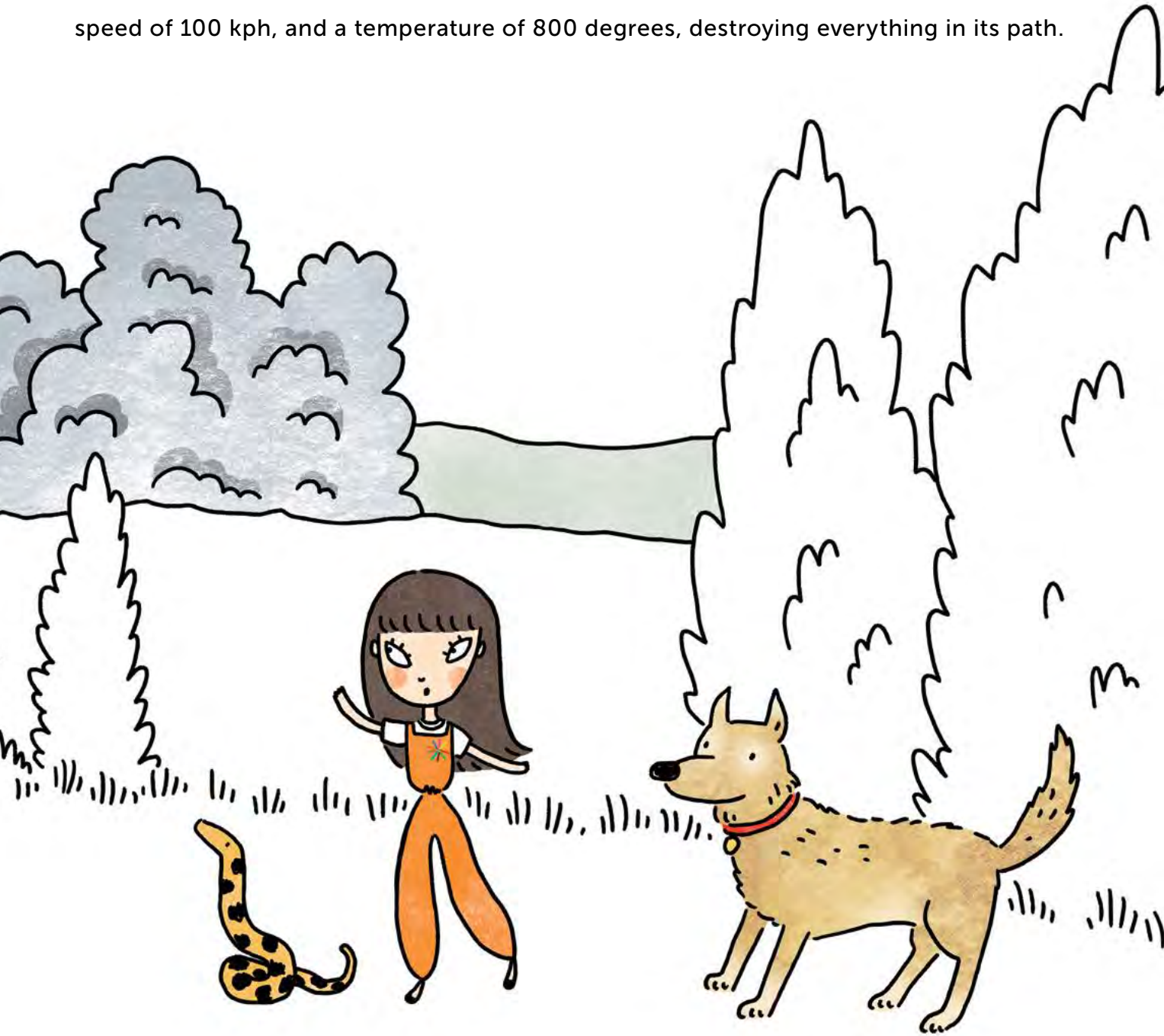


Oh no, it's the  
"Wedhus Gembel"



'Wedhus Gembel' means 'shaggy goat' in Javanese, and is the local term for the pyroclastic flow.

This burning hot flow of ash, blocks of pumice and lava crashed down the slopes, at a speed of 100 kph, and a temperature of 800 degrees, destroying everything in its path.



Schools were flattened. Trees, farms and houses scorched.

Villages were blanketed in white ash.

The *evacuation tents* were very cramped.

There is little privacy here.  
I had to leave all my stuff at  
home. I wish I could go back,  
but it is too dangerous.





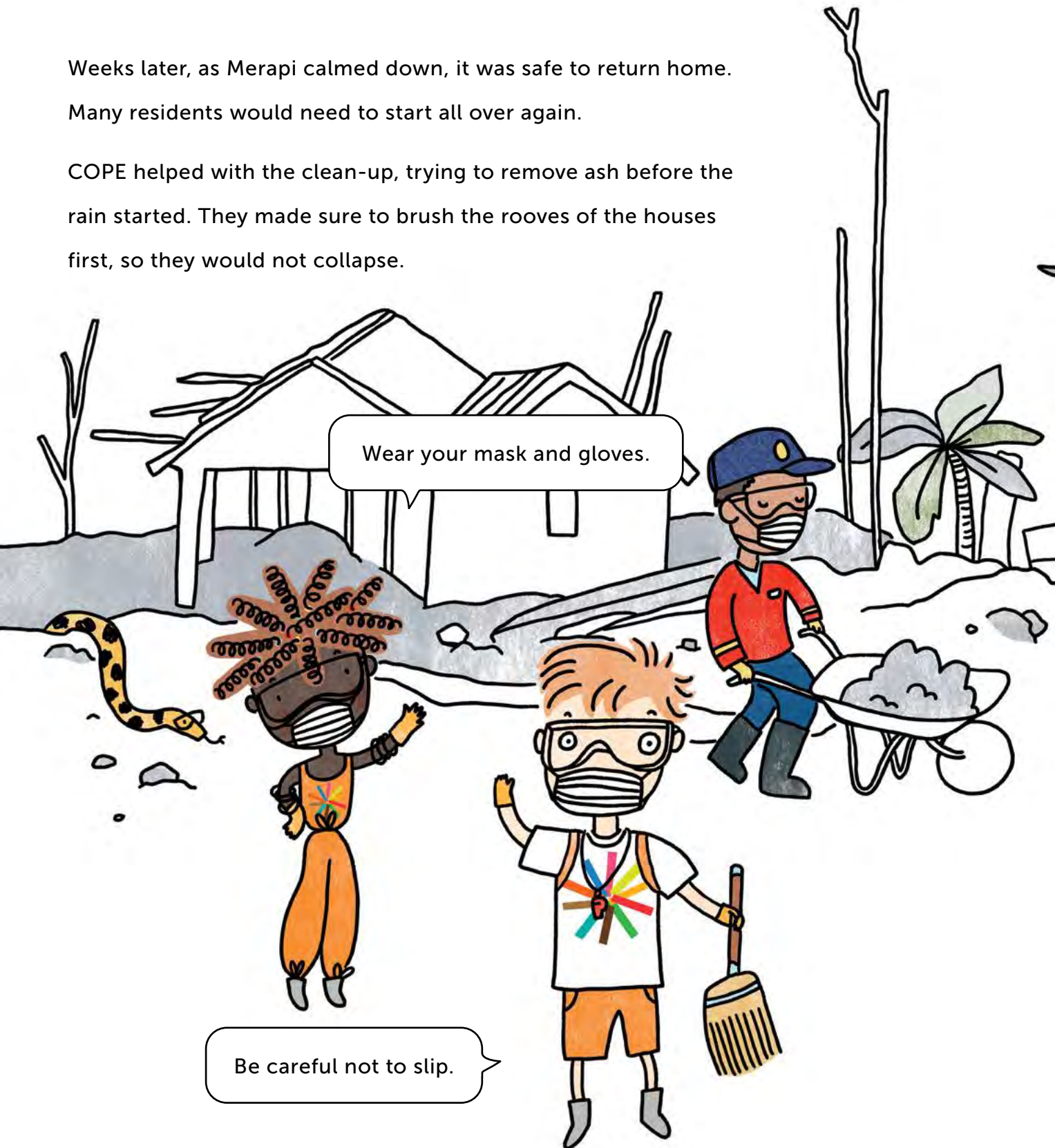


COPE handed out food, water, masks and blankets, trying to keep everyone's spirits up.

Weeks later, as Merapi calmed down, it was safe to return home.

Many residents would need to start all over again.

COPE helped with the clean-up, trying to remove ash before the rain started. They made sure to brush the rooves of the houses first, so they would not collapse.





Keep watching out for  
*lahar warnings.*

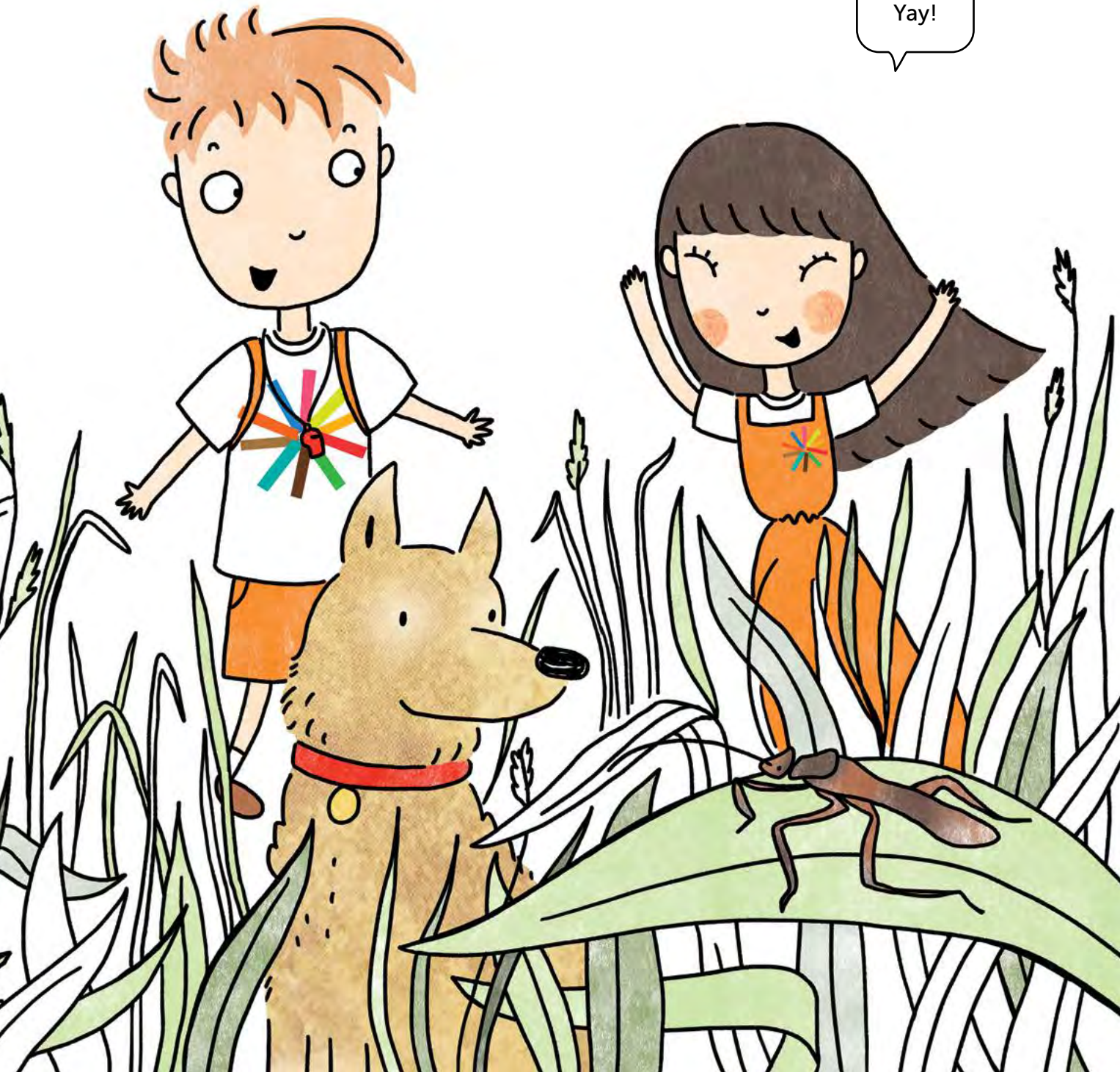
As the ash stopped falling and the lava stopped flowing, animals returned to Merapi. Spiders and beetles were among the first to come back.

The ash would also act as a good fertiliser for the soil.



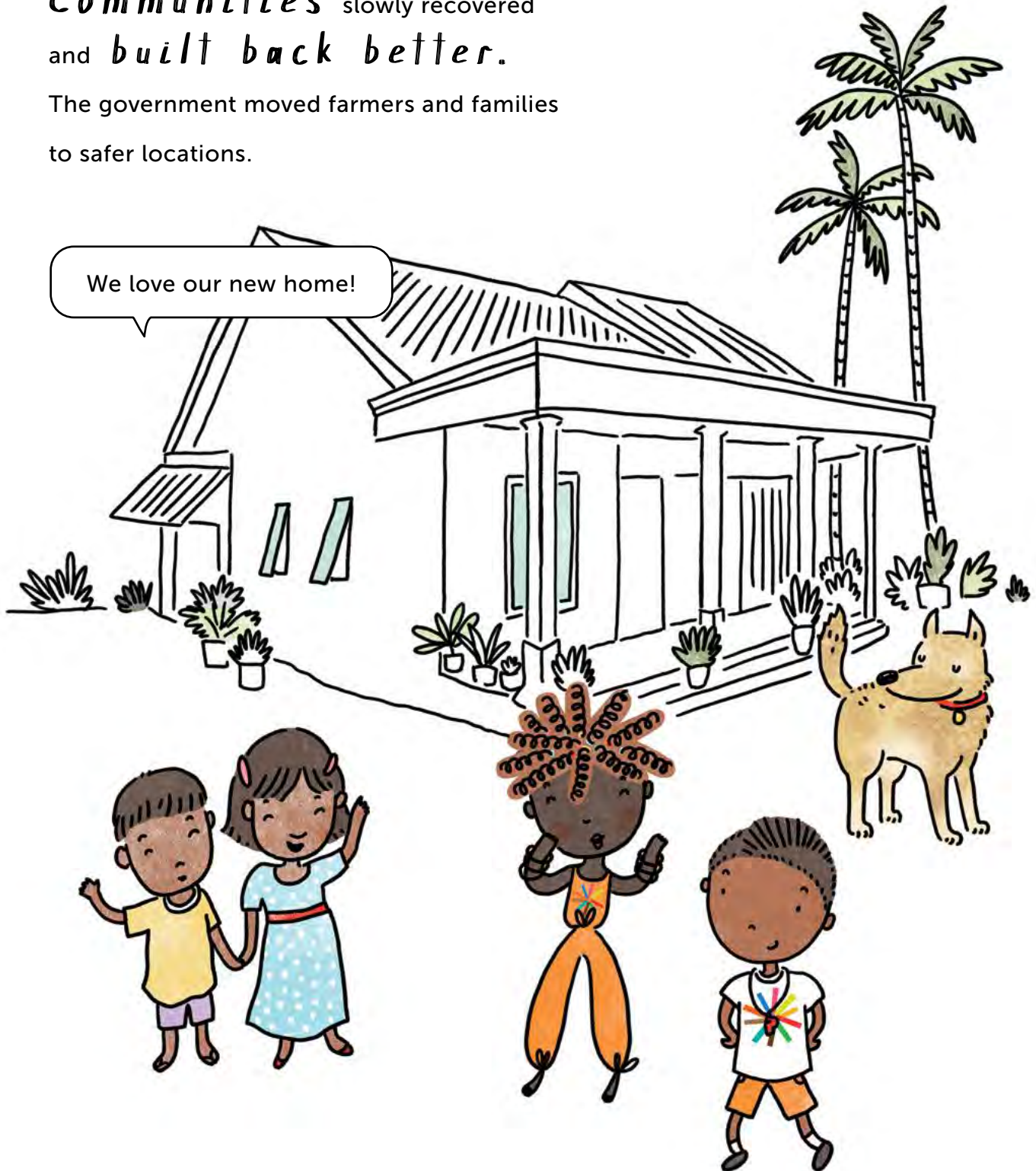
The grass is growing again.

Yay!



*Communities* slowly recovered  
and *built back better*.

The government moved farmers and families  
to safer locations.



My cows are settled here,  
and there is plenty of grass.



Grand Mistress Fu was proud of her squad.

They had made a real difference to the people of Merapi.

Thank you, COPE!

Always remember –  
*Listen, Prepare, Stay aware!*

Goodbye!







COPE, we are home, over.

It had been such a long mission, winter had already arrived on Mount Emei. COPE could not wait to build a snowman.



## T H E C O P E C O N T R I B U T O R S



## Martha Keswick

**COPE  
AUTHOR**

Martha Keswick is the author of the popular bilingual *Max and Mei* picture book series, the factual *Zhongguo Mingren Series* about famous people of China and the action-packed *Pangu* comic book series. Martha's work for the Keswick Foundation often supports disaster related projects in China.

Martha lives in Hong Kong with her husband, their four children and two dogs.



## Mariko Jesse

**COPE  
ILLUSTRATOR**

Mariko Jesse studied at Central St Martins, where she went on to be an Associate Lecturer. She is an acclaimed freelance illustrator, working on a variety of projects around the world from picture books to ceramics.

Mariko lives in San Francisco where she is always in a state of preparedness for earthquakes.



## Timothy Sim

**COPE  
EDITOR**

Dr Timothy Sim started out as a social worker specializing in family therapy. His focus on disaster risk reduction stemmed from his work with the children, families, schools and communities who were affected by the horrific Wenchuan earthquake in 2008. He has written many books in Chinese and English on the subject.

Tim is currently an Associate Professor at the Singapore University of Social Sciences



The COPE Volcanoes book is an effective and scientifically accurate tool to teach children, and indeed whole communities at risk, how to prepare and respond to volcanic eruptions.

— **DR JOHAN STANDER**

Director of Services Department,  
World Meteorological Organization

The engaging illustrations and simple text make this book an accessible way for children living on or near active volcanoes to learn about what to look out for and what to do if they erupt.

— **PROFESSOR TAMSIN MATHER**

Department of Earth Sciences, University of Oxford

These deceptively simple books are accessible, delightful to read, and help children understand and prepare for natural hazards.

— **PROFESSOR DAVID PYLE**

Department of Earth Sciences, University of Oxford

The COPE booklet for children about Volcanoes is a great tool needed to generate awareness among children to become agents of change for enhancing disaster preparedness and resilience.

— **MR MARCO TOSCANO-RIVALTA**

Chief, UNDRR Regional office for Asia and the Pacific

The COPE Volcanoes book beautifully conveys information about early warning, response, and recovery in a way that children can grasp.

— **SONIKA POUDEL**

Sendai Stakeholders Children and Youth Group  
Major Group for Children and Youth

## COPE Academy, Sichuan Province.

Under Grand Mistress Fu, the COPE squad receive intensive training on disasters and how to be prepared. Join their epic volcanoes mission to Indonesia where they have to put their disaster risk reduction skills into action.



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COPE TITLES

- Earthquakes
- Tsunamis
- Floods
- Cyclones
- Storm Surges
- Landslides
- Wildfires
- Droughts
- Volcanoes**
- Heatwaves



COPE

.....  
*Make the Difference.  
Be Ready!*