



NATIONAL GEOGRAPHIC LIVE

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**Andrés Ruzo: *Hunt for Sleeping Giants***  
Student Presentation Study Guide

January 27, 2025 at 10:15 am

Jack Singer Concert Hall at Arts Commons



## Andrés Ruzo

In 79 AD, residents of a town on the coast of Italy were enjoying afternoon snacks of walnuts and dried figs when nearby Mount Vesuvius erupted after centuries of dormancy. Imagine that sight! Volcanoes existed for millennia before that well-known disaster, but these sleeping giants have rumbled in our imaginations even more since then, including geothermal scientist and National Geographic Explorer Andrés Ruzo.

Andrés was originally captivated by the legend of a mysterious “boiling river” as a child – and then he discovered the real thing. Now, he studies the point where the Earth’s molten core meets our world on the surface: far-off lava fields, hidden boiling rivers, and fiery portals underground.

### Andrés Ruzo Resources:

#### Follow the Explorer!

Instagram: [@andresruzo](#)

X: [@georuzo](#)

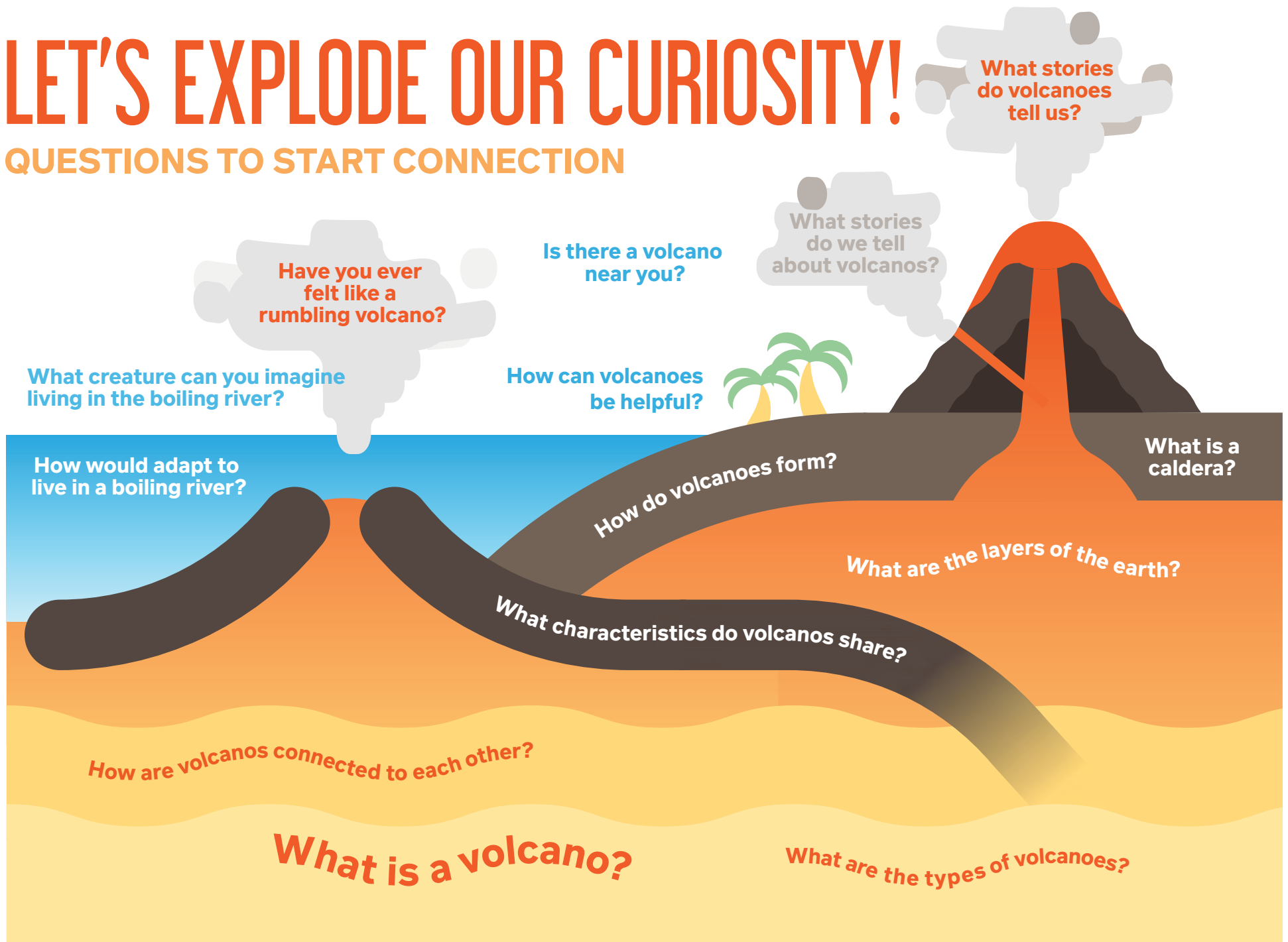
[TED Talk with Andrés Ruzo](#)

[Andrés A. Ruzo - National Geographic](#)



# LET'S EXPLODE OUR CURIOSITY!

## QUESTIONS TO START CONNECTION





# How Far to the Nearest Volcano?

\* Walking times are through mountains and forests and don't include sleeping time



## Wells Gray-Clearwater volcanic field

DISTANCE FROM ARTS COMMONS: 825 KM (7 DAYS ,17 HOUR WALK)



## Garibaldi Volcanic Belt

DISTANCE FROM ARTS COMMONS: 1,221 KM (11 DAYS, 19 HOUR WALK)

The northern extension of the American Cascade Arc.



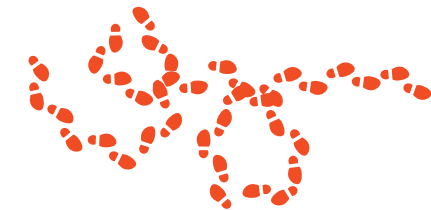
## Anahim Volcanic Belt

DISTANCE FROM ARTS COMMONS: 1,374 KM (12 DAYS, 21 HOUR WALK)



## Wrangell Volcanic Belt

DISTANCE FROM ARTS COMMONS: 1,964 KM (15 DAYS, 17 HOUR WALK)

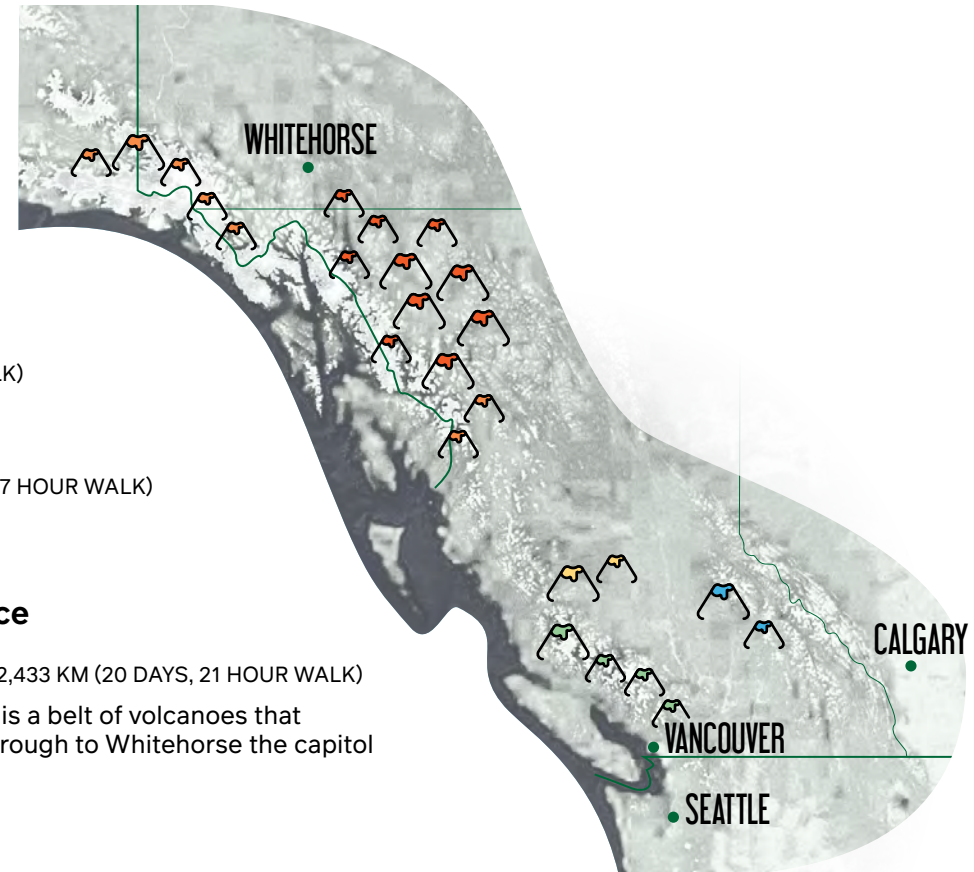


## Northern Cordilleran volcanic province

also called the Stikine Volcanic Belt

DISTANCE FROM ARTS COMMONS TO WHITEHORSE: 2,433 KM (20 DAYS, 21 HOUR WALK)

This is a known as a geological province as this is a belt of volcanoes that extends from Northwestern British Columbia through to Whitehorse the capitol of the Yukon.



Thankfully there are no nearby volcanoes to Calgary, though the five potentially active volcanic areas in Canada can be found close by, in British Columbia and the Yukon Territory.

The most recent eruption from a Canadian volcano was in northwestern British Columbia about 150 years ago. Prior to that the last big explosive eruption was from Qwelqwelústen/Mount Meager 2, 350 years ago.

Chronicling the seismic activity of Canada's active volcanoes has received a helping hand from Indigenous knowledge passed through generations of oral tradition. [A team of B.C. researchers has been able to create the first detailed map of the Tseax Volcano thanks to a combination of scientific data and Indigenous knowledge.](#)

In the Garibaldi Volcanic Belt volcano in southwestern British Columbia, [Lilwat stories suggesting an eruptive plume and an outburst flood closely paralleled geological evidence discovered in the area.](#) This was a great example of how oral traditions can be equally important in holding landscape history.

### Learn more

[Lava Land - Canada's History](#)

[Canada's Volcanoes: The Cradle of Life | Full Documentary | TRACKS](#)

# Do Mountains Explode?

Wait a second, wait a second! We are surrounded by mountains – how come they aren't considered volcanoes?

It has to do with how they are formed.

Source: [Fun Facts for Kids about Mountains and Volcanoes \(All You Need to Know!\)](#)

## What are the unheard voices in the mountains?

Like Clay Ray from  
from  
[Eva Enkelmann's Rocky Voices](#)



Mountains are typically formed through tectonic plate movements, where two plates collide or move apart, causing the Earth's crust to be pushed upwards and form a mountain range.



Volcanoes though, are formed around a vent that allows magma from the earth's mantle to erupt through the surface, creating a cone shape structure. They form into mountain-like structures over time as the lava, ash and other volcanic materials build up.

**Phew, lucky for us in Calgary our mountains will keep their hats on!**

# (A Few) Indigenous Connections in the Mountains



Photo: [Bill Kerr](#)

## Castle Mountain

Castle Mountain in Banff has a similar significance to the Blackfoot to Yamnuska. It is on the border of traditional Blackfoot territory as it was the visual junction for the Saskatchewan crossing trail, Highway 1, and Highway 93 valley where a sacred paint collection site is (paint pots).

Texts from Blackfoot artist [Jared Tailfeathers](#)

## Natooyi Kiiskoom

Cave and Basin, in Blackfoot, is known as “Natooyi Kiiskoom”, or Holy Hot Spring.

In harsh weather on the prairies, especially in winter, the Blackfoot would travel to the site and other cave systems in the area for refuge. Learn more about [local artists honouring the Indigenous significance of the Cave and Basin National Historic Site in Banff National Park](#).



Photo: [Bill Kerr](#)

## Mount Yamnuska

Many of us are familiar with Mt. Yamnuska, the bold flat-faced peak that dominates the landscape as you approach the mountains on Trans-Canada Highway.

It is actually pronounced “Yumnuthka” in Nakoda, which means “Flat Face.” It’s sacred as a key indicator for the Banff Corridor and where the trade trail (Highway 1) led to the major trade site of Sleeping Buffalo. It also signifies an important social and economic location as it was the junction site for Highway 1 and Highway 40 (Kananaskis) trade trails. In fact, it’s one of the main reasons why the Stony Nakoda reserve is located in proximity to that location. If you visit Yumnuthka, you can observe Indigenous paintings and ceremony markings all along it.



# More (Non-explosive) Mountains in Our Backyard



Photo: [Bill Kerr](#)

## Rundle Mountain

Long massive mountain with 8 peaks. Runs from Canmore to Banff.

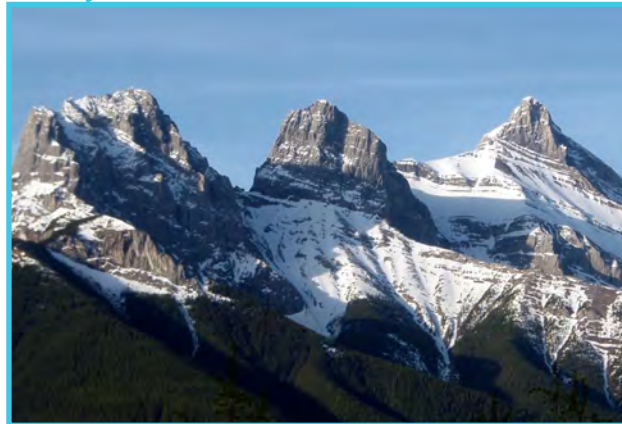


Photo: [Bill Kerr](#)

## Three Sisters Mountains

Iconic group of mountains that is the most photographed and painted in Canmore area and maybe the Canadian Rockies



Photo: [Bill Kerr](#)

## Heart Mountain

Near Exshaw and Lac des Arcs

**Local learning links** [Cave and Basin Historic Site](#) | [Seismic zones in Western Canada](#) | [12 Fascinating Yellowstone National Park Facts for Kids](#)

# Volcanic Vocabulary

Active Volcano	Volcano that has had a recorded eruption since the last glacial period, about 10,000 years ago
Altitude Sickness	The body's reaction to the decreased atmospheric pressure and lower concentration of oxygen that exist at high altitudes
Altitude	The height of a thing above earth or above sea level
Andes Mountain Range	A high mountain range that stretches along the entire west coast of South America
Boiling River	The Boiling River is in the central Peruvian Amazon
Caldera	A large depression resulting from the collapse of the center of a volcano
Cinder Cones	A cinder cone is a conical hill of mostly cinder-sized pyroclastics
Conservationist	A person who promotes and encourages preservation, esp. of natural resources
Crater	A hollow area shaped like the inside of a bowl. The mouth of a volcano is a crater, and the moon has many craters on its surface
Dormant Volcano	A volcano that has erupted in the past but is unlikely to erupt soon
Earthquake	The sudden shaking of Earth's crust caused by the release of energy along fault lines or from volcanic activity
Erupt	To explode or suddenly eject material
Geologist	A person who studies the physical formations of the Earth
Geothermal Energy	Geothermal energy is heat that comes from inside Earth

Hot Springs	A hot spring, or thermal spring, is a spring that issues water at temperatures substantially higher than the air temperature of the surrounding region
Lava	Molten rock, or magma, that erupts from volcanoes or fissures <i>above</i> the Earth's surface
Magma	Molten, or partially melted, rock <i>beneath</i> the Earth's surface
Magma Chamber	Underground reservoir that holds molten rock
Molten	Solid material turned to liquid by heat
Mountain	A land mass with great height and steep sides. It is much higher than a hill
Ring of Fire	Refers to a tectonic belt of volcanoes and earthquakes found in the Pacific Ocean, containing 750- 915 active or Dormant Volcanoes
Scientist	Is a person who researches to advance knowledge in an area of the natural sciences
Shield Volcanoes	Shield volcanoes have a low, broad profile created by highly fluid basalt flows that spread over wide areas
Stratovolcanoes	Are steep cones composed of alternating layers of lava and pyroclastics, or rock fragments
Thermal Mud	Thermal mud is a mineral-rich, volcanic origin mud that is obtained from regions of high thermal activity
Volcano	A volcano is an opening in Earth's crust. When a volcano erupts, hot gases and melted rock from deep within Earth find their way up to the surface
Volcanologist	A scientist who studies volcanoes



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Roots to Canopy*

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Ken Havard

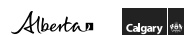
*Doug Smith – Wild  
Wolves of Yellowstone*

Joel Lipkind &  
Sally Sprague-Lipkind  
Anonymous

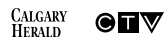
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