Meteorites: A Hands on Tauranga Resource for Teachers

HC159 Meteorite and HC162 Meteorite

https://www.handsontauranga.co.nz/hot-items/science/meteorite-hc159/
https://www.handsontauranga.co.nz/hot-items/science/meteorite-hc162/

Te MARAU MĀTAURANGA O AOTEAROA / NZ CURRICULUM

Science > **Planet Earth and Beyond** > **Achievement Aims** > **Astronomical systems :** Investigate and understand relationships between the Earth, Moon, Sun, solar system, and other systems in the universe.

NGĀ KŌRERO / ORAL LANGUAGE PRE DISCUSSION

He aha tō mōhio mō ngā matakōkiri? What do you know about meteorites?
How old do you think this meteorite is?
What comes to mind when you think about outer space?
What would you like to know about meteorites? Or Space in general? (Brainstorm on the board)
Use your senses- what does the meteorite feel like / smell like / look like? Use the magnifying glasses to study the meteorite more closely.

NGĀ MŌHIOHIO / INFORMATION

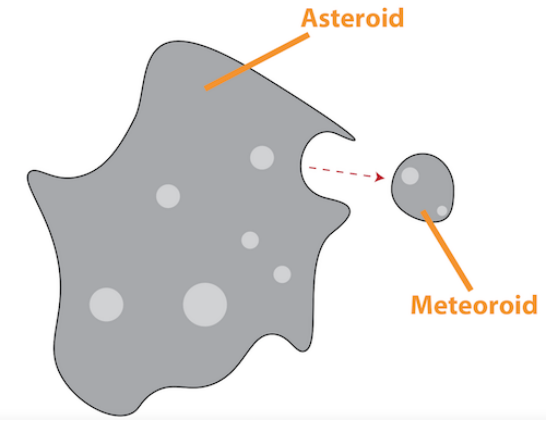
- This meteorite was found in the Sahara Desert in Algeria, Africa.

- It is over 4.5 billion years old. It was formed when our solar system was developing.
- It is as old as our planet. Earth is 4.543 billion years old!
- A meteorite is a piece of **rock** or metal that has fallen to the earth's surface from outer space as a **meteor**.
- This meteorite is a **chondrite**. Chondrites are stony (non -metallic) meteorites. Chondrites are the most common type of meteorite that falls to Earth: they are about 85 or 86 per cent of all meteorites.
- Most meteorites are one of three types: stony, stony-iron, or iron. An iron or stony iron was close to the core of an asteroid, while a stony object was closer to the surface.
- Meteorites are 90% rock.
- Millions of **meteoroids** travel through Earth's atmosphere each day.
- Over the course of Earth's history, many meteorites (large and small) have fallen to our planet's surface. The most famous are the Allende, the Fukang, Hoba, and the Willamette Meteorite.
- Sixty-six million years ago, dinosaurs became extinct due to an **asteroid** hitting earth.
- There has only been one recorded incident of a meteorite hitting a human. On Nov 30 1954 Ann Hodges was struck by a meteorite in Alabama, USA.

NGĀ HUINGA KUPU / VOCABULARY

Asteroid: An asteroid is a small rocky object that orbits the Sun. Asteroids are smaller than a planet, but they are much larger than the objects we call meteoroids.

Meteoroid: A small piece broken off an asteroid (meteoroids can also come from comets)



Meteor: If a meteoroid comes close enough to Earth and enters Earth's atmosphere, it vaporises and turns into a meteor: a streak of light in the sky. Because of their appearance, these streaks of light are sometimes called "shooting stars." But meteors are not actually stars.

Comet: Comets orbit the Sun, like asteroids. But comets are made of ice and dust—not rock. As a comet's orbit takes it toward the Sun, the ice and dust begin to vaporise. That vaporised ice and dust become the comet's tail.

Rock: Rocks and stones are naturally occurring solids made up of minerals. The Earth's crust is made up of rock.

Orbit: An orbit is the path that an object takes in space when it goes around a star, a planet, or a moon.

NGĀ KUPU MĀORI

Tuarangi: Space

Matakōkiri: Meteorite

Aorangi: Planet

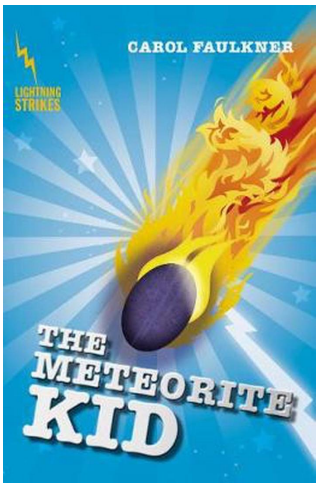
aorangi iti (small planet): Asteroid

Marama: Moon

Whetū: Star

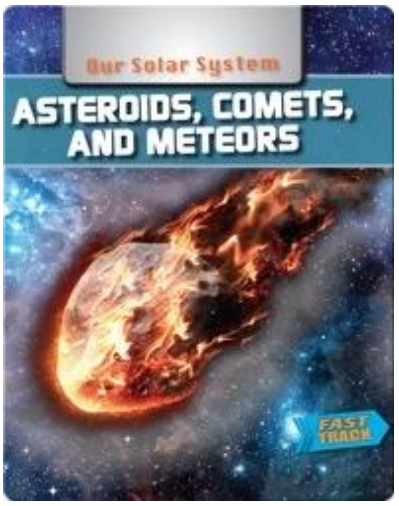
Ranginui: Atua (God) of the skies and heavens

NGĀ PUKAPUKA / BOOKS



A story about a girl who catches a meteorite that falls from the sky, and the race against time to protect whatever is contained within.

https://www.getepic.com/app/read/5690
This science-as-entertainment book chronicles how a meteorite ended up in the American Museum of Natural History...

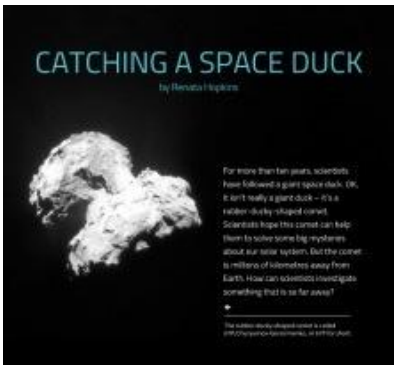


https://www.getepic.com/app/read/35627
Comets and asteroids, where they come from, the difference between a meteor & a meteorite, & why shooting stars are not really stars at all.

https://www.penguinrandomhouse.com/books/625110/down-to-earth-by-betty-culley/
Science and wonder abound in this middle-grade debut about an inquisitive boy and the massive rock that came down to Earth to reshape his life.

NGĀ HAUTAKA KURA / SCHOOL JOURNALS

http://instructionalseries.tki.org.nz/Instructional-Series/School-Journal/School-Journal-Level-2-May-2016/Night-Light



https://instructionalseries.tki.org.nz/Instructional-Series/Connected/Connected-2015-level-3-Fact-or-Fiction/Catching-a-Space-Duck

https://instructionalseries.tki.org.nz/Instructional-Series/School-Journal/School-Journal-Level-3-May-2017/Haritina-Mogosanu-Starryteller

MAHI / DO

Writing Ideas:

Write your own story about a meteorite crashing to Earth!

Research about a famous meteorite hitting earth and write a news article based on your research

Kahoot: Play this kahoot to see what you know about Meteorites

https://create.kahoot.it/share/meteoroids-meteors-and-meteorites/b3467006-fd11-4702-a2c8-d3231da8fffe

Maths: https://nzmaths.co.nz/resource/space-zapper

Craft: Make a straw rocket https://buggyandbuddy.com/straw-rockets-with-free-rocket-template/

Art: How to draw a meteor https://iheartcraftythings.com/meteor-drawing.html

NGĀ RAUEMI / LINKS + RESOURCES

Youtube

- How Planet Earth was formed

https://www.youtube.com/watch?v=-7eTxxy9yvA

- What is a Meteorite?

https://www.youtube.com/watch?v=tXfjUxdzqBY

- The day the Dinosaurs Died- Minute by Minute

https://www.youtube.com/watch?v=dFCbJmgeHmA&t=317s

Websites

- http://teara.govt.nz/en/table/4694/meteorite-falls-and-finds-in-new-zealand
- https://theconversation.com/amp/curious-kids-what-are-meteorites-made-of-and-where-do-they-come-from-114408
- https://www.nhm.ac.uk/discover/how-an-asteroid-caused-extinction-of-dinosaurs.html

News articles

- Father and son play pivotal roles in fate of Kimbolton meteorite

https://www.rnz.co.nz/news/national/462974/father-and-son-play-pivotal-roles-in-fate-of-kimbolton-meteorite

- Hunting for Meteorites

https://www.rnz.co.nz/national/programmes/ourchangingworld/audio/2018828973/hunting

- The True Story of History's Only Known Meteorite Victim

https://www.nationalgeographic.com/science/article/130220-russia-meteorite-ann-hodges-science-space-hit