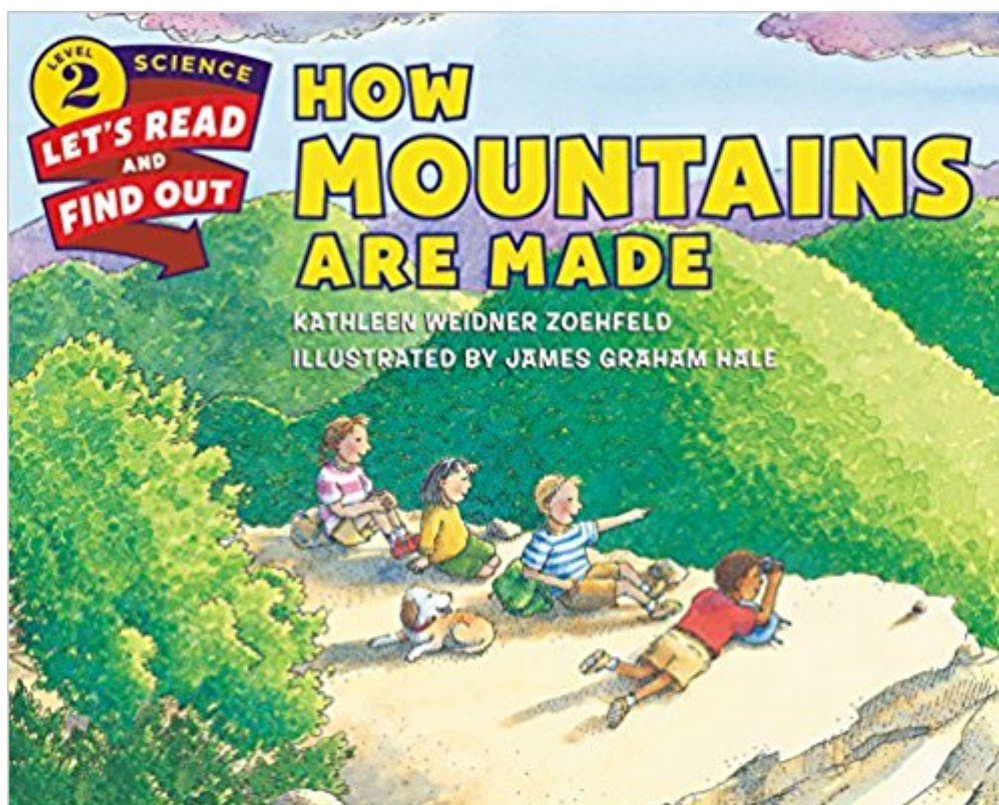


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# How Mountains Are Made (Let's-Read-and-Find-Out Science 2)



## Synopsis

A mountain might be thousands of feet high, but it can still grow taller or shorter each year. This classic picture book explores how mountains are made—including how Mount Everest grew from a flat plain under an ocean to become 29,028 feet tall! Now rebranded with a new cover look, this book features simple activities and fascinating cross-sections of the earth's moving crust that clearly explain plate tectonics. Both text and artwork were vetted for accuracy by an expert in the field. This is a Level 2 Let's-Read-and-Find-Out Science title, which means the book explores more challenging concepts for children in the primary grades and supports the Common Core Learning Standards, Next Generation Science Standards, and the Science, Technology, Engineering, and Math (STEM) standards. Let's-Read-and-Find-Out Science is the winner of the American Association for the Advancement of Science/Subaru Science Books & Films Prize for Outstanding Science Series.

## Book Information

Series: Let's-Read-and-Find-Out Science 2

Paperback: 32 pages

Publisher: HarperCollins; Reprint edition (October 6, 2015)

Language: English

ISBN-10: 0062382039

ISBN-13: 978-0062382030

Product Dimensions: 10 x 0.1 x 8 inches

Shipping Weight: 4 ounces (View shipping rates and policies)

Average Customer Review: 4.0 out of 5 stars 11 customer reviews

Best Sellers Rank: #266,481 in Books (See Top 100 in Books) #52 in [Books > Children's Books > Education & Reference > Science Studies > Nature > Rocks & Minerals](#) #168 in [Books > Children's Books > Education & Reference > Science Studies > Earth Sciences](#) #3079 in [Books > Children's Books > Literature & Fiction > Chapter Books & Readers > Beginner Readers](#)

Age Range: 4 - 8 years

Grade Level: Preschool - 3

## Customer Reviews

Grade 2-3? In this clear, concise presentation, four children introduce the subject of mountain formation by taking a hike in their local community. The youngsters appear throughout the book,

commenting in dialogue bubbles about specific facts, giving demonstrations of ways mountains change, or making humorous asides. They provide continuity and keep the tone light while information is related to explain why fossils of sea animals are found atop mountains, the various layers in the earth, why volcanoes form, and the effects of erosion. The text and illustrations work together well in this sequential, well-organized book. Much credit goes to Hale's engaging watercolor illustrations done in cheery colors; they are simply drawn but add effective examples and diagrams. Used with Franklyn Branley's *Volcanoes* (HarperCollins, 1985), this fine addition to the science series would be of value to students interested in the geology and the changes of planet Earth. Diane Nunn, Richard E. Byrd Elementary School, Glen Rock, NJ Copyright 1995 Reed Business Information, Inc. --This text refers to an out of print or unavailable edition of this title.

Ages 5<sup>^</sup>-9. Four children and a dog climbing a forest trail provide the framework for this discussion of mountains. Along the way, the knowledgeable characters explain the earth's structure and tectonic plates as well as the different types of mountains and how they are formed. Bright line-and-watercolor-wash pictures and diagrams illustrate the text. Apart from the problem of scale that crops up when showing four children and a tree sitting on a cross-section of the earth extending down for 95 miles, the illustrations succeed quite well in showing the structures, forces, and processes that mold mountains. An appealing addition to the *Let's-Read-and-Find-Out* series. Carolyn Phelan --This text refers to an out of print or unavailable edition of this title.

Perfect book for an introduction to plate tectonics! I used as an anchor text with my 2nd graders.

This is great. You can combine it with going out to the countryside to see what kind of mountains you can identify, or we also got play-doh out and created them!

This book pretty accurately presents a simplified version of the current theory on mountain formation. According to the UC Berkeley department of Geology, the asthenosphere is fluid: "These observations, along with many other studies of our planet, support the theory that underneath the Earth's crust (the lithosphere: a solid array of plates) is a malleable layer of heated rock known as the asthenosphere which is heated by radioactive decay of elements such as Uranium, Thorium, and Potassium. Because the radioactive source of heat is deep within the mantle, the fluid asthenosphere circulates as convection currents underneath the solid lithosphere."

I am uncertain my 4 1/2 year old granddaughter was getting all the nuances. Then they suggested that you put a towel on the table and scrunch it together with 2 flat hands, mimic-ing the plates coming together to create mountains. She got that part! Then we put a sticker on the towel to represent a sea shell, and she got that too! Great inspiration for talking about science.

I so appreciate the way I can obtain books at for a good price. This book is fun to read.

it is recommend. tell a lot of the product . I received this product on time and in very safe packaging. Cutting a watermelon was the first opportunity to use it.It sliced through the whole melon easier than any product I've owned before. Can't beat that. I'm happy. the old one has been broke in my family , next day arrive.

This book is anomalous to this series of educational books. As stated by a previous poster, the account of the internal structure of the Earth is false, and there are numerous other problems throughout. The errors are not trivial and will give children (and their unsuspecting parents) an erroneous misconception of the nature of geologic processes. I present my review as a geology professor with more than 15 years of teaching and research experience related to mountain building. A series of misconceptions begins on page 13 of this 32 page illustrated book. The Earth's upper layer, the crust, is illustrated as lumps of broken rock set in what appears to be a fine-grained matrix of dirt. This "layer" overlies a series of layers termed "solid rock". The text correctly identifies both these intervals to comprise the Earth's solid lithosphere. However, the text states that the crust is a single "layer" below soil and vegetation, although the illustration shows it to be a pile of rubble that could entice the reader to infer that the 35 mile-thick crust was essentially a continuation of the Earth's very thin soil horizon. The text is misleading; the illustration is incorrect and needs to be redrawn. Page 14 features a map showing 8 major plates that constitute the upper lithosphere of the Earth. The map is over-generalized to the point of inaccuracy, and children fond of maps will be quick to note numerous cartographic problems. For USA readers, the map is scientifically inaccurate with respect to California, which is shown to be entirely part of the North American Plate. Page 15 features the most egregious error - the layer of "partially melted rock called magma" beneath the lithosphere. This layer is not a magma. Geologists refer to this layer as the asthenosphere, and it is in fact partially molten, but only about 1% or so on average. Magma is nearly or completely molten rock that ultimately cools off and solidifies; the term is completely inappropriate as a descriptor for the Earth's asthenosphere. A previous poster at this site provides an accurate review of this issue.

This major misconception of a liquid magma layer beneath the solid lithosphere propagates into additional errors throughout the rest of the book, and is the primary reason why the book should be avoided. Pages 16-17 show four types of mountains, but is an extreme oversimplification. The illustrations on page 17 show a strange lumpy mound forming within the non-existent "magma" layer beneath the lithosphere. There is no sense of conservation of mass, and it might give children a sense that matter can appear out of nowhere. Pages 19-23 show antiquated models for the origin of what the author declares to be different types of mountains. The illustrations are physically unrealistic and based upon the misconception of a molten magma layer beneath the lithosphere. In fact, the model of a volcano described on p. 22-23 is even at odds with another book in the "read and find-out science" series. Page 23 features a plate of lithosphere sinking into the "magma" layer and claims that pressure and friction cause the plate to heat up and melt forming another magma within the magma layer. Again, this is a terrible misconception and is at odds with what one would find in introductory geology textbooks written over the past few decades. Remarkably, there is a picture of a dog with an exclamation point in a thought box above his head, perhaps indicative of the surprising interpretation presented in this book. There are several other misconceptions and factual errors scattered through this book. I strongly suggest that it be avoided. We ordered it online without reading any reviews; in the past, our experience has been that only one or two minor problems existed in most other books in this series, and we could simply scratch them out and write in an updated correction. This book, however, is not simply a few outdated facts that one might expect in a commercial children's book that has been on the market for many years. It is unable to be amended and repaired.

Unfortunately, and unusually for this series, this book is complete fiction. We got it for our daughter, and had to throw it away. The geophysics presented in this book is completely imaginary (and I should know, I'm an earth scientist). The basic premise is that the plates of the Earth's crust ride on a layer of magma. That is false. The plates move on top of the asthenosphere, which is quite solid. The enormous stresses over large distances allow it to flow, so that the plates move a few cm/year. Magma does exist here and there in small pockets. From the erroneous notion of a magma layer, a complete, and entirely fictional geophysics is constructed to explain various things about mountains -- much as the Aristotelian/Ptolemaic systems explained the cosmos from the false premise of geocentrism. There are numerous other errors also, and the volcano book in the series uses the same magma layer fiction.--Later addition--As a practicing earth scientist and member of the American Geophysical Union let me reiterate my complaint that the "geophysics" in this book are

stuff and nonsense. To the person who claims a university page said the aesthenosphere was liquid, may I suggest a trip to the dictionary. "Malleable" does not mean liquid, it means solid, but deformable, like clay (very malleable) or iron (much less malleable). It's Latin for "hammerable". The mantle, including the aesthenosphere, is solid, solid, solid. Under the tremendous stresses it is subject to, it deforms very slowly, over tens of millions of years, moving the plates about. Magma forms only in relatively tiny areas due to pressure release (midocean ridges and hotspots), or the fluxing effect of water intrusion from descending plates (ring of fire volcanos) as a secondary effect of the plate tectonic movements. This book is garbage. The subject is fascinating, and has much that should interest children. A book that is nothing but nonsense does them a gross misservice. It should be withdrawn and replaced with a legitimate and informative book.

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