走近自然

火山 VOLCANOES

外语教学与研究出版社

Two-Can出版公司（英国）

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走近自然

图书光盘 配合使用

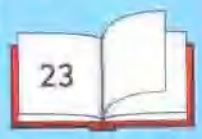
这张光盘中有丰富多彩的内容，它会告诉你许多有趣的知识，出很多题目来考你，还会提供好多好玩儿的游戏让你来做呢。

在屏幕上拖动名称框，看看你能不能填对火山各部分的名称。

翻开书页，你就会发现这里有很多奇妙的知识，还配有绚丽多彩的插图与照片。

地球上的火山都在哪里？仔细阅读去寻找答案吧！

要想从“走近自然”中取得最大的收获，就要把书和盘一起用。要注意像“DISK LINK（光盘关联）”和“书签”这样的特殊标志。想知道更多的情况，翻到第43页去看看吧。



BOOKMARK

DISK LINK
Vic and Vera will answer all your questions about lava. Simply Ask The Experts!

来吧！
翻到第41页看看如何安装光盘，然后点击你的鼠标开始吧！

光盘里有什么

帮助屏

即时学会如何使用光盘。

帮助屏将教你学会使用以下的几个控制功能：

- 箭头键
- 文字框
- “热点”词

智拼板块

这是一个有关地球板块的有趣拼图游戏！

看看你能不能把地球的所有板块都拼到一起，形成一张全球地图。然后去了解板块的运动以及它们怎样引起火山爆发和地震的发生。

喷发类型

看一看各种火山的喷发类型！

用你的鼠标去点击，就可以让4种不同类型的火山在你的眼前喷发！然后你可以入地去了解更详细的情况，并研究一下在每一种火山的内部都会发生什么情况。

趣味探山

去探索一片真实的地形！

调查一片火山地形。去研究火山内部的一个洞，找到一个间歇泉，并学习如何分辨不同类型的火山造成的不同山形。

专家解疑

你的有关火山的所有火爆问题，在这里都能找到答案！

只要是有关火山的，就没有什么是维克和威拉不知道的。我们专业的火山学家正等着回答你所有的问题呢。你只管提出问题好了！

知识之旅

这是考验你的火山知识的一个有趣测验！

你可以周游全球去回答有关火山的问题。如果你及时完成了旅程，就能去参观全世界最有名的几个火山喷发地了。

火山解析

研究火山的不同部分。

来标识一下火山不同部分的名称吧。在屏幕上用鼠标拖动写有名称的文字框，一旦它们都被放在了正确的位置，你就能学到有关每一个部分的更多的知识。

拼词抢险

你能阻止火山爆发吗？

看看你能不能在时间用完之前拼出有关火山的神秘单词。在屏幕上有一座火山正要喷发呢。用你的知识来拯救世界吧！

书里有什么

*All words in the text which appear in **bold** can be found in the glossary*

What is a volcano? 什么是火山?

Volcanoes are openings in the surface of the Earth from which gas and hot rock escape and cover the surrounding land. Some volcanoes are simply long cracks in the ground. Others are cone-shaped mountains with a hole in the top. This hole is called a **vent**.

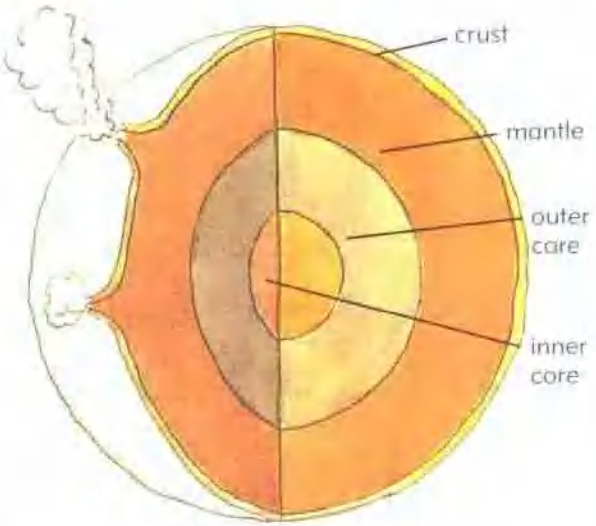
While molten rock is inside the Earth, it is known as **magma**. But when it escapes on to the Earth's surface, it is called **lava**.

As lava flows away from the vent, it cools and hardens. Layers of lava, ash and cinders from the volcano, pile up to create the **cone**.

DISK LINK
Play What A Po-Lava and see if you can name all the parts of a volcano.

◀ 这是一幅火山横断面图。这个火山爆发的，中心喷孔主要是由于形成火山锥。

▶ 当火山爆发时，通常会有云雾状的尘埃、气体和熔岩喷发出来。



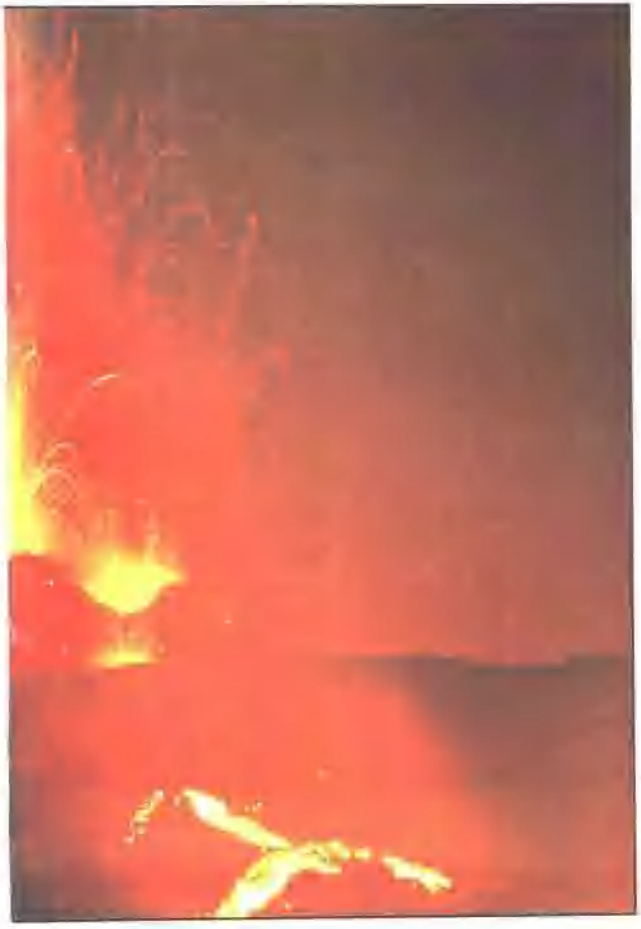
The outer layer of the Earth is called the lithosphere. It is made up of the **crust** and the solid, top part of the **mantle**. The lithosphere is split into vast slabs called **plates**. These float on the layer of liquid rock that makes up the rest of the mantle. Below this is a layer of molten metals called the outer **core**. In the middle is the inner core, which is made up mostly of solid iron.

Volcanic eruptions 火山喷发

Volcanic eruptions are spectacular and often terrifying sights. There are different types of volcanic eruption. Sometimes, red-hot lava will shoot hundreds of metres into the air, creating deadly fire fountains. Other times, it will pour down the sides of a mountain in fiery rivers. These lava streams can travel great distances, burning, burying or flattening anything in their path. Some volcanoes emit burning-hot clouds of gas. Others explode, sending out dusty, hot ash and **volcanic bombs**.

▶ 此图为夏威夷众多火山中的冒纳罗亚(Mauna Loa)火山的熔岩，它显有流动性，在变冷、变硬之前要奔流很长的路程。

▼ 火星从西西里岛爱特那山上的寄生火山喷中喷发出来，炽热的熔岩直流至火山底部。



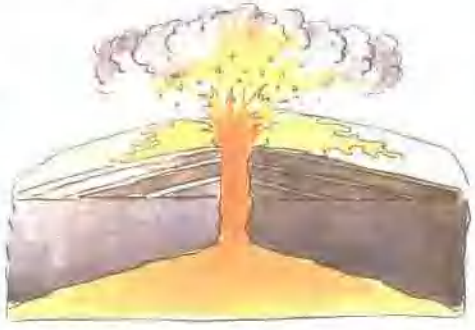
DID YOU KNOW?

● Stromboli, off the coast of Italy, is one of the few volcanoes in Europe that is constantly **active**. It regularly emits clouds of dust.

● On average, between 20 and 30 volcanoes erupt each year.

● Mauna Loa, on Hawaii, is the largest active volcano on Earth. One eruption lasted one-and-a-half years!

● The volcanoes on Hawaii, like the one in the diagram below, have wide, gently sloping cones. The runny lava from these volcanoes flows and spreads so quickly that the cones do not build up to any great height.



Going out with a bang

剧烈的爆发

Sometimes, magma is stiff and thick and it hardens inside a volcano. Pressure builds up behind the blockage because gases in the magma below cannot escape. Often, the pressure becomes so great that a huge explosion takes place. When this type of eruption occurs, the whole mountain may be blown apart. Following the explosion, the centre of the volcano may collapse into its own magma chamber, creating a large, circular crater called a **caldera**.

▶ 猛烈的火山爆发会喷发出大量云雾状的尘埃，这些尘埃像埋没周围的乡村，毁坏植物，甚至人致死。

DISK LINK

One of the words in this chapter may help your chances in Don't Blow It!

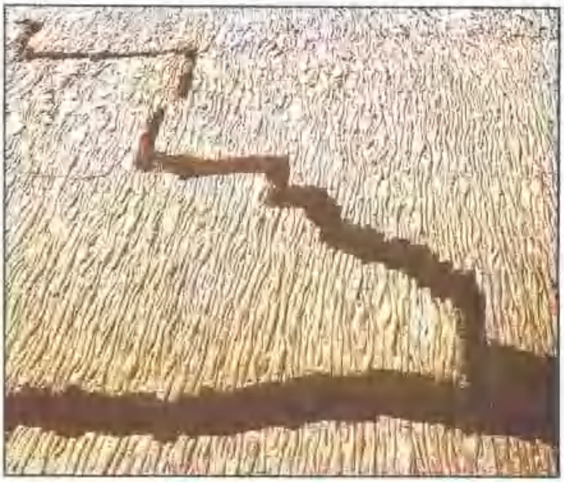
Volcanic materials 火山矿物

Lava can be runny or thick. Different volcanoes produce different types of lava. Some volcanoes produce no liquid lava at all. Instead they throw out solid pieces of rock. The tiniest pieces are known as **volcanic ash**. The largest ones are called volcanic bombs.

Dust from volcanoes can spread over huge areas. Particles of volcanic dust in the atmosphere sometimes produce brilliant red sunsets across the globe.

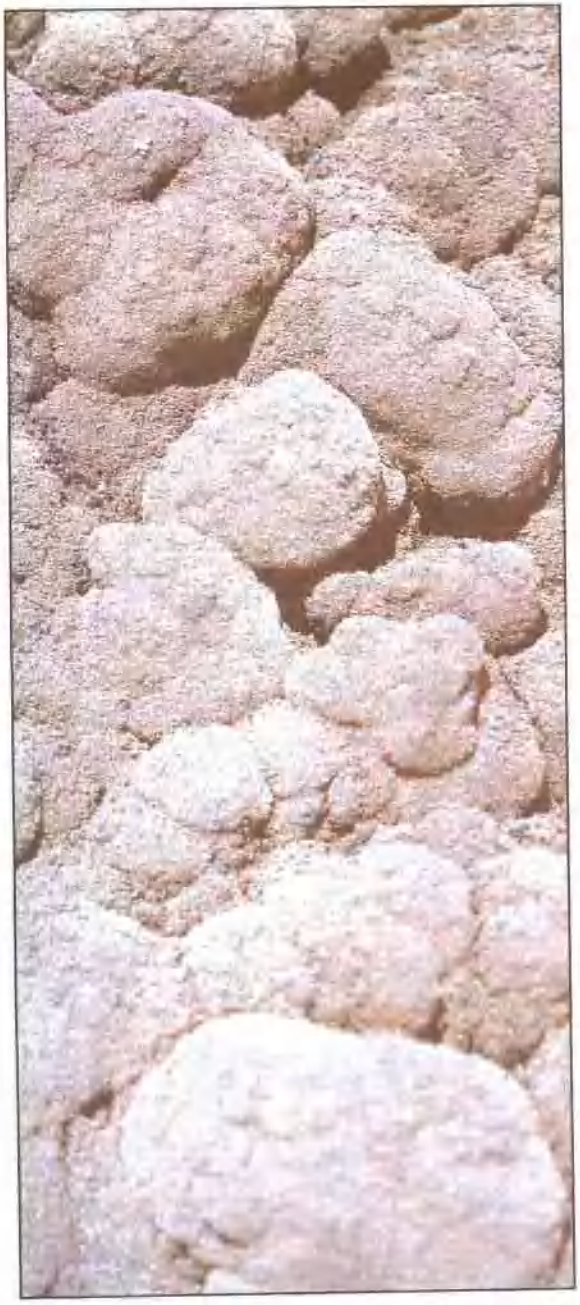
Volcanoes also produce clouds of steam and gases. These can rush down the mountain at over 160km/h.

DISK LINK
Vic and Vera can answer all your questions about lava. All you have to do is Ask The Experts!



▲ 图中大块的变得很坚硬的熔岩区域被称为熔岩原

▼ 图中的农田被停留的火山灰所覆盖。火山灰在水的冲刷过程中随水渗入地层，这将使土壤得到更多的养分

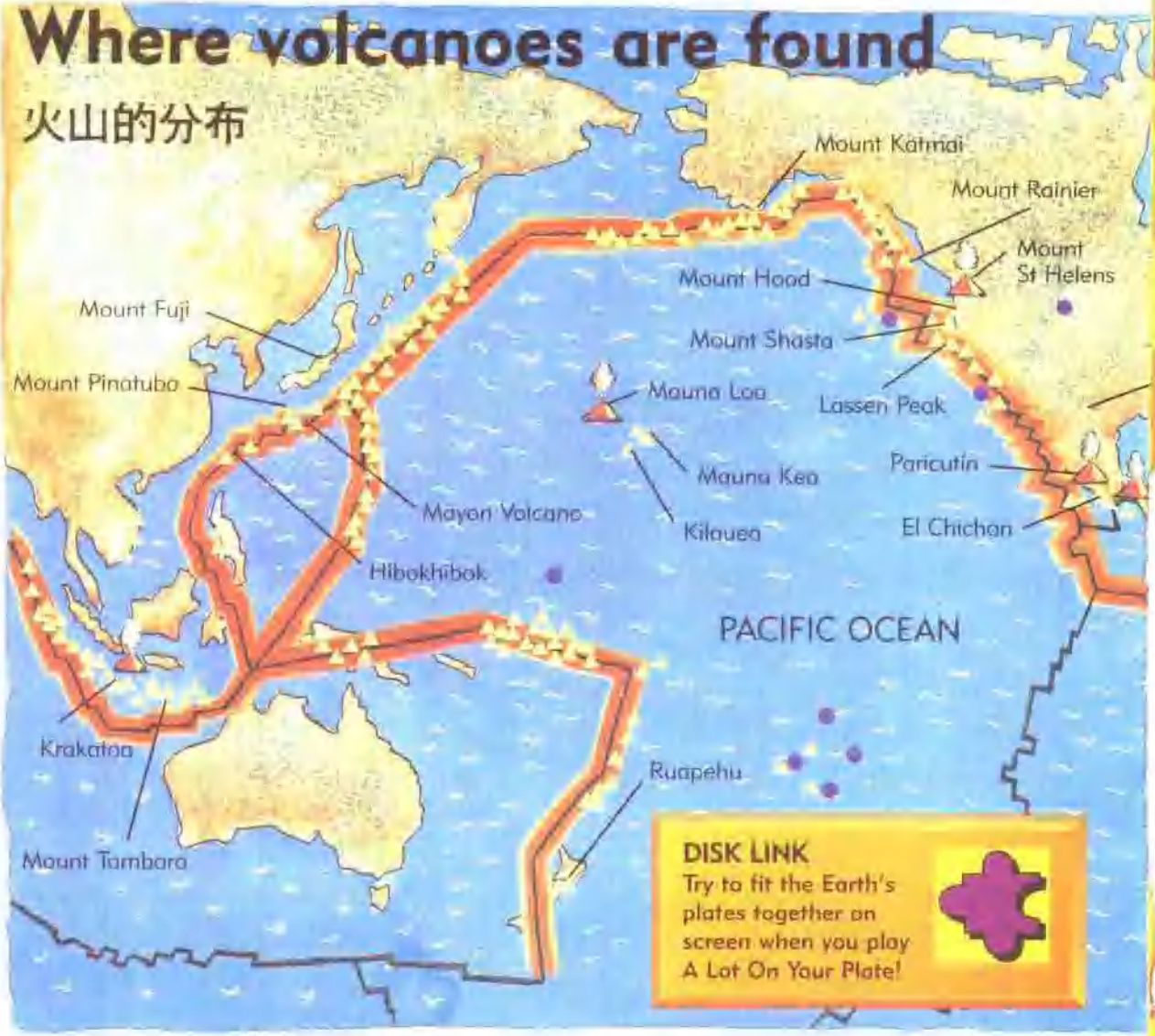


▲ 浮石是一种由于熔岩快速冷却而形成的火山岩，它全身布满气囊，并且轻得足以浮于水面之上。

▲ 随着熔岩的冷却，坚硬而且形状怪异的火山岩将会形成于地表。富有流动性的熔岩将会形成波状外表的绳状熔岩(pahoehoe 夏威夷语)。

Where volcanoes are found

火山的分布



▲ 这幅地图划分了地球板块并标示出了许多火山。

The Earth's hard, outer layers – the crust and the upper mantle – are divided into huge, moving pieces called plates. These can be up to 75km thick. They float on the molten rock in the mantle.

Volcanoes form along ridges where plates move apart. They also occur where two plates collide and one is forced beneath the other. This happens in the so-called **Ring of Fire** around the Pacific Ocean. Other volcanoes, such as those in Hawaii, lie far from the plate edges. They form over **hot spots** – areas of fierce heat in the mantle that cause magma to bubble up towards the surface.