# Why there's a ring of natural disasters around the Pacific?



*There's been a lot of _____ _____ in 2018.*

*Mount Mayon in the Philippines erupted in January. It continued for over a month.*

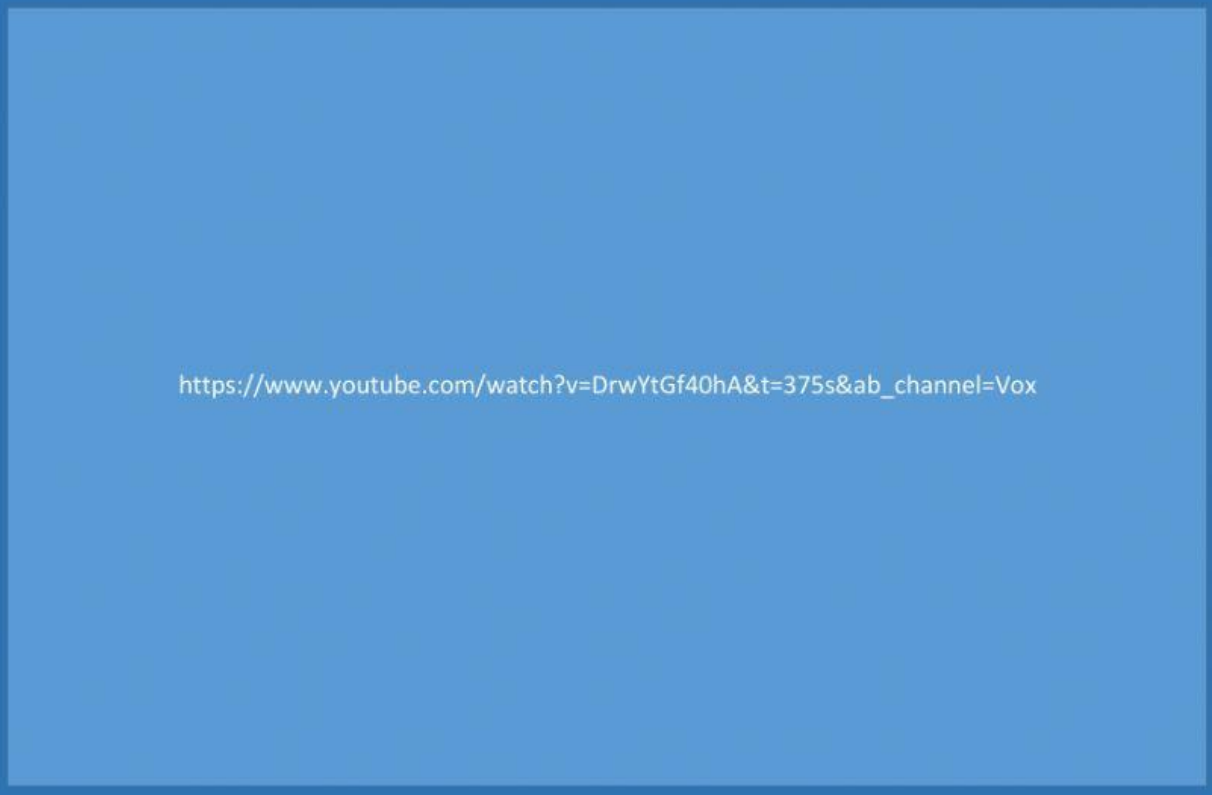
*In February, Mount Sinabung erupted in Indonesia. Here's the _____ _____ is seen from space.*

*And in June an eruption in Guatemala killed more than 100 people.*

*Turns out this is pretty normal.*
*On average, there are 10 to 20 volcanoes _____ around the world at any given time.*

LIVEWORKSHEETS

When you look at these on a map and add volcanoes that are not currently erupting, you'll start to see a pattern.



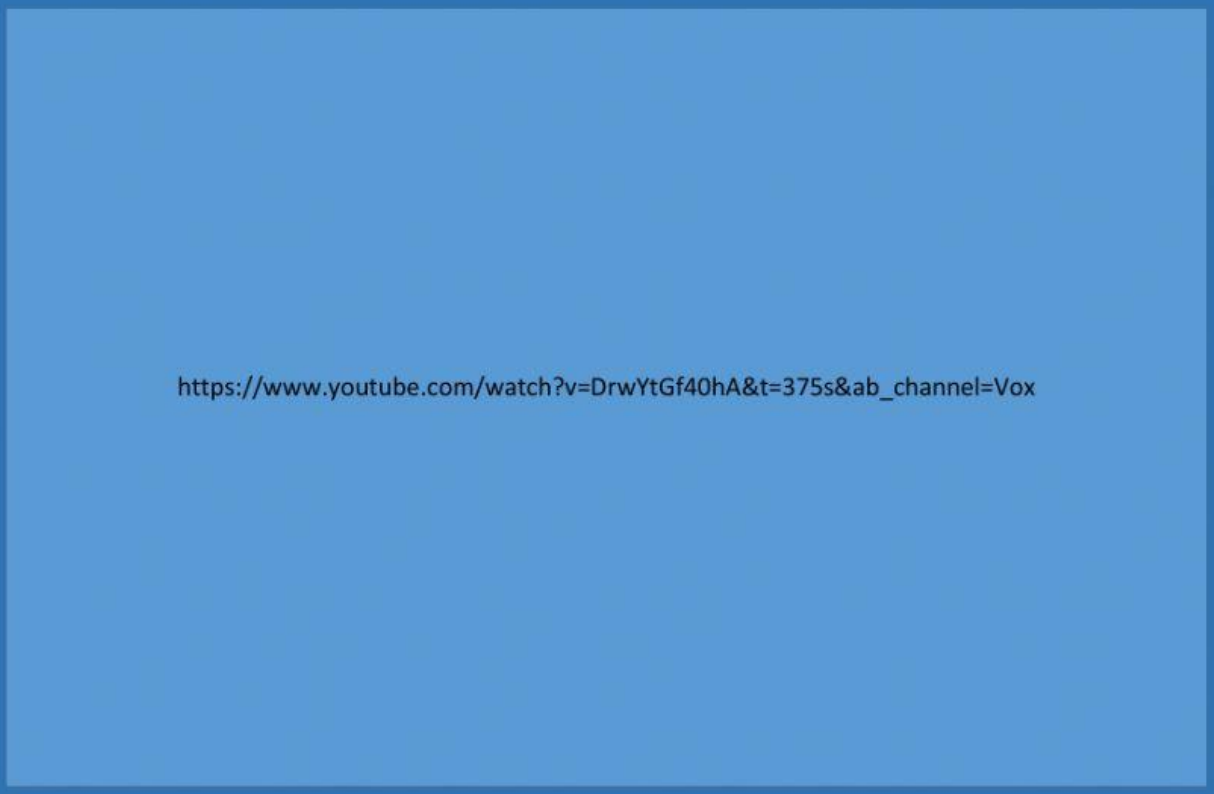

Most are concentrated here, along the edges of the _____ _____.
This region is known as the Ring of Fire, a stretch of _____ of volcanoes spanning 40,000 kilometers.
It's also where most of the earthquakes and tsunamis in the world _____ _____.

This year alone, the region saw 4 eruptions and 5 of the world's biggest earthquakes .
The Ring of Fire is where some of history's most devastating natural _____ have happened and will continue to happen.

Volcanoes have terrorized people for centuries. In the 1800s, explorers and scientists started _____ them _____.

LIVEWORKSHEETS

Take a look at this map from 1852. It has "the volcanic series of Australasia" and "the volcanic series of Japan and Kamchatka, in Russia."




By the 1960s, most scientists concluded the earth's surface is made up of a series of _____ _____ that slowly move into and apart from each other.
Now look at where the eruptions and earthquakes occur.
The Ring of Fire is the result of these plates crashing into _____ _____.

The plates in the Pacific are moving _____ than other plates around the world, adding stress where the plates interact.

This plate is moving northwest, crashing into the North American plate, which _____ all the volcanoes here.

Over in California, the Pacific plate is grinding past the North American Plate -- where they meet is called the San Andreas Fault.

LIVEWORKSHEETS

https://www.youtube.com/watch?v=DrwYtGf40hA&t=375s&ab_channel=Vox

The _____ causes thousands of earthquakes a year. A few of them are even large enough to cause serious _____.

Like the San Francisco-Oakland earthquake in 1989, which killed 63 people and injured nearly 4,000.

All these plate interactions are _____ from each other. But when grouped together, they make up the most seismically active region in the world.

The problem with the Ring of Fire is that geologists can't accurately _____ when a volcano is going to erupt or an earthquake will shake the ground.

They can monitor tremors, gas emissions and temperature changes around a volcano to _____ when it might erupt, but they can't be sure of the exact timing or the severity.

LIVEWORKSHEETS

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*And those predictions get even weaker with earthquakes which aren't preceded by any _____ _____, so we can't even see them coming. One way scientists forecast the future of these phenomena is by looking at the past -- take New Zealand, for example.*

*Earthquakes have occured on this fault line every 500 to 1,000 years. There was a _____ _____ over 800 years ago and another one around the 500 mark. So scientists now believe New Zealand is due for mega quake.*

*Over here in California, there is a 72% chance of a major earthquake along _____ section of the San Andreas faultline in the next 30 years.*

*Parts of Japan have a 25% chance of a big quake and Seattle could see one in the next 50 years that could impact 7 million people.*
*In fact many countries along the Ring of Fire will continue to be _____ _____ for the foreseeable future.*

LIVEWORKSHEETS

They can't get out of harm's way, but there is something they can do about it.

https://www.youtube.com/watch?v=DrwYtGf40hA&t=375s&ab_channel=Vox

In 2011, an earthquake and a following tsunami, killed 15,000 people and _____ $300 billion in damages in Japan.

But those numbers _____ (can be) a lot higher.
See, Japan requires buildings be constructed with anti-earthquake designs, like the one in this video.

And it has an early _____ system that stopped high-speed trains, factory lines, and sent countrywide text _____ a full minute before the tremor hit. While Japan's precautions didn't prevent the disaster, they did save countless lives.

The problem is, not every country in the Ring of Fire is like Japan. Most of these countries have some form of anti-earthquake building code, but the _____ and implementation of these codes varies. And none of these countries have early warning systems for earthquakes. In developing countries, _____ these projects can be a problem.

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*But even richer countries aren't taking the risk seriously enough.*

*California, Oregon, Washington are some of the most _____ states in the US, still don't have a public early-warning system in place. Because volcanoes and earthquakes continue to be _____ threats, governments tend to treat them as a low priority.*

*And that's what makes the Ring of Fire even more_____.*

*We know for certain that there will be more natural disasters along this belt. What we don't know is if we'll be prepared for them.*

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