



The USA

Learning Objective:

To find out about natural phenomena in the USA.

Florida



Florida is warm and sunny all year round. There are lots of beaches, as well as Disney World, the Kennedy Space Center and Seaworld. It is also famous for the Everglades where people go to spot alligators and crocodiles.

Kansas



Kansas is one of the flattest states. It has very changeable weather with very hot summers and very cold winters. Kansas is known for barbecues, massive expanses of farm land and as being the setting of 'The Wizard of Oz'!

California



California has a very varied climate from desert to subarctic. People enjoy skiing and snowboarding in the mountains in winter and sunbathing on the beach in warm summer. California also has Disneyland, Hollywood and the Golden Gate Bridge.



Which of these states would you most like to live in and why?

There are natural phenomena that occur in some parts of America that can make living in certain places really difficult.

blizzard

tornado

hurricane

earthquake

Do you
know what
each of these
different
phenomena
are?



Blizzards are severe snow storms where there are low temperatures, fast winds and lots of blowing snow. During a blizzard, you can't see very far in front of you and snow can bury objects like cars or houses, or make roofs or bridges collapse.

Blizzards can happen in any location that it snows but in the USA they most often happen on the Great Plains of the Midwest, or in states in the north-east of the country, such as Maine, New York, Pennsylvania or Maryland.



Snow covering cars after a blizzard in Washington, D.C.

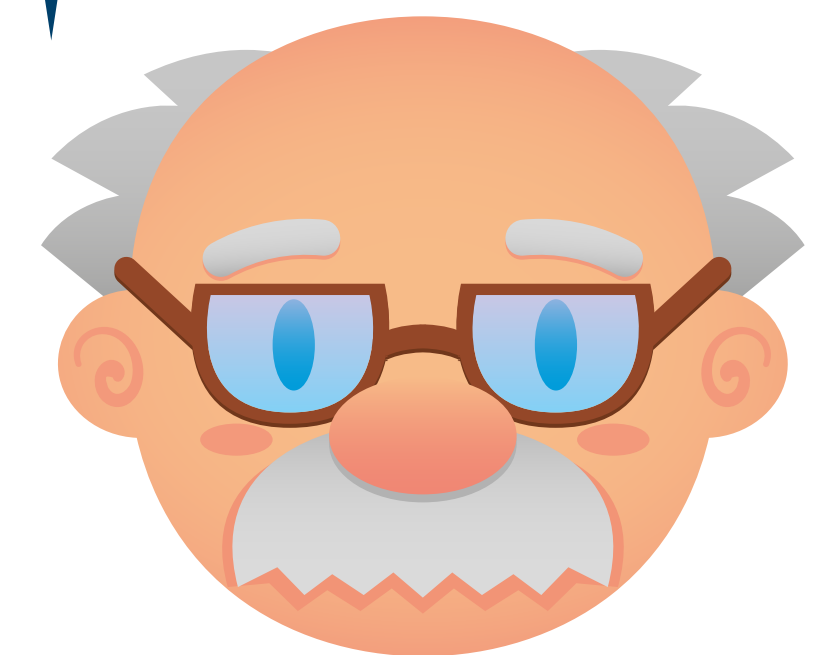
What do you think the dangers might be during a blizzard?



Heavy snow can make driving very difficult and cause accidents. It can also cause power lines to fall and make pipes freeze, meaning people don't have any heat or running water in their homes. People may also find it difficult to get out of the house to get supplies like food or water.



38 people died during a blizzard in the USA in 2016, but in 1888 a blizzard killed around 400 people.



Blizzards can be particularly dangerous in rural areas. People can become stranded in their homes, schools or workplaces. Today, with snow ploughs to help clear snow, people are stranded by blizzards less often, but they can still be very dangerous.

A **tornado** (also known as a twister) is a spiralling funnel of air which descends from a storm cloud to the ground. Tornadoes are formed when warm air meets cold air, which causes the air to twist around. This creates a vortex which then descends to the ground. Tornadoes are mobile and move across the Earth for anything between a few minutes and a few hours, destroying anything in their path.



In the USA, there is an area known as Tornado Alley which is where most of the tornadoes in the country happen. The main states affected by tornadoes are Texas, Oklahoma, Kansas and Nebraska, although other surrounding states also get many tornadoes each year. Most houses in this area have storm cellars so that people can protect themselves underground if a tornado hits.



The USA has more than 1000 tornadoes a year but only a few of them cause the kind of severe damage shown here.



Many people think tornadoes and **hurricanes** are the same things but they are actually very different phenomena. A hurricane is a tropical storm that starts in the Atlantic Ocean. They last much longer than tornadoes and can cause even more damage. Tornadoes can actually be formed from hurricanes.

The state most vulnerable to hurricanes is Florida, although they do happen in other states too, such as North and South Carolina. Hurricane season is from June to November. There are usually around 12 tropical storms in this area of the USA during hurricane season.

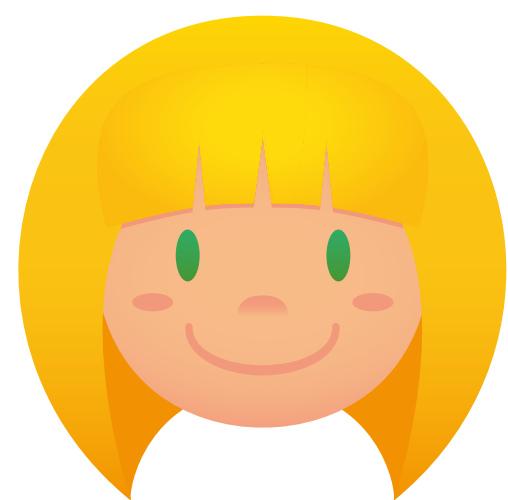
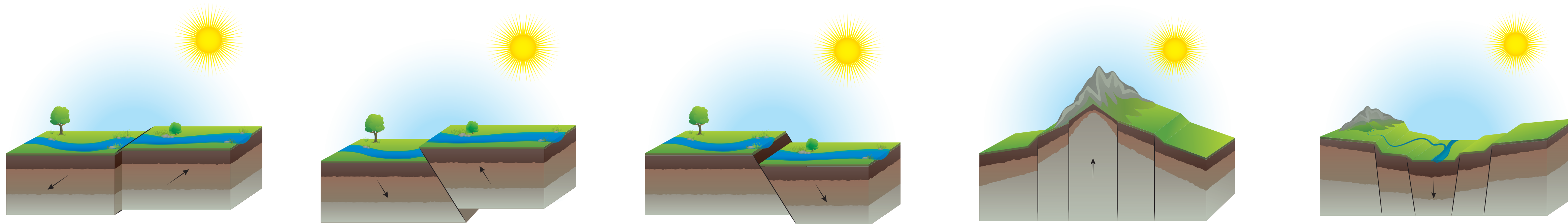
How are
tornadoes
and
hurricanes
different
from each
other?



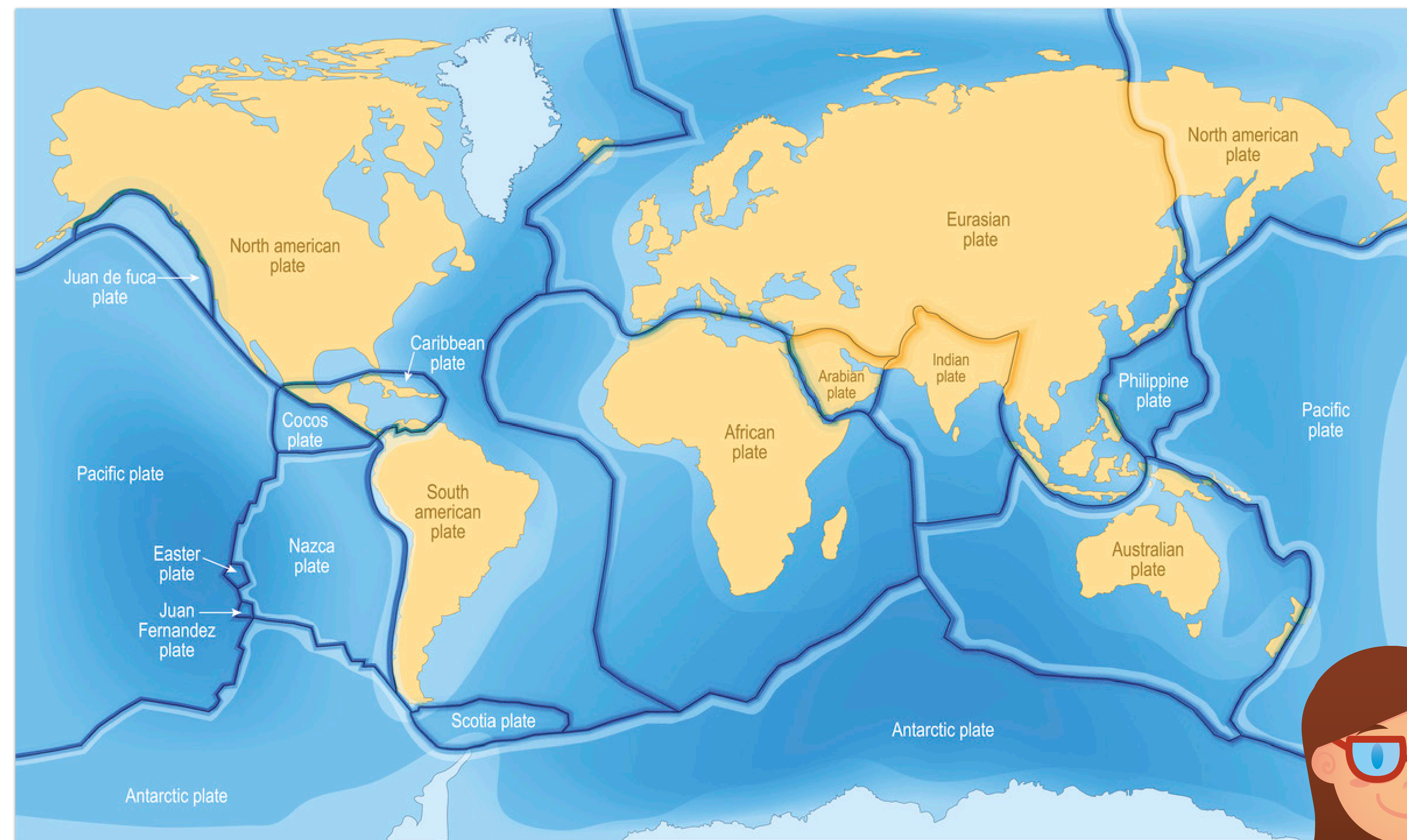
	Hurricanes	Tornadoes
Where do they form?	Over warm water in the Atlantic Ocean	Over land
How big are they?	Can be a few hundred miles wide	Usually no more than quarter of a mile wide
How long do they last?	Can last up to three weeks	No more than a few hours
How many times a year do they happen?	Around 12 times a year	Around 1000 times a year
How far in advance can you tell if one is coming?	A few days	No more than half an hour beforehand

The final natural phenomenon we will be looking at is **earthquakes**. The Earth's crust is made up of massive plates of rock called tectonic plates. These plates are constantly moving but only move a few centimetres every year.

Earthquakes happen when the plates get jammed together. The forces pushing the rocks together then build up until the rocks distort. They judder past each other then fall back to their original shapes. This releases stored energy in seismic waves. It is these waves that cause earthquakes.



These diagrams show some of the ways earthquakes can cause the ground to move.



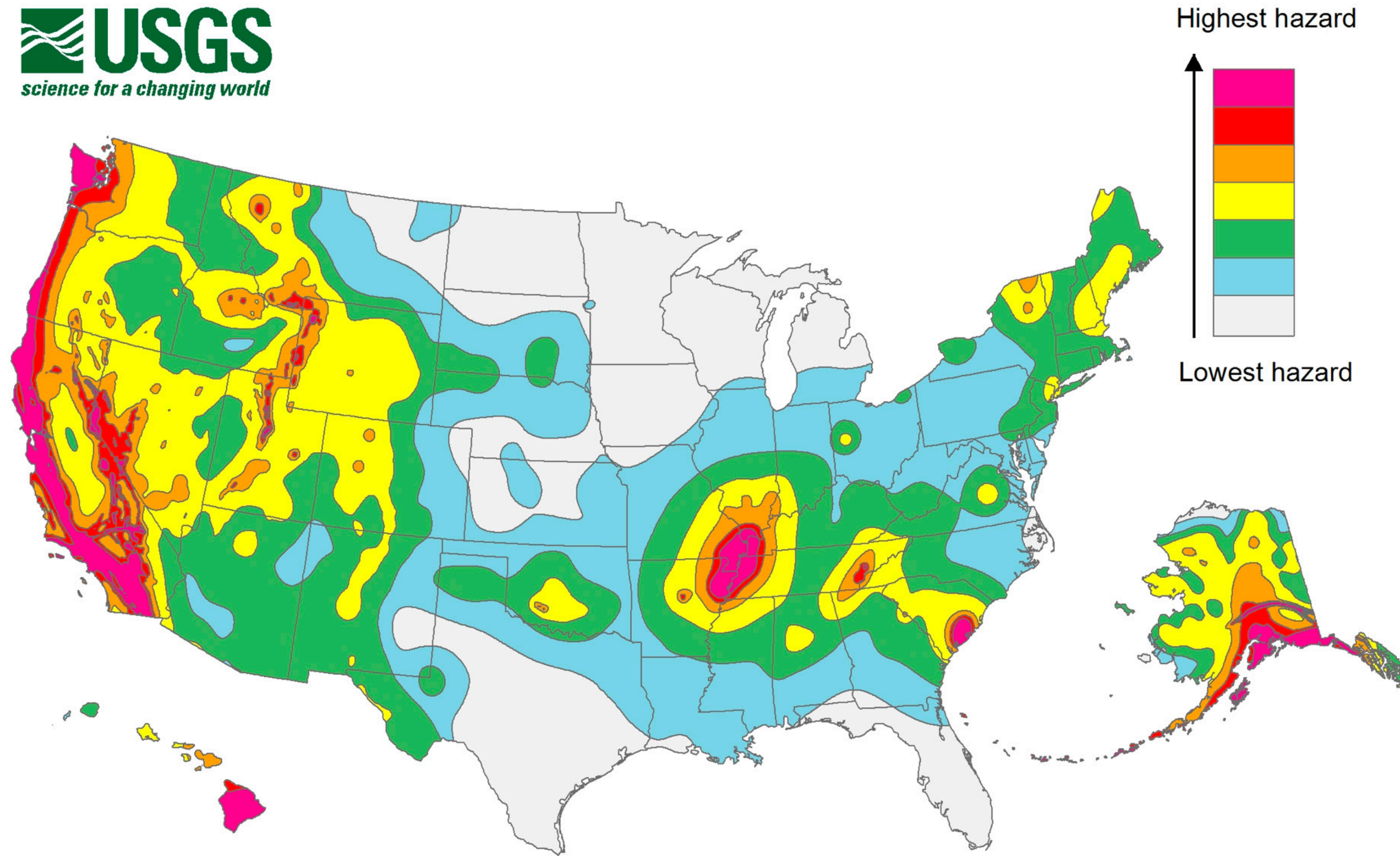
Earthquakes are most likely to happen where the plates meet. This map shows the tectonic plates.



Which parts of the USA are most likely to have earthquakes?

California and Alaska are the two states that have the most earthquakes in the USA. However, they can also occur in many other states.

What can you learn from this map?



There are thousands and thousands of earthquakes in the USA every year. Most of them are so slight that they cannot be felt. With many of them, you can feel a slight rumbling but they don't do any real damage. Some of them shake the ground so hard that it can make your house move and cause objects to fall and move around. The few major earthquakes in the USA each year cause a lot of damage to buildings and roads.

What do you think the biggest dangers during an earthquake are?

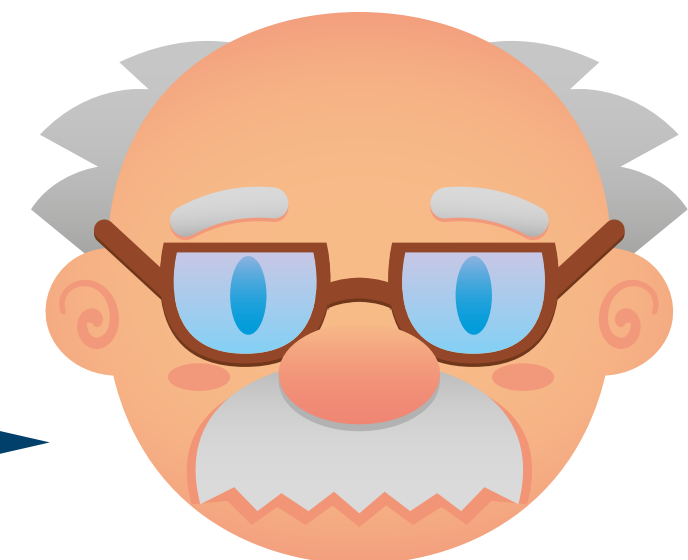


The biggest danger during an earthquake is objects falling or collapsing. If buildings crumble with people inside, the people can be crushed. If bridges collapse with people on, the people can be injured or killed.



In 1989, California suffered a strong earthquake known as the Loma Prieta earthquake. Sixty-seven people were killed, more than 3000 people were injured and it caused more than \$5 billion worth of damage.

This picture shows the collapse of the Nimitz Freeway.



Florida



Hurricanes happen here frequently.

Kansas

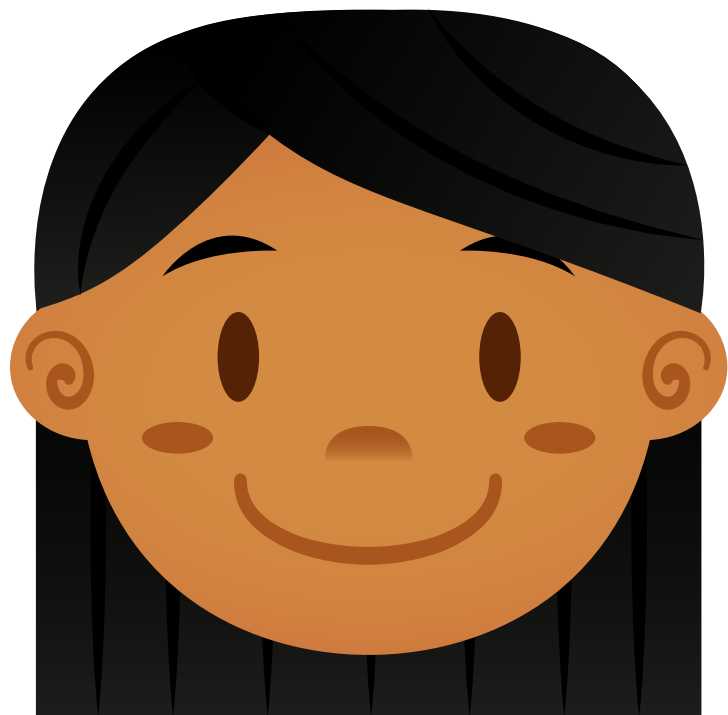


Kansas is in the middle of Tornado Alley.

California



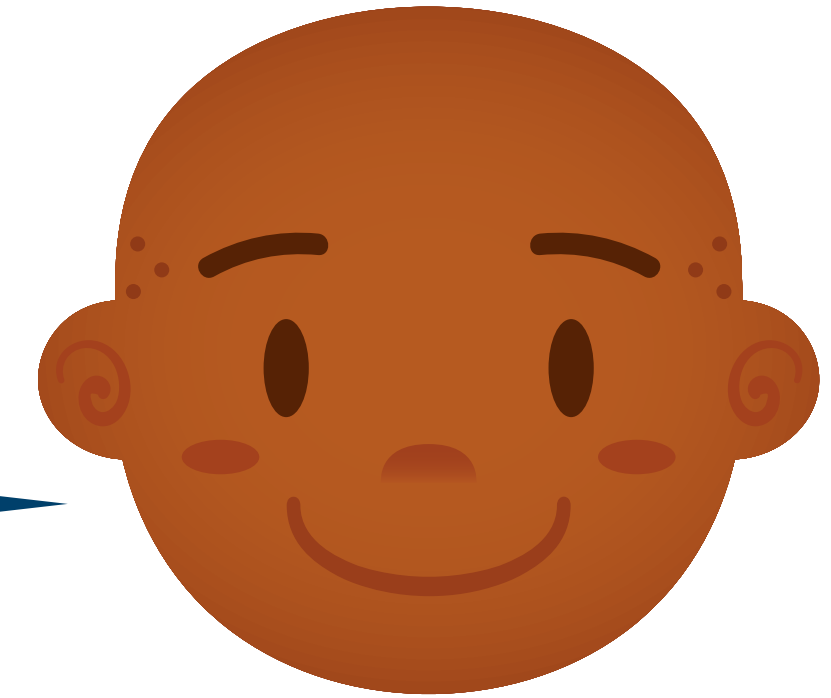
California has many earthquakes every year.



Have you changed your mind about which of these states you would most like to live in?! Why or why not?

Plenary:

Did you know that the UK has a few hundred earthquakes every year?



Most of the earthquakes in the UK are too small to be felt but the tremors from around 20 earthquakes each year can be felt. Very few earthquakes in the UK ever cause any damage at all.



Have a look around the classroom. What objects could cause a hazard if there was a major earthquake? How could you make the classroom safer?