



The Big 7 – Straight-up Answers to 7 Big Questions About Climate Change

1. What’s the difference between climate change and global warming?

Greenhouse gases (like carbon dioxide and methane) act like a blanket around the earth. Normally this is a good thing, because it keeps us from being frozen by the cold of outer space! However, human actions have caused extra greenhouse gases to build up in the earth’s atmosphere. This causes heat from the sun, some of which normally bounces off earth and disappears back into space, to be trapped. This extra build up of heat causes the planet to warm up. That’s where the name “global warming” came from.

However, the actually warming isn’t what people are most likely to notice. That’s because it will probably be an average increase of just a few degrees globally, too small for people to feel most days. Instead, that little bit of heat is enough to add quite a bit of extra energy to the weather systems on earth. The extra heat energy causes stronger winds, bigger storms and more intense weather.

“Climate” means the kind of weather in a place over a long period of time. As the weather systems get all that extra heat energy affecting them, the climate is likely to change in most places, and it will be harder to predict. Some places might get more hot, dry air than usual. Some might get more rain that they used to. Some might actually get colder because the warm air has been pushed somewhere else by winds. Events like big storms, long droughts, strong winds, and large hurricanes can all happen more often.

In other words, humans putting more greenhouse gases into the atmosphere causes global warming, and then global warming causes climate change by adding more and more energy to weather systems.

2. But it snowed so much this year! I thought it was supposed to be getting hotter?

Strangely enough, a warmer planet doesn’t mean warmer weather everywhere. Instead it means that the normal systems that create our weather get stronger and harder to predict. That’s because as the world heats up there is more energy around, and that creates more intense weather and bigger winds to push it around.

The stronger winds can push arctic air further south than usual, making a warm place much colder, like happened this past winter. It could also bring warmer and drier weather our way in the summer. Climate change is all about the weather being a bit strange, not doing what we expect it to, and it being hard to guess exactly what will happen in the future.

3. Why all the fuss?

This issue is probably the biggest challenge humans have ever faced. If we don't get together and take action, and the world heats up too much the climate could change so much that many of the plants and animals that live on earth wouldn't be able to survive. Humans are animals too, and letting the planet overheat would make it really hard for us too. It would be a big challenge to have food, water and shelter for everyone.

As scary as that might seem sometimes though, climate change offers humans a pretty neat opportunity. We are going to need to figure out how to work together and to come up with some great ideas that will allow us and the planet we depend on to continue to be healthy. Meeting this challenge could make earth better in a whole lot of ways!

4. So there is hope that we can solve this?

Lots! Humans have faced other big challenges before and found ways to solve them, so we know that our species can do a great job when we put our minds to finding a solution. For example, not so long ago it was discovered that certain common chemicals were causing holes in the ozone layer, which is like the earth's sunscreen layer. At first everyone thought it was such a huge problem that it could never be solved and that life on earth would be threatened by it. Then people realized that if we were causing the problem we could fix it. The damaging chemicals were banned all around the world, and the ozone layer not only stopped being damaged, but also started showing signs of improving again.

When it comes to dealing with our changing climate, we just need to start taking action, and we need to start taking it soon! The sooner people actually get together to take meaningful action, the less severe the impacts of climate change will be and the sooner we can hopefully turn the process around. The great news is that the things we need to do to make deal with climate change (like driving electric cars that don't pollute) will make the world a better place in lots of other ways too.

5. Won't dealing with climate change cost a lot of money and isn't it more important to worry about the economy right now?

If we just sit back and let the earth keep warming up, there is a point after which we won't be able to turn climate change around. At that point the planet would just keep getting warmer and warmer and we would have a hard time dealing with it. So we have to start acting now no matter what it costs, because that's the only way to make sure that earth remains a healthy home for all species (including us!).

As well, even though it might seem like coming up with solutions to this issue will be expensive, people are starting to realize that it is actually way cheaper to deal with it now, rather than not doing anything and then dealing with all the damage that is caused.

Beyond that, solving this issue will mean coming up with efficient technologies and clean energy solutions that will not only save money in the long run, but will make earth better in a lot of other ways too.

So, by taking climate change seriously and taking action on it now we can not only help stop a serious situation from getting worse, we will actually be creating an economy that is better in the long run.

6. Is it true that some scientists say it's not really happening or that it's just a natural thing?

For a long time scientists debated over whether climate change was real. At that point they just didn't have enough information to decide what was really happening. Some people thought that it was real, but that it was just a normal change that had nothing to do with people. Today the debate is over and science makes it clear that climate change **is** happening. The proof keeps pouring in, and there are signs of it all over the world.

It's also good to remember that all the things that we are going to have to do to deal with changes to the climate are good for the earth for other reasons. So, if we do all the work to keep climate change from getting worse and it turns out that all the scientists were somehow wrong, the planets would still be a better place because of all the work.

7. I'm a bit confused about Climate change verses the ozone hole - what's the deal?

The first thing to know is that climate change has nothing to do with the ozone layer. It can be a bit confusing though, because both have to do with things happening in the atmosphere that surrounds earth. The ozone layer surrounds the earth and acts like sunscreen, keeping the sun's harmful rays out. Climate change is due to a layer of different gases forming and acting like a blanket to trap heat in. They are two different layers, near each other, but doing different things.

The deal with the ozone hole, is that about 30 years ago it was discovered that chemicals, which were used for lots of things, including getting things like whipping cream to come out of the can, were breaking down the ozone layer, and even creating a hole. The good news is that all over the planet people realized this was a huge problem and teamed up. The chemicals causing the damage (called chlorofluorocarbons or CFCs) were banned. Governments and organizations and industry worked really hard on this and the effects have been great. Now the ozone layer shows signs of being able to repair itself.

Climate change doesn't have anything to do with the ozone layer but it is also going to require us to work together. It is time for us to take it just as seriously and do a great job! Our planet depends on it!