

## 2025 年【科學探究競賽-這樣教我就懂】

大專/社會組 科學文章格式

**文章題目： Understanding Climate Change: Causes, Impacts, and Solutions**

**摘要：** Climate change is a long-term shift in Earth’s climate, mostly caused by human activities like burning fossil fuels and cutting down forests. These actions release gases that trap heat in the atmosphere, making the planet warmer. This leads to serious problems like rising sea levels, stronger storms, and changes in weather. To fight climate change, we need to use clean energy, protect forests, and make more eco-friendly choices.

**文章內容：** ( 限 500 字~1,500 字 )

Climate change is one of the biggest environmental issues our world is facing today. It refers to long-term changes in temperature, weather patterns, and other natural conditions on Earth. While climate change can happen naturally, recent changes are happening much faster because of human activities. Understanding what causes climate change, how it affects the planet, and what we can do to solve it is important—especially for young people who will shape the future.

The main cause of climate change is the increase in greenhouse gases in the atmosphere. These gases—such as carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O)—trap heat from the sun and cause the planet to warm. This is known as the “greenhouse effect.”

One major source of greenhouse gases is the burning of fossil fuels like coal, oil, and gas. We use these fuels to produce electricity, drive cars, and power factories. Another big problem is deforestation. When trees are cut down, they can no longer absorb CO<sub>2</sub> from the air. Farming also adds to the problem, especially livestock farming, which produces a lot of methane, and the use of fertilizers, which releases nitrous oxide.

Industries also release greenhouse gases during the production of things like cement, steel, and chemicals. Altogether, these human activities have greatly increased the amount of heat-trapping gases in our atmosphere.

As the Earth gets warmer, many changes are happening. One of the biggest effects is rising temperatures. Over the past century, the average temperature of the planet has increased by about 1°C. That may not sound like much, but even small changes in temperature can have huge effects on the environment.

Warmer temperatures are causing ice at the poles and in glaciers to melt. This adds more water to the oceans and causes sea levels to rise. If sea levels keep rising, many coastal areas could flood, affecting millions of people who live near the sea.

Climate change also causes more extreme weather. We are seeing stronger hurricanes, longer

droughts, more heatwaves, and heavier rains. These changes can destroy homes, reduce food production, and even lead to health problems. Wildlife is also affected—some animals lose their habitats, and others can't survive in the changing climate.

Fighting climate change will take effort from everyone—governments, businesses, and individuals. One of the best solutions is switching to renewable energy sources like solar, wind, and hydropower. These sources don't produce greenhouse gases and are much better for the environment.

We also need to be more efficient with how we use energy. This means using less electricity, driving fuel-efficient cars, and insulating homes to reduce heating and cooling needs. In farming, using fewer chemical fertilizers and managing livestock better can reduce emissions.

Planting more trees is another powerful solution. Trees absorb carbon dioxide from the air, helping to clean our atmosphere. Protecting forests from being cut down is just as important.

Finally, governments can help by creating laws that reduce pollution and encourage clean energy. International agreements like the Paris Agreement are examples of how countries can work together to fight climate change.

Climate change is a serious problem that affects everyone. It's caused mostly by human actions that release greenhouse gases into the atmosphere. The effects—like rising temperatures, stronger storms, and flooding—are already happening. But there's still hope. By using clean energy, protecting forests, and making smarter choices, we can slow down climate change and protect our planet for future generations.

#### 參考資料

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2. Teen Vogue Staff. (2018). What Is Climate Change? Everything You Need To Know About Global Warming. Teen Vogue.
3. Environmental Literacy Council. Understanding Climate Change: Causes, Effects, and Solutions. The Environmental Literacy Council.

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