

Mathematics Project Competition (2023/24)

數學專題習作比賽 (2023/24)

Information Sheet 資料頁

Category 參賽組別	<input checked="" type="checkbox"/> * A 組：初中習作 (Category A: Junior secondary project) <input type="checkbox"/> * B 組：中一小型習作 (Category B: S1 mini-project)			
Title of Project 專題習作題目	Insight from the latest time shown on the Doomsday Clock			
Name of School	Sha Tin Government Secondary School			
學校名稱	沙田官立中學			
Team members 隊員		Name in English	中文姓名	Class 班別
	1	Chan Seung Him	陳尚謙	1D
	2	Chung Shing Yau	鍾承佑	1D
	3	Ng Tsz Nok	吳梓諾	1D
	4	Ho Sui Tung	何瑞桐	1D
	5	Kwan Yee Ting	關漪婷	1D
	6	Li Wan Yao	李婉瑤	1D

Introduction

Some may have heard of the Doomsday Clock, which is adjusted closer and closer to midnight every year, due to man-made threats (1). As announced on 23 January 2024, the Science and Security Board of the *Bulletin of the Atomic Scientists* leaves the hands of the Doomsday Clock unchanged as 90 seconds to midnight due to ominous trends that continue to point the world toward global catastrophe. ‘Midnight’ indicates the destruction of humanity. With 90 seconds left on the clock this year, it is surely nerve-wracking to human society. The furthest time away from midnight was 17 minutes in 1991! This only proves how us humans are destroying our homes ourselves...

How can we perhaps delay and turn the time backwards? Well, the Doomsday Clock is actually influenced by quite a lot of different factors, with the main factors being nuclear wars, artificial intelligence, and climate change. However, not everyone can change all the three factors. So what can we possibly do as humans in normal society? In particular, extreme climate impacts, like massive wildfires, large-scale flooding, and prolonged heat waves, were seen around the world in 2023. In light of Earth experienced its hottest year on record in 2023, we will make use of the average temperatures of Hong Kong in the past as an example, to make a model for estimating the temperature of future years and to find a possible pattern of the average temperatures in the first part of this project. Then in response to the fact that Antarctic sea ice reached its lowest daily extent since the advent of satellite data, we will prepare an ice block and record the temperature changes on the block, in the room and a place far away from the ice when the ice melts to model corresponding changes on glaciers and Hong Kong when glacier melts.

In this project, we hope to persuade people to pay attention to what’s happening to our planet Earth. It is a stark warning for us to respond urgently and concertedly to halt further warming the world as if today were the most dangerous moment in modern history. We also hope to let people know they can all help to turn back time on the Doomsday Clock, because having hope is the first step towards our goal. The earlier this is accomplished, the lower the amount of human suffering from climate disruption will be.

Conclusion

The above two studies align with the latest results of the Doomsday Clock that it has ever been to striking midnight. It is convincing to draw all of our attention that temperature increases more rapidly as we think. We should take, individually and together, to help reduce major global threats. To make a positive impact on climate change, it is time for all of us, even if we are ordinary people, to look at our daily habits and see if there are small changes we can make in our life to help mitigate, or deal with the effects of, the climate crisis and meet the challenges that the Doomsday Clock is warning us.

References

1. A moment of historic danger: It is *still* 90 seconds to midnight
<https://thebulletin.org/doomsday-clock/>
2. Hong Kong Observatory – Yearly Extract of Climate Information Service
<https://www.hko.gov.hk/en/cis/yearlyExtract.htm>
3. What is linear regression?
<https://www.statisticssolutions.com/free-resources/directory-of-statistical-analyses/what-is-linear-regres>
4. Master Polynomial Regression With Easy-to-Follow Tutorials
<https://www.analyticsvidhya.com/blog/2021/07/all-you-need-to-know-about-polynomial-regression/>
5. The Science of Climate Change
<https://dnr.wisconsin.gov/climatechange/science>
6. Science News
<https://www.sciencedaily.com/releases/2019/02/190212092603.htm>
7. World of Change: Global Temperatures
<https://earthobservatory.nasa.gov/world-of-change/global-temperatures>
8. Hong Kong Observatory

☰ MyObservatory ↻

Local Weather Regional Weather

Tai Wai 📍
14-19°C
14.9°C
80%
Chance of Rain: 60% Light Rain

9 Mar (Sat)

12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00
15°C	14°C	14°C	14°C	14°C	14°C	14°C	14°C
☁	☁	☁	☁	☁	☁	☁	☁
83%	85%	87%	86%	84%	82%	80%	77%

Today's Details
Updated at 2024/03/09 10:50

Local Forecast 9-Day Forecast Extended Outlook

9. Climate Data

<https://en.climate-data.org/asia/china/hong-kong/hong-kong-977986/>