WORKBOOK

1. MAKE A COPY OF THIS WORKBOOK

2. RENAME THE NEW WORKBOOK WITH YOUR NAME(s)
   
   Last name, first name, short project name
Can we prepare for the consequences of Climate Change?

Investigate

- Impact on the environment and where we live (biology)
- Consumption, conservation, natural resources and public goods (biology and chem)
- Urban planning, strategy and infrastructure (physics, individuals and societies)

2 weeks will be given for this project
Assessment Criteria: Summative

Criteria B, C and D
Completion of Individual Milestone workbook and reflections (AtL)

Product:

Tri-Folder Poster

Authentic audience of peers (TBA)
Objectives: STEM Fair

✓ Research a real life situation (Criteria D- problem and solution)

✓ Write a focused scientific research question

✓ Chose a database or simulation (online) which will answer the question

✓ Collect data (5 trials or enough to answer question reliably)

✓ Create tables and process data to find means (average)

✓ Create graphs to display results and find trends
Objectives continued

✓ **Display** printed information that supports the findings of your scientific investigation

✓ **Communicate** the results using report writing format and labeled diagrams

✓ **Explain** and discuss how the use of science and technology can help us solve problems related to climate change

✓ **Present** results to an audience of peers
AtL Objectives

Communication skills
Exchanging thoughts, messages and information effectively through interaction
Use appropriate forms of writing for different purposes and audiences
Use a variety of media to communicate with a range of audiences

Organizational skills
Managing time and tasks effectively
Plan short- and long-term assignments; meet deadlines
Create plans to prepare for summative assessments

Personal growth
Managing state of mind
Perseverance
Demonstrate persistence and perseverance
Resilience
Practise “bouncing back” after adversity, mistakes and failures
Questions to investigate

- **UN Stop disasters**: make changes to towns to reduce damage from
  - Wild fires, Hurricanes, Floods, Tsunamis, Earthquakes

- **Food Production**
  - Diets and nutrition

- **Erosion**: Studying the environment and food webs

- **Chemicals and toxins**: effect on our health

- **Tracking Climate Change**
  - Air quality indexes
1. Research and Topic choice (2-40 minute classes)

Choose **one area** to focus on

**Background information- Find a real life situation**

Find **articles** in scientific publications that explain your real life situation

- Library data bases
  
  https://www.sciencedaily.com/

  https://www.nationalgeographic.com/

  https://www.natgeokids.com/za/category/discover/science/
Simulations can be found at this link

http://dochemistry.weebly.com/simulations.html

Pick one and practice
Summary of real life situation (3 sources, 500-900 words)

- Citations and brief outline of your findings
2. Planning: (40 minutes)

State your research question

List your Variables: IV and DV

Write your hypothesis based on your background knowledge

Describe which database or simulation you will be using to gather data (who made it and for what purpose)
2. Reflection: (20 minutes)

What was the most difficult part of deciding which topic to pick?

Identify one strength and one weakness that you can see in using databases or simulations.
3. Data Collection (3-40 minute periods)

Data charts:

Data Tables:
Place your data charts here
3. Data Collection:

Final Data charts: start to process your data (calculate mean, graph the results)
Create graphs using Excel (paste here)
4. Analysis and Evaluation (1-40 minute class)

**Analysis:**

- List a minimum of 3 things that your graphs and data show.
- Does the data trends support your hypothesis?

**Evaluation:**

- List 2 strengths of your investigation.
- List 3 limitations and give reasonable improvements to these limitations.
5. Conclusion (final week)

Review your Investigation from the start and write the conclusion

Rephrase the purpose
Summarize your method
Summarize your data analysis
Rephrase your hypothesis
Does your data support your hypothesis
List one strength
List one weakness and the improvement that would increase the reliability of your findings
Link back to the original background and discuss the sustainability of tourism on Jeju

Conclusion:
Create a tri-fold poster that includes all the parts of your investigation

Attach a picture of your finished product here
6. Final Reflection (last day)

How were your communication and organization skills used during this project?

Give an example of how you grew personally while researching and answering your question? (perseverance, resilience)