Issue Title: New Zealand's Green Energy
Date: 10 May 2022

Teacher:
Level: All Levels

Achievement Objectives:

- Explore everyday examples of physical phenomenon, such as electricity. (Physical World -L2)
- Explore and describe natural features and resources (Planet Earth and Beyond L2)
- Explore, describe and represent patterns and trends for everyday phenomenon, such as forces, electricity…)For example, identify the effect of forces on the motion of objects; identify and describe everyday examples of sources of energy and energy transformations.(Physical World -L3)
- Understand how people make choices to meet their needs and wants. (SS L2)

Big Question:

- Why is it necessary to make more effective use of natural resources to create renewable energy for the future?
- What form of renewable energy would be most effective? Why?

Learning Intentions (Students will):

- Understand the pros and cons of converting to "alternative energy"
- Understand how the different sources of renewable energy work.

Success Criteria (Students can):

- Share key ideas about pros and cons of converting to "alternative" energy.
- Explain how wind, water and geothermal power are used for renewable energy.

Key competencies (highlight):
Thinking, Relating to others, Understanding Language, Symbols and Text, Managing Self, Participating and Contributing,

Vocabulary: hydropower, fossil fuels, biomass, geothermal, turbine, feasible, renewable energy, fluctuations,

Tuning in: (How to connect with students' current thinking, prior knowledge, misconceptions, interests and wonderings)-
Class discussion – How will cars be powered in 30 years time? Where will your electricity come from? Will there be sufficient natural resources to power NZ for the next generation? (your grandchildren), taking into consideration population growth?
Group Activity:

- Make a wind turbine. Can you make it work? Create a model of the most effective landscape that you would find wind turbines.

Other activities/group research:

- Draw a graph (choose type you think is most appropriate), to illustrate differences in amounts of electricity supplied by different sources in a year.
- Draw a graph (choose type you think is most appropriate), to illustrate differences in amounts of electricity supplied since 1975.
- Make a poster to illustrate and explain different forms of renewable energy.
- Debate: Fossil fuels are more reliable than renewable energy.

Making conclusions:

- Have you come to a conclusion as to whether it's worth changing to renewable energy?

Assessment

Formative

- **Engagement with topic**
- **Collaboration**
- **Questions to investigate**

***Summative*:**

- Poster
- Debate
- Model
- Graph

Materials/Resources:

www.in2edu.com

Power alternatives	Year 7 : Connected No. 03 : 2010 : 24-29
Power from the Sun	Year 3 : JJ No. 57 : 2018 : 2-8
Solar Power in Tokelau	JJ No. 57 : 2018 : 10-17
Driving Us into the Future	Year 8 : CN L4 : 2016 : 5
Harnessing the wind	Year 7 : Connected No. 03 : 2010 : 2-9
Where shall we put the turbine?	Year 7 : Connected No. 03 : 2010 : 16-23
A new life for old machines	Connected No. 3 : 2007 : 28-32