

Tackling the Technology Gender Gap Together: Investigating Renewables - Thunkable App creation

Level - Third Level

Subject area/s – Computing Science and Science



Level - S2/3 3rd Level

Subject area/s – Technologies- Computing Science and Science 3rd Level (SCN 3-04b)

Experiences and Outcomes –

SCN 3-04b “By investigating renewable energy sources and taking part in practical activities to harness them, I can discuss their benefits and potential problems”

TCH 3-15a "I can select appropriate development tools to design, build, evaluate and refine computing solutions based on requirements"

Benchmarks Technologists – Computing Science (3-15a)

- 1) Writes code which receives and responds to real world inputs (in a visual language)
- 2) Can find and correct errors in program logic
- 3) Designs and build a program using a visual language combining constructs and using multiple variables

Duration of time – 6 x 50/55min

Computing Science Concepts and Approaches –

Decomposition – planning of individual screens and linking between them

Debugging – testing their app on multiple phones of different sizes

Resources required

- A computer with Google Chrome
- www.thunkable.com
- www.manymo.com
- An Android tablet/phone (optional)
- Printed app planning sheets (provided)
- Presentation included in this pack and video tutorial available on Glow or on [YouTube](https://www.youtube.com)

Overview of learning

In this activity, students are encouraged to design and build a working app for mobiles to convey what they've learned about different renewable technologies and the benefits and drawbacks of each. Using the video tutorial provided, students are shown the steps involved in creating information screens and entering information and images. They can test their apps on Android devices throughout the development process or use an online emulator if no Android device is available (instructions provided below for how to do this).

This activity can be completed as a different way of recording evidence of pupil learning. After completing activities to harness renewable energy this can be introduced. Materials are provided to cover the basics of design and programming in Thunkable, but the emphasis should be on the pupils expressing their own creativity. Their finished apps can be tested on any Android device

Pupil Objectives

- I can plan and design the individual screens to show the benefits and drawbacks of multiple types of renewable energy
- I can build and program an app
- I can debug and test my app

Introduction

Explanation that students will be making an app that lists the benefits and drawbacks of at least three different types. Students should go to Thunkable.com and sign in using an account of their choice.

Show some example screens, such as those provided in the presentation as a guide.



Main Activity

Step 1 – slide 3 & 4

Students should be asked to think about the screens that they'll have to plan. Students should have an "information" page for each of the renewable technologies they want to cover as well as a benefits and drawbacks page. Planning sheets are provided. Note, they should also develop a basic plan of what they'll be writing about in their app.

Step 2 – slide 5

A full video tutorial on how to structure and program their app is provided for the students to work through. You can download the MP4 file to your network or view on YouTube at: <https://youtu.be/inAB7jX64eE>

Teachers should leave **slide 6** on the screen to remind students of what is expected. Students should be encouraged to test out their app at regular intervals by downloading the file to their Android phones/tablets. Note an iOS (Apple) version of Thunkable is due to be released soon. If your students or your school do not have Android phones, pupils can sign up for a free account at <https://www.manymo.com> where they can install their app on an online emulator. Note they can only have 10 installs per month.

Experimentation is very much encouraged when working with Thunkable and learning should be student-led.

Plenary

The plenary can take the form of a “show and tell” where students’ apps can be passed around for others to see. Screenshots can be taken as evidence of passing the outcome

Differentiation

Some students may struggle with laying out the app, therefore an .aia file is provided where students can just customise the photographs and content. Example coding has been provided in the "Solar_HIW" (How it works) screen. This can be replicated in other screens

For those students who are working well through setting up the app structure, they can be encouraged to explore other cool coding features within Thunkable. They should be encouraged to experiment. For example, doing the following:

- Adding a username/password screen that authenticates them into the app
- Adding a sound recorder component to record teacher feedback

Assessment Opportunities

The final produced result can be used to assess SCN 3-04b

Benchmark 1 can be assessed by having working buttons

Benchmark 2 can be assessed by observing debugging throughout the activity

Benchmark 3 can be assessed by having a working, finished product