



MICROMAKER

EDUCATION

ZEP Island Starter Kit Guide



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What is ZEP Island?

ZEP ISLAND

ZEP Island is an educational game based on building a model sustainable community for “ZEPs” - ‘Zero Emissions People’.

The science is clear – significantly reduce carbon emissions into the atmosphere or face adverse consequences such as more extreme weather, or worse. To curb the effects of mankind on the planet, each one of us has to strive to become as close to ‘zero CO₂ emissions’ as possible.

The core challenge is to model sustainable scenarios for supporting life, and the aim of the game is to maximise the number ZEPs you can sustainably support using an A2 or A3 space. The more water, food, energy and shelter players learn to provide, the more ZEPs can live on the island.

1. Introduction

Understand the ideas, scoring and assessment criteria for ZEP Island.

2. Plan

Develop a plan.

3. Activate the Starter Kit

Program a micro:bit plant watering system to work.

4. Design the Concept

Sketch lots of ideas for your ZEP Island.

5. Design Water System

Produce clean, fresh water to sustain a community on your island.

6. Design Food System

Grow enough food to sustain a community on your island.

7. Design Energy System

Produce enough energy to sustain a community on your island.

8. Design Shelter

Build weather-proof living spaces for your ZEPs.

9. Integrate Your Designs

Produce a clear plan for bringing the different ZEP Island systems together.

10. Build

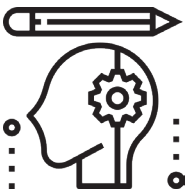
Turn your designs into a working model.

11. Refine

Apply finishes to your ZEP Island to professionalise its presentation.





12. Present

Communicate the story of your design and development thinking.



ZEP ISLAND

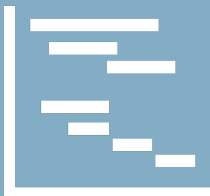
The goal is to produce as many units of fresh water, food, energy and shelter as possible. For each unit produced, your team gets a point towards a ZEP who can be added to your island.

	 Food	 Water	 Energy	 Shelter
Unit	Grams	Litre	Wh	cm ²
Produced	1	1	100	10
ZEPs	1	1	1	1

Your ZEP Island will be as good as you plan it to be, so you will need the following:

Gantt Chart

Work out what tasks you need to complete and when you need to complete them by.



Design Portfolio

A slide presentation with:

- Sketches
- Detailed drawings
- Photos
- Videos





Activate the Starter Kit

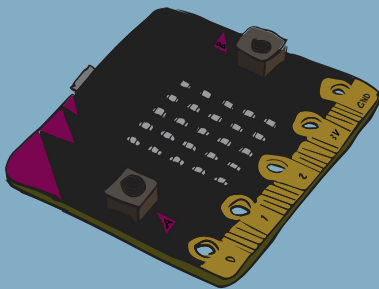
1. Explore the kit Contents

6V Solar Cell Panel
3.7V, Lithium Polymer (LiPo)
Battery
USB Battery Shield
BBC micro:bit
MicroMaker Innovation Board
Moisture Sensor

3V Aquarium Pump
Tubing
USB type-A to USB Micro-B Cable
Power Cable
Power and Signal Cable
ZEPs – 1:50 scale

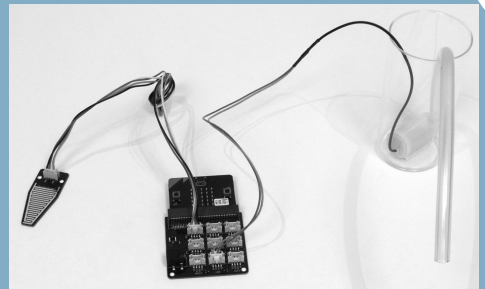
2. Program the micro:bit

Information available in ZEP Island school.

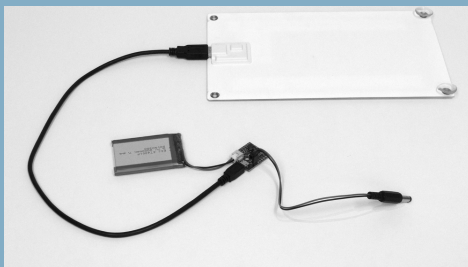


4. Water System

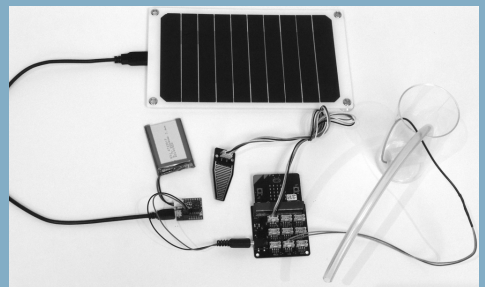
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3. Build the Power System

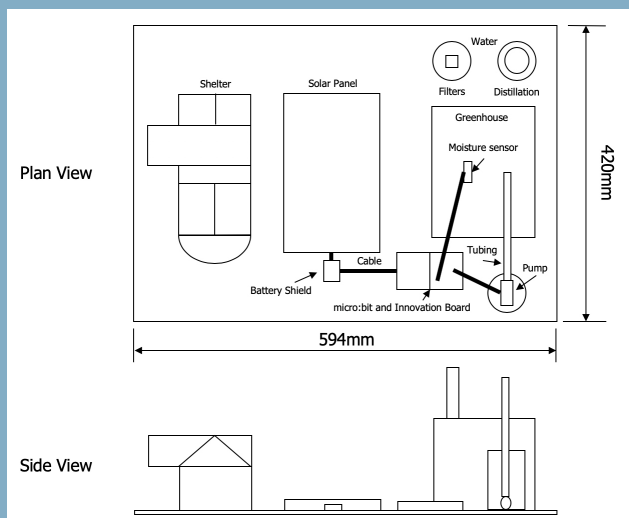


5. Connect Both Systems Together

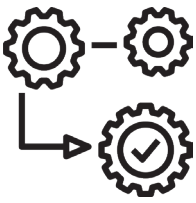


ZEP ISLAND

Draw ideas to work out how you will build your ZEP Island. Start with a mindmap, and work towards a detailed working drawing.



Subsystem Design



Explore different way in which you can produce clean, fresh water and design a system to sustain your island community.



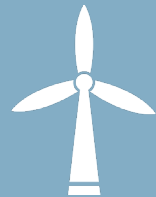
Explore different ways in which you can grow food in a small space, and design a system to sustain your island community.



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Add new ways of creating clean energy to your power system.



Design and build shelter that is sustainable and provides the most floorspace with the least land.





ZEP ISLAND

When building your ZEP Island, there are no limits to what tools you can use – from hand tools, machines, to 3d printers.



Follow our safety guide at ZEP Island School.

- Work under the supervision of an instructor, teacher, parent or other responsible adult.
- Do not plug anything into the mains unless it has been designed to do so.
- If you are working with a craft knife, make sure your fingers are always behind the blade.



What matters the most is how your thinking developed. Your final step in the ZEP Island project is to present that story.

Ideally, you should have:

- The finished working model.
- A poster.
- A PowerPoint design portfolio.

You will need to display your ZEP Island, so that your class colleagues, teachers, and other people can critique your work.

In your presentation you should cover the following:

- What were the main questions you came up with?
- What predictions did you make?
- What plans did you produce?
- How did you process and analyse data?
- How did you communicate and evaluate as you progressed?
- What problems did you have to solve?
- What new skills did you need to develop?
- What are your main learnings?



ZEP ISLAND

Log on to ZEP Island School to obtain detailed instructions, lesson plans and resources:

ZEP Island for Students - <http://bit.ly/3bSgXXw>

ZEP Island for Teachers - <http://bit.ly/39LhKaA>

Clearly write your full name, email address and password here:

Team Member 1.

Name: _____

Email: _____

PW: _____

Team Member 2.

Name: _____

Email: _____

PW: _____

Team Member 3.

Name: _____

Email: _____

PW: _____

ZEP Island for Students



ZEP Island for Teachers





I. Enroll in ZEP Island School

The name you put here will be put on your certificate of completion.

Use an email account that you have easy access to.

Make sure you make a note of your password on page 10 – you'll need it to log in.

Tick this box.

Not necessary.

If you agree to our Privacy Policy and Terms of Use then check the box, click “Sign Up”, and continue to the next stage.


Enroll in ZEP Island

Full Name
ZEP Student1

Email Address
ZEPStudent1@zepisland.com

Password
.....

Confirm Password
.....

I'm not a robot  reCAPTCHA
Privacy - Terms

I agree to receive instructional and promotional emails

I agree to the [Terms of Use & Privacy Policy](#)

Sign Up

[Log In with a School Account](#)





ZEP ISLAND

2. Continue to the Course

Thanks for enrolling in this course!

Your order ID: **40356547**

You will shortly receive an email confirmation at zepstudent1@zepisland.com.

[Continue to Course >](#)

{ Learn-tech.io }

Category: All ▾ Author: All ▾

ZEP Island

ZEP Island

0% COMPLETE

Mike Lloyd

3. Begin the first lecture - “Using This Course”

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Course Curriculum

Your Instructor

Course Curriculum

[Start next lecture >](#) Using This Course

Introduction & Teachers' Guide

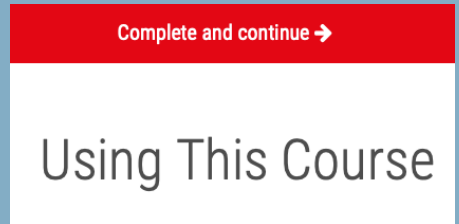
- Using This Course [Start](#)
- Notices
- What is ZEP Island?
- Course and Classroom Organisation
- ZEP Island Full Course
- ZEP Island Short Course
- UN Sustainable Development Goals and Curriculum Mapping

Plan

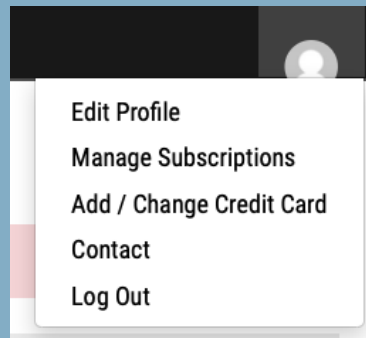
- Climate Change Primer
- ZEP Island
- Planning and Design Requirements
- Reference Design
- Plan Checkpoint
- Discussion Points and Blog



4. Make sure you “Complete and continue” to progress to the next lecture.



5. Log out when finished.



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6. Return to the course anytime:
go to <https://www.learn-tech.courses>



ZEP Island Collaboration



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Icons source, Flaticon.

Safety

Please:

- Work under the supervision of an instructor, teacher, parent or other responsible adult.
- Do not plug anything into the mains unless it has been designed to do so, and only if you are certain that the equipment is in good working order.
- If you are working with a craft knife, make sure your fingers are always behind the blade.

Code of Conduct

We expect every ZEP Island project participant to demonstrate the following characteristics:

- Willingness to work in a team and negotiate, co-operate, find consensus.
- A systematic approach to tasks.
- Self-assessment and honest self-evaluation.
- Awareness of the potential dangers of misusing materials and tools, in terms of personal health and safety and that of others.
- Sensitivity for the effects of design and technological activity on the environment.

ZEP Island School

Before signing up to ZEP Island School, please ensure you agree to:

Our Privacy Policy - <http://bit.ly/2V150Zr>

Our Terms of Use - <http://bit.ly/32emOSn>

Please note - MicroMaker Education is unable to provide support with lost logon information. If logon details are lost, users can re-register for the course with a different email address. Follow the instructions on pages 13-14.

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Booklet Version 1.0

support@micromaker.co.uk