

# GIRLS FOR GREEN ENERGY

offline Resource

Suitable for ages 10+; younger players may join older teams



# TABLE OF CONTENTS

- **Table of Contents**..... 2
- **Acknowledgements**..... 3
- **Introduction**..... 4
- **Say Hello to E4G (the main character in game)**..... 4
- **How to complete the pack**..... 5
- **Guidance for leaders**..... 8
  - Brave Space - how to facilitate it..... 9
  - Get prepared..... 9
- **Staying Safe Online**..... 10
- **Glossary**..... 10
- **Key Objectives**..... 11
- **Activity Guide**..... 12
  - Location 1: The Dome..... 14
  - Location 2: The Amazon..... 16
  - Location 3: Research Centre..... 18
  - Location 4: City of Energy..... 20
  - Location 5: Offshore..... 22
  - Location 6: The Village ..... 24
  - Location 7: Green Hydrogen..... 26
  - Location 8: Back to the Future..... 28
- **Final Reflection & Thoughts**..... 30
- **Appendix**..... 32
  - Learning and Engagement Assessment..... 32
  - Location 1: The Dome (Energy Cards)..... 34
  - Location 2: Rainforest for All (Character Profiles)..... 35
  - Location 5: Wind Energy Fishbowl (Prompt Cards)..... 36
  - Location 6: Energy Efficient Transport (Energy Consumption Table)..... 37
  - Location 7: Women in Green Energy (Character Profiles)..... 38
  - Location 8: Pledge for the Future (Green Heart)..... 39

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# INTRODUCTION

The Girls for Green Energy activity pack is a chance for girls to reflect on what they have learnt while completing the [Planet Rescuers](#) game. It will enable them to use and develop the skills gained from the game to explore how they can take action to create a more sustainable future for all.

Participants will travel across the world by following a fun interactive map. For example, they will visit the Amazon Rainforest, a Research Centre and the City of Energy. There are eight different lessons in the game and one final activity to reflect on everything they have learnt. Once they have completed a lesson in the game, they then complete the corresponding offline activity to learn and reflect on the lesson. The game takes approximately six hours to complete (each session lasts around 45 minutes) and the corresponding offline activities can take up to 3.5 hours.

Not all the offline activities are compulsory but we recommend participants complete at least three. There is one final compulsory activity that allows them to bring together everything they have learnt throughout the activity pack and Planet Rescuers game.

Girls for Green Energy is a part of a project within the WAGGGS STEM Change Makers programme and there will be even more resources developed in 2025 for Girl Guides and Girl Scouts. Please keep an eye out for updates. You can learn more at [Discovering STEM | Campfire](#)

## SAY HELLO TO E4G (Main character in game)

E4G is a remarkable robot who guides players through the adventure, ensuring they are fully immersed in the Planet Rescuers game. E4G embodies the essence of curiosity and wisdom, inspiring young minds to explore, learn, and grow.

E4G and several activities from the game were designed by children and young people from La Ciudad Escuela Muchachos (CEMU), or Children's City School, in Spain, working in collaboration with Siemens Energy. The school has a deep commitment to environmental education, with over 3,000 square metres of lush green areas, gardens, orchards, and a farm school. It also uses digital technologies for efficient management of resources, such as irrigation, lighting, and waste.

The school's approach to education, the diversity of student backgrounds, the role students play in the life of the school, and its strong commitment to sustainability are the reasons Siemens Energy developed activities with CEMU, starting with a review of the video game with students aged 12-13.

# HOW TO COMPLETE THE PACK

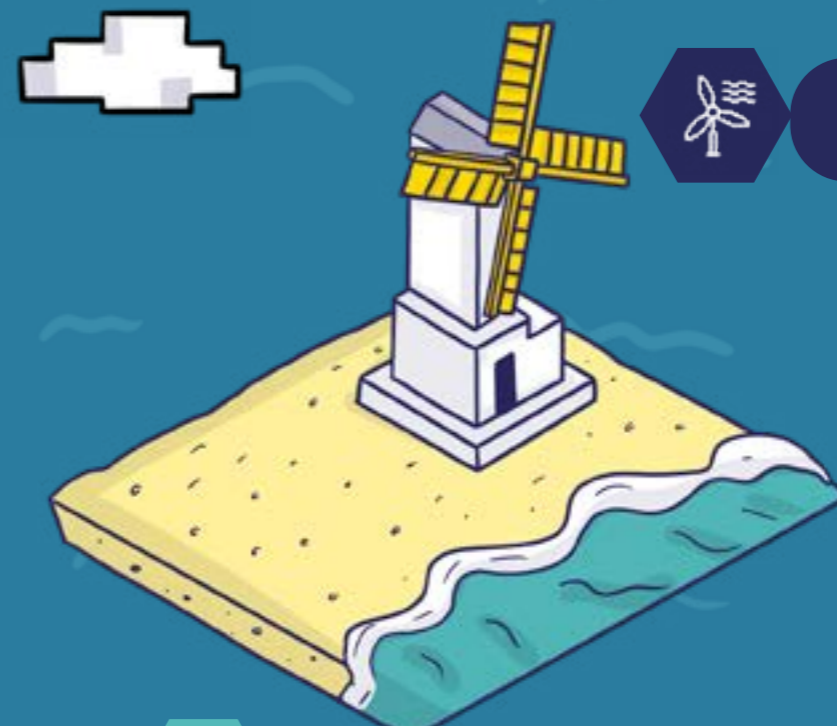
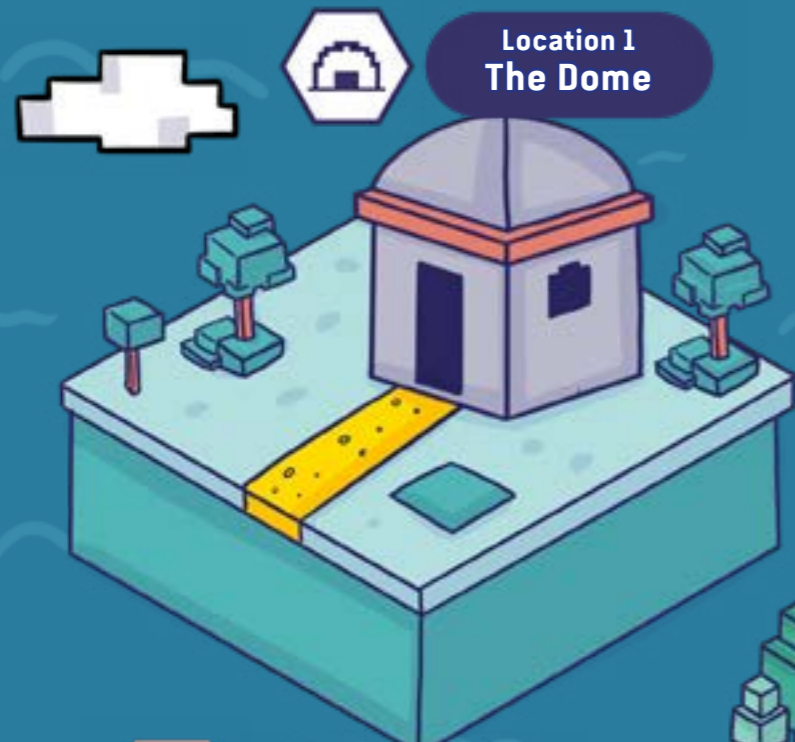
Participants will play the game first and once they have completed a section, they will complete the corresponding activity. For example, when they have played 'The Dome', they will travel to Location 1 and do the offline activity.

Participants will travel across the map to each of the 8 locations, which are all linked to an activity.

|   |                                       |   |  |
|---|---------------------------------------|---|--|
|    | <b>Location 1<br/>The Dome</b>        |    | <b>Location 5<br/>Offshore</b>           |
|    | <b>Location 2<br/>The Amazon</b>      |    | <b>Location 6<br/>The Village</b>        |
|   | <b>Location 3<br/>Research Center</b> |   | <b>Location 7<br/>Green Hydrogen</b>     |
|  | <b>Location 4<br/>City of Energy</b>  |  | <b>Location 8<br/>Back to the Future</b> |

They can track their learning journey using this map.

After completing each activity, participants will collect tokens (from recycled items). Once they have completed all eight activities, as a group they will create their green hero or 'Planet Rescuer' using these tokens. Leaders can then share this green hero on social media as their mascot using the hashtag **#GirlsForGreenEnergy #PlanetRescuers**.



# GUIDANCE FOR LEADERS

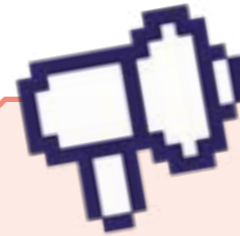


Please take time to read, reflect, and actively embed this as a conscious practice when facilitating activities.

It is important to create a youth-focused, engaging and brave space. This **brave space** should be a supportive and safe environment where every participant feels confident to learn, develop and challenge themselves. It should be:

- **Inclusive:** Everyone can meaningfully participate and feels an equal part of the space.
- **Empowering:** Everyone feels confident to be themselves
- **Safe:** Everyone is respected and free from discrimination and harm

We encourage leaders and facilitators to reflect on the key objectives in this activity pack and use the Learning and Engagement Assessment (appendix), which will support you in evaluating your participants' learning and development. Alternatively, you can access it using this QR code.



## Brave Space - how to facilitate it

- As a group, decide on some clear guidelines to encourage openness and respect, agreeing on how the group will uphold them.
- Tell the group that your space is safe for all those who wish to participate.
- Be aware of what is happening in your local community and the wider world that may be impacting your group members. Ensure your approach allows all voices to be heard.
- Be ready and willing to adapt the resource to your local context and your group's experiences.
- Avoid making generalisations when speaking about issues.
- Stress the importance of confidentiality.
- Create a plan to ensure group members feel supported to speak up or seek support if they do not feel safe. Communicate this clearly to your group.



## Get Prepared

- Encourage and support group members to lead when planning and facilitating activities where appropriate.
- Allow changes to accommodate the interests and needs of all group members.
- Ensure that you use the [non-formal education method](#) to create an experience that is relevant, exciting, accessible, and learner-led.
- Consider working in smaller groups for some activities.
- Plan time during and at the end of the activities for discussion and reflection.



# STAYING SAFE ONLINE

It is important to make sure that participants are safe when completing these activities. When you are bringing Girl Guiding and Girl Scouting online, you should follow the appropriate policies and procedures of your Association. It is important that anything you post or share online is aligned to your Association's values, code of conduct, promise and law.



Here are some helpful tips:

- When posting content online, be careful and always review your content before posting.
- Participants should NEVER use their real name (especially not their full-name) when participating in the Planet Rescuers game.
- It is important that there is adult supervision when playing the Planet Rescuers game. At minimum, there should be two adults but check your Association's guidelines to ensure there is enough support. Find out more about [online safety](#).

## GLOSSARY

Below is a list of key terminology used throughout the activity pack. These simple definitions will help to support your facilitation of activities and ensure participants fully understand the terms used.

| Key Word         | Definition   |
|------------------|--|
| Climate Change   | A change in the typical weather for a region over a long period of time. This could be a change in the amount of rainfall or extreme high and low temperatures. Often this term is linked to global warming. |
| Deforestation    | The clearing and removal of forests by humans for various purposes such as crops and animal grazing.   |
| Energy efficient | When something uses less energy but still maintains the same performance, such as energy-efficient light bulbs.  |








| Key Word         | Definition  |
|------------------|---|
| Global warming   | The increase in the Earth's average surface temperature. This is caused by greenhouse gases such as carbon dioxide (CO2) being released into the atmosphere.  |
| Law/s            | A series of rules and regulations created by a particular country or community (often governments) to control the actions of its people. There are usually penalties or punishments when laws are broken. |
| Overexploitation | The over-use of a resource until there is little or none left.  |
| Policy           | Guidelines used by governments and organisations that aim to guide decision-making. There are usually no penalties if the policy or guidelines are not followed.  |
| Renewable energy | Energy that comes from an unlimited source that is not reduced after use, such as solar power.  |
| Sustainable      | When something will continue for a long time with little or no damage to the environment.   |

## KEY OBJECTIVES

1. Reflect on the learning from the Siemens Energy Planet Rescuer Minecraft game.
2. Identify the issues of energy and sustainability by planning their 'Take Action' project to bring positive change in their communities.
3. Encourage girls to explore more about Science, Technology, Engineering and Mathematics (STEM) and sustainability in their education and future career.
4. Practise a sustainable way of life, driven by scientific skills and mindsets.
5. Empower girls and young people to take the lead for a sustainable world, driven by the active application of STEM knowledge, skills and mindsets.










# ACTIVITY GUIDE

Use the icons below to guide you when completing an activity.

|   |   |
|---|---|
| <b>Activity name</b><br>     | Name of the Activity  |
| <b>Outcome</b><br>           | What the activity tries to achieve and what the Girl Guides and Girl Scouts will learn and experience   |
| <b>Time</b><br>              | How long it takes to complete the activity  |
| <b>Preparation</b><br>       | Suggested materials and environment for the activity  |
| <b>What happens</b><br>    | How to run the activity.  |
| <b>Take it further</b><br> | Additional information or extra steps for participants who have some more time to explore, so they can challenge themselves and take the experience to the next level |
| <b>E4G Tips</b><br>        | Suggestions on how to adapt the activity for younger or older members, as well as other tips on how to make activities more engaging                                  |

Please take time to look at the activities in advance as some may need additional preparation. This pack can be completed in around 3.5 hours. All activities are flexible and can be completed indoors or outdoors.

To receive the Girls for Green Energy badge and certificate of completion, you must complete every reflective offline activity alongside the Planet Rescuers Game.

| Game Location  | Corresponding Activity Name | Time    | Key Objectives |
|--|-----------------------------|---------|----------------|
| 1. The Dome<br>             | Energy Card Game            | 15 mins | 1, 3, 5        |
| 2. The Amazon<br>           | Rainforest for All          | 20 mins | 1, 2           |
| 3. Research Center<br>      | Climate Protection Promises | 30 mins | 1, 2, 4        |
| 4. City of Energy<br>      | Hydropower Prototype        | 30 mins | 1, 3, 5        |
| 5. Offshore<br>           | Wind Energy Fishbowl        | 20 mins | 1, 2           |
| 6. The Village<br>        | Energy Efficient Transport  | 30 mins | 1, 3, 4, 5     |
| 7. Green Hydrogen<br>     | Women in Green Energy       | 30 mins | 1, 3, 5        |
| 8. Back to the Future<br> | Pledge to the Future        | 30 mins | 1, 2, 3, 5     |
| Final Reflection<br>      | Green Hero                  | 20 mins | 1, 2, 3, 5     |




## Location 1 The Dome

Participants learn how energy works and its relevance in our society



### ENERGY CARD GAME (COMPULSORY)

 15 mins



#### Outcome

- Learn about different energy types, their definitions and their role within society.
- Participants feel confident and understand the role of different energy types.



#### Preparation

- Printed or written energy cards (appendix) - need one per group



#### What happens

1. Get into groups of 2-3 people.
2. Give each group a selection of cards and ask them to group together the cards by matching their definition, energy types, and their role in society.
3. Once they have matched up their cards, bring the group back together and discuss their definition for each energy type. During this discussion, reflect on the following questions:
  - Why do you think this definition is linked to \_\_\_\_\_ energy type?
  - How often have you used this \_\_\_\_\_ energy?
  - Have you seen this form of \_\_\_\_\_ energy in your local area?
  - In your local community, how many people have access to renewable energy?
  - How can we make renewable energy more accessible?

### Take it Further

In your meeting place, take time to walk around the space and make a list of all the different energy types you can see around you. Are these energy types renewable? If not, what can be done to make your space more energy efficient and sustainable (check the Glossary for definitions).



### E4G TIPS

If girls are struggling to connect the cards, ask them to think about the key words that appear in the definition as well as images as they link directly to the terminology. If they need additional help, they could look at the answers for five seconds.



**Congratulations you have completed the activity. Collect your token!**





## Location 2 The Amazon

A large area near a village is being deforested, affecting the inhabitants' lives.  
The mission is to help them stop the overexploitation of resources.



### RAINFOREST FOR ALL (OPTIONAL)

 20 mins



#### Outcome

- Learn and reflect about the Amazon and the impact on the environment of resources being overused.
- Use drama to understand the impact of this on the lives of local people.



#### Preparation

- Post-it notes or paper with roles written on them (local villager, animal rights activist, cattle rancher, journalist)
- Character profiles (appendix)
- Additional costumes (not required but can be used)



#### What happens

1. Introduce the 4 different characters. If participants feel comfortable they can read out the character profiles to the group. Alternatively, the facilitator can read these aloud.
2. Get into groups of 4. Each person should be assigned one of the following roles:
  - Local villager
  - Animal rights activist
  - Cattle rancher
  - Journalist
3. Ask them to create a two-minute drama showing the point of view and aims of their characters. Encourage them to improvise and get creative!
4. Bring everyone back together and get each group to share their drama if they feel comfortable doing this.
5. Discuss how becoming their character made them feel. *Did they find it hard to put themselves in the situation of someone else? What are their thoughts on overexploitation of resources after this activity? What do they think can be done to offer better support to those most affected?*

### Take it Further

Reflect on similar experiences within your own community or country. What can you do to create change and offer support to those most vulnerable?

Raise awareness about these issues through the eyes of a journalist by creating a headline or article that highlights the issue and those most affected.

### E4G TIPS



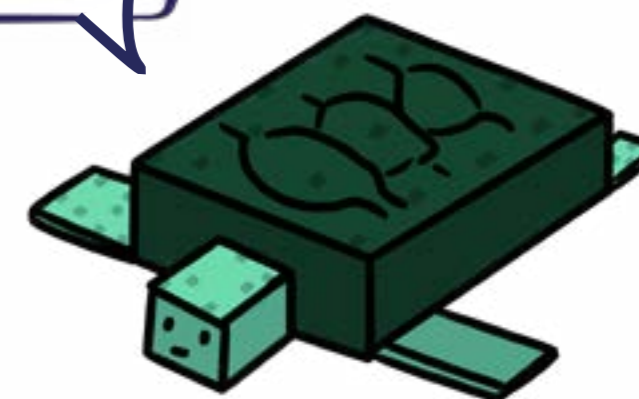
Learn more about the real life stories of people impacted by reading this article on [deforestation in the Amazon](#).

Watch this video about [Amazon deforestation and climate change](#).

Watch this child-friendly video that highlights the issues of deforestation through animation: [There's a monster in my kitchen](#)



**Congratulations you have completed the activity. Collect your token!**





## Location 3 Research Center

Participants will search for the lost Paris Agreement, necessary to fight climate change by promoting the use of renewable energy to reduce carbon emissions.



### CLIMATE PROTECTION PROMISES (COMPULSORY)

 20 mins



#### Outcome

- Learn more about the different environmental laws introduced by governments around the world (including the 2015 Paris Agreement and Conference of the Parties, COP).
- Reflect on different countries' policy and actions since then. Are they keeping their promises to take a stand against climate change?
- Take action to evaluate your own country's environmental policies.



#### Preparation

Post-it notes or paper saying different country names



#### What happens

1. Introduce the idea of 'policies' and 'laws' about the environment. Read aloud the following statement:  
*'Environmental policy is the vision and thinking behind how we want the world to be more sustainable. Through different international events (like COP), countries will have certain policies and laws introduced to them (eg. The Paris Agreement). The countries involved will then decide if they want to introduce this policy in their own country, while laws are the framework that holds people and countries accountable through legal repercussions. It is important to look at policy and laws when thinking about the environment and how we can encourage change.'*
2. Introduce COP. Read aloud the following statement:  
*'COP stands for Conference of Parties, often referred to as the Climate Change Conference. It happens every year. This is one of the biggest environmental events that happens globally, where different countries collaborate to introduce different policies and laws regarding the environment. At one of these events - COP21, the Paris Agreement was signed. However, only countries that are part of the United Nations participate and sometimes countries with bigger*

3. Introduce the Paris Agreement. Read aloud the following statement:  
*'The 2015 Paris Agreement was signed by 195 countries with the aim to strengthen countries' response to Climate Change. Its objectives are:*
  1. *To limit the global temperature rise to 2°C globally this century to 2°C and improve efforts to limit the temperature increase to 1.5°C*
  2. *To support countries' and local communities' ability to adapt to the impacts of climate change*
  3. *To reduce greenhouse emissions**The agreement encouraged action, collaboration and accountability.'*
4. Get into groups of up to 4 people.
5. Ask groups to discuss whether your country has taken any action to tackle climate change. If there are no current policies or laws, what action should be taken?
6. Groups should then identify an issue that is impacting the environment in their country. Look at the ways in which they can take action to change this.



#### Take it Further

In 2024, some young WAGGGS members attended COP29. Find out more about [WAGGGS' COP29 attendees](#), and check WAGGGS social media pages for more information.

In small groups, ask girls to design and create a new policy (such as no more trees to be cut down). They should add three key points stating how this policy can be achieved in their country, and when it should be achieved. Get the participants to all come back together and share their new policies. Are there any similarities or differences?

Create a poster about their new policy or write a speech about why it is important to their country and local area.



#### E4G TIPS

Check out this accessible explanation of the Paris Agreement created by UNICEF to offer some additional context and support when discussing this topic: [Paris Agreement for young people | UNICEF](#)

In Malaysia, a local guide group submitted their ideas about climate change to the local government. Read the [Malaysian Guides' submission](#). This shows how your input can shape government policy.



**Congratulations you have completed the activity. Collect your token!**



## Location 4 City of Energy

In this activity, girls will provide solutions to help the city's people repair some energy outages. To do so, they must help them build and improve the renewable energy systems, such as wind, hydroelectric, and photovoltaic energy.



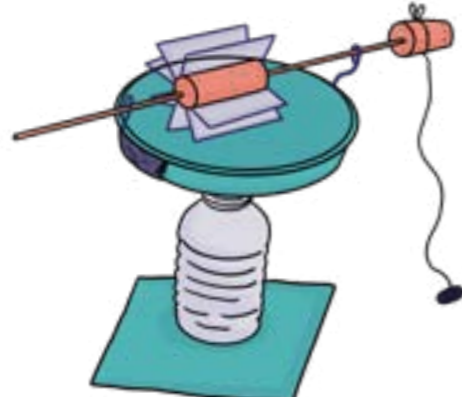
### HYDROPOWER PROTOTYPE (OPTIONAL)

30 mins



#### Outcome

- Learn more about hydropower
- Create a miniature hydropower model



#### Preparation

If possible, think about using reusable or recycled materials:

- Plastic bottle
- 2 Corks
- 1 Wooden Skewer
- Funnel
- Sewing Thread
- Pen
- Ruler
- Scissors
- Small Object to lift (an eraser)
- Paper Clips
- Tape

This activity should be done in a sink



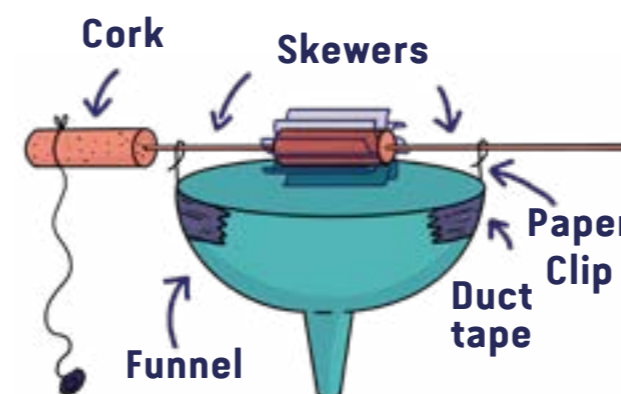
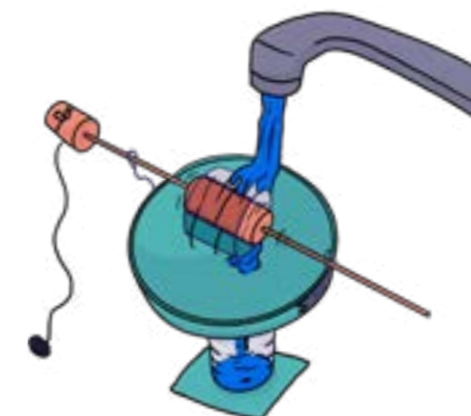
#### What happens

1. Begin by explaining what hydropower is. You can use this definition: *Hydropower, sometimes also known as hydroelectricity, uses moving water to create power. It involves placing a turbine (rotating object) in the water to cause movement. The energy this creates will drive a generator, producing power, often electrical.*
2. Using a pen and ruler, measure and mark a few dots 6cm above the bottom of the bottle. Connect the dots and cut off the bottom using the scissors. Be careful when doing this.
3. Measure an 8cm section from the cut part of the bottle, so you have a cylindrical section of plastic.
4. Take the cylindrical section of plastic and cut four 2cm-wide strips from this using scissors. Cut these in half so that you now have 8 curved pieces measuring 4cm by 2cm. They should look like this:



5. Draw 8 evenly spaced lines lengthways on the cork, and make slits along each line using scissors. Insert the plastic pieces and make sure that the plastic pieces all curve in the same direction.
6. Unfold two paper clips and flex one end of each to create a small loop. Using tape, attach the paper clips to either side of the funnel.
7. Cut the skewer in half. Poke each half into one end of the wheel cork. Guide the other ends through the paperclip loops. Make sure these loops are loose enough to allow the wheel to turn freely.
8. Insert one of the skewers into the other cork and tie the thread tightly around it. Tie the loose end of the thread to a weight or other small household object.

9. You have now completed your water wheel! Place this under a gentle stream of water in your sink. Slowly run water over the wheel so that the plastic pieces of the cork catch the falling water. This will turn it into mechanical energy. It should look like this:



10. Congratulations you have just generated hydropower using water from your tap! Gravity pulls the water down towards the earth, and the weight of the water exerts torque (a rotational force) that allows it to move!
11. Final Reflection: Hydropower  
Discuss: In your local area, have you seen any hydropower dams? Are they commonly used as a form of electricity and power in your country? If yes, why? If no, why not?



#### Take it Further

- Suggest participants create a series of water wheels and connect them together. Once the water has left one 'water wheel' it can pass onto another.
- Ask them to create and design a poster explaining why hydropower should be used more in your local area. They should think about its role as a sustainable power source.
- Research online or visit a hydropower dam in person.
- Ask them to find out what animals build dams. (Answer: beavers) They could then look into why these animals do this and how we can protect their environment.

#### E4G TIPS

Be careful when using scissors cutting the plastic as it can be quite sharp! Facilitators and older participants can offer support with this. For more help, check out this [link](#)



**Congratulations you have completed the activity. Collect your token!**



# Location 5 Offshore

In this adventure, girls will participate in the construction of wind turbines following the steps of the building process.



## ACTIVITY NAME WIND ENERGY FISHBOWL (OPTIONAL)

20 mins

|  |   |
|--|---|
| <h3>Outcome</h3> <ul style="list-style-type: none"> <li>Learn about the positives and negatives of wind energy, and why some people oppose it</li> </ul> | <h3>Preparation</h3> <ul style="list-style-type: none"> <li>Two cards (For / Against)</li> <li>Prompt ideas (Appendix)</li> <li>Enough chairs for the group, or you can sit on the floor</li> </ul> |
|--|---|

### What happens

- Place chairs in a circle and put three chairs in the centre of the room with two of them facing one another. These are the 'fishbowl chairs'. Label one of these chairs, FOR and the other, AGAINST. The third chair should be placed in between.
- Begin by explaining what wind energy is. You can use this definition: *'Wind energy converts the movement (or kinetic energy) of wind into mechanical energy, and electric energy. Often this is harnessed using wind-turbines.'*
- Separate into two groups:
  - Group 1: FOR
  - Group 2: AGAINST
- Give each group their prompt cards to encourage dialogue and conversation about the topic. You can add to this list if you want.
- Bring the two groups back together and get the participants to take a seat. They should sit on the FOR and AGAINST sides. There should be one person from each group on the two chairs in the centre.
- Share the 'fishbowl' rules: *Two people should sit on the chairs. One chair is to be kept empty all the time. This is available for anyone who wants to join the conversation. When someone sits on the empty chair, someone else (typically the one who has sat longer or is less involved in the discussion) has to leave, leaving one chair empty. The other participants who are not sitting on the fishbowl chairs cannot get involved in the conversation. They are listeners, if they want to speak, they must first sit in the empty chair.*

- Read out the following statement: *'Your local government has decided they want to build 100 wind turbines in your local area. You must tell us why you are FOR or AGAINST this new plan.'*
- Remind everyone that they can only speak if they are sitting on the fishbowl chairs. Encourage everyone to have a turn in the fishbowl.
- The discussion can continue until you feel everyone has had the opportunity to speak up.
- Once the discussion has ended, everyone should vote on their preferred option (either by writing it down or raising their hands). Ask them if their opinion has changed or if they feel more passionate than ever. Count the votes and discuss the results.

**Take it Further**

Check if there are any wind turbines in the local area. Do the girls know where they are? Has there been any local debate about wind turbines in the area?

### E4G TIPS

You could ask participants to do some research around the topic before the activity, so their fishbowl debate is more relevant to their local area.

**Congratulations you have completed the activity. Collect your token!**





## Location 6 The Village

After learning about energy production, it is time to solve problems on transportation and efficiency.



### ENERGY-EFFICIENT TRANSPORT (OPTIONAL)

20 mins



#### Outcome

- Explore and reflect on local transport methods.
- How can renewable forms of energy solve problems linked to transport and efficiency?



#### Preparation

- Blank Paper and Pen (1 per pair)
- Timer
- Pens
- Post-It notes (or paper)
- Large flip chart paper
- Energy Consumption Table (Appendix)



#### What happens

1. Introduce the term 'energy efficient'. You can use this definition: *When something uses less energy but still maintains the same performance, for example, energy-efficient light bulbs.*
2. Ask girls to get into pairs and give each pair a piece of paper and pen. Ask them to write down all the different types of transport they can think of in one minute.
3. Head outside into your local area and spend one minute observing all the different forms of transport. *Ensure girls maintain a safe distance from transport and are aware of their surroundings when doing this.*
4. When back inside, each pair should create a tier list ranking the different forms of travel they saw from MOST energy efficient to LEAST. They should use their post-it notes to visualise it.
5. Discuss their choices. Why did they choose to put it in that position? Do the other pairs agree or disagree?
6. Work together as a big group to reorganise the lists from most energy efficient to least using the Energy Consumption Table.
7. Reflect on their original lists. Did they need to make any changes? Did they learn anything surprising?
8. Discuss how everyone travels to your meeting place. How energy efficient are their transport methods? Can they make any changes to make their journey more energy



#### Take it Further

Calculate how much energy is consumed when travelling to and from their meeting place. You can use the Energy Consumption Table to support this. Discuss ways in which we can make the LEAST energy efficient transport methods more energy efficient.

#### E4G TIPS



Make sure that you have parental consent before leaving the usual meeting place to go outside and maintain necessary safeguarding.

If you can't out into the local area, you could prepare a set of photos of your local area and print them out or share them on screen.

Instead of writing down the modes of transport, you could create actions for each form of transport and move to locations in the room to create a physical version of the list.



**Congratulations you have completed the activity. Collect your token!**





## Location 7 Green Hydrogen

A new adventure that looks at green hydrogen and how to produce it thanks to electricity generated by wind energy. They will visit an offshore wind turbine and see how it works from the inside, while taking control to undertake electrolysis to generate green hydrogen.



### WOMEN IN GREEN ENERGY (OPTIONAL)

30 mins



#### Outcome

- Explore the various non-playable characters (NPCs) included in the video game. These are inspiring women who work in STEM (science, technology, engineering and mathematics).
- Discuss the various careers related to renewable energy.
- Invite local women who work in this field to offer career guidance and share the opportunities they have had.



#### Preparation

- Research and invite local women who currently work in STEM (and green energy) to your meeting before starting this activity.
- Character profile cards (Appendix)



#### What happens

1. Read the following to participants: *Globally, over one million women work in science, technology, engineering and mathematics (STEM). In Asia, two thirds of the 13 million renewable energy jobs are in Asia, yet women represent only 30% of the global workforce in this sector according to [Institution of Engineering and Technology statistics](#). Women have made so many brilliant scientific and technological discoveries over the years but often they aren't seen or represented. It is really important to learn more about the diverse range of STEM careers. This activity is all about highlighting the amazing women who work in green energy!*
2. In the video game, several iconic women were mentioned including: Chien-Shiung Wu, Katherine Blurr Blodget, Maria Telkes and Dorothy M. Simon. Take a look at the character profiles to learn more about them.
3. Think about women involved in STEM they might know locally, or those who have made discoveries in your country. (For example, in Malaysia in 2017, Nur Adlyka Ainul Annuar [discovered a supermassive black hole](#) during her PhD at only 27 years old.)

4. Discuss their thoughts on future careers in STEM. Is this something they have thought about and want to do in the future? Are they aware of all the different career opportunities? Brainstorm the different careers they can think of that are involved in STEM (eg. microbiologist, engineer, mathematician, doctor).
5. Invite a local woman from your community or local area who works within the STEM industry to speak at your unit. Give the participants the chance to ask questions about their career, opportunities and their personal experiences.



#### Take it Further

Discuss why they think STEM education and careers are typically male dominated? (Often this is due to [gender stereotypes and gender bias](#).) How can we change this?



#### E4G TIPS

If you are unable to find a local woman in STEM to attend your meeting, try watching this video and sharing it with participants: [What it takes to be a Woman in STEM | Fatima AlKaabi | TEDxGEMSNewMillenniumSchool](#)



**Congratulations you have completed the activity. Collect your token!**




2300

## Location 8 Back to the Future

Now that they have completed the seven missions successfully, they must share their knowledge with everyone to avoid repeating the mistakes of the past.



### PLEDGE TO THE FUTURE (COMPULSORY)

 30 mins



#### Outcome

- Reflect on the knowledge they have gained from the video game and the activities, as well as their own lived experiences in their local community.
- Make a pledge to themselves and their local community on how they will create a sustainable and green future for all.



#### Preparation

- Green Heart Paper Outline (Appendix)
- Pens



#### What happens

1. Everyone should share one thing that they have learnt as part of the video game and activity pack.
2. Reflect on these ideas and get everyone to write down a personal pledge on their 'green heart'. This should be something they are going to do to create change at home, with friends and family and in their local community.
3. Once these are complete, get each participant to share with the group (if they feel comfortable). Take pictures and share their green hearts for the future on social media with the hashtag #GirlsforGreenEnergy.
4. Using these pledge ideas, get participants to write down a collective group pledge. They can use ideas from the green hearts or create a new pledge. Encourage them to think about how they can take action on a bigger scale (beyond their family, friends and local community).
5. Once they have decided on the pledge, choose an action to tackle it as a group. For example:
  - Writing an article to a local newspaper or online blog
  - Creating a poster/leaflet/video highlighting the problem
  - Organising a special event to raise funds related to an organisation or group that is working towards a specific goal related to your problem.
  - Writing to local or national environmental ministries
  - Meeting with a local elected representative or community leader to discuss the problem
6. Take time to create a group plan setting out how they will be taking action to complete this task.

### Take it Further

Find out about local charities or organisations that are tackling the issue girls identified. Contact them and collaborate to encourage change and take action.

Revisit these pledges in the future (1-2 years later). Has anything changed? This can be done through personal reflections on their individual pledge or reviewing it as a group. Were they able to maintain their pledge? Is there anything more they can do to take action?



### E4G TIPS

Participants' pledges can be big or small, but it is important they choose something that matters to them!



**Congratulations you have completed the activity. Collect your token!**





# FINAL REFLECTION AND THOUGHTS

Throughout their time completing the Planet Rescuers game and the Girls for Green Energy activities girls should have collected some different tokens. Using these tokens, participants will create a 'Green Hero' or 'Planet Rescuer' mascot!



## GREEN HERO (COMPULSORY)

30 mins



### Outcome

- Reflect on what they have learnt throughout the activity pack
- Get creative and design a superhero that will rescue the planet!



### Preparation

- Recycled materials (plastic bottles, cardboard etc.)
- Tape
- Scissors
- Glue
- Rope
- Pens
- Post-it notes or paper



### What happens

1. Gather the tokens they have collected after completing each activity. These could be a plastic bottle, a cardboard box or another recycled item.
2. Work as a group to create a 'superhero' who is a planet rescuer, just like them! The superhero can be big or small, what is important is that they use the resources around to get creative.
3. Once they have created their green hero, using post-it notes or paper, they should write or draw messages of sustainability - things that the green hero would encourage people around the world to do. For example, use more energy-efficient modes of transport (ride a bike!) or empower more women to work in STEM.
4. Take some photos and share them on social media using the hashtag #GirlsForGreenEnergy #PlanetRescuers or your MOs own hashtag.

## Take it Further

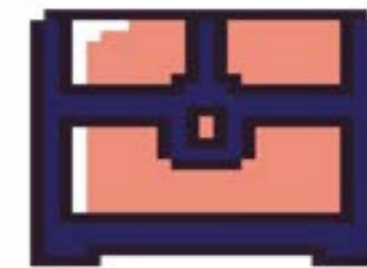
Create a video or write a story about how their green hero will be promoting sustainability around the world.



## E4G TIPS

If you have a large group, try separating participants into smaller groups to work on different body parts, such as head, arms, legs, body.

**Congratulations you have completed the Girls for Green Energy Resource!**



**#GirlsForGreenEnergy**

**#PlanetRescuers**

# APPENDIX

## Learning and Engagement Assessment

Thank you for facilitating this session!

The purpose of this assessment is to evaluate the overall progress of the girls and young people in relation to the programmes' objectives. Please note that this evaluation is intended to provide insight into the group's collective development, not the progress of individual participants. Your observations will help us understand the group's progress toward the programme objectives and guide future sessions.

As the session progresses, you can quickly fill out the data sheet during key moments of the discussion and activities. This will help capture participants' progress, involvement, and understanding at various points.

- **Session Date:** \_\_\_\_\_
- **Leader Name:** \_\_\_\_\_
- **Country/ Member Organisation (MO) Name:** \_\_\_\_\_
- **Number of Participants:** \_\_\_\_\_
- **Number of Groups:** \_\_\_\_\_

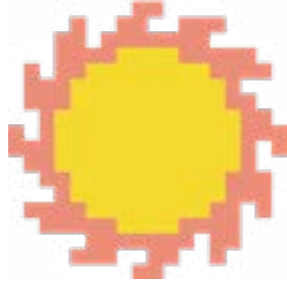
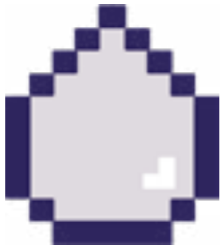
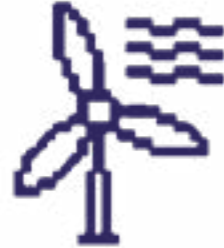


## Key Learning Objectives (to track during the session)

| Objective  | Indicator to Track  | Scale/Rating  | Comments/Notes (if any)   |
|--|---|---|---|
| 1. <b>Reflect on learning from the Planet Rescuers Game</b>                        | Participants demonstrate an understanding of energy and sustainability issues explored in the game. | <input type="checkbox"/> No evidence<br><input type="checkbox"/> Limited<br><input type="checkbox"/> Moderate<br><input type="checkbox"/> Strong                  | Example: Understanding of resource management, challenges faced in the game, solutions applied. |
| 2. <b>Identify energy/sustainability issues &amp; plan a 'Take Action' project</b> | Participants can identify a real-world energy/sustainability issue to address in their community.   | <input type="checkbox"/> No idea<br><input type="checkbox"/> Some idea<br><input type="checkbox"/> Clear idea<br><input type="checkbox"/> Very clear & actionable | Example: Project idea for waste reduction, renewable energy promotion, etc.                     |

| Objective   | Indicator to Track   | Scale/Rating  | Comments/Notes (if any)  |
|---|--|---|--|
| 3. <b>Develop interest in STEM/sustainability for future education/career</b> | Participants show interest in STEM and sustainability topics for the future.   | <input type="checkbox"/> No interest<br><input type="checkbox"/> Some interest<br><input type="checkbox"/> Clear interest<br><input type="checkbox"/> Strong interest | Example: Expresses interest in exploring STEM careers, taking courses related to sustainability. |
| 4. <b>Practise a sustainable lifestyle</b>                                    | Participants mention or plan to adopt a sustainable practice in daily life (e.g., reducing energy consumption, recycling, etc.). | <input type="checkbox"/> No<br><input type="checkbox"/> Some<br><input type="checkbox"/> Plans to implement<br><input type="checkbox"/> Already implementing          | Example: Action to reduce plastic waste, conserve energy at home, etc.                           |
| 5. <b>Empower girls and young people to take the lead for sustainability</b>  | Participants mention or demonstrate leadership skills for driving sustainability in their community.                             | <input type="checkbox"/> No<br><input type="checkbox"/> Some<br><input type="checkbox"/> Ready to lead<br><input type="checkbox"/> Already leading                    | Example: Plans to lead a community cleanup or raise awareness about climate change.              |

- **Session Overview** (This section to be filled out at the end of session or right after the session)
- **Percentage of participants actively engaged:** \_\_\_\_\_
- **Percentage of participants with completed 'Take Action' Project Plan:** \_\_\_\_\_%
- **Number of activities completed during the session:** \_\_\_\_\_
- **Name of the completed activities:** \_\_\_\_\_
- **Most common sustainability issues identified:** (e.g., waste reduction, water conservation, renewable energy) \_\_\_\_\_
- **Notable leadership ideas/actions proposed by participants:** \_\_\_\_\_
- **Other observations/notes by the leader:** ( Examples might include, but not limited to, participation engagement, challenges faced by the participants, group dynamics, progress in activities, individual development or leadership development, feedback on methods and effectiveness of activities, suggestions for enhancing future sessions, etc) \_\_\_\_\_

## LOCATION 1: THE DOME (ENERGY CARDS)


|                |   |  |
|----------------|---|--|
| Solar Power    |    | This is the conversion of sun rays into electricity using panels often placed on rooftops or on ground level.  |
| Hydro Power    |    | This uses water in motion to create power. It involves placing a turbine in the body of water and turning this into energy that will drive a generator, producing power, often electrical. |
| Wind Power     |   | This uses the movement of air (wind) to create energy when it comes in contact with turbines.  |
| Hydrogen Power |  | This is an environmentally friendly alternative to fossil fuels. It is extracted from natural gas and combined with oxygen to generate energy that can power vehicles and other machinery. |
| Nuclear Power  |  | This form of power is created when the nucleus (central part) of an atom is divided or joined to another nucleus through reactions. It can have a negative impact on the environment.      |

## LOCATION 2: RAINFOREST FOR ALL (CHARACTER PROFILES)




**Animal Rights Activist**

They want to protect animals at risk of going extinct in the Amazon Rainforest (eg. Jaguar, Ugari Monkey, River Dolphin etc.)



**Cattle Rancher**

They want farmland to support their cattle and make an income. They need trees to be removed to make more space for farming.



**Journalist**




They have travelled to the Amazon Rainforest to understand the issue of deforestation and overexploitation of resources. Their role is to encourage a discussion and dialogue between other roles. *Why do they feel this way? What can be done to change this? Is it possible to allow everyone's goals to be achieved?*

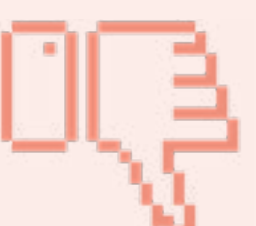




**Local Villager**








Their village is at risk of being destroyed and they are struggling to find food to support their community.

## LOCATION 5: WIND ENERGY FISHBOWL (PROMPT CARDS)

|   |  |
|---|--|
| <p>FOR</p>   | <p>It is a renewable energy source - wind is clean and does not deplete over time like fossil fuels.</p>   |
| <p>FOR</p>   | <p>No pollution or toxic waste is produced, unlike coal, gas or nuclear power.</p>   |
| <p>FOR</p>  | <p>Wind turbines are low cost. Once they are installed, the cost of maintaining and operating them is low in comparison to other energy sources.</p> |

|  |  |
|--|--|
| <p>AGAINST</p>  | <p>Noise and appearance concerns. Some people may find wind turbines to be visually unappealing and the noises from blades can be disruptive in residential areas.</p> |
| <p>AGAINST</p>  | <p>Impact on wildlife. Wind turbines can pose a risk to birds and bats in particular who may be killed if they fly into the blades.</p>                                |
| <p>AGAINST</p>  | <p>Space requirements. Wind farms require large areas of land which may conflict with other land uses such as agriculture or conservation.</p>                         |

## LOCATION 6: ENERGY EFFICIENT TRANSPORT (ENERGY CONSUMPTION TABLE)

| Transport Type   | How much CO2 (in kg) is produced per 10 kilometres?<br>(CO2 data source) | How many people use this form of transport? |
|--|--|---|
| <p>Walking</p>    | 0  | 1   |
| <p>Bike</p>       | 0  | 1   |
| <p>Motorbike</p>  | 1.13 kg  | 1-2   |
| <p>Car</p>      | 1.97 kg  | 4-5   |
| <p>Bus</p>      | 1.03 kg  | 40  |
| <p>Train</p>    | 0.37 kg  | 100+  |
| <p>Plane</p>    | 1.46 kg  | 250+  |

## LOCATION 7: WOMEN IN GREEN ENERGY (CHARACTER PROFILES)

Members Organisations (MOs) can add in other women who have worked in STEM here:



**Chien Shiung-Wu**

She was a Chinese-American scientist who made significant contributions in nuclear energy and particle physics.

*Did you know?* She had several nicknames including the 'Queen of Nuclear Research' and 'First Lady of Physics'



**Katherine Blurr Blodget**

She was an American chemist and physicist, renowned for her invention of 'invisible' or non-reflective glass.

*Did you know?* She was the first woman to be awarded a PhD in Physics from the University of Cambridge in 1926.



**Dorothy Martin Simon**

She was an American chemist known for her development of polymers and aerospace combustion.

*Did you know?* She made important improvements to rocket engine designs and heat shield construction.



**Maria Telkes**

She was a Hungarian-American inventor and biophysicist who worked on solar energy technology.

*Did you know?* During WW2, she created a solar water distillation device (to create pure water from sea water) which helped to save the lives of soldiers stranded at sea.

Picture

Name:

Short Biography:

Did you know? (Interesting fact)

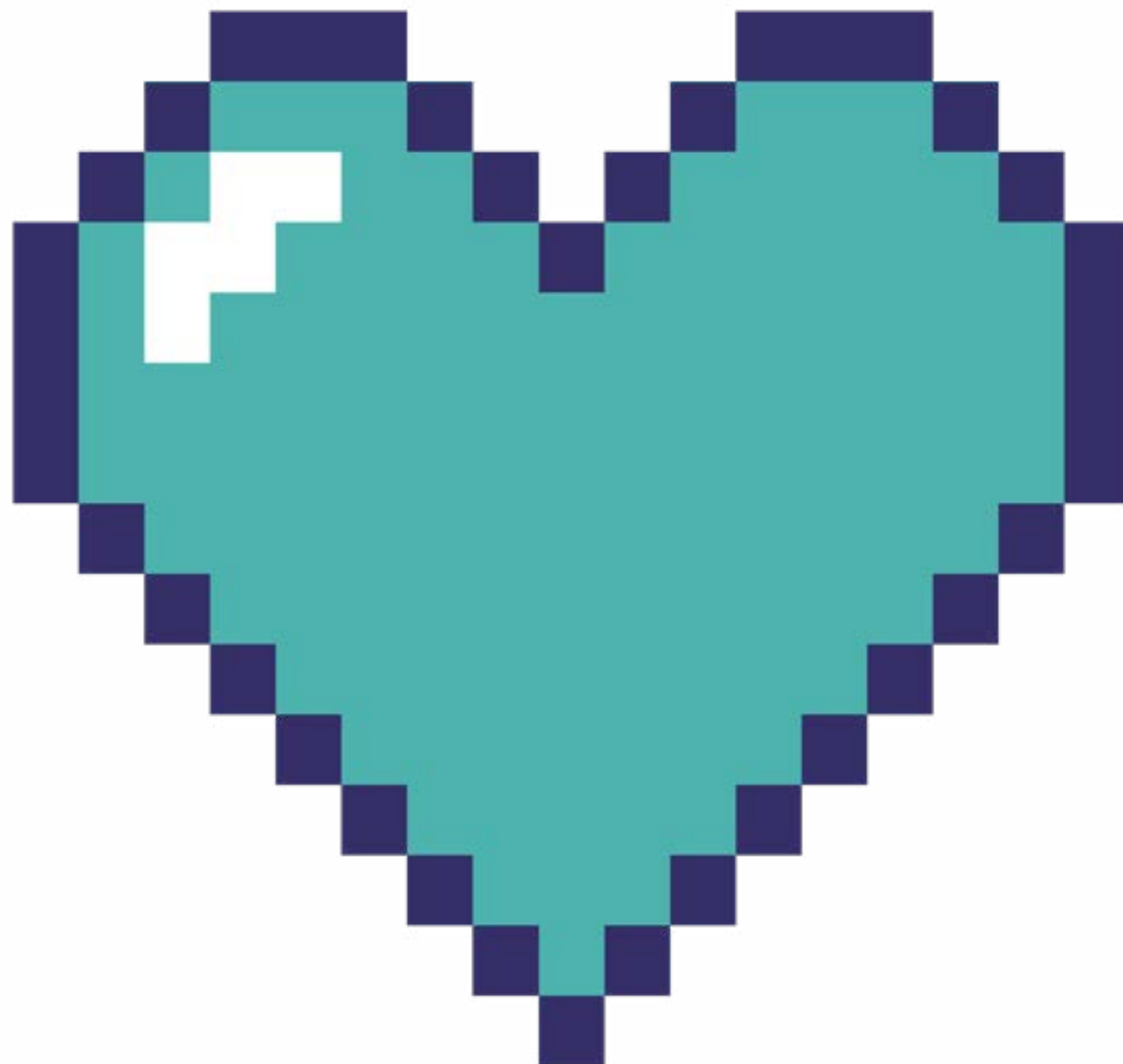
Picture

Name:

Short Biography:

Did you know? (Interesting fact)

## LOCATION 8: PLEDGE FOR THE FUTURE (GREEN HEART)





WORLD ASSOCIATION  
OF GIRL GUIDES  
AND GIRL SCOUTS

SIEMENS  
ENERGY

**Girls for Green Energy aims to ignite an interest and offer new perspectives on sustainability by learning through gaming and the application of STEM subject matter.**

*"Our goal is for girls to feel empowered and passionate to take the lead in building a sustainable world driven by STEM knowledge, skills and mindsets." - Candela Gonzalez, Chair, World Board, WAGGGS*

*"Today's energy transformation hinges on innovation. It's not just about meeting rising demand; it's about ensuring a sustainable future. Let us empower women to seize the job opportunities that will shape this new era." - Melanie Forbrick, Head of Energy4Good, Siemens Energy's societal engagement programme*

    @wagggsworld

