

Ground Source Heat Pump Association Webinar Series 2020

# The Importance of Education within the ground source Industry

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Can the Ground Source Heat  
Pump industry be the vehicle for  
education for all to help to  
preserve the planet?



“There are two educations. One should teach us how to make a living and the other how to live.”

James Truslow Adams 1878 - 1949

“The main hope of a nation lies in the proper education of its youth.”

Erasmus 1466 - 1536



“Education is the most powerful weapon which you can use to change the world.”

Nelson Mandela 1918 - 2013



“It is time to end the pointless nonsensical gulf that’s been fixed for more than 100 years between the so-called academic and so-called practical side of education. Everything is ultimately a skill.”

It is crucial the next generation learns from the mistakes of the last. The planet is broken...



And we must fix it.



## **‘Our Earth - Use It; Don’t Abuse It.’**

**Aimed at teaching about the importance of using the earth as a renewable energy source – and not abusing it using non-renewable energy sources.**

Key Stage 1 Year 2

Key Stage 2 Year 5

Key Stage 3 Year 9

Key Stage 4 / GCSE

Higher Education

Specialist Areas



## **Citizenship**

- Pupils learn about themselves as developing individuals and as members of their communities
- Pupils are taught to realise that people and other living things have needs, and that they have responsibilities to meet them
- Pupils are taught what harms their local, natural and built environments and about some of the ways people look after them
- Pupils take part in discussions ..... such as topics of .....global concern
- Pupils consider social dilemmas that they come across..... such as simple environmental issues
- Pupils will be taught how to make simple choices that improve their health & wellbeing
- The ways in which citizens work together to improve their communities
- The different ways in which a citizen can contribute to the improvement of his or her community

## **Geography**

- The change in climate
- How human & physical processes interact to influence and change landscapes
- Environments and the Climate
- How human activity relies on effective functioning of natural systems
- The distribution of natural resources
- How environments can change and that this can sometimes pose dangers to living things

## **Science 2**

Sc2/1.4 Identifying & Classifying & Sc2/1.6 Gathering & recording data to help in answering questions

Sc2/2.3b Finding out about and describe basic needs ... of humans, for survival (Water, Food & Air)

## **Science 3**

Materials, their Properties & The Earth

Scientific and Technological Development in Everyday Life

Reversible and Irreversible Changes

Benefits and Drawbacks of the Use of Fossil Fuels

Earth is a source of limited resources

Formation and Use of rocks in Renewable Energy

## **Science 4**

Energy, Forces & Space

The Sustainable Earth

Organisms are affected by environment, including the accumulation of toxic materials

Earth is a source of limited resources.

# Energy

- Energy changes in a system involving heating, doing work using forces, or doing work using an electric current: calculating the stored energies and energy changes involved
- Power as the rate of transfer of energy
- Conservation of energy in a closed system, dissipation
- Calculating energy efficiency for any energy transfers
- Renewable and non-renewable energy sources used on Earth, changes in how these are used

## Long Term Plan Year 2

### Making Choices with Energy

- Week/Lesson 1** Where does energy come from? Including food
- Week/Lesson 2** How we use and mis-use energy? – Including food
- Week/Lesson 3** Our sun
- Week/Lesson 4** Our air
- Week/Lesson 5** Our heat
- Week/Lesson 6** Making Choices – including Who Wants to be a Millionaire Quiz

## Long Term Plan Year 5

Natural Resources, Renewable and Non-Renewable Energy, Sustainability

**Week/Lesson 1** What is energy used for?

**Week/Lesson 2** Where does energy come from?

**Week/Lesson 3** Introduction to carbon footprint

**Week/Lesson 4** Introduction to air quality, climate change and global warming

**Week/Lesson 5** What are green technologies?

**Week/Lesson 6** Are renewable energies one of the solutions to climate change and global warming?

## Long Term Plan Year Upper Key Stage 2

**Week 1** What is ground source heating? What and where are Britain's natural resources?

**Week 2** How are natural resources used to produce electricity?

**Week 3** Identify how clean and natural resources produce the energy we use in everyday life

**Week 4** Identify what ground source heating is, where the heat can be sourced and how heat pumps work

**Week 5** Compare the global effects of using oil v's ground source heat pumps

**Week 6** Visit to Centre for Alternative Technology, Machynlleth or another facility

## Long Term Plan Year 9

Natural Resources, Renewable and Non-Renewable Energy, Sustainability

**Week/Lesson 1** Types of energy, how energy use effects air quality and human health

**Week/Lesson 2** Carbon Zero – what does it mean?

**Week/Lesson 3** Carbon Zero and Me – My Carbon Footprint

**Week/Lesson 4** Decarbonisation of heat

**Week/Lesson 5** Heat pumps as the future for providing heating & cooling

**Week/Lesson 6** Renewable energy and industry

## Long Term Plan Year 10 / 11

Natural Resources, Renewable and Non-Renewable Energy, Sustainability

**Weeks 1 – 6** What is ground source heating?

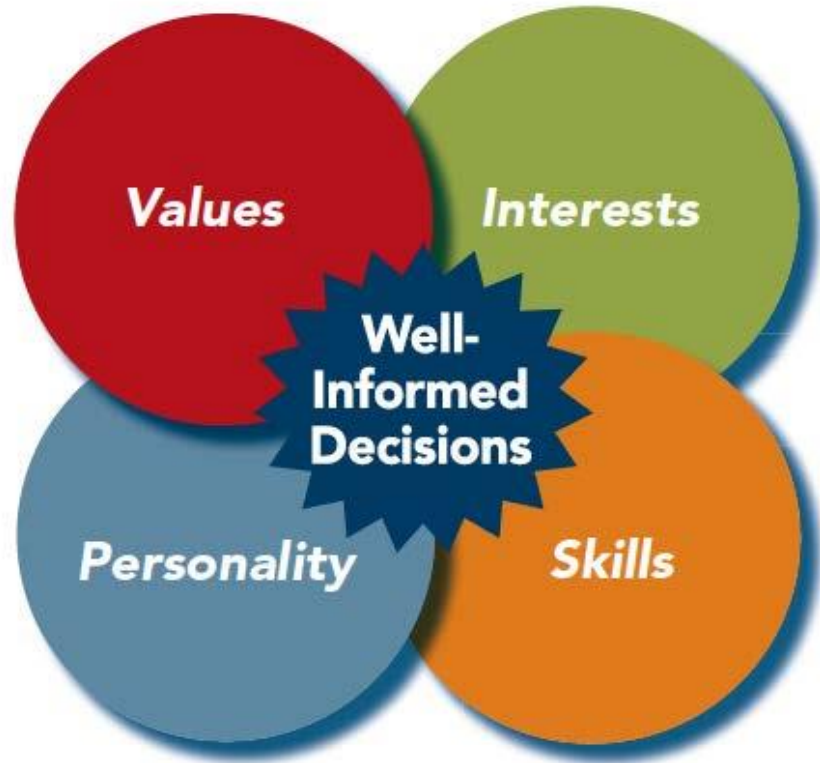
**Weeks 7 – 12** Pre-installation preparation

**Weeks 13 – 18** On-site installation

**Weeks 19 – 24** Post-installation and practical assessment



# Careers & Industry



## Understanding

# Careers and Industry Headings (in alphabetical order)

After Care

Design & Consultancy

Education

Installation

Manufacture and Supply

[www.gshp.org.uk](http://www.gshp.org.uk)

**GSHPA** 

GROUND SOURCE HEAT PUMP ASSOCIATION

# Careers and Industry

Local and National Management

Product Research

Regulation & Compliance

Sales

[www.gshp.org.uk](http://www.gshp.org.uk)

# Increasing Career Opportunities

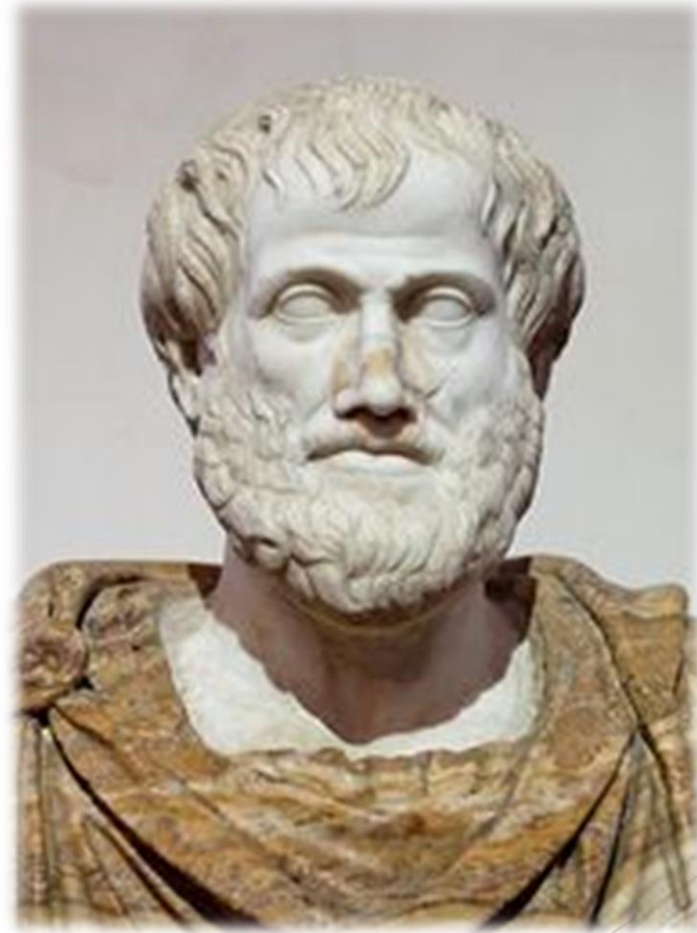
Why do colleges often go for the quick and easy route of gas?

Heat pumps industry training programme being compiled.

# Is Education Important for the Future of the Planet?

“Give me a child until the age of 7, and I will show you the man.”

Aristotle 384 – 322BC



# BUT ... How Can We Get There?



**WHO  
CARES?**



Teachers must apply their education and acquired skills to safeguard pupils.



Schools and teachers have a duty to take or exercise reasonable care to protect students from risks of harm that are 'reasonably foreseeable.'

# Climate Change And Renewable Energy Sustainability



**And**  
**Climate Change**  
**Renewable**  
**Energy**  
**Sustainability**

**Renewable**  
**And**  
**Climate Change**  
**Energy**  
**Sustainability**

# **CARES**

**Sustainability**  
**Climate Change**  
**And**  
**Renewable**  
**Energy**

**Climate Change**  
**And**  
**Renewable**  
**Sustainability**  
**Energy**

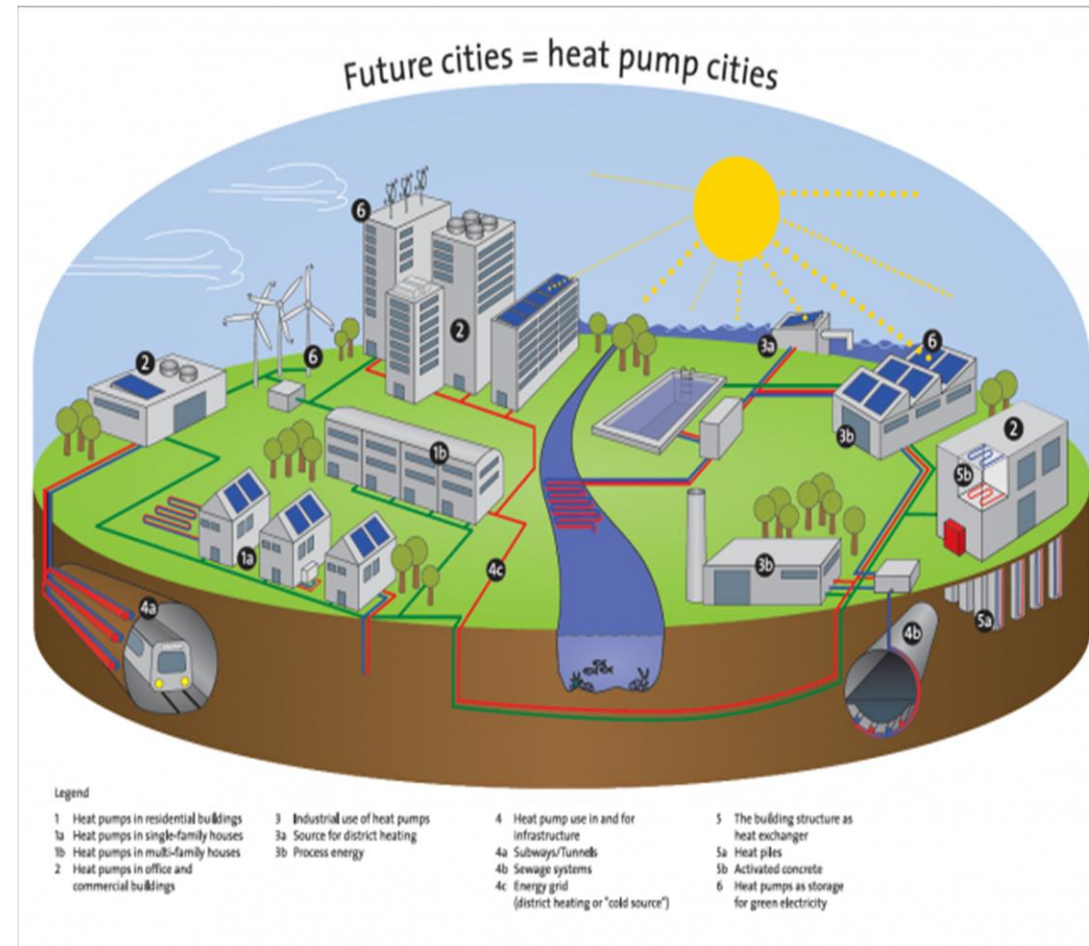
# Can the Ground Source Heat Pump Industry be the vehicle for education for all to help to preserve the planet?

“The trick is to raise the standard of living of the world without increasing our impact on that world; that may sound impossible, but there are ways in which we can do this.

Move to **renewable** energy and run our world on the eternal energies of nature — solar, wind, water, and geothermal energy.”

*David Attenborough 7<sup>th</sup> October 2020*

The future world as I see it.



<https://twitter.com/GSHPAssociation/status/1326113088878354432?cn=ZmxleGlibGVfcmVjcw%3D%3D&refsrc=email>



<https://www.theguardian.com/environment/video/2015/sep/16/david-attenborough-supports-clean-energy-plan-inspired-by-apollo-mission-video>

# Questions.....

and thank you  
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