



# Training Activities in Geoparks

A guide to using training as a method of engagement with Geoparks and Geotourism.

*An outcome of the Atlantic Geoparks Project*

*Co Funded by;*



<u>The Atlantic Geotourism Route ERDF Co-funded Project</u>	<b><u>8</u></b>
<u>Project Background</u>	<b><u>8</u></b>
<u>Project Objectives</u>	<b><u>8</u></b>
<u>Atlantic Geotourism Route Project Partnership</u>	<b><u>9</u></b>
<u>What is Geotourism?</u>	<b><u>10</u></b>
How do Geoparks develop Geotourism?	<b>10</b>
<u>Using this Training Guide</u>	<b><u>12</u></b>
<u>Introduction</u>	<b><u>12</u></b>
<u>At what stage in its development does a Geopark deliver training activities?</u>	<b><u>12</u></b>
<b>Engagement in Geoparks through training activities</b>	<b>13</b>
Why do Geoparks deliver training?	<b>13</b>
Audiences for training within a Geopark	<b>15</b>
Where to start with Geopark training programmes	<b>17</b>
Who delivers Training within a Geopark?	<b>18</b>
Types of training in Geoparks	<b>19</b>
Reasons for Training within a Geopark, purposeful training delivery	<b>19</b>
Geopark Knowledge Gaps	<b>19</b>
Resource Requirements for Training in A Geopark	<b>20</b>
Planning Training within a Geopark	<b>23</b>
Case Studies	<b>26</b>
<b>Case Study 1: Training Course « Arouca Geopark’s Route of Geosites: educational aspects»</b>	<b>27</b>
<b>Case Study 2: Earth Sense Project « Copper Coast Geopark Early Years learning project</b>	<b>30</b>
<b>Case Study 3: Running a Guide Training Course « Basque Coast UNESCO Global Geopark</b>	<b>33</b>
<b>Case Study 4: Geotourism, Art and Education« A secondary school project in the Burren and Cliffs of Moher UNESCO Global Geopark</b>	<b>36</b>
<b>Case Study 5: Re-engaging businesses and communities with a Geopark: A case study from the Marble Caves UNESCO Global Geopark</b>	<b>40</b>
<b>Case Study 6: Running a training program for local unemployed people: A case study from Mancomunidad de Municipios Sostenibles</b>	<b>42</b>

<b>Case Study 7: An introductory training weekend for Geopark volunteers: A case study from the North Pennines AONB and UNESCO Global Geopark</b>	<b>45</b>
<b>Case Study 8: Training Course: Interpretation of Geological Heritage, Geoparks in Art, Culture and Tourism Centres of Lanzarote from the Lanzarote and Chinijo Islands UNESCO Global Geopark</b>	<b>48</b>
<b>Appendix 1 Sample Geopark Training Plan</b>	<b>50</b>
<b>Appendix 2 Promotional Material and Programme from Arouca Geopark Teacher Training Course</b>	<b>54</b>
<b>Appendix 3 Earth Sense Information leaflet for stakeholders, from The Copper Coast Geopark Case Study</b>	<b>55</b>
<b>Appendix 4 Information poster about training program from Lanzarote Geopark case study</b>	<b>56</b>
<b>Appendix 5 Geopark Familiarisation trip invitation to stakeholders from Marble Arch Caves Global Geopark</b>	<b>57</b>
<b>Appendix 6 Photos of tour guide training program From MMS case study</b>	<b>58</b>
<b>Appendix 7 Geological guide training example from North Pennines Geopark Case Study</b>	<b>59</b>

## **The Atlantic Geotourism Route ERDF Co-funded Project**

The Atlantic Geotourism Route project ran between 2016 and 2020 and involved 12 partners across five countries within the Atlantic area of Europe. The project was co-funded through the Atlantic Area section of the European Regional Development Fund. The aim of the project was the ‘development and promotion of the tourism potential of natural areas as well as the protection, development and promotion of public, cultural and heritage assets’ of the European Atlantic Area. The information on the project below is presented here to showcase an example of a collaborative interregional Geopark led project.

### ***Project Background***

The Atlantic Geotourism Route project aimed to strengthen the integration of tourism and natural heritage, reconciling tourism development with conservation of geodiversity, biodiversity and cultural heritage in several territories in the EU including France, Ireland, Portugal, Spain and the UK.

The innovative aspect of the project was to advance transnational Geotourism along the western margin of Europe using UNESCO Global Geoparks and aspiring UNESCO Global Geoparks as best practice models for regional and local sustainable development, including development of a European Atlantic Geotourism Route candidacy to the Cultural Routes of the Council of Europe.

The work of the project was divided into seven Work Packages distributed among the various partners and covering areas such as development of ICT tools, management toolkits, geodiversity charter, community engagement and communication. This training guide is the output of one of those work packages.

### ***Project Objectives***

The main objective of the Atlantic Geotourism Route project was to promote and disseminate the geological and cultural heritage of the Atlantic Geoparks as a basis for an economic development, culture and sustainable tourism strategy.

The Atlantic Geoparks project aimed to have a significant influence on the

increase in the number of tourists and visitors to the Geoparks; it aimed to boost the economic activity by creating new businesses and increasing the number of jobs in the service sector.

Finally, the project aimed to influence regional policies by sensitizing public authorities about the need to legislate and manage the geological areas under both economic and environmental sustainable criteria supported by European policies and the recommendations of UNESCO.

The project allowed the Atlantic Geoparks to have a common identity and an internationally recognized image. Moreover, the creation of a European Atlantic Geotourism Route will show a clear commitment to its growth and will therefore actively work towards the incorporation of new geoparks.

In summary, the project was conceived as a new opportunity for territorial development linked to geotourism within Atlantic Area Geoparks. This is also a means of sustainable development, conservation and geodiversity across the Atlantic area.

As per the goals stated above, one of the most important outputs of the project was the development of a strong working partnership.

### ***Atlantic Geotourism Route Project Partnership***

The Atlantic Geoparks partnership was composed of 1 partner from France, 2 from the Republic of Ireland, 3 partners from Portugal, 3 from Spain and 3 from the United Kingdom. One of the partner geoparks was also located across two national borders on the island of Ireland. The partnership includes 9 UNESCO Global Geoparks, 2 aspiring UNESCO Global Geoparks and a university, all supported by the Global Geoparks Network.

The project partners:

- **Arouca UNESCO Global Geopark (Portugal)**
- **Azores UNESCO Global Geopark (Portugal)**
- **Basque Coast UNESCO Global Geopark (Spain)**

- **Burren and Cliffs of Moher UNESCO Global Geopark (Ireland)**
- **Copper Coast UNESCO Global Geopark (Ireland)**
- **Fforest Fawr UNESCO Global Geopark (UK)**
- **Marble Arch Caves UNESCO Global Geopark (Ireland/UK)**
- **Lanzarote UNESCO Global Geopark (Spain)**
- **North Pennines AONB and UNESCO Global Geopark (UK)**
- **PNR Armorique Aspiring Geopark (France)**
- **Sustainable Municipalities Community of Cantabria Aspiring Geopark (Spain)**
- **University of Trás-os-Montes and Alto Douro (Portugal)**

The project stakeholders included the communities and local businesses of each of the partners.

This project was co-financed by the European Regional Development Fund through the Interreg Atlantic Area Programme. As such the European Community as a whole also has a stake in the outcomes of the project.

### ***What is Geotourism?***

One definition of Geotourism is “tourism that sustains or enhances the geographical character of a place – its environment, culture, aesthetics, heritage, and the wellbeing of its residents” (National Geographic, 2005).

In essence it is tourism that supports and respects the locality, its people, its landscape and its culture. It is tourism that strives for a balance between being mindful of the landscape and its finite resources while endeavouring to develop a prosperous local economy built on quality, well managed visitor products and experiences that benefit the local community and traveller alike (Geotourism as promoted by UNESCO Global Geoparks).

### ***How do Geoparks develop Geotourism?***

UNESCO Global Geoparks support tourism that celebrates earth heritage and sustains the local community. They support tourism that is sympathetic to the environment. Having a landscape of outstanding world-famous geological heritage isn't enough to become a UNESCO Global Geopark; an area also needs to have a management programme with a plan for sustainable development for the people who live there. Geoparks need to develop programmes and

initiatives around sustainable tourism in order to maintain their accreditation.

To do this, UNESCO Global Geoparks actively involve local people in planning their management programmes and their tourism programmes. Local communities are an integral part of a Geopark; they are the link between the culture and the land and can provide unique and fascinating experiences and memories to their visitors.

UNESCO Global Geoparks are required to invest in quality infrastructure and interpretation for their key sites of geological importance, which are called Geosites. They invest in providing quality visitor information and training for local guides and tourism operators. Another part of Geoparks' mission and mandate is to develop training and engagement activities that promote the objectives of the UNESCO Global Geoparks programme. This training guide is designed to be an aid to fulfilling the requirement for Geoparks to develop training and engagement activities.

## Using this Training Guide

### *Introduction*

The intended audience for this training guide is people and organisations interested in developing and running activities to engage local stakeholders with Geoparks, geotourism and further promotion of the Atlantic Geotourism Route. These activities might include formal and informal educational activities as well as business engagement sessions.

Through reading this guide it is hoped that environmental educators, Geopark project managers and education specialists, as well as various others involved in training and engagement activities, will be able to use the experiences of training delivered during the Atlantic Geoparks project for their own benefit.

However please note, this document is not intended to be a step-by-step manual on how to deliver training and engagement activities in your particular area.

Instead, it is a guide to help you understand the types of training Geoparks deliver, what's required to deliver this training as well as the challenges involved. You may find some of the methodologies explored within the case studies are not applicable within your Geopark. In this case, the authors of this guide encourage you to adapt them to your own circumstances.

### **At what stage in its development does a Geopark deliver training activities?**

In order to meet the criteria for approval as a UNESCO Global Geopark, aspiring areas need to conduct training at all stages of their development. This means from initial conception and decision to develop an area as a Geopark, training should be an integral part of what the development body does in order to create the Geopark. Long standing Geoparks also continuously need to revisit and refresh their training activities to stay relevant to the various audiences.

This training guide is intended to serve trainers working directly and indirectly with or within Geoparks, environmental educators, bodies and persons interested in nominating their area as a Geopark and running geotourism-related activities and unsure about the kind of educational activities delivered by Geoparks.

The case studies within this guide are examples taken from the activities of the project partners within the Atlantic Geotourism Route ERDF co-funded project. All of these partners are either existing or aspiring UNESCO Global Geoparks.

Over the course of the project, the project partnership developed and delivered a variety of training activities resulting in far more examples than are showcased here. The audiences for these activities varied, including children, local authorities, private sector businesses, organisations and community groups as well as the general public.

From all of the activities performed, six case studies were chosen that represent best practise in Geopark training delivery. The lessons learned in these case studies are presented and examined in this guide.

## **Engagement in Geoparks through training activities**

For the purposes of this document, engagement has generally been used to refer to activities that connect an audience (such as tourists, residents or educational groups) with natural and cultural features, usually for the purposes of enjoyment and learning. Training is used to describe activities that aim to improve people's skills or knowledge to enable them to facilitate engagement."

In the context of this guide, Geoparks conduct training in order to engage different audiences with their mission. There are other forms of engagement Geoparks can deliver, but training is the one we are looking at here.

**Training and Engagement:** Training is a key part of engaging stakeholders with Geotourism and Geoparks

### **Why do Geoparks deliver training?**

While educational institutions are often involved in Geoparks, Geoparks don't exist specifically to deliver educational programmes. Instead Geoparks use educational, training and engagement programmes to help maximise the

benefit of the Geopark designation in their local areas and beyond.

### **Reasons why Geoparks deliver training activities**

While the ultimate aim of all geopark training activities is to work towards delivering sustainable development in local regions, here are some specific reasons or triggers which might justify a training activity being developed and delivered. Please note that this not an exhaustive list by any means.

#### **Increasing knowledge and capacity for sustainable development**

By engaging local people, businesses and organisations with the concept of sustainable development and the UN 2030 SDGs, Geoparks can improve local knowledge of sustainable development best practice and the environmental and social factors that surround them..

#### **Improving standards within local partner organisations**

By conducting formal or accredited training directly with the staff of local partner organisations, Geoparks aim to increase their environmental and economic performance.

#### **Increasing environmental knowledge among local school children**

Workshops and engagement activities with local school classes can improve awareness of our geological and environmental heritage.

#### **Conservation**

Training may be required to inform stakeholders about issues regarding the conservation of the ecological and environmental heritage within a Geopark.

#### **Raising public awareness of Geoparks**

Sometimes training and engagement may be conducted by a Geopark in order to clear up public misperception about the Geopark designation itself. This will take the form of developing training that tells people what a Geopark does and does not do.

#### **Informing local government staff about the geopark concept**

Engagement and training activities can involve local and regional government stakeholders in the Geopark by creating an environment for better collaboration and delivery of programs.

#### **Training educators in geoscience**

An effective way to integrate Geoscience in formal educational programs is to train educators such as teachers in earth science concepts through the Geopark.

There are many other reasons to engage in training activities within a Geopark, however, in a practical sense, training is delivered in order to drive change.

While the content of training activity will vary greatly depending on the context, the general message of Geoparks will stay consistent throughout, which, according to UNESCO, is to:

*“Use geological heritage, in connection with all other aspects of the area’s natural and cultural heritage, to enhance awareness and understanding of key issues facing society, such as using our earth’s resources sustainably, mitigating the effects of climate change and reducing natural disasters-related risks”*

This message is the core of every Geopark's operational rationale and will therefore need to be integrated into any training and engagement activities which are developed by the Geopark.

## **Audiences for training within a Geopark**

The audiences for Geopark training activities will vary depending on the region, the stakeholders involved and the reason why these activities are being delivered.

**SEE CASE STUDY 1** In this example, from Arouca Geopark in Portugal, a training course for secondary school teachers was organised within the Geopark. By engaging teachers with the Geology and the Geopark, Arouca were able to multiply their efforts.

The specific make-up of the population will vary greatly between different Geoparks. However, as noted within the Atlantic Geoparks Project, the types of audiences encountered within a Geopark for training are generally similar.

Most Geoparks contain audiences that could fit into one or more of the following broad groups:

#### **Audiences for Training in Geoparks**

The people and organisations that receive training from Geoparks are the audiences for training within Geoparks. Here is a non-exhaustive list of Geopark training audiences to help you define who to aim your training at.

##### **The general public**

Local residents and visitors to geopark areas.

##### **Community organisations and local groups.**

Formal and informal groups with social objectives.

##### **Sporting Associations**

Informal and formal sporting clubs that exist or operate within the Geopark boundaries.

##### **Local Government**

Local government authorities responsible for Geopark areas.

##### **School children and their teachers**

Primary and Second level students in formal education in schools with the Geopark.

##### **Educational institutions**

Universities, colleges and institutes of higher education that exist or operate with the Geopark in some way.

##### **Private sector businesses**

Businesses and their staff located or operating within a Geopark. These can be tourism businesses but might also be manufacturing businesses, crafts people, mines or any kind of business that exists within a geopark.

##### **National and governmental representatives**

National bodies and that have a presence within a Geopark such as rural development bodies.

##### **Organisations and individuals responsible for other designations**

The Geopark may have other designations within its boundaries such as national parks and nature reserves that will have dedicated staff. This might also include local farmers and landowners within the Geopark.

##### **Indigenous people**

Some Geoparks are home to indigenous people who may have a legal definition within the Geopark boundaries.

Various sectors of these kinds of groups make up the most common audiences for training within a Geopark.

Training can also be delivered by a Geopark to people who will in turn deliver

training to others on behalf of the Geopark such as consultants.

### ***Where to start with Geopark training programmes***

Starting a training and engagement programme or project in a Geopark can be a daunting task. However, with proper planning, it need not be.

Geopark training and engagement programmes should always be adapted to local circumstances, audiences and available budget."

#### **Four things to keep in mind when getting started with training activities in a Geopark**

Different geoparks may have varying degrees of confidence and capability based on their prior experience and expertise. Actually delivering training can also be a complex and long term process. If you are just getting started with training, here are four things to remember when planning training in your Geopark.

1. **Audit your internal training resources.** What, in terms of staff time and financial support, can your organisation be dedicated to training activity. Do you have a dedicated budget?
2. **List existing training activities of a similar nature.** Find out what ongoing training activities within your area that might be sympathetic to the aims of a UNESCO Global Geopark.
3. **Create value with targeted training.** Understanding one urgent training gap and filling it will give more value than a larger training program which fills multiple smaller gaps.
4. **Start Small, no matter what your budget is.** don't overstretch your aims at the beginning. Successful projects will lead onto further activities, leave room for these.

As you develop your Geopark's training plan, you may find that many relevant activities are already taking place performed by different existing and potential stakeholders with the Geopark.

You may be able to suggest improvements or new angles on existing activities or use this guide to interest trainers and organisations delivering training in undertaking activities similar to the ones described in this guide.

## Who delivers Training within a Geopark?

A Geopark on its own is purely a designation. The designation is generally run directly by either an incorporated non-profit entity or a department of a local or regional government organisation.

As such its practical resources are usually quite limited.

Training therefore cannot be limited to that delivered directly by the Geopark's staff but can also be delivered by organisations working in partnership with a Geopark and subject to a quality assurance system within the Geopark.

**SEE CASE STUDY 2** Take a look at the case study from the Copper Coast Geopark. In this example, an educational activity NGO collaborated with the Geopark to develop an educational program with its members. By working through the NGO's existing network of educational providers, the Copper Coast Geopark was able to quickly and effectively deliver an educational program that tied in with an early years education curriculum.

In many cases, training will be delivered directly via staff employed by the Geopark responsible body. In this instance the staff will be required to themselves possess the correct experience, Geopark-related knowledge and aptitude to deliver training programs.

Staff will also need both logistical and organisational support, that's to say; i) the supply of correct materials, venues and resources, and ii) engagement with the relevant stakeholders and bodies being assured of pre- and post -training delivery.

In other cases training will be delivered within a Geopark by other bodies and individuals not directly employed or engaged by the Geopark itself. In this instance it is vital to ensure that these persons and bodies are properly trained, legally safe, and themselves resourced and knowledgeable to deliver training to a high standard on behalf of the Geopark.

## **Types of training in Geoparks**

The type of training and engagement activities delivered within Geoparks vary greatly.

There is no one size fits all package for the developing Geopark training and engagement activities which will need to be sensitive to local conditions.

**Fit training to local conditions:** No two Geoparks will conduct or use training in the same way.

From formal classroom-based learning with a clear start and finish to more open-ended programmes as well as activities such as guided walks and talks.

Ideally a Geopark will engage with a variety of different training types to suit the various audiences identified.

It is important to focus firstly on what kinds of training best suit the identified training needs and audiences within the Geopark rather than fitting the audience to the type of training.

There is no one type of training activity that works best within a Geopark. Every Geopark is different and the training activities delivered will be different too.

## **Reasons for Training within a Geopark, purposeful training delivery**

Training activities work best within a Geopark when they happen for a reason. These reasons can be due to prior planning i.e a Geopark's management plan but can also occur *ad hoc* due to an identified knowledge gap regarding the Geopark.

### **Geopark Knowledge Gaps**

As Geoparks develop and go through different cycles of growth, it will sometimes occur that gaps in knowledge have evolved within the Geopark. These gaps will be areas where the different stakeholders within a Geopark

diverge from the Geopark's goals or would like to receive renewed training from the Geopark in some form.

An example of this may be that businesses are incorrectly using the Geopark designation or new residents are unaware of what a Geopark is. Another example may also occur when the Geopark is approached by local schools wanting to integrate aspects of their local geoh heritage into their learning plans.

**SEE CASE STUDY 5** Take a look at the case study from the Marble Arch Caves Geopark. In this example, a lack of awareness of current Geopark projects and activities was identified and became a trigger for a Geopark familiarisation activity.

As a Geopark develops, it is important to watch out for these gaps. Their existence will quickly become apparent to a Geopark's team as they go about their jobs. Ideally the Geopark should conduct a yearly appraisal of its training programs, needs and activities to see what gaps exist.

As gaps are identified, training programmes or activities will need to be designed to fill them. Ideally, when planning future training programs, Geoparks should account for potential unforeseen training needs which will arise over time.

### **Resource Requirements for Training in A Geopark**

Every time a Geopark delivers or develops a training activity a cost is incurred. This cost can be financial or can be purely staff time related. Either way, it will place a drain on the resources of the organisation responsible for the Geopark. To sustainably conduct training within a Geopark it is vital to manage and plan resources adequately.

Different training activities will have different costs. However, as a general rule you need to ensure that sufficient resources are available to cover some or all of the primary cost requirements for training.

### **Resource Requirements for Geopark training**

The financial, staff and time requirement for training will vary hugely depending on the type and scale of training that is being delivered by a Geopark. Specific types of training will also have special resource requirements and will require specialist knowledge and capability in that respect. Here are some common requirements for training that are worth keeping in mind as you plan training projects in your geopark.

- A training venue suitable for the intended audience i.e a classroom/lecture theatre if indoors or a suitable outdoor location for field based learning
- Trained, qualified and capable staff. Ideally staff will be experienced in delivering training of a similar type to different audience and be able to adapt to changing audience requirements.
- Training materials appropriate to the type of training being delivered.
- Training equipment such as a projector, flip chart, a laptop computer and internet connection. Appropriate software may also be necessary.
- A means of accessing training afterwards and maintaining some degree of communication with the learners to get feedback and assess the training activity/program itself.

If training is being delivered within a Geopark by a person or body working in partnership with a Geopark responsible organisation (i.e the training is not delivered by the Geopark) further requirements need to be considered such as:

1. Ensuring that the organisation is itself sufficiently equipped to deliver training and can meet the same standards as the Geopark itself.
2. Making sure the correct legal agreements are in place regarding the responsibilities of the trainers and the Geopark with regards to the training

and the learners

3. Ensuring that each partner organisation is able to correctly answer any learner questions on other aspects of the Geopark.

Even with the extra requirements which doing so entails, it is still a great idea

**SEE CASE STUDY 6** Take a look at the case study from the North Pennines Geopark. Here a volunteer induction course was developed and ran by the Geopark but staff from the local university were used to help deliver the Geology section of the course.

to collaborate with third parties within Geoparks to deliver training. By working with other organisations, you can maximise training resources and expertise and deliver far more effective programmes that you might otherwise deliver alone.

## Planning Training within a Geopark

This guide is not intended to be a comprehensive instructional resource on how to conduct training in a Geopark.

There are numerous training methodologies and a vast body of research and practice on how to conduct training in general.

A good place to start with developing training activities in Geoparks is to conduct a **Training Needs Analysis**. Conducting a training needs analysis (TNA) is your first step to developing a successful training program.

### What is a Training Needs Analysis?

A training needs analysis takes an overall view of your Geopark and its local circumstances, goals and needs before drilling down into various types of concrete training that you need. For example, your Geopark may need more robust training or on-demand mobile training because of your employee or risk profile, based on this evaluation. Conducting a training needs analysis before you start putting together your training program is a crucial step to developing more effective training materials and capturing the best use of a geopark's time and resources.

### Training needs analysis methods

Once you've familiarized yourself with the different types of analysis, let's look at the methods for actually conducting that analysis. There is a variety of training needs analysis methods.

Not every method is appropriate for every Geopark. Here are some methods which a Geopark's staff or management body can use to determine where training might be needed.

## Questionnaires

Use online questions to figure out how competent do different stakeholders in the Geopark feel? What would they like more training on?

## Observation

Look around the Geopark at the people and organisations that engage with it, what training needs are apparent.

## Interviews

Informally and formally ask people within the Geopark about their knowledge of the Geopark and its goals and assess what skills and knowledge they lack that training might help with.

## How to conduct a training needs analysis

Within any Geopark, a training needs analysis will differ depending on local circumstances, here is a brief example of how an average geopark might conduct an assessment of what training needs its stakeholders have.

### Step 1: Understand your Geoparks profile

Referring to your Geopark's management plan, local identity and individual personnel, physical and financial assets, gather a clear understanding of what kind of training your Geopark might be capable of delivering in the short and long term. Also assess what kind of training is required locally.

### Step 2: Ask what you are hoping to achieve

Aim to reassess your geoparks training strategy regularly. You will obviously have many more questions to ask throughout this process, but these are good, high-level ones to start considering.

- **What are your long term needs?** It's important that your training program ties in with your long term goals as a Geopark. Understand where training fits into how your Geopark will look and run in 1,5 and 10 years time.

- **What are your training goals?** Just as your Geoparks goals will probably evolve over time, so will your training goals. Think about what you really need and want from your training program.
- **Do you have enough resources?** Do you have the financial, staff and physical resources to deliver the training your geopark needs and wants? If not you need to prioritise where you will deliver training as well as looking

### Step 3: Start Planning training

Geoparks now need to start planning training activities based on their previous assessments. This will tie in with observations, questionnaires and interviews that the Geopark has conducted and inform the beginning of training planning.

### Step 4: Audit current training materials and methods

Your Geopark may already have access to existing training materials or methodologies or be able to source these from partners and local collaborators. If possible list these and see which if any can be applied to new training activities.

### Step 5: Develop recommendations

After taking a holistic look at your Geoparks needs, resources, requirements and training assets you can make recommendations to inform your training program development. For your own program, look to make recommendations in these key areas:

- Training delivery methods
- Training gaps and deficiencies
- Changes to improve stakeholder engagement
- Updates to reduce training costs and resources
- Tracking and assessing results over time

- Addressing any accessibility concerns

These recommendations will be specific to your Geoparks needs and will not be universal to all geoparks.

After conducting a Training Needs Analysis, the next step is to create a training plan for activities to be delivered within your Geopark. A sample training plan for use in a Geopark is included in the Appendix of this guide.

The case studies can also be used as templates for planning and recording your own training activities.

### ***Case Studies***

The following case studies are here to serve as examples of training activities and engagement activities that were developed and delivered during the Atlantic Geotourism Route project.

As well as serving as inspiration for your own Geopark training activities, these case studies serve as useful templates for planning training activities aimed at the different audiences that you might find within a Geopark area.

## Case Study 1: Training Course « Arouca Geopark's Route of Geosites: educational aspects»



**Partner:** AGA – Arouca Geopark Association

**Country:** Portugal

**Target Audience:** Geoscience Teachers

### **Who delivered the training:**

Staff from the Arouca UNESCO Global Geopark along with members of the Portuguese Association of Geologists and the Faculty of Sciences within the University of Porto

### **Reason for training**

To engage Geoscience teachers with the Arouca UNESCO Global Geopark, its geosites and its potential use as a field trip destination.

### **Methodology:**

1. The AGA (Arouca Geopark Association) and the APG (Portuguese Association of Geologists) created a partnership to deliver a training course for Geosciences teachers in the vicinity of the Arouca Geopark.
2. Within this partnership several meetings were held in order to establish the main objectives of the training.
3. The organization of the training decided to theme the course on the educational aspects of the Arouca Geopark's Route of Geosites.

4. The organization has established a training plan for a 25-hour course to be held in September 2019. It contacted the trainers and disseminated the training to potential participants.
5. The training course was very well attended by teachers from all over the country. After 70 teachers participated in the first edition. It was decided to schedule a second edition of the same training course for November of the same year (which was attended by 40 teachers).
6. Educational resources were distributed to the trainees, the PowerPoints of the theoretical sessions and the field guide "Arouca Geopark's Route of Geosites".
7. The training course was evaluated by: (i) Face-to-face work and participation and (ii) Response to an evaluation questionnaire on the topics covered and critical reflection.
8. Photographic and video coverage of the course was provided to the participants.

**Duration:**

Time is for one person.

**Preparation:** 15 days each edition

**Training:** Two editions of 25 hours each (September 6 to 8, 2019 and November 8 to 10, 2019)

**Follow on communication:** 4 days

**Resources Required:** Classroom, bus to transport teachers to field trip areas, stationary and materials, projector, laptop, paper, geological samples, PowerPoint presentations, promotional materials, leaflets, Geosites guide.

**Outcome:** The training course was very well received, given the high number of participants (110), which justified the creation of two editions. The evaluation made by the trainees was very positive, both at the level of the theoretical sessions and at field trips. New educational resources were produced (PowerPoints of the theoretical sessions and the field guide "Route of the Geosites of Arouca Geopark") and distributed to trainees.

**Lessons Learned:**

- Training courses can contribute to a greater knowledge of the tourist potential of territories
- It was important to integrate the Seminar open to the general public,

which allowed the information to be disseminated not only to teachers, but to a wider audience.

- Teachers need up-to-date educational tools to support their classes
- 25 hour adult training courses contribute for a sustainable economic development of the territories, through consumption at restaurant, accommodation, museums, handicraft or local products level

## Case Study 2: Earth Sense Project « Copper Coast Geopark Early Years learning project



**Partner:**

Copper Coast UNESCO Global Geopark

**Country:**

Ireland

**Target Audience:**

Children Ages 3 to 8 and Early Years Room leaders

**Who delivered the training:**

The Copper Coast Geopark staff along with staff of local NGO Waterford Childcare Centre

**Reason for training**

To engage children in early years education, their teachers and parents with Geopark. The project developed after the Geopark was approached by a local NGO with a proposal for collaboration.

**Methodology:**

1. Communication was made with the Geopark by a local NGO responsible for early years education development locally.
2. A meeting was held with a representative of that NGO to discuss potential for an education training initiative involving the Geopark and members of the NGO's organization. After this meeting a positive sentiment along with the intent to conduct some kind of educational initiative along the lines of the project was developed.

3. A further meeting was held with more representatives from the NGO to brief them on the idea for collaboration, Geoparks in general as well goals and ideas for an educational training initiative. Agreement was gained and a training plan created.

4. The NGO made contact with a local early years learning centre to organise the logistical element of the training and recruit their staff to participate. Following this, a training day firstly for the educators was arranged based around the concept of Geoparks in the Atlantic Area, Geology and sustainable development.

5. A Geopark staff member ran the training day with the educators and representatives of the NGO in their facility.

6. After the staff was engaged, it was decided to do a similar workshop just for the children. As such, classroom and field trip based learning experience took place with the children and materials were delivered for them to produce a project subsequently.

7. In the days following the training the children produced a project on their geological heritage and feedback was given to the Geopark staff working on the program.

***Duration:***

Time is for one person.

**Preparation:** 1-3 days

**Training:** 2 days

**Follow on communication:** 1/2 day

***Resources Required***

Classroom, bus to transport children to field trip area, stationary and materials, projector, laptop, paper, geological samples, presentation, promotional material and leaflets.

***Outcome:***

Successful activity. Feedback from participants was very positive and the children produced the required project in the classroom afterwards.

***Lessons Learned***

- It is important to address the needs and concerns of all engaged stakeholders from the beginning.
- It is better to ask too many questions at the start of a training program than to leave unanswered concerns built up.
- An activity that participants can do after the training takes place is valuable in ensuring the training “sinks in”.

## Case Study 3: Running a Guide Training Course « Basque Coast UNESCO Global Geopark



**Partner:** *Basque Coast UNESCO Global Geopark*

**Country:** *Spain*

**Target Audience:** *Existing and prospective tour guides*

**Who delivered the training:**

Basque Coast Geopark staff (manager, environmental expert and scientific director), Aranzadi science association, Debegesa local development agency, group management expert, and an expert in history and culture.

### **Reason for training**

The Basque Coast Geopark is committed to maintaining a wide range of guided tours with high-quality services that allow visitors to discover the natural and cultural values of their territory. For this, it is necessary to have geopark qualified guides. This course was designed to provide specific knowledge about the Basque Coast Geopark, its natural and cultural heritage, as well as concepts related to the interpretation, communication, group dynamization and entrepreneurship.

**Methodology:**

1. The Basque Coast Geopark decided to organize a training course intended for guides that were already working or people interested in working as a guide in the Geopark.
2. The course content was developed. For the content it was considered important to train guides in subjects such as communication, group

management or keys for entrepreneurship, in addition to the natural, geological and cultural heritage of the Geopark.

3. The Geopark, as organizer, agreed on the dates, content and methodology with the teachers who would deliver aspects of the course.
4. Communication and promotion of the training was done by the Geopark, through its official webpage, social networks and local newsletters.
5. There were 30 places advertised on the course. However, because there was interest from more than 30 people, the Geopark had to evaluate the CVs of those interested in order to assign places.
6. The training was carried out for 6 half days in total. The theoretical part took place in an indoor location in the town of Deba and the practical activities in Deba, Mutriku and Zumaia.
7. After the training course (theory and practice) each participant had to present a guided tour proposal to the audience (topic, duration, content, etc.). The proposal was evaluated by the trainers.
8. The participants were certified by the Geopark to work as a Geopark guide.
9. After finishing the course, a survey was sent to the attendees in which they had to evaluate the content, the teaching staff and the methodology.

### ***Geopark Staff Time Requirement***

**Staff time:** 33 hours

**Preparation:** One month

**Training time:** 3 half days theory and 3 half days of field trips and practice

### ***Resources Required***

Classroom, stationary and materials, projector, laptop, paper, geological samples, presentation, promotional material and leaflets

### ***Training Outcome:***

Successful activity. Feedback from participants was very positive since they discovered what content can be explained in each place of the Geopark and how to adapt that content depending on the type of visitor.

### ***Lessons Learned***

- The theoretical content of a course has to be applicable to reality and it must be taught how to disseminate that content.
- There is a lot of interest and intention to work as a geotourism guide in the Geopark and having a process to evaluate who is most suitable for training is necessary.

For More Information: Please see the document used with the objectives of the course, the program... (Spanish)

[https://geoparkea.eus/site\\_media/pdf/Curso\\_Formaci%C3%B3n\\_Gu%C3%ADas31102018.pdf](https://geoparkea.eus/site_media/pdf/Curso_Formaci%C3%B3n_Gu%C3%ADas31102018.pdf)

- legacy of the training.

For More Information: Please see appendix x to see the Earth Sense presentation

## Case Study 4: Geotourism, Art and Education« A secondary school project in the Burren and Cliffs of Moher UNESCO Global Geopark



**Partner:** The Burren and Cliffs of Moher UNESCO Global Geopark

**Country:** Ireland

**Target Audience:** Secondary level school pupils

**Who delivered the training:** The Geopark Geologist and a contracted Artist

### **Reason for training**

Environmental education and community engagement are among the most important features of the work programme of Geoparks and Geotourism is most effective and sustainable when based on support and involvement from the community. Through the Atlantic Geoparks project the Burren and Cliffs of Moher UNESCO Global Geopark has decided to use art as a medium of raising awareness of and strengthening knowledge in the community of Geotourism.

### **Methodology**

1. In Ireland there is much focus put on environmental education programmes for children in primary education, however there is an absence of programmes for secondary school pupils. The Geopark therefore decided that second level pupils would be a good target for a programme on Geoparks and Geotourism as it would build on their existing knowledge.

2. The Geopark team decided that placing an artist in a local school to work with its students on developing a brief and subsequently a piece of art based on the ideal of Geoparks and Geotourism they could raise awareness among the future guardians of the landscape around the importance of their landscape and the need to develop it sustainably. Through this engagement, they hoped to create a learning environment and to encourage conversations around the landscape, the environment, geotourism, local life and art as a form of recording and documenting.

3. The Geopark team decided that a sculpture would be a piece of art that the students could contribute to and would peak their interest.

4. The Geopark team contacted the art teacher at a local second level school to see if such a programme could be incorporated into the teaching programme and received a positive response.

5. Quotes were sought from a number of local sculptors and selected one that had experience working with students.

6. A timetable was agreed between all parties to ensure the project could be delivered to a reasonable time within the students schedule and that allowed for the sculptor to develop the piece without the students losing interest in the programme.

7. Training was delivered at the local school over an agreed period of time

a. Class 1 (40 minutes): The Burren and Cliffs of Moher UNESCO Global Geopark team presented on the European Atlantic Geotourism Route project to inform the students brief

b. Class 2 (80 minutes): The local Artist / Sculptor worked with the students to develop and interpret a brief for the project.

c. Class 3 (80 minutes): The students got a chance to do some hands on work on the art piece

d. Class 4: The artist presented the final finished piece to the students and the Geopark team collected feedback from the students on the process

**Total Project Duration:** 10 weeks

**Preparation:**

1-2 days: The Geopark team needed time to prepare a presentation and discussion touchpoints for the initial class. The sculptor needed time to source and select a piece of stone that would be used to carve the piece.

**Training:**

1 day – though the training took place over a period of weeks.

Class 1 (40 minutes)

Class 2 (80 minutes)

Class 3 (80 minutes)

\*Between classes 2 and 3 the artist needed a number 2 weeks to return to their workshop to begin the piece and bring it to a place where the students could contribute to it.

**Follow on communication:**

80 minutes (class 4)

\*Between classes 3 and 4 the artist needed some time to return to the workshop to complete the final touches.

**Resources Required:**

Geopark staff time, a laptop to present the programme to the students, promotional materials, leaflets, funds to engage a local artist, classroom, stationery and materials.

**Outcome:**

Feedback was very positive from both the students and the teacher.

- The students got the experience of developing and interpreting a brief to a given subject.
- They also gained hands-on experience in creating a piece of commissioned art that they were able to keep in their school.

**Lessons Learned:**

Ensure that an engagement project does not take too long. A project that runs over too many weeks can struggle to keep the students engaged in the learning.

## **Case Study 5: Re-engaging businesses and communities with a Geopark: A case study from the Marble Caves UNESCO Global Geopark**



### **Marble Arch Caves Global Geopark**

**Partner:** Marble Arch Caves UNESCO Global Geopark

**Country:** Ireland & Northern Ireland (UK)

**Target Audience:** Geopark Guides

**Who delivered the training:** Geopark Staff in partnership with staff from various different Geopark sites.

#### **Reason for training**

To re-engage local communities and businesses with the Geopark plans and programs. Recent consultation with representatives from the local business and community sector had indicated there was a lack of awareness in regard to the Geopark and its recent activities/developments.

#### **Methodology (step by step on how you did the training):**

1. Geopark staff engaged with a number of representatives in the local business and community sectors to determine how to address the lack of awareness of the Geopark in the locality through a training activity. It was agreed that a study visit to a number of key Geopark sites would be a useful starting point to provide a development update, including informing them about the Atlantic Geoparks Project and demonstrate the range of on-activities undertaken by the Geopark.
2. Given the audiences were different, Geopark staff compiled two one day 'Getting to Know Your Geopark' sessions; one for the business community and the other for the local community/voluntary sector. The content was tailored

for the specific audience based on the original consultation feedback.

3. It was agreed to hold these at a weekend in the shoulder tourist season in an attempt to encourage as great participation as possible.

4. The sessions were advertised and promoted extensively locally and the two full day sessions were well attended and successfully delivered.

**Duration:**

This relates to the time for one person.

**Preparation:** 1-3 days

**Training:** 1 day

**Follow on communication:** ½ day

**Resources Required:**

Bus to transport participants to different Geopark sites, Staff available at key Geopark sites to engage with the group, information packs to include promotional material and leaflets.

**Outcome:**

Feedback from the session was positive, with many recommendations and suggestions for future collaboration and participation between the Geopark and the local communities and businesses.

Greater awareness among the local communities and businesses about the on-going activities and developments within the Geopark and how they can participate and benefit from the Geopark.

**Lessons Learned:**

- Programmes developed must address a specific need and will be most successful when the participants have been consulted in relation to the need and the solutions required.
- Content of programmes must be tailored specifically to the target audience – a ‘one size fits all’ approach is not advocated.
- Communication after the session is crucial to ensure the continuous building of relationships and encourage collaborative partnership working.

## Case Study 6: Running a training program for local unemployed people: A case study from Mancomunidad de Municipios Sostenibles



**Partner:**

Mancomunidad de Municipios Sostenibles (MMS)

**Country:**

Spain

**Target Audience:**

Fifteen unemployed people over 30 years old

**Who delivered the training:**

Instructors contracted by the MMS (the organisation tasked with delivering a geopark project).

**Reason for training**

To train unemployed local people in the fundamentals of tourism guiding and training in order to prepare them for jobs in the tourism industry locally.

**Methodology:**

1. The project educational content was drafted by MMS and presented to the Government of Cantabria. This was done to ensure it complied with the certification requirements.
2. The Government of Cantabria approved and authorized the training.

3. Instructors and students were selected for the program in conjunction with the Government of Cantabria.
4. Recruitment of students was done and the training project was developed, incorporating both theoretical and practical elements.
5. Delivery of a training project which trained the students to practice as guides in hiking, mountaineering and trekking in the low and medium mountains, snowshoe routes and as monitors in camps, in conditions of safety and respect for the environment.
6. The project went through an evaluation and monitoring phase.

***Duration:***

The project took six months to complete from start to finish

***Resources Required:***

Classroom, transport for students to field trip area, projector, laptop, paper, presentation, promotional material and leaflets.

***Outcome:***

Feedback from participants was very positive. Several students have been contacted by tourism entrepreneurs for subsequent hiring.

***Lessons Learned:***

Professionally certification is a more difficult and time consuming process but is worthwhile for both workers and businesses. Certified workers can guarantee companies that they have the necessary skills, abilities and knowledge, as well as demonstrable experience, for their work.

In this training a very comprehensive approach was taken. As such every employment niche within geotourism was covered. The training delivered covered all of the different aspects of knowledge within the natural environment (biology, ecology, geology), various specialties of active tourism (caving, canyoning, ...) as well as risk prevention and first aid.

The teaching staff was made up of professionals from the sector with a presence in the territory of the Valles de Cantabria Geopark. Having local teaching staff was an advantage as it meant the trainers had up to date local

knowledge.

## Case Study 7: An introductory training weekend for Geopark volunteers: A case study from the North Pennines AONB and UNESCO Global Geopark



**Partner:** North Pennines AONB and UNESCO Global Geopark

**Country:** UK

**Target Audience:** Adult volunteers with an interest in geology and supporting public events. 15 attended.

**Who delivered the training:**

Staff from the Geopark and Durham University

### **Reason for training**

To create a core of trained volunteers to assist in Geopark events.

### **Methodology:**

1. Geopark staff discussed the purpose and content of the proposed training with a member of staff at Durham University, who is also a member of the North Pennines Geopark Advisory Group.
2. A date was set and arrangements made for room hire and catering.
3. The training was advertised to local residents through a press release to local newspapers and through social media.
4. A questionnaire was sent to participants to gauge prior experience and interest.
5. The two-day training course was run over a weekend, with day one primarily led by a member of Durham University staff and focusing on the geology of the area, and day two by two members of Geopark staff focusing on

presentation skills and working with the public. This involved some time indoors and some time in the field.

6. Feedback from participants was collected, and some further training events organised for particular activities such as leading guided walks.

**Duration:**

The time here is for two people working 8 hours per day.

**Preparation:** 3 days

**Training:** 2 days

**Follow on communication:** 1 day

**Resources Required:**

Indoor meeting space, e.g. classroom area where examples can be given in the field, Geological specimens, Projector and laptop (for day 1 only), Refreshments, Printed materials e.g. list of websites, glossary leaflets and promotional materials

**Outcome:**

15 volunteers were engaged in the training and trained to assist with public events. Nearly all have subsequently contributed to events with school or the public or attended further training.

**Lessons Learned:**

- Planning training with partners is more complicated, but rewarding due to the different perspectives brought. More voices helps keep people engaged.
- Start with a clear plan of what you want the training to achieve and how it is structured and make participants well aware of this.
- A lot of material was covered in two days, but this is not enough to embed the learning. Practise and feedback are the best way to do this.
- Making a training experience enjoyable and memorable is just as important as for a public event or educational workshop. A comical demonstration of 'how not to lead a guided walk' went down particularly well.
- The range of knowledge and skills in the group was very broad so some got more out of different parts of it than others. Future sessions with smaller groups could be more targeted.



## **Case Study 8: Training Course: Interpretation of Geological Heritage, Geoparks in Art, Culture and Tourism Centres of Lanzarote from the Lanzarote and Chinijo Islands UNESCO Global Geopark**



**Partner:** Cabildo Insular de Lanzarote (Lanzarote and Chinijo Islands UGGp)

**Country:** Spain

**Target Audience:** Employees of the Art, Culture and Tourism Centres (waiters, gardeners, maintenance personnel, offices, cooks, guides, etc)

**Who delivered the training:** The Geopark Team is in charge of organizing and the staff of Geological Survey of Spain and University of La Laguna give the talks.

### **Methodology (step by step on how you did the training):**

1. The Art, Culture and Tourism Centers (hereinafter, CACT) are integrated in the volcanic nature of the island and are its main tourist benchmark. They are a must-visit for anyone wanting to discover the true essence of Lanzarote. César Manrique, a local artist of international renown, created these unique spaces by perfectly bringing together Art and Nature under a philosophy and a model of intervention based on sustainability.
2. The Geopark staff contacts the Human Resources of CACT, to arrange the course in the best way, avoiding affecting the public of these tourist centers.

3. On the other hand, the teachers organized the courses into two types: basic and advanced. The basic courses included: knowledge of geoparks and the Atlantic Route and knowledge of the geological heritage of each of the Centers. The advanced level was intended for the guides of the Cueva de los Verdes and included an entire session for their interpretation of this cave.

4. Finally, the course took place over five days, each Center varying each day. The courses were theoretical-practical since the staff learned the theoretical part of the Geological Heritage and Geoparks and could verify what they had learned on the spot.

**Duration:**

Time for one person.

**Preparation:** 3 days

**Training:** 5 days

**Follow on communication:** ½ day

**Resources Required:** Classroom, rent a car for teacher, hotels and food for teachers, projector, laptop, presentation, promotional material and leaflets.

**Outcome:** Feedback from participants was very positive

**Lessons Learned:**

- Most of the employees did not know anything about the geological heritage of the places where they work or didn't know that they were considered geosites, so this course was very important for them.

- It is important to know a place to respect it. It's important to know the values of the place where you work and to be able to transmit to the tourists who are visiting a special place.

## Appendix 1 *Sample Geopark Training Plan*

Programme/course Title:	
Overall Training Aim:	
Profile of target trainees:	
Special considerations <sup>1</sup> :	

---

<sup>1</sup> Include here any changes to the group or issues related to the profile of the group that may affect the choice of teaching methodology etc.

### Training Session Layout

Trainer		Date
Course Title (if applicable)		Session Number
Lesson Title/Unit	Specific topic	
Logistics (day, date and timing and room details)		
Lesson aims and objectives (purpose)		
Learner Outcomes (use action verbs in a description of measurable outcomes)		
Rationale (why the learners need to learn this topic)		
Special Considerations: (issues relating to profile of the group that may affect choice of materials)		
Lesson content (main headings of what is to be taught)		

- ✓
- ✓
- ✓
- ✓

### Training methods

- a. Focusing event
- b. Teaching methods
- c. Formative check (questions/progress checks)
- d. Student participation (how will you get the learners to participate)
- e. Closure (how will you end the lesson)

Evaluation procedures/test questions (measure outcomes/determine learning)

Materials and aids (what will you need in order to teach this lesson)

Post mortem (notes for follow up work; what went well; what needs revision)

# Appendix 2 Promotional Material and Programme from Arouca Geopark Teacher Training Course



## XXXIX CAP – CURSO DE ATUALIZAÇÃO DE PROFESSORES DE GEOCIÊNCIAS

Rota dos Geossítios do Arouca Geopark: aspetos educativos  
06 a 08 de Setembro de 2019 | Arouca Geopark

### PROGRAMA

#### 06 de setembro (sexta-feira) | Museu das Trilobites

17h30 - 18h00

Receção dos participantes

18h00 - 18h30

Sessão de Abertura

Margarida Belém | Presidente da CMA

António Duarte | Coordenador Executivo da AGA

Manuel Valério | Proprietário do MIT

Mónica Sousa | Diretora Executiva da APO

18h30 - 19h30

Recursos geológicos vs. Património geológico: o

contributo da Pedreira do Valério

Manuel Valério & Manuel Figueiredo (MIT)

19h30 - 20h30

Visita à Pedreira do Valério e ao Museu das Trilobites

Manuel Valério & Manuel Figueiredo (MIT)

21h00 - 23h00

Jantar de arauques no restaurante Semblano, comentado

pelo veterinário Paulo Teixeira (CVA)

#### 07 de setembro (sábado) | Auditório da Loja Interativa

de Turismo de Arouca

#### Seminário: Dos recursos geológicos aos recursos

patrimoniais e educativos

Moderadora: Margarida Silva | APG

09h00 - 09h45

A Rota dos geossítios e a Rota Europeia Atlântica de

Geoturismo como ferramentas de valorização de recursos

geológicos e patrimoniais

António Duarte (AGA)

09h45 - 10h30

Da região mineira de Arouca à realidade mineira atual de

Portugal

Fernando Noronha (FCUP & ICT)

#### 07 de setembro (sábado) (cont.)

10h30 - 11h00

Debate

11h00 - 11h30

Coffee-break

11h30 - 12h00

Partida em autocarro para a Serra da Freita. Saída do

campo «Aspetos educativos do Itinerário A da Rota dos

geossítios: Freita - a serra encantada»

Daniela Rocha (AGA) & Alexandra Paz (AGA)

12h00 - 13h00

Visita aos geossítios Panorâmica do Detrelo da Malhada e

S. Pedro Velha

13h00 - 14:00

Almoço de campo na área de Recreio de Lazer do Menjal

14h00 - 15h15

Continuação da saída de campo, com visita aos

geossítios Frecha da Mizarela e Contacto litológica da

Mizarela

15h15 - 15h30

Visita ao Hotel Rural da Freita

David Fernandes (HRF)

15h30 - 16h30

Continuação da saída de campo, com visita aos

geossítios Pedras Pardeiras (Casa das Pedras Pardeiras -

Centro de Interpretação) e Panorâmica da Costa da

Castanheira (Radar Meteorológico de Arouca)

Daniela Rocha & Alexandra Paz (AGA)

16h30 - 19h00

Regresso ao centro de Arouca

20h00 - 23h00

Jantar Geofood no restaurante do Hotel S. Pedro,

comentado pela nutricionista Ana Helena Pinto (AGA)

### Organização



### Apoios






**07 SET 2019**  
**09:00 - 11:00**

## SEMINÁRIO: DOS RECURSOS GEOLÓGICOS AOS RECURSOS PATRIMONIAIS E EDUCATIVOS

A Rota dos geossítios e a Rota Europeia Atlântica de Geoturismo como ferramentas de valorização de recursos geológicos e patrimoniais | António Duarte

Da região mineira de Arouca à realidade mineira atual de Portugal | Fernando Noronha

### XXXIX CAP - Curso de Atualização de Professores de Geociências "Rota dos geossítios do Arouca Geopark: aspetos educativos"

Associação Portuguesa de Geólogos

Tel.: [351] 215 477 695 | info@opgeologos.pt | opgeologos.pt | opgeologos.wordpress.com | xxxixcap.wordpress.com



### Apoios



# Appendix 3 Earth Sense Information leaflet for stakeholders, from The Copper Coast Geopark Case Study

COPPER COAST GEOPARK (ATLANTIC GEOPARKS INTERREG PROJECT)/WATERFORD CHILDCARE COMMITTEE

## EARTH SENSE

THE EARTH SENSE PROJECT IS A COLLABORATION BETWEEN THE COPPER COAST GEOPARK ATLANTIC GEOPARKS PROJECT AND WATERFORD CHILDCARE COMMITTEE TO CREATE A GEOLOGY AND EARTH SCIENCE EARLY YEARS EDUCATION PROGRAM THAT WILL LINK PRACTICES AND PRINCIPLES OF EARLY YEARS EDUCATION WITH LEARNING AND WITH ELEMENTS OF ENVIRONMENTAL AND EARTH SCIENCE.

THE PROCESS THROUGH WHICH THIS PROJECT WORKS IS:

1. A COLLABORATIVE LEARNING APPROACH, BETWEEN CHILDREN AND EDUCATORS, THROUGH INTERACTIVE LECTURES AND EXPERIMENTS WITH THE COPPER COAST GEOPARK GEOLOGIST
2. A POSSIBLE FIELD TRIP TO A COASTAL LOCATION TO EXPLORE THE THEMES FURTHER.



### The key learning goals of the project are:

- To create an awareness of environmental change, through understanding basic themes of geology with Children aged between 3 and 12 .
- To introduce children to broader scientific concepts of experimentation and scientific reasoning (evidence based assumptions) in an accessible way.
- To help children form an understanding of our roles as stewards of the present environment and how humans force and react to environmental change in positive and negative ways.
- To create a sense of place and realisation of the geological story which is recorded in Waterford and internationally recognised in by the Copper Coast UNESCO Global Geopark
- To form a basis for further questions and experiments through exploration and play.

[WWW.COPPERCOASTGEOPARK.COM](http://WWW.COPPERCOASTGEOPARK.COM)



## Appendix 4 Information poster about training program from Lanzarote Geopark case study

# Curso de Capacitación: Interpretación del Patrimonio Geológico, Geoparque y CACT

Del **24** al **28**  
de septiembre

Fecha	Hora	Lugar Celebración	Participantes
Lunes, 24/09/2018	16:30	Montañas del Fuego	Personal del Montañas del Fuego
Martes, 25/09/2018	09:00	Jardín de Cactus	
Martes, 25/09/2018	17:00	Castillo de San José	Personal Castillo de San José
Miércoles, 26/09/2018	09:00	Jameos del Agua	Personal Jameos del Agua Personal Mirador del Río Guías de la Cueva de los Verdes
Miércoles, 26/09/2018	18:00	Cueva de los Verdes	Personal de la Cueva de los Verdes
Jueves, 27/09/2018	10:30	Monumento el Campesino	Personal Monumento el Campesino Personal Oficina: CX
Jueves, 27/09/2018	16:30	Montañas del Fuego	Personal Montañas del Fuego
Viernes, 28/09/2018	09:00	Jameos del Agua	Personal Jameos del Agua Personal Mirador del Río

Imparte  
Dra. Inés Galindo Jiménez- IGME  
Dra. Nieves Sánchez Jiménez- IGME  
Dra. Carmen Romero Ruíz -ULL



Para más información e inscripción: [www.geoparquelanzarote.org](http://www.geoparquelanzarote.org)



# Appendix 5 Geopark Familiarisation trip invitation to stakeholders from Marble Arch Caves Global Geopark



## “Know Your Geopark”

### A Geopark Familiarisation Trip



**Saturday, 17<sup>th</sup> November – 9am to 5pm**

The Marble Arch Caves UNESCO Global Geopark, through funding received by the INTERREG European Atlantic Project, are delighted to offer you a guided day of discovering and experiencing your Geopark. Let us show you what the Geopark has to offer and enhance your knowledge and awareness of the Geopark area.

There is so much to do and see within the Geopark. Straddling the border between Counties Fermanagh and Cavan, our cross border Geopark takes in some of the most scenic and iconic parts of this region allowing visitors and residents alike to experience the best of what the landscape has to offer.

Lunch will be provided. Please wear warm waterproof clothing and sturdy footwear.

**Booking essential. Numbers are limited and allocated on a strictly first come, first served basis.**

The bus will leave from two locations:

- 1) Cavan Courthouse (GPS: 59.99, -7.36)
- 2) Enniskillen Castle Museums Car Park (GPS: 54.36, -7.64)

For more information and to book please contact Nuala +353 (0) 49 9526121 or email [nmccann@cavancoco.ie](mailto:nmccann@cavancoco.ie) during office hours. (9.15am to 5.00pm, Monday to Friday).



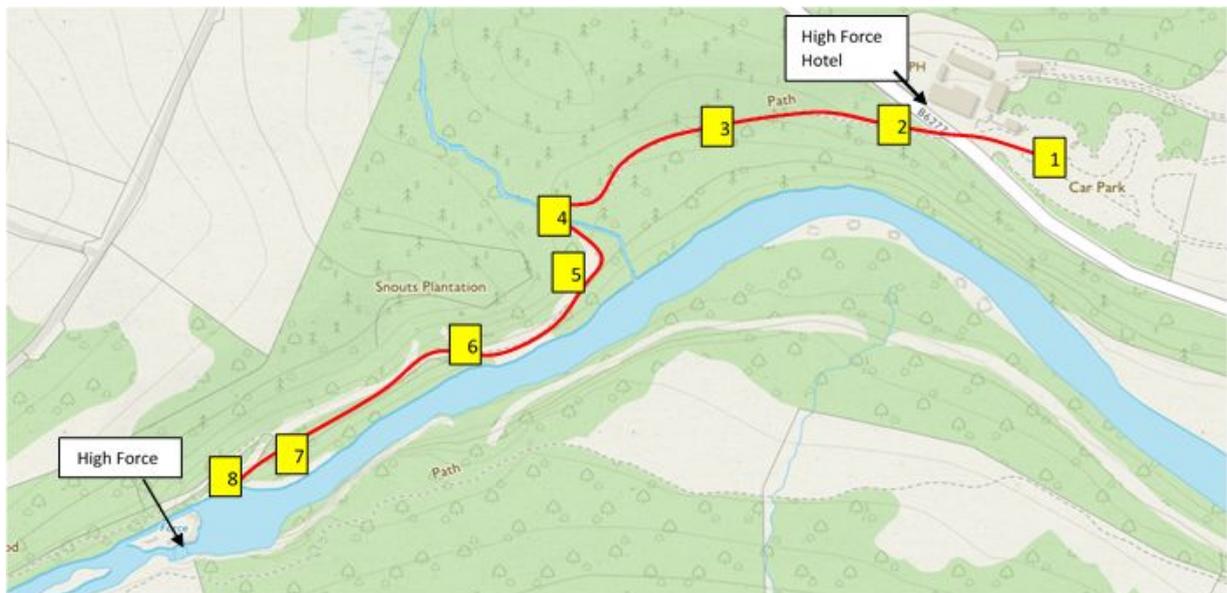
## Appendix 6 Photos of tour guide training program From MMS case study



# Appendix 7 Geological guide training example from North Pennines Geopark Case Study



## Guiding at High Force



Map based on OS mapping © Crown Copyright. All rights reserved. Durham County Council. LA 100049055.

1. **Human Sundial** – A good place to start the walk and introduce the concept of geological time. People are used to hours, days and years. We're going to be talking about things that happened hundreds of millions of years ago.
2. **Fallen trees** – Point out the fallen trees brought down in the storm of 1992. The woodland you're walking through has been left to naturally regenerate. This is also a nice place to say that a geology walk doesn't have to be entirely about geology, and to mention some of the plant life or birds you can see or hear.
3. **Stepped hills** – Through gaps in the trees it is possible to see some of the stepped hills on the south side of the valley. The hills of the North Pennines are mainly made up of repeating sequences of hard limestone, with layers of softer sandstone and shale (mudstone) between them. The more weather-resistant limestone layers stand proud of the other rocks, forming the 'benches'.
4. **Sandstone outcrop** – This is the first outcrop of rock we see up-close. Pick up a loose piece and encourage participants to have a look. The rock is light brown, rough and fairly brittle. This is sandstone, which formed around 330 million years ago, when the North Pennines sat close to the

shore of a shallow tropical sea. Vast river deltas deposited layers of sand, which were compressed to form sandstone. Point out that the rock is layered, and that this will be important later.

5. **Sandstone and dolerite** – At this point you can see more of the sandstone from the previous stop beside the path, with a different type of rock above it. The rocks above are dolerite, which cooled from molten rock (magma) and forms the Whin Sill. The Whin Sill is a fairly well-known landscape feature in the north of England, and forms the large cliffs beneath parts of Hadrian's Wall and is exposed on parts of the Northumberland Coast, e.g. at the Farne Islands. It is a particularly prominent feature of Upper Teesdale. The rocks above are distinct from those below in that they lack any layering, instead having large, vertical cracks running through them where the magma contracted while cooling.

6. **More outcrops of sandstone and dolerite** – There are various outcrops of sandstone and dolerite along the path between points 5 and 7. It's worth stopping at one or two of these to say more about the Whin Sill, such as the fact that it formed 295 million years ago, or that the layers of older sandstone around it have been cooked by the intense heat of the magma. There are also a couple of places where it clearly overhangs the softer sandstone beneath it, which is a good primer for explaining the formation of High Force later. It's also nice to stop for a moment when you get the first view of the waterfall.

In various places **between points 5 and 7**, you can look across the gorge and see that the rocks on both sides are exactly the same, because the layers were originally continuous when they formed – there was once no gorge here.

7. **Top of the steps** – This is the best place to talk about the formation of High Force. It's loud, but you can make a point of this. To the first humans that settled here, High Force would have been the loudest thing in their world (with the possible exception of thunder!). Point out the harder dolerite forming the top of the waterfall (the same layer of rock they've been following down the gorge) and the sandstone beneath it. The darker rock at the bottom is limestone, which formed from the bodies of countless tiny creatures when the North Pennines was a shallow, tropical sea near the equator. Both the sandstone and limestone are much softer than the dolerite, and so are eroded more quickly by the force of the water. The ledge of dolerite eventually becomes unstable and collapses into the river, and the process begins again. This has repeated countless times since High Force formed at the end of the last Ice Age, causing the waterfall to gradually retreat up the gorge.

8. **Bottom of the steps** – It's far too loud to talk to a group down here, so just let participants enjoy the view. You can go around and talk to them on an individual basis if they have any additional questions at this point.

### **Other things to point out**

- The water in the Tees is a dark brown colour, due to the presence of peat washed down from the hilltops.
- The rocks of the gorge are still being actively eroded by frost and water, but also by plant life – there are places where the roots of trees can be seen forcing their way into cracks in the rock, slowly pushing them apart.

