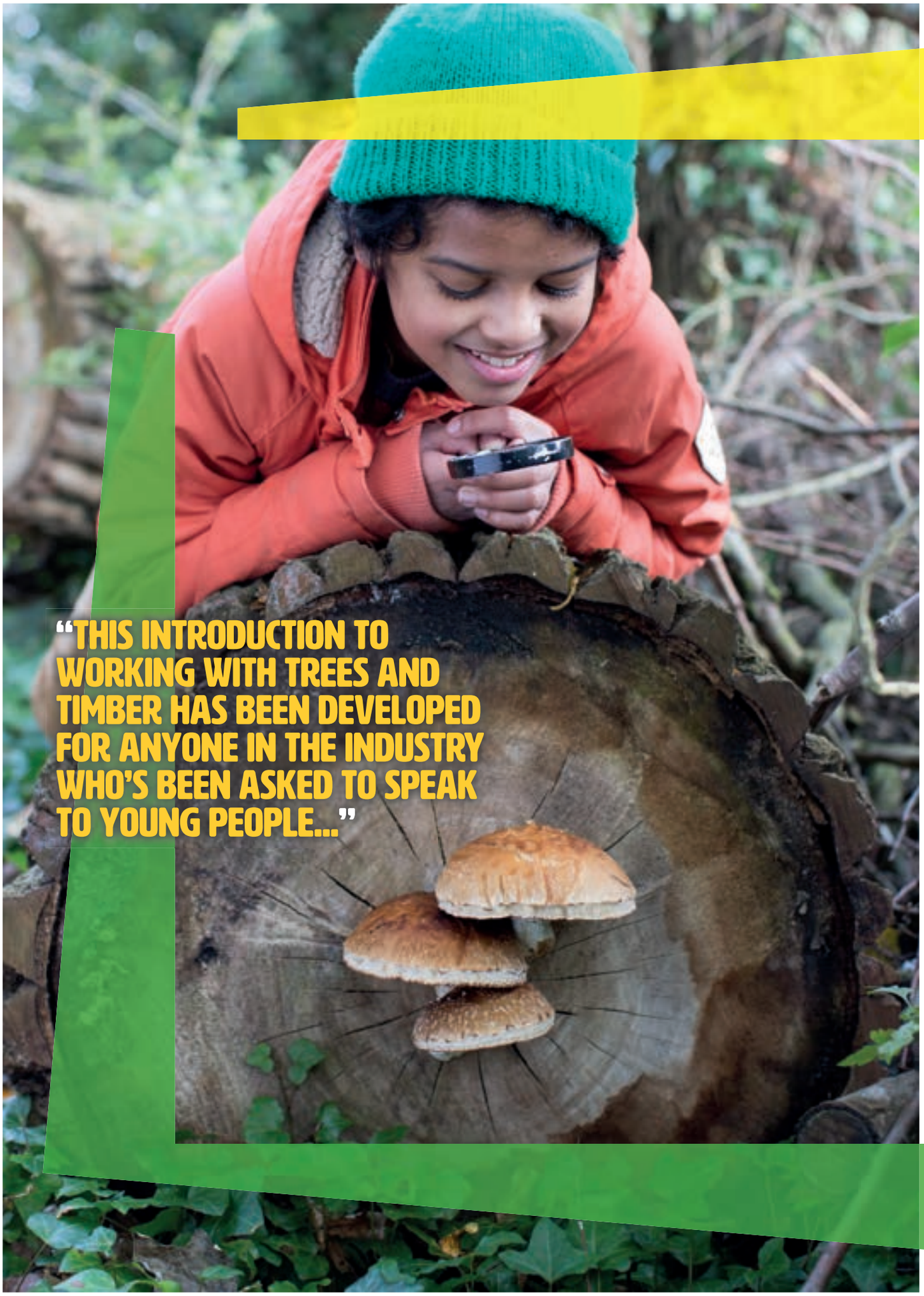
GROWING THE NATION'S NEXT GENERATION OF FORESTERS

A toolkit for introducing forestry to schools

STEM Ambassadors



“THIS INTRODUCTION TO WORKING WITH TREES AND TIMBER HAS BEEN DEVELOPED FOR ANYONE IN THE INDUSTRY WHO’S BEEN ASKED TO SPEAK TO YOUNG PEOPLE...”

INTRODUCTION

Those of us who work in the industry already know how great the trees and timber sector can be as a career choice. That's why many of us become STEM Ambassadors for Forestry.

When you combine the forecasts showing how the sector is set to grow substantially during the next decade with increasing calls to say we need more new entrants to join us, we really have an important ambassadorial role to inspire the next generation of the workforce to think so too.

One way of doing this is through taking part in career and school events. Such events vary greatly in terms of their audience as too do their format, location and duration, so flexibility and adapting to each situation is key. Where possible, it is also useful to tie in any activities with a school's curriculum so that the event can feed into an establishment's on-going learning programmes.

This introduction to working with trees and timber has been developed for anyone in the industry who's been asked to speak to young people in order to signpost and provide easy access to a wide range of resources that have been created to promote the sector and which could be used/adapted for use in a variety of settings.

Often the best way to tell a story is to draw from what you know and there simply is no substitute for first-hand knowledge and experience. This is a really important point and why schools ask for guest speakers to come to their schools.

The passion and expertise individual's bring is what excites and engages young people. So it is not the intention of this pack to stifle individuality or promote one particular approach that has to be used on every occasion. Rather, it presents some thoughts, comments and information from which ideas can be drawn and hopefully complement those of industry representatives attending career events.

It also provides links to organisations such as **Outdoor Woodland Learning (OWL) Scotland**, the **Forest School Association**, and the **Wales Council for Outdoor Learning groups**, and others, who may be able to provide equipment, information and moral support at a more local level.

We hope the wealth of information, tips and resources gathered here inspires the ambassador in you and that the many films we've linked to at the end endorse your own passion for this very special industry. We hope that you will help us to share our manifesto for trees within schools and communities across the country, helping us to secure the future of our woods and forests for generations to come.

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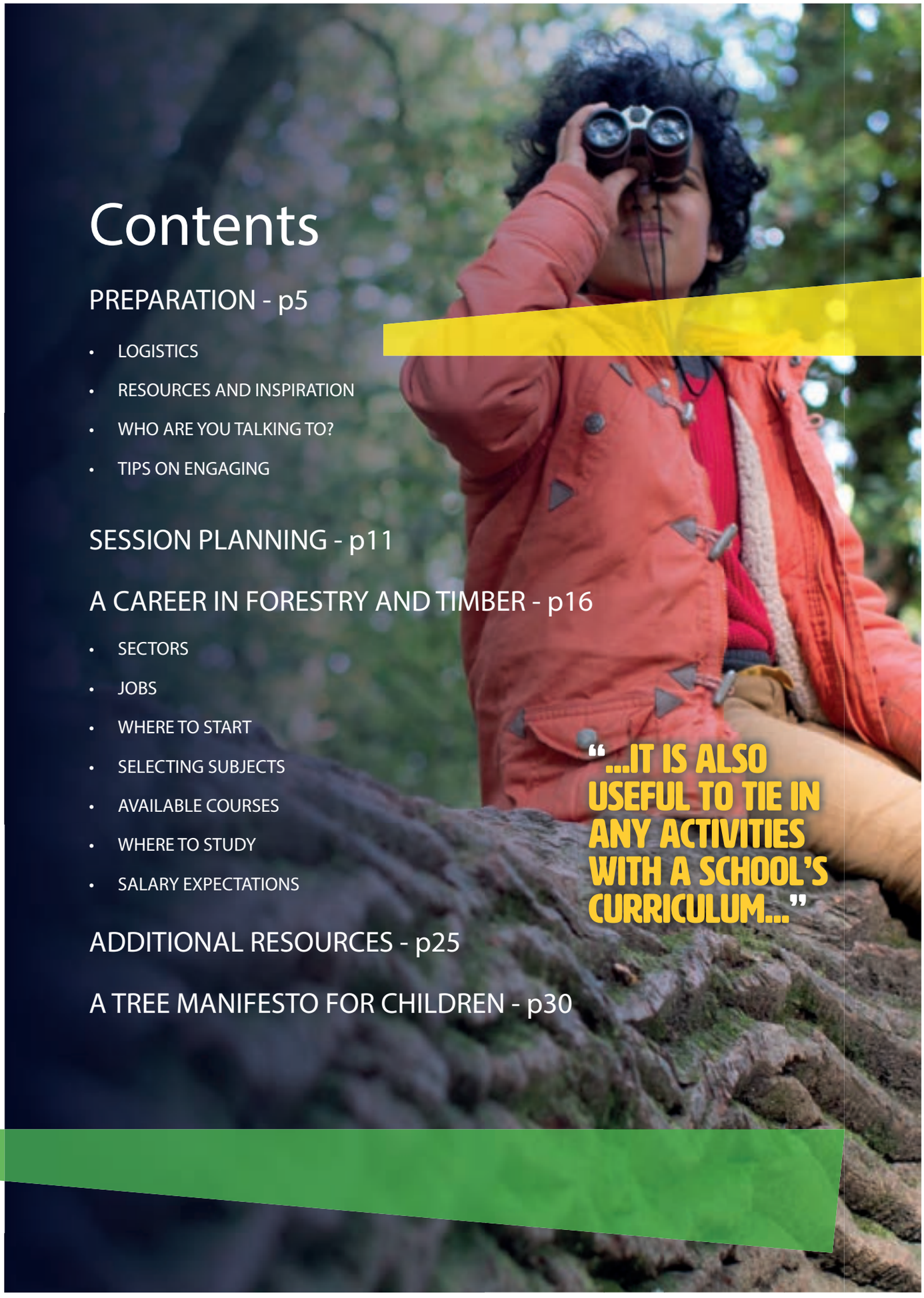
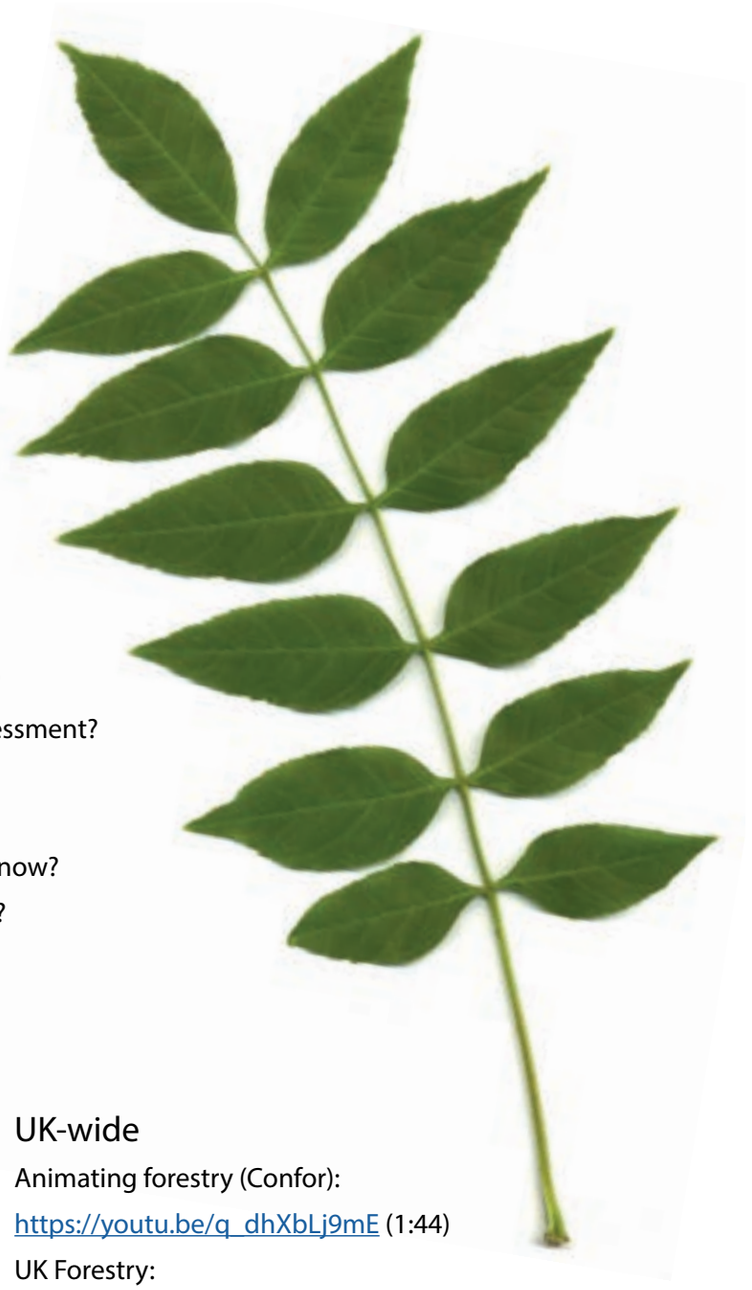


"...IT IS ALSO USEFUL TO TIE IN ANY ACTIVITIES WITH A SCHOOL'S CURRICULUM..."



PREPARATION - Logistics

When you've been asked to speak about forestry to a group of young people here are a few questions you may initially like to ask your host/s.

- How many people will I be speaking to?
- What are their ages?
- How long will I have to talk/have with them?
- Are there any individual needs I should be aware of?
- What are your policies for safeguarding and risk assessment?
- Will we be indoors or outdoors?
- What equipment will be available?
- What sort of topics are students learning about just now?
- What do you expect/are hope to get from the event?

Resources and inspiration

Here are some links to a number of short films about the industry that you can use to enhance your talk, either by getting some inspiration for yourself and/or selecting and forwarding to the school you are due to visit to whet their appetite. It's a good idea to suggest that the films are shown in connection with activities related to the curriculum. You might also consider incorporating one or two of the films in your presentation.

Global

WWF Film narrated by Sir David Attenborough: **How To Save Our Forests and Rewild Our Planet** - https://www.youtube.com/watch?v=Ig9Tfc_hNsE

UK-wide

Animating forestry (Confor): https://youtu.be/q_dhXbLj9mE (1:44)

UK Forestry: https://www.youtube.com/watch?v=_v3MkCFRcrs

Those with an appetite for machines and higher risk activities may be interested in this short film. But do warn them not to try any of it at home!

Serious work, serious danger (FCS) : https://youtu.be/VXYf3VHbUy0 (1:31)

Scotland

There's more to Scotland's forests than meets the eye (FCS): https://youtu.be/4M8v0k5YdIg (1:26)

If you have access to virtual reality goggles and can control the stampede, this is a great way of getting children interested!

https://www.youtube.com/watch?v=WjDkBpW1x68&sns=em

England

https://www.forestryengland.uk/we-are-for?utm_source=youtube&utm_medium=ad&utm_campaign=brand&utm_content=national

Tree planting: https://www.youtube.com/watch?v=N37vMGjqmYs

Lots more here: https://www.youtube.com/channel/UCspfY4rpODprWA_9zeZ_9EQ

Wales

National Forest Video Wales: https://www.youtube.com/watch?v=UGhNsU7-I00

Animation version: https://www.youtube.com/watch?v=NfD8ebGtnGs

Careers in forestry (Wales) https://www.youtube.com/channel/UCSQoJ0TaN92j6F3eYdjQSdw

And here's a useful hand out for visitors to Welsh schools: https://www.confor.org.uk/media/246794/2017-wales-forestry-infographic.pdf

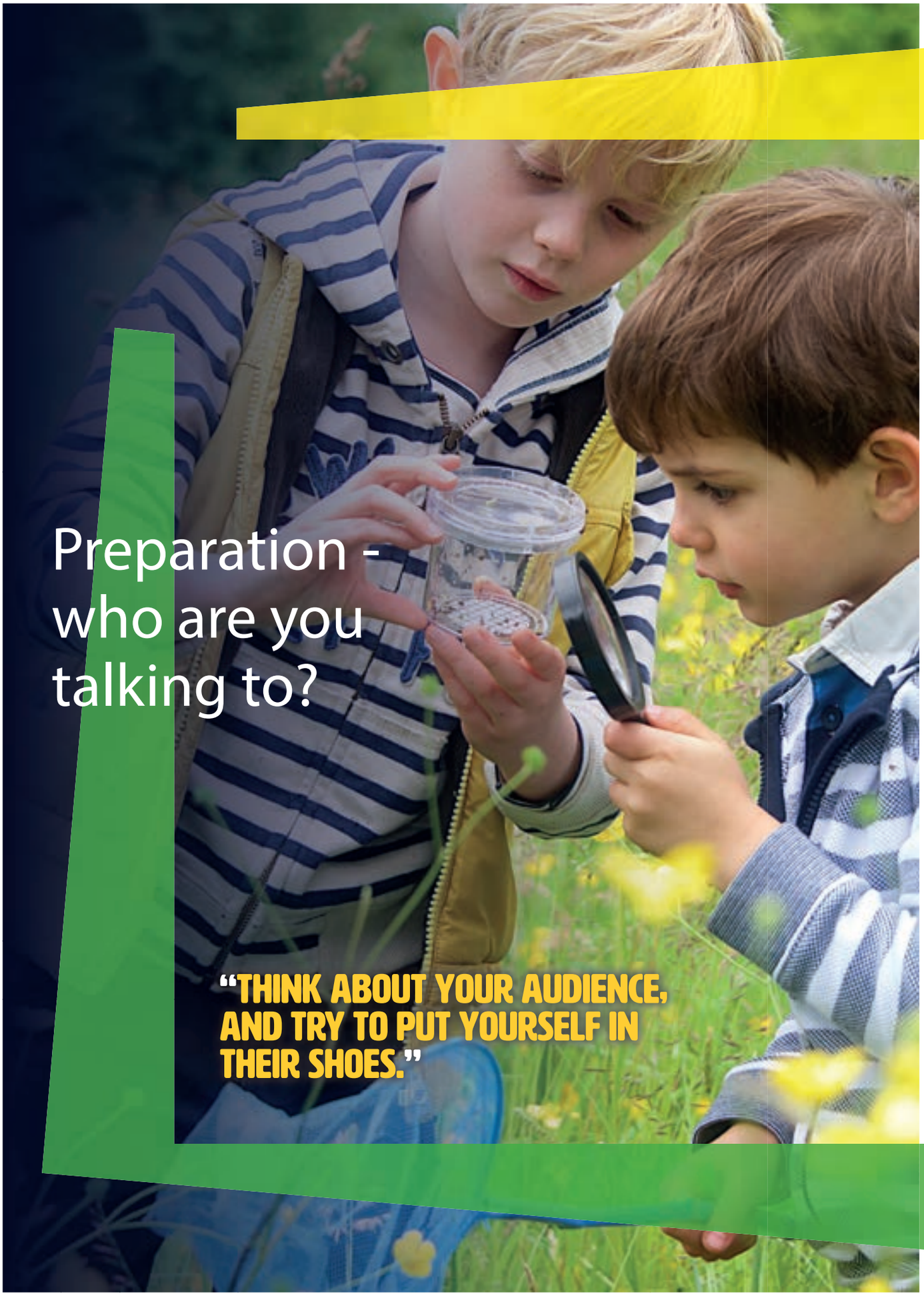
UK trees and Forests

Other useful sources for ideas can be found at Forestry and Land Scotland and Forestry England learn pages. These explore different species of tree, describe their uses and explain their journey from seedling to timber product.

https://forestryandland.gov.scot/learn/forestry

https://www.forestryengland.uk/growing-future-forests-from-seed

https://www.forestryengland.uk/timber-uses-of-wood



Preparation - who are you talking to?

"THINK ABOUT YOUR AUDIENCE, AND TRY TO PUT YOURSELF IN THEIR SHOES."

You will be talking to children from nursery level to 17-18 year olds in Year 13 in England and Wales and S6 in Scotland.

The table below shows the different level descriptors used across the UK.

Age	English and Welsh School Year	English and Welsh Key Stages	Scottish School year	Scottish Level
3-4	Nursery	Early Years	Nursery	Early
4 - 5	Reception			
5-6	Year 1	Key Stage 1	P1	
6-7	Year 2		P2	First
7-8	Year 3	Key Stage 2	P3	
8-9	Year 4		P4	
9-10	Year 5		P5	Second
10-11	Year 6		P6	
11-12	Year 7	Key Stage 3	P7	
12-13	Year 8		S1	Third/Fourth
13-14	Year 9		S2	
14-15	Year 10	Key Stage 4	S3	
15-16	Year 11		S4	Senior phase
16-17	Year 12	Key Stage 5	S5	
17-18	Year 13		S6	

Fig. 1
Summary of student ages and school years in UK Schools.

Tips for engaging youth

Before you engage

Think about your audience, and try to put yourself in their shoes. What were you interested in at that age? If you can't remember, speak to friends or family in that age group. If you are trying to communicate what can be a complex idea try to relate it to something they can visualise or that they enjoy. (A remarkable number of scientific theories can be explained through chocolate or pizza).

Planning is crucial, as is a practice run! If you are delivering a 'hands on activity' make sure you have tried to explain it to someone else at least once (ideally of your target age), before you face a


"USE TECHNOLOGY AS A TOOL RATHER THAN A TOPIC OF CONVERSATION."

classroom of 30 primary school children. Time the activity too and double check the time you think you have is the time the organiser has allocated you.

Talk to the leader of the group or class before you plan the session, and again once you have developed your plan. This will help to make sure that the time you take out of their teaching or delivery plan is worth every minute! It also helps to ensure there is enough space / equipment available (e.g. pens, paper, scissors etc.).

Top tips

- It is normally best to engage young people by listening to them and organizing activities rather than lecturing or giving advice. Remember, they don't know you, so you need to earn their attention!

- Props are a great way to start discussions. Guessing what things and how / why they are used. Even hi vis vests, hard hats etc are exciting!

- If you are at a careers fair, or in a small group – it can sometimes help to ask them what their favourite (or least favourite) subject is and why, or what classes they have avoided to come to the fair! This encourages them to start with something they know. And as forestry is so diverse, you can normally find an example of how being good at that subject can lead to a career in forestry!

- Don't ask "What do you want to do when you leave school?" or similar. If they don't know, they will often instinctively make something up in order to give you an answer, or repeat what an advisor has recommended. Instead try "have you decided on a career path yet" or " do you have in mind what you would like to do after you leave school?" That way, 'I don't know' doesn't sound like a wrong answer!

- If they have clearly picked a subject area you can ask them whether they visit woods/forests with family or friends and which forests nearby are their favourites and what sorts of activities they do or seen people do in woods. You can ask them what the forest is like (ask them for a couple of words to describe their experience) and see if that might lead to some tree identification. This also helps to emphasise to them how important forests are, and perhaps makes it a bit more likely they might recommend a career in forestry to a friend.

- You can also engage them in discussion by relating forestry back to climate change, the class or subject you are helping with (e.g. Biology or Maths) or how access to forests and woodland impact on their lives. Putting it in that context is a way of making the discussion personal and of interest to them, even if they might have no intention of working in forestry in future.

- Use technology as a tool rather than a topic of conversation. For young people, technology is not so much an interest, it is a normal part of daily life integrated into almost everything they do. However, they do tend to like to know about apps or tools / technology they might not have encountered before. If technology is part of your role, perhaps try passing some around the class (if not too expensive or easily broken!) and ask them to guess what you use it for. A clinometer is a good one to try in this regard, or you could make one: https://www.instructables.com/Using-a-clinometer-to-measure-height/

• Be sincere and genuine when working with young people. They are not expecting you to be trendy or cool (you are a new face in the classroom and so are often automatically more interesting than their teacher), and trying too hard may backfire. Just tell the story of how you got into forestry and don't polish it too much. If you didn't know what you wanted to do and fell into it by accident – tell them!

There is also this future learn course on Volunteering in the classroom and how to bring STEM into schools which might spark some ideas: https://www.futurelearn.com/experttracks/stem-industry-volunteering-in-schools

And remember – stay safe! All STEM Ambassadors need to comply with the health and safety requirements for activities. If you are volunteering with a school, community group or event, you are required to discuss and, more importantly, agree to any health and safety requirements, and any risk assessment procedures, with the school or activity organiser prior to the activity taking place. It is vital you follow the STEM Ambassador safeguarding guidelines in order to keep everyone safe and for insurance purposes. See your STEM handbook for more information, paying particular attention to pages 24 and 25.

FINAL STEM Ambassadors Handbook is here: https://www.stem.org.uk/sites/default/files/pages/downloads/FINAL%20STEM%20Ambassadors%20Handbook.pdf

SESSION PLANNING

Some examples of activities follow and resources that are appropriate for the different age groups you might be talking to.

But first, here are two important messages for everyone:

Forests and the environment

We all benefit from the goods and services provided by our forests, biodiversity, timber, food, renewable energy, water purification and flood mitigation. Our forests are important natural assets!

Forests and people

Forests and woodlands provide opportunities for people to improve their physical and mental health and to play and learn in different ways. They enhance the quality of life for people living and working in towns and cities.


“FORESTS AND WOODLANDS PROVIDE OPPORTUNITIES FOR PEOPLE TO IMPROVE THEIR PHYSICAL AND MENTAL HEALTH AND TO PLAY AND LEARN IN DIFFERENT WAYS.”

Indicative ages: 4-5

Short duration

- Paint with pine cones or conkers - https://www.woodlandtrust.org.uk/blog/2019/09/conker-crafts/
- Super Sticks - https://cdn.oxfordowl.co.uk/2016/07/22/14/43/49/60/super_sticks_activity_sheet.pdf

Medium duration

- Tree measuring - https://owlscotland.org/resources/tree-measuring1/
- Leaf identification challenge - Leaf identification for kids - Nature Detectives (woodlandtrust.org.uk)
- Woodland treasure Hunt - https://www.treetoolsforschools.org.uk/activities/pdfs/pdf_forest_floor_puzzle.pdf

Longer duration

- Adapted Harestanes woodland maths trail - https://owlscotland.org/resources/woodland-maths-trail/
- Build a tree - http://www.owlscotland.sbp-creative-dev.co.uk/images/uploads/resources/files/Summer_text_stages_1+2.pdf

Indicative ages: 5-8

Short duration

- Tree rubbing (Forestry England) - https://www.forestryengland.uk/sites/default/files/documents/Tree%20Explorer%20Activity%20Pack-2020.pdf
- Super Sticks - https://cdn.oxfordowl.co.uk/2016/07/22/14/43/49/60/super_sticks_activity_sheet.pdf

Medium duration

- Forest Floor puzzle (Woodland Trust) - https://www.treetoolsforschools.org.uk/activities/pdfs/pdf_forest_floor_puzzle.pdf
- Level 1 tree measuring - https://www.owlscotland.org/images/uploads/resources/files/TreeMeasuring2018.web3.pdf
- Leaf ID sheet - https://www.woodlandtrust.org.uk/media/48345/leaf-id-sheet.pdf

Longer duration

- Adapted Harestanes woodland maths trail (OWL Borders Group) - https://www.owlscotland.org/images/uploads/resources/files/Harestanes_woodland_Maths_Trail11.pdf
- Summer woodland activities (OWL North East Group) - http://www.owlscotland.sbp-creative-dev.co.uk/images/uploads/resources/files/Summer_text_stages_1+2.pdf

Indicative ages: 8-11

Short duration

- Match the seeds - https://www.treetoolsforschools.org.uk/activities/pdfs/pdf_match_the_seeds_puzzle.pdf
- Tiny Treasure Hunt - http://treetoolsforschools.org.uk/activities/pdfs/pdf_tiny_treasure_hunt.pdf

Medium duration

- Second level tree measuring - https://owlscotland.org/resources/tree-measuring1/
- Why do leaves change colour - https://www.treetoolsforschools.org.uk/activities/pdfs/pdf_why_do_leaves_change_colour.pdf

Longer duration

- Summer woodland activities (OWL NE Group) - http://www.owlscotland.sbp-creative-dev.co.uk/images/uploads/resources/files/Summer_text_stages_1+2.pdf

More activities and resources for these age groups can be found on the following websites:

Forestry England Tree Explorer
Outdoor Woodland Learning (OWL)
Tree Tools for Schools (Woodland Trust)
Things To Do in Our Woods - Woodland Trust

Looking further afield – Canada and Finland – there are some great forestry learning resource websites and virtual interactive tours such as: - The Forest Academy: https://smy.fi/en/teach-learn/material-for-schools/.

UPM's Forest Life is a tour of forestry focusing on harvesting, reforestation, forest health and other aspects of forest management. https://www.upmforestlife.com/

Become a forest expert and take a journey through the woods. Collect merit badges as you learn about trees and their environment.

University of Birmingham, Institute of Forest Research Education resource - an online tour of a forest research facility in central England, with worked examples appropriate to A level Biology and Geography students https://canvas.bham.ac.uk/courses/52405/pages/welcome

Indicative ages: 11-14 and 14+

Rather than a more generic introduction to the forestry and timber industry, particularly through the sort of examples of outdoor activities and play ideas highlighted above, by this stage, pupils would be looking for careers advice, information and guidance that is more focused and sector-specific.

Students will be narrowing down their exam subject options so information on which could be useful for a career in the forestry and timber sector would be helpful.

Formal careers events are likely to be incorporated into the school curriculum and could be run in a range of different formats such as "speed-dating", market stands (career fairs) and workshops and have a number of industries represented.

Short duration (e.g. speed dating/market stands)

- Create a visually attractive/impactful stand/display
- Highlight breadth of forestry and timber industry (virtual reality goggles, suitably managed, are good for this but if unavailable, a looped presentation could be played)
- Describe range of job opportunities within the sector
- Provide advice on subject choices, where to study forestry and salary expectations
- Be prepared to answer questions

Medium duration

- Run presentations on the forestry and timber industry
- Third/fourth level & Senior Phase Tree Measuring (OWL) https://owlscotland.org/resources/tree-measuring1/

Longer duration

- Our forests, Our future

If you need to post an offer there are some good tips on how to make it attractive in your STEM Ambassador Handbook!

https://resources.stemambassadors.scot/wp-content/uploads/2021/12/STEM-Ambassadors_Writing-a-good-Offer.pdf


“TECHNOLOGY IS MAKING THE PROCESS OF HARVESTING TIMBER SAFER AND MORE EFFICIENT.”

A CAREER IN FORESTRY AND TIMBER

Having inspired your audience with your talk there might be some who want to explore a little further what a career in forestry might entail and then how to get on that path. So, firstly here's a reminder of all the different sectors there are within the industry.

Nursery

Trees are grown in sheltered nurseries before they are planted as part of a new, well designed forest. It typically takes between one and three years to prepare trees for planting.

Management

Once trees are planted, they need to be established and managed. Nurturing our woodland takes decades of planning, dedication and hard work.

Harvesting

Technology is making the process of harvesting timber safer and more efficient. The modern day lumberjack sits in a protected cab and uses a high-tech control panel to manoeuvre the blades that cut the wood. Communication with the sawmill is vital and tells the machine operator what kind of wood to cut and how much is needed.

Transport

Hauliers play a vital role in our modern forestry supply chain. They move millions of tonnes of logs from the forest to timber processors, often along remote, rural roads. Some timber is moved by sea and rail. Once processed, the timber products are then transported to suppliers for onward distribution.

Processing

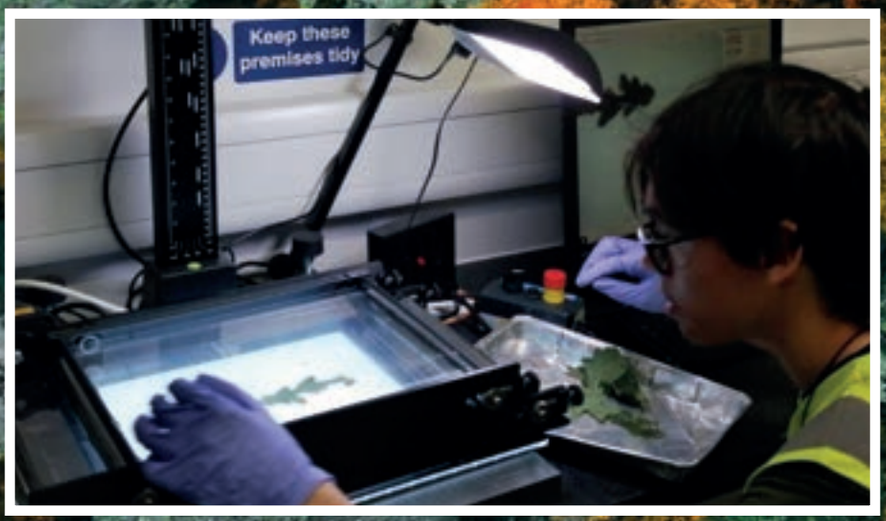
The processing of the wood from our forests takes place in high-tech sawmills. Logs are scanned using 3D CAT scanners and are automatically cut up into shapes required by designers. Modern processing is extremely efficient and no part of the product is wasted.

Designers and wood users

The wood that we harvest from our forests is of exceptional quality. It's not only a beautiful material to work for designers, architects, construction engineers and furniture makers, it is also a reliable and sustainable one – using much less energy than other materials.

Biomass and woodfuel

Wood can also be burnt to release renewable energy. Renewable energy from biomass boilers can power farms, homes and businesses. Woodfuel, in the form of logs or woodchip pellets can also be combusted in wood-burning stoves to warm up our homes and heat our water.


Keep these
premises tidy

What jobs could they do?

The forestry and timber industry is so much more than lumberjacks and jills cutting down trees. The following jobs are just a few examples of those within the sector.

- Assistant manager forestry / harvesting / logistics / nursery / operations / sales / sawmill / woodland
- Building Compliance Officer
- CAD Technician
- Chainsaw Operator
- Contractor – establishment (drainage, cultivation) / fencing / harvesting
- Engineer – chemical / civil / maintenance / mechanical
- Forest Ecologist
- Forest Ranger – conservation / education / recreation / wildlife
- Forest Surveyor
- Forest Worker - /craftsperson/woodman
- Forester – community / harvesting / recreation & tourism / social
- Forestry Consultant
- Forestry Supervisor / Squad Leader
- Forestry Liaison Manager
- GIS Technician
- Land Agent
- Landscape Architect
- Machine Operator
- Manager – contracts / forestry / harvesting / logistics / nursery / production / operations / sales / sawmill / woodland
- Policy Advisor
- Product Technician
- Sawmill Operative
- Scientist
- Timber Buyer
- Timber Frame Designer
- Timber Haulier
- Wood Machinist
- Woodland Investment Advisor
- Woodland / Forest Officer
- Yardsperson

The forestry and timber industry is exciting and dynamic and as we have seen there are many different routes you could take. The film below showcases the diversity of roles that a career in forestry can offer you today.

Forestry careers in 60 seconds (ICF):
https://youtu.be/73050YM4CnY (1:10)

Where to start?

Having seen the range of opportunities forestry affords the next question is "where do I start?"

Professor Ted Wilson has written his Top Ten Tips for starting a career in forestry (and forest conservation and arboriculture).
https://www.confor.org.uk/media/79559/22-23-career-in-forestry.pdf

(Professor Ted Wilson is a silviculturist and forest scientist. He is Director of Silviculture Research International and Adjunct Professor of Forestry, Faculty of Forestry, University of Toronto, Canada. His varied career in the UK and Canada has included roles in woodland management, forest policy, research and academia. His forestry passions include silviculture, professional education and public engagement with forest conservation issues).

For more information on jobs and qualifications in forestry check out these websites or this link:
https://rfs.org.uk/jobs/
Lantra - https://www.scotland.lantra.co.uk/
CONFOR - https://www.confor.org.uk/resources/jobs/
ICF - https://www.charteredforesters.org/what-we-do/education-careers

https://www.myworldofwork.co.uk/my-career-options/job-profiles/forest-worker

https://careerswales.gov.wales/job-information/forester

https://nationalcareers.service.gov.uk/job-profiles/forestry-worker

Selecting subjects

It will be helpful for those in your audience who are 14+ and are excited about the prospect of a career in forestry to know the range of subjects that would be regarded as useful in the industry.

Scotland

National 4 and National 5 exams are the main qualifications taken by pupils at the age of 15/16 (S4/S5) with subject choices being selected by the end of S3. Some schools may select subjects before S3 so it's always best to check with the individual's school.

National 4 (4) and National 5 (5) subjects that could be useful for a career in the forestry and timber sector include:

- Biology (4 & 5)
- Business Management (5)
- Chemistry (4 & 5)
- Computer Science (4 & 5)
- Design & Manufacture (4 & 5)
- Engineering science (4 & 5)
- English* (4 & 5)
- Environmental science (4 & 5)
- Geography (4 & 5)
- Mathematics* (4 & 5)
- NPA Rural Skills
- Practical electronics (4 & 5))
- Practical metal working (4 & 5)
- Practical wood working (4 & 5)
- Science (4)
- Skills for Work Rural Skills

*compulsory subject/s

The school leaving age is generally 16 (after the completion of National 4 and 5s), after which a student may choose to stay in full time education and study for Higher and Advanced Higher qualifications.

Higher exams can be taken by pupils at the age of 15/16 (S5) and 16/17 (S6) and further Highers and Advanced Highers during S6.

Highers (H) and/or Advanced Highers (AH) subjects that could be useful for a career in the forestry and timber sector include:

- Biology (H & AH)
- Engineering science (H & AH)
- Business Management (H & AH)
- English (H & AH)
- Chemistry (H & AH)
- Environmental science (H)
- Computer Science (H & AH)
- Geography (H & AH)
- Design & Manufacture (H & AH)
- Mathematics (H & AH)

England and Wales

There are some subtle differences between England and Wales but generally speaking GCSE exams are the main qualifications taken by pupils at the age of 15/16 (KS4) with subject choices being selected by the end of KS3. Some schools may select subjects earlier in Key Stage 3 so it's always best to check with individual schools.

GCSE options that could be useful for a career in the forestry and timber sector include:

- Biology
- Design & Technology
- Physical Education
- Chemistry
- Business Studies
- Engineering
- Geography
- Computer Science
- Science
- Maths
- Combined Science
- Electronics

After the age of 16, students may choose to stay in full time education and study for A-Levels or vocational qualifications or they may choose to work part time alongside courses such as apprenticeships or traineeships.

Subjects that could be useful for a career in the forestry industry and timber sector include:

- Sciences: Biology / Chemistry / Environmental Science
- Humanities: Geography / Geology / Business Studies
- English
- Mathematics
- Computer Science / ICT

What Further and Higher Education courses are available?

In Scotland forestry and timber sector subjects are available across a wide range of qualifications from National Progression Awards to SVQs and Modern Apprenticeships.

In England, from 2023, the current post-16 qualifications will be largely replaced by T Levels. The relevant one will be "Agriculture, Land Management and Production" with a specialism in tree and woodland management. You can also do apprenticeships.

Wales is continuing with the current Level 2 and Level 3 vocational courses.

At a higher level you can also do Foundation Degrees, Undergraduate or Postgraduate studies in all three nations.

Some of the courses which are available can be checked out https://www.charteredforesters.org/what-we-do/education-careers

Where could they study?

There are a number of colleges and universities across the UK where you can study for forestry or timber-related qualifications.
This website might help with linking to courses and entry requirements. The following websites also provide search by subject or university functions to help narrow down the choice.

- **UCAS**
- **Which? University**
- **The Institute of Chartered Foresters** awards points to certain courses; these points, along with practical experience, can then be used as part of the process towards becoming a Chartered Forester or Arboriculturalist.
- **The Royal Forestry Society** also offers Certificates in Forestry and Certificates in Arboriculture.
https://rfs.org.uk/learning/
https://rfs.org.uk/learning/professionaldevelopment/rfs-certifications/

What could they earn?

There are a number of colleges and universities across the UK where you can study for forestry or timber-related qualification

- **Civil Service Jobs** (search under Forestry Commission)
- **Confor** - Jobs in the forestry and timber sector
- **Countryside Jobs Service** (CJS)
- **Environmentjobs.co.uk** (search under forestry, woodland or timber)
- **Forestry Journal** - Job Vacancies
- **Indeed** (search under forestry or timber)

But here's a quick reference across the range of possible jobs:

Job Vacancy	Salary range (£)	Sector
Conservation Support Officer (Trees and Woodlands)	15,807 – 20,651	National Park Authority
Tractor driver	19,995 – 21,175	Civil service
Community and Visitor Services Craftsperson	19,995 – 21,175	Civil service
Support officer: Tree Health	19,995 – 21,175	Civil service
Woodland Contracts Manager	21,000 – 22,000	Charity
Assistant woodland consultant	22,000 – 28,000	Private
Civil engineering work supervisor	23,293 – 24,633	Civil service
Molecular biologist/forest pathologist	25,294 – 28,008	Civil service
Project Support Officer: Tree improvement	25,294 – 28,008	Civil service
Site Manager	26,000 – 30,000	Charity
Woodland Officer	29,695 – 32,811	Civil service
Harvesting & marketing forester	29,695 – 32,811	Civil service
Beat forester	29,695 – 32,811	Civil service
Structural CAD technician	30,000 – 35,000	Private
Timber Frame Designer	30,000 – 40,000	Private
Woodland consultant	30,000 – 43,000	Private
GIS Technical Manager	33,139 – 36,060	Civil service
Contracts Officer	33,139 – 36,060	Civil service
Assistant Area Land Agent	33,139 – 36,060	Civil service
HR Projects Manager	33,139 – 36,060	Civil service
Civil engineer (bridges & structures)	40,013 – 43,587	Civil service
Regional Manager	60,993 – 67,536	Civil service

Fig. 2
Current vacancies and salaries in the forestry and timber sector[1]

Additional Resources

If you have a bit more time, this film gives a great overview of our sector and can also be shown as shorter clips too (see below).

Our forests, our people (Confor)
https://www.confor.org.uk/our-story/our-story/

People

Humans and forests have been intertwined for centuries and from large productive forests to small woodland, modern day foresters work hard to support wildlife and the natural environment whilst managing a growing timber resource.
https://youtu.be/n-US-dG-i6M (2:05)

Environment

Sustainability sits at the heart of modern forestry design. Foresters take care to design forests, which protect the environment, enhance biodiversity and create habitats and landscapes for future generations to enjoy.
https://youtu.be/W-WqJyHsBiU (2:09)

Climate change

Climate change is one of the greatest threats we face today. By planting more trees and using more wood in our everyday lives, we can all play a part in tackling climate change.
https://youtu.be/ZmLH8d4-Ac0 (1:58)

Economy

Modern forestry nurtures our economy in many ways. Our forests are creating a new and vibrant rural economy, based around a renewable resource, and support over 30,000 jobs in some of the UK's most beautiful landscapes.

Making it personal

If you find yourself struggling to connect with your audience, it may be they have understood why forestry is important generally, but not perhaps why it is important to them. There now follows both a sales pitch and an inspiration, to help ambassador and pupil alike to find that connection!

The heart of wood, the soul of trees

We depend on forests for our survival. Forests regulate ecosystems, protect biodiversity, play an key role in the carbon cycle, support livelihoods, and supply goods and services that can drive sustainable growth. Many of the goods we use come from forests directly or indirectly. Although we tend to associate forestry mainly with the timber used for construction and furniture, as well as wood fuel, Non-Timber Forest Products (NTFPs), such as medicines, resins and bamboos are increasing in value and importance, as is their importance in health and wellbeing and of course in mitigating climate change.

Forests are a source of many products

We use products from trees every day, from the obvious wood and paper, to the chemicals extracted from trees, which are used to make thousands of products. All parts of the log are used, so there is virtually no waste, and leftover sawdust is used for energy to run the mills.

- There are so many examples of products made from wood: houses, furniture, toothpicks, musical instruments, charcoal, fences, floors, bridges and much more.

- Wood pulp is used to make all paper products, including books, cardboard boxes, coffee filters, tissues, blankets, building insulation, and more.

- Natural dyes, oils, tar, pitch, menthol and turpentine are chemicals made from trees. Chemicals extracted from trees also are used in the manufacture of cleaning products, deodorants and cosmetics. For example, sodium lauryl sulphate is a papermaking by-product used in shampoos and shaving creams as a foaming agent.

- Drugs made from trees include Taxol for cancer, Aldoril for hypertension, L-Dopa for Parkinson's disease and quinine for malaria.

- Cellulose fibres from trees are used to make clothing, cellophane, adhesives, food additives and thickeners, helmets, twine, luggage, sandwich bags, cigarette filters and photographic film.

- Some examples of foods that come from trees are almonds, apples, bay leaves, cherries, hazelnuts, juniper berries (used as gin flavouring - probably not the best example for under 18s!), pine nuts, plums and walnuts.


They are important for recreation, health and wellbeing

Forests are a great place to improve physical and mental health, seek adventure, make memories and find escape. They are host to a wide range of activities that demand a range of fitness and motor skills, such as trail running, mountain biking, pony trekking and even sled dog training.

- There were an estimated 446 million visits to woodland in England in 2015-16.
- There were an estimated 90 million visits to woodland in Scotland in 2013.
- There were an estimated 68 million visits to woodland by Welsh residents in 2014
https://www.forestresearch.gov.uk/tools-and-resources/statistics/forestry-statistics/forestry-statistics-2017/recreation-6/

For those seeking a more relaxing experience, forests can be used for bird watching and photography, or just relaxing under the canopy, enjoying the unique sights, sounds and smells of the forest. The Japanese practice of Forest Bathing, is a process of relaxation, known in Japan as shinrin yoku. The simple method of being calm and quiet amongst the trees, observing nature whilst breathing deeply can reduce stress and boost health and wellbeing in a natural way. https://www.forestryengland.uk/blog/forest-bathing

Visiting forest environments can help lower blood pressure and pulse rate, reduce cortisol levels and suppress sympathetic nervous activity - https://cdn.forestresearch.gov.uk/2021/10/health_and_well-being_benefits_of_visits_to_scotlands_forests_5dec20.pdf

The longevity of trees and forests means they often carry an emotional connection for people, inspire awe, and connect people with places and memories. They also provide artistic/creative inspiration for many. Grizedale Sculpture Park in Cumbria and The Forest of Dean Sculpture Trail in Gloucestershire are famous examples of where you can experience art in woodland settings. There are a number of prominent contemporary artists who work in wood including Andy Goldsworthy, based in Scotland, and David Nash, based in Wales. The increasing popularity of nature writing shows an appetite for a deeper engagement with our landscape and natural environment.

You can find out more about how to connect with nature here:

https://www.forestryengland.uk/blog/how-to-tune-into-nature or download the Forestry England 'Forests for Wellbeing' booklet here: https://www.forestryengland.uk/resource/wellbeing-booklet

They are important for, health and wellbeing

Flood risk is a major issue in the UK, and the increase in winter rainfall and extreme weather events caused by climate change are increasing the likelihood of such events. In addition to the potential advantages of flood control and storage, forestry offers a wide range of other benefits, including improvements to water quality, nature conservation, fisheries, recreation, and landscape. Forests are known to help reduce flooding. They use more water than other vegetation types and can also affect floods through their soils holding back and delaying the passage of rainwater to

streams and rivers. You can find out more about forestry and flooding here: https://www.confor.org.uk/media/246067/confor-37_forestryandfloodingreportfeb2016.pdf in Confor's Forests and Flooding report

Forests are a vital part of the carbon cycle

Forests are a vital part of the carbon cycle, acting as both carbon sources (producing) and carbon sinks (storing). A forest is a carbon sink if it absorbs more carbon from the atmosphere than it releases. Carbon dioxide is taken in from the atmosphere and used to produce sugars, with the oxygen released back into the atmosphere. The carbon is then stored in the tree – for example in the trunk, branches, roots and leaves, then in the litter and dead wood and in soils.

A forest is a carbon source if it releases more carbon than it absorbs. Forest carbon is released when trees burn or when they decay after dying (for example through fire, age or disease). The net balance of all of these carbon exchanges determines whether a forest is a carbon source or sink, and how much carbon dioxide is released to the atmosphere overall.

https://www.forestresearch.gov.uk/tools-and-resources/statistics/forestry-statistics/forestry-statistics-2018/uk-forests-and-climate-change/carbon-cycle/ and The diagram showing the carbon cycle is adapted from Figure 3 of Broadmeadow and Matthews (2003).

Forests have moderated climate change by absorbing about one-quarter of the carbon emitted by activities such as the burning of fossil fuels. This reduces the rate at which carbon accumulates in the atmosphere and 'slows down' climate change. How well forests continue to do this, will as a result, affect the future rate and impact of climate change, and will depend in part on how many trees we plant now and in the future.

Trees connect us

Trees and wood also appeal at a deep emotional and spiritual level with many people. The Tree of Life is a referred to in many of the world's religions, mythologies and philosophical traditions. Wood is one of the five Chinese elements, the one that seeks ways to grow and expand. Wood heralds the beginning of life, springtime and buds and fertility. It's a constant companion in our everyday lives, from musical instruments to log fires, tongue and groove panelling to cricket bats. Its uses are extensive, and often surprising, as you'll have read above. It both supports us and pleases us time and time again. So, the importance of wood is not just aligned to our survival but also to the quality of our lives. There's an ancient connection between trees and people, enshrined in the heart and soul of many cultures.

And finally, here is a Tree Manifesto for children, which if you can get them to commit to and sign would make a great end-point for your session.

A tree manifesto for children

"I BELIEVE WE SHOULD PLANT MORE TREES, INCLUDING IN TOWNS WHERE THEY CAN BECOME HABITATS FOR WILDLIFE."

A Tree Manifesto for Children

Forests and Me

- "I believe that trees are important. Looking at trees and walking in woods makes me feel good. Trees shield me from pollution and the heat of the sun in summer. They improve the quality of the air I breathe and reduce noise pollution.
- I believe we should plant more hedges, including in towns where they can become habitats for wildlife.
- I agree to help stand up for old trees and ancient woodland. I look for ancient trees to learn about and add to the Ancient Tree Inventory https://ati.woodlandtrust.org.uk/
- I understand that some trees are planted as a crop to be felled and used. While they grow, crop forests are important places for wildlife and for me to play and learn. I walk in the woods whenever I can, appreciating the trees and the resources they provide.

My actions for Forests

- Trees take in carbon and then hold some in their wood and fibre. We can help keep it there for as long as possible. I believe that we should plant more trees and woods to lock up more carbon. I always ask myself and others "can we use more sustainable products made from plants instead of those made from steel, concrete or plastic?"
- Over a third of the trees cut down around the world are used by the paper industry. One third of the paper products we use in this country are not recycled after use, so I try to use less paper.
- I help collect, reuse and recycle waste paper at home and at school.

My action for trees

One in every four new trees in public areas will die due to lack of care. I help the trees in my neighbourhood by

- Giving street trees a bucket of water a day during heat waves
- Telling a grown-up about any damaged or diseased trees that I see
- Adopting a tree, observing it from day to day, through the seasons.

- I will work towards a Junior Forester award: https://rfs.org.uk/learning/schools-and-outdoor-ed/junior-forester-award/
- I will learn about my local wood: its history; its wildlife; and what I can do to help.

SIGNATURE _____

DATE _____

GROWING THE NATION'S NEXT GENERATION OF FORESTERS

A toolkit for Introducing Forestry to Schools

Working with Trees and Timber in the UK

With thanks to: **Claire Glaister** FICFor, **Becky Wilkinson** RFS, and all of the lovely people on the Scottish Forest and Timber Technologies Skills Group who supported the creation of the first edition of this guide.

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This document was funded by the

Forestry Commission