My Learning My Future

Where can studying Mathematics take you?

Highlighting the relevance of Mathematics to future careers and opportunities

Why Mathematics matters

Have you ever considered where studying Mathematics can take you?

Today, we'll be exploring some of the career opportunities that are available to you, as well as the various pathways you can take to get there.

What pathways can you take with this subject?

What do you think these roles involve (daily task, etc.)?

What careers can you think of that use Mathematics?

Why is Mathematics an important subject?
5 great reasons to study maths - Success at School

What skills do you think you might need for these roles?

Explore a career as a…

Here are some example roles and careers linked to

Mathematics

Senior Systems Engineer

BBC Bitesize case study

Financial trader/ Stockbroker

Prospect case study

icould case study

Quantity Surveyor

BBC Bitesize case study

icould case study

Explore a career as a...

Here are some example roles and careers linked to

Mathematics

Accounting Technician

BBC Bitesize case study

Prosects case study

Games Designer

BBC Bitesize case study

Prospects case study

BBC Bitesize case study

Sales Associate

icould case study

Discover more about the role

Explore careers using National Careers Service and find out about what jobs involve and how they are right for you

Includes:

- Average salary
- Typical hours
- Work patterns
- Pathways/How to become
- Essential Skills
- Daily tasks
- Career path and progression
- Current opportunities

Research Ideas:

Senior Systems Engineer
Stockbroker
Quantity Surveyor
Accounting Technician
Games Designer
Sales Associate

National Careers Service

We provide information, advice and guidance to help you make decisions on learning, training and work.

This service is available to people who live in England.

Skills assessment

Learn more about your skills and match them to potential new careers.

Assess your skills

Explore careers

Choose from over 800 career profiles to discover what each job involves.

Search job profiles

Find a course

Look for online learning opportunities and training courses local to you.

Look for courses

Careers advice

Making career choices

Whether starting your career, changing job or if you have been affected by COVID-19, understand and make the right choice for you.

Getting a job

Be successful in the recruitment process with tips on great CVs, interviews and graduate scheme applications.

Progressing your career

Move up in your career by developing new skills. Find opportunities like volunteering and online learning.

About us

The National Careers Service can help you with your career, learning and training choices. Find out more about the different ways we can support you.

Speak to a careers adviser

Wherever you are in your decision-making, you can call us on 0800 100 900 or use webchat.

Follow us

- Twitter
- Facebook
- LinkedIn
- YouTube

Why not teach Mathematics?

Start in the classroom, where you go from there is up to you. Bring your passion for your subject, keep learning, and pass your knowledge onto others

• No two days are the same – and neither are the pupils
• Once qualified you can teach throughout your life
• You could teach abroad

• Progress your career into leadership and management
• Bring your outside interests into the classroom and your subject

Why is STEM important?

• It boosts essential skills such as problem solving and curiosity
• It helps you see and understand the wider world around you
• It helps young people become future entrepreneurs

Explore teaching

Vjendra's Story

Every Lesson Shapes a Life

The right skills to teach?

Love to keep learning?

Love to nurture imagination?

What makes a great teacher?

GCSE

While there are different routes you can take to be a teacher there are a few essential things that you will need:
• A minimum GCSE Grade 4 or above in English and maths (plus science if you want to teach primary)
A degree or equivalent qualification

A level

A levels are 2 years of study

T Level

T Levels are nationally recognised, technical qualifications for 16–19-year-olds. Designed by leading employers, one T Level is equivalent in size to 3 A levels

Vocational/Technical Qualification

These include BTEC, Applied General Qualifications (AGQ) and Vocational Technical Qualifications (VTQ) – all at Level 3

Apprenticeship

Apprenticeships are jobs which combine practical work and study. Intermediate is Level 2, Advanced is Level 3

Degree

Complete a degree course

It is possible to get QTS as part of an undergraduate degree, for example:

• Bachelor of Arts (BA) with QTS
• Bachelor of Education (BEd) with QTS
• Bachelor of Science (BSc) with QTS

Level 4/5 qualifications

Complete a L4/5 course and top up to a degree – L4/5 includes Certificate of HE, Diploma of HE, Higher Technical Qualification (HTQ), HNC, HND and Foundation degrees

Top up to a degree (Level 6) in a year of full-time study

Higher apprenticeships

Higher level apprenticeship (foundation degree / Level 5)

Degree apprenticeships

Degree apprenticeship (Level 6-7). There is a Level 6 Teaching apprenticeship programme

Initial Teacher Training (ITT) with qualified teacher status (QTS)

Teacher

Why not teach activity?

- Pick a topic in Mathematics you think you would like to try and teach
- Agree your choice of topic with your teacher and the length of session (and with which group)
  (It may be the perfect opportunity to try this with a younger class lower down the school, or as a transition activity for Y6)
- Plan a short activity to cover the topic in a way you feel will be engaging and memorable for your peers as part of a lesson starter, main activity or plenary

Consider:
- What are you trying to achieve (teach)? Be clear what information you intend to impart
- How will you make it fun? How will you make it 'stick'? How long will this take?
- What type of activity will you plan for? (written/practical)
- How will you know others have learned it?
- How will you make sure everyone is stretched and challenged?
- What will the end-product be?

Once you have checked it with your teacher, try the lesson with a small group (as agreed by your teacher)
Try and get feedback during and after the session from those in the lessons and from the teacher

After, consider:
- What you enjoyed about the experience
- Whether this is something, with training, you would enjoy
- How you felt when others learned from you

My Learning My Future

5| Non-obvious jobs using Mathematics: Ever thought about..?

How to become a Catchment Officer: Liam's story

How to become a Farmer: Aimee's story

How to become a Corporate Social Responsibility coordinator: Ben's story

Careers ideas and information - Maths

Credit Manager | Explore careers | National Careers Service

Private Practice Accountant | Explore careers | National Careers Service

Quantity Surveyor | Explore careers | National Careers Service

BBC Bitesize
https://www.bbc.co.uk/bitesize/articles/zhst2sg

icould

National Careers Service
https://nationalcareers.service.gov.uk/explore-careers

THE CAREERS & ENTERPRISE COMPANY

MYPATH Job of the week (Mathematics)

Actuary

Quantity Surveyor

Financial Advisor
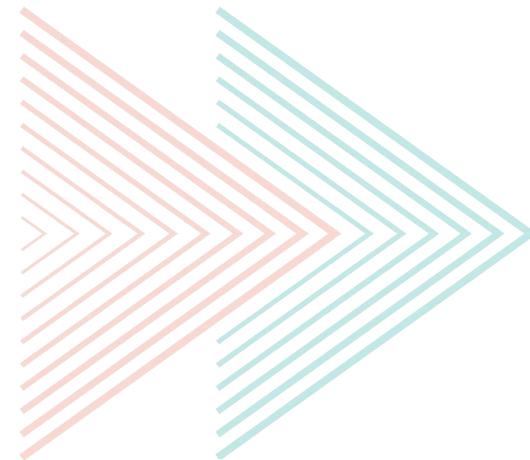
MYPATH Maths: <u>Why bother?</u>

KS3:

2D Shapes	**Finance**	**Positive and Negative Numbers**	**Symmetry**
3D Shapes	**Fractions**	**Powers and Roots**	**Time**
Angles	**Graphs**	**Probability**	**Transformations**
Area	**Inequalities**	**Proportion**	**Trigonometry**
Averages	**Measurement**	**Pythagoras**	
Data	**Multiples**	**Ratio**	
Decimals	**Operations**	**Speed**	
Distance	**Patterns**	**Standard Form**	
Estimation	**Percentages**		
Equations	**Perimeter**		
	Place Value		
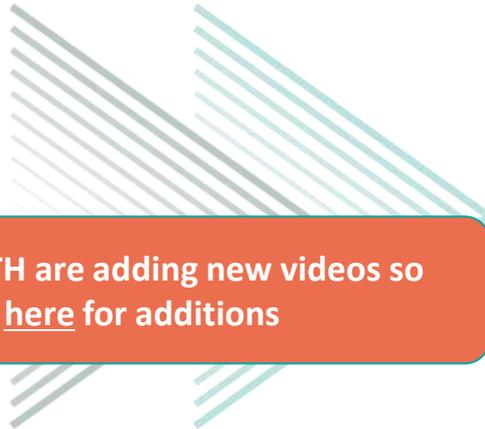
Please be aware MYPATH are adding new videos so keep checking <u>here</u> for additions

MYPATH Maths: <u>Why bother?</u>

KS4:

2D Shapes	Fractions	Quadratic Equations	Transformations
3D Shapes	Geometry	Powers and Roots	Trigonometry
Algebra	Graphs	Pythagoras	Vectors
Angles	Inequalities	Ratio	Whole Numbers
Approximation	Measurement	Sequences	
Area	Multiples	Simultaneous Equations	
Circles	Percentages	Standard Form	
Data	Probability	Statistics	
Decimals	Problem Solving		
Finance	Proportion		

Please be aware MYPATH are adding new videos so keep checking <u>here</u> for additions

Mathematics careers in a changing world: How can I future-proof my career pathway?

The world will be changing drastically in the next few years to cope with the impact of climate change and nature loss, and the need to lower greenhouse gas emissions and unsustainable practices. How might this steer your choice of career path using your Mathematics skills?

Sustainability means meeting our own needs without compromising the ability of future generations to meet their own needs.
(UN definition)

Mathematics careers in a changing world

Climate Scientist

Careers in Ethical Banking

Consultant (Element Energy)

Every career can be sustainable
1. Use your skills and passion for sustainability to help businesses adapt
2. Work for a company with sustainable values
3. Innovate for a sustainable future

A spotlight on Technicians using Mathematics

6| Discover here how the technical jobs related to Mathematics keep industries moving and the real difference technicians make in our lives.

R097 Logistics Technician

R103 Transport and Planning Technician

R007 Air Traffic Controller

R032 Data Technician

R051 Geospatial Survey Technician

R070 Nuclear Technician

Technicians We make the difference

Visit the Gallery here

Find further resources here

A spotlight on Technicians using Mathematics

6| Discover here how the technical jobs related to Mathematics keep industries moving and the real difference technicians make in our lives.

R071 Optical Technician

R092 Surveying Technician

R008 Aircraft Maintenance Technician

R011 Architectural Technician

R022 Civil Engineering Technician

R088 Space Engineering Technician

R024 Clinical Coder

Visit the Gallery here

Find further resources here

7 | **Mathematics Pathways**
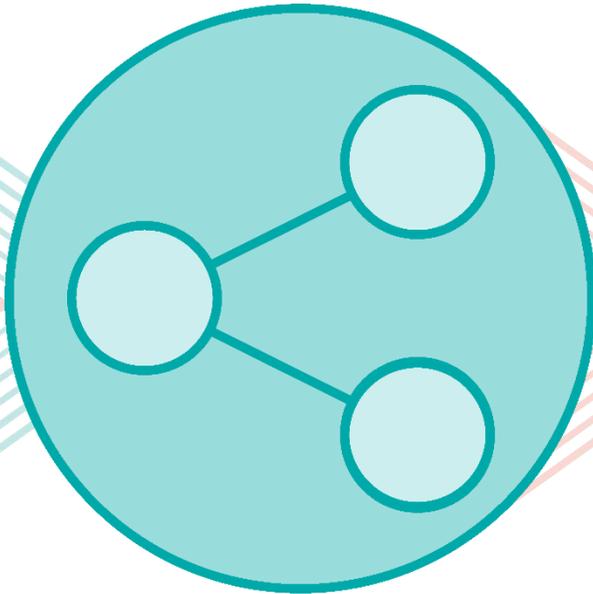
Combine Study and Work

Study

Work

7 | **Combine Study and Work**

Apprenticeships

- Economist
- Aerospace Engineer
- Clinical Coder
- Accountant
- Civil Engineer

- Insurance Practitioner

- Chartered Surveyor
- Debt Adviser
- First Officer Pilot
- Senior Investment Professional
- Engineering Technician

T Levels

T Levels | National Careers Service
T Levels | Building Services Engineering for Construction
T Levels | Design, Surveying and Planning for Construction
T Levels | Digital Business Services
T Levels | Accounting
T Levels | Engineering, Manufacturing, Processing and Control
T Levels | Finance

VTQs

Vocational Technical Qualifications (VTQs) | National Careers Service

- Engineering Design
- Engineering Manufacture
- Engineering programmable Systems

- Enterprise and Marketing
- Business
- Core Maths

Find more >

7 | Study Pathways

HTQs (Higher Technical Qualifications)

Higher technical qualifications (HTQs) | National Careers Service

You might find courses in:

• Mathematics
• Accounting and Finance
• Aeronautical Engineering
• Accounting
• General Engineering

A levels

A levels | National Careers Service

You might find courses in:

• Mathematics
• Further Mathematics
• Statistics
• Statistical Problem Solving using Software
• Economics
• Accounting

Higher education

Higher education | National Careers Service
You can explore undergraduate courses in Mathematics

You might find courses in:

• Actuarial Mathematics
• Accounting
• Mathematics
• Accounting and Finance
• Aeronautical Engineering

• Banking and Finance

• Finance, Investment and Risk
• Agri-Business Management
• Accounting with data Science
• Accounting with Economics
• Accounting and Law
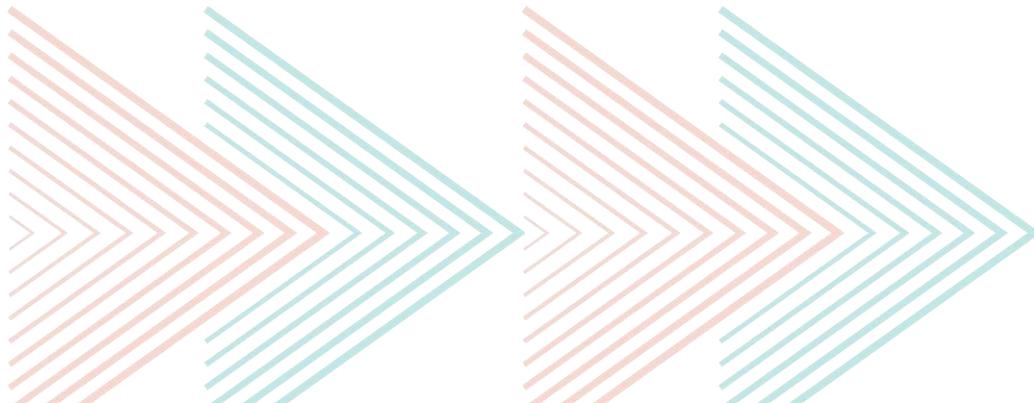
7 | Work Pathways

Supported internships
with an education, health and care plan

Supported internships | National Careers Service

Watch Saul's story

You might read about:

• Access to Work Funding (if you have a disability or health condition)

• Preparing for Adulthood

• Talking Futures (A parents' toolkit for career conversations)

School leaver schemes

School leaver schemes | National Careers Service

You might read about:

• How to fill in an application form

• How to write a CV

• Interview help

• Progressing your career (Careers Advice from NCS)

7| **University League Tables**

See at a glance the university ranking for Mathematics

Mathematics Rankings (thecompleteuniversityguide.co.uk)

Filter by:

• Overall score
• Entry standards
• Student satisfaction
• Research quality
• Research intensity
• Graduate prospects
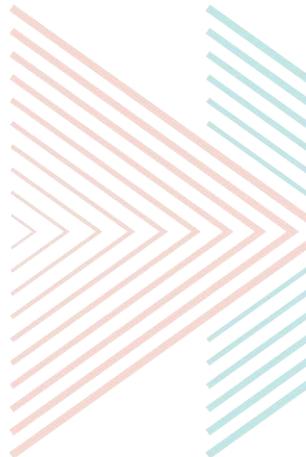
Discover Uni

Have you ever considered if higher education is right for you?

1.Go to https://discoveruni.gov.uk/

2. Search for a course or subject
(You should get a page of search results, you can filter these by university or college, whether you want to study full or part time or perhaps you want to see that courses are near you)

Once you have had a look at a few different courses and subjects now it is time to compare some side by side

3. Check out this video which shows you how to use our comparison tool https://youtu.be/dBFzCQgTp8I - Pick 5 courses and add these as a saved course and then you can compare

4. Once you have your chosen five side by side, try to answer the following questions:

a. What kinds of qualifications do students on the course have when they start the course?

b. How many have a placement year?

c. How many courses let you study abroad?

d. Which has the highest student satisfaction rating? How do you know this?

e. What kinds of job do graduates from this course go on to?

f. Which course has the highest salary after three years? (higher/lower than national average)

g. Choose your favourite course and explain why you chose this course over the others?

Discover Uni

Have you ever considered if higher education is right for you?

1.Go to https://discoveruni.gov.uk/

2. Search for a course or subject
(You should get a page of search results, you can filter these by university or college, whether you want to study full or part time or perhaps you want to see that courses are near you)

Once you have had a look at a few different courses and subjects now it is time to compare some side by sid

3. Check out this video which shows you how to use our comparison tool https://youtu.be/dBFzCQgTp8I - Pick 5 courses and add these as a saved course and then you can compare

4. Once you have your chosen five side by side, try to answer the following questions:
Is the data I am looking at for a course or a subject?
   a.   What year, or years, does the data relate to?
   b.   How many students or graduates is this data based on?
   c.   Does the data represent all the students on the course or subject area?
   d.   Does the data include people like me?
   e.   What factors might impact the data?

![My Learning My Future]

1 |

In 10 years time...

Job in 10 years time (related to Mathematics):

_____

What GCSEs helped you get this job:

_____ _____ _____ _____ _____ _____

What KS5 Pathways choice did you make and what did you study:

Apprenticeship   T level   A Level   other L3 equivalent

_____

Post 18 pathways choices did you make: explain:

Study & Work   Study   Work

_____

Essential skills used in the job:

_____

Progression route:

_____

My Learning My Future

2 |

My local options...

Subject chosen (related to Mathematics):

_____

Local college options:

_____

Local apprenticeships options:

_____

Other options:

_____

The pros and cons of these options for me:

Pros:

_____

Cons:

_____

Consider how these will apply and explain:

Cost _____

Travel _____

Convenience _____

Aspirations _____

Personal circumstances _____

Other _____

Final choice – justify:

_____

Next steps:

_____

My Learning My Future

THE CAREERS & ENTERPRISE COMPANY

3 | **Prepare a 3 - 5 minute talk to share with a small group on any role that interests you related to Mathematics**

What's the role

Where has the interest come from

What do you need to do to become one

Where can you go to study and what level of study

Where do you need to go to carry out the role

What's the chances of getting this role

Who do you look up to in this role

What might a typical day look like

4 |

My career path....

My Learning My Future
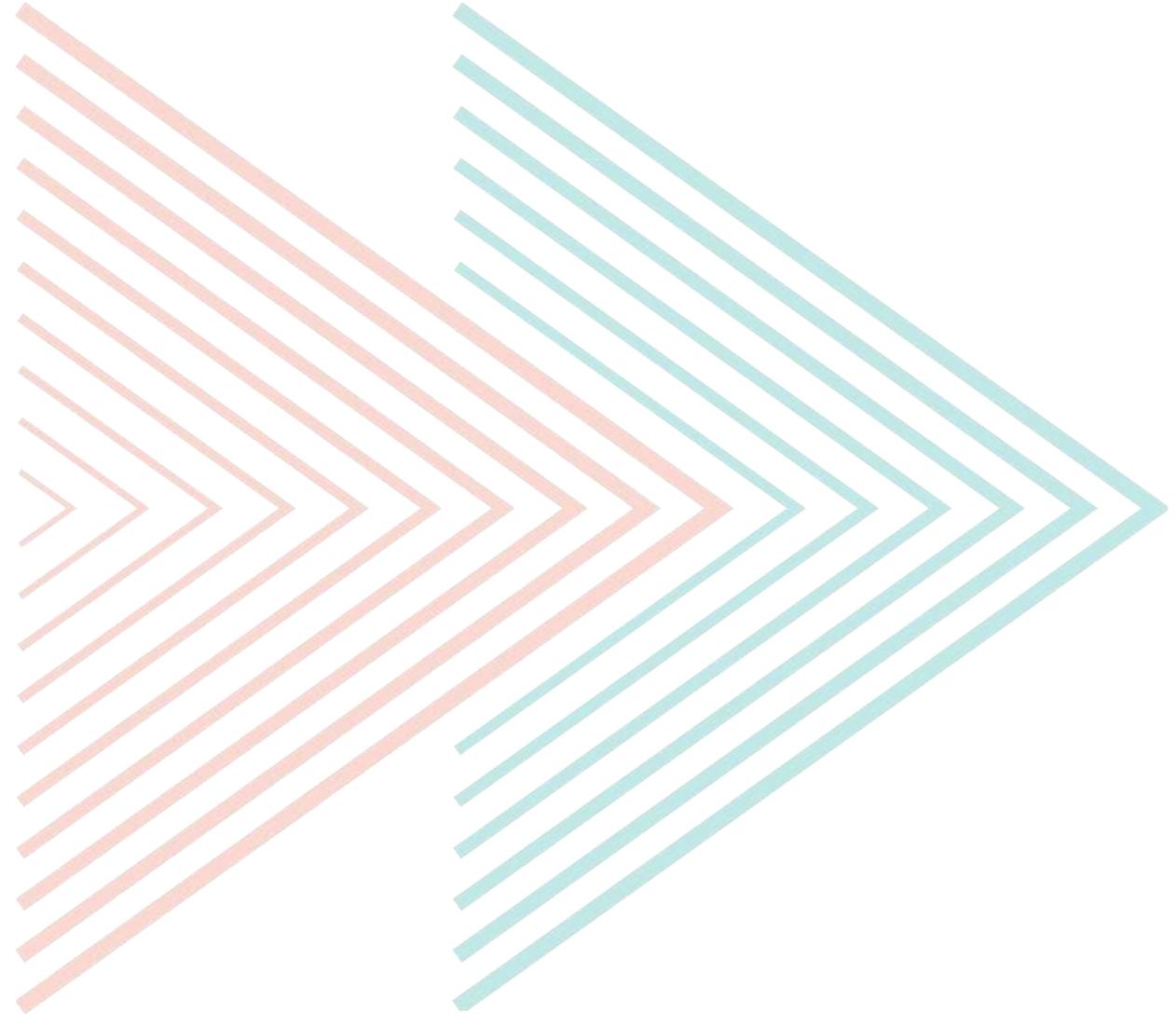
Essential Skills

Here are three key skills needed for a career that uses

Mathematics

		Video	Skills Builder Resource KS3	Skills Builder Resource KS4	Skills Builder Resource Post 16
STAYING POSITIVE	The ability to use tactics and strategies to overcome setbacks and achieve goals	Watch here	Short Lesson Staying Positive Step 6-8	Short Lesson Staying Positive Step 8-10	Short Lesson Staying Positive Step 10-12
AIMING HIGH	The ability to set clear, tangible goals and devise a robust route to achieving them	Watch here	Short Lesson Aiming High Step 6-8	Short Lesson Aiming High Step 8-10	Short Lesson Aiming High Step 10-12
PROBLEM SOLVING	The ability to find a solution to a situation or challenge	Watch here	Short Lesson Problem Solving Step 6-8	Short Lesson Problem Solving Step 8-10	Short Lesson Problem Solving Step 10-12

8 | Staying Positive

	Staying Positive	**I can do this**
Step 6	I keep trying when something goes wrong and encourage others to keep trying too	
Step 7	I look for opportunities in difficult situations	
Step 8	I look for opportunities in difficult situations, and share these with others	
Step 9	I look for opportunities in difficult situations, and adapt plans to use the opportunities	
Step 10	I look for opportunities in difficult situations, and create new plans to use the opportunities	
Step 11	I identify risks and gains in opportunities	
Step 12	I identify risks and gains in opportunities, and make plans to manage them	

My Strength (s)	**My area (s) of Development**

8 |

Aiming High

		Tick which apply
Step 6	I set goals informed by an understanding of what is needed	
Step 7	I set goals, ordering the prioritising tasks to achieve them	
Step 8	I set goals and secure the right resources to achieve them	
Step 9	I set goals and plan to involve others in the best way	
Step 10	I create plans that are informed by my skill set and that of others	
Step 11	I create plans that include clear targets to make progress tangible	
Step 12	I create plans that are informed by external views, including constructive criticism	

My Strength (s)	My area (s) of Development

Problem Solving

	Problem Solving	I can do this
Step 6	I explore complex problems by identifying when there are no simple technical solutions	
Step 7	I explore complex problems by building my understanding through research	
Step 8	I explore complex problems by analysing the causes and effects	
Step 9	I create solutions for complex problems by generating a range of options	
Step 10	I create solutions for complex problems by evaluating the positive and negative effects of a range of options	
Step 11	I analyse complex problems by logical reasoning	
Step 12	I analyse complex problems by creating and testing hypotheses	

My Strength (s)	My area (s) of Development

Homework

Use the National Careers Service Explore careers tool to research for this homework

Explore here