



2023/2024



# Youth STEMM Award Participants' handbook

## Silver Level

# Welcome to Youth STEMM Award!

This booklet is designed to help you get started and let you know what will be expected at Silver level. This level is a good intermediate challenge, either for those who have already undertaken the Bronze level, or for those who like a challenge from the start. It is mainly aimed at those aged 14-16 years, but could be the best choice for post-16 participants if you've never undertaken a Youth STEMM Award before. It requires participants to commit to a minimum of 90 hours of activity and explore each of the five STEMM areas in more detail than at Bronze level. By taking part you will develop skills and experience across a range of areas and create a record of achievement to help you stand out in applications and interviews. Perhaps you'll even be inspired to work towards a Gold level Youth STEMM Award!

We hope you enjoy the journey!

*Dr Simon Fox and Dr Samantha Fox,  
Co-founders,  
Youth STEMM Award CIC*

“As an aspiring medic, this has been a very positive experience for me!”



**Sanshika, Silver Youth STEMM Award recipient 2021**

## STEMM stands for:



Science



Technology



Engineering



Maths



Medicine

## About the Award:

The Youth STEMM Award (YSA) is a skills framework for young people, designed to support and inspire the next generation into STEMM, which stands for: Science, Technology, Engineering, Mathematics and Medicine.

As part of your journey to achieving a Youth STEMM Award, you'll need to take part in extracurricular activities and log them to the YSA e-portfolio. When enough activity hours have been logged and the criteria are met in each of the four strands you'll receive a medal, certificate and digital badge. Your personal e-portfolio can be downloaded as a record of achievement for future applications and interviews. Your coordinator will help guide you through the programme, identify activities and sign them off as completed.



- ▶ Undertake STEMM-based activities and decide which of the four core strands they fit into
- ▶ Log hours onto the e-portfolio to complete the strands
- ▶ Accumulate virtual badges and build your portfolio
- ▶ Receive a medal and certificate upon completion of Award

# Skills you will develop:

By completing activities in these skill areas you will set yourself up for success in your future STEMM career:



**Inspiring**  
the next  
generation

By **inspiring** the next generation you will become a role model to younger children and develop leadership skills and confidence.



**Engaging**  
the public

By **engaging the public** you will develop your communication skills and help your family and community to appreciate STEMM topics.



**Developing**  
your skills and  
knowledge

By **developing skills and knowledge** you will explore topics over and above the national curriculum in areas that interest you.



**Shaping**  
your future

By **shaping your future** you will focus on careers in STEMM and explore options you may not have previously considered.

## Top Tip:

These are the four YSA core strands. You will need to undertake activities in each of these areas to complete your Award.

# Achieving a Silver level Youth STEMM Award



In order to achieve a Silver Award, you will need to undertake a minimum of 90 hours of STEMM-based activities. You will also need to meet certain criteria in each of the four strands. The Gold level works in exactly the same way, except you'll need to log more hours and there are some additional criteria to meet. *See the YSA website for more details.*

Before you start an activity, it's a good idea to be clear on which strand it covers, and which of the five STEMM areas are involved.

**Top Tip:**  
You can take as long as you need to complete your Award.

For the Silver Award you must cover all five areas of STEMM in each strand during the course of your Award. An activity can count for more than one area of STEMM, for example a visit to a museum might involve both Science and Technology.

For each activity, you'll need to identify an Assessor. This should be an adult who can authorise that you took part in the activity and add a comment to your e-portfolio.

If you are undertaking an activity at school or at home, your School or College Coordinator can act as your Assessor. If you are taking part in an activity at somewhere else, your Assessor should be someone involved in the activity, such as a work experience host. Check with your Coordinator if you are unsure about whether someone is a suitable Assessor.

You can start and complete your Award at any time of the year and take as long as you need to undertake the required hours. You can continue working towards your Award over the holidays and can even roll into the next school year.

# What you need to do in each strand at Silver level:



20 hours **inspiring** the next generation



20 hours **engaging** the wider public



20 hours **developing** your skills and knowledge



30 hours **shaping** your future career

More detail on each of these strands can be found in the following pages of this handbook, along with some suggested activities.

## Steps to success:



# What counts as an activity?

When looking for potential activities there are a few things you need to check:

- Does it involve at least one area of STEMM?
- Is it outside normal lessons and homework?
- Which YSA strand does it best fit into?

You cannot count time spent in regular lessons or on homework but you can include other activities carried out at school such as after-school clubs:

## Yes (if STEMM related):

- ✓ *After school clubs, open evenings and public events*
- ✓ *School-organised trips*
- ✓ *Extra study in your spare time to learn more about a topic that you were introduced to at school*

## Does NOT Count:

- ✗ *Work carried out in normal lessons*
- ✗ *Homework*
- ✗ *Exam-specific revision of topics learnt in school*
- ✗ *Activities that don't involve STEMM*

When deciding which strand your activity fits into, remember you can split the time (but you can't double count!).

## Example activity:





## Inspiring the next generation

In this strand you will develop leadership skills and act as a role model. You can work directly with young people or produce resources aimed at inspiring them about STEMM topics or careers. Your audience can be the same age as yourself or younger.

For the Silver Award you should:

- Complete at least 20 hours of activities in this strand over the course of the Award.
- Work with at least two different groups of students, from two different organisations - one can be your own school
- Develop a novel STEMM activity or project to be delivered to younger students

### Top Tip:

You can work on your own or as part of a team

### Some example activities:

- Design an experiment to run at a local youth group or primary school. This could be on your own or part of a team.
- Mentor or tutor a young person (can be a sibling) on a STEMM topic, or help with homework or home schooling.
- Work in a small group with your teacher to organise a lunchtime science talk for your peers – invite a speaker from one of the YSA partner organisations or a local STEM Ambassador to give a talk.
- Make a poster for British Science Week to communicate a STEMM topic that is aimed at young people, to be displayed in school or in a community location.





## Engaging the public

In this strand you will develop your communication skills by helping the public to better understand STEMM topics. Your audience can include your family and your wider community, including at your school or college, and can either be a similar age or older than you.

For the Silver Award you should:

- Complete at least 20 hours of activities in this strand over the course of the Award.
- Be involved in at least two different events or activities, in at least two different settings.
- Develop and deliver an activity or talk at a public event.
- Demonstrate the use of digital skills in how you engage with others.

### Top Tip:

How about writing a blog for the YSA website?

### Some example activities:

- Create a video to inform and educate, for example about environmental topics.
- Write an article for the school newspaper or magazine, or launch one if there isn't one already.
- Design and run a practical experiment demonstration at an open evening for your school community.
- Create a poster to be displayed in a public place or other organisation (like a residential home, or community centre).



## Developing skills and knowledge

In this strand you will enhance your understanding of topics related to STEMM, including learning new skills that are beyond the national curriculum. By undertaking activities in this strand, you will be able to explore areas that interest you and evidence your commitment and enthusiasm to extend beyond the curriculum.

For the Silver Award you should:

### Top Tip:

Activities can be virtual or in person

- Complete at least 20 hours of skill development in this strand over the course of the Award.
- Attend at least three different events, in at least two different places (or from different online providers).
- Be able to clearly explain what you learned through taking part in the activity for your e-portfolio entry.
- Produce a research project (in the form of an essay or poster) on a new topic that you have studied in depth.

### Some example activities:

- Take part in an after-school club, or undertake a CREST Award or Big Bang Project to learn new skills.
- Visit a science museum or other organisation that involves STEMM.
- Watch, listen and read educational STEMM-related content, such as the Royal Institution Christmas Lectures, science podcasts or the Youth STEMM Award newsletter.
- Research and write an essay and enter a competition.



## Shaping your future

In this strand you will focus on exploring further and higher education, training and careers in STEMM. You are expected to research different pathways and find out about areas that you may not have previously considered. The aim is to help you widen your future options and make informed decisions.

For the Silver Award:

- You should complete at least 30 hours of activities in this strand over the course of the Award.
- A maximum of 15 hours can count from any single individual activity, such as work experience.
- At least 15 hours must be specifically linked to careers in STEMM sectors, the remainder can be general careers guidance and personal development.
- Research at least three different careers in more than one STEMM area.

### Top Tip:

Check out the Wellcome Connecting Science speaker series featuring diverse role models in STEMM

### Some example activities:

- Research a STEMM-related career to find out what the job involves and what qualifications are required.
- Undertake work experience or work-shadowing to experience a STEMM-related career (virtual or in-person).
- Attend university or college open days to explore options for future study, practise applications and carry out mock interviews under the guidance of a mentor or careers advisor.
- Attend a careers fair or watch videos recorded by STEMM professionals to learn about their job, for example the My STEMM Future Speaker series.

Click the  
QR code:



# Who is supporting you?

## At your organisation:

Your school or college Coordinator will guide you through the programme and help you to get started. If you are registered independently, your Coordinator will be from the YSA team. Your Coordinator will moderate the activities that you log and check you have provided a good description and enough evidence.

### Top Tip:

Your YSA Coordinator can help you plan out your activities and make sure they are appropriate for each strand

All the activities you undertake also need to be signed off by an Assessor, someone who was involved with the activity and can confirm that you took part. They can also leave feedback which forms part of your portfolio. Your Coordinator can act as your Assessor for activities that they are involved with, or activities that you undertake at home or online where there is no other independent person involved.

## At home:

We recommend letting the people you live with know that you are working towards a Youth STEMM Award. They might have some ideas for ways you could gain hours by doing activities at home. If you have younger children in your family you could do activities with them for 'Inspiring the next generation'.

## Online:

Want to plan an activity with another group? Why not reach out to the Youth STEMM Award community online. You could plan a joint remote activity and maybe even ask one of our patrons to get involved. Connect with us on social media to share your stories and reach a wider audience.

# Setting up your e-portfolio:

Your e-portfolio is where you should log all of the STEMM activities you take part in during the course of your Award.

It will help keep you on track with your progress and let you know what you need to do to complete. As you progress you will unlock virtual badges that will be added into your e-portfolio. You can download your portfolio at any time to help with applications for college, university or jobs.

Once your Coordinator has added you to the system, you'll receive an email asking you to activate your account. Follow the link to complete your registration and set up your password.

You'll need to complete your profile including your school year and postcode. It is important that this information is correct and up-to-date so that you don't miss out on any opportunities. If anything changes you can update it by clicking 'edit profile'. We look after this data very carefully and you can read our full privacy policy by visiting [www.ysawards.co.uk](http://www.ysawards.co.uk).

You are now ready to log your first activity!



## YSA e-portfolio

### Activate Account

**E-Mail Address**

rich.nicolson@\*\*\*\*\*

**Choose a password**

**Password**

\*\*\*\*\*

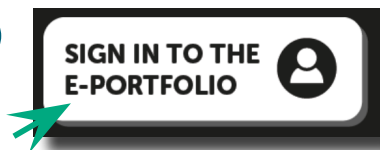
**Confirm Password**

\*\*\*\*\*

Activate account

# How to submit an activity:

1

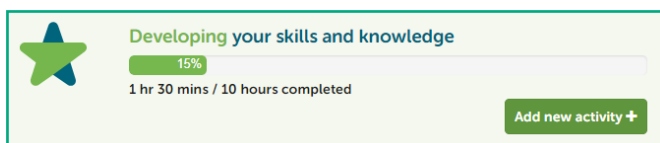


## Top Tip:

To log an activity, visit [www.ysawards.co.uk](http://www.ysawards.co.uk) and follow the link to sign in to the e-portfolio

2

Choose the strand that best matches the activity and click 'add new activity'.



3

## Add a new 'Developing your skills and knowledge' activity

### Activity title

Watching the Royal Institution Christmas Lectures 2020

### Provider

Undertaken at home

### Activity Description

I watched Lecture one 'Engine Earth' which focuses on climate change throughout history going from hot to cold ice-ages and how fossils provide evidence for these changes. I learnt how human activity is now causing the Earth's climate to change because of the amount of carbon dioxide in our atmosphere. This is changing at

### Hours

01:00

### Date undertaken

January 2021						
Su	Mo	Tu	We	Th	Fr	Sa
27	28	29	30	31	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	1	2	3	4	5	6

### STEMM Discipline



Enter the details on the form. Be sure to include a clear title and description so that your coordinator understands exactly what you did. This includes the length of time the activity took, the date it took place and the area(s) of STEMM it involved.

Save the submission as a draft to continue later or click 'submit' when you are happy that you have included all the information.

Finally, provide the name and email address of an adult who was involved with the activity, eg. a work experience host. They will receive an automated email asking them to verify that you took part and have the option to add comments. If you did an activity at home, such as watching a TV documentary, or at school, tick the box 'use my coordinators details'.

### Top Tip:

You can only include activities that you have taken part in since you registered for Youth STEMM Award.

4

Assessor name

Name

Assessor email address

Email address

If you don't know your assessor's details, or your co-ordinator is assessing this activity, please tick below

☒ Use my co-ordinator's details

Submit

## Activity submission checklist:

### Activity title:

This should be a clear summary of what you did – e.g. 'Attended a Chemistry lecture presented by John Innes Centre' or 'Supported my younger sister with her Maths homework'. If you're not too sure if you've achieved this, ask yourself 'would someone reading the title know what the activity was about'?

### Provider:

Select the organisation that provided the activity or pick 'Undertaken at home' if appropriate. This information helps us to tell our partners how many young people have been enjoying their activities. If the organisation who provided the activity is not listed, select 'other' and type the name of the organisation into the box. If the activity took place at school, you can select this as an option. Be sure to explain how it was outside of normal lessons.

### **Hours:**

Only include hours that you spent learning and participating in STEMM during the activity. Don't count breaks or travel time.

### **Top Tip:**

If an activity was undertaken at school, be sure to explain how it was outside your normal lessons

### **STEMM Discipline:**

Tick all the areas you think apply to your activity.

### **Evidence:**

Including evidence helps your coordinator to see what you did and help them moderate the activity. Evidence can be any resources you created, screen shots or pictures of the activity you participated in. Its also a great way for you to reflect back on the activity in the future.

## **How to write a good description:**

A description is where all the action happens!

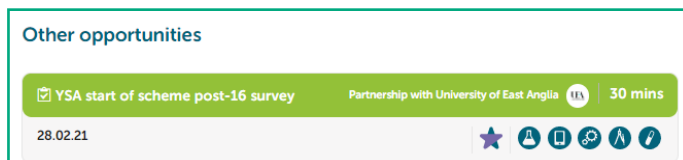
This is your opportunity to showcase your activity and tell us how exciting it was. Descriptions are rejected when there is too little information, so make sure to provide at least three complete sentences about the activity.


You could answer the following questions:

- **What was the activity?**
- **What did you learn from it?**
- **What interested you the most?**
- **What there anything that surprised you about what you did or learned?**
- **Has it inspired you to do anything else or explore something further?**



Remember to regularly log in and check the opportunities section for links to activities and surveys which can earn you additional time towards your Award. You can export your portfolio at anytime as a printable file.



Export your ePortfolio as a printable PDF file 

## Completing your Award

When you have logged enough hours and met all the criteria for your Award level, you need to submit your e-portfolio for moderation. Your coordinator will then check through your portfolio to ensure you have done enough to receive your Silver Youth STEMM Award. You can request to use the hours you have already logged to upgrade to the Gold level, though there may be a small additional fee.

When you complete, you will receive a medal, certificate and a digital badge.

This is a great time to reflect on the skills you have developed and celebrate your achievements with your friends, school and family. Why not get in touch and send us a picture of you with your Award? We hope you have enjoyed the experience and learnt a lot about yourself too.




**The Youth STEMM Award digital badge will be issued on completion - look out for the email to claim your badge!**

# Inspiring ambassadors

We are delighted to have the support of inspirational role models and expert science communicators, who are passionate and committed about inspiring the next generation.




**Professor Ben Garrod**  
Evolutionary biologist,  
Conservationist,  
broadcaster and author

 @Ben\_garrod


“ We each have the potential to be anything we want, no matter who we are or where we are from and the YSA promotes that at every opportunity. ”



**Lizzie Daly**  
Biologist, naturalist and  
wildlife presenter

 @LizzieDalyWild

**Dr Nira Chamberlain OBE**  
Mathematical Modeller

 @ch\_nira



**Mark Thompson**  
Astronomer, author  
and broadcaster


 @Astronomer\_Mark

**Dr Marcia Philbin**  
Chief Executive of the  
Faculty of Pharmaceutical  
Medicine



“ If something like the YSA had been around when I was at school, I honestly think I'd have explored my passion for science sooner. ”

**Maddie Moate**  
YouTube filmmaker and  
BAFTA winning presenter

 @maddiemoate



## Our partners

The Youth STEMM Award is supported by a number of prestigious organisations. We thank them for their support which enables us to be able to deliver the Award for the benefit of schools and young people:



A UK top 25 university and part of one of the largest scientific communities in Europe



[www.uea.ac.uk](http://www.uea.ac.uk)



Wellcome Connecting Science's mission is to enable everyone to explore genomic science and its impact on research, health and society



[wellcomeconnectingscience.org](http://wellcomeconnectingscience.org)



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[jic.ac.uk](http://jic.ac.uk)



A world-class research institution, focusing on basic cell and molecular biology with an emphasis on healthy ageing through the human lifecycle



[babraham.ac.uk](http://babraham.ac.uk)



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