

# Recommendations & Syllabus for a Mandatory Citizen Science Program (CSP) Within UK School Curriculums

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## Why Citizen Science in Schools: The Declining State of Science

- Shortages in science-specific teachers and professional development availability (CORDIS, 2006).
- Ineffective, non-scientific feedback provided to students.
- Underdeveloped abilities to critically analyse methods taught.
- Underfunding of classroom equipment resulting in limited access to practical experiments.
- CSP aligns with SDG 4.4: develop a range of employable skills.
- UK government aims to be hub for science and develop a competitive, adaptable workforce (UK Government, 2021).

## Science Literacy and Citizen Science

- CS democratises science (Strasser *et. al.*, 2019).
- Strengthens skills including data collection, critical thinking, planning and social responsibility.
- Contributes to productivity in society and empowers individuals to respond better to future climate mitigation efforts.

## Widening Accessibility

### Locally in schools:

- Consider physical and mental abilities of students
- 'Citizen Science Delegate' teacher as point of call
- Host drop-in sessions during PSHCE classes

### National Online Project Hub:

- Integration of projects for CSP
- Recruitment of volunteers
- Access of templates, forms and data collection methods
- Access of servers for data-sharing
- Archival material
- Forum/discussion board for mentorship and training

## Summary of Recommendations:

- Mandatory Citizen Science Programme (CSP) should be implemented within UK GCSE, A-level, and Elective Home Education curricula to enrich science literacy and address the decline in science.
- Jointly consider CSP with the development of an online hub to build a virtual community and promote projects.
- Develop CSP alongside national priorities in STEM, UK Science and Technology Framework 2030, and SDG4.

CSP  
Framework  
built on:

International  
Baccalaureate  
Creativity, activity,  
service (CAS)

Projects in UK  
Schools:  
Blue Woodlice  
Project M  
SAMHE Air  
Quality  
Big School's  
Birdwatch

National  
Extracurriculars:  
DofE  
CREST Awards

## Inclusion and Outreach /Levels of Engagement

- Secondary education often sees a decline in science interest (Osbourne *et al.*, 2023)
- CS can boost excitement and help reduce gender imbalances in STEM careers (Zhao *et al.*, 2024).
- The CSP diversifies participation beyond highly educated and retired individuals (Waugh *et al.*, 2023).
- Homeschooling should require the CSP to enhance scientific skill sets, benefiting roughly 126,100 children (UK Government, 2024).

## Citizen Science Programme (CSP) Syllabus

### Secondary School

Course Aims: Collective CS Project | Scientific methods | Data collection methods | Understanding public domain | Community engagement (100 hours)

#### Year 7

- Explore National Online Hub or existing projects
- Research local issues/personal interests
- Understand current state of inter/national affairs
- Select collective CS project to partner with throughout secondary school
- School trip: The Project
- Learn data collection processes for The Project
- Continuous Student Activity Logging System (SALS)

#### Year 8, Year 9 & Year 10

- Data collecting methods, purpose, data accuracy and quality
- School trip: participate in data collection for The Project

#### Year 11

- Research for independent CS selection for Sixth Form
- Learning about how to write a project proposal
- Complete a proposal for chosen CS project
- Students can also propose their own project
- Junior Citizen Scientist Awards
- Group Presentations Fair

### Sixth Form

Course Aims: Individual CS Project | Synthesising Problems | Final Presentation | Essay Writing (50 hours)

#### Year 12

- Engagement proposal for chosen CS project
- Volunteering
- Essays on CS academic papers

#### Year 13

- Volunteering
- Essays on CS academic papers
- Final Presentation Fair
- Senior Citizen Scientist Awards

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