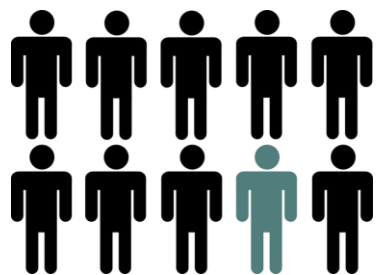
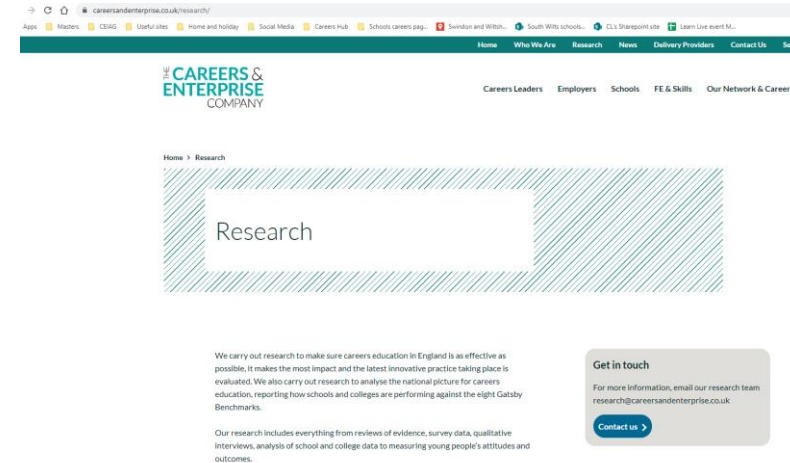


# Hub Incubation Project



## Research question

*Will embedding employer enriched careers activities into the year 7 maths curriculum, showcasing a wider range of careers which utilise maths, encourage girls to have a more positive attitude towards maths, and be able to make direct links with STEM/STEAM careers?*



# Hub Incubation Project – What do we want to achieve?

## Short-term

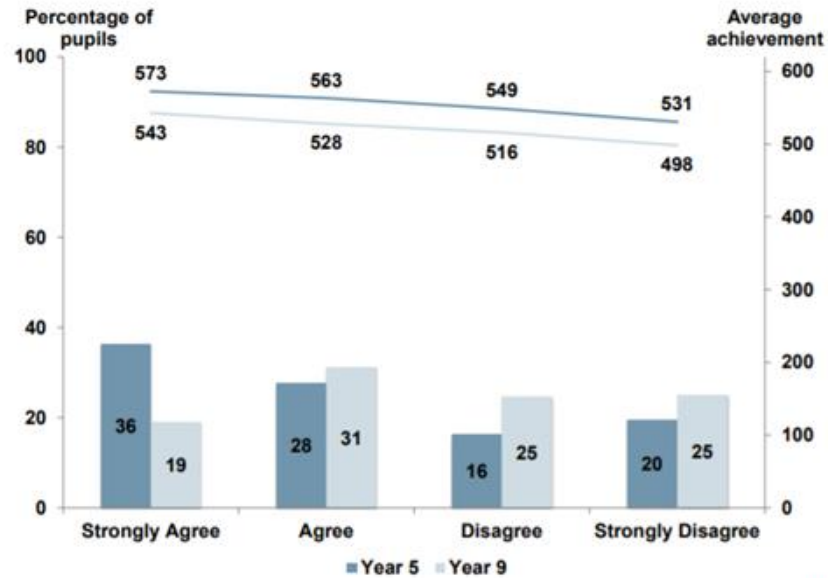
- to **support maths teachers** to develop and embed careers related activities into their schemes of learning for maths in year 7,
- to **reduce maths anxiety** levels in the target cohort of year 7 female students,
- to **increase the interest of female students in maths-based careers** during year 7,
- to **increase girls' confidence in tackling further study in maths** and related subject areas.

## Longer-term

- to develop an **ongoing community of practice for maths teachers** who are utilising an employer enriched embedded careers curriculum model for maths delivery to ensure sustainability for this model,
- **encourage all year 7 maths teachers to adopt the employer enriched embedded careers curriculum model** for their maths schemes of learning in the future,
- to **expand the year 8 maths curriculum** to encompass a similar employer enriched embedded careers curriculum model for their maths schemes of learning to provide consistency of delivery to the year 7 cohort upon progression,
- to **see an increase in female student engagement** with the maths curriculum in future years which would lead to an increase in subject choices for maths and/or STEM subjects in KS5, \*
- to **see an increase in female students choosing STEM/STEAM based career pathways** by the end of year 11.

# Hub Incubation Project – Why?

Figure 83: The percentage of year 5 and year 9 pupils reporting agreement that they would like to study mathematics after secondary school and their average achievement in mathematics (England)

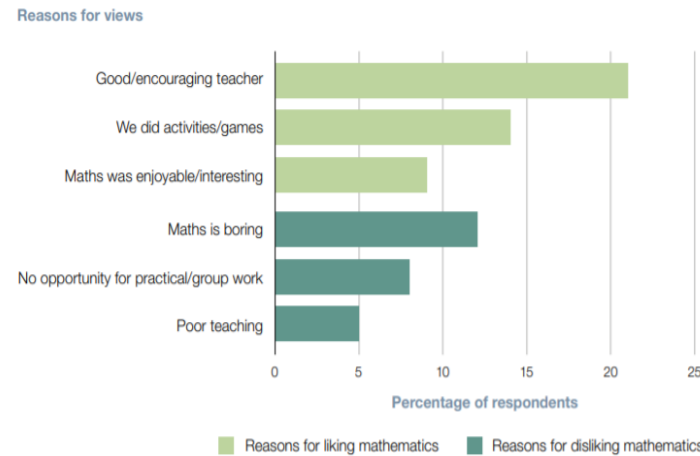


Source: TIMSS 2019.

Source: Trends in International Mathematics and Science Study (TIMSS) 2019

76% of respondents to a National Audit Office (2010) survey said that lack of enjoyment and interest was their main barrier to continuing with science, technology, engineering and maths studies post-GCSE.

Figure 13  
Top reasons for young secondary school pupils liking or disliking maths



NOTE  
1 Base: 1,129 secondary school pupils in years 7 or 8.

Source: Ipsos MORI Young People Omnibus 2008 conducted for the National Audit Office (Mathematics performance in primary schools: Getting the best results, HC 1151, Session 2007-08, 19 November 2008)

Negative attitudes and psychological resilience towards maths 'are damaging, leading to disengagement, increased anxiety and a lack of confidence, and a reluctance to try to improve skills. The impact of low numeracy significantly affects not only individuals' life chances, but also the UK economy and international competitiveness, especially in an increasingly technology centric society.' (National Numeracy, 2020)

# Hub Incubation Project – Why?

There is a documented skills gap in the local area linked to STEM subject areas. Swindon and Wiltshire’s Local Industrial Strategy has STEM industries and jobs as key strategic objectives for the area. SWLEP intend to continue to “*build on its strengths: advanced engineering, energy / sustainability, agritech, life sciences; and emerging opportunities: cyber, defence and security, digitech and connected systems*” which will all require young people to be equipped with maths skills in work readiness. (SWLEP, LIS, 2020).

Of all the sub-benchmark questions for Gatsby Benchmark 4, maths has the least number of schools fully achieving (in March 2021, and jointly with Science in July 2021). Sixteen mainstream schools across the Swindon and Wiltshire network are not currently achieving this sub-benchmark.

Attainment figures for GCSE English and maths for the Swindon and Wiltshire area are lower than national average (all students):

2019/2020	Swindon	Wiltshire	Nationally
GCSE English/Maths	44.6%	46.6%	50.5%
pass rate (%)			

# Hub Incubation Project – How?

- Research project over 1 academic year 2021-22
- 10 schools across Swindon and Wiltshire taking part, at least one year 7 class per school with at least one control group per school.
- New Project Lead to be appointed to join Careers Hub Team on temporary contract.
- Working with Forum Talent Potential A range of evaluation methods will be utilised to measure the impact of the activities
- All findings and resources will be shared widely next summer.

# Hub Incubation Project - Activities

- Two CPD sessions for maths teachers
- One parent webinar
- 5 Employer-enriched activities for each school in maths lessons
  1. Algebra
  2. Geometry - shapes, angles
  3. Averages and probability
  4. Application of number - solving problems with addition, subtraction, multiplication and division
  5. Ratio, percentages and fractions

# Hub Incubation Project – Evaluation

- Student survey before and after project (for both control group and activity group)
- Student focus group
- Teacher surveys
- Parent survey
- Employer surveys
- Longer term attainment and destination data to be tracked