

# The Broader Curriculum

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King's Maths School

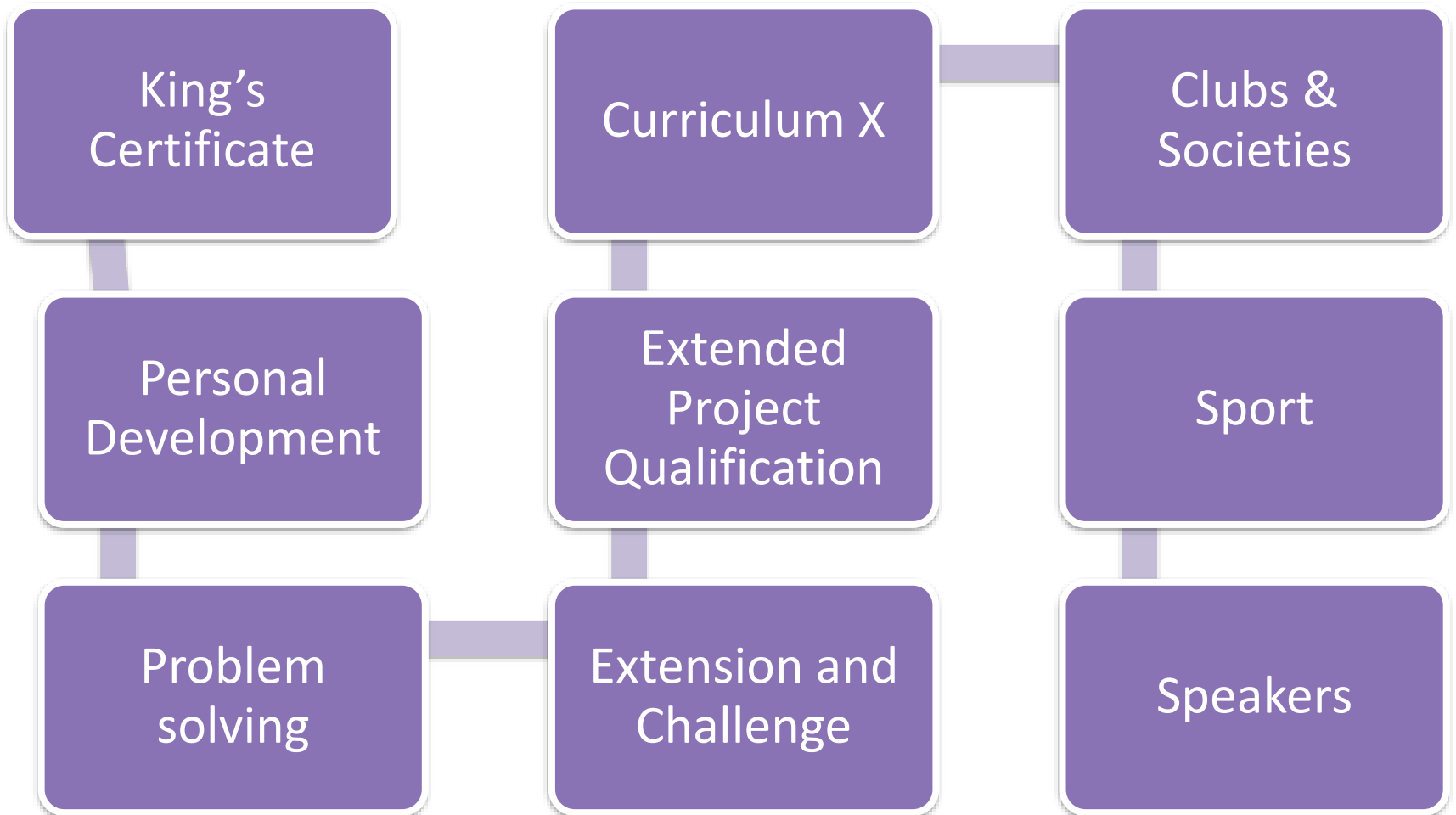
# WHAT IS IT?

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- Everything that isn't an A Level!
- Outcomes... and wider outcomes
  - Subject knowledge, skills and understanding
  - Learning behaviours
  - Personal, interpersonal and emotional skills

# WHAT IS IN IT?

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KING'S CERTIFICATE

# PURPOSE OF THE SESSION

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- What is the King's Certificate?
- Why do we do it?
- How does it work?
- Successes and challenges
- The next steps...

# What is the King 's Certificate?

- A substantial, challenging, collaborative research project for all Year 12s
- Work with a mentor in industry or academia, with support
- Leads to a:
  - Final lecture at KCL
  - Formal journal article





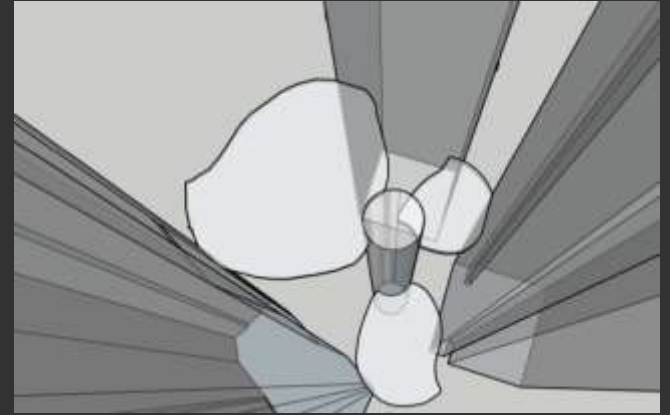


SHOULD ROBOTS  
REPLACE HUMANS FOR  
ULTRASOUND IMAGING?

How can we  
communicate  
effectively with  
a probe in  
deep space?



Design a  
**vertical village**  
in London



SENORGIF.COM

HOW DOES A  
**SWING**  
WORK?



# MY GOALS

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- Students should:
  - Work with professional, talented mentors
  - Explore new, challenging ideas with rigor and intellectual curiosity
  - Develop key, practical skills in research and academic writing
  - Gain direct experience of challenges, obstacles, and setbacks – which they may or may not fully overcome

# HOW DOES IT WORK?



External mentors in industry or academia set project briefs



Students go through an application process and are awarded a project

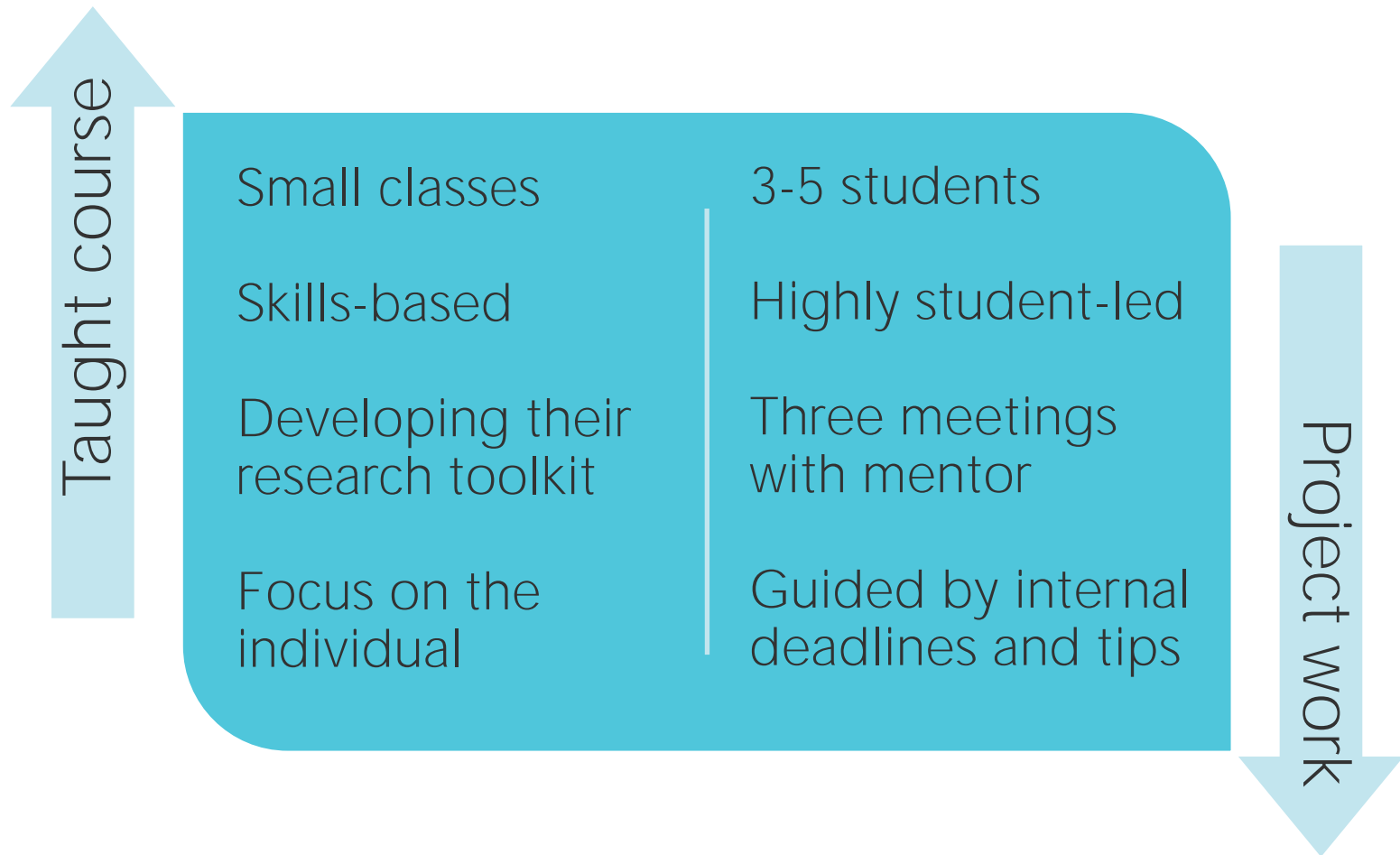


Groups have until the end of the year to complete their projects



# THE CURRICULUM

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# THE CALENDAR

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Autumn

Spring

Summer

# THE CALENDAR

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Autumn

Focus: basic skills  
and reading

Classes:

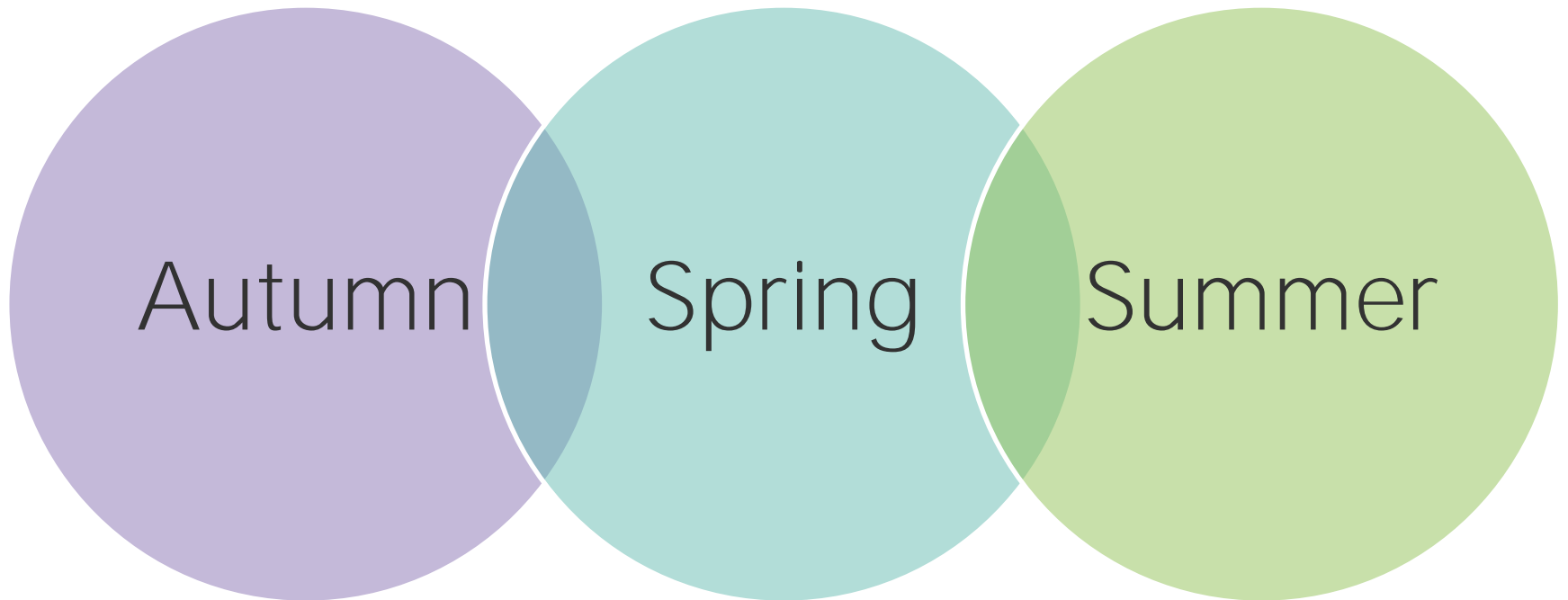
- Referencing
- Planning
- Application writing
- Research ethics
- Finding / analysing sources

Group work:

- Mentor meeting 1
- Introduction and lit review

# THE CALENDAR

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# THE CALENDAR

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Spring

Focus: writing and speaking

Classes:

- Editing
- Academic writing and style Using LaTeX
- Independent presentations

Group work:

- Mentor meeting 2
- Methodology and initial results

# THE CALENDAR

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Autumn

Spring

Summer

# THE CALENDAR

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Summer

Focus: polishing  
and reflecting

Classes:

- Guided work sessions
- Prepping for final meeting
- Responding to feedback
- Exemplars

Group work:

- Mentor meeting 3
- Full article
- Final presentation

# SUCCESSES!

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- Improved confidence with writing, researching, and using resources
  - Both in EPQ and the core subjects
- High-quality outcomes
- Strong reflection and self-assessment
- Positive feedback...

# STUDENT FEEDBACK

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"Learning to research well and write properly has been super interesting and I feel a lot more confident now."

"I'm sure that after this year my writing and speaking will be at a good standard."

"It makes the task of writing a whole journal article seem a lot less daunting."

"It was great to use LaTeX and this information will be very useful for my university days."



## **Fraud detection through analytics**

*King's Certificate*

*Paul Mould*

*June 17, 2019*

**Deniz Aydin, Nandita Joshi, James  
Kluver, Hugo Wong-Berard**



# CHALLENGES

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- Recruiting good mentors and developing project briefs that are appropriate
- Diverse project briefs that are interesting
- Grouping students effectively
- The balance between support and challenge
- Where next?

# A VISION FOR THE FUTURE

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- Collaborative work between maths schools to share resources and perhaps teaching
- Greater standardisation?
- Doing good through research
- Build relationships and mentor networks
- Seek funding for:

- Prizes
- Mentors



**This is in progress!**