

**A LEVEL PHYSICS  
AT  
KING ECGBERT  
SCHOOL**

# KEEPS YOUR OPTIONS OPEN

- ◉ Provides an excellent foundation
- ◉ Enables you to study science or other subjects further
- ◉ Maximise career options in science but also far beyond...



# PHYSICS CAN HELP YOU:

- ◉ Develop transferable skills you will need throughout life
  - ◉ Teamwork
  - ◉ Problem solving
  - ◉ IT
  - ◉ Communication
  - ◉ Numeracy

# WHAT MAKES PHYSICS AT KING ECGBERT SCHOOL UNIQUE?

- ◉ Experienced staff
- ◉ Heads of department are also examiners for OCR
- ◉ Innovative and engaging lessons
- ◉ Excellent technical support for practical work
- ◉ Enrichment activities (if restrictions allow)
  - Trip to CERN in Geneva
  - Physics Olympiad
  - Manchester University Visit

# COURSE CONTENT – OCR A

- ⦿ Module 1 – Development of practical skills in physics
- ⦿ Module 2 – Foundations of physics
- ⦿ Module 3 – Forces and motion
- ⦿ Module 4 – Electrons, waves and photons
- ⦿ Module 5 – Newtonian world and astrophysics
- ⦿ Module 6 – Particles and medical physics

# ASSESSMENT AT A LEVEL

Paper	Structure	Time	What is it worth?
Modelling Physics	Covers content from modules 1-3 and 5 Multiple choice and short response questions	2 hour 15 minutes	37% of A Level
Exploring Physics	Covers content from modules 1,2,4 and 6 Multiple choice and short response questions	2 hour 15 minutes	37% of A Level
Unified physics	Covers content from all modules Short and extended response questions	1 hour 30 minutes	26% of A Level

# PRACTICAL ENDORSEMENT

- ⦿ This is a new qualification which is reported separately from the A Level qualification and is pass/fail
- ⦿ Students will need to demonstrate that they have developed a set of key practical skills in order to pass this qualification
- ⦿ Records will be kept in a laboratory folder and checked by their teacher but there will be no formal practical assessment

# Physics assessment in the sixth form

- Regular assessments help you keep on track and monitor your progress
- In class assessments
- Key skills practicals recorded in laboratory folder
- Key assessed homework tasks based on past examination questions

## Assessed Task Fundamental particles

### Multiple choice questions

1. Which **one** of the following **might** not apply in interactions between sub atomic particles?

- A charge conservation
- B energy conservation
- C matter conservation
- D momentum conservation

2. A pion could consist of

- A  $u\bar{d}$
- B  $ud$
- C  $uud$
- D  $u\bar{u}\bar{d}$

3. A positive kaon ( $K^+$ ) is a meson which includes a strange quark. Its structure could be

- A  $u\bar{s}$
- B  $us$
- C  $\bar{s}d\bar{d}$
- D  $usd$

4. The Large Hadron Collider is designed to accelerate protons to very high energies for particle physics experiments. Very high energies are required to

- A annihilate hadrons.
- B collide hadrons.
- C create particles with large mass.
- D produce individual quarks.

5. A pion can decay to produce two leptons. Which one of the following is possible?

- A  $\pi^+ \rightarrow e^+ + \nu_e$
- B  $\pi^0 \rightarrow e^- + \nu_e$
- C  $\pi^+ \rightarrow e^+ + e^-$
- D  $\pi^0 \rightarrow \pi^+ + e^-$



# CERN 2019



# PHYSICS OLYMPIAD



- An examination based competition entered annually by over 1,600 talented young physicists.
- Aims to challenge and reward the best physicists in British schools and to select the UK Physics Team for competition at international level.



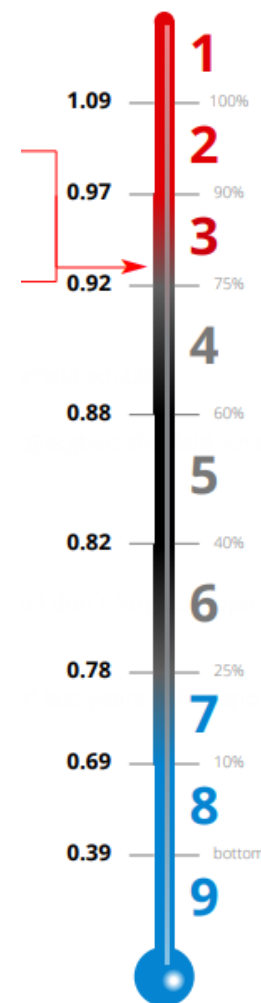
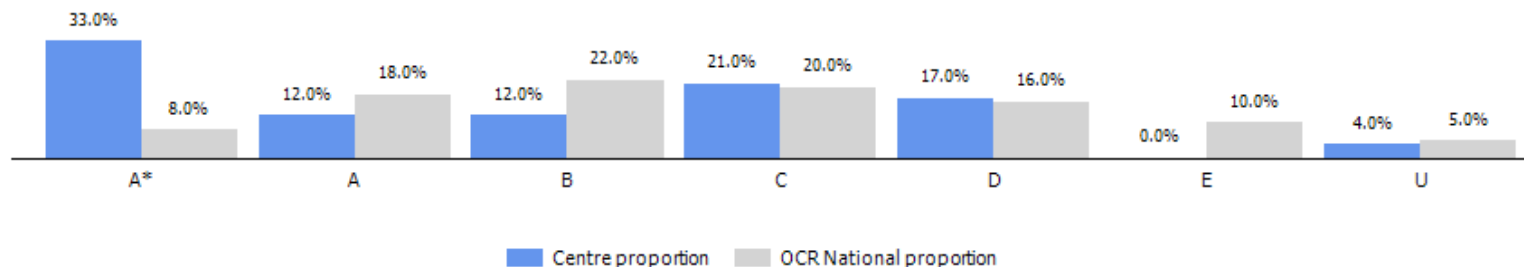
# DESTINATIONS OF PREVIOUS STUDENTS

- Students who studied Physics at King Egbert have progressed to a wide variety of post-18 options
  - Physics/Theoretical physics
  - Architecture
  - Mathematics
  - Engineering (e.g. mechanical, aerospace)
  - Dental surgery
  - Medicine
  - Computer science
  - Biochemistry
  - Quality surveying
  - Sport and exercise science

# RESULTS 2019

- 33% of students last year achieved an A\* grade (nationally the figure was 8%)
- Our students consistently score higher than the national average across all papers
- ALPS score 3 – this puts us in the top 25% of schools in the country (including fee paying schools)

Grade Breakdown for Advanced GCE Physics A Centre Proportion Vs OCR National Proportion





## RESULTS 2020

- ◉ **46%** of students achieved grades **A\*-A**
- ◉ **63%** of students achieved grades **A\*-B**

## RESULTS 2021

- ◉ **56%** of students achieved grades **A\*-A**
- ◉ **67%** of students achieved grades **A\*-B**

# ENTRY REQUIREMENTS

- ⦿ You will need to have at least a 6 grade in Additional Science or Physics **and** a grade 6 in Maths.
- ⦿ Students studying Combined Science will need two grade 7's.
- ⦿ It is also expected that students studying A Level Physics study either Mathematics A Level or Core Mathematics.