Introduction to A level Physics

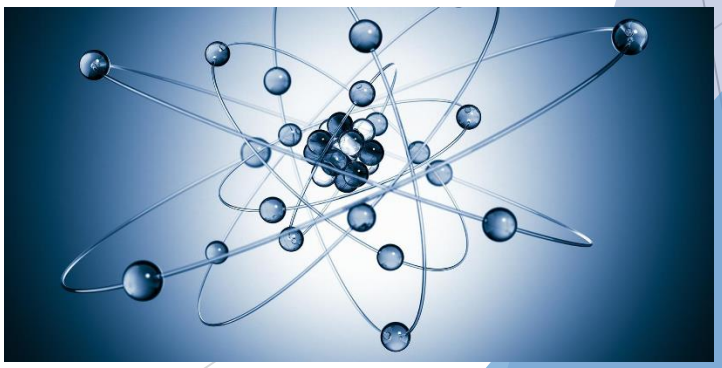
Dr Gregory

Head of Physics

THE ECCLESBOURNE SCHOOL

LEARNING TOGETHER FOR THE FUTURE

INTEGRITY • TENACITY • SERVICE



What is physics?

About 13.5 billion years ago, matter, energy, time and space came into being in what is known as the Big Bang. The story of these fundamental features of our universe is called physics.

Why study physics?

A thinking framework

A functioning society

Money

The joy of finding things out

What do you actually do?

1. Study a body of knowledge that explains how the Universe works
2. See how that knowledge has been applied by humankind
3. Learn how to apply the scientific method
4. You solve problems

The best thing?

EDUCATION
is not the learning of facts,
but the TRAINING of the
MIND TO THINK.

Albert Einstein

Where can physics take you?

So what's the big deal?

1. Demanding
2. Rewarding
3. Respected

Which spec do we teach?

AQA

AS AND
A-LEVEL
PHYSICS

AS (7407)
A-level (7408)

Specifications
For teaching from September 2015 onwards
For AS exams in May/June 2016 onwards
For A-level exams in May/June 2017 onwards

Version 1.3 June 2017

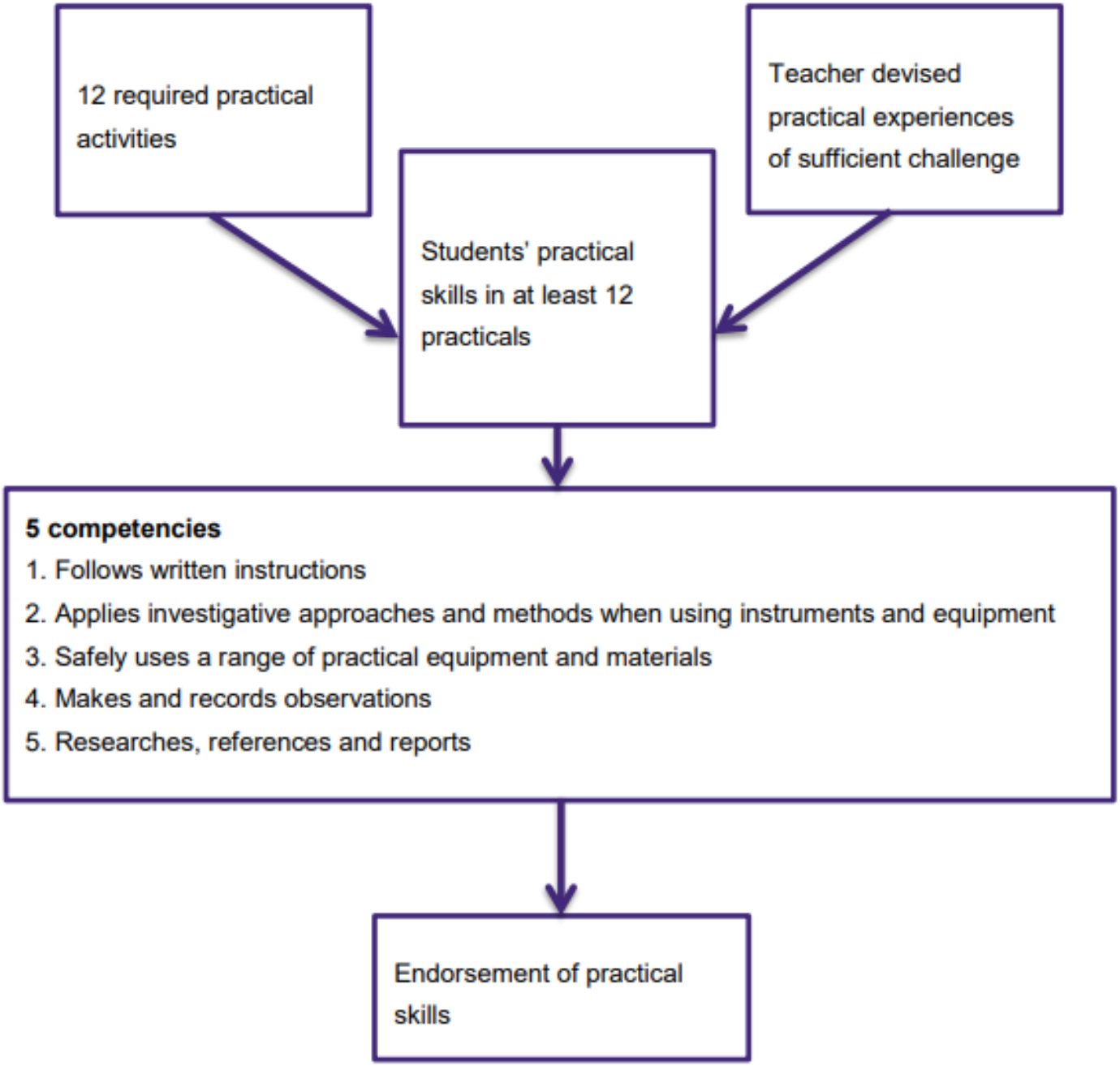
Course content

1. Measurements and their errors
2. Particles and radiation
3. Waves
4. Mechanics and materials
5. Electricity
6. Further mechanics and thermal physics
7. Fields and their consequences
8. Nuclear physics

Options

9. Astrophysics
10. Medical physics
11. Engineering physics
12. Turning points in physics
13. Electronic

All


12 required practical activities
Teacher devised practical experiences of sufficient challenge
Students' practical skills in at least 12 practicals
5 competencies
1. Follows written instructions
2. Applies investigative approaches and methods when using instruments and equipment
3. Safely uses a range of practical equipment and materials
4. Makes and records observations
5. Researches, references and reports
Endorsement of practical skills

Resources

- Full access to Oxford University Press on-line system (Kerboodle)
- Workbooks covering key areas of each topic with lots of questions
- Practical assessment modules
- Isaac Physics online platform
- British Physics Olympiad

Entry requirements

- GCSE Separate Sciences: Grade 6 in Physics and grade 5 in either Biology or Chemistry
- GCSE Combined Science: 6,6
- GCSE Maths: **Grade 6 (7 desirable)**
- GCSE English: Grade 5

Our expectations of students

- Commitment to the course both in and out of school
- Play an active part in lessons
- Creativity during practical sessions
- Follow up lessons with private study to enhance understanding
- Ask for help if necessary
- Complete and hand in homework on time

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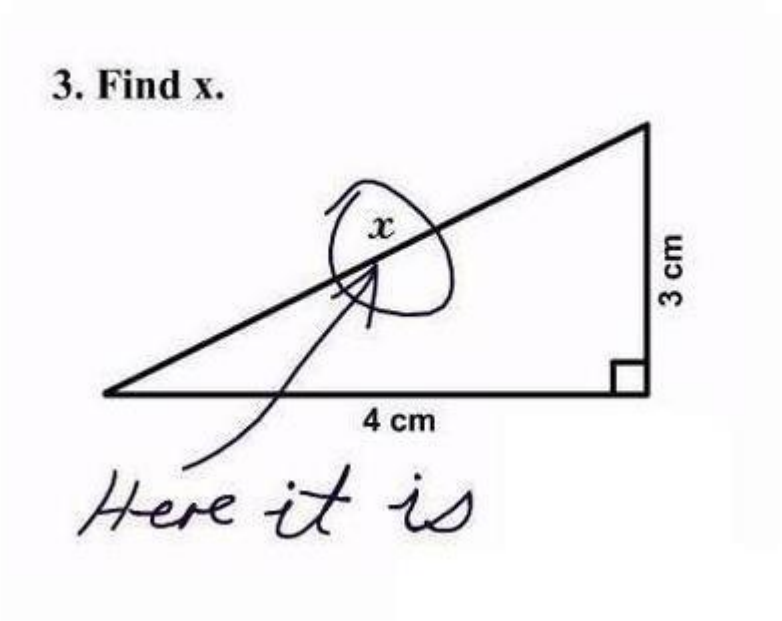
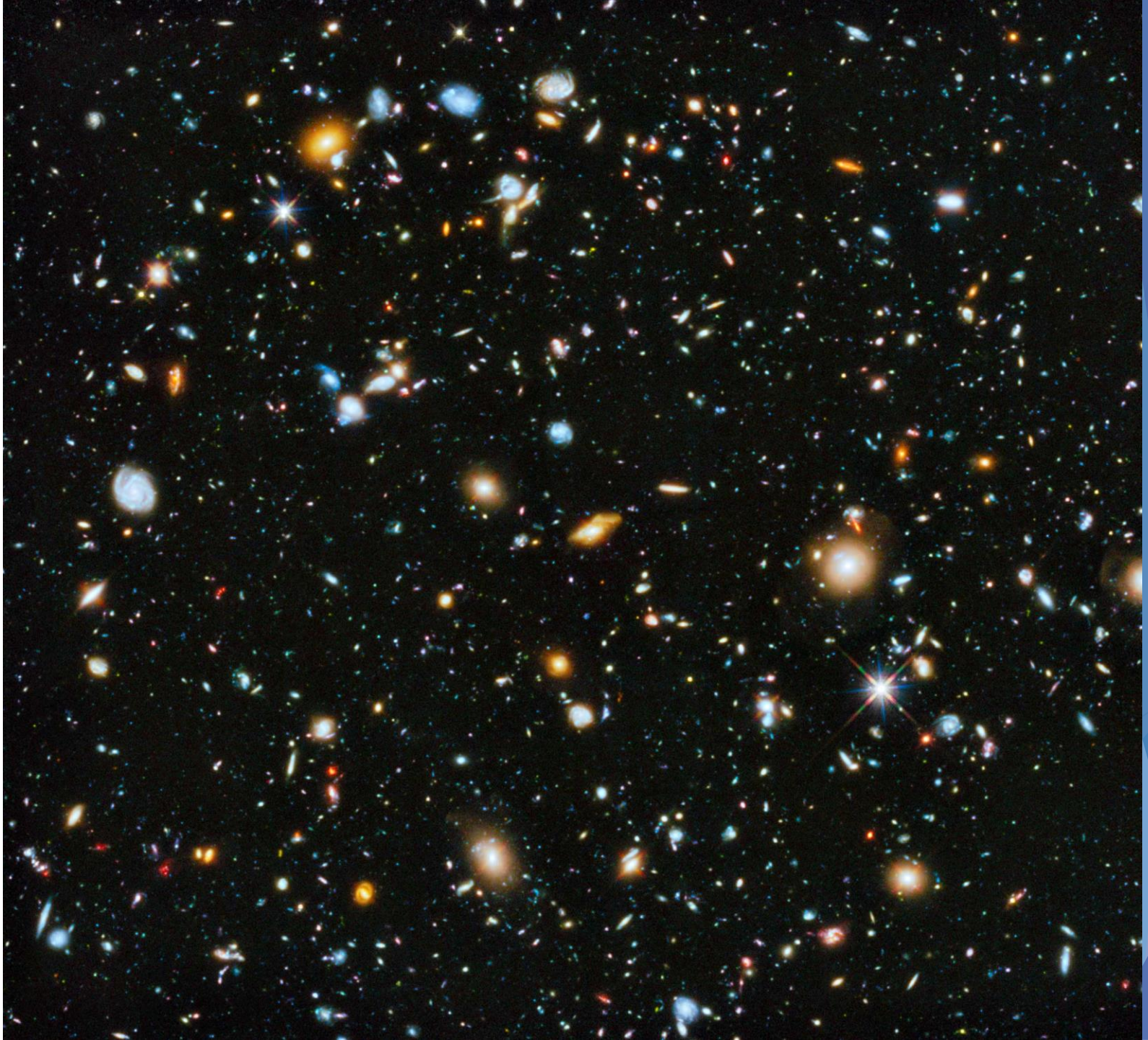
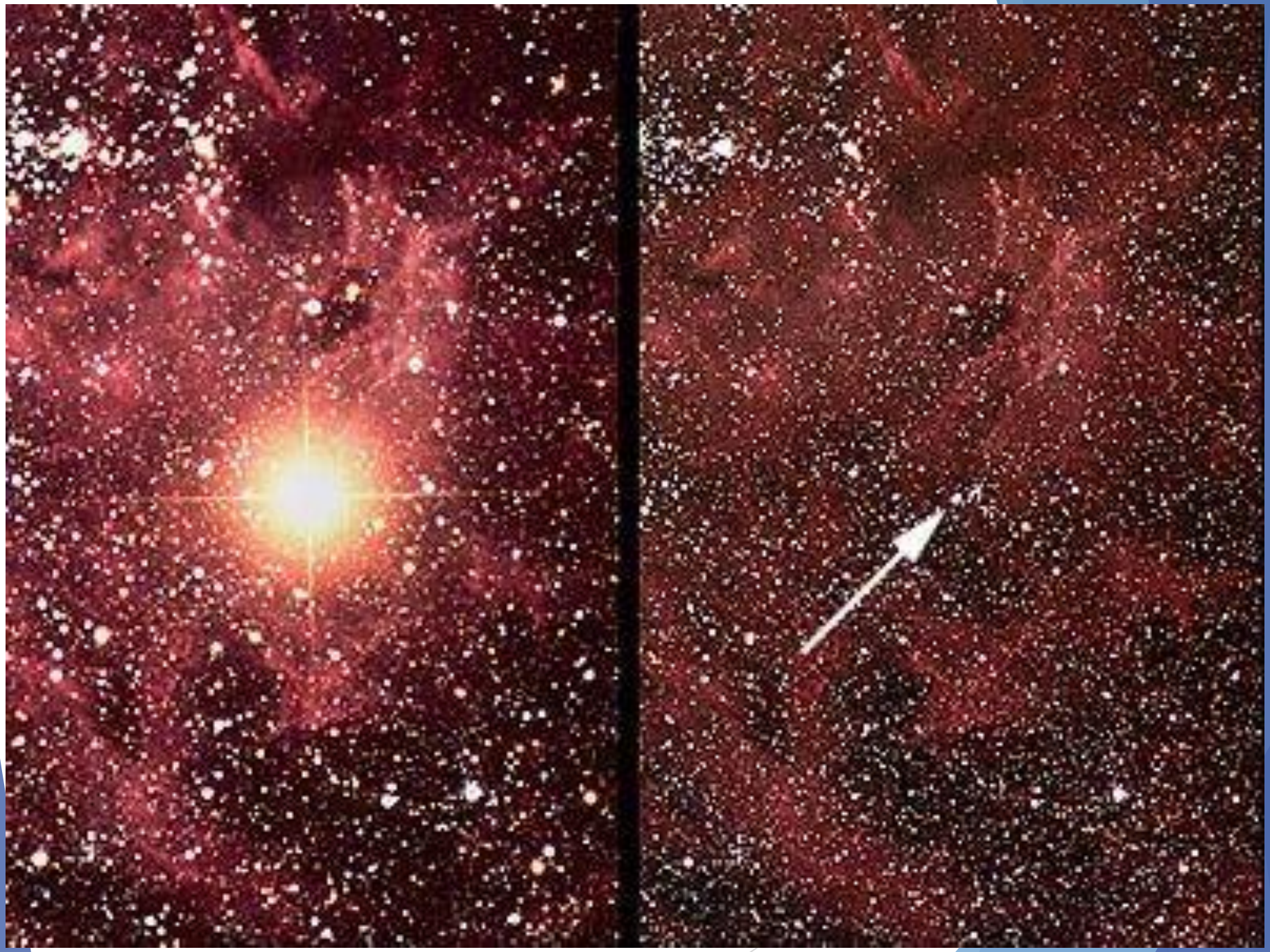
Questions…

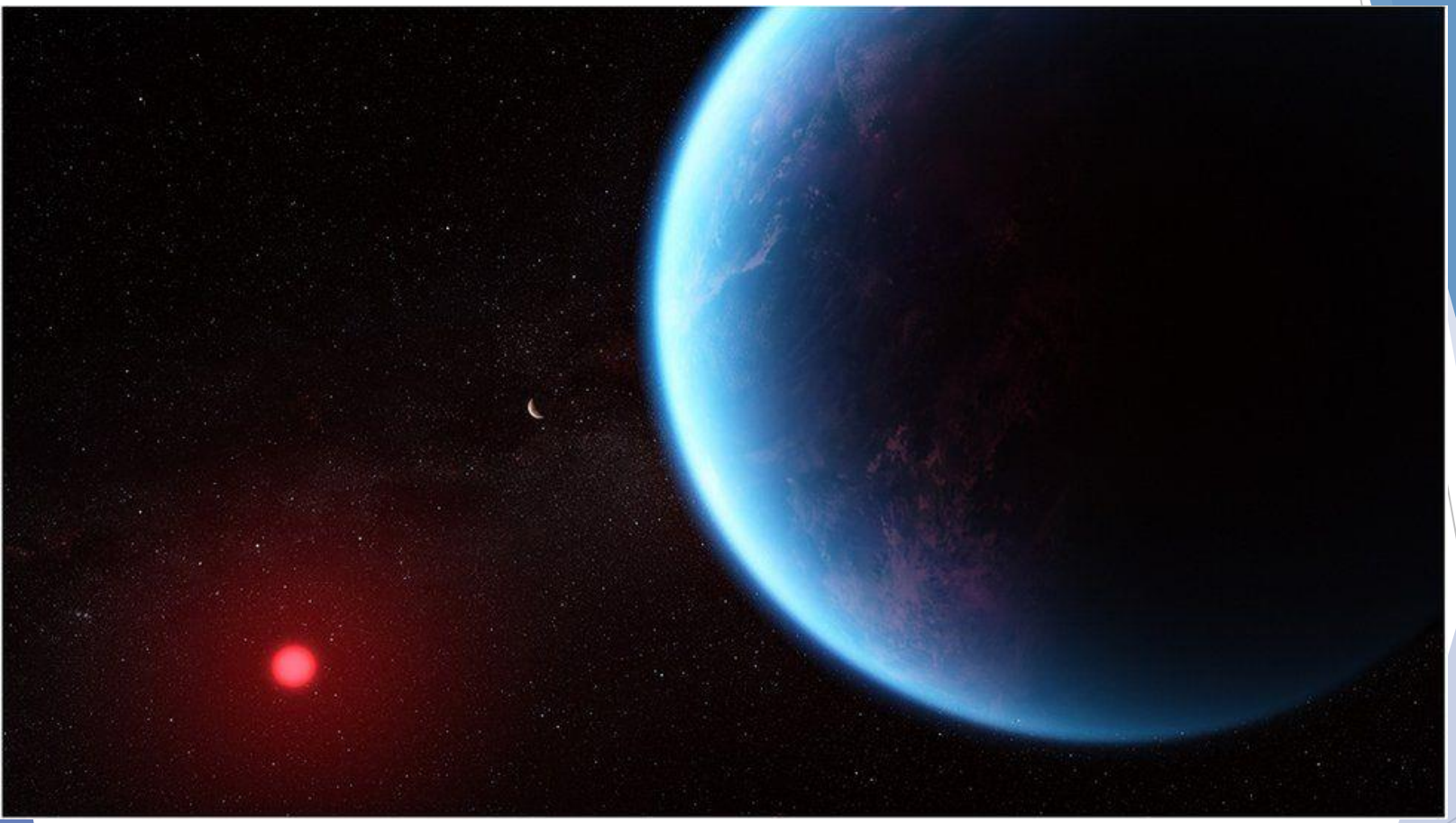
- *Do I need to do A level maths to take physics?*



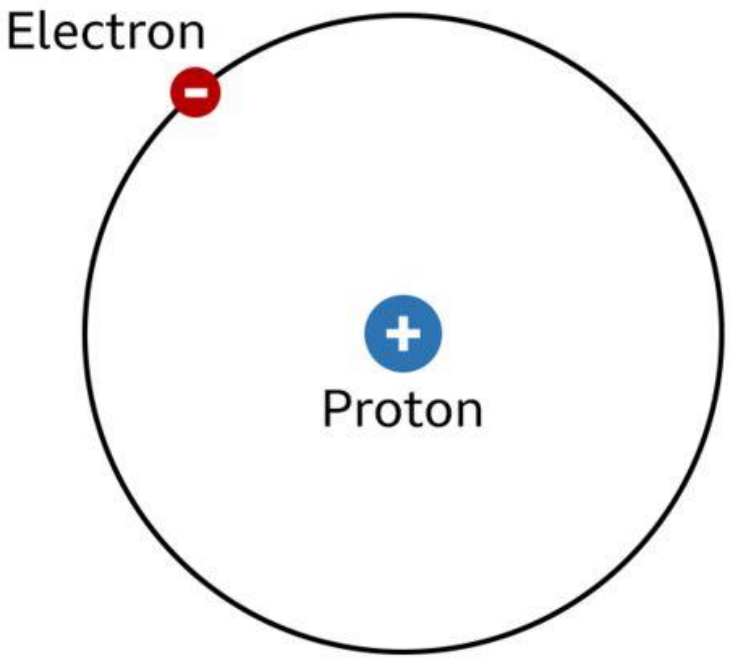
Thank you for listening!





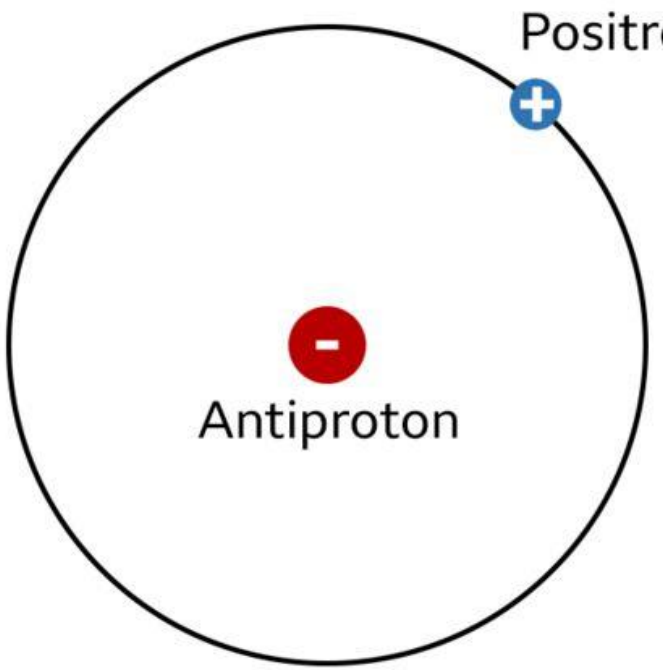


Hydrogen atom



A hydrogen atom is made up of a positively charged proton and negatively charged electron revolving round it

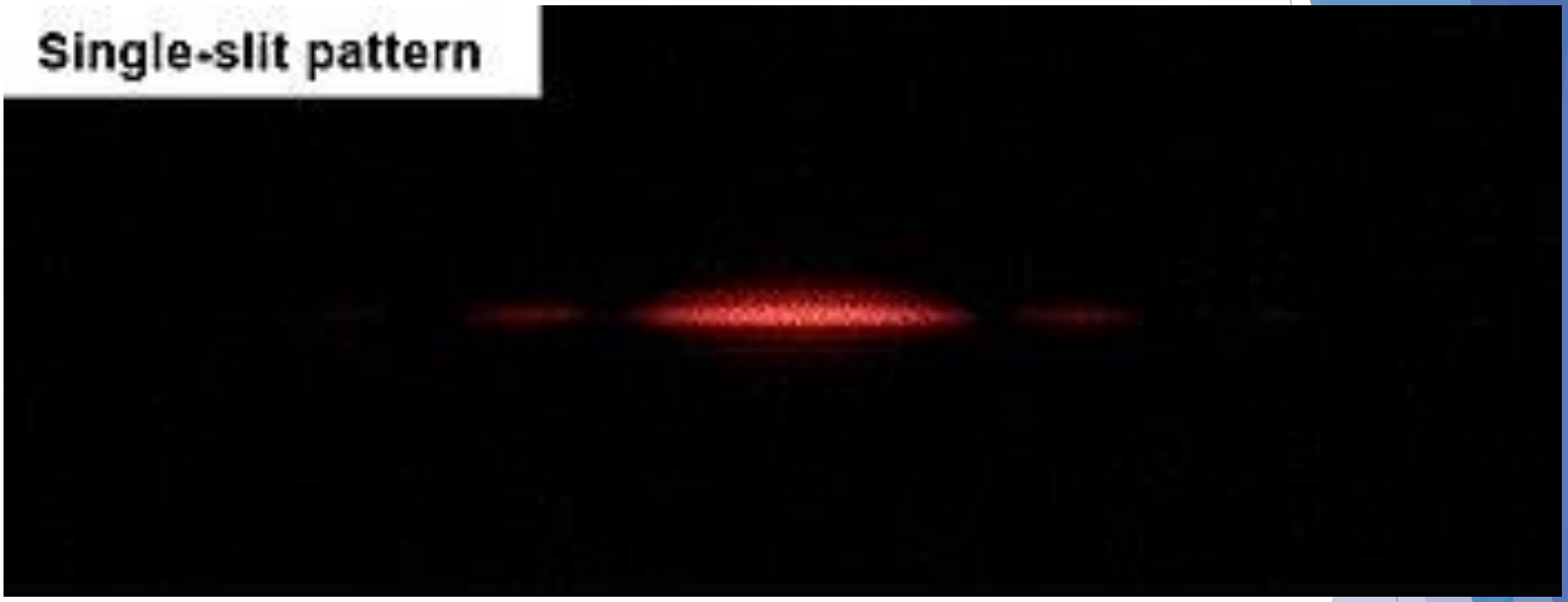
Antihydrogen atom



Antihydrogen is the opposite, a negatively charged antiproton in the middle and a positive positron around it.

Source: BBC research

BBC



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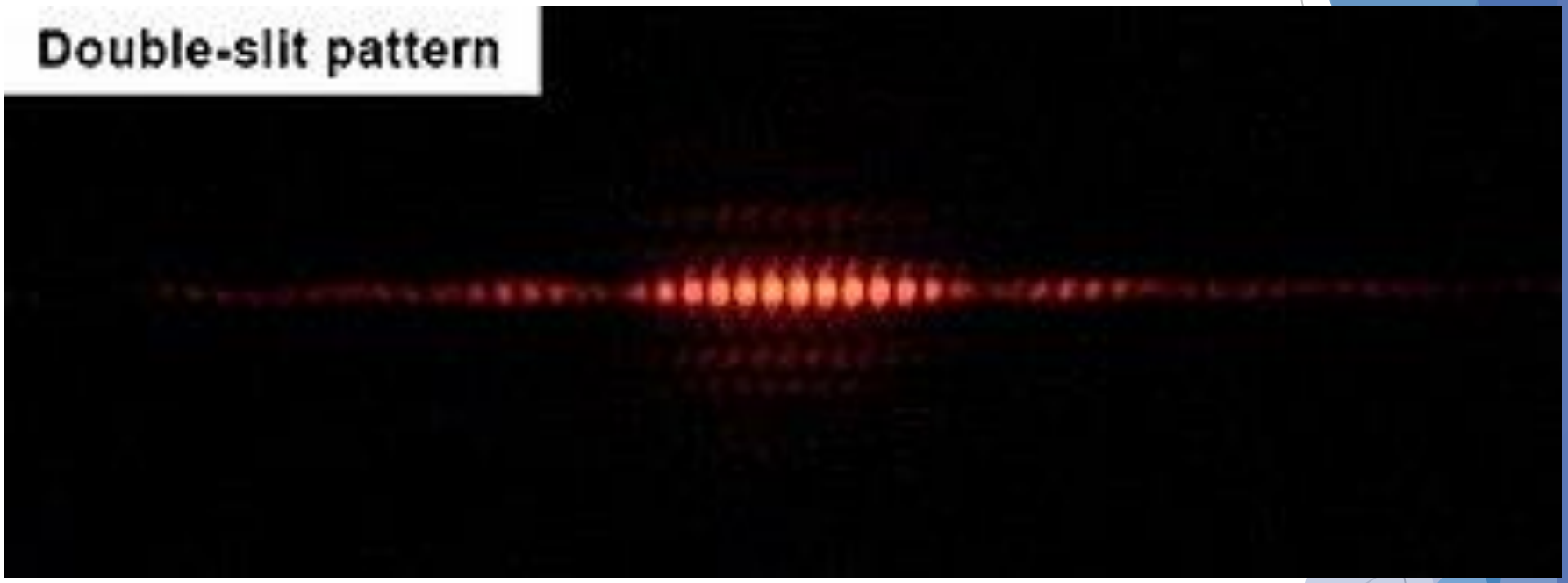

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