



Cardiff  
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University

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Caerdydd

## PGCE Science Pathways Welcome Pack: 2022-23

Hi everyone

Congratulations on gaining your place on either the Biology with Science, Chemistry with Science or Physics with Science programme. A very warm welcome!

It will be a busy, exciting and challenging year. The tasks detailed below will help you prepare for the course. Please complete them before you start the course in September.

### 1) CONFIRMATION OF PLACE

When you receive this pack, email me at [cpugh2@cardiffmet.ac.uk](mailto:cpugh2@cardiffmet.ac.uk) to confirm that you will starting with us in September 2022.

### 2) FAMILIARISE YOURSELF WITH THE GCSE AND A LEVEL SPECIFICATIONS

Access the Science subject area of the [WJEC website](#). Find out more about the range of Science qualifications offered in Wales at GCSE.

Most pupils follow the GCSE Science (Double Award) qualification, where exams in the three sciences contribute to a final award of two GCSEs. GCSE Biology, Chemistry and Physics are often referred to as 'separate sciences' where additional modules are added to the double award content to give three GCSEs. GCSE Applied Science is also offered by some schools and, as you would expect, has a more vocational focus.

All exam papers are offered at Foundation (grades C – G) and Higher Tier (grades A\* - D) and the specification makes clear any content that is only required at higher tier (bold text).

Please **print off and complete** the following [past papers](#) for all three science subject areas:  
**GCSE 2019 SUMMER – SCIENCE: BIOLOGY UNIT 1 Higher Tier - QUESTION PAPER**  
**GCSE 2019 SUMMER – SCIENCE: CHEMISTRY UNIT 2 Higher Tier - QUESTION PAPER**  
**GCSE 2019 SUMMER – SCIENCE: PHYSICS UNIT 3 Higher Tier - QUESTION PAPER**

These units are usually undertaken in Year 10 whilst units 4, 5 and 6 are studied in Year 11.

As you work through the GCSE papers think about and write down some misconceptions that you think pupils may have with some of the questions. Be ready to bring these papers and your ideas with you in September. Being aware of, and revealing, pupil misconceptions are crucial to help plan teaching and learning in ALL classes. **Good subject knowledge at this level will be an essential part of a successful year for you.** It is most likely that schools will expect you to be able to teach all three science subjects up to and including GCSE, so aim to identify any gaps in your subject knowledge. Use the marks schemes, also available on the WJEC website, to support you and to begin to get an insight into the minds of those who write examination questions.

Also familiarise yourself with the specification and practical tasks required for your subject specialism at A level. Have a look at the Y12 AS past papers and check your current knowledge at this level.

### 3) DO SOME READING

E.g. dip into one of the following (or earlier additions) that looks at secondary teaching generally:

- Capel, S., Leask, M. and Younie, S. (2019) *Learning to teach in the secondary school*, 8<sup>th</sup> edn. London: Routledge.
- Kyriacou, C. (2018) *Essential Teaching Skills*, 5<sup>th</sup> edn. Oxford.
- Muijs, D. and Reynolds, D. (2017) *Effective teaching: evidence and practice*, 4<sup>th</sup> edn. London: Sage.

Also, familiarise yourself with the [Hwb website](#) and with the following Welsh Government documents:

[Curriculum for Wales](#) which is due for implementation from September 2022, including the [Science and Technology](#) Area of Learning and Experience (AoLE) and the [cross-curricular skills frameworks](#) that are already in place.

[Science National Curriculum Programme of Study in Wales \(2008\)](#) (the old curriculum that will still be applied for those who entered Year 7 of secondary school before September 2022.

### 4) SEE SOME SCIENCE TEACHING

Try to get some more experience observing / supporting in a secondary school. Focus on how pupils interact with each other and with the teacher and how learning is managed. If you can, observe some practical lessons. How is Health and Safety managed? How are practical and theory linked in the Science classroom?

I look forward to meeting you in September and working with you at this very exciting time for education in Wales.

Enjoy the tasks and enjoy the summer.

Best wishes

Ceri

Dr Ceri Pugh

Programme Leader, PGCE Science Pathways