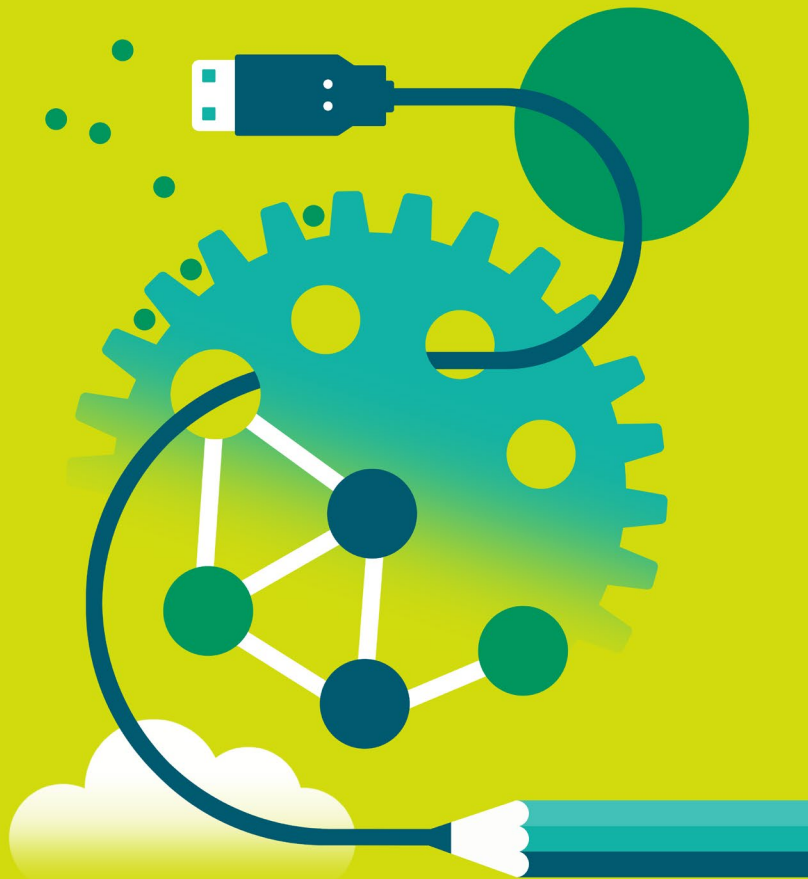




Pearson

# Getting Ready to Teach - IAL Physics 2018

17IOAS13



## Your Online Environment

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**XX** Technical Difficulties & Support

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**XX** Recording

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**XX** Communication in an online environment

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**XX** Asking Questions

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**XX** Using Polls

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**XX** Downloading Documents

# Aims and Objectives

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## Getting Ready to teach Pearson's new IAL specification from September 2018

### During the day you will

- Get an overview of the main changes in the new specification
- Explore possible teaching and learning strategies that may be employed
- Look at the Sample Assessments and Mark Schemes
- Look at planning and organisation for the new specification
- Explore the support and resources available from Pearson to guide you through teaching the new specification



# Agenda

- 16.00 – 16.05 Introduction to the training environment
- 16.05 – 16.45 Session 1: Delivering the new specification
- 16.45 – 17.00 Session 2: Mathematical and practical skills
- 17.00 - 17.55 Session 3: Assessment in the new specification
- 17.55 – 18.00 Event evaluation and plenary





# **Session 1**

## **Delivering the new Specification**

# Session 1 Delivering the new specification

Introduction to the new specification

- What it looks like

- How it has changed

- New topics

Approaches to planning the delivery

- Planning for progression over two years

Progression

- From GCSE

- On to university and the workplace

# The new specification

## Similarities

- . Modular format
- . Same topics in each module

## Changes

- . Content update
- . The assessment objectives
- . New question types
- . The assessment of mathematics

# Content changes

- The materials topic has been reduced principally by removing definitions
- Momentum in one dimension & De Broglie equation has moved to AS
- Equation for speed of a transverse wave on a string is added
- Potential introduced to gravitational and electric fields
- Fission and fusion linked to the binding energy per nucleon graph
- Derivations of some equations required
- Huygen's construction, diffraction equation and latent heat all added

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Particle physics section rewritten to make it clear what is required



# The Assessment Objectives

		% in IAS	% in IAL
AO1	Demonstrate knowledge and understanding of science.	34-36	32-34
AO2	(a) Application of knowledge and understanding of science in familiar and unfamiliar contexts	34-36	34-36
	(b) (b) Analysis and evaluation of scientific information to make judgements and reach conclusions.	9-11	12-14
AO3	Experimental skills in science, including analysis and evaluation of data and methods.	20	20

# Assessment overview

unit	marks	Exam time	Unit code	% of IAS	% of IAL
IAS unit 1	80	1 hour 30 mins	WPH11/01	40	20
IAS unit 2	80	1 hour 30 mins	WPH12/01	40	20
IAS unit 3	50	1 hour 20 mins	WPH13/01	20	10
IA2 unit 4	90	1 hour 45 mins	WPH14/01		20
IA2 unit 5	90	1 hour 45 mins	WPH15/01		20
IA2 unit 6	50	1 hour 20 mins	WPH16/01		10

# Assessment availability and first award

Unit	January 2019	June 2019	October 2019	January 2020	June 2020
1	✓	✓	✓	✓	✓
2	✗	✓	✓	✓	✓
3	✗	✓	✓	✓	✓
4	✗	✗	✗	✓	✓
5	✗	✗	✗	✗	✓
6	✗	✗	✗	✗	✓
IAS award	✗	✓	✓	✓	✓
IAL award	✗	✗	✗	✗	✓

From June 2020, all six units will be assessed in January, June and October for the lifetime of the qualifications

From June 2020, IAL and IAS will both be awarded in January, June and October for the lifetime of the qualifications.

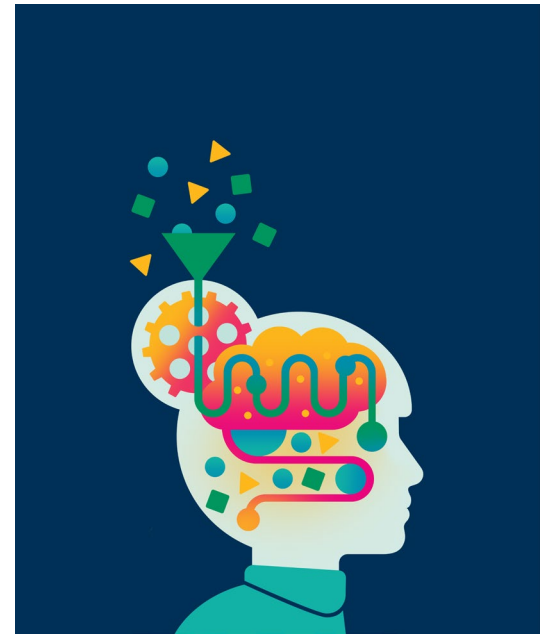
# New style of questions

AO2b assessed by questions designed to allow candidates to make a conclusion, usually based on calculations.

Quality of written communication questions replace by questions where candidates have to show linkage and lines of reasoning in their answers.

# Mathematical requirements

Across the set of AS papers and the set of A2 papers, 40% of the marks must be assessing mathematical skills to level 2 or above.



# Progression

## **To HE**

This specification has the same content and assessment style of questions as the GCE AL specification. Consultation with HE occurred at all stages

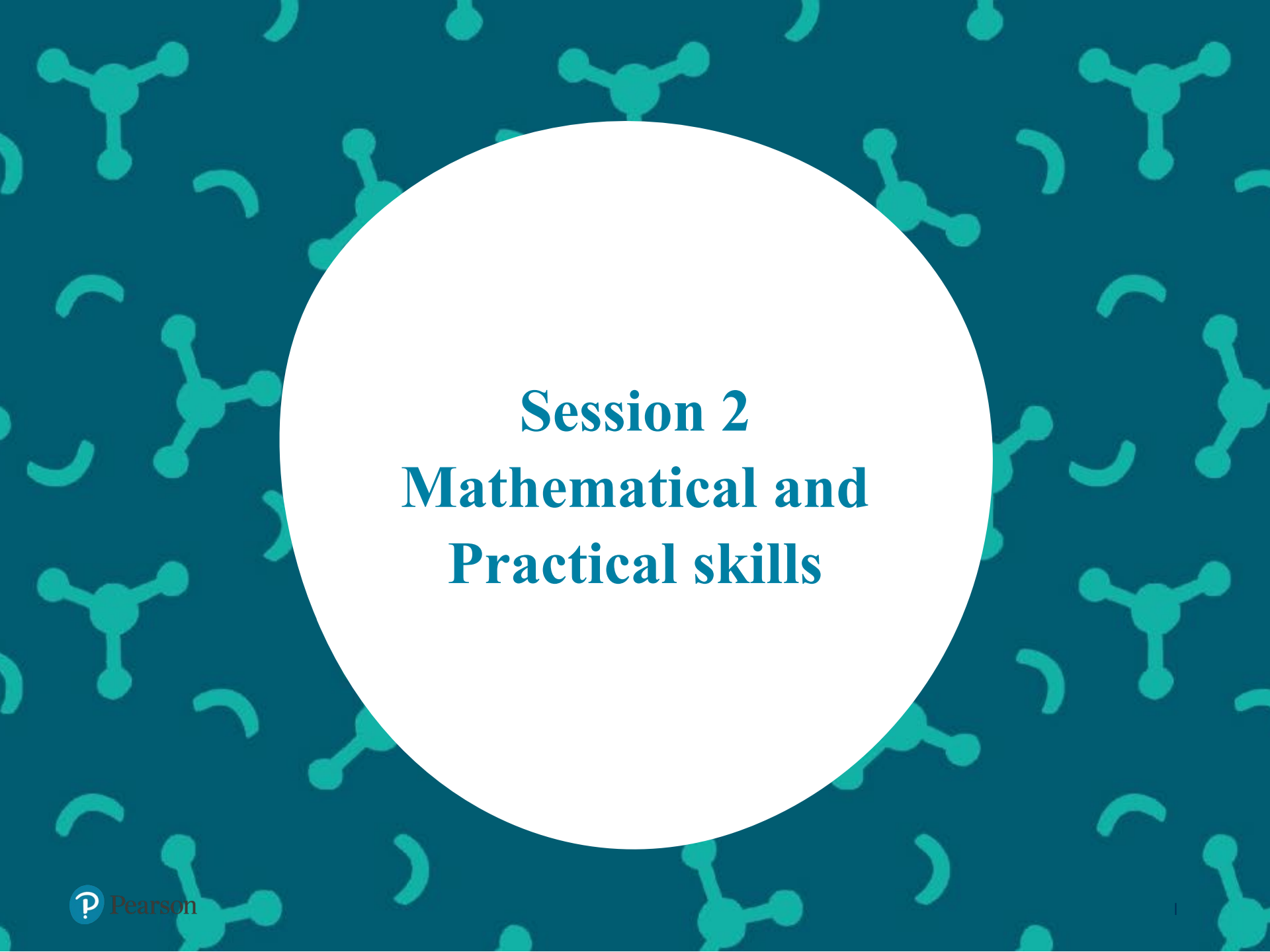
## **From GCSE**

Use of the Transition Guide. This is a set of 5 starter lessons, one from 5 different parts of the AS specification

Each lesson has - starter, activity and plenary

Each builds on common GCSE strengths and considers common misconceptions. Mathematical activities are included

These can be used to form the basis for your assessment of your students as they start in the Sixth Form

The background is a solid teal color with a repeating pattern of white chemical symbols, including water molecules (H2O) and curved lines representing bonds or arcs.

# **Session 2**

## **Mathematical and Practical skills**

# Mathematical and Practical Skills

Maths at level 2

- 40% of the marks

Practical Skills

- The core practicals
- Appendix 10
- Integration into teaching and developing competencies
- Resourcing the practicals
- Investigative approaches



# Maths Assessment in the IAL

The skill areas

- Arithmetic and numerical computation
- Handling data
- Algebra
- Graphs
- Geometry and trigonometry

These are detailed in Appendix 6 of the specification – page 60

40% of the marks in each set of IAS and IA2 papers, will be for carrying out Maths at level 2 - this is GCSE Higher level.

# Practical Skills

The core practicals are

- embedded into the topics
- form an integral part of the teaching
- cover the whole specification
- contain tried and tested procedures
- do not make heavy demands on apparatus resources
- allow students to gain the competencies needed for units 3 & 6.

# Practical skills

The core practicals

Mathematical skills linked to the core practicals

Core practical resources

Appendix 10

- Changes in terminology
- Dealing with uncertainties



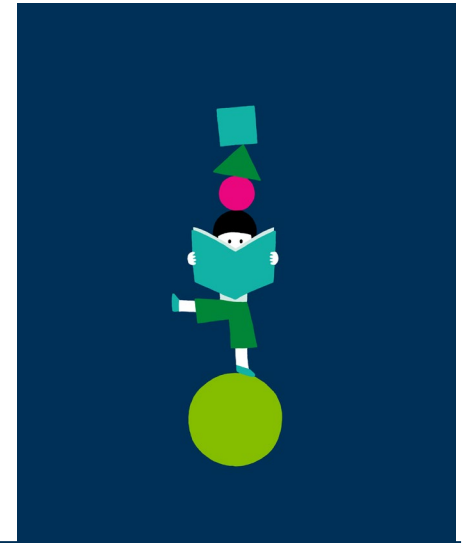
# **Session 3**

## **Assessment in the new specification**

# Question Papers –in detail

## The appendices

- Appendix 8: Data sheet, gives the data that will be provided
- Appendix 7: Equations, gives the formulae that don't need to be memorised
- Appendix 9: Taxonomy, gives the command terms



# Question types theory units

## Multiple Choice

- These will be in the familiar pattern with four responses of which one is correct.
- The style of these has changed so that there is generally only one thing being tested ie responses are given as uncompleted sums rather than numerical answers thus retaining one step per mark.

## Short answer

- The usual calculation (including 'show that' calculations) or short explanation and now perhaps a derivation

## Free response

- Some longer answers will require the material to be ordered logically with correct use of technical terms for full marks to be awarded
- Some longer questions will require conclusions to be made or evidence to be evaluated.

# Linkage Questions - always 6 marks

These questions assess a student's ability to show a coherent and logical structured answer with linkage and fully-sustained reasoning.

Each question will have 5 or 6 physics points (called indicative content).

The following table shows how the marks are awarded for the number of indicative points in the answer

Number of indicative points seen in answer	Number of marks awarded for indicative points
6	4
5-4	3
3-2	2
1	1
0	0

Marks are then awarded for how the answer is structured and its lines of reasoning

The following table shows how these marks are awarded.

	Number of marks awarded for structure and lines of reasoning
Answer shows a coherent and logical structure with linkage and fully sustained lines of reasoning demonstrated throughout	2
Answer is partially structured with some linkage and lines of reasoning	1
Answer has no linkage between points and is unstructured	0

# Questions that assess AO2b

An electric iron rated at 2600 W contains a steel plate which is heated to a working temperature of 215 °C. Room temperature is 18 °C.

Deduce whether the plate could reach its working temperature in less than 1 minute.

mass of steel plate = 890 g

specific heat capacity of steel = 450 J kg<sup>-1</sup> K<sup>-1</sup>

(3)

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# Question types – practical units

## Unit 3

No multiple choice

No long planning question (Q7)

50 marks instead of 40

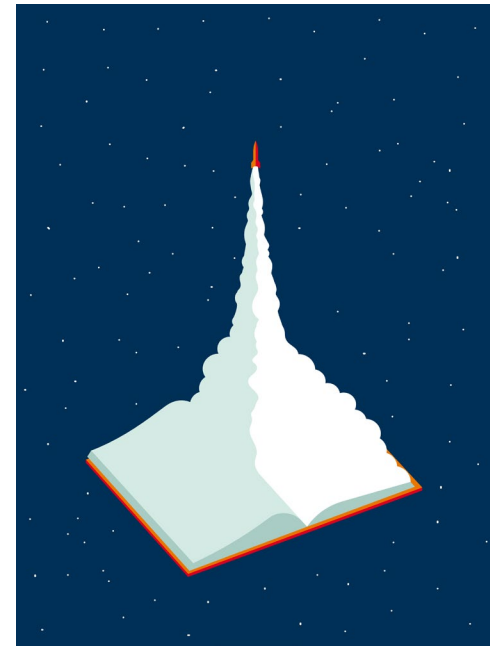
## Unit 6

50 marks instead of 40

Otherwise very similar to current specification

# Exemplar material

Discussion and marking of the new question styles using exemplar material from the June 2016 home GCE series



# Plenary Session

# Tracking Progress

## ResultsPlus

[www.edexcel.com/resultsplus](http://www.edexcel.com/resultsplus)

Edexcel's free online service giving instant and detailed analysis of your students' exam and mock performance

see your students' scores for every exam question

understand how your students' performance compares with Edexcel national averages

# Support

For more information, please contact subject advisors, subjects pages/communities and [ask the expert](#).

The root of all assistance is

<http://qualifications.pearson.com/en/qualifications/edexcel-a-levels/physics-2015.html>

the Edexcel physics subject website

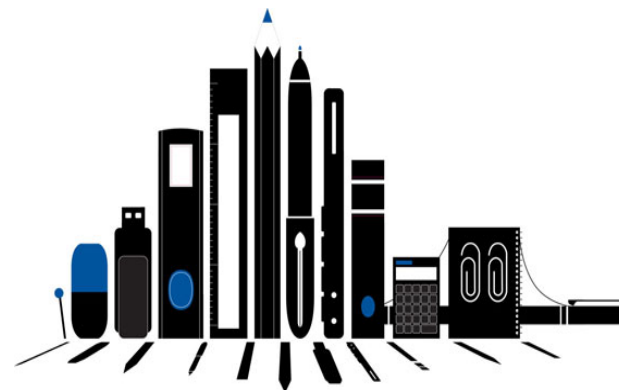
# Statistics

If you would like to know more about examination statistics, you may find these links of interest to you.

## Examination Results Statistics

[www.edexcel.com/iwantto/Pages/stats.aspx](http://www.edexcel.com/iwantto/Pages/stats.aspx)

Results statistics summarise the overall grade outcomes of candidates sitting Edexcel examinations.



## Grade Boundaries

<http://www.edexcel.com/iwantto/Pages/grade-boundaries.aspx>

This page shows the minimum marks needed to achieve a certain grade for all UK and international examinations.

Also refer to the examiners report which is available for download with other documents.

# Training

**Wide range of training events for 18/19**

**Choice of Delivery methods to suit you and your centre**

- F2F
- Online
- Centre-based

**More information**

<http://www.edexcel.com/training>



**Any questions?**

**Thank you for  
attending this event.**

*How did we do?*

*Please fill in the **evaluation form** that you'll  
receive via e-mail in a few minutes.*



# **There's so much more to learn**

Find out more about our range of events at  
<http://qualifications.pearson.com/training>

**ALWAYS LEARNING**