

IOP Institute of Physics

Summer School – Monday 16 August to Friday 20 August 2021

Join us for a week long programme of sessions covering some of the main KS3 physics topics and how to teach them; forces, electricity, energy and waves. Running on the mornings of 16-20 August. Anyone can attend, but the event is particularly aimed at those who have just finished their training and should give any NQT a great start to their teaching career.

The event is also running on 5-9 July, so please come along to sessions on these dates if you can't make it in August – see <https://www.talkphysics.org/events/summer-school-july-2021/>

We recommend that you plan to attend all the sessions throughout the week but appreciate this may not be possible, but please try to attend as many of the sessions as you can. Sessions will run using Zoom 5.3.0 or later (and Wonder for the drop-in/networking afternoon) information on this will be included in the booking confirmation. Any queries, please contact teacherCPD@iop.org

Time	Session	Description	Supporting video(s)
Monday 16 August			
9.15 – 9.30am	Welcome	Welcome to the Summer School	
9.30 – 10.45am	Inclusive Physics	We know that certain contexts and classroom practices can put some students off or even exclude them from the subject. We'll be looking at things to avoid and what you can do to make your physics teaching inclusive and welcoming for all.	
11am – 12.15pm	Maths in Physics	In this session we will look at how language can be effectively used to support calculations, how we can improve understanding of equations, ways of changing the subject of equations, and ways of answering calculation questions.	https://spark.iop.org/electricity-cpd-videos#electricityequations
Tuesday 17 August			
9.30 – 10.45am	Forces and force diagrams	<p>In this workshop we'll be using everyday physics to introduce forces and force arrows!</p> <p>Suggested kit list:</p> <ul style="list-style-type: none">• prepare some arrows – print out this force arrows template and cut a few out!• gather some of this everyday kit:<ul style="list-style-type: none">- a washing up bowl or plastic tub- a balloon- an empty drink can- a bottle top- 2 biro's (or 2 plastic straws)- an elastic band (or something stretchy)- a sponge (or something squishy)- a cork (or something floaty)- a mug- some cupcake cases (or some A4 paper)- Sellotape or Blu Tack <p>But please don't worry if you don't manage to print off or gather all the kit – you'll still be able to enjoy the workshops – we're really looking forward to working with you!</p>	https://spark.iop.org/forces-cpd-videos#forcearrows
11am – 12.15pm	Newton's Laws	We'll be exploring Newton's Laws – 3,2,1!	

Wednesday 18 August			
9.30-10.45am	Energy	<p>This session will introduce and consolidate the “energy stores” way of teaching energy. We’ll use hands-on and practical examples to illustrate the approach.</p> <p>Suggested kit list:</p> <ul style="list-style-type: none"> • A ball that will bounce and something that does not (e.g. ball of Blu Tack) • A metre rule • A toy car (any kind: simple, pull-back, friction, battery powered) 	https://spark.iop.org/energy-cpd-videos#energystores
11am-12.15pm	Particles and Matter	Inclusive approaches that link simple particle models with classroom experiences of pressure and heating.	https://spark.iop.org/matter-and-nuclear-cpd-videos#states
2.00 - 3.30pm	Drop-in surgery and general networking	This optional session is for you to ask any questions about physics or starting teaching – why not join us!	
Thursday 19 August			
9.30 - 10.45am	Waves	<p>In this session, we will be looking at sound and light and how a general understanding of waves can be established using these accessible examples.</p> <p>Suggested kit list:</p> <ul style="list-style-type: none"> • Metal coat hanger • String • download phyphox onto phone 	https://spark.iop.org/waves-cpd-videos#introduction
11am - 12.15pm	Earth in Space	This workshop will look at some of the common misconceptions children hold about earth and space and explore the many practical alternatives to project work that are possible in this topic.	
Friday 20 August			
9.30 - 10.45am	Electricity	This session will focus on circuits and how we can help students understand what potential difference, current and resistance are and how they are related.	https://spark.iop.org/electricity-cpd-videos#simplecircuits
11am - 12.15pm	Electromagnetism	This session will show how to use simple demonstrations to develop the concepts and understanding of applications of electromagnetism.	

Please complete the online feedback form and request your confirmation of attendance for the summer school. We will then send you a complimentary goody bag to start off your essential physics tool kit!

Book online at <https://www.talkphysics.org/events/summer-school-august-2021/>
Any queries, please contact teacherCPD@iop.org

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Registered office: 37 Caledonian Road, London N1 9BU