NHSG Key stage 3: Unit Overview for P5.3 Wave interaction

Scheme of Learning	P5.3 Wave interaction
Learning outcomes	**Subject Content** Knowledge and Understanding: - How light reflects, refracts, and passes through different materials. - The difference between convex and concave lenses, and how they affect light rays. - How we see colour and why objects appear differently under coloured light. - The difference between specular (mirror-like) and diffuse (scattered) reflection. Skills: - Drawing and interpreting ray diagrams. - Understanding how filters and lenses affect light. - Using scientific vocabulary like: reflection, refraction, absorption, transmission, convex, concave, and filters. - Explaining real-life examples, like why a red shirt looks black under blue light.
Key questions	"What colour does a red shirt look under blue light – and why?" By the end of the unit, students should be able to confidently explain this using scientific reasoning.
Knowledge	Key Ideas and Skills: - Different types of wave interactions - Properties of waves (reflection, refraction, diffraction) - Uses of wave interactions in everyday life Important Words to Learn: - Waves, Reflection, Refraction, Diffraction, Interference
Ongoing Assessment	During Lessons (Ongoing Checks): • Quick starter tasks to review past lessons • Whiteboard activities to check understanding • Teachers asking questions to everyone (not just hands up) • Common mistakes addressed, like: ▪ Primary colours in science vs. art: Students often confuse the primary colours used in science (red, green, blue) with those in art (red, yellow, blue).

	▪ Filters and colour: A common misunderstanding is that filters add colour to light. In reality, filters remove certain wavelengths, allowing only specific colours to pass through.
Key Assessment	• A short multiple-choice quiz in the middle of the topic. • 6 mark questions which are teacher assessed to look for greater depth of understanding. • Topic tests which aim to provide specific targets for improvement.
Content	• Builds on earlier science lessons • Helps prepare for future topics in physics • Vocabulary is taught clearly and used often
Careers	Connects to careers in science and technology
Diversity and Inclusion	• Shows how different cultures have contributed to our understanding of wave interactions
Support	• Revision guides, online resources, and booklets • Talk about how light and colour appear in everyday life (e.g. rainbows, sunglasses, mirrors). • Ask them to explain what they've learned using real-world examples.
Challenge	- How do waves interact with the world around us? - How are wave interactions used in technology? - How do scientists measure wave interactions?