

Visual Sciences Sessions Overview

The emphasis is on practical hands-on learning, designed to give a better understanding of how the exciting world of Optics works and how photography (optics) plays a role. The course demonstrates to pupils how they can easily improve their images by following some basic principles. The approach will be informal and fun.

From fiber optics and telecommunications to medical imaging and cancer research, optics and photonics are advancing today's critical technologies.

Breakdown of Lessons for the 6 week workshops:

Week 1 and Week 2: Different uses of Optics in the outside world (part 1)

Learning opportunities for pupils include:

- Energy Production and efficient technologies
- Oil and Gas Production
- Displays
- Telecommunications
- Consumer Technologies
- Advanced Manufacturing
- Medicine and Healthcare

Week 3 and Week 4: Different uses of Optics in the outside world (part 2)

Learning opportunities for pupils include:

- Optical Design
- Medical Healthcare Imaging
- Pharmaceutical Engineering
- Education Technology
- Aviation engineering
- Civil engineering
- Marine Engineering
- Optometry
- Hematology
- Bioengineering

- Optical Engineering
- Optical Manufacturing
- Aerospace Engineering
- Ophthalmology
- Optometry
- Spectroscopy
- Aeronautical Engineering
- Medical Imaging
- Nanotechnology
- Aeronautical Engineer
- Medical Physicist
- Photonics
- Genetic engineering
- Holography
- Biophotonics
- Biomedical Technology
- Bioengineering
- Haematologist
- Virology
- Metrology, spectroscopy, holography
- Neurosurgery
- Plastic and Reconstructive Surgery
- Spine Surgery

Week 5 and Week 6: Different uses of Optics in the outside world (part 3)

Learning opportunities for pupils include:

- Telecommunications
- Information processing
- Lighting
- Metrology
- Spectroscopy
- Holography
- Medicine (surgery, vision correction, endoscopy, health monitoring)
- Military technology,
- Laser material processing
- Visual art, Biophotonics, agriculture, and robotics