

PROGRAMMA SVOLTO DI INGLESE

CLASSE V B AUTOMAZIONE

a.s. 2024-2025

Docente: Elena Petrin

Libro di Testo: Bolognini, Barber, O'Malley: Career Paths in Technology, Pearson
Fotocopie da parte della docente materiale su classroom e video secondo la sitografia indicata o proposti dal libro di testo

George Orwell: 1984, Life and works, visione film "Wilde" di Brian Gilbert

MODULE 1: ELECTROMAGNETISM AND MOTORS

- Electricity and magnetism
- Applications of electromagnetism
- The electric motor
- Types of electric motors
- Electric cars
- Maglev: The transport of the future?
- The Hyperloop

MODULE 2: GENERATING ELECTRICITY- CITIZENSHIP

- Methods of producing electricity
- The generator
- Fossil fuel power station
- Protest against Fracking
- Nuclear power stations- pros and consControlling a Nuclear reactor
- **RENEWABLE ENERGY:** water and wind-sun and earth
- Changing our sources of energies[Bioenergy: America's Energy Future](#)

MODULE 3: ELECTRONIC COMPONENTS

- Application of electronics
- Semiconductors
- The Transistor[Transistors Explained - How transistors work](#)
- Basic electronic components
- Working with transistors
- Colour coding of components
- Pioneers in electronics

MODULE 4: ELECTRONIC SYSTEMS

- Conventional and integrated circuits
- Amplifiers
- Oscillators
- Surface mounting and through-hole mounting
- The race to build integrated circuit
- How an electronic system works
- Analogue and digital
- The problem of electronic waste [What is E-Waste and Why does it Matter?](#)

MODULE 5: MICROPROCESSORS

- What is a microprocessor?
- How a microprocessor works [How The Global Computer Chip Shortage Happened](#)
- Logic gates
- The man who invented the microprocessor
- How microchips are made [Intel: The Making of a Chip with 22nm/3D Transistors | Intel](#)
- The end of Moore's Law?
- The future of microchip technology- Do you want to be microchipped?
<https://www.bbc.com/news/business-61008730>
- Reading data Sheets
- Interview to Robert Noyce: <https://www.youtube.com/watch?v=VG2jwWtjyXU>

MODULO 6: AUTOMATION

- What is automation?
- How automation works
- Programmable logic controller
- The development of automation
- Automation at work
- How a robot works
- Varieties and uses of robots
- Robots in manufacturing
- Artificial intelligence and robots
- The rise of the useless class: <https://ideas.ted.com/the-rise-of-the-useless-class/>

ATTIVITA' DI CONSOLIDAMENTO DELLE STRUTTURE MORFO-SINTATTICHE

Durante l'anno sono state svolte attività di recupero in itinere e consolidamento, mentre tutte le attività sono state accompagnate da video proposti dal libro di testo o selezionate dalla docente.

Gli alunni sono stati esercitati per diverse ore con Reading and Listening comprehensions in preparazione alla prova INVALSI.

DIDATTICA ORIENTATIVA

- Writing a CV
- Report on training and apprenticeship

Social Studies: School outing to Sarajevo e Srebrenica

Parma, 10 maggio 2025

La docente
Elena Petrin

I rappresentanti degli studenti