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| **PROGRAMMA SVOLTO**ANNO SCOLASTICO 2022/2023 |
| **DOCENTE****Frangi Anna Maria** | **MATERIA****Inglese** | **CLASSE****5MM2** |
| * **“Animal Farm”, by G.Orwell**
	+ Plot and characters
	+ Historical background
	+ Animation movie (1954)
* **History of Materials and Machines**
	+ The First Industrial Revolution
	+ The Steam Engine
	+ The Second Industrial Revolution
	+ Coketown (description of the industrial town by C.Dickens)
	+ Henry Ford: life and achievements
	+ How Ford built America – the man behind the automobile (YouTube video)
	+ Ford and Taylor’s scientific management (YouTube video)
* **Shaping Materials conventionally**
	+ Casting
	+ Rolling, Extrusion and Drawing
	+ Sintering
	+ Machine tools and CNC machine tools
	+ Turning and Milling
	+ Drilling and Grinding
* **Shaping Materials unconventionally**
	+ Waterjet Machining (WJM) and Ultrasonic Machining (USM)
	+ Electrical Discharge Machining (EDM)
	+ Laser Beam Machining
	+ Plasma – the fourth state of matter
	+ Additive manufacturing: 3D Printing
* **Safety**
	+ The importance of safety: hazards and risks
	+ Personal Protective Equipment
	+ Safety education: fire safety plan; fire extinguishers; evacuation drills
	+ Safety signs: warning, prohibition, obligation
	+ Electrical hazards of welding
* **Vehicles and Engines**
	+ Main parts of a car; driving rules
	+ Main parts of an internal combustion engine
	+ The four-stroke petrol engine
	+ The two-stroke engine
	+ The four-stroke diesel engine
	+ The dangers of diesel pollution (YouTube video)
	+ Fuel injection systems and turbochargers
	+ The electric car
	+ How Tesla is driving electric car innovation (article)
	+ Are electric cars really better for the environment? (YouTube video)
	+ Alternative engines: fuel cell vehicles, hybrid vehicles
	+ Enzo Ferrari and the prancing horse logo
* **Automation and robotics**
	+ 5 coolest robots you can actually own (YouTube video)
	+ The dawn of industrial robotics: listening activity
	+ Robotic arms
	+ Industrial robots
	+ MIR robots (YouTube video)
	+ The future of robotics (article)
	+ What is Industry 4.0? (YouTube video)
* **Educazione Civica : Agenda 2030 goal 7 – Affordable and clean energy**
	+ Renewable and non-renewable energy sources
	+ Hydroelectric power plants, solar panels, windmills
	+ The boy who harnessed the wind (movie)

 * **FCE format exercises**
* **Invalsi Reading and Listening Tests**
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| **TESTI IN ADOZIONE**  |
| M. Robba – L. Rua, **MECHPOWER**, Edisco**FIRST FOR SCHOOLS TRAINER 2**, Cambridge |