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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 |