**CLASSE 5^MM2**

**PROGRAMMA DI INGLESE**

Anno Scolastico 2017/2018

**Testo:** - Faggiani - Robba, NEW MECHWAYS, Edisco

* from Module 1 - Energy Sources

- Hydroelectric power plants

- Thermoelectric plants; fossil fuels

- Fracking (video from YouTube)

- Nuclear power plants; nuclear fission

- Alternative energies: solar, wind, tidal, geothermal

- Hydrogen as a future energy source

* from Module 3 - Shaping materials

- Casting

- Rolling, extrusion, drawing

- Powder forming

- Introduction to machine tools

- Turning, milling, drilling, grinding

- Unconventional machining processes: ultrasonic (USM), spark erosion (EDM), laser (LBM)

- Bystronic laser beam machines (fotocopia)

- A4SORT sorting machine: reading comprehension

* from Module 4 – Safety in the workplace

- Safety first of all; hazards and protective equipment

- How to promote safety in the workplace; fire safety plan; evacuation drills

- Safety signs: warning, prohibition, obligation (fotocopia)

- Welding hazards (fotocopia)

* from Module 5 – Technical drawing

- Manual drafting; drawing tools

- Engineering drawing

- Computer aided design

* from Module 6 – Automation and robotics

- What is automation

- Numerical control; Programmed commands in CNC systems

- Sensors

- Domotics

- What is a robot? Origin of the term ‘robot’

- What a robot looks like

- Industrial robots; robot applications

- The dawn of industrial robotics: listening activity

- Robots at work: reading comprehension

- Mobile robots and animal-like robots

- The future of social robots; Top 5 coolest and futuristic robots (videos from YouTube)

* from Module 7 – Engine technology

- Main parts of a car and an internal combustion engine; driving rules

- Drive train (fotocopia)

- The four-stroke gasoline / diesel cycle

- Fuel delivery systems

- Electrical, exhaust and cooling systems (fotocopia)

- Alternative engines: electric and hybrid cars

- Biofuels

- How Tesla is driving electric car innovation (fotocopia)

* Extra readings

**-** Science fiction stories: - The smile, The hobbyst, The fun they had, The weapon,

The sentry, A lot to learn, Zoo, The store of the worlds

* How to write a CV: Europass format
* FCE format exercises

Como, 15/05/18

L'insegnante

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