Content of 2H potenziata – Science in English

Module	Content	Objectives/extra
Origin of the universe	• The big bang; Doppler effect, background radiation • Gravity; creation of galaxies and solar systems • Composition of the stars; red giants and blue dwarfs	• To be able to understand and describe the theory of how the universe began • To be able to explain the Doppler effect; red shift and blue shift of stars based of light frequency • To be able to describe the composition of stars and explain why stars emit different colours of light (Helium and Hydrogen content)
The Solar System	• The system we call home; creation and evolution of the solar system • The planets; terrestrial planets and gas giants • Earth; the blue planet, the moon • The 'goldilocks effect' • The importance of water for life	• To be able to describe the solar system and it's planets • To be able to identify the reasons for life on Earth and give an account of the necessary conditions needed to create life • Define the goldilocks effect • To be able to explain why water is necessary for life; metabolic processes, characteristics of living organisms
Chemicals of life	• Carbohydrates, proteins and fats; properties • Chemical bonding and carbohydrate chains • Chemicals in everyday life; use or hindrance	• To be able to define and identify the different types of substrates/chemicals that occur • To be able to

	• Impacts of human usage of chemicals in the environment • How soap is made; lab activity for project area	outline and explain the processes of chemical bonding (electrostatic force/ionic and covalent bonds) • To be able to outline human's impacts on the environment due to use of dangerous chemicals • To be able to explain how soap is made • Complete project area – use previous knowledge to make soap; lab based activity