

# Contents. Physics and Chemistry 2.º ESO

APPENDIX. Mathematical tools		
UNIT	CONTENT	FINAL SECTIONS
1 Scientific work	<ol style="list-style-type: none"> <li>1. The scientific method</li> <li>2. Measurements</li> <li>3. A research proposal</li> <li>4. Presenting results</li> <li>5. Scientific communication</li> <li>6. The impact of science in society</li> <li>7. Laboratory equipment</li> </ol>	<b>Revision activities</b> <b>Science practical</b> Do heavier bodies reach the ground faster?
		<b>Work on your key competences</b> <b>LS</b> Births and moon phases
<b>BLOCK I</b>	<b>MATTER AND HOW IT CHANGES</b>	
2 Matter and its properties	<ol style="list-style-type: none"> <li>1. What is matter?</li> <li>2. Different scales of matter: scientific notation</li> <li>3. Scientific notation and conversion of units</li> <li>4. Mass, volume and density</li> </ol>	<b>Revision activities</b> <b>Science practical</b> Measurement of masses, volumes and densities
		<b>Work on your key competences</b> <b>LS</b> Building a densitometer and functioning of «Galileo's Thermometer»
3 States and their properties	<ol style="list-style-type: none"> <li>1. States of matter and their properties</li> <li>2. The kinetic particle theory</li> <li>3. Changes of state</li> <li>4. The gases around us: the atmosphere</li> <li>5. The behaviour of gases</li> </ol>	<b>Revision activities</b> <b>Science practical</b> Obtaining a heating curve
		<b>Work on your key competences</b> <b>LS</b> Studying the atmosphere
4 Matter in nature	<ol style="list-style-type: none"> <li>1. Classifying physical systems</li> <li>2. Solutions</li> <li>3. Colloids</li> <li>4. Methods for separating mixtures</li> </ol>	<b>Revision activities</b> <b>Science practical</b> Separating substances in a mixture
		<b>Work on your key competences</b> <b>LS</b> Home made saline
5 The atom and the periodic system	<ol style="list-style-type: none"> <li>1. Atoms</li> <li>2. Inside an atom</li> <li>3. Representing atoms</li> <li>4. Ions</li> <li>5. How atoms come together in matter</li> <li>6. The periodic table</li> </ol>	<b>Revision activities</b> <b>Science practical</b> Atomic models of pure substances
		<b>Work on your key competences</b> <b>LS</b> Building an original mural of the periodic table
6 Chemical reactions	<ol style="list-style-type: none"> <li>1. Changes in matter: chemical reactions</li> <li>2. The organisation of atoms and collision theory?</li> <li>3. Representing chemical reactions</li> <li>4. The laws of chemical reactions</li> <li>5. Chemical equations</li> <li>6. Adjusting chemical reactions</li> <li>7. Energy and rate of chemical reactions</li> <li>8. The chemical industry and the environment</li> </ol>	<b>Revision activities</b> <b>Science practical</b> Checking for carbon dioxide
		<b>Work on your key competences</b> <b>LS</b> Plastics in our daily lives
<b>APPENDIX. Inorganic chemical formulas and nomenclature</b>		
<b>PROJECT I</b> <b>LS</b>	<b>Sustainable products</b>	

BLOCK II		INTERACTION
UNIT	CONTENT	FINAL SECTIONS
7 Bodies in motion	<ol style="list-style-type: none"> <li>1. Motion</li> <li>2. Position, trajectory and displacement</li> <li>3. Velocity</li> <li>4. Uniform rectilinear motion (URM)</li> <li>5. Acceleration</li> <li>6. Uniformly accelerated rectilinear motion (UARM)</li> </ol>	<b>Revision activities</b> <b>Science practical</b> URM experimental study
		<b>Work on your key competences</b> <b>LS</b> A matter of reflexes
8 Forces and their effects	<ol style="list-style-type: none"> <li>1. Forces</li> <li>2. Friction</li> <li>3. Forces and balance</li> <li>4. Forces and simple machines</li> </ol>	<b>Revision activities</b> <b>Science practical</b> The law of levers
		<b>Work on your key competences</b> <b>LS</b> Friction: friend or foe?
9 Gravity, electricity and magnetism	<ol style="list-style-type: none"> <li>1. Gravity</li> <li>2. Acceleration due to gravity</li> <li>3. Weight, mass and weightlessness</li> <li>4. Electric force</li> <li>5. Electric charge: methods of electrifying matter</li> <li>6. Magnetic force</li> <li>7. Magnetic phenomena</li> <li>8. Electromagnetism</li> <li>9. The Earth's magnetic field</li> </ol>	<b>Revision activities</b> <b>Science practical</b> Studying the magnetic behaviour of materials
		<b>Work on your key competences</b> <b>LS</b> How induction cookers work
<b>PROJECT II</b> <b>LS</b>	<b>Forces, movement and sports</b>	
<b>BLOCK III</b>		<b>ENERGY</b>
10 Energy	<ol style="list-style-type: none"> <li>1. Transformations of electrical energy</li> <li>2. Types of energy</li> <li>3. Sources of energy</li> <li>4. Problems related to electrical energy production and consumption</li> </ol>	<b>Revision activities</b> <b>Science practical</b> Construction of a mini steam engine
		<b>Work on your key competences</b> <b>LS</b> Green buildings: towards sustainable architecture
11 Heat and temperature	<ol style="list-style-type: none"> <li>1. What is thermal energy?</li> <li>2. Temperature: its measurements and scales</li> <li>3. Thermal expansion of solids, liquids and gases</li> <li>4. Heat and thermal equilibrium</li> <li>5. How is heat transmitted or transferred?</li> <li>6. Thermal efficiency and energy saving.</li> </ol>	<b>Revision activities</b> <b>Science practical</b> Determining thermal conductivity
		<b>Work on your key competences</b> <b>LS</b> The thermal efficiency of a house
12 Electric current	<ol style="list-style-type: none"> <li>1. Electrical behaviour of materials</li> <li>2. Electric current. Ohm's law</li> <li>3. Simple electrical circuits</li> <li>4. Electromagnetic induction. Alternating current</li> <li>5. The hazards of electric currents</li> </ol>	<b>Revision activities</b> <b>Science practical</b> Constructing a battery using lemons or pickles
		<b>Work on your key competences</b> <b>LS</b> Building the electrical wiring of a house model
<b>PROJECT III</b> <b>LS</b>	<b>Energy label</b>	
<b>APPENDIX. The periodic table</b>		