# Year 7

# 7B1 Cells, Tissues & Organs

| Year 7 Topics | |
|---|---|
| Topic code | Topic title |
| **7B1** | **Cells, Tissues and Organs** |
| 7C1 | Atoms, Elements and Compounds |
| 7P1 | Energy |
| 7B2 | Sexual Reproduction |
| 7C2 | Mixtures and Separation |
| 7P2 | Electricity and Magnetism |
| 7B3 | Plants and Ecosystems |
| 7C3 | Reactivity 1 |
| 7P3 | Forces & Motion |

| Year 8 Topics | |
|---|---|
| Topic code | Topic title |
| 8B1 | Organ Systems |
| 8C1 | Atomic Structure and the Periodic Table |
| 8P1 | Particle Model and Fluids |
| 8B2 | Unicellular Organisms and Diseases |
| 8C2 | Reactivity 2 |
| 8P2 | Waves |
| 8B3 | Genetics and Evolution |
| 8C3 | Rocks and Earth Resources |
| 8P3 | Space |

| Why am I learning this? | What learning does this build on? | GCSE link |
|---|---|---|
| This is a very important topic in biology. Many other biology topics in Year 7 and 8 and at GCSE build on your knowledge of cells and tissues.<br><br>Knowledge of cells is needed to study further topics in Year 7 and 8:<br>7B2 Sexual Reproduction<br>7B3 Plants and Ecosystems<br>8B1 Organ Systems<br>8B2 Unicellular Organisms and Diseases<br>8B3 Genetics and Evolution<br><br>**Careers linked to this topic:**<br>Health care, vet, physiotherapy | KS2 Year 6 learning – animals including humans. Identifying organs and describing the functions of organs | B1<br>B2<br>B3<br>B4<br>B5<br>B6<br>B7 |

# 7C1 Atoms, Elements and Compounds

| Year 7 Topics | |
|---|---|
| Topic code | Topic title |
| 7B1 | Cells, Tissues and Organs |
| **7C1** | **Atoms, Elements and Compounds** |
| 7P1 | Energy |
| 7B2 | Sexual Reproduction |
| 7C2 | Mixtures and Separation |
| 7P2 | Electricity and Magnetism |
| 7B3 | Plants and Ecosystems |
| 7C3 | Reactivity 1 |
| 7P3 | Forces & Motion |

| Year 8 Topics | |
|---|---|
| Topic code | Topic title |
| 8B1 | Organ Systems |
| 8C1 | Atomic Structure and the Periodic Table |
| 8P1 | Particle Model and Fluids |
| 8B2 | Unicellular Organisms and Diseases |
| 8C2 | Reactivity 2 |
| 8P2 | Waves |
| 8B3 | Genetics and Evolution |
| 8C3 | Rocks and Earth Resources |
| 8P3 | Space |

| Why am I learning this? | What learning does this build on? | GCSE link |
|---|---|---|
| Atoms make up everything around us, so we need to understand how atoms form larger structures. This is a very important topic in chemistry and the knowledge gained in this topic will help you be much more confident with later chemistry topics. You will learn about the Periodic Table and how and why elements are arranged on this.<br><br>**Careers linked to this topic:**<br>Scientist, engineering, medicine, pharmacist | KS2 Year 5/6 knowledge of materials | C1<br>C2<br>C3<br>C4<br>C5<br>C6<br>C7<br>C8<br>C9<br>C10 |

# 7P1 Energy

| Year 7 Topics | |
|---|---|
| Topic code | Topic title |
| 7B1 | Cells, Tissues and Organs |
| 7C1 | Atoms, Elements and Compounds |
| **7P1** | **Energy** |
| 7B2 | Sexual Reproduction |
| 7C2 | Mixtures and Separation |
| 7P2 | Electricity and Magnetism |
| 7B3 | Plants and Ecosystems |
| 7C3 | Reactivity 1 |
| 7P3 | Forces & Motion |

| Year 8 Topics | |
|---|---|
| Topic code | Topic title |
| 8B1 | Organ Systems |
| 8C1 | Atomic Structure and the Periodic Table |
| 8P1 | Particle Model and Fluids |
| 8B2 | Unicellular Organisms and Diseases |
| 8C2 | Reactivity 2 |
| 8P2 | Waves |
| 8B3 | Genetics and Evolution |
| 8C3 | Rocks and Earth Resources |
| 8P3 | Space |

| Why am I learning this? | What learning does this build on? | GCSE link |
|---|---|---|
| The modern world depends on energy. You will learn about different types of energy and how they can be transferred. You will also study how energy loss can be reduced. Efficiency is important to understand when buying appliances for the home.<br><br>**Careers linked to this topic:**<br>Engineering, health care, sports scientist, any job involving energy sources. There are likely to be more jobs in the future working with sustainable energy resources. | Year 5/6 learning – energy sources | P1<br>P2<br>P3<br>P4<br>P5<br>P6<br>P7 |

# 7B2 Sexual Reproduction

| Year 7 Topics | |
|---|---|
| Topic code | Topic title |
| 7B1 | Cells, Tissues and Organs |
| 7C1 | Atoms, Elements and Compounds |
| 7P1 | Energy |
| **7B2** | **Sexual Reproduction** |
| 7C2 | Mixtures and Separation |
| 7P2 | Electricity and Magnetism |
| 7B3 | Plants and Ecosystems |
| 7C3 | Reactivity 1 |
| 7P3 | Forces & Motion |

| Year 8 Topics | |
|---|---|
| Topic code | Topic title |
| 8B1 | Organ Systems |
| 8C1 | Atomic Structure and the Periodic Table |
| 8P1 | Particle Model and Fluids |
| 8B2 | Unicellular Organisms and Diseases |
| 8C2 | Reactivity 2 |
| 8P2 | Waves |
| 8B3 | Genetics and Evolution |
| 8C3 | Rocks and Earth Resources |
| 8P3 | Space |

| Why am I learning this? | What learning does this build on? | GCSE link |
|---|---|---|
| This is an important topic to understand as you begin puberty.<br><br>You will learn about sex and reproduction, how the body changes during puberty, how babies grow, develop and are born. You will also learn how sexually transmitted diseases can be prevented.<br><br>**Careers linked to this topic:**<br>Health care, midwife | KS2 Year 5/6 learning – how the body changes as humans develop<br><br>Knowledge of cells from 7B1 | B6 |

# 7C2 Mixtures and Separation

| Year 7 Topics | |
|---|---|
| Topic code | Topic title |
| 7B1 | Cells, Tissues and Organs |
| 7C1 | Atoms, Elements and Compounds |
| 7P1 | Energy |
| 7B2 | Sexual Reproduction |
| **7C2** | **Mixtures and Separation** |
| 7P2 | Electricity and Magnetism |
| 7B3 | Plants and Ecosystems |
| 7C3 | Reactivity 1 |
| 7P3 | Forces & Motion |

| Year 8 Topics | |
|---|---|
| Topic code | Topic title |
| 8B1 | Organ Systems |
| 8C1 | Atomic Structure and the Periodic Table |
| 8P1 | Particle Model and Fluids |
| 8B2 | Unicellular Organisms and Diseases |
| 8C2 | Reactivity 2 |
| 8P2 | Waves |
| 8B3 | Genetics and Evolution |
| 8C3 | Rocks and Earth Resources |
| 8P3 | Space |

| Why am I learning this? | What learning does this build on? | GCSE link |
|---|---|---|
| You will learn how different mixtures and compounds can be separated in the science lab. This will enable you to practice essential laboratory skills and become familiar with the use and names of scientific equipment.<br><br>In some parts of the world, safe drinking water is not widely available. You will see how water can be made safe for drinking.<br><br>**Careers linked to this topic:**<br>Scientist, engineering, medicine, pharmacist | KS2 Year 5/6 knowledge of materials and basic separating methods eg. sieving<br><br>7C1 – knowledge of atoms | C1<br>C10 |

# 7P2 Electricity and Magnetism

| Year 7 Topics | |
|---|---|
| Topic code | Topic title |
| 7B1 | Cells, Tissues and Organs |
| 7C1 | Atoms, Elements and Compounds |
| 7P1 | Energy |
| 7B2 | Sexual Reproduction |
| 7C2 | Mixtures and Separation |
| **7P2** | **Electricity and Magnetism** |
| 7B3 | Plants and Ecosystems |
| 7C3 | Reactivity 1 |
| 7P3 | Forces & Motion |

| Year 8 Topics | |
|---|---|
| Topic code | Topic title |
| 8B1 | Organ Systems |
| 8C1 | Atomic Structure and the Periodic Table |
| 8P1 | Particle Model and Fluids |
| 8B2 | Unicellular Organisms and Diseases |
| 8C2 | Reactivity 2 |
| 8P2 | Waves |
| 8B3 | Genetics and Evolution |
| 8C3 | Rocks and Earth Resources |
| 8P3 | Space |

| Why am I learning this? | What learning does this build on? | GCSE link |
|---|---|---|
| The modern world depends on electricity. You will learn what an electric current is and how to create working electrical circuits. You will also learn about safety in the home and how to re-wire a plug and change a fuse safely. You will also learn about magnets and magnetic fields, and find out many uses of magnetism in the modern world.<br><br>**Careers linked to this topic:**<br>Electrician, engineer, vehicle mechanic, computer scientist, manufacturing and repairing electrical appliances | Year 5/6 learning – circuits | P2<br>P7 |

# 7B3 Plants and Ecosystems

| Year 7 Topics | |
|---|---|
| Topic code | Topic title |
| 7B1 | Cells, Tissues and Organs |
| 7C1 | Atoms, Elements and Compounds |
| 7P1 | Energy |
| 7B2 | Sexual Reproduction |
| 7C2 | Mixtures and Separation |
| 7P2 | Electricity and Magnetism |
| **7B3** | **Plants and Ecosystems** |
| 7C3 | Reactivity 1 |
| 7P3 | Forces & Motion |

| Year 8 Topics | |
|---|---|
| Topic code | Topic title |
| 8B1 | Organ Systems |
| 8C1 | Atomic Structure and the Periodic Table |
| 8P1 | Particle Model and Fluids |
| 8B2 | Unicellular Organisms and Diseases |
| 8C2 | Reactivity 2 |
| 8P2 | Waves |
| 8B3 | Genetics and Evolution |
| 8C3 | Rocks and Earth Resources |
| 8P3 | Space |

| Why am I learning this? | What learning does this build on? | GCSE link |
|---|---|---|
| Plants form the basis of most food webs on Earth. You will learn how plants grow and the things that can affect plant growth. Pollinators like bees are very important for human food supplies.<br><br>This is an opportunity to recap cells at the start of Year 7. This topic covers important processes such as photosynthesis, diffusion and osmosis that are essential to understand for your GCSEs.<br><br>**Careers linked to this topic:**<br>Food production, agriculture, botanist, pharmacy and drug development | Knowledge of cells and plant organs from 7B1 | B1<br>B2<br>B4<br>B7 |

# 7C3 Reactivity 1

| Year 7 Topics | |
|---|---|
| Topic code | Topic title |
| 7B1 | Cells, Tissues and Organs |
| 7C1 | Atoms, Elements and Compounds |
| 7P1 | Energy |
| 7B2 | Sexual Reproduction |
| 7C2 | Mixtures and Separation |
| 7P2 | Electricity and Magnetism |
| 7B3 | Plants and Ecosystems |
| **7C3** | **Reactivity 1** |
| 7P3 | Forces & Motion |

| Year 8 Topics | |
|---|---|
| Topic code | Topic title |
| 8B1 | Organ Systems |
| 8C1 | Atomic Structure and the Periodic Table |
| 8P1 | Particle Model and Fluids |
| 8B2 | Unicellular Organisms and Diseases |
| 8C2 | Reactivity 2 |
| 8P2 | Waves |
| 8B3 | Genetics and Evolution |
| 8C3 | Rocks and Earth Resources |
| 8P3 | Space |

| Why am I learning this? | What learning does this build on? | GCSE link |
|---|---|---|
| There are lots of different chemical reactions that happen in nature and in this topic you will start to learn in detail about some of them. You will be able to identify acids and alkalis found in the home, and be aware of the dangers of them. This topic also covers reactions in combustion (burning). You will be introduced you to important skills such as writing chemical equations. This will be expanded on during your GCSEs.<br><br>**Careers linked to this topic:**<br>Scientist, product development, industry, medicine, pharmacy, cosmetic production and testing | 7C1 – knowledge of atoms<br>7C2 – laboratory skills | C1<br>C4<br>C7 |

# 7P3 Forces and Motion

| Year 7 Topics | |
|---|---|
| Topic code | Topic title |
| 7B1 | Cells, Tissues and Organs |
| 7C1 | Atoms, Elements and Compounds |
| 7P1 | Energy |
| 7B2 | Sexual Reproduction |
| 7C2 | Mixtures and Separation |
| 7P2 | Electricity and Magnetism |
| 7B3 | Plants and Ecosystems |
| 7C3 | Reactivity 1 |
| **7P3** | **Forces & Motion** |

| Year 8 Topics | |
|---|---|
| Topic code | Topic title |
| 8B1 | Organ Systems |
| 8C1 | Atomic Structure and the Periodic Table |
| 8P1 | Particle Model and Fluids |
| 8B2 | Unicellular Organisms and Diseases |
| 8C2 | Reactivity 2 |
| 8P2 | Waves |
| 8B3 | Genetics and Evolution |
| 8C3 | Rocks and Earth Resources |
| 8P3 | Space |

| Why am I learning this? | What learning does this build on? | GCSE link |
|---|---|---|
| You will learn how and why objects interact and produce forces. You will be able to identify many forces, including contact and non-contact forces. This topic is expanded at GCSE.<br><br>**Careers linked to this topic:**<br>Engineering, vehicle mechanic, architect, manufacture of sports equipment and building materials | Year 5/6 learning – names and effects of forces | P5 |