# Secondary 1 Science grade 7 teaching topic order

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## Physics Ps Sound (UK KS3:8L)

* **8Ps1** Explain the properties of sound in terms of movement of air particles.
* **8Ps2** Recognise the link between loudness and amplitude, pitch and frequency, using an oscilloscope.

## Physics Pl Light (UK KS3:8K)

* **8Pl1** Use light travelling in a straight line to explain the formation of shadows and other phenomena.
* **8Pl2** Describe how non-luminous objects are seen.
* **8Pl3** Describe reflection at a plane surface and use the law of reflection.
* **8Pl4** Investigate refraction at the boundary between air and glass or air and water.
* **8Pl5** Explain the dispersion of white light.
* **8Pl6** Explain colour addition and subtraction, and the absorption and reflection of coloured light.

## Biology Bc Cells and organisms:

* + **7Bc1** Identify the seven characteristics of living things and relate these to a wide range of organisms in the local and wider environment.
  + **7Bc2** Know about the role of micro-organisms in the breakdown of organic matter, food production and disease, including the work of Louis Pasteur.
  + **7Bc3** Identify the structures present in plant and animal cells as seen with a simple light microscope and/or a computer microscope.
  + **7Bc4** Compare the structure of plant and animal cells.
  + **7Bc5** Relate the structure of some common cells to their functions. Secondary sources can be used.
  + **7Bc6** Understand that cells can be grouped together to form tissues, organs and organisms.

## Biology Be Living things in their environment (UK KS3:

* **7Be1** Describe how organisms are adapted to their habitat, drawing on locally occurring examples. Secondary sources can be used.
* **7Be2** Draw and model simple food chains.
* **7Be3** Discuss positive and negative influence of humans on the environment, e.g. the effect on food chains, pollution and ozone depletion.
* **7Be4** Discuss a range of energy sources and distinguish between renewable and non-renewable resources. Secondary sources can be used.

## Chemistry Cp Material properties (UK KS3: 8E, 8F)

• **9Cp1** Describe the structure of an atom and learn about the methods and discoveries of Rutherford.

• **9Cp2** Compare the structures of the first twenty elements of the Periodic Table.

• **9Cp3** Describe trends in groups and periods.

• **9Cp4** Talk about the contribution of scientists. Secondary sources can be used.

## Physics Pm Magnetism (UK KS3:8J)

* **8Pm1** Describe the properties of magnets.
* **8Pm2** Recognise and reproduce the magnetic field pattern of a bar magnet.
* **8Pm3** Construct and use an electromagnet.

## Biology Bv Variation and classification

* **7Bv1** Understand what is meant by a species.
* **7Bv2** Investigate variation within a species. Secondary sources can be used.
* **7Bv3** Classify animals and plants into major groups, using some locally occurring examples.

## Biology Bh Humans as organisms (UK KS3:

* **8Bh1** Identify the constituents of a balanced diet and the functions of various nutrients. Secondary sources can be used.
* **8Bh2** Understand the effects of nutritional deficiencies.
* **8Bh3** Recognise the organs of the alimentary canal and know their functions. Secondary sources can be used.
* **8Bh4** Understand the function of enzymes as biological catalysts in breaking down food to simple chemicals.
* **8Bh5** Recognise and model the basic components of the circulatory system and know their functions.
* **8Bh6** Understand the relationship between diet and fitness.
* **8Bh7** Discuss how conception, growth, development, behaviour and health can be affected by diet, drugs and disease.
* **8Bh8** Recognise the basic components of the respiratory system and know their functions.
* **8Bh9** Define and describe aerobic respiration, and use the word equation.
* **8Bh10** Explain gaseous exchange.
* **8Bh11** Describe the effects of smoking. Secondary sources can be used.
* **8Bh12** Discuss the physical and emotional changes that take place during adolescence.

中学1科学7年级教学题目顺序

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生物学Bh人类作为有机体（英国KS3：2

物理Ps声音（英国KS3：8L）

•8Ps1根据空气粒子的运动解释声音的特性。

•8Ps2使用示波器识别响度与幅度，音高和频率之间的关系。

物理Pl光（英国KS3：8K）

•8Pl1使用直线行进的光线来解释阴影和其他现象的形成。

•8Pl2描述如何看到非发光物体。

•8P13描述平面表面的反射并使用反射定律。

•8Pl4调查空气和玻璃或空气和水之间的边界处的折射。

•8P15解释白光的色散。

•8P16解释色彩的加减，以及彩色光的吸收和反射。

生物学Bc细胞和生物体：

7Bc1识别生物的七个特征，并将它们与当地和更广泛的环境中的各种生物体联系起来。

o 7Bc2了解微生物在有机物分解，食品生产和疾病方面的作用，包括路易斯巴斯德的工作。

7Bc3通过简单的光学显微镜和/或计算机显微镜可以看出存在于植物和动物细胞中的结构。

7Bc4比较植物和动物细胞的结构。

7Bc5将一些常见单元格的结构与其功能关联起来。次要来源可以使用。

o 7Bc6了解细胞可以分组在一起形成组织，器官和生物体。

生物在他们的环境中生活（英国KS3：

•7Be1描述生物如何适应其栖息地，利用当地发生的例子。次要来源可以使用。

•7Be2绘制并建模简单的食物链。

•7Be3讨论人类对环境的积极和消极影响，例如对食物链，污染和臭氧消耗的影响。

•讨论一系列能源并区分可再生资源和不可再生资源。次要来源可以使用。

化学Cp材料特性（UK KS3：8E，8F）

•9Cp1描述原子的结构并了解卢瑟福的方法和发现。

•9Cp2比较元素周期表前20个元素的结构。

•9Cp3描述组和阶段的趋势。

•9Cp4谈论科学家的贡献。次要来源可以使用。

物理学磁力学（英国KS3：8J）

•8Pm1描述磁铁的属性。

•8Pm2识别并重现棒状磁体的磁场模式。

•8Pm3构造并使用电磁铁。

生物学变异和分类

•7Bv1了解物种的含义。

•7Bv2调查物种内的变异。次要来源可以使用。

•7Bv3使用一些当地出现的例子将动物和植物分为主要群体。

生物学Bh人类作为有机体（英国KS3：

•8Bh1确定均衡饮食的组成成分和各种营养素的功能。次要来源可以使用。

•8Bh2了解营养不足的影响。

•8Bh3识别消化道器官并了解其功能。次要来源可以使用。

•8Bh4了解酶作为生物催化剂在将食物分解为简单化学物质中的功能。

•8Bh5识别和模拟循环系统的基本组成部分并了解其功能。

•8Bh6了解饮食和健身之间的关系。

•8Bh7讨论饮食，药物和疾病如何影响受孕，生长，发育，行为和健康。

•8Bh8识别呼吸系统的基本组成部分并了解其功能。

•8Bh9定义和描述有氧呼吸，并使用等式。

•8Bh10解释气体交换。

•8Bh11描述吸烟的影响。次要来源可以使用。

•8Bh12讨论青少年期间发生的身体和情绪变化。