

# YEAR 9\_2 SCIENCE

## Light, Sound and Electricity

- Unit Outline -



### Course Description:

In this unit students will learn about some of the different forms of energy and how they can be transformed from one type to another using Light, Sound and Electricity. It is aimed to give students a foundation understanding of the characteristics, functions and applications of Light, Sound and Electricity.

### Course Outcomes:

By the end of this unit you should be able to:

- Explain why the movement of energy varies according to the medium through which it is transferred
- Recognise the properties of waves and how energy is transferred using waves
- Recognise that wave and particle models can help to describe different phenomena
- Explain the transfer of heat in terms of convection, conduction and radiation
- Explain the process of conduction and convection using a particle model
- Understand the factors that affect the transfer of energy through an electric circuit

### Course Organisation:

The organisation of the unit will be:

- The students are presented with both theoretical and practical work to develop their knowledge and skills.

Student's activities will include:

- Developing a knowledge base using notes, questions, bookwork/worksheet
- Conduct practical activities to explore and visualise theoretical concepts
- Practice using terminology and language in oral and written activities

### Course Timeline:

Wk	Activity	Assessment
1-2	<b>What is Sound?</b> <ul style="list-style-type: none"><li>• Sound energy</li><li>• Applications of sound</li></ul>	Quiz at end of Wk 2.
3-4	<b>Anatomy and physiology of the Ear</b> <ul style="list-style-type: none"><li>• Functions of the ear</li></ul>	Quiz at end of Wk 4.
5-6	<b>What is Light?</b> <ul style="list-style-type: none"><li>• Light energy</li><li>• Applications of Light</li><li>• Convection, conduction and radiation</li></ul>	Quiz at end of Wk 6.
7-8	<b>Anatomy and physiology of the eye</b> <ul style="list-style-type: none"><li>• Functions of the eye</li><li>• Eye dissection</li></ul>	Eye dissection
9-10	<b>Electricity</b> <ul style="list-style-type: none"><li>• Electric energy</li><li>• Series and parallel circuits</li></ul>	Quiz at the end of Wk 9.

**Course Vocabulary:**

- Energy
- Electromagnetic wave
- Light spectrum
- Visible light
- Reflect
- Refract
- Polarise
- Photon
- Luminous
- Transparent
- Translucent
- Opaque
- Umbra and penumbra
- Eclipse
- Concave and Convex
- Conduction, convection and radiation
- Wavelength and amplitude
- Frequency
- Compression and rarefaction
- Medium
- Decibel
- Circuit
- Ductile
- Resistance
- Current
- Voltage
- Conduction

## - Assessment Outline -

**Course Assessment:**

Wk	Assessment type	Weighting	Marks achieved	Your Total
2-6	Class quizzes	70%		
1-9	Class and practical activity participation	30%		

\*specific marks to be advised

**Specific Equipment required for each lesson:**

- File/book to write in
- Pens, ruler, calculator