



CITY OF LONDON  
FREEMEN'S SCHOOL

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**ENTRANCE  
EXAMINATION TOPIC LIST**

**For pupils currently in Year 8**

# **SCIENCE**

**(BIOLOGY, CHEMISTRY, PHYSICS)**

**Time: 1 hour**

**You should spend no more than 20 minutes on each section.**

**Answer all questions in the spaces provided.**

## Science Department

### 13+ Entrance Examination Requirements

Candidates may be required to plot graphs and measure lengths and angles, so should bring a pen, pencil, ruler, rubber and protractor to the exam.

#### **Biology**

- Cells
- Plant and Animal Reproduction
- Ecology
- Variation and Classification

#### **Chemistry**

- Acids and Alkalis: acids and alkalis, indicators, pH, everyday applications
- Physical Separations and Changes: filtering, evaporation, distillation, fractional distillation, chromatography, states of matter, changes of state, effect of impurities, diffusion
- Chemical changes and corrosion: thermal decomposition, burning and oxidation, rusting, precipitates and effervescence
- Food Chemistry: cooking, baking powder, additives, packaging
- Rocks: weathering, erosion and transport, three rock types, rock cycle
- Elements, Compounds and Mixtures: atoms and symbols for elements, compounds/mixtures, interpretation of formulae, pigments and colloids

#### **Physics**

- Light and sound, including reflection and refraction
- Satellites and the Solar System
- Forces
- Speed
- Electric circuits
- Electromagnets
- Energy changes