
Morning Reading 晨读

Grade 11 · AS · Week 9

Read each word aloud, then copy the English word three times. 朗读每个单词，然后把英语单词抄写三遍。

Reading 阅读

Read the passage aloud twice. 把短文朗读两遍。

Stretch a spring gently and it returns to its original length when you let go: the behaviour is **elastic**. **Hooke's law** says the **extension** is proportional to the **load**, and the **spring constant** measures the stiffness. Pull too far, past the **limit of proportionality**, and finally the spring deforms permanently: it has become **plastic**. Springs hide everywhere: in pens, mattresses, keyboards and car suspensions.

A factory beside a river makes cheap paint but releases waste into the water. The firm counts only its **private cost**; the fishermen downstream carry the **external cost**. Economists call the fishermen a **third party**, and the pollution a **negative externality**. Add private and external together and you get the true **social cost** of the paint, which the market price ignores. This is why governments tax pollution.

Programmers met translators this week. A **compiler** converts the whole program into machine code once, producing a fast **executable**; an **interpreter** translates line by line, which is slower but easier for testing.

Talk about it 说一说:

1. Name three objects you used today that contain a spring.
2. A neighbour plays loud music at midnight. Explain this as an externality.

Physics

Topics 7-8 · Waves, Superposition

 **medium** 介质

 **oscillate** 振动

 **transverse wave** 横波

 **longitudinal wave** 纵波

 **progressive wave** 行波

 **amplitude** 振幅

 **wavelength** 波长

 **in phase** 同相

 **crest** 波峰

 **period** 周期

 **frequency** 频率

 **hertz** 赫兹

 **phase difference** 相位差

 **cathode-ray oscilloscope**
示波器

 **time-base** 时基

 **y-gain** 垂直增益

 **intensity** 强度

 **point source** 点源

 **sine curve** 正弦曲线

 **source** 波源

Chemistry

Topics 5-7 · Chemical energetics, Electrochemistry, Equilibria

 **specific heat capacity** 比热容

 **Hess's law** 盖斯定律

 **energy cycle** 能量循环

 **redox** 氧化还原

 **oxidation** 氧化

 **reduction** 还原

 **electron transfer** 电子转移

 **disproportionation** 歧化

 **oxidising agent** 氧化剂

 **reducing agent** 还原剂

 **reversible reaction** 可逆反应

 **forward reaction** 正反应

 **reverse reaction** 逆反应

 **closed system** 封闭系统

 **dynamic equilibrium** 动态平衡

 **Le Chatelier's principle** 勒夏特列原理

 **equilibrium** 平衡

 **catalyst** 催化剂

Biology

Topic 4 · Cell membranes and transport

 **glycoprotein** 糖蛋白

 **antigen** 抗原

 **stability** 稳定性

 **permeability** 通透性

 **partially permeable membrane** 半透膜

 **cell signalling** 细胞信号传递

 **ligand** 配体

 **hormone** 激素

 **target cell** 靶细胞

 **receptor** 受体

 **passive** 被动

 **diffusion** 扩散

 **simple diffusion** 简单扩散

 **concentration gradient**
浓度梯度

 **carbon dioxide** 二氧化碳

 **ion** 离子

 **facilitated diffusion** 易化扩散

 **active transport** 主动运输

 **endocytosis** 胞吞作用

↑ exocytosis 胞吐作用

📦 volume 体积

□ surface area 表面积

○ agar 琼脂

Mathematics

Topic 2 · Pure Mathematics 2

×² degree 次数

÷ quotient 商

% remainder 余数

% remainder theorem 余数定理

× factor theorem 因式定理

×² indices 指数

📖 laws of logarithms 对数定律

📖 natural logarithm 自然对数

— linear form 线性形式

↗ secant 正割

Further Mathematics

Topic 3 · Further Mechanics

+ Cartesian equation 直角坐标方程

↪ trajectory 轨迹

↻ moment 力矩

☉ centre of mass 质心			
[:] symmetry 对称			

Computer Science

Topics 5–6 · System Software, Security, privacy and data integrity

👤 man-in-the-middle 中间人攻击			
👤 social engineering 社会工程			
🔒 encryption 加密			
📖 audit logs 审计日志			
🛡️ VPN 虚拟专用网			
👤 authentication 身份验证			
🛡️ two-factor authentication 双因素认证			
🔑 authorisation 授权			
🔒 least-privilege 最小权限			
📄 plaintext 明文			
📄 ciphertext 密文			
🔑 Symmetric encryption 对称加密			
🔑 asymmetric encryption 非对称加密			
🔑 public key 公钥			
🔑 private key 私钥			
🔒 access control 访问控制			
✓ Validation 验证			

 check digit 校验位			
 Verification 核对			
 parity check 奇偶校验			
 checksum 校验和			
 cyclic redundancy check 循环冗余校验			
 pharming 域名欺骗			
 hackers 黑客			
 user accounts 用户账户			
 digital signatures 数字签名			
 anti-spyware 反间谍软件			
 access rights 访问权限			

Economics

Topics 2–3 · The price system and the microeconomy, Government microeconomic intervention

 factor market 要素市场			
 wage 工资			
 foreign exchange market 外汇市场			
 exchange rate 汇率			
 consumer surplus 消费者 剩余			
 producer surplus 生产者 剩余			
 welfare 福利			
 market failure 市场失灵			

 externality 外部性			
 third party 第三方			
 negative externality 负外部性			
 external cost 外部成本			
 social cost 社会成本			
 private cost 私人成本			
 positive externality 正外部性			