

Morning Reading 晨读

Grade 11 · AS · Week 5

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。

Who pays for the streetlight? When it shines, it shines for everyone: my using it takes nothing from you. Economists call this **non-rivalry**. And nobody can be stopped from using it: **non-excludability**. Goods with both properties are **public goods**, and they create the **free-rider problem**: since people benefit without paying, no private firm wants to supply them. That is why street lighting and **national defence** are paid for by the state. A **merit good** like education is different: markets do supply it, but less than society would like.

Meanwhile, tiny computers hide all around you. An **embedded system** is a small computer inside another machine: a rice cooker, a lift, a traffic light. Its program, the **firmware**, is written once into memory. It reads a **sensor**, decides, and acts, millions of times without a screen or keyboard.

In mechanics, a thrown basketball is a **projectile**: gravity curves its path into a parabola. When two players collide, the total momentum just before equals the total just after; each **collision** obeys this law.

Talk about it 说一说:

- 1. Is a park a public good? Test it: non-rivalry, non-excludability.
- 2. Count the embedded systems you met before school this morning.

Physics

Topics 2-3 · Kinematics, Dynamics

↔ kinetic energy 动能			
/kɪˈnetɪk ˈenədʒi/			
→ external force 外力			
/ekˈstɜːnl fɔːs/			
⚡ electrostatic 静电			
/ɪˌlektroʊˈstætɪk/			
↑ normal contact force 支持力			
/ˈnɔːml ˈkɒntækt fɔːs/			
→ thrust 推力			
/θrʌst/			
⊕ gravitational field 重力场			
/ˌɡrævɪˈteɪʃənl fiːld/			
↪ friction 摩擦力			
/ˈfrɪkʃn/			
💧 viscous 黏性			
/ˈvɪskəs/			
≡ drag 阻力			
/dræg/			
💧 fluid 流体			
/ˈfluːɪd/			
× coefficient 系数			
/ˌkəʊɪˈfɪʃənt/			
↓ terminal velocity 收尾速度			
/ˈtɜːmɪnl vəˈləsɪti/			
☁ parachutist 跳伞者			
/ˈpærəʃjuːtɪst/			
⚖ gravitational potential energy 重力势能			
/ˌɡrævɪˈteɪʃənl pəˈtenʃl ˈenədʒi/			

 thermal energy 热能			
<i>/θɜːml 'enədʒi/</i>			
 conservation of momentum 动量守恒			
<i>/kɒnsə'veɪʃn ɒv məʊ'mentəm/</i>			
 explosion 爆炸			
<i>/ek'spləʊʒn/</i>			
 recoil 反冲			
<i>/rɪ'kɔɪl/</i>			
 elastic collision 弹性碰撞			
<i>/ɪ'læstɪk kə'liʒn/</i>			
 relative speed 相对速率			
<i>/rɪlətɪv spiːd/</i>			

Chemistry

Topics 2–3 · Atoms, molecules and stoichiometry, Chemical bonding

 titration 滴定			
<i>/taɪ'treɪʃn/</i>			
 significant figures 有效数字			
<i>/sɪɡ'nɪfɪkənt 'fɪɡəz/</i>			
 electronegativity 电负性			
<i>/ɪˌlektɹəŋɡə'tɪvɪti/</i>			
 Pauling electronegativity 鲍林电负性			
<i>/ˈpɔːlɪŋ ɪˌlektɹəŋɡə'tɪvɪti/</i>			
 ionic bonding 离子键			
<i>/aɪ'ɒnɪk 'bɒndɪŋ/</i>			
 electrostatic attraction 静电引力			
<i>/ɪˌlektɹəʊ'stætɪk ə'tɹækʃn/</i>			
 lattice 晶格			
<i>/ˈlætɪs/</i>			
 metallic bonding 金属键			
<i>/mə'tælɪk 'bɒndɪŋ/</i>			

 delocalised electrons 离域电子			
<i>/dɪ'lɒkəlaɪzd ɪ'lektɹɒnz/</i>			
 covalent bonding 共价键			
<i>/ˈkəʊələnt 'bɒndɪŋ/</i>			
 expand the octet 扩展八隅体			
<i>/ek'spænd ðɪ ɒk'tet/</i>			
 coordinate bond 配位键			
<i>/kəʊ'ɔːdɪnət bɒnd/</i>			
 sigma bond σ 键			
<i>/ˈsɪɡmə bɒnd/</i>			
 overlap 重叠			
<i>/əʊvə'læp/</i>			
 pi bond π 键			
<i>/paɪ bɒnd/</i>			
 hybridisation 杂化			
<i>/ˌhaɪbrɪdaɪ'zeɪʃn/</i>			
 bond energy 键能			
<i>/bɒnd 'enədʒi/</i>			
 bond length 键长			
<i>/bɒnd leŋθ/</i>			

Biology

Topic 2 · Biological molecules

 covalent bond 共价键			
<i>/ˈkəʊələnt bɒnd/</i>			
 glycosidic bond 糖苷键			
<i>/ˌɡlaɪkə'sɪdɪk bɒnd/</i>			
 condensation 缩合			
<i>/kɒndən'seɪʃn/</i>			
 hydrolysis 水解			
<i>/haɪ'drɒləsɪs/</i>			

 amylose 直链淀粉			
<i>/ˈæmɪləʊs/</i>			
 amylopectin 支链淀粉			
<i>/ˈæmɪləʊpʃtɪn/</i>			
 glycogen 糖原			
<i>/ˈɡlaɪkədʒn/</i>			
 insoluble 不溶			
<i>/ɪnˈsɒljʊəbəl/</i>			
 water potential 水势			
<i>/ˈwɔːtə pəˈtenʃl/</i>			
 osmosis 渗透			
<i>/ɒzˈməʊsɪs/</i>			
 hydrogen bond 氢键			
<i>/ˈhaɪdrədʒn bɒnd/</i>			
 microfibril 微纤丝			
<i>/ˈmaɪkrəʊfɪbrəl/</i>			
 triglyceride 甘油三酯			
<i>/ˈtrɪɡlɪsəraɪd/</i>			
 non-polar 非极性			
<i>/nɒn ˈpəʊlə/</i>			
 hydrophobic 疏水			
<i>/ˈhaɪdrəˈfəʊbɪk/</i>			
 glycerol 甘油			
<i>/ˈɡlɪsərəl/</i>			
 fatty acid 脂肪酸			
<i>/ˈfæti ˈæsɪd/</i>			
 ester bond 酯键			
<i>/ˈestə bɒnd/</i>			
 saturated 饱和			
<i>/ˈsætʃəreɪtɪd/</i>			
 double bond 双键			
<i>/ˈdʌbl bɒnd/</i>			
 unsaturated 不饱和			
<i>/ʌnˈsætʃəreɪtɪd/</i>			

 insulation 隔热			
<i>/ˌɪnsjuːˈleɪʃn/</i>			
 phosphate 磷酸			
<i>/ˈfɒsfet/</i>			

Mathematics

Topic 1 · Pure Mathematics 1

 segment 弓形			
<i>/ˈseɡmənt/</i>			
 sine 正弦			
<i>/saɪn/</i>			
 cosine 余弦			
<i>/ˈkɒsaɪn/</i>			
 tangent function 正切			
<i>/ˈtæŋdʒənt ˈfʌŋkʃn/</i>			
 principal value 主值			
<i>/ˈprɪnsɪpl ˈvæljuː/</i>			
 identity 恒等式			
<i>/aɪˈdentɪti/</i>			
 trigonometric equation 三角方程			
<i>/ˌtrɪɡənəʊˈmetrɪk ɪˈkweɪʃn/</i>			
 binomial expansion 二项 展开式			
<i>/baɪˈnəʊmɪəl ekˈspænjən/</i>			
 binomial coefficient 二项 式系数			
<i>/baɪˈnəʊmɪəl ˌkəʊˈfɪʃənt/</i>			
 progression 数列			
<i>/prəˈɡreʃn/</i>			

Further Mathematics

Topic 1 · Further Pure Mathematics 1

 polar curves 极坐标曲线			
/ˈpəʊlə kɜːvz/			
 plane 平面			
/pleɪn/			
 vector product 向量积			
/ˈvektə ˈprɒdʌkt/			
 vectors 向量			
/ˈvektəz/			
 skew lines 异面直线			
/skjuː laɪnz/			

Computer Science

Topics 3–4 · Hardware, Processor Fundamentals

 transistors 晶体管			
/ˈtrænzɪstəz/			
 optical disc 光盘			
/ˈɒptɪkl dɪsk/			
 touchscreen 触摸屏			
/ˈtʌtʃskriːn/			
 resistive 电阻式			
/rɪˈzɪstɪv/			
 capacitive 电容式			
/kəˈpæsɪtɪv/			
 virtual reality 虚拟现实			
/ˈvɜːtʃʊəl rɪˈælɪti/			
 accelerometer 加速度计			
/əkˌseləˈrɒmɪtə/			
 gyroscope 陀螺仪			
/ˈdʒaɪrəskoʊp/			
 RAM 随机存取存储器			
/ræm/			

 volatile 易失性			
/ˈvɒlətaɪl/			
 ROM 只读存储器			
/rɒm/			
 non-volatile 非易失性			
/nɒn ˈvɒlətaɪl/			
 SRAM 静态			
/ˈesræm/			
 flip-flop 触发器			
/ˈflɪp flɒp/			
 cache 高速缓存			
/kæʃ/			
 DRAM 动态			
/ˈdɪræm/			
 refreshed 刷新			
/rɪˈfreʃt/			
 monitoring 监控			
/ˈmɒnɪtərɪŋ/			
 control system 控制系统			
/kən ˈtrəʊl ˈsɪstəm/			
 sensor 传感器			
/ˈsensə/			
 thermistor 热敏电阻			
/ˈθɜːmɪstə/			
 actuator 执行器			
/ˈæktʃʊeɪtə/			
 feedback 反馈			
/ˈfiːdbæk/			
 logic gate 逻辑门			
/ˈlɒdʒɪk geɪt/			
 Boolean 布尔			
/ˈbuːliən/			
 truth table 真值表			
/truːθ ˈteɪbl/			

 **logic circuit** 逻辑电路
/ˈlɒdʒɪk ˈsɜːkt/

 **Von Neumann architecture** 冯·诺依曼体系结构
/vɒn ˈnɔɪmən ˈɑːktitektʃə/

Economics

Topics 1–2 · Basic economic ideas and resource allocation, The price system and the micro-economy

 **consumer goods** 消费品
/kənˈsuːmə ɡɒdz/

 **free good** 免费物品
/friː ɡɒd/

 **economic good** 经济物品
/iːkəˈnɒmɪk ɡɒd/

 **private good** 私人物品
/ˈpraɪvət ɡɒd/

 **rivalry** 竞争性
/ˈraɪvəlri/

 **excludability** 排他性
/eksˌkluːdəˈbɪlɪti/

 **public good** 公共物品
/ˈpʌblɪk ɡɒd/

 **non-rivalry** 非竞争性
/nɒn ˈraɪvəlri/

 **non-excludability** 非排他性
/nɒn eksˌkluːdəˈbɪlɪti/

 **free-rider problem** 搭便车问题
/friː ˈraɪdər ˈprɒbləm/

 **national defence** 国防
/ˈnæʃənl dɪˈfens/

 **merit good** 优值品
/ˈmerɪt ɡɒd/

 **demerit good** 劣值品
/ˈdemərɪt ɡɒd/

 **information failure** 信息失灵
/ˌɪnfəˈmeɪʃn ˈfeɪlɪə/

 **demand** 需求
/dɪˈmænd/