
Morning Reading

Grade 10 · Week 4

Read each word aloud, then copy the English word three times.

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Reading

Read the passage aloud twice.

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Lifting your school bag is **work done**. Energy is measured in **joules**, and **power**, measured in **watts**, tells us how fast energy is used. A bright old lamp feels hot because much of its energy is **wasted** as heat. A good LED lamp has high **efficiency**: most of the electrical energy becomes light. A **Sankey diagram** shows with wide and narrow arrows where the energy goes.

Your messages also need protection. Before a message leaves your phone, an app turns the readable **plaintext** into secret **ciphertext**. This is **encryption**. Only someone with the right **key** can read it, even if the message is **intercepted** on the way.

Shops watch our choices carefully. The **law of demand** says that when the price of a good rises, the **quantity demanded** usually falls. If milk tea gets expensive, many students switch to **substitutes** such as juice.

Talk about it :

1. Name one thing at home that wastes energy. How could you improve its efficiency?
2. The price of your favourite snack doubles. What do you buy instead, and why?

Physics

Topic 1 · Motion, forces and energy

↻ **velocity**

/və'ləsɪti/

↓ **terminal velocity**

/'tɜːmɪnəl və'ləsɪti/

↻ **acceleration**

/ək'selə'reɪʃn/

↓ acceleration of free fall			
/ək,sələ'reɪʃn Òv frɪ: fə:l/			
↗ speed			
/spi:d/			
↗ speed–time graph			
/spi:d taɪm græf/			
↗ load–extension graph			
/ləʊd ek'stenʃn græf/			
↗ distance–time graph			
/'dɪstəns taɪm græf/			
↕ extension			
/ek'stenʃn/			
↖ deceleration			
/dɪ,sələ'reɪʃn/			
⏸ at rest			
/æt rest/			
↗ gradient			
/'greɪdɪənt/			
Σ area under the line			
/'eəriə 'ʌndə ðə laɪn/			
⇌ air resistance			
/əə rɪ'zɪstəns/			
⊗ matter			
/'mætə/			
⊕ gravitational field strength			
/'grævɪ'teɪʃənl fi:ld streŋθ/			
Δ gravitational potential			
/'grævɪ'teɪʃənl pə'tenʃl/			
⚖ balance			
/'bæləns/			

 regular solid <i>/ˈregjʊlə ˈsɒlɪd/</i>			
 irregular solid <i>/ɪˈregjʊlə ˈsɒlɪd/</i>			
 displacement method <i>/dɪˈspleɪsmənt ˈmeθəd/</i>			
 floats <i>/fləʊts/</i>			
 shape <i>/ʃeɪp/</i>			

Chemistry

Topics 2–4 · Atoms, elements and compounds, Electrochemistry

 noble gases <i>/ˈnəʊbl ˈɡæsiːz/</i>			
 isotopes <i>/ˈaɪsəʊtəʊps/</i>			
 abundance <i>/əˈbʌndəns/</i>			
 cation <i>/ˈkætaɪən/</i>			
 anion <i>/ˈænaɪən/</i>			
 electrostatic attraction <i>/ɪˌlektərəʊˈstætɪk əˈtrækʃn/</i>			
 metal <i>/ˈmetl/</i>			
 non-metal <i>/nɒn ˈmetl/</i>			
 lattice <i>/ˈlætɪs/</i>			

	alternating <i>/ˈɔːltəneɪtɪŋ/</i>			
	electrical conductivity <i>/ɪˈlektɹɪkl kɒndəktɪvɪti/</i>			
	electric current <i>/ɪˈlektɹɪk ˈkʌərənt/</i>			
	molten <i>/ˈməʊltən/</i>			
	aqueous <i>/ˈeɪkwɪəs/</i>			
	intermolecular forces <i>/ˌɪntəməˈlekjələ ˈfɔːsɪz/</i>			
	diamond <i>/ˈdaɪəmənd/</i>			
	cutting tools <i>/ˈkʌtɪŋ tuːlz/</i>			
	graphite <i>/ˈgræfaɪt/</i>			
	layers <i>/ˈleɪəz/</i>			
	lubricant <i>/ˈluːbrɪkənt/</i>			
	electrode <i>/ɪˈlektɹəd/</i>			
	silicon(IV) oxide <i>/ˈsɪlɪkən ˈɒksaɪd/</i>			

Biology

Topics 2–4 · Organisation of the organism, Movement into and out of cells, Biological molecules

	digestive system <i>/daɪˈdʒestɪv ˈsɪstəm/</i>			
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 microscope /'maɪkrəskəʊp/			
 magnification /'mæɡnɪfɪ'keɪʃn/			
 specimen /'spesɪmən/			
 micrometres /'maɪkrəʊmi:təz/			
 diffusion /dɪ'fjuːʒn/			
 net movement /net 'muːvmənt/			
 particles /'pɑːtɪklz/			
 concentration /ˌkɒnsən'treɪʃn/			
 concentration gradient /ˌkɒnsən'treɪʃn 'ɡreɪdɪənt/			
 random movement /'rændəm 'muːvmənt/			
 kinetic energy /kɪ'netɪk 'enədʒi/			
 ions /'aɪənz/			
 gases /'ɡæsɪz/			
 solutes /'sɒljuts/			
 carbon dioxide /'kɑːbən daɪ'ɒksaɪd/			
 surface area /'sɜːfɪs 'eəriə/			

 temperature /'tempɪtʃə/			
 solvent /'sɒlvənt/			
 dissolve /dɪ'sɒlv/			
 solution /sə'lu:ʃn/			
 transport /'trænsɒ:t/			
 osmosis /ɒz'məʊsɪs/			
 partially permeable membrane /'pɑ:ʃəli 'pɜ:məbl 'membreɪn/			
 water potential /'wɔ:tə pə'tenʃl/			
 turgid /'tɜ:dʒɪd/			
 turgor pressure /'tɜ:gə 'preʃə/			
 flaccid /'flæsɪd/			
 plasmolysis /plæz'mɒləsɪs/			
 dialysis tubing /daɪ'æləsɪs 'tju:bɪŋ/			
 active transport /'æktɪv 'trænsɒ:t/			
 root hairs /ru:t heəz/			
 protein carriers /'prəʊtɪn 'kæriəz/			

 **molecule**

/ˈmɒlɪkjʊːl/

 **elements**

/ˈelɪmənts/

 **carbohydrates**

/ˌkɑːbəʊˈhaɪdreɪts/

Mathematics

Topic 1 · Number

 **reverse percentage**

/rɪˈvɜːs pəˈsentɪdʒ/

 **exponential growth**

/ˌekspəˈnenʃl grəʊθ/

 **exponential decay**

/ˌekspəˈnenʃl dɪˈkeɪ/

 **depreciation**

/dɪˌpriːʃiˈeɪʃn/

 **ratio**

/ˈreɪʃiəʊ/

 **proportion**

/prəˈpɔːʃn/

 **scale**

/skeɪl/

 **rate**

/reɪt/

 **average speed**

/ˈævərɪdʒ spiːd/

 **density**

/ˈdensɪti/

 **mass**

/mæs/

 volume /'vɒljʊ:m/			
 population density /ˌpɒpjʊ'leɪʃn 'densɪti/			
 pressure /'preʃə/			
 decimal place /'desɪml pleɪs/			
 significant figure /sɪɡ'nɪfɪkənt 'fɪɡə/			
 estimate /'estɪmət/			

Computer Science

Topics 2–3 · Data transmission, Hardware

 check digit /tʃek 'dɪdʒɪt/			
 transposition error /trænspe'zɪʃn 'erə/			
 barcodes /'bɑ:kəʊdɪz/			
 encryption /en'krɪpʃn/			
 intercepted /ˌɪntə'septɪd/			
 plaintext /'pleɪntekst/			
 ciphertext /'saɪfətekst/			
 symmetric encryption /sɪ'metrɪk en'krɪpʃn/			

 key /ki:/			
 asymmetric encryption /ˌeɪsɪ'metrɪk en'krɪptʃn/			
 public key /'pʌblɪk ki:/			
 private key /'praɪvət ki:/			
 central processing unit /'sentrəl 'prəʊsesɪŋ 'ju:nɪt/			
 instructions /ɪn'strʌkʃnz/			
 arithmetic logic unit /ə'rɪθmətɪk 'lɒdʒɪk 'ju:nɪt/			
 control unit /kən'trəʊl 'ju:nɪt/			
 buses /'bʌsɪz/			
 address bus /ə'dres bʌs/			
 data bus /'deɪtə bʌs/			

Economics

Topic 2 · The allocation of resources

 **law of demand**

/lɔ: vɒ di'mænd/

 **inverse relationship**

/ɪn'vɜ:s rɪ'leɪʃənʃɪp/

 **ceteris paribus**

/'setəris 'pærɪbəs/

 **quantity demanded**

/'kwɒntəti di'mændɪd/

 **demand curve**

/di'mænd kɜ:v/

 **shift**

/ʃɪft/

 **income**

/'ɪŋkʌm/

 **tastes**

/teɪsts/

 **substitutes**

/'sʌbstɪtju:ts/

 **complements**

/'kɒmplɪmənts/

 **population**

/ˌpɒpjʊ'leɪʃn/

 **advertising**

/'ædvɜ:təɪzɪŋ/

 **supply**

/sə'plaɪ/

 **law of supply**

/lɔ: vɒ sə'plaɪ/

English

Topic 2 · Writing: purpose, audience and accuracy

🎯 **purpose**

/ˈpʊːpəs/

📢 **inform**

/ɪnˈfɔːm/

⚖️ **argue**

/ˈɑːɡjuː/

🗨️ **discuss**

/dɪˈskʌs/

👥 **audience**

/ˈɔːdiəns/

📋 **register**

/ˈredʒɪstə/

🎓 **formal**

/ˈfɔːml/