

Morning Reading

Grade 11 · AS · Week 2

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

Reading

Read the passage aloud twice.

Scientists and economists both build models. A **model** is a simplified picture of the world that keeps the important parts and drops the rest. A map is a model: it ignores every tree, and that is exactly why it is useful. Economists add the phrase **ceteris paribus**, "all other things equal", to study one change at a time. Be careful to separate a **positive statement**, which can be tested against facts, from a **normative statement**, which contains a **value judgement** about what ought to happen.

Mathematics gives models their shape. A **quadratic equation** draws a **parabola**, the curve a thrown ball follows. A **function** is a machine: for each input from its **domain**, it returns exactly one output.

In physics the model is often an equation linking quantities: **force** in **newtons**, **energy** in **joules**, **power** in **watts**, **pressure** in **pascals**. Each unit is built from the base units, and checking them catches many mistakes.

Talk about it :

- "Petrol prices should be lower" and "petrol prices rose 5% last year": which is normative, which is positive?
- A map ignores trees. What does a distance-time graph ignore about a real journey?

Physics

Topic 1 · Physical quantities and units

→ force /fɔːs/			
🍏 newton /'njuːtn/			
🔧 work /wɜːk/			
⚡ energy /'enədʒi/			
⚡ joule /dʒuːl/			
⚡ power /'paʊə/			
💡 watt /wɒt/			
↓ pressure /'preʃə/			
↕ stress /stres/			
🌀 pascal /'pæskl/			
= homogeneous /ˌhɒmə'dʒiːniəs/			
✖ prefix /'priːfiks/			
📏 measurement /'meʒəmənt/			
❓ uncertainty /ʌn'sɜːtənti/			
↗ systematic error /ˌsɪstə'mætɪk 'erə/			

 zero error			
<i>/ˈziərəʊ ˈerə/</i>			
 calibration			
<i>/ˈkæliˈbreɪʃn/</i>			
 parallax			
<i>/ˈpærələks/</i>			
 accuracy			
<i>/ˈækjərəsi/</i>			
 precision			
<i>/priˈsiʒn/</i>			

Chemistry

Topic 1 · Atomic structure

 period			
<i>/ˈpiəriəd/</i>			
 nuclear charge			
<i>/ˈnjuːkliə tʃɑːdʒ/</i>			
 shielding			
<i>/ˈʃiːldɪŋ/</i>			
 group			
<i>/gruːp/</i>			
 cation			
<i>/ˈkætaɪən/</i>			
 anion			
<i>/ˈænaɪən/</i>			
 repulsion			
<i>/rɪˈpʌljən/</i>			
 isotope			
<i>/ˈaɪsəʊp/</i>			
 chemical properties			
<i>/ˈkemɪkl ˈprɒpətɪz/</i>			

 physical properties			
<i>/ˈfɪzɪkl ˈprɒpətɪz/</i>			
 density			
<i>/ˈdensɪti/</i>			
 principal quantum number			
<i>/ˈprɪnsɪpl ˈkwɒntəm ˈnʌmbə/</i>			
 sub-shell			
<i>/sʌb ʃel/</i>			
 orbital			
<i>/ˈɔːbɪtl/</i>			
 electronic configuration			
<i>/ɪlekˈtrɒnɪk kənˌfɪɡjəˈreɪʃn/</i>			
 ground state			
<i>/graʊnd steɪt/</i>			
 noble gas			
<i>/ˈnəʊbl ɡæs/</i>			
 spin			
<i>/spɪn/</i>			

Biology

Topic 1 · Cell structure

 eukaryotic cell			
<i>/juːkəriˈɒtɪk sel/</i>			
 nucleus			
<i>/ˈnjuːkliəs/</i>			
 organelle			
<i>/ˈɔːɡəˈnel/</i>			
 cytoplasm			
<i>/saɪtəplæzəm/</i>			
 cell surface membrane			
<i>/sel ˈsɜːfɪs ˈmembreɪn/</i>			

 nuclear envelope <i>/ˈnjuːkliə ˈenvələʊp/</i>			
 nucleolus <i>/ˌnjuːklɪˈəʊləs/</i>			
 rough endoplasmic reticulum <i>/rʌf ˌendəʊˈplæzmɪk reˈtɪkjələm/</i>			
 protein <i>/ˈprəʊtiːn/</i>			
 antibody <i>/ˈæntɪbɒdi/</i>			
 smooth endoplasmic reticulum <i>/smuːð ˌendəʊˈplæzmɪk reˈtɪkjələm/</i>			
 lipid <i>/ˈlɪpɪd/</i>			
 Golgi body <i>/ˈɡɒlɡɪ ˈbɒdi/</i>			
 vesicle <i>/ˈvesɪkl/</i>			
 secretion <i>/sɪˈkriːʃn/</i>			
 mitochondria <i>/ˌmaɪtəˈkɒndrɪə/</i>			
 respiration <i>/ˌrespɪˈreɪʃn/</i>			
 energy <i>/ˈenədʒi/</i>			
 ribosome <i>/ˈriːbəʊsəʊm/</i>			
 amino acid <i>/əˈmiːnəʊ ˈæsɪd/</i>			
 synthesise <i>/ˈsɪnθəsaɪz/</i>			

 lysosome <i>/ˈlaɪsəʊsəʊm/</i>			
 enzyme <i>/ˈenzaim/</i>			

Mathematics

<i>Topic 1 · Pure Mathematics 1</i>			
= quadratic equation <i>/kwɒˈdrætik ɪˈkweɪʒn/</i>			
<> quadratic inequality <i>/kwɒˈdrætik ɪniˈkwɒlɪti/</i>			
 parabola <i>/pəˈræbələ/</i>			
 simultaneous equations <i>/ˌsɪməˈteɪniəs ɪˈkweɪʒnz/</i>			
 substitution <i>/ˌsʌbstɪˈtjuːʃn/</i>			
 function <i>/ˈfʌŋkʃn/</i>			
 domain <i>/dəˈmeɪn/</i>			
 range <i>/reɪndʒ/</i>			
= one-one <i>/wʌn wʌn/</i>			
 inverse function <i>/ɪnˈvɜːs ˈfʌŋkʃn/</i>			

Further Mathematics

Topic 1 · Further Pure Mathematics 1

 oblique asymptote			
<i>/ə'blɪk 'æsɪmptəʊt/</i>			
 method of differences			
<i>/'meθəd ɒv 'dɪfrənsɪz/</i>			
 convergent			
<i>/kən'vɜːdʒənt/</i>			
 sum to infinity			
<i>/sʌm tu ɪn'fɪnɪti/</i>			
 matrix			
<i>/'meɪtrɪks/</i>			

Computer Science

Topics 1–2 · Information representation, Communication

 bit depth			
<i>/bɪt depθ/</i>			
 vector graphic			
<i>/'vektə 'ɡræfɪk/</i>			
 drawing list			
<i>/'drɔːɪŋ lɪst/</i>			
 primitive			
<i>/'prɪmɪtɪv/</i>			
 render			
<i>/'rendə/</i>			
 analogue data			
<i>/'ænəlɒɡ 'deɪtə/</i>			
 digital data			
<i>/'dɪdʒɪtl 'deɪtə/</i>			
 sampling			
<i>/'sæmplɪŋ/</i>			

 sampling rate			
<i>/'sæmplɪŋ reɪt/</i>			
 sampling resolution			
<i>/'sæmplɪŋ ,reɪzə'luːʃn/</i>			
 amplitude			
<i>/'æmplɪtjuːd/</i>			
 quantisation			
<i>/'kwɒntaɪ 'zeɪʃn/</i>			
 compression			
<i>/kəm'preʃn/</i>			
 bandwidth			
<i>/'bændwɪdθ/</i>			
 lossless			
<i>/'lɒsləs/</i>			
 lossy			
<i>/'lɒsi/</i>			
 run-length encoding			
<i>/'rʌn leŋθ en'kəʊdɪŋ/</i>			
 dictionary methods			
<i>/'dɪkʃənəri 'meθədz/</i>			
 Huffman coding			
<i>/'hʌfmən 'kəʊdɪŋ/</i>			
 entropy			
<i>/'entrəpi/</i>			
 spatial			
<i>/'speɪʃl/</i>			
 temporal			
<i>/'tempərəl/</i>			
 network			
<i>/'netwɜːk/</i>			

 local area network			
<i>/ˈləʊkl ˈeəriə ˈnetwɜːk/</i>			
 latency			
<i>/ˈleɪtənsi/</i>			
 wide area network			
<i>/waɪd ˈeəriə ˈnetwɜːk/</i>			
 server			
<i>/ˈsɜːvə/</i>			
 client			
<i>/ˈklaɪənt/</i>			
 peer-to-peer			
<i>/piə tə piə/</i>			

Economics

Topic 1 · Basic economic ideas and resource allocation

 ceteris paribus			
<i>/ˈsetərɪs ˈpærɪbəs/</i>			
 positive statement			
<i>/ˈpɒzɪtɪv ˈsteɪtmənt/</i>			
 normative statement			
<i>/ˈnɔːmətɪv ˈsteɪtmənt/</i>			
 value judgement			
<i>/ˈvæljuː ˈdʒʌdʒmənt/</i>			
 microeconomics			
<i>/ˌmaɪkrəʊˌiːkəˈnɒmɪks/</i>			
 macroeconomics			
<i>/ˌmækrəˌriːkəˈnɒmɪks/</i>			
 output			
<i>/ˈaʊtpʊt/</i>			

 factors of production			
<i>/ˈfæktəz ɒv prəˈdʌkʃn/</i>			
 reward			
<i>/rɪˈwɔːd/</i>			
 land			
<i>/lænd/</i>			
 rent			
<i>/rent/</i>			
 labour			
<i>/ˈleɪbə/</i>			
 wages			
<i>/ˈweɪdʒɪz/</i>			
 capital			
<i>/ˈkæpɪtl/</i>			
 interest			
<i>/ˈɪntrest/</i>			
 enterprise			
<i>/ˈentəpraɪz/</i>			