

Morning Reading

Grade 11 · AS · Week 8

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

Reading

Read the passage aloud twice.

A steel ship weighs thousands of tonnes. Why does it float when a steel coin sinks? A body in water feels an upward force, the **upthrust**, equal to the weight of the water it has **displaced**. This is **Archimedes’ principle**. The ship’s hull is shaped to push aside an enormous volume of water, so the upthrust can match its huge weight. The coin displaces almost nothing, so it sinks. Even the air pushes on us: **atmospheric pressure** at sea level is about 100,000 pascals, though we never notice it.

Chemists this week met energy in reactions. An **exothermic** reaction releases heat, like the hand warmers sold in winter; an **endothermic** one absorbs it, like the instant cold packs used for sports injuries. Every reaction must first climb over its **activation energy**.

In the market diagram, the crossing point of demand and supply gives the **equilibrium price**. Below it there is **excess demand**: a **shortage**, queues, and pressure for the price to rise.

Talk about it :

1. A ship floats but a coin sinks. Explain the difference in one sentence.
2. Ice-cream sellers cut prices every evening. What does this say about equilibrium?

Physics

Topics 5–6 · Work, energy and power, Deformation of solids

 chemical energy <i>/ˈkemɪkl ˈenədʒi/</i>			
 frictionless <i>/'frɪkʃənləs/</i>			
 ramp <i>/ræmp/</i>			
% efficiency <i>/'ɪfɪjənsi/</i>			
 voltage <i>/'vɔʊltɪdʒ/</i>			
 spring <i>/sprɪŋ/</i>			
 compression <i>/kəmˈpreʃn/</i>			
 spring constant <i>/sprɪŋ ˈkɒnstənt/</i>			
 tensile <i>/'tensəl/</i>			
 extension <i>/ekˈstɛnjən/</i>			
 load <i>/ləʊd/</i>			
 Hooke’s law <i>/hʊks lɔː/</i>			
 limit of proportionality <i>/ˈlɪmɪt ɒv prəˌpɔːʃəˈnæləti/</i>			
 elastic <i>/'iːləstɪk/</i>			
 plastic <i>/'plæstɪk/</i>			

 series <i>/ˈsiəriːz/</i>			
= parallel <i>/ˈpærəlel/</i>			
 strain <i>/streɪn/</i>			
 Young modulus <i>/jʌŋ ˈmɒdjʊləs/</i>			
 pulley <i>/ˈpʊli/</i>			

Chemistry

Topics 4–5 · States of matter, Chemical energetics

 covalent bonds <i>/ˈkəʊvələnt bɒndz/</i>			
 silicon(IV) oxide <i>/ˈsɪlɪkən ˈɒksaɪd/</i>			
 graphite <i>/ˈgræfaɪt/</i>			
 diamond <i>/ˈdaɪəmənd/</i>			
 giant metallic <i>/ˈdʒaɪənt məˈtælək/</i>			
 melting point <i>/ˈmeltɪŋ poɪnt/</i>			
 electrical conductivity <i>/ɪˈlektʀɪkl kɒndəktɪvɪti/</i>			
 solubility <i>/ˌsɒljʊːˈbɪlɪti/</i>			
 enthalpy change <i>/enˈθælpɪ tʃeɪndʒ/</i>			

 exothermic <i>/egzəˈθɜːmɪk/</i>			
 endothermic <i>/ˌendəθˈθɜːmɪk/</i>			
 reaction pathway diagram <i>/rɪˈækʃn ˈpæθweɪ ˈdaɪəgræm/</i>			
 activation energy <i>/ˌæktɪˈveɪʃn ˈenədʒi/</i>			
 standard conditions <i>/ˈstændəd kənˈdɪʃnz/</i>			

 enthalpy change of reaction <i>/enˈθælpɪ tʃeɪndʒ ɒv rɪˈækʃn/</i>			
 enthalpy change of formation <i>/enˈθælpɪ tʃeɪndʒ ɒv fɔːˈmeɪʃn/</i>			
 enthalpy change of combustion <i>/enˈθælpɪ tʃeɪndʒ ɒv kəmˈbʌstʃn/</i>			
 enthalpy change of neutralisation <i>/enˈθælpɪ tʃeɪndʒ ɒv ˌnjuːtrəlaɪˈzeɪʃn/</i>			

Biology

Topics 3–4 · Enzymes, Cell membranes and transport

 temperature <i>/ˈtemprɪtʃə/</i>			
 colorimeter <i>/ˌkʌləˈrɪmɪtə/</i>			
 rate of reaction <i>/reɪt ɒv rɪˈækʃn/</i>			
 kinetic energy <i>/kɪˈnetɪk ˈenədʒi/</i>			

 collide <i>/kəˈlaɪd/</i>			
 optimum temperature <i>/ˈɒptɪməˈtempɪtʃə/</i>			
 denature <i>/ˈdenətʃə/</i>			
 buffer solution <i>ˈbʌfə səˈluːʃn/</i>			
 inhibitor <i>/ɪnˈhɪbɪtə/</i>			
 Michaelis–Menten constant <i>/ˈmaɪkəlɪzˈmentnˈkɒnstənt/</i>			
 affinity <i>/əˈfɪnɪti/</i>			
 reversible <i>/rɪˈvɜːsɪbl/</i>			
 competitive inhibitor <i>/kəmˈpetɪtɪv ɪnˈhɪbɪtə/</i>			
 non-competitive inhibitor <i>/nɒn kəmˈpetɪtɪv ɪnˈhɪbɪtə/</i>			
 immobilised enzyme <i>/ɪˈməʊbəlaɪzd ˈenzaim/</i>			
 alginate <i>/ˈældʒɪneɪt/</i>			
 fluid mosaic model <i>/ˈfluːɪd məˈseɪk ˈmɒdl/</i>			
 bilayer <i>/ˈbɪleɪə/</i>			
 carrier protein <i>/ˈkæriə ˈprəʊtɪn/</i>			

 channel protein <i>/ˈtʃænl ˈprəʊtɪn/</i>			
 cholesterol <i>/kəˈlestərol/</i>			
 fluidity <i>/fluːˈɪdɪti/</i>			
 glycolipid <i>/ˈɡlaɪkəlɪpɪd/</i>			

Mathematics

Topics 1–2 · Pure Mathematics 1, Pure Mathematics 2

 Integration <i>/ˌɪntɪˈɡreɪʃn/</i>			
 constant of integration <i>/ˈkɒnstənt ɒv ˌɪntɪˈɡreɪʃn/</i>			
 definite integral <i>/ˈdefɪnət ˈɪntɪɡrəl/</i>			
 region <i>/ˈriːdʒn/</i>			
 volume of revolution <i>/ˈvɒljʊːm ɒv ˌrevəˈluːʃn/</i>			
 composition of functions <i>/ˌkɒmpəˈzɪʃn ɒv ˈfʌŋkʃnz/</i>			
 logarithms <i>/ˈlɒɡərɪθənz/</i>			
 exponential function <i>/ˌekspeɪˈnensjəl ˈfʌŋkʃn/</i>			
 modulus <i>/ˈmɒdjʊləs/</i>			
 polynomial <i>/ˌpɒliˈnəʊmɪəl/</i>			

Further Mathematics

Topics 1–3 · Further Pure Mathematics 1, Further Mechanics

 stretch			
/stretʃ/			
 shear			
/ʃiə/			
 Further Mechanics			
/ˈfɜːðə miˈkæniks/			
 projectile			
/prəˈdʒektail/			
 constant acceleration			
/ˈkɒnstənt əkˌseləˈreɪʃn/			

Computer Science

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

 program library			
/ˈprəʊgræm ˈlaɪbrəri/			
 subroutines			
/ˈsʌbruːtiːnz/			
 static library			
/ˈstætɪk ˈlaɪbrəri/			
 dynamic library			
/daɪˈnæmɪk ˈlaɪbrəri/			
 translator			
/trænˈsleɪtə/			
 compiler			
/kəmˈpaɪlə/			
 executable			
/ɪɡˈzekjʊtəbl/			
 interpreter			
/ɪnˈtɜːprɪtə/			

 bytecode			
/ˈbaɪtkəʊd/			
 virtual machine			
/ˈvɜːtʃʊəl məˈʃiːn/			
 just-in-time compilation			
/dʒʌst ɪn taɪm ˌkɒmpɪˈleɪʃn/			
 integrated development environment			
/ˈɪntɪɡreɪtɪd dɪˈveləpmənt enˈvaɪrənmənt/			
 syntax highlighting			
/ˈsɪntæks ˈhaɪlaɪtɪŋ/			
 auto-complete			
/ˈɔːtəʊ kəmˈpliːt/			
 debugger			
/ˈdiːbʌɡə/			
 breakpoints			
/ˈbreɪkpoɪnts/			
 version control			
/ˈvɜːʃn kənˈtrəʊl/			
 refactoring			
/rɪˈfæktərɪŋ/			
 unit test			
/ˈjuːnɪt test/			
 security			
/sɪˈkjoʊərɪti/			
 unauthorised			
/ʌnˈɔːθəraɪzd/			
 privacy			
/ˈprɪvəsi/			
 integrity			
/ɪnˈteɡrɪti/			
 malware			
/ˈmælweə/			

 virus			
<i>/ˈvaɪrəs/</i>			
 worm			
<i>/wɜːm/</i>			
 Trojan horse			
<i>/'trɒdʒɪn hoːs/</i>			

Economics

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

 equilibrium			
<i>/iːkwɪˈlɪbrɪəm/</i>			
 equilibrium price			
<i>/iːkwɪˈlɪbrɪəm praɪs/</i>			
# equilibrium quantity			
<i>/iːkwɪˈlɪbrɪəm ˈkwɒntəti/</i>			
 disequilibrium			
<i>/dɪˌsiːkwɪˈlɪbrɪəm/</i>			
 excess demand			
<i>/ekˈses dɪˈmænd/</i>			
 shortage			
<i>/'ʃɔːtɪdʒ/</i>			
 excess supply			
<i>/ekˈses səˈplaɪ/</i>			
 product market			
<i>/'prɒdʌkt ˈmɑːkɪt/</i>			
 factor market			
<i>/'fæktə ˈmɑːkɪt/</i>			
 foreign exchange market			
<i>/'fɒrən eksˈtʃeɪndʒ ˈmɑːkɪt/</i>			
 exchange rate			
<i>/eksˈtʃeɪndʒ reɪt/</i>			

 consumer surplus			
<i>/kənˈsuːmə ˈsɜːpləs/</i>			
 producer surplus			
<i>/prəˈdjuːsə ˈsɜːpləs/</i>			
 welfare			
<i>/'welfeə/</i>			
 market failure			
<i>/'mɑːkɪt ˈfeɪlɪə/</i>			