Name: _____

Worksheet Booklet

Katoomba High School

Stage 4 (8A)

- Complete all the sheets in this booklet
- Write in the space provided
- Hand booklet in to Deputy Principal

Charles Lyell (1797–1875)

In the nineteenth century Charles Lyell's geology textbooks were considered
necessary reading for all geology students. Lyell was born in Scotland but
after studying law at Oxford, he spent most of his life wandering around the
world, studying the geology of areas and trying to tell people about science.
Lyell was successful, particularly through his *Principles of Geology* which was
printed in 12 editions. The ideas he presented in this and other books
shaped thinking, both in geology and other sciences, up to the present day.

1   (a) Are books useful in spreading information and knowledge?

   (b) If you were Lyell and wanted to teach people about your favourite subject, how would you
       do it?

   (c) Do you have a text book which is easy to read and interesting? If so, describe what makes it
       interesting.

   (d) If you were able to travel the world and study something, where would you go? Why?

The story so far

One of the most popular geological theories of the day was the theory of catastrophism. This theory stated
that most of the Earth's history consisted of a short period of violent geological activity. This idea was based
on some people's interpretation of Creation described in the Bible. Bishop James Ussher (1581–1656)
calculated that the Earth was created in 4004 BC. Because of this idea, most people believed the Earth had
only been in existence a few thousand years. These people thought that violent earthquakes, volcanoes and
floods had happened 'all the time', and created the world around them.

A totally different idea was developed by James Hutton (1726–97), a Scottish geologist. He thought the
world had been made some millions of years earlier and that changes had occurred much more slowly.
Lyell called Hutton's theory uniformitarianism and supported it in his writings as strongly as he could.

2   (a) What is the theory of catastrophism?

   (b) What is uniformitarianism?

   (c) What did Bishop Ussher do?

   (d) How old did Ussher think the world was?

What did Lyell do?

In the first volume of *Principles of Geology* (published in 1830), Lyell argued that geological activities could
be explained as 'what was happening now'. Lyell said that although volcanoes and earthquakes had been
occurring for a long time, they were relatively few and located in different areas around the world. The
second volume (1832) described the geological activities which occur regularly in the world. These include
the action of rivers (in eroding areas of mountains and depositing layers of sediment), and volcanic activity
(building mountains and producing new rock).

3   (a) What are the main ideas of Lyell's first two volumes of *Principles of Geology*?

   (b) What main geological activities occur in the world?

   (c) What is the difference between erosion and deposition?

In the second volume of *Principles of Geology* Lyell made up a number of new words to describe what was happening. One of these words was 'metamorphic'. This describes sedimentary rocks which have been changed by being close to volcanic activity, and been affected by heat or pressure or both. Even igneous rocks from previous volcanic activity can be metamorphosed or changed by new volcanic activity.·

4 (a) What is a metamorphic rock?

(b) How is one formed?

(c) Could you find fossils in metamorphic rocks? Explain.

In Volume 3 (1833) Lyell described the ideas of 'stratigraphy' and 'palaeontology'. Stratigraphy describes how rocks are found in layers, and how the early rocks to be formed are on the bottom and later rocks are on the top. This was not Lyell's original idea. It had been developed by William Smith (1769–1839), an English geologist who studied fossils.

In 1816 Smith listed the strata or levels of rocks according to the types of fossils which he found. Palaeontology is the study of fossils. Both of these ideas help describe what has happened in the Earth's structure.

5 (a) What is the difference between 'stratigraphy' and 'palaeontology'?

(b) What was William Smith's major idea?

What did Lyell conclude?

From his studies in geology and zoology (the study of animals), Lyell classified or grouped the rocks of northern Italy. Unlike fellow geologists, Lyell looked at the fossils rather than the rock types to help him date and describe the different layers. The fossils that he studied were shellfish and based on these he was able to date the rocks and describe how they had been made.
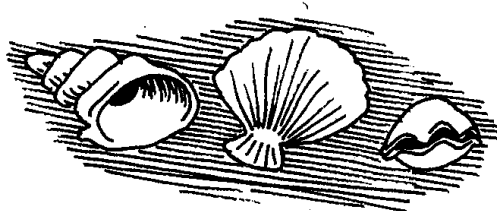
6 How could Lyell use shells of shellfish to date rocks?

Lyell also produced new terms to describe different geological periods (called epochs). These were Pleistocene, Pliocene, Miocene, and Eocene. These were Lyell's words which are still basically used today.

What happened next?

Charles Darwin read Volume I of Lyell's *Principles of Geology* before his famous trip on the Beagle in 1831. It is likely that Lyell's ideas on how long the Earth had been in existence, and how it had changed slowly but regularly, helped Darwin develop his theory of evolution. Lyell also helped Darwin and Alfred Russel Wallace (1823–1913), another philosopher who considered the origin of the Earth and life on it, to publish their ideas.

GROUP WORK

7 (a) For what is Charles Darwin famous?

(b) How could his ideas be helped by the writings of Lyell?
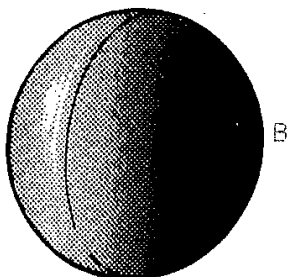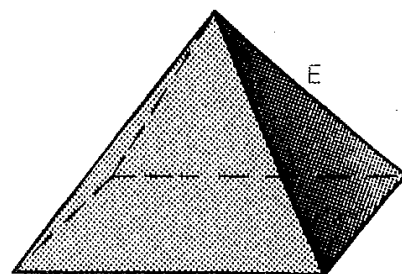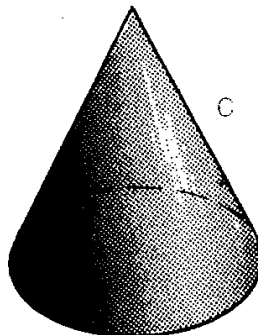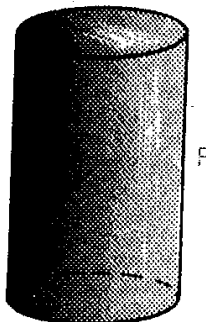
Week 10

MORE SHAPES

Solids

The names of these space figures are given in this key:

A ... triangular prism D ... rectangular prism G ... cube
B ... sphere   E ... pyramid
C ... cone   F ... cylinder
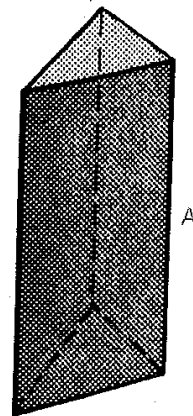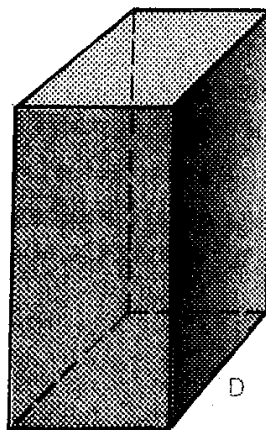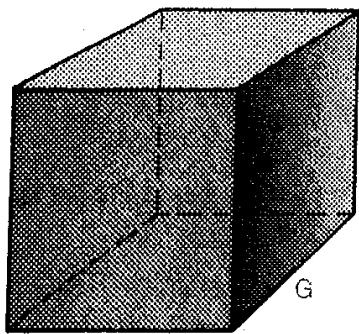
1. Copy these figures carefully into your book. Match the name with the figure.
2. Copy and complete:

   (a) A . . . . . . may roll no matter how it is placed, on a flat surface.

   (b) A cube has . . . . . . flat faces.

   (c) A cube has . . . . . . corners.

   (d) A cube has . . . . . . edges.

   (e) A die is the same shape as a . . . .

3. What is the shape of the
   flat surface of this solid?
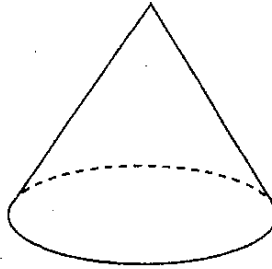
4. Two faces have the same shape
   in this solid. What shape?
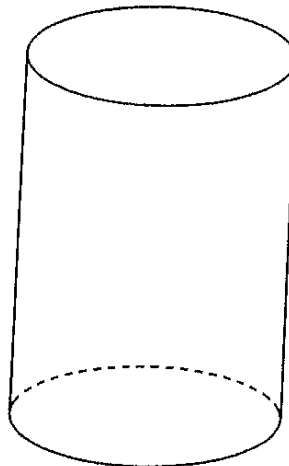
5. This is a triangular prism.
   How many flat surfaces does
   it have?
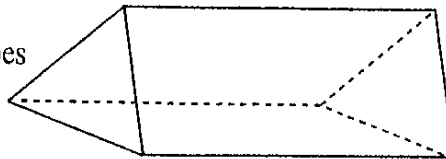
6. Write down the name of the solid which is most like:

   (a) a tin of jam   (f) a house brick

   (b) a lump of sugar   (g) a school case

   (c) a tennis ball   (h) a pencil

   (d) a block of ice   (i) a packet of cornflakes

   (e) a piece of chalk   (j) a length of water pipe

7. Write a sentence to explain why breakfast cereals are packed in rectangular boxes.
8. Copy and complete:

   (a) A cube has . . . . . . equal faces.

   (b) A cylinder has . . . . . . circular faces.

Classroom Unit 3 –ibe –ife –ile –ise
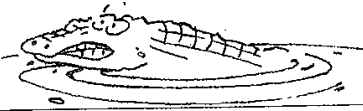
The List

tribe	bribe	scribe	describe	prescribe	subscribe		
knife	fife	strife	missile	fertile	textile	crocodile	
vile	reptile	while	exile	agile	hostile	mobile	fragile
exercise	paradise	surprise	demise	revise	televise	advise	
despise	disguise	supervise					

1 Write a suitable **list** word in the gaps in these sentences . . .

a After being arrested the burglar attempted to _____ the police officer.

b The sunrise was too beautiful to _____ .

c Our school will _____ to the science magazine for one year.

d Deep in the Amazon jungle a _____ of natives lived happily, unaware of the modern world.

2 Match these definitions with words from the **list**.

a trouble _____ **b** woven material _____ **c** cutting tool _____

d easily broken _____ **e** hate _____ **f** a thrown or shot object _____

3 Use a dictionary to help you define these words and then write each in a sentence.

vile _____

demise _____

fife _____

exile _____

4 Write Yes or No . . .

a Is a gymnast agile? _____ **b** Is the moon fertile? _____

c Is a mountain mobile? _____ **d** Is glass fragile? _____

e Can a textile be stitched? _____ **f** Is a beautiful flower vile? _____

5 Write one interesting sentence containing: exercise advise surprise _____

_____

6 Write the following words in alphabetical order: despise demise describe disguise

_____

Word Building

1 Add the **suffix** –ion to the following words (careful!) . . .

a televise _____ **b** supervise _____ **c** revise _____

2 Add the **suffix** –tion to the following words (careful!) . . .

a prescribe _____ **b** subscribe _____ **c** describe _____

3 Add the **suffix** –ility to each of the following words and then write each in a sentence (careful!) . . .

fertile _____ _____

agile _____ _____

hostile _____ _____

For Champs guile juvenile versatile docile enterprise compromise
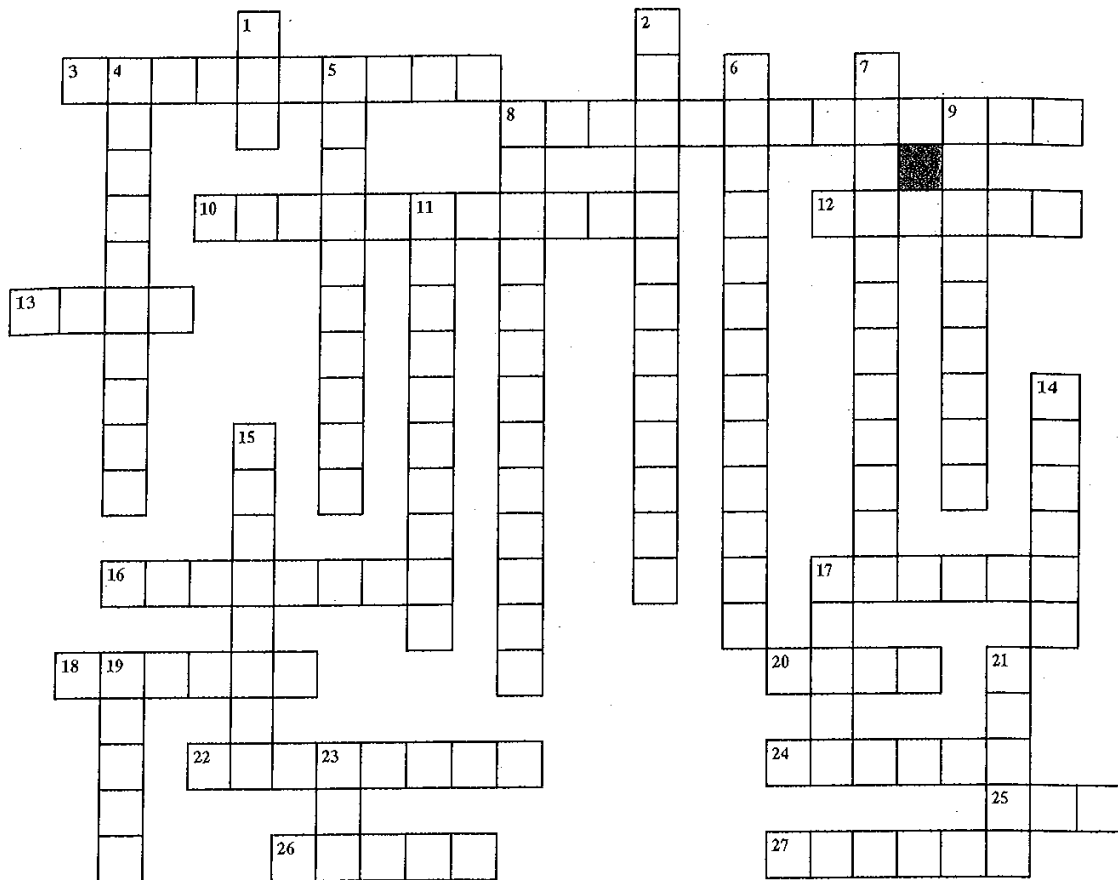
Clues across

3 Instrument for measuring angles.

8 Angles that add to 90°.

10 A line that crosses two or more other lines.

12 The 'corner' of an angle or shape.

13 The number of angles created when two lines cross.

16 Lines that never cross.

17 Perpendicular lines cross at right _____.

18 The measuring unit for angle size.

20 A right angle is a quarter-_____.

22 180° angle.

24 Angle between 180° and 360°.

25 How many straight angles in a revolution?

26 A protractor has a clockwise and an anti-clockwise s_____.

27 The number of degrees in a right angle.

Clues down

1 A part of an angle that is also a part of your body.

2 Angles that add to 180°.

4 360° angle.

5 These 'inside' angles are supplementary.

6 Lines that intersect at 90°.

7 Two lines cross at their point of i_____.

8 Equal matching angles on parallel lines cut by a transversal.

9 Angles between parallel lines on opposite sides of a transversal.

11 Two intersecting lines create two pairs of v_____ opposite angles.

14 Number of degrees between 90° and 180°.

15 Neighbouring angles that share an arm.

17 Smaller than a right angle.

19 Vertically opposite angles are _____.

21 The angle a clock's minute hand turns in 10 minutes.

23 This curved line is used to mark an angle.

Atkins puts bite on diet success

THINK the boom–bust cycle refers to real estate?

Think again. While house price rises slow, the eating habits of Australians remain more prone to fluctuation than ever, say dietitians.

And a finger is being pointed firmly at the Atkins diet, blamed for encouraging people to stick to an unnecessarily restrictive diet.

A British survey revealed last week that 3 million people are on the low-carbohydrate, high-protein diet, and that 10 per cent of women and 7 per cent of men have tried it.

While there are no comparable figures for Australia, Dietitians Association of Australia spokesman Trent Watson said almost all of the people who seek weight loss advice from him ask about the Atkins diet.

And of the top 10 self-help bestsellers last month, three positions were taken up by Robert Atkins, the US diet author who died in April. They were *Dr Atkins' New Diet Revolution*, *Dr Atkins' New Carbohydrate Counter* and *Dr Atkins For Life*.

Mr Watson said one of the main problems with the diet was that it could leave people fatter in the long run — and almost one in five Australian adults is actively trying to lose weight.

'In the short term you may see some weight loss,' he said. 'But given that the diet is so restrictive, and that it's human nature not to withstand deprivation, you won't follow it in the long term.

'So there's this cycle of diet-binge, diet-binge that reduces your metabolism and makes you put on weight.'

Nutritionist Rosemary Stanton said the high popularity of the diet could be attributed to people's desire for instant results. 'It gives people the idea they can get rid of weight quickly.'

Ms Stanton said her greatest concern was that the Atkins diet discouraged consumption of grains and fruits that protect against bowel cancer, the most common cancer affecting both men and women in Australia.

Source: D. Teutsch 'Atkins puts bite on diet success', *The Sun-Herald*, 7 September 2003.

Questions

1. What are the main problems with this diet? What might be the consequences of the Atkins diet in the long term?
2. Why might the Atkins diet fit the category of 'fad diet'?

The Atkins Diet: summary

Cardiologist Robert Atkins developed the Atkins Diet in the 1970s. His book, *Dr Atkins' New Diet Revolution*, revived the diet's popularity. The basic diet claim is that only carbohydrates make a person fat, so strict limitations on the intake of carbohydrates of all types help you burn fat.

The diet involves eating foods that are high in total fat and saturated fat. Such foods include meats, poultry, seafood, eggs, high fat dairy products such as cheese, butter, cream, oils, nuts and artificial sweeteners.

The diet allows only extremely limited amounts of fruits and vegetables, grains, beans, breads and sugar of any type.

Recently, the Atkins Diet has been getting more attention because it is being studied for the validation of its claims. Like many diets, the Atkins Diet is claimed to improve overall health, including heart health. However, a large body of evidence shows that diets such as the Atkins Diet that are high in animal foods and saturated fat raise blood cholesterol and increase atherosclerosis (heart disease).

Questions

1. In what field of the health profession was Robert Atkins qualified?
2. What is the basic claim of the diet?
3. Compare the foods eaten most and least on the Atkins diet with the Australian Guide to Healthy Eating on page 176. Describe the differences.
4. What is the evidence that contradicts the claims of the Atkins diet?

Home Study Unit 3

1 Match these definitions with **list** words . . .

a a writer or author _____

b money or gift given to someone by a criminal if they do something illegal or dishonest _____

c to tell about someone or something _____

d to make payment for club membership or regular magazine _____

e to order for use as a treatment _____

f a group of people with a chief as leader _____

2 a Are you likely to be happy or sad if you are in strife? _____

b Where would you most likely find a fife, in a kitchen, in a band or on a ship? _____

3 What am I?   Clue: A   N L Y R O V   X I L X L W R O V

_____
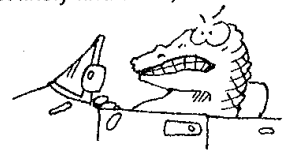
5 Which **list** words . . . ?
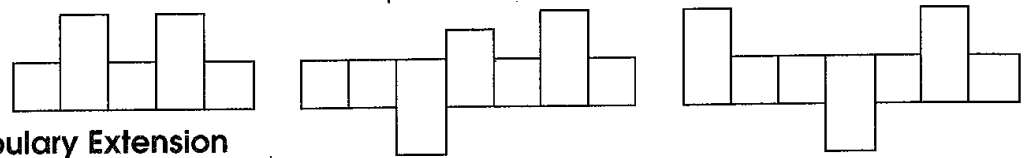
Vocabulary Extension

1 Some words ending with –ise can also be spelt –ize.

Complete the following words using both endings. Which ending do you prefer?

recogn _____   _____   real _____   _____

fertil _____   _____   apolog _____   _____

organ _____   _____   author _____   _____

econom _____   _____   hypnot _____   _____

harmon _____   _____

2 wile and stile (Be careful not to confuse these words with while and style)

'wile' means trickiness or cunning

The clever fox used all of his _____ to outsmart the hounds.

'stile' means a step (or steps) for climbing over a wall or fence.

When we reached the north side of the paddock we were lucky enough to find a _____ to cross into the orchard.

General Knowledge

1 Bile is a bitter, yellowish liquid which is produced by the body to help digest food. In which organ is it found? _____

2 The longest river in the world is _____.

3 A fife has been used in military bands since the time of the Crusades. Which instrument does it usually accompany? _____

4 What am I? I am a brightly coloured bird found in northern Australia and New Guinea. I feature on the flag of Papua New Guinea. _____

5 Which of the following tribes were not tribes of Native Americans? (circle)

Sioux   Iroquois   Zulu   Crow   Masai   Navajo   Pygmy   Pitjantjatjara   Mohican   Apache

Colour in the answers to the

4x and 7x

tables in different colours
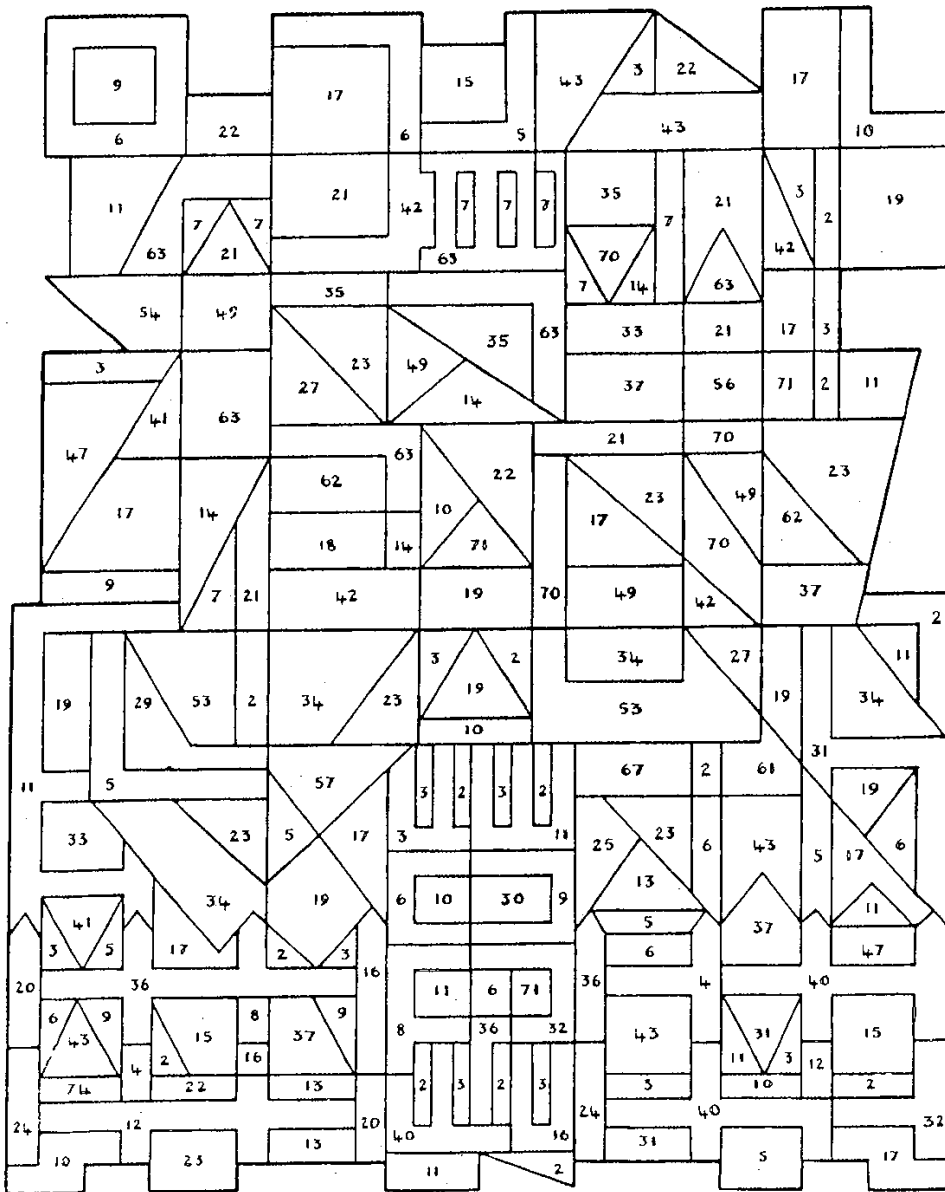
Assignment 6: The Oldest Living Thing

In 1938 a trawler fishing off the coast of southern Africa netted a large and unusual fish. Nearly two metres long, it had large powerful jaws and heavy armoured scales. Its fins were limblike, apparently used to crawl around on the sea bottom, and its backbone continued well into the tail. It was eventually identified as a *coelacanth*, thought to be extinct for about 70 million years. Unfortunately, by the time it was identified it had decomposed badly. Rewards were offered and in 1952 a second specimen was caught in deep water off the Comoro Islands. Several more have since been captured in the same area.

Coelacanths were abundant as fossils in rocks 400 million years old. They are important as apparent links between fish and land animals. Their fins are like those used by the first fish to drag themselves out of the water onto the land in pursuit of insects which had colonized land earlier.
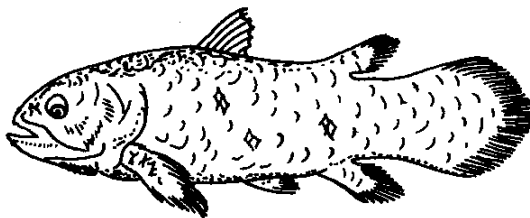
Coelacanth, a living fossil — thought to be extinct for 70 million years

Monoplacophorans

Also, in 1952, in water some 3570 metres deep off Costa Rica, oceanographers dredged several primitive snails called *Monoplacophorans*. They had been thought extinct for 400 million years. These still have the segmented body structure of their worm ancestors. Since then others have been found at depths of about 5800 metres off the coast of Central and South America.
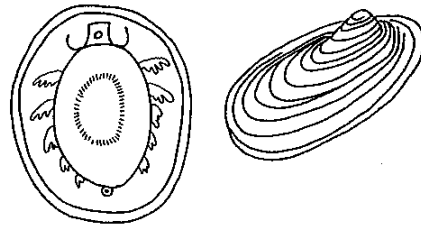
A monoplacophoran — thought to be extinct for 400 million years

Extinct animals

Is it possible that more such 'extinct' animals exist? Is the Loch Ness Monster really a plesiosaur? Automatic photographs taken by the Academy of Applied Science in 1975 leave little doubt. Fishermen have more than once come back with tales of sea monsters or even tales of badly decomposing carcasses in their nets. Is the yeti or yowie a rare near-human ape? Do dinosaurs still roam remote African or Amazon jungles? (See *On the Track of Unknown Animals*, B. Heuvelman, Paladin.)

16

Ancient life forms

Surprisingly, there are many very ancient animals with us today. Crocodiles, almost indistinguishable from those of today, existed 180 million years ago. The tuatara, from a few remote islands off New Zealand, belongs to a group of reptiles common even before the dinosaurs some 300 million years ago. Sharks have existed little changed from 450 million years ago.
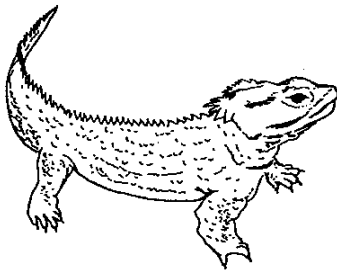
The tuatara — a very ancient reptile

Cockroaches and dragonflies of today are virtually unchanged from those of 300 million years ago — except that they were much larger then. Blue-green algae have been found in fossil cherts (very fine-grained sedimentary rocks) 2000 million years old. Why, then, did they not evolve? It appears that they are perfectly adapted to their ecological niche.

Lifespan of animals and plants

But how old do living things actually grow? W.S. Spector, 1956, in his handbook of *Biological Data*, recorded these figures for animals in captivity. Of course, in captivity an animal may reach an old age with no predator to eat it. Only in captivity, however, can we usually be sure of an animal's true age, *if*, of course, the birth-date of the animal is known and accurately recorded.

ANIMAL	MAXIMUM AGE
Mouse	3
Cat	21
Goose	31
Dog	34
Horse	62
Elephant	57
Macaw (parrot)	63
Box turtle	123
Giant tortoise	177

Table 3.1

Human lifespans

But this is equally true of people. The accepted human record holder was Pierre Jouyert who died at the age of 113 years and 124 days in 1814. Christian Jacksen Drakenberg is reputed to have died in 1772 at an age of 145 years and 325 days. Even older was Henry Jenkins who supposedly died in 1670 at 169 years of age but this is regarded as mostly legend. Of course, Methuselah of the Bible Old Testament was credited with 969 years! Human longevity varies from country to country and has increased over the centuries. Neanderthal man is known to have
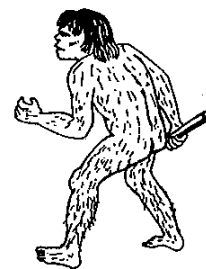
Neanderthal man had a lifespan of 18 years

ANIMAL	TYPICAL AGE
Rabbit	12
Sheep	10–15
Cat	13–17
Chicken	13–14
Dog	14–18
Lion	25
Horse	30
Hippopotamus	40
Pelican	45
Ostrich	50
Alligator	55
Dolphin	65
Crow	69
Rhinoceros	70
Man	68
Woman	76
Sulphur-crested cockatoo	75

Table 3.2

had an average lifespan of only 18 years. Even in sixteenth–century England men lived an average of only 30 years and by 1900 life expectancy had increased to only 46. In India today it is 41, in England and the US 72 and in Sweden and Japan 75.

The oldest
Plants grow to be far older than animals — some say their lifespan is indefinite. The Giant Redwoods of California grow to an average of 1500 years, but some are believed to be 4000 years old. The oldest of all trees are the bristlecone pines of Nevada, some of which are 4900 years old. With trees it is not very difficult to ascertain age — we count the annual growth rings.

Bristlecone Pines are known to live up to 4900 years

Questions
Answer in sentences.
1. What is a *coelacanth*? Why is it an important animal?
2. What are *Monoplacaphorans*? Why are they important animals?
3. Name five other creatures that have existed barely changed from long ago. For each, state when they first appeared.
4. Suggest why the life expectancy of people has become so much longer.
5. Suggest two problems associated with determining how old animals grow.
6. Why is it easier to determine the age of trees than of animals?
7. What is the oldest living thing on earth today — are there two possible answers?

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Up and down

C

Sometimes an addition or subtraction sign appears next to a negative sign.

1.

I owe Sarah some money. My debt is $4, so I have ⁻4. I want to take away this debt, so I give Sarah her money back.

My debt **take away** my debt
⁻4 – ⁻4 = ⁻4 + 4 = 0

Answer these questions. Rewrite them to help you.

(a) 5 – ⁻4 = $\boxed{9}$ **(b)** ⁻7 – ⁻8 = $\boxed{}$ **(c)** 2 – ⁻5 = $\boxed{}$ **(d)** ⁻9 – ⁻5 = $\boxed{}$

5 + 4 = 9

(e) 6 – ⁻3 = $\boxed{}$ **(f)** ⁻5 – ⁻6 = $\boxed{}$ **(g)** 4 – ⁻7 = $\boxed{}$ **(h)** ⁻6 – ⁻6 = $\boxed{}$

(i) ⁻10 – ⁻8 = $\boxed{}$ **(j)** 13 – ⁻8 = $\boxed{}$ **(k)** ⁻18 – ⁻11 = $\boxed{}$ **(l)** ⁻21 – ⁻16 = $\boxed{}$

2.

I have a debt of $10, so my balance is ⁻10. I add another $3 of debt to this.

My debt **plus** more debt
⁻10 + ⁻3 = ⁻10 – 3 = ⁻13

Answer these questions. Rewrite them to help you.

(a) 5 + ⁻4 = $\boxed{1}$ **(b)** ⁻7 + ⁻2 = $\boxed{}$ **(c)** 4 + ⁻6 = $\boxed{}$ **(d)** ⁻3 + ⁻4 = $\boxed{}$

5 – 4 = 1

(e) 8 + ⁻3 = $\boxed{}$ **(f)** ⁻4 + ⁻6 = $\boxed{}$ **(g)** ⁻3 + ⁻7 = $\boxed{}$ **(h)** ⁻6 + ⁻6 = $\boxed{}$

(i) 10 + ⁻8 = $\boxed{}$ **(j)** ⁻9 + ⁻8 = $\boxed{}$ **(k)** ⁻12 + ⁻8 = $\boxed{}$ **(l)** 21 + ⁻27 = $\boxed{}$

NOW TRY THIS!

● Complete these magic squares so that each row, column and diagonal has the total shown.

Total 3
0	⁻1	
	1	
⁻2		

Total ⁻3
		2
3		
⁻4	0	

Total ⁻9
		0
1	⁻3	
		⁻2

Think of subtracting a negative as 'plus' and think of adding a negative as 'subtract'. The squares are 'magic' because each row, column and diagonal has the same total. In the first magic square, each row, column and diagonal has a total of 3.
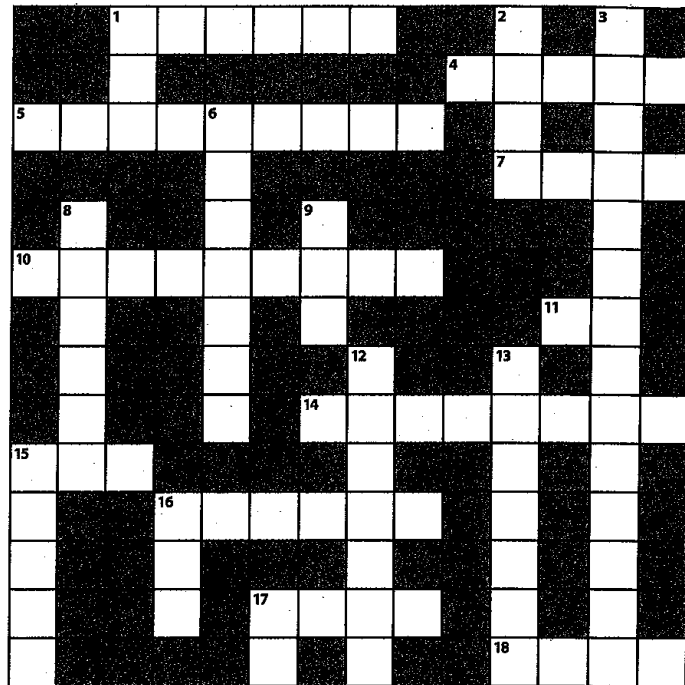
25

D C CROSSWORD

WORD LIST

- Dalton
- data
- dec
- decayed
- deciduous
- degree
- density
- di
- Di
- diabetes
- died
- diet
- digestion
- digestive tract
- digit
- din
- dioxin
- disc
- disease
- DNA
- Down's
- dry

ACROSS

1 Important chemist who studied how atoms join to form compounds. (6)

4 Term referring to an individual finger or toe. (5)

5 Type of tree which loses its leaves during autumn and winter. (9)

7 This is determined by the amount and type of food we eat. (4)

10 Process which occurs in the digestive tract to break down the food we eat into molecules our body can absorb. (9)

11 Symbol for the element Didymium. (2)

14 Disease which is due to lack of insulin in the blood. (8)

15 Deoxyribonucleic acid (initials). (3)

16 $\frac{1}{360}$th of a circle is one _ _ _ _ _ _ . (6)

17 Small circular piece of plastic-coated metal used for storing computer or other forms of digital information. (4)

18 Information technology uses this term for information. (4)

DOWN

1 Prefix for 10. (3)

2 When people ran out of food they _ _ _ _ of starvation. (4)

3 System in the body in which digestion takes place. (9, 5)

6 Property of substance which is related to and described by mass per unit volume. (7)

8 Very strong and dangerous poison which can be found in pesticides. (6)

9 Round multi-pin plug that connects electrical components; also a loud noise. (3)

12 Problem with body function which may be caused by a micro-organism such as a virus, genetic variation or diet. (7)

13 After death, the bodies of plants and animals are _ _ _ _ _ _ _ by decomposers. (7)

15 A genetic variation causes this syndrome to appear in children. (5)

16 Lack of water in our bodies or the environment causes us/it to become _ _ _ . (3)

17 This means 2. (2)

Classroom Unit 4 -obe -ode -ote
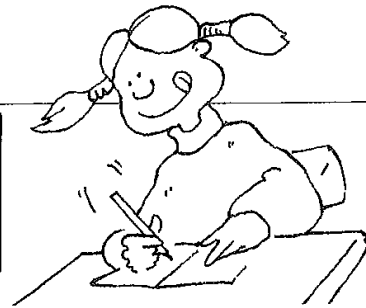
The List
probe	globe	lobe	wardrobe	
mode	erode	abode	episode	explode
tote	quote	wrote	denote	promote

1 Write the dictionary definitions of the following **list** words . . .

tote _____

probe _____

lobe _____

abode _____

mode _____

denote _____

2 Use the following words as **verbs** (things we do) in sentences.

For example: wrote — The children wrote to their pen pals.

a tote _____

b probe _____

c quote _____

3 Write all of the **list** words which contain a smaller word meaning to steal from someone.

_____

4 Use a **list** word to complete these sentences . . .

a We asked the radio personality to _____ our fund-raising event on his program.

b Captain Kidd, the pirate, was known to _____ a cutlass and a pistol.

c All of the children's clothing had been stored away neatly in their _____.

d It takes many long years for the wind to _____ rocks into strange formations.

e A yellow flag raised on a ship's mast may _____ that there is a serious illness aboard.

5 Which **list** words mean . . . ?

a one in a series _____   b a sphere _____   c blow up _____

Word Building

1 Add the **suffix** –sion to the following **list** and **champs'** words:

erode _____   explode _____   corrode _____

(Rule: Drop the ___ before adding –sion)

2 To make the following words **past tense**, just add 'd'.

probe _____   explode _____   erode _____

3 Add the **suffix** shown to the following **list** or **champs'** words . . .

quote + ation = _____   promote + ion = _____

globe + al = _____   anecdote + al = _____
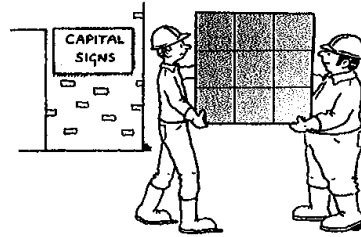
(Note: Did you drop the 'e' first?)

For Champs   microbe   corrode   anecdote

Fraction distraction

C A company makes capital letters for signs. Each letter is cut from a square metal sheet like the one on the right.

CAPITAL SIGNS

1. What fraction of a whole sheet is used for each of these letters?

(a) ▨ _____ (b) ▨ _____ (c) ▨ _____ (d) ▨ _____

(e) ▨ _____ (f) ▨ _____ (g) ▨ _____ (h) ▨ _____

2. Shade other capital letters on the templates below. Write what fraction of the whole sheet is used for each letter.

(a) [grid] _____   (b) [grid] _____   (c) [grid] _____

(d) [grid] _____   (e) [grid] _____   (f) [grid] _____

(g) [grid] _____   (h) [grid] _____   (i) [grid] _____

NOW TRY THIS!

• If there are 24 sweets in a bag, what fraction (in its simplest form) of the sweets is:

(a) 12 sweets? _____   (b) 6 sweets? _____   (c) 7 sweets? _____

(d) 8 sweets? _____   (e) 3 sweets? _____   (f) 14 sweets? _____

(g) 16 sweets? _____   (h) 9 sweets? _____   (i) 23 sweets? _____

Write all the fractions in their simplest form. To give a smaller number as a fraction of a larger one, remember that the larger number will be the denominator (bottom number) and the smaller number will be the numerator (top number). Then cancel the fraction to its simplest form (divide the numerator and the denominator by the same number, if you can).

Developing Numeracy
Numbers and the Number System
Book 1
Blake Education 2005

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FIRST AID

Find the word or phrase from Column B that best matches the word in Column A

Column A	Column B
1. ___ EAR	1. Often used to support arm, shoulder and collarbone injuries.
2. ___ CPR	2. An acronym used to assess sporting injuries.
3. ___ SHOCK	3. Signs and symptoms of this condition include muscle spasms, rigid body and loss of consciousness.
4. ___ ASTHMA	4. Dangerously high body temperature.
5. ___ EPILEPSY	5. Are classified as first, second and third degree.
6. ___ HYPOTHERMIA	6. Signs and symptoms of this condition include difficulty with breathing, wheezing and coughing.
7. ___ HYPERTHERMIA	7. An acronym used to treat soft tissue injuries.
8. ___ SPINE	8. A recurring injury.
9. ___ VENTILATE	9. A type of injury that results from training on hard surfaces or poor technique.
10. ___ TOTAPS	10. Occurs when a joint separates.
11. ___ CONCUSSION	11. The process of putting air into the lungs.
12. ___ DISLOCATION	12. Dangerously low body temperature.
13. ___ CHRONIC	13. Signs and symptoms of this condition include vomiting, headache and strange smelling breath.
14. ___ POISON	14. Injury to this body part may result in loss of limb movement.
15. ___ BURNS	15. Should be performed by a first aider if a person has stopped breathing and has no pulse.
16. ___ OVERUSE	16. May result from a blow to the skull.
17. ___ SOFT	17. Should be performed by a first aider if a person has stopped breathing, but has a pulse.
18. ___ HARD	18. A type of tissue injury. Examples include bones and teeth.
19. ___ SLINGS	19. Signs and symptoms of this condition include pale, cold, clammy skin and a weak rapid pulse.
20. ___ RICER	20. A type of tissue injury. Examples include skin, muscles, ligaments and tendons.

Are you positive?

C Palaeontologists have drawn a map to show exactly where they found some bones and fossils.

1. Label the *x*-axis and the *y*-axis of this grid with the **integers** from ⁻8 to 8.
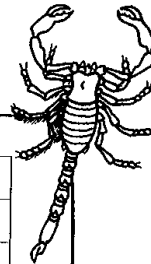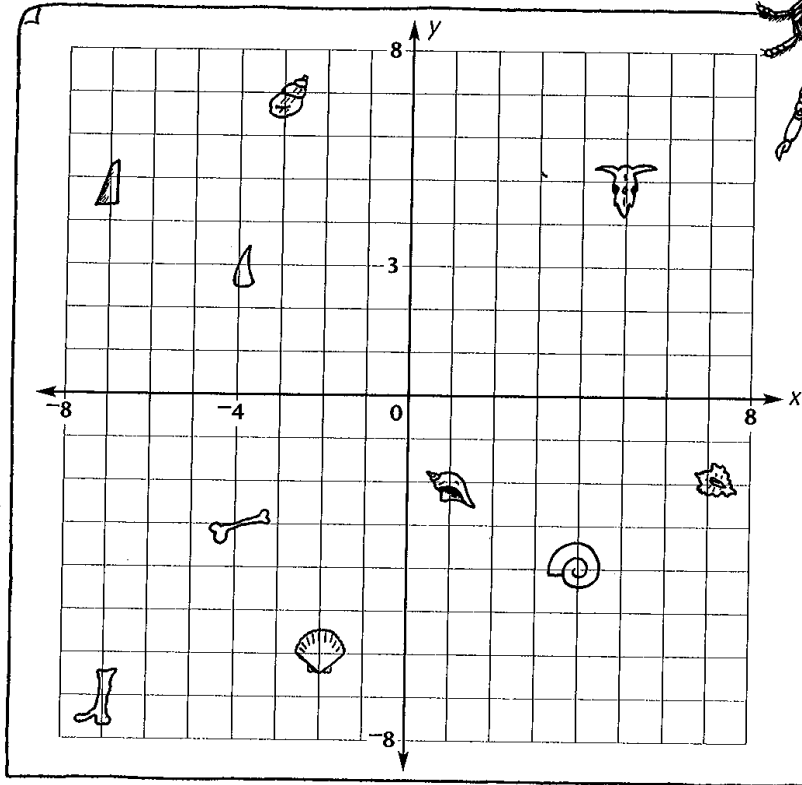
2. A shark's tooth was found at (⁻4,3).
Write the coordinates of these bones and fossils.

> Remember to write the x coordinate before the y coordinate.

(a) (__,__)   (b) (__,__)   (c) (__,__)

(d) (__,__)   (e) (__,__)   (f) (__,__)

(g) (__,__)   (h) (__,__)   (i) (__,__)

NOW TRY THIS!

● Arrange these cards to make 12 different negative integers. Use as many of the digit cards as you wish.

[⁻] [3] [3] [3] [4] [5]
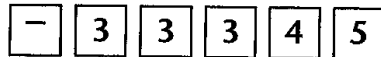
● Arrange the negative integers to make ten true statements using the > and < signs.

Example: ⁻33 > ⁻354
                ⁻354 < ⁻33

An **integer** is a whole number and can be positive, negative or zero, for example ⁻12, 6, 0, ⁻54, 16. Decimals and fractions are not integers as they are not whole numbers.

New drivers' drink ban

ALL learner and P-plate drivers will be banned from drinking any alcohol before getting behind the wheel in a major reform of drink-driving laws.

New rules enforcing a zero blood alcohol limit for learners and P-plate motorists of any age will be introduced by the end of the year.

The current alcohol limit is 0.02 for learners and P-platers and 0.05 for other drivers.

Also yesterday, the State Government moved to reject setting up 'wet rooms' where underage teenagers can binge drink with adult supervision, the most controversial recommendation to come out of last week's NSW alcohol summit.

The new zero tolerance laws are the biggest drink-driving reforms in more than a decade.

They come as the latest statistics reveal that drunk teenage motorists are responsible for 17 per cent of all fatal alcohol-related accidents — but only account for 6 per cent of all NSW drivers.

'A zero blood alcohol limit sends a zero tolerance message to young people,' Premier Bob Carr told Parliament yesterday.

'If you are planning to drive, you simply cannot drink. There's no confusion and no excuses. Anyone who drinks and drives is at greater risk of a crash, but young people are especially vulnerable because they are more willing to take risks.'

The new rules will apply to all learner drivers and those on both their red and green provisional licences regardless of their age ...

NRMA president Ross Turnbull said the move could see alcohol-related crashes involving young people reduced by 20 per cent a year.

The State Government will respond by the end of the year to 318 resolutions put forward by delegates at the alcohol summit.

But yesterday, Mr Carr formally rejected 'safe drinking rooms' where teenagers could binge drink while being supervised by adults.

'I offer this assurance to parents — the concept ... is dead,' he said.

Source: S. Sofios, 'New drivers' drink ban', *The Daily Telegraph*, 3 September 2003.

Question
1. The zero tolerance laws were introduced in 2004. What does 'zero tolerance' mean?
2. Identify the factors that contribute to the higher rates of injury to children and young people on the roads.
3. Do you think zero tolerance is a good strategy to reduce road fatalities among young people? Explain.
4. Identify other strategies that could reduce the risk to the health and safety of children and young people on the road.

*skill*BOOSTER ▶ *communicating*

Safety on the road

Create a PowerPoint presentation that promotes safe road use. You may wish to select one or two of the strategies identified in your answers to snapshot question 4 as the focus of your presentation. Show your presentation to the class and give each other feedback on the potential effectiveness of the presentations.

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Scientific Observation and Manuals

It is important for scientists to be able to record useful information in their laboratory manuals. This means noting details of procedures, results, thoughts at the time and visual observations. This simple exercise teaches basic steps required when working with a specimen.

Using the hand you do not write with as your specimen, draw a rough sketch of it in the box provided. Artistic talent is not required of a scientist, just sketch the basic shape of your hand.

Observe the hand and record 12 details below.

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

7 _____

8 _____

9 _____

10 _____

11 _____

12 _____
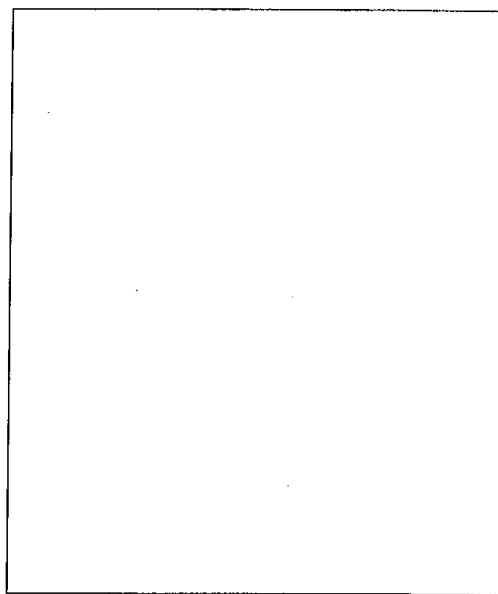
13 How might this data be used with similar data from the rest of the class to draw up a table?

_____

_____

14 Suggest a hypothesis. Discuss the data required to test your hypothesis, then design a table from which to draw information for it.

_____

_____

_____

Add the required data from individual observations together to form a class list. Use the class data to support or disprove your hypothesis.

15 How can you improve the validity of your results? (This means how can you make them more accurate and convincing?)

_____

_____

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E E F E G C A D J A C E N T L A N O I T A T O R Y
L U U S O S N G N O G A C E D A M U I Z E P A R T
L I L G F T N I O P D I M J R O T C A R T O R P L
I P P E N T A G O N J W L A N O G A I D E C T F X
P H D A T C E S I B H O E T I K P R E L U R K V S
S S U E N I L Q X E T R E V D E D U L C N I A U W
E N E L A C S I S O S C E L E S I W N O G Y L O P
X T H G I R K Z L A V R E T N I C V N O G A N O N
A X E S I N O G A C E D O D G E O M E T R I C A L
W C R A N O S I X A G H E P T A G O N E S U T B O
M E L W D N O M A I D O Q S A E T I S O P P O D Y
S E T H R A L U G E R N O G A T C O S U B M O H R
E Q U I L A T E R A L R E S Q U A R E N A L P V T
E A N V O H A R A L U C I D N E P R E P E N P L E
Y G O E Q U A L E Y F I S S A L C S I D E I J Y M
G X G A Y U X L E L G N A T C E R G E T U C A I M
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V X X G U R H K M A R G O L E L L A R A P O N B S
R H E X I T Y C O M P A S S E S R Q W S T N I O P
U M H C L O F W D E L G N A V L J Q E R U G I F A
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Find these words in the puzzle above. They are across, up and down, and diagonal, and can be
backwards as well as forwards.

ACUTE	DIAMOND	LINE	RECTANGLE
ADJACENT	DODECAGON	MIDPOINT	REGULAR
ANGLED	ELLIPSE	NONAGON	RHOMBUS
ARC	EQUAL	OBTUSE	RIGHT
AXES	EQUILATERAL	OCTAGON	ROTATIONAL
AXIS	FIGURE	OPPOSITE	RULER
BISECT	GEOMETRICAL	PARALLELOGRAM	SCALENE
CIRCLE	HEPTAGON	PENTAGON	SET
CLASSIFY	HEXAGON	PERPENDICULAR	SIDE
COMPASSES	INCLUDED	PLANE	SQUARE
CONSTRUCT	INTERVAL	POINTS	SYMMETRY
DECAGON	ISOSCELES	POLYGON	TRAPEZIUM
DIAGONAL	KITE	PROTRACTOR	VERTEX