

Name _____

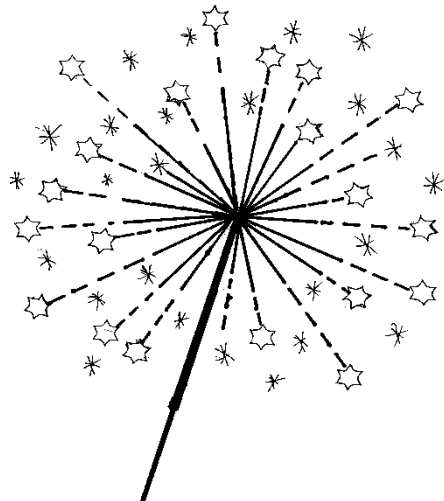
Science Sparkler

SUSTAINABILITY

PART A

This resource unit contains:

- Feeding Roles
- The Biosphere
- The Hydrosphere
- Energy Resources
- Acids and Bases



ACTIVITY: FEEDING ROLES

NEW WORDS

Producer: An organism that makes its own food like a plant.

Herbivore: An organism that eats only plants like a sheep.

Consumer: An animal that eats other organisms for food.

Carnivore: An organism that eats only animals like a cat.

Omnivore: An animal that eats both plants and animals like a human.



Micro-organisms: Microscopic organisms like fungi and bacteria. They can also be called **microbes**.

1. Complete the following table using the clues to help you.

No.	Clue	Word
1	An animal that eats other organisms.	__ _ n s __ m __ r
2	Animals that eat both plants and animals.	__ m __ i __ o r __ __
3	An animal that eats only animals.	__ a r __ i __ o r __
4	Organisms that make their own food.	__ r __ d __ c __ r __
5	An animal that eats plants only.	__ e __ b i __ o __ e

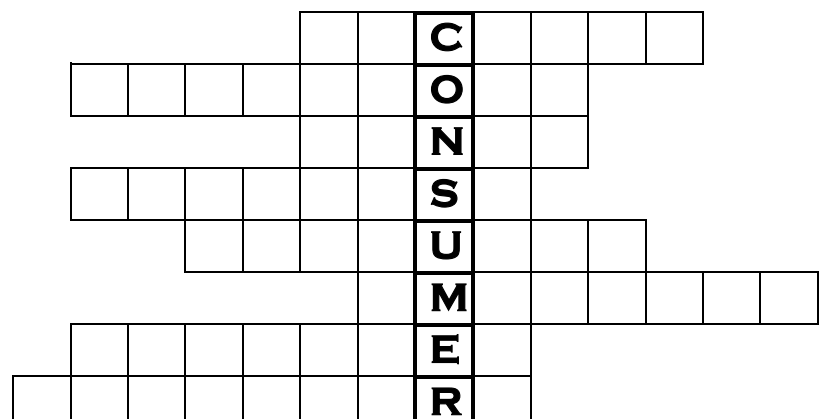
2. Put the vowels back in to work out the word. All words can be found on this page. The first one has been done for you.

Word without vowels	Word
r g n s m	organism
h r b v r	
b c t r	
m c r b	
c n s m r	
m n v r	



3. Complete the following acrostic puzzle.

1. A microscopic organism.
2. Organism that eats only plants.
3. Group of micro-organisms.
4. Name for a living thing.
5. Makes its own food.
6. Eats both plants and animals.
7. Must eat other organisms.
8. Eats other animals.



MORE WORDS

Decomposers: Organisms like fungi and bacteria that break down dead material.

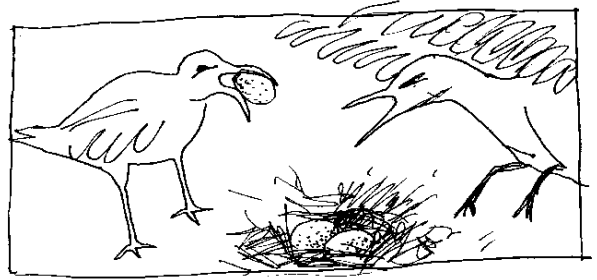
Predator: An animal that eats another animal species.

Parasite: An organism that feeds off living things like a flea.

Scavenger: An organism that eats dead animals, for example, a seagull.

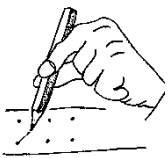
Saprophyte: A micro-organism that gets its nutrients from dead material.

Symbiosis: Two different organisms living happily off each other.



Biological control: Using an organism to reduce the numbers of a pest.

4. Match up the dots in list A with those in list B, with a line, to complete a word. Write the word in the box on the right. The first one is done for you



LIST A

P a r ● ●
 P r e ● ●
 S y m ● ●
 S c a ● ●
 D e c ● ●

LIST B

b i o s i s
 a s i t e
 o m p o s e r
 d a t o r
 v e n g e r

WORD
P a r a s i t e

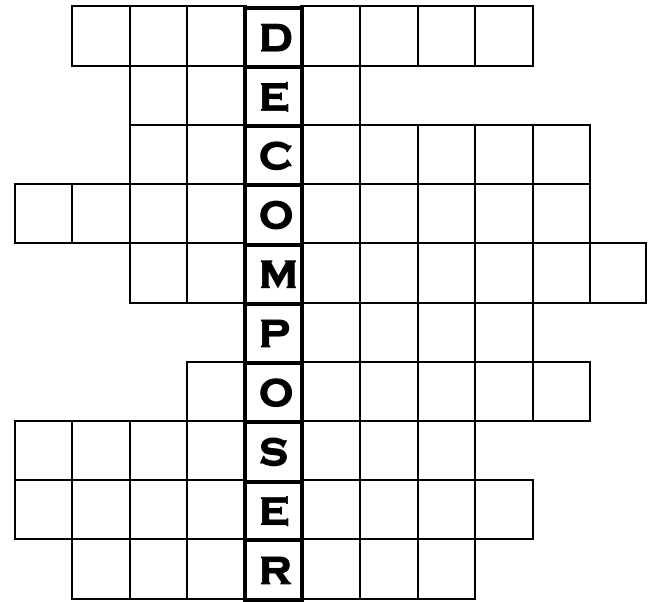
5. Complete the following table using the clues to help you.

No.	Clue	Word
1	An animal that eats another animal species.	___ e d ___ t ___ r
2	An animal that eats dead animals.	___ c a ___ e ___ g ___
3	An organism that feeds off living things.	___ a r ___ i ___
4	Breaks down dead material.	___ e ___ m ___ o ___ e ___
5	A microbe that gets its nutrients from dead material.	___ a ___ r ___ p ___ y ___ e ___
6	Another name for a micro-organism	___ i c ___ b ___



6. Complete the following acrostic puzzle.

1. An animal that eats another animal.
2. An example of a parasite on cats and dogs.
3. Decomposers.
4. Gets its nutrients from dead material.
5. Organisms happily living off each other.
6. This organism will always be a producer.
7. Biological ____ is used to get rid of pests.
8. Feeds off living things.
9. Eats dead animals.
10. Another term for a microorganism.



7. There are **12** words, from this activity, to find in the word find. There are no plurals or words within words. You are given the first letter of each word. Mark them off in the word find then list them below.

d	e	c	o	m	p	o	s	e	r	p
c	e	r	o	v	i	b	r	e	h	a
o	a	e	o	y	n	e	c	s	s	r
n	t	l	a	i	r	e	t	a	m	a
t	t	b	a	c	t	e	r	i	a	s
r	m	h	a	e	l	f	u	n	g	i
o	c	o	m	m	u	n	i	t	y	t
l	r	e	g	n	e	v	a	c	s	e



WORDS

- | | | |
|---------|---------|---------|
| p _____ | c _____ | f _____ |
| d _____ | c _____ | f _____ |
| s _____ | c _____ | m _____ |
| h _____ | b _____ | e _____ |

Arrange the **9** letters left over to form a word from this activity.

THE WORD IS _____

ACTIVITY: LIVING IN THE BIOSPHERE

WORDS

Biosphere: Part of the Earth and atmosphere where organisms live.

Habitat: Place where a species lives.

Species: A group of organisms that can reproduce with each other.

Niche: The place where an organism lives and 'makes a living'.

Organism: Something that is alive.



Biotic environment: Living parts of the environment.

Environment: Everything around an organism that affects its survival.

1. Complete the following table using the clues to help you.

No.	Clue	Word
1	The place where an organism lives.	__ _ b _ t a _ _
2	The living part of the environment.	__ _ o _ i _ _
3	A place where an organism makes a living and lives.	__ i _ h e
4	Things around an organism that affect its survival.	__ n _ i _ o _ m _ _ t
5	Organisms that can reproduce with each other.	s _ e _ i e _ _
6	Anything that is alive.	__ _ g _ _ i s _ _

MORE WORDS

Population: A group of organisms of the same species.

Community: Different species living in the same area.

Adaptation: A features of a species that allows it to survive in its chosen habitat.

Role: The way an organism gets its food.



Ecology: The study of the interaction between organisms and the environment.

Ecosystem: The interaction of communities and the environment.

Behavioural adaptations: These are the actions that help organisms to survive.

Structural adaptations: These are physical changes to organisms that help them to survive.

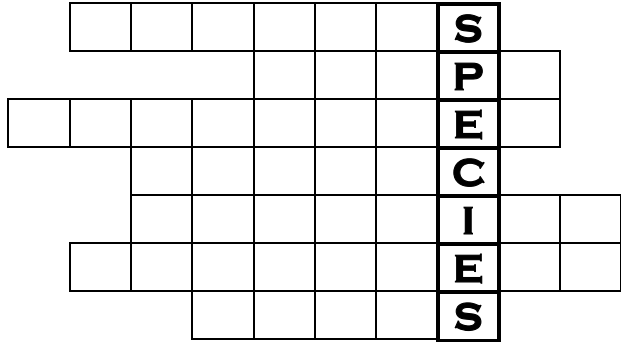
2. Complete the following table using the clues to help you.

No.	Clue	Word
1	A group of organisms of the same species.	__ _ p _ l _ t i _ n
2	Study of living things in their environment.	__ c _ l _ g _ _

3	Different species living in the same area.	__ o __ m __ n i __ y
4	Allows a species to survive.	__ d __ p t __ t __ o __
5	Interaction of community and physical environment.	__ __ o __ y s __ __ m
6	Adaptation that involving physical changes	__ t r __ c __ u __ a __

3. Complete the following acrostic puzzle.

- Populations contain the same ____.
- Species need to ____ to survive.
- The community and the environment.
- Living part of the environment.
- A living thing.
- Part of the Earth where life exists.
- The ways organisms feed.



4. There are **13** words, from this activity, to find in the word find. There are no plurals or words within words. You are given the first letter of each word. Mark them off in the word find then list them below.

b	i	o	s	p	h	e	r	e	h
s	u	r	v	i	v	a	l	a	e
t	e	g	n	a	n	o	b	r	r
u	c	a	r	v	r	i	o	t	u
d	a	n	i	o	t	e	c	h	t
y	l	i	r	a	u	n	a	h	a
e	p	s	t	n	e	p	m	t	e
c	o	m	m	u	n	i	t	y	f



WORDS

- | | | |
|---------|---------|---------|
| a _____ | h _____ | f _____ |
| s _____ | n _____ | r _____ |
| b _____ | g _____ | e _____ |
| o _____ | s _____ | p _____ |
| c _____ | | |

Arrange the **11** letters left over to form a word from this activity.

THE WORD IS _____

ACTIVITY: LINKING FEEDING ROLES

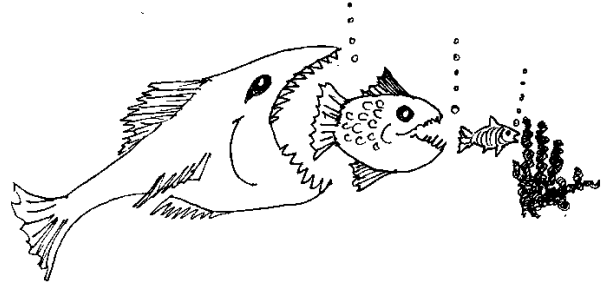
WORDS

Food chain: Shows 'who-eats-whom' and begins with a plant. It shows how nutrients and energy are passed from creature to creature.

Resource: Anything that is needed for an organism's survival.

Graze: When an animal only eats parts of a plant.

Food web: All feeding connections in a community.



Competition: Two different species fighting for the same resources.

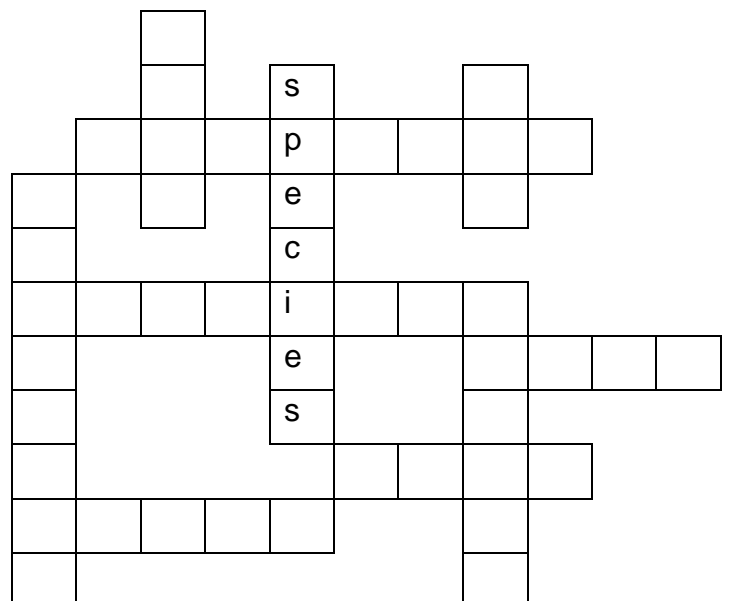
Trophic level: Feeding levels in a food web. Plants are the first level.

1. Complete the following table using the clues to help you.

No.	Clue	Word
1	Needed for an organism's survival.	__ _ s o _ _ r _ _ e
2	Shows 'who eats whom'.	__ o _ _ d _ _ h a _ _ n
3	Shows all feeding connections in a community.	__ o _ _ d _ _ e _ _
4	When 2 animals compete for the same food.	__ o _ _ p e _ _ i _ _ i o _ _
5	When an animal eats only part of a plant.	__ _ _ a _ _ e
6	A feeding level.	__ r _ _ p h _ _ c

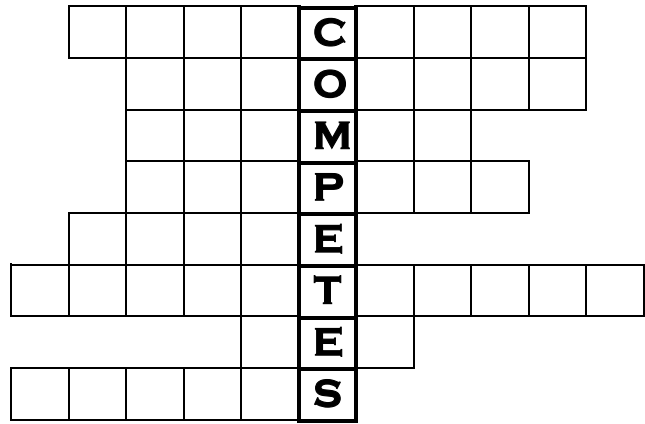
2. The first column of the table contains a list of jumbled words (anagrams). The words have to do with this activity and you are given the first letter of each word. Unravel them then put them into the crossword grid. The first one has been done for you.

Jumbled word	word
spicees	species
curesore	r
bew	w
defe	f
doof	f
achin	c
urvvials	s
meetcops	c
evells	l
seat	e



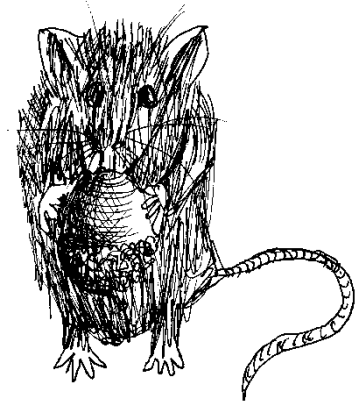
3. Complete the following acrostic puzzle.

1. Shows 'who eats whom'.
2. Something needed for survival.
3. Organism that grazes.
4. Feeding level in a food web.
5. Eating part of a plant is to _____.
6. Competing for the same resource.
7. Feed connections in a community.
8. Always in a food chain.



4. There are **13** words, from this activity, to find in the word find. There are no plurals or words within words. You are given the first letter of each word. Mark them off in the word find then list them below.

c	o	m	m	u	n	i	t	y
o	h	f	e	e	d	r	n	l
m	t	a	e	z	o	s	a	a
p	o	e	i	p	a	e	l	m
e	w	c	h	n	s	r	p	i
t	t	i	w	e	b	i	g	n
e	c	r	u	o	s	e	r	a
p	l	a	v	i	v	r	u	s



WORDS

- | | | |
|---------|---------|---------|
| p _____ | c _____ | a _____ |
| c _____ | t _____ | e _____ |
| f _____ | r _____ | g _____ |
| t _____ | s _____ | w _____ |
| c _____ | | |

Arrange the **7** letters left over to form a word from this activity.



THE WORD IS _____

ACTIVITY: THE HYDROSPHERE

WORDS

Condensation: The process when water vapour cools and changes into liquid water.

Water cycle: Cycle of the Earth's water by evaporation, condensation then precipitation.

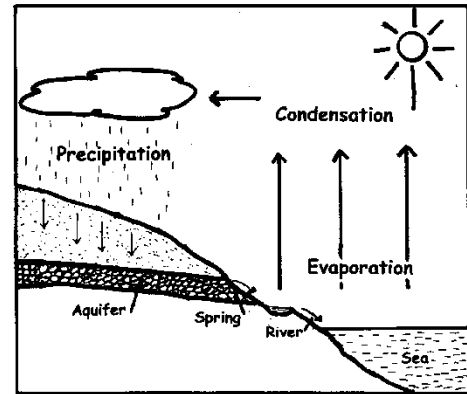
Precipitation: Moisture that falls from clouds in the form of rain, snow, sleet, or hail.

Hydrosphere: The part of the Earth that contains water.

Hard water: Water that contains dissolved calcium and magnesium carbonate.

Soft water: Water with few or no dissolved salts like calcium carbonate.

Dew: Condensation formed in the evening when the Earth cools quickly.



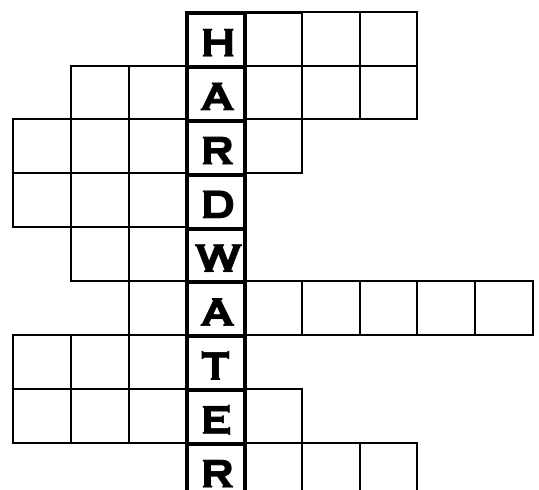
The water cycle.

1. Complete the following table using the clues to help you.

No.	Clue	Word
1	Water that contains few dissolved salts is ____.	__ o __ __
2	Part of the Earth that contains water.	__ y __ r __ s p __ e r __
3	Water vapour changing into rain.	__ __ n d __ __ s a __ i o __
4	Water falling from the clouds is ____.	__ r __ c __ __ i t __ t i __ n
5	Hard water contains calcium ____.	__ __ r __ o __ a __ e
6	Evaporate, condense, precipitate, is the water __	__ y __ l __

2. Complete the following acrostic puzzle.

1. A form of precipitation.
2. Changing from a liquid to a gas is ____ ation.
3. The _____ sphere is the part that contains water.
4. Water with lots of dissolved salts is ____.
5. Condensation occurring in a cool evening.
6. Hard water contains _____ carbonate.
7. Water with few dissolved salts is ____.
8. Substance that can exist as snow or hail.
9. Most common form of precipitation.



MORE WORDS

Aquifer: Rock that is permeable to water and lets it flow through.

Permeable: Able to pass through.

Impermeable: Not able to pass through.

Ground water: Water found under the ground.

Water table: Place below which the ground is saturated with water.

Saturated: There is no more room for any more water in the rock or soil.

Dehydrate: To dry out through excess water loss.

Salinity: Describes how salty the water is.



3. Complete the following table using the clues to help you.

No.	Clue	Word
1	Salinity describes how ___ the water is.	__ a __ t __
2	Not able to pass through.	__ m p __ r __ e a __ l e
3	Rock that is permeable to water.	__ __ u i __ e __
4	To dry out.	__ e __ y d __ __ t __
5	When no more water can be held by the soil.	__ __ t __ r a __ __ d
6	Able to pass through.	__ e __ m e __ __ l __

4. Match up the dots in list A with those in list B, with a line, to complete a word. Write the completed word in the box on the right.

LIST A

P e r ●
S a l ●
D e h ●
A q u ●
G r o ●
s a t ●

LIST B

● u r a t e d
● u n d
● i f e r
● m e a b l e
● y d r a t e
● i n i t y

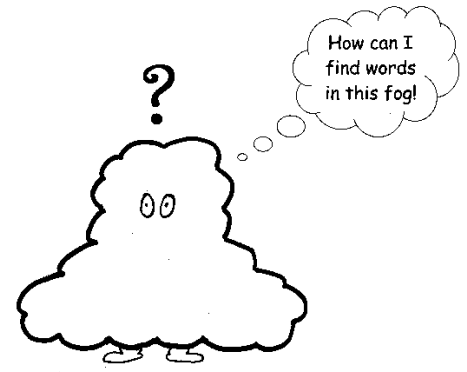


WORD



5. There are **16** words, from this activity, to find in the word find. There are no plurals or words within words and you are given the first letter of each word. Mark them off in the word find then list them below.

a	t	r	u	o	p	a	v	s	e	w
d	r	p	e	r	m	e	a	b	l	e
n	l	a	w	f	t	l	a	r	b	d
u	d	i	i	a	i	f	r	e	a	r
o	r	s	a	n	t	u	o	o	t	a
r	y	u	i	h	t	e	q	s	c	h
g	e	t	a	n	o	b	r	a	c	k
h	y	d	r	o	s	p	h	e	r	e



WORDS

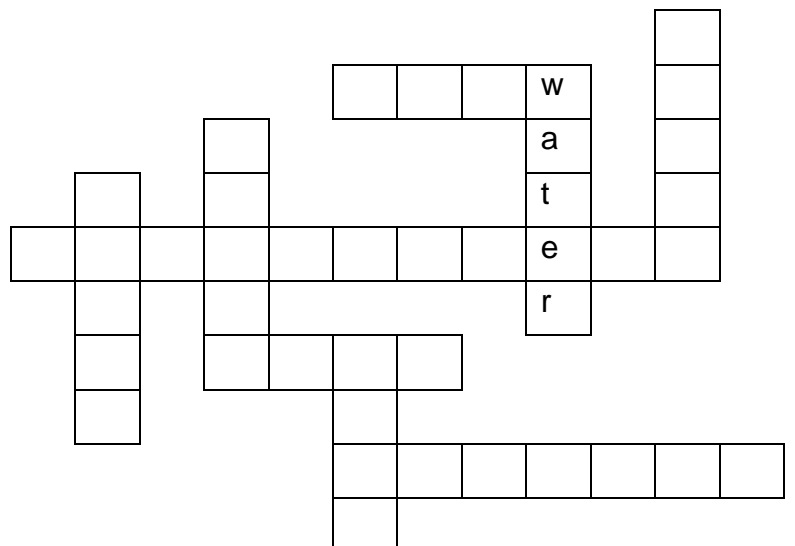
s _____	d _____	c _____
r _____	w _____	g _____
r _____	h _____	a _____
t _____	p _____	v _____
h _____	s _____	h _____
d _____		

Arrange the **8** letters left over to form a word from this activity.

_____ **THE WORD IS** _____

6. The first column of the table contains a list of jumbled words (anagrams). They are to do with this activity; and you are given their first letter. Unravel them then put them into the crossword grid. The first one has been done for you.

Jumbled word	Word
rweta	water
bleat	t
leccy	c
dryshophere	h
drah	h
cork	r
swon	s
ucclaim	c
heart	e



ACTIVITY: ENERGY RESOURCES

WORDS

Non-renewable resource: A resource where there is a fixed amount like fossil fuels.

Renewable resource: A resource where there is an endless supply like wind, tidal and light.

Energy resource: A source of useable power that can be used by society when needed.

Turbine: A machine turned by moving water, wind or steam.

Energy: It makes things happen.

Generator: A machine that makes electricity.

Solar: Uses light that comes from the sun to make electricity.



1. Complete the following table using the clues to help you.

No.	Clue	Word
1	Fossil fuels are a _____ resource.	__ o n - __ e __ __ w a __ l __
2	This is turned by moving water or wind.	__ __ r b __ __ e
3	Uses the sun's energy.	__ o __ a __
4	Used to make electricity.	__ __ s __ u __ c __

MORE WORDS

Hydro: Water is used to turn the turbines to generate electricity.

Nuclear: Radioactive substances break down producing heat which used to form steam.

Geothermal: Heated steam from under the ground that comes from areas like Taupo and Rotorua.

Fossil fuels: The remains of ancient buried plants and animals that turned into coal and oil.

Biomass: Crops and waste gases that can be burned to produce heat, then electricity.

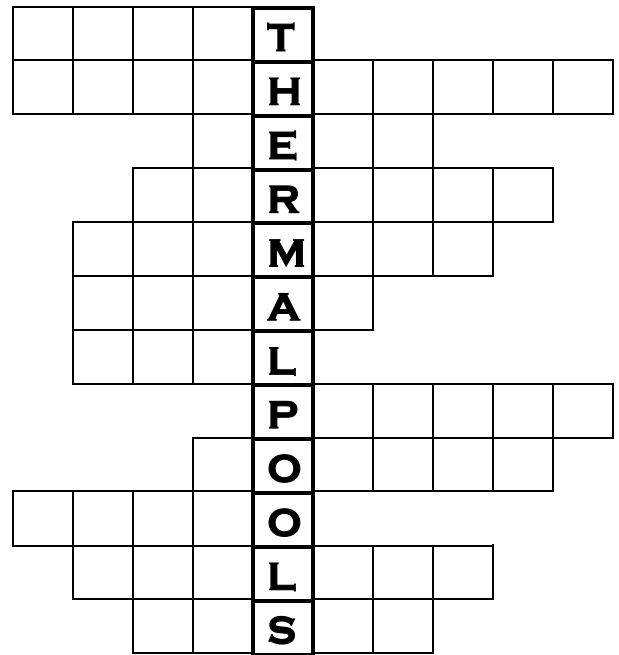


2. Complete the following table using the clues to help you.

No.	Clue	Word
1	Crops and waste gases producing electricity.	__ __ o __ a __ __
2	Uses heated steam from under the ground.	__ e __ t h __ __ m __ l
3	Fuel formed from ancient plants and animals.	__ o __ s i __
4	Uses radioactive substances.	__ __ c __ e __ r

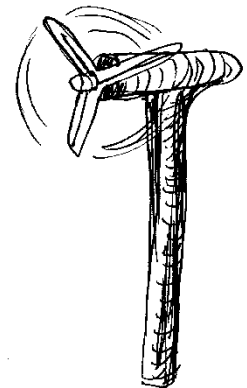
3. Complete the following acrostic puzzle.

1. A renewable energy resource.
2. Resource providing electricity in Taupo.
3. Energy coming from radioactive substances.
4. Generates electricity by spinning.
5. Living source of energy.
6. ___ power relies on the sun.
7. An example of a fossil fuel.
8. Fossil fuels were formed from these.
9. ___ fuel is a non-renewable resource.
10. Main source of making electricity in NZ.
11. Potential energy in radioactive substances.
12. ___ gases can be used to produce heat.



4. There are **13** words, from this activity, to find in the word find. There are no plurals or words within words. You are given the first letter of each word. Mark them off in the word find then list them below.

g	e	o	t	h	e	r	m	a	l
r	a	v	y	l	a	e	i	t	t
a	o	d	a	e	d	l	c	n	e
l	r	o	l	d	i	n	u	i	n
o	c	c	f	o	s	s	i	l	g
s	u	s	t	e	a	m	a	w	a
n	r	s	s	a	m	o	i	b	m
l	a	c	i	r	t	c	e	l	e



WORDS

- | | | |
|---------|---------|---------|
| g _____ | h _____ | w _____ |
| n _____ | b _____ | s _____ |
| f _____ | m _____ | s _____ |
| o _____ | e _____ | c _____ |
| s _____ | | |

Arrange the **11** letters left over to form a word from this activity.

THE WORD IS _____

ACTIVITY: ACIDS AND BASES

WORDS

Litmus: An indicator that tells us whether a solution is acidic or alkaline.

Acid: A substance that turns blue litmus a pink colour.

Base: A substance that reacts with an acid to form a salt and water, neutralising it.

Alkali: A base that dissolves in water and turns pink litmus paper a blue colour.



Organic acid: It contains carbon and hydrogen and is found in living things.

1. Complete the following table using the clues to help you.

No.	Clue	Word
1	An alkali is a soluble _____	_ a _ e
2	Acids turn litmus to this colour.	_ i _ _
3	An acid found in living things.	_ r g _ n _ c
4	Indicator paper that shows if an acid or base..	_ i t _ u _
5	Turns pink litmus paper blue.	_ l _ a _ i

MORE WORDS

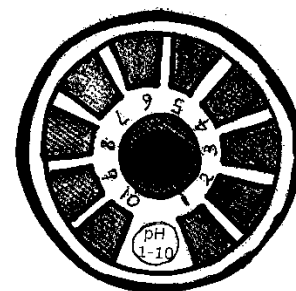
Universal Indicator solution: A mixture of dyes that changes colour to show the pH of a solution.

pH: A measure of how acid or alkaline a solution is.

Neutral: A solution that is neither acid nor alkaline and has a pH of 7

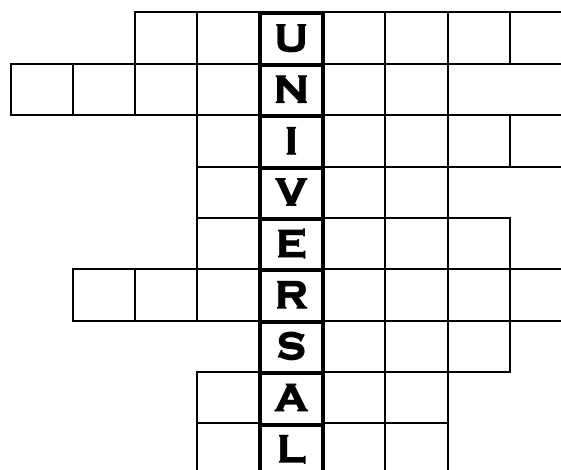
Alkali: It produces hydroxide ions (OH^-) in water. It has a pH above 7.

Acid: It produces hydrogen ions (H^+) in water and has a pH below 7.



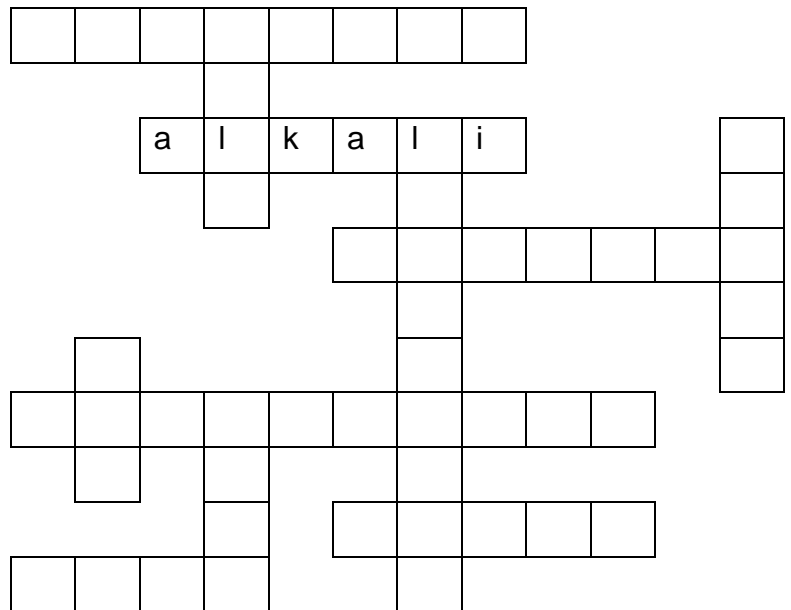
2. Complete the following acrostic puzzle using the clues to help you.

- A solution with a pH of seven is _____.
- Acids that contain C and H are _____.
- Indicator that tests for acids or bases.
- Bases have a pH _____ seven.
- Acids have a pH _____ seven.
- Acids produce _____ ions in solution.
- Acids reacting with bases form a _____.
- An alkali is a soluble _____.
- Bases turn litmus paper a _____ colour.



3. The first column of the table contains a list of jumbled words (anagrams). They are to do with this exercise, and you are given their first letter. Unravel them then put them into the crossword grid. The first one has been done for you.

Jumbled word	Word
kaalli	alkali
nomaima	a
abes	b
basecarton	c
ags	g
last	s
vissoled	d
kahlc	c
stets	t
imeetrawl	l
lube	b



4. There are **12** words, from this activity, to find in the word find. There are no plurals or words within words. You are given the first letter of each word. Mark them off in the word find then list them below.

u	n	i	v	e	r	s	a	l	n
a	e	l	b	u	l	o	s	a	e
b	l	s	a	n	r	t	u	r	g
a	n	k	e	g	r	c	m	t	o
s	d	v	a	o	o	t	t	u	r
e	e	n	n	l	n	o	i	e	d
s	i	g	r	i	i	i	l	n	y
c	e	d	i	x	o	r	d	y	h



WORDS

u _____ s _____ h _____
 a _____ s _____ o _____
 n _____ b _____ s _____
 h _____ l _____ i _____

Arrange the **10** letters left over to form a word from this activity.

THE WORD IS _____

ACTIVITY: PUTTING IT ALL TOGETHER

Complete the crossword below using the clues provided. The words at the bottom of the page may be of help.

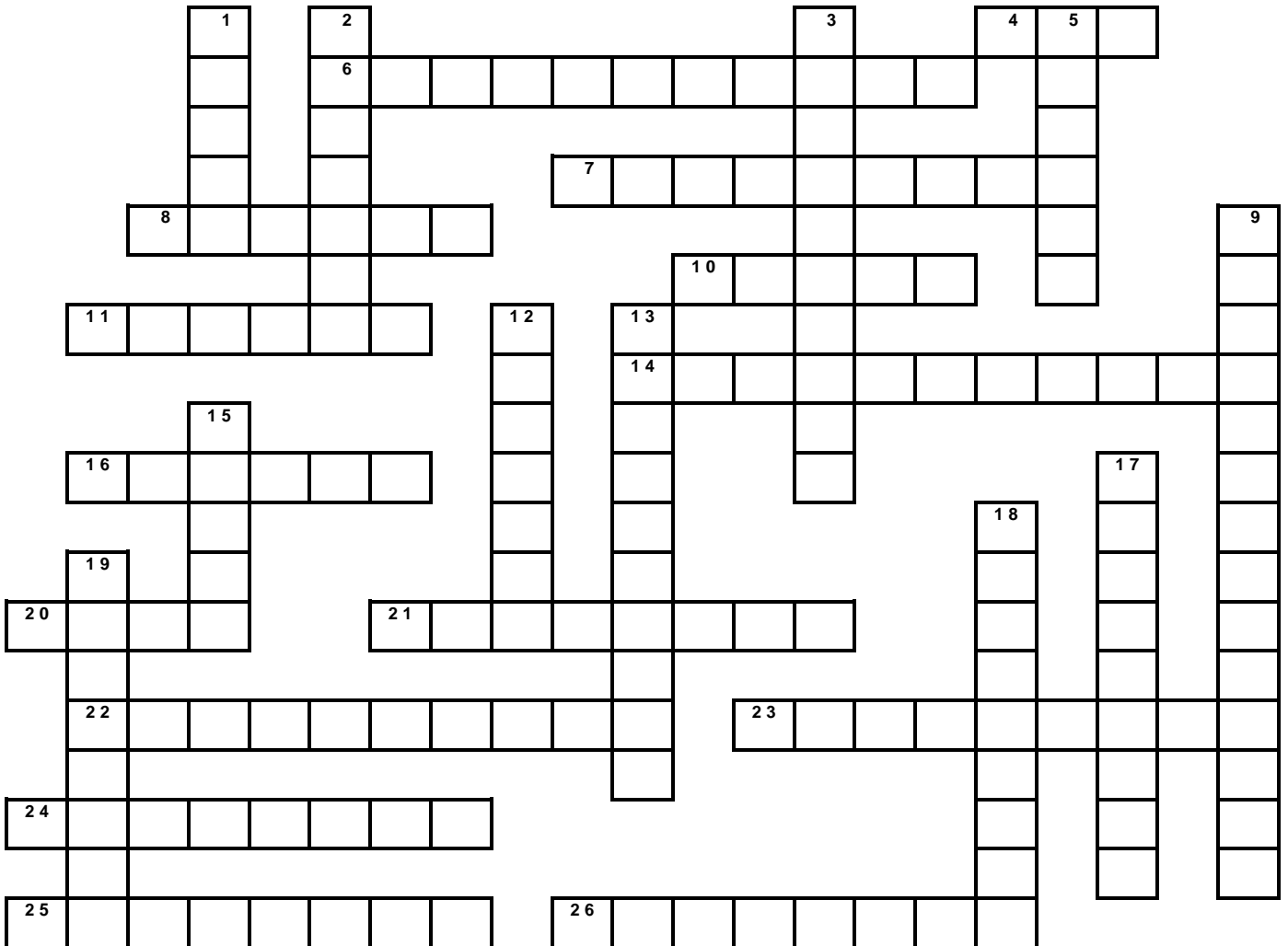
ACROSS

4. Feeding connections make a _____.
6. Features that allow survival.
7. Place where different species live.
8. Living parts of the environment.
10. To ___ is when part of a plant gets eaten.
11. Producers are _____.
14. Affects an organism's survival.
16. A carnivore is usually an _____.
20. Way an organism gets its food.
21. Bacteria and fungi are _____.
22. Get their nutrients from dead material.
23. Eats animals only.
24. Eats plants and animals.
25. Something that is living.

26. Feeds off living things.

DOWN

1. _____ are decomposers.
2. Place where a species lives.
3. A group of organisms of the same species.
5. Chemical that speeds up food breakdown.
9. Process that plants make food by.
12. Feeding level.
13. Breaks down dead material.
15. Place where an organism lives and 'works'.
17. Organisms live 'happily' together in ____.
18. Eats only animals.
19. They can't make their own food.



Omnivore	Symbiosis	Photosynthesis	Animal	Habitat	Parasite	Organism
Adaptations	Parasite	Environment	Niche	Graze	Trophic	Carnivore
Saprophyte	Microbes	Decomposer	Fungi	Role	Enzyme	Herbivore
Community	Consumer	Population	Plants	Web	Biotic	



