

2

Understanding Ecosystems

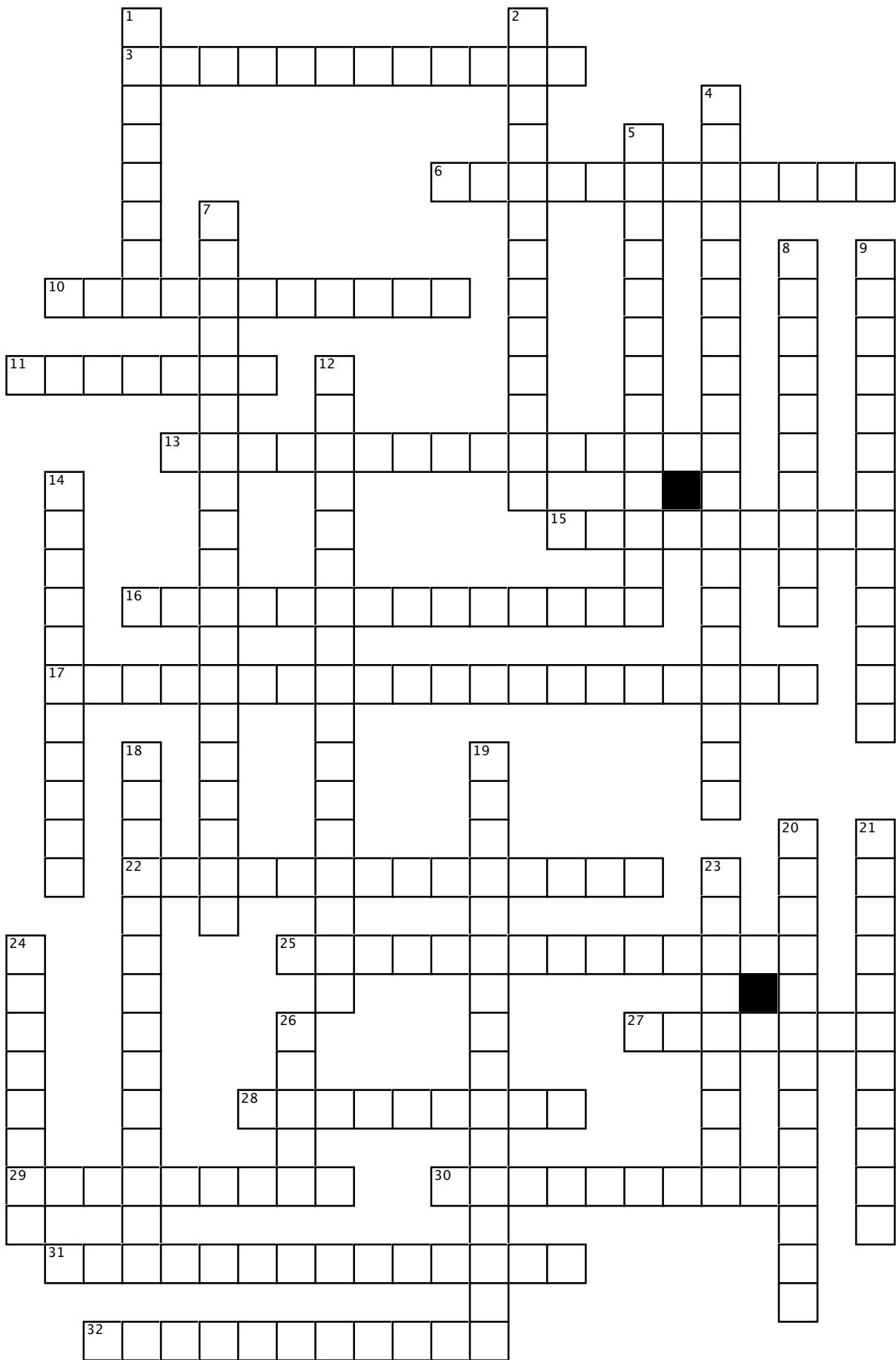
Use the clues to complete the crossword puzzle. Terms with multiple words are written without spaces.

ACROSS

3. a body of water that is low in nutrients
6. the level of an organism in an ecosystem depending on its feeding position along a food chain (two words)
10. the biogeochemical cycle in which carbon is cycles through the lithosphere, atmosphere, hydrosphere, and biosphere (two words)
11. a representation of the feeding relationships within a community (two words)
13. the function a species serves in its ecosystem, including what it eats, what eats it, and how it behaves (two words)
15. the zone around Earth where life can exist
16. the non-living physical and chemical components of an ecosystem (two words)
17. an ecosystem that is maintained through natural processes (two words)
22. the abiotic conditions within which a species can survive (two words)
25. any factor that restricts the size of a population (two words)
27. the mass of living organisms in a given area
28. a sequence of organisms, each feeding on the next, showing how energy is transferred from one organism to another (two words)
29. all the living organisms and their physical and chemical environment
30. the series of processes that cycle water through the environment (two words)
31. the ability to maintain an ecological balance
32. visible forms of radiant energy (two words)

DOWN

1. an organism that obtains its energy from consuming other organisms
2. the series of processes in which nitrogen compounds are moved through the biotic and abiotic environment (two words)
4. the process by which sugar and oxygen are converted into carbon dioxide and water, to provide energy for the cell (two words)
5. living things, their remains, and features, such as nests, associated with their activities (two words)
7. the movement of matter through the biotic and abiotic environment (two words)
8. the layer of gases surrounding Earth
9. energy that travels through empty space (two words)
12. a representation of energy, numbers, or biomass relationships in ecosystems (two words)
14. Earth's solid outer layer
18. the process in which the Sun's energy is converted into chemical energy
19. the maximum population size of a particular species that a given ecosystem can sustain (two words)
20. the form of energy transferred during heating or cooling (two words)
21. all of Earth's water in solid, liquid, and gas form
23. a body of water that is rich in nutrients
24. an organism that makes its own energy-rich food compounds using the Sun's energy
26. a large geographical region defined by climate (precipitation and temperature) with a specific set of biotic and abiotic factors



Natural Ecosystems and Stewardship

3

Use the clues to complete the crossword puzzle. Terms with multiple words are written without spaces.

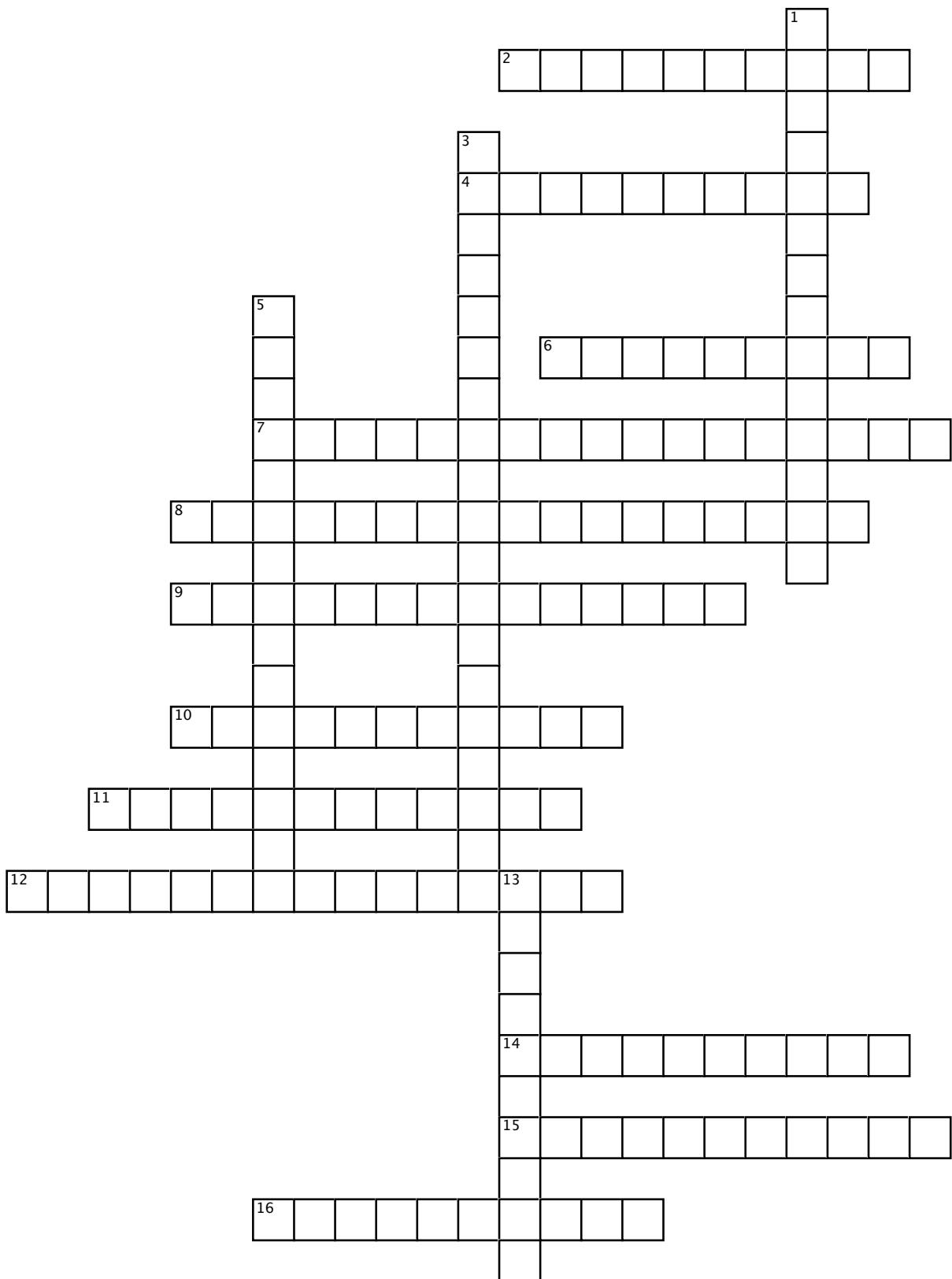
ACROSS

2. the gradual and usually predictable changes in the composition of a community and the abiotic conditions following a disturbance
4. a species that no longer exists in a specific area
6. harmful contaminants released into the environment
7. precipitation that has been made more acidic than usual by the combination of certain chemicals in the air with water vapour (two words)
8. succession on newly exposed ground, such as following a volcanic eruption (two words)
9. a species that may become threatened or endangered because of a combination of factors (two words)
10. taking responsibility for managing and protecting the environment
11. the variety of life in a particular ecosystem; also known as biological diversity

12. the number of species in an area (two words)
14. counteract the chemical properties of an acid
15. describes the state of an ecosystem with relatively constant conditions over a period of time
16. a species that is likely to become endangered if factors reducing its survival are not changed

DOWN

1. the use of micro-organisms to consume and break down environmental pollutants
3. succession in a partially disturbed ecosystem, such as following a forest fire (two words)
5. a non-native species whose intentional or accidental introduction negatively impacts the natural environment (two words)
13. a species facing imminent extirpation or extinction



4

Ecosystems by Design

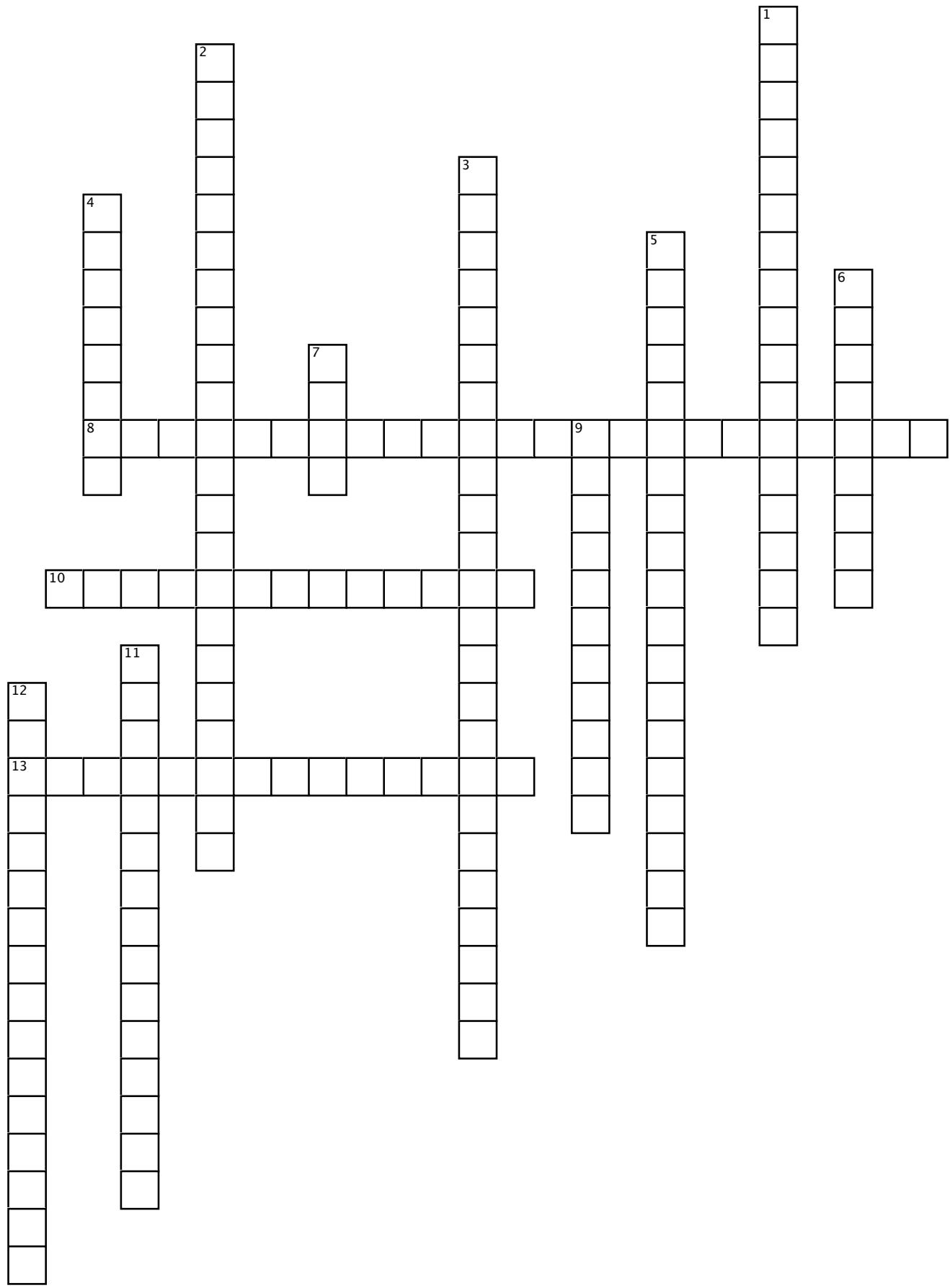
Use the clues to complete the crossword puzzle. Terms with multiple words are written without spaces.

ACROSS

8. a pesticide that is effective against only a few types of pest (three words)
10. an agricultural ecosystem
13. the system of agriculture that relies on non-synthetic pesticides and fertilizers (two words)

DOWN

1. plant nutrients that have been obtained from natural sources and have not been chemically altered by humans (two words)
2. a pesticide that is effective against many types of pest (three words)
3. a strategy to control pests that uses a combination of physical, chemical, and biological controls (three words)
4. the process by which nutrients are removed from the soil as water passes through it
5. fertilizers that are manufactured using chemical processes (two words)
6. a substance used to kill a pest
7. any plant, animal, or other organism that causes illness, harm, or annoyance to humans
9. the cultivation of a single crop in an area
11. the concentration of a substance, such as a pesticide, in the body of an organism
12. the increase in concentration of a substance, such as a pesticide, as it moves higher up the food web



Sustainable Ecosystems

B

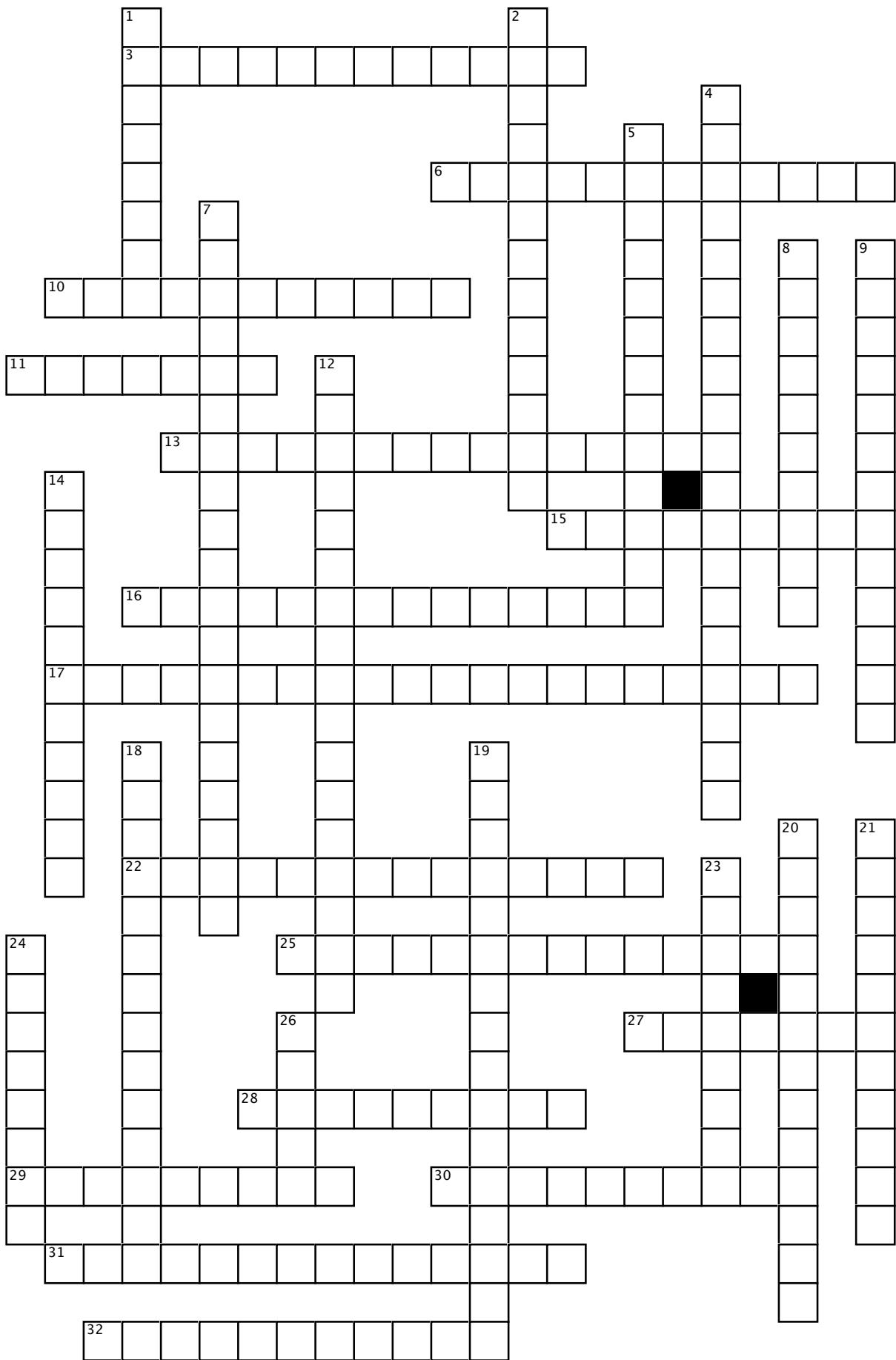
Use the clues to complete the crossword puzzle. Terms with multiple words are written without spaces.

ACROSS

1. the series of processes in which nitrogen compounds are moved through the biotic and abiotic environment (two words)
6. the mass of living organisms in a given area
10. the increase in concentration of a substance, such as a pesticide, as it moves higher up the food web
11. the number of species in an area (two words)
12. the function a species serves in its ecosystem, including what it eats, what eats it, and how it behaves (two words)
14. any plant, animal, or other organism that causes illness, harm, or annoyance to humans
16. harmful contaminants released into the environment
19. Earth's solid outer layer
21. a large geographical region defined by climate (precipitation and temperature) with a specific set of biotic and abiotic factors
22. fertilizers that are manufactured using chemical processes (two words)
25. the concentration of a substance, such as a pesticide, in the body of an organism
27. the biogeochemical cycle in which carbon is cycles through the lithosphere, atmosphere, hydrosphere, and biosphere (two words)
31. a species that no longer exists in a specific area
32. precipitation that has been made more acidic than usual by the combination of certain chemicals in the air with water vapour (two words)
34. the form of energy transferred during heating or cooling (two words)
35. all the living organisms and their physical and chemical environment
36. a pesticide that is effective against many types of pest (two words)

Down

2. a species that is likely to become endangered if factors reducing its survival are not changed
3. any factor that restricts the size of a population (two words)
4. the cultivation of a single crop in an area
5. the gradual and usually predictable changes in the composition of a community and the abiotic conditions following a disturbance
7. taking responsibility for managing and protecting the environment
8. the series of processes that cycle water through the environment (two words)
9. the zone around Earth where life can exist
13. a strategy to control pests that uses a combination of physical, chemical, and biological controls (three words)
15. the abiotic conditions within which a species can survive (two words)
16. a substance used to kill a pest
17. the process by which nutrients are removed from the soil as water passes through it
18. a pesticide that is effective against only a few types of pest (two words)
20. a body of water that is low in nutrients
23. a non-native species whose intentional or accidental introduction negatively impacts the natural environment (two words)
24. a sequence of organisms, each feeding on the next, showing how energy is transferred from one organism to another (two words)
26. living things, their remains, and features, such as nests, associated with their activities (two words)
28. counteract the chemical properties of an acid
29. visible forms of radiant energy (two words)
30. the layer of gases surrounding Earth
33. a representation of the feeding relationships within a community (two words)



2

Understanding Ecosystems

Find the following terms in the word search puzzle.

- ✓ atmosphere
- ✓ ecosystem
- ✓ sustainability
- ✓ photosynthesis
- ✓ ecological niche
- ✓ ecological pyramid
- ✓ carbon cycle
- ✓ carrying capacity
- ✓ lithosphere
- ✓ biotic factors
- ✓ radiant energy
- ✓ producer
- ✓ food chain
- ✓ biomass
- ✓ nitrogen cycle
- ✓ biome
- ✓ hydrosphere
- ✓ abiotic factors
- ✓ light energy
- ✓ cellular respiration
- ✓ trophic level
- ✓ biogeochemical cycle
- ✓ limiting factor
- ✓ oligotrophic
- ✓ biosphere
- ✓ sustainable ecosystem
- ✓ thermal energy
- ✓ consumer
- ✓ food web
- ✓ water cycle
- ✓ tolerance range
- ✓ eutrophic

G	W	H	H	X	I	Y	V	I	F	C	R	Y	T	N	W	A	R	F	N	V	M	O	F	A
V	L	K	Y	F	T	Z	F	N	I	W	B	D	O	P	T	K	L	C	F	R	Y	R	Z	S
G	I	W	E	D	S	V	W	U	M	D	I	I	L	C	R	D	X	Z	B	A	R	X	C	L
P	I	K	N	T	R	B	Q	M	A	V	O	C	E	M	O	A	S	L	S	B	Z	H	N	N
L	E	U	A	X	G	O	U	X	T	T	D	U	R	P	P	K	T	M	L	I	E	X	E	M
N	O	I	Z	Q	M	X	S	J	X	A	X	A	R	H	Z	E	M	I	O	C	C	B	R	
F	C	S	B	Y	E	H	I	P	L	J	V	D	N	O	I	Q	C	I	T	T	O	F	O	O
J	D	E	U	H	I	C	B	I	H	H	C	N	C	D	C	B	A	M	H	I	L	D	I	L
V	V	R	L	S	I	W	Z	A	N	E	R	N	E	U	L	X	R	B	O	C	O	Z	J	I
M	H	U	W	L	T	Y	A	I	V	F	R	M	R	C	E	F	B	Y	S	F	G	E	H	G
L	Y	B	T	F	U	A	B	T	N	C	P	E	A	E	V	B	O	F	P	A	I	U	S	O
O	D	R	H	M	D	L	I	F	E	I	P	A	N	R	E	J	N	N	H	C	C	L	U	T
J	E	H	E	C	B	U	A	N	O	R	T	C	G	M	L	C	C	E	E	T	A	U	S	R
C	U	M	R	B	U	I	S	R	A	O	C	R	E	V	B	B	Y	Q	R	O	L	F	T	O
F	T	J	M	I	J	S	O	D	R	B	D	Y	O	H	F	Y	C	W	E	R	P	G	A	P
N	R	T	A	O	W	L	F	M	Q	E	I	W	C	G	S	X	L	V	W	S	Y	R	I	H
Z	O	R	L	S	A	C	T	T	A	T	S	L	E	L	E	X	E	T	R	N	R	R	N	I
A	P	P	E	P	K	O	V	N	S	S	Q	P	I	B	E	N	Z	T	X	V	A	A	A	C
X	H	R	N	H	O	N	O	N	R	G	S	E	I	T	V	K	C	U	N	N	M	D	B	J
Q	I	R	E	E	Q	S	T	T	Y	V	V	R	I	R	Y	Y	A	Y	U	O	I	I	L	X
E	C	F	R	R	S	U	O	R	R	M	Q	O	C	B	A	E	J	V	C	J	D	A	E	G
O	P	T	G	E	C	M	P	E	G	B	L	C	B	J	M	T	Y	B	S	L	F	N	E	X
L	Z	W	Y	F	W	E	H	M	A	Z	O	Z	G	O	V	F	I	K	L	V	E	T	C	E
Y	N	U	C	D	G	R	O	C	F	P	V	M	I	R	G	J	X	O	W	D	K	E	O	T
C	J	T	S	P	M	T	T	L	S	U	X	B	A	M	A	F	W	S	N	U	C	N	S	D
D	T	B	I	O	G	E	O	C	H	E	M	I	C	A	L	C	Y	C	L	E	I	E	Y	L
Z	Y	B	S	S	V	Y	S	M	L	I	G	H	T	E	N	E	R	G	Y	Z	I	R	S	I
F	L	W	C	A	R	R	Y	I	N	G	C	A	P	A	C	I	T	Y	U	K	L	G	T	I
E	Y	B	D	O	M	K	N	B	I	O	T	I	C	F	A	C	T	O	R	S	M	Y	E	U
I	N	V	A	R	R	G	T	U	L	T	A	F	O	O	D	C	H	A	I	N	K	H	M	U
U	V	M	O	H	P	E	H	T	A	T	M	O	S	P	H	E	R	E	H	O	W	J	V	A
W	Q	O	A	Z	X	Q	E	E	C	O	L	G	I	C	A	L	N	I	C	H	E	U	C	
E	C	Q	H	T	L	U	S	Z	T	G	X	S	C	D	E	C	O	S	Y	S	T	E	M	M
T	G	Z	U	A	W	P	I	M	W	E	W	C	D	J	X	U	B	Y	K	C	K	B	R	F
F	G	P	W	K	W	C	S	M	U	L	I	M	I	T	I	N	G	F	A	C	T	O	R	R

Natural Ecosystems and Stewardship

3

Find the following terms in the word search puzzle.

- ✓ equilibrium
- ✓ biodiversity
- ✓ threatened
- ✓ acid precipitation
- ✓ succession
- ✓ species richness
- ✓ special concern
- ✓ neutralize
- ✓ primary succession
- ✓ extirpated
- ✓ invasive species
- ✓ bioremediation
- ✓ secondary succession
- ✓ endangered
- ✓ pollution
- ✓ stewardship

X	H	A	V	Q	T	E	T	I	R	R	E	N	X	K	X	D	T	L	M	V	A	N	V	R	
U	M	U	S	U	G	E	U	Q	E	Z	Y	Z	M	A	Z	A	D	D	M	N	C	N	M	N	
P	H	C	L	P	J	P	Y	U	T	U	B	X	P	X	N	A	E	U	Z	Q	P	G	R	A	
Q	C	S	V	L	R	P	E	C	D	G	A	T	T	C	Y	N	D	A	B	N	O	M	M	O	
I	N	V	A	S	I	V	E	S	P	E	C	I	E	S	E	B	N	Y	W	S	L	A	P	B	
S	K	M	X	F	C	Z	L	I	F	Q	I	R	G	T	Q	O	C	N	M	J	L	D	Q	C	
T	O	I	X	S	N	J	Z	W	O	U	D	X	A	C	I	H	R	B	S	I	U	F	S	G	
E	L	Y	I	V	T	Q	H	W	P	L	P	E	L	S	S	G	D	N	F	L	T	Z	O	M	
W	N	E	U	T	R	A	L	I	Z	E	R	T	S	R	K	O	W	R	M	Z	I	Z	J	F	
A	S	M	D	P	P	F	O	H	M	H	E	E	Z	N	B	O	E	U	B	B	O	G	P	C	
R	B	A	S	W	H	H	L	K	T	Z	C	Q	W	E	E	D	K	O	I	E	N	E	Q	I	
D	D	T	Y	S	Q	W	O	Q	Q	C	I	L	P	O	N	A	E	I	O	G	F	H	W	Q	
S	X	O	X	O	S	A	J	Q	U	E	P	F	P	G	Q	X	Q	I	D	N	E	W	X	R	
H	P	Z	M	C	F	M	C	S	Y	S	I	X	A	M	W	E	G	X	I	S	P	T	D	U	
I	A	H	R	R	R	H	S	Y	U	E	T	T	Q	O	Q	J	S	K	J	V	Y	T	E	U	T
P	W	O	O	G	L	R	G	A	N	G	A	H	F	Q	T	E	P	Z	E	Q	Z	U	X	A	
B	Q	D	W	A	A	W	S	C	D	C	T	P	M	G	S	C	K	K	R	T	H	T	I	G	
R	C	V	R	M	X	F	U	U	A	B	I	S	Y	Y	W	O	P	S	F	M	X	E	I		
B	T	O	I	Y	R	A	C	M	N	Q	O	P	V	I	N	N	T	H	I	B	P	F	P	X	
I	P	R	A	B	T	U	C	C	G	Z	N	E	B	N	X	D	P	H	T	R	S	V	B	M	
O	P	O	Q	X	G	Q	E	R	E	A	Q	C	P	D	A	A	Z	C	Y	B	P	U	Q	O	
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E	R	R	F	E	S	F	O	Q	V	J	B	R	Y	Y	Z	U	Q	X	X	F	A	C	Z	C	
D	Y	H	L	Z	X	E	N	P	C	F	G	I	Q	T	R	C	H	V	Y	X	L	K	R	B	
I	W	B	G	G	I	T	J	U	L	I	Y	C	P	W	Y	C	H	V	F	V	C	K	H	L	
A	Y	Y	G	N	F	D	I	H	I	R	S	H	O	J	B	E	B	L	Y	I	O	M	M	I	
T	B	S	S	F	O	G	M	R	M	Q	U	N	A	G	Y	S	T	R	U	S	N	P	J	W	
I	Q	S	D	Y	N	U	G	N	P	S	Q	E	G	A	T	S	E	Q	I	H	C	R	D	S	
O	Q	A	Y	X	D	I	F	J	K	A	Q	S	F	D	K	I	H	W	Z	L	E	K	G	C	
N	Y	O	A	P	Y	B	C	R	Q	X	T	S	O	Y	F	O	N	F	Z	X	R	D	P	Q	
Y	X	H	T	M	O	M	B	U	D	I	N	E	I	X	N	N	E	M	W	H	N	T	J	N	
C	X	K	V	V	B	V	O	Z	H	H	C	O	D	R	R	G	S	T	S	J	L	P	Q	G	
S	Y	S	G	D	D	L	Z	X	X	L	D	S	E	Q	U	I	L	I	B	R	I	U	M	S	

Ecosystems by Design

4

Find the following terms in the word search puzzle.

- ✓ agroecosystem
- ✓ natural fertilizer
- ✓ pesticide
- ✓ bioaccumulation
- ✓ integrated pest management
- ✓ monoculture
- ✓ synthetic fertilizer
- ✓ broad-spectrum pesticide
- ✓ bioamplification
- ✓ pest
- ✓ leaching
- ✓ narrow-spectrum pesticide
- ✓ organic farming

D	J	B	P	O	V	Q	V	K	P	L	X	O	P	X	A	E	R	P	G	K	P	J	L	I
N	Q	F	K	N	V	N	U	S	Y	R	V	J	Q	Z	E	P	E	S	T	I	C	I	D	E
E	K	J	O	X	L	T	D	V	O	L	S	F	L	E	A	C	H	I	N	G	P	B	N	T
K	F	H	U	I	T	D	D	B	E	U	M	H	A	E	I	S	G	D	B	Q	H	O	N	L
O	Z	Z	G	R	Y	M	O	E	O	D	J	J	T	A	W	P	E	S	T	Q	E	E	N	U
F	U	A	Q	N	A	T	U	R	A	L	F	E	R	T	I	L	I	Z	E	R	M	R	I	C
W	K	S	Z	B	U	C	X	M	A	Q	G	N	L	V	X	K	O	Q	W	E	J	Y	R	E
R	N	D	W	M	F	T	C	X	O	N	X	A	D	E	W	J	N	C	G	T	D	V	E	F
Z	E	F	E	E	S	P	W	W	Z	W	A	R	D	X	G	F	P	A	B	H	J	R	K	D
F	O	A	W	F	J	A	Y	C	Y	H	J	R	Y	E	J	C	N	T	S	K	U	P	K	X
H	V	Q	P	W	C	P	F	N	Q	S	V	O	Y	U	G	A	A	Z	A	T	R	B	Q	Z
N	Q	C	C	D	F	M	W	P	Y	W	Q	W	E	W	M	T	T	J	L	Y	G	S	U	B
A	R	M	W	B	S	N	I	I	L	C	T	S	Z	T	H	F	R	U	R	B	E	H	V	Z
C	D	Q	P	B	W	D	C	L	E	T	T	P	S	K	W	R	C	C	F	R	G	S	S	Q
L	Y	A	A	Z	W	U	V	Y	X	K	A	E	O	O	B	O	D	R	G	O	Y	H	X	S
H	S	V	N	V	M	G	I	X	Y	J	P	C	W	I	N	T	M	I	S	A	N	R	J	R
P	M	W	M	D	F	N	E	F	C	D	N	T	S	O	R	O	T	K	Q	D	V	K	M	F
O	X	F	V	Q	F	G	N	O	E	L	W	R	M	J	X	F	G	O	L	S	C	T	M	B
R	X	U	V	Y	B	V	B	T	Z	Q	V	U	U	Q	N	R	P	C	P	P	M	B	R	C
G	M	M	T	Y	W	V	A	V	M	N	E	M	M	Z	T	Q	B	E	S	E	H	I	U	Z
A	F	M	P	W	H	R	W	A	H	M	S	P	K	W	W	L	N	S	T	C	S	O	N	M
N	U	J	Q	Z	G	P	A	G	Q	I	D	E	B	H	V	A	Y	N	L	T	M	A	G	C
I	S	F	L	E	N	X	Y	U	J	H	T	S	S	R	U	K	D	E	V	R	S	M	N	F
C	A	S	T	J	K	Z	E	L	K	N	I	T	S	W	U	H	G	D	M	U	Z	P	X	S
F	S	N	U	B	C	X	B	H	O	A	P	I	H	I	A	G	I	V	A	M	Y	L	E	H
A	I	N	C	G	M	O	A	G	R	O	E	C	O	S	Y	S	T	E	M	P	M	I	A	W
R	B	R	A	L	F	J	T	H	S	H	S	I	D	C	J	U	E	K	J	E	N	F	F	F
M	I	U	J	O	M	F	E	I	V	R	D	D	D	X	Y	Q	V	C	Q	S	X	I	J	G
I	S	I	O	W	M	L	U	C	D	V	Z	E	Q	H	I	U	T	J	T	T	N	C	B	J
N	Q	D	C	U	N	I	Z	J	P	N	R	C	L	M	V	N	N	T	C	I	G	A	P	V
G	X	G	Z	V	S	D	I	V	K	Z	J	A	T	X	Z	G	T	G	M	C	R	T	U	Y
B	Y	H	B	I	O	A	C	C	U	M	U	L	A	T	I	O	N	M	Y	I	V	I	A	T
K	K	S	O	N	Z	T	F	I	Q	J	F	H	G	V	S	L	D	F	N	D	M	O	I	V
R	W	X	Z	T	Q	B	O	D	U	W	D	Y	B	K	S	V	H	B	D	E	O	N	B	X
P	E	P	O	S	Y	N	T	H	E	T	I	C	F	E	R	T	I	L	I	Z	E	R	V	K

Sustainable Ecosystems

B

Find the following terms in the word search puzzle.

- ✓ atmosphere
- ✓ biosphere
- ✓ abiotic factors
- ✓ radiant energy
- ✓ photosynthesis
- ✓ consumer
- ✓ trophic level
- ✓ biomass
- ✓ carbon cycle
- ✓ tolerance range
- ✓ oligotrophic
- ✓ succession
- ✓ biodiversity
- ✓ endangered
- ✓ invasive species
- ✓ neutralize
- ✓ agroecosystem
- ✓ natural fertilizer
- ✓ pesticide
- ✓ bioaccumulation
- ✓ integrated pest management
- ✓ lithosphere
- ✓ ecosystem
- ✓ sustainable ecosystem
- ✓ light energy
- ✓ producer
- ✓ ecological niche
- ✓ food web
- ✓ biogeochemical cycle
- ✓ nitrogen cycle
- ✓ carrying capacity
- ✓ eutrophic
- ✓ primary succession
- ✓ species richness
- ✓ threatened
- ✓ pollution
- ✓ bioremediation
- ✓ monoculture
- ✓ synthetic fertilizer
- ✓ broad-spectrum pesticide
- ✓ bioamplification
- ✓ hydrosphere
- ✓ biotic factors
- ✓ sustainability
- ✓ thermal energy
- ✓ cellular respiration
- ✓ food chain
- ✓ ecological pyramid
- ✓ water cycle
- ✓ limiting factor
- ✓ biome
- ✓ equilibrium
- ✓ secondary succession
- ✓ extirpated
- ✓ special concern
- ✓ acid precipitation
- ✓ stewardship
- ✓ pest
- ✓ leaching
- ✓ narrow-spectrum pesticide
- ✓ organic farming

I	L	S	T	S	P	E	C	I	E	S	R	I	C	H	N	E	S	S	D	B	P	H	A	B	
N	I	A	H	E	P	C	M	B	I	O	A	M	P	L	I	F	I	C	A	T	I	O	N	R	
T	G	C	R	C	P	O	O	I	H	Y	D	R	O	S	P	H	E	R	E	C	K	E	N	O	
E	H	I	E	O	R	L	T	O	A	G	R	O	E	C	O	S	Y	S	T	E	M	R	E	A	
G	T	D	A	N	I	O	H	R	S	I	W	E	K	B	I	O	M	E	C	L	B	A	U	D	
R	E	P	T	D	M	G	E	E	T	N	E	U	P	I	Z	Z	G	C	M	L	I	D	T	S	
A	N	R	E	A	A	A	I	R	M	E	V	N	T	W	O	M	B	J	E	I	U	O	I	R	P
T	E	E	N	R	R	C	M	E	W	A	D	R	O	M	Z	I	T	O	C	L	S	A	A	E	
E	R	C	E	Y	Y	A	A	D	A	S	A	O	B	A	Q	S	Q	I	I	A	P	N	L	C	
D	G	I	D	S	S	L	L	I	R	I	N	P	E	S	Y	R	H	R	R	H	T	I	I	T	
P	Y	P	L	U	U	P	E	A	D	V	G	H	A	S	Y	P	E	I	E	R	E	E	Z	R	
E	M	I	I	C	C	Y	N	T	S	E	E	I	O	D	O	Z	T	L	B	E	R	N	E	U	
S	L	T	M	C	C	R	E	I	H	S	R	C	G	R	I	K	C	B	I	S	E	E	O	M	
T	S	A	I	E	E	A	R	O	I	P	E	X	T	L	E	Y	T	I	O	P	D	R	R	P	
M	E	T	T	S	S	M	G	N	P	E	D	O	I	R	C	S	M	O	A	I	V	G	G	E	
A	Q	I	I	S	S	I	Y	V	L	C	G	T	E	L	Q	Y	S	D	C	R	H	Y	A	S	
N	U	O	N	I	I	D	P	B	R	I	R	H	A	X	T	R	N	I	C	A	N	B	N	T	
A	I	N	G	O	O	J	A	E	L	E	P	C	S	I	O	A	T	V	U	T	I	N	I	I	
G	L	B	F	N	N	N	M	O	F	S	I	I	L	T	L	S	R	E	M	I	T	S	C	C	
E	I	I	A	C	I	U	I	C	O	M	S	I	C	C	E	L	O	R	U	O	R	A	F	I	
M	B	P	C	A	S	D	I	M	E	E	B	A	S	P	R	I	P	S	L	N	O	H	A	D	
E	R	V	T	N	N	T	T	H	H	A	F	O	M	Z	A	T	H	I	A	F	G	K	R	E	
N	I	S	O	K	E	A	C	T	N	C	E	U	D	E	N	H	I	T	T	P	E	B	M	E	
T	U	C	R	H	B	O	N	I	I	R	R	E	L	I	C	O	C	Y	I	O	N	I	I	F	
S	M	V	T	S	E	Y	A	T	U	T	T	C	A	N	E	S	L	P	O	L	C	V	N	O	
M	V	N	D	G	S	T	O	T	C	A	Y	H	O	L	R	P	E	M	N	L	Y	P	G	O	
U	Y	Q	O	O	S	I	L	E	P	C	C	I	C	Q	A	H	V	Q	U	U	C	R	Y	D	
S	Z	I	T	U	B	U	P	R	N	D	S	Y	L	R	N	E	E	T	U	T	L	O	O	W	
N	B	O	S	D	C	S	I	O	O	S	C	Y	P	G	G	R	L	B	H	I	E	D	V	E	
J	H	Z	F	O	W	T	B	O	E	R	Y	K	S	I	E	E	W	G	I	O	K	U	L	B	
P	V	S	N	O	X	R	F	C	E	E	C	O	L	O	G	I	C	A	L	N	I	C	H	E	
T	O	O	R	E	A	E	C	T	G	U	S	P	E	C	I	A	L	C	O	N	C	E	R	N	
J	M	R	J	C	C	U	A	L	K	A	B	I	O	T	I	C	F	A	C	T	O	R	S	T	
X	A	U	M	H	S	W	J	L	C	A	R	Y	I	N	G	C	A	P	A	C	I	T	Y		
N	A	T	U	R	A	L	F	E	R	T	I	L	I	Z	E	R	L	E	A	C	H	I	N	G	

5

Properties of Matter

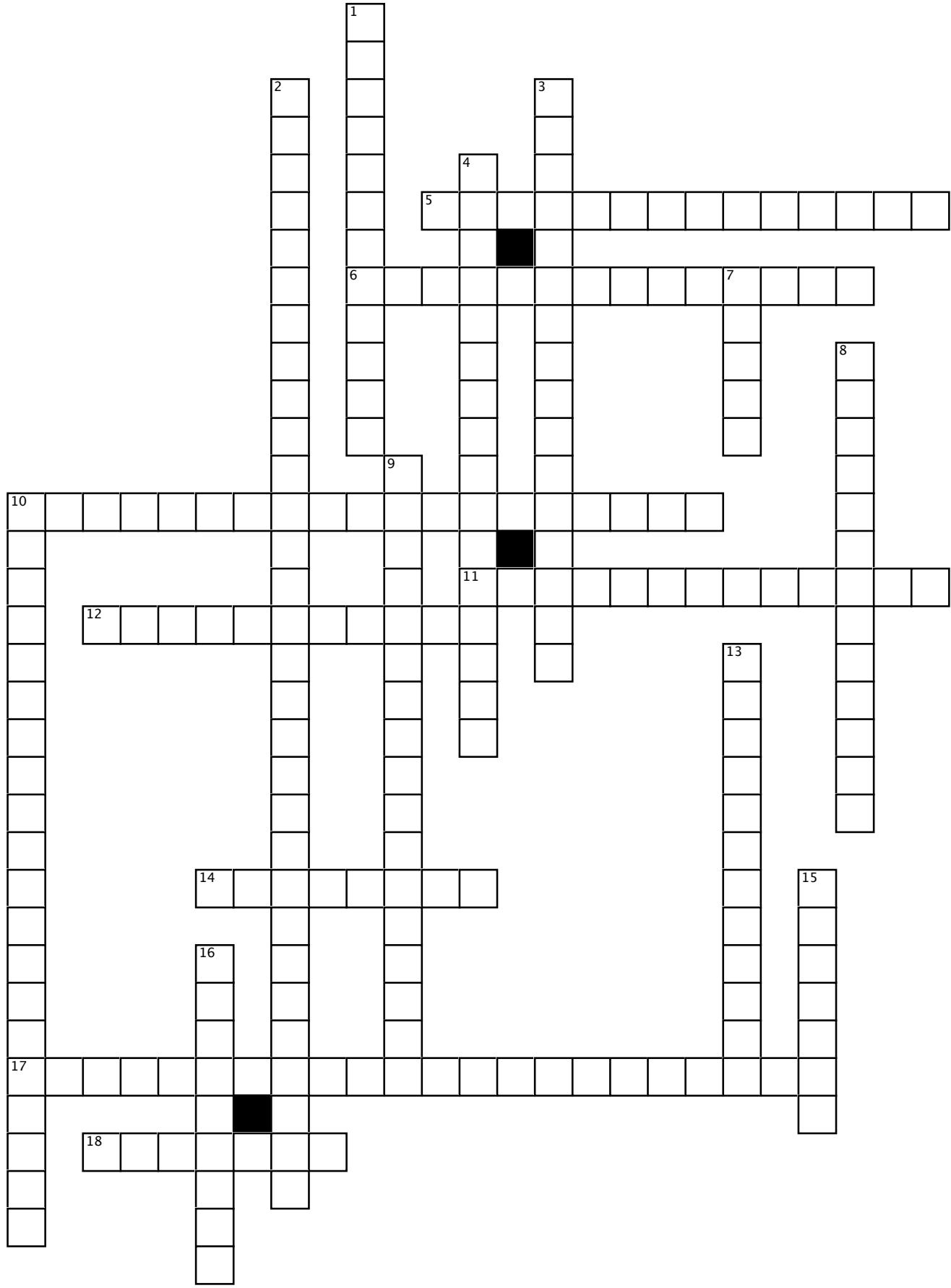
Use the clues to complete the crossword puzzle. Terms with multiple words are written without spaces.

ACROSS

5. a change in the starting substance or substances and the production of one or more new substances (two words)
6. a change in which the composition of the substance remains unaltered and no new substances are produced (two words)
10. a property of a substance that is not measured and does not have a numerical value, such as colour, odour, and texture (two words)
11. a substance that is made up of only one type of particle (two words)
12. a solid that separates from a solution
14. a uniform mixture of two or more substances
17. a theory that describes the composition and behaviour of matter (four words)
18. a measure of how much mass is contained in a given unit volume of a substance; calculated by dividing the mass of a sample by its volume

DOWN

1. the temperature at which a substance changes state rapidly from a liquid to a gas (two words)
2. a physical property that is unique to a substance and that can be used to identify the substance (three words)
3. a characteristic of a substance that is determined when the composition of the substance is changed and one or more new substances are produced (two words)
4. a characteristic of a substance that can be determined without changing the composition of that substance (two words)
7. a solid solution of two or more metals
8. the temperature at which a substance changes state from a liquid to a solid (two words)
9. a mixture in which you can distinguish between different types of matter (two words)
10. a property of a substance that is measured and has a numerical value, such as temperature, height, and mass (two words)
13. the temperature at which a substance changes state from a solid to a liquid (two words)
15. a substance that is made up of at least two different types of particle
16. the degree to which a fluid resists flow



Elements and the Periodic Table

6

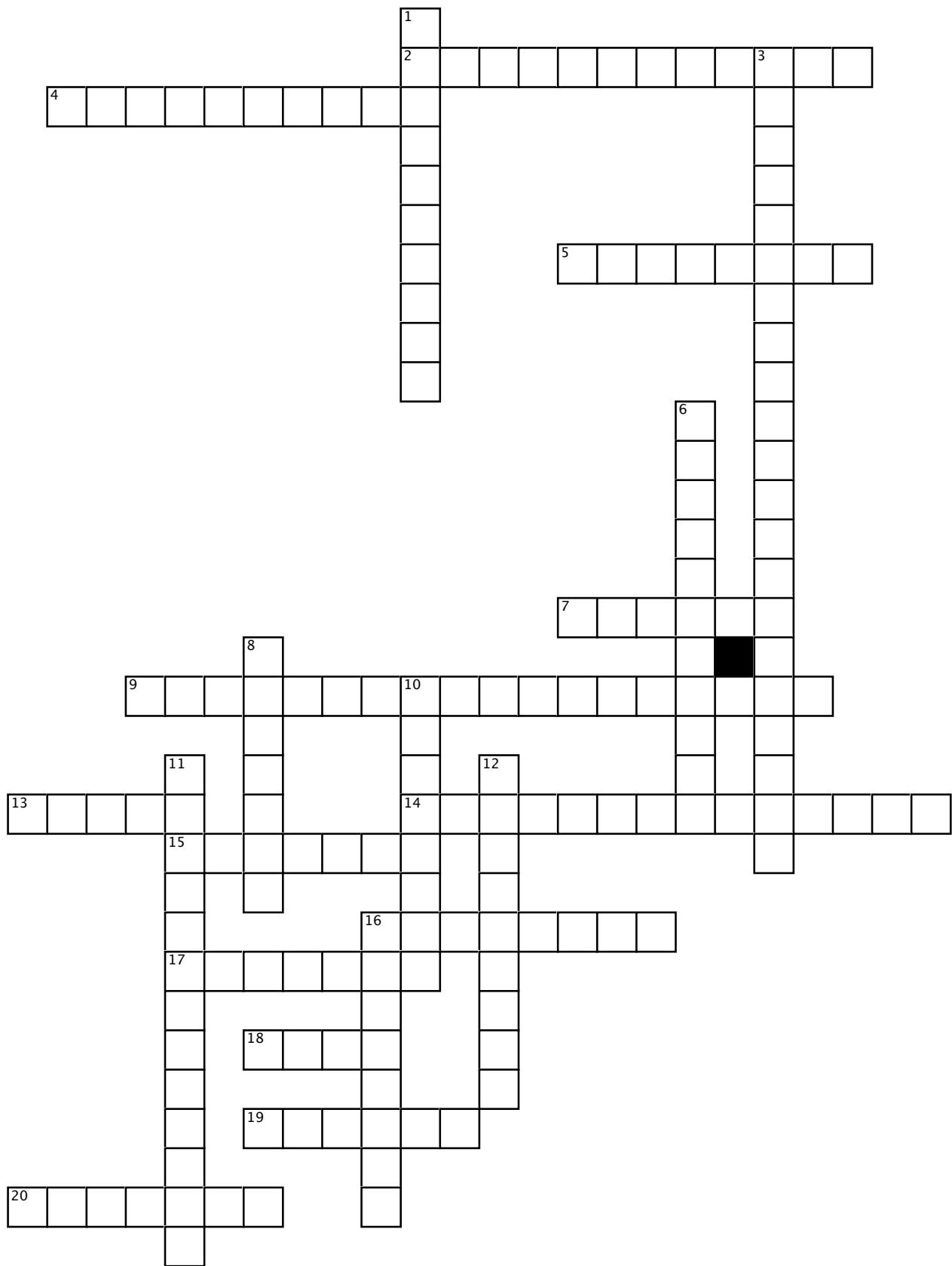
Use the clues to complete the crossword puzzle. Terms with multiple words are written without spaces.

ACROSS

2. the number of protons in an atom's nucleus (two words)
4. the mass of an atom in atomic mass units (two words)
5. a pure substance composed of two or more different elements that are chemically joined
7. a row on the periodic table
9. an element in Group 2 of the periodic table (three words)
13. an element that is lustrous, malleable, and ductile, and conducts heat and electricity
14. a column of elements with similar properties on the periodic table (two words)
15. a pure substance that cannot be broken down into a simpler chemical substance by any physical or chemical means
16. an element in Group 18 of the periodic table (two words)
17. a neutral particle in the atom's nucleus
18. the smallest unit of an element
19. a positively charged particle in the atom's nucleus
20. an atom with the same number of protons but a different number of neutrons

DOWN

1. the number of protons and neutrons in an atom's nucleus (two words)
3. a simple drawing that shows the numbers and locations of protons, neutrons, and electrons in an atom (two words)
6. an element in Group 1 of the periodic table (two words)
8. an element in Group 17 of the periodic table
10. a negatively charged particle in an atom
11. an abbreviation for a chemical element (two words)
12. an element that has properties of both metals and non-metals
16. an element, usually a gas or a dull powdery solid, that does not conduct heat or electricity



7

Chemical Compounds

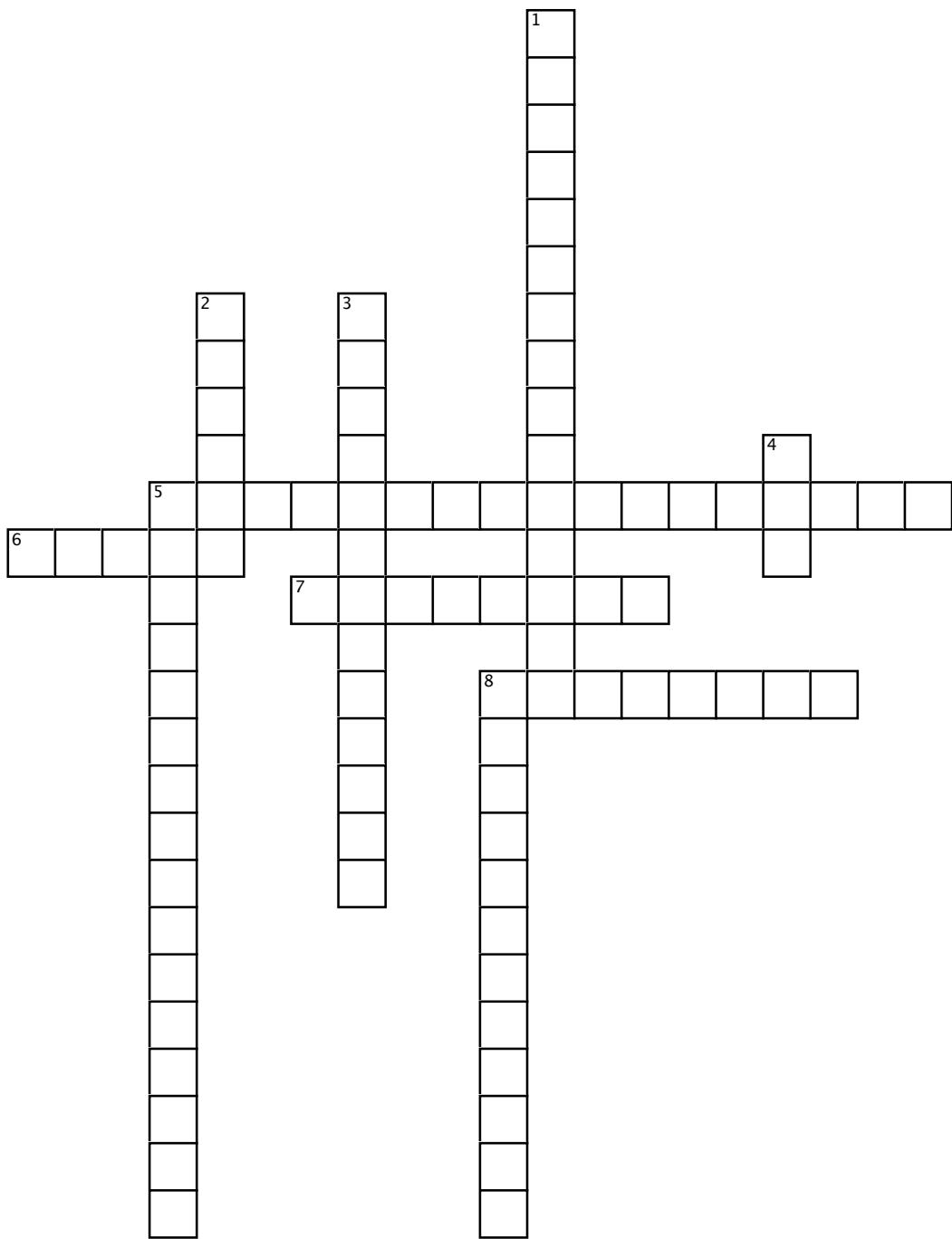
Use the clues to complete the crossword puzzle. Terms with multiple words are written without spaces.

ACROSS

5. a molecule that consists of two or more different elements (two words)
6. a negatively charged ion
7. two or more atoms of the same or different elements that are chemically joined together in a unit
8. a substance that speeds up a chemical reaction but is not used up in the reaction

DOWN

1. notation that indicates the type and number of atoms in a pure substance (two words)
2. a positively charged ion
3. a compound that consists of positively and negatively charged ions (two words)
4. a particle that has either a positive or a negative charge
5. a molecule consisting of atoms of the same element (two words)
8. a bond formed when two non-metal atoms share electrons (two words)



Atoms, Elements, and Compounds

C

Use the clues to complete the crossword puzzle. Terms with multiple words are written without spaces.

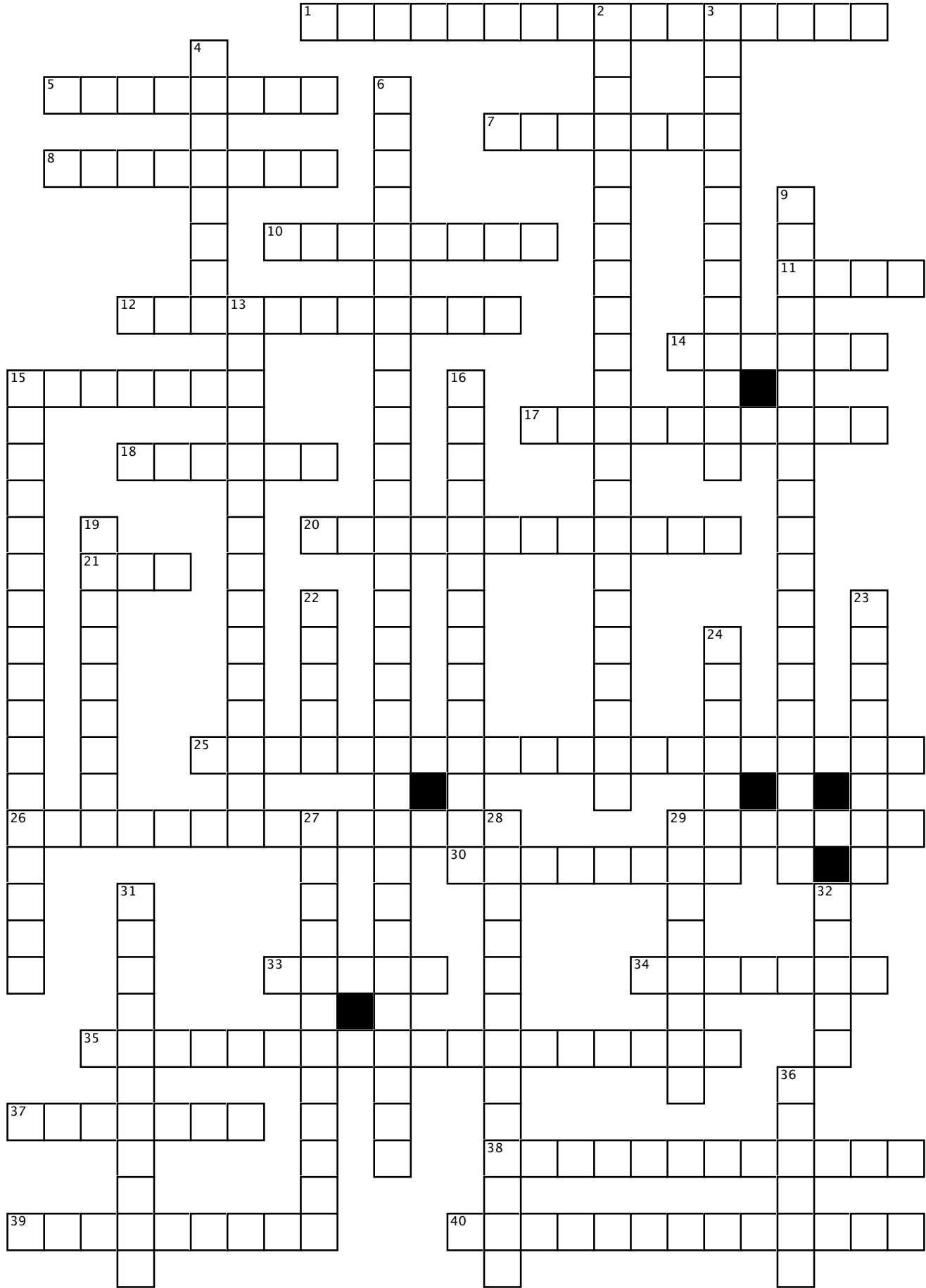
ACROSS

1. a characteristic of a substance that is determined when the composition of the substance is changed and one or more new substances are produced (two words)
5. a pure substance composed of two or more different elements that are chemically joined
7. an atom with the same number of protons but a different number of neutrons
8. an element in Group 18 of the periodic table (two words)
10. a substance that speeds up a chemical reaction but is not used up in the reaction
11. the smallest unit of an element
12. a solid that separates from a solution
14. a positively charged ion
15. a substance that is made up of at least two different types of particle
17. the mass of an atom in atomic mass units (two words)
18. a row on the periodic table
20. the temperature at which a substance changes state rapidly from a liquid to a gas (two words)
21. a particle that has either a positive or a negative charge
25. a property of a substance that is measured and has a numerical value, such as temperature, height, and mass (two words)
26. a change in which the composition of the substance remains unaltered and no new substances are produced (two words)
29. a neutral particle in the atom's nucleus
30. a negatively charged particle in an atom
33. a solid solution of two or more metals
34. a measure of how much mass is contained in a given unit volume of a substance; calculated by dividing the mass of a sample by its volume
35. an element in Group 2 of the periodic table (three words)
37. a pure substance that cannot be broken down into a simpler chemical substance by any physical or chemical means

38. the temperature at which a substance changes state from a solid to a liquid (two words)
39. an element that has properties of both metals and non-metals
40. a compound that consists of positively and negatively charged ions (two words)

Down

2. a theory that describes the composition and behaviour of matter (four words)
3. a substance that is made up of only one type of particle (two words)
4. two or more atoms of the same or different elements that are chemically joined together in a unit
6. a physical property that is unique to a substance and that can be used to identify the substance (three words)
9. a property of a substance that is not measured and does not have a numerical value, such as colour, odour, and texture (two words)
13. notation that indicates the type and number of atoms in a pure substance (two words)
15. a molecule that consists of two or more different elements (two words)
16. a change in the starting substance or substances and the production of one or more new substances (two words)
19. the degree to which a fluid resists flow
22. a negatively charged ion
23. a uniform mixture of two or more substances
24. an element in Group 17 of the periodic table
27. a bond formed when two non-metal atoms share electrons (two words)
28. an abbreviation for a chemical element (two words)
29. an element, usually a gas or a dull powdery solid, that does not conduct heat or electricity
31. an element in Group 1 of the periodic table (two words)
32. an element that is lustrous, malleable, and ductile, and conducts heat and electricity
36. a positively charged particle in the atom's nucleus



5

Properties of Matter

Find the following terms in the word search puzzle.

- ✓ particle theory of matter
- ✓ mechanical mixture
- ✓ physical property
- ✓ viscosity
- ✓ chemical change
- ✓ density
- ✓ boiling point
- ✓ pure substance
- ✓ solution
- ✓ qualitative property
- ✓ physical change
- ✓ precipitate
- ✓ freezing point
- ✓ mixture
- ✓ alloy
- ✓ quantitative property
- ✓ chemical property
- ✓ characteristic physical property
- ✓ melting point

Z	Q	P	L	K	H	Z	F	E	T	Y	K	F	Z	F	H	V	T	V	Z	H	C	E	A	P	
L	V	L	E	E	P	D	L	Q	N	Q	R	N	U	Z	Z	N	M	X	B	B	E	V	R	H	
U	Y	M	S	K	T	E	S	S	O	R	B	C	X	U	J	G	M	Q	Y	B	C	Y	M	Y	
F	X	L	X	W	I	K	H	B	I	F	J	Q	M	P	K	N	E	Y	K	W	H	V	Z	S	
L	X	A	D	D	P	M	P	F	A	V	B	U	S	H	S	F	C	T	J	V	E	Z	P	I	
U	C	S	J	E	B	T	Q	C	P	L	W	A	U	Y	O	N	H	T	X	S	M	D	P	C	
X	H	L	J	W	N	D	I	F	M	O	Q	N	U	S	R	S	A	W	Z	F	I	Y	Y	A	
Q	A	S	D	E	L	S	K	A	U	N	U	T	G	I	I	V	N	P	X	V	C	G	P	L	
L	R	I	G	Q	G	I	I	T	M	H	A	I	H	C	Z	L	I	C	U	Q	A	C	A	P	
S	A	P	E	S	L	N	P	T	R	T	L	T	S	A	M	A	C	J	J	U	N	L	M	U	R
C	C	Q	F	C	K	E	V	J	Y	T	I	A	B	L	E	W	A	S	K	K	P	M	I	O	
F	T	X	R	K	I	E	D	M	Q	M	T	T	U	C	L	O	L	T	F	M	R	I	V	P	
C	E	N	E	N	F	A	C	V	I	S	A	I	S	H	T	V	M	N	D	E	O	S	V	E	
D	R	N	E	B	K	C	S	Q	V	D	T	V	V	A	I	D	I	G	W	H	P	J	M	R	
C	I	Z	Z	K	E	I	B	I	P	B	I	E	G	N	N	X	X	Q	H	Y	E	J	E	T	
H	S	K	I	Q	M	F	E	X	F	T	V	P	A	G	G	A	T	A	K	O	R	T	N	Y	
E	T	R	N	Y	W	I	Z	B	Y	B	E	R	M	E	P	L	U	J	T	J	T	S	M	G	
M	I	A	G	B	U	P	S	G	B	B	P	O	P	K	O	L	R	B	Q	A	Y	V	S	I	
I	C	M	P	O	S	R	L	R	S	Z	R	P	C	G	I	O	E	T	M	L	X	W	O	R	
C	P	Y	O	N	L	E	A	G	R	F	O	E	O	U	N	Y	D	F	A	D	L	Q	L	X	
A	H	Q	I	D	P	C	O	M	M	V	P	R	A	R	T	L	O	T	J	Q	E	I	U	A	
L	Y	K	N	C	T	I	Z	Q	I	C	E	T	T	J	V	Y	U	C	H	C	F	K	T	G	
C	S	W	T	X	R	P	W	H	X	L	R	Y	X	R	R	S	G	A	N	B	L	R	I	U	
H	I	S	T	F	A	I	J	I	T	E	T	R	Y	O	C	T	T	A	Q	O	O	C	O	K	
A	C	K	T	W	G	T	G	W	U	T	Y	O	E	B	V	I	T	B	M	I	D	G	N	Z	
N	A	T	R	T	D	A	V	E	R	F	R	H	S	M	M	S	R	U	W	L	W	W	Y	M	
G	L	S	N	L	X	T	Y	W	E	X	T	R	P	K	B	N	K	R	Y	I	N	J	S	Q	
E	P	N	L	U	H	E	W	F	L	E	X	R	N	U	W	O	V	D	H	N	C	L	R	B	
M	R	N	Q	U	Z	U	O	U	L	Z	Y	O	S	K	B	H	D	T	X	G	D	N	F	I	
X	O	B	S	S	N	G	X	C	L	N	B	E	I	C	Q	X	H	Z	Q	P	W	F	W	W	
S	P	C	I	Y	P	A	I	H	B	I	R	K	V	E	L	A	Z	D	M	O	H	B	E	A	
A	E	Z	Z	O	V	T	P	Y	B	U	Z	H	L	P	C	M	T	M	W	I	Q	S	E	R	
X	R	U	G	J	R	L	L	I	P	M	L	J	H	G	U	O	I	A	U	N	F	S	W	X	
N	T	F	S	A	V	E	P	Q	G	N	W	N	V	I	S	C	O	S	I	T	Y	T	Y	J	
U	Y	Q	P	R	I	A	D	S	W	U	E	F	S	G	D	Y	D	X	I	V	Q	J	S	A	

Elements and the Periodic Table

6

Find the following terms in the word search puzzle.

- ✓ element
- ✓ proton
- ✓ non-metal
- ✓ isotope
- ✓ alkaline earth metal
- ✓ metal
- ✓ atom
- ✓ alkali metal
- ✓ atomic number
- ✓ period
- ✓ Bohr-Rutherford diagram
- ✓ neutron
- ✓ element symbol
- ✓ atomic mass
- ✓ metalloid
- ✓ noble gas
- ✓ electron
- ✓ mass number
- ✓ compound
- ✓ chemical family
- ✓ halogen

K	U	P	W	O	X	M	X	L	H	F	O	L	F	O	E	J	Q	D	U	F	Q	J	G	Y
U	Y	U	D	U	Q	N	M	T	H	G	X	N	U	Q	E	Z	E	L	U	C	E	R	A	I
N	W	W	D	O	B	P	N	B	I	X	B	P	R	H	I	I	T	M	I	L	G	J	H	V
O	G	W	O	R	X	P	A	U	D	A	D	A	C	O	M	P	O	U	N	D	X	Z	W	X
B	D	F	E	C	S	E	C	M	E	P	G	Z	R	E	S	L	I	E	B	X	O	K	J	U
L	K	S	V	U	C	T	U	P	M	N	R	V	P	R	M	T	Y	Q	N	Y	E	O	R	N
E	Q	R	L	S	X	Q	S	L	R	L	V	O	H	C	Y	F	A	V	V	X	E	B	B	C
G	R	D	F	O	G	P	W	P	U	F	T	M	V	M	Q	V	U	Y	Q	S	R	P	I	X
A	G	Z	Q	O	X	B	G	D	K	O	M	O	W	G	B	R	O	T	Y	G	K	B	R	O
S	B	B	S	C	V	R	J	Q	S	S	E	V	A	L	K	A	L	I	M	E	T	A	L	B
Y	L	G	T	A	H	R	X	I	G	Q	S	D	Y	F	G	Z	I	A	Q	O	O	G	H	X
N	E	O	Y	L	I	M	A	F	L	A	C	I	M	E	H	C	Y	P	U	T	A	L	O	F
B	R	P	R	D	C	H	D	U	U	I	T	N	O	R	T	C	E	L	E	I	C	D	O	R
N	P	J	A	E	K	I	F	X	M	P	W	M	L	A	T	E	M	P	Y	A	L	Z	A	U
A	L	P	H	L	M	M	O	K	N	I	F	N	L	D	J	Q	Y	Y	M	V	R	W	T	W
T	B	O	H	R	R	U	T	H	E	R	F	O	R	D	D	I	A	G	R	A	M	X	N	B
O	M	A	D	P	R	K	V	N	N	V	T	N	W	A	K	A	B	C	G	T	B	O	Y	A
M	K	E	I	W	B	R	U	B	E	R	A	M	Q	C	E	H	V	A	E	D	Q	C	N	Y
I	I	A	O	O	H	J	L	Q	G	K	I	E	B	R	H	P	H	H	G	R	P	C	Y	F
C	I	I	L	D	A	U	N	I	O	Q	O	T	Q	M	E	T	B	H	X	L	W	Q	T	Z
N	U	A	L	P	T	M	K	S	L	G	D	A	M	G	B	B	G	W	A	H	X	X	I	
U	V	N	A	E	P	C	R	D	A	U	J	L	R	A	M	B	M	K	M	G	M	W	P	S
M	J	X	T	R	B	T	F	H	H	L	F	C	L	Q	V	Q	X	U	S	H	Y	C	S	I
B	Z	X	E	I	G	T	G	R	F	Z	X	E	C	E	E	I	C	Q	N	T	T	A	T	F
E	R	X	M	O	A	R	H	F	J	M	F	P	N	D	Q	W	I	C	F	S	M	T	O	Z
R	R	J	Z	D	K	W	K	B	X	Y	K	U	P	E	H	N	E	Q	M	C	S	I	O	V
N	I	Q	J	X	X	F	H	Q	I	T	N	E	M	E	L	E	C	Q	I	O	X	A	Q	I
E	L	E	M	E	N	T	S	Y	M	B	O	L	N	O	W	F	C	M	C	U	Z	V	M	A
U	V	B	D	H	I	F	O	T	Z	J	Q	D	S	E	W	S	O	I	A	M	G	S	L	C
T	O	T	T	L	Y	F	N	O	T	O	R	P	N	V	Q	T	C	Z	G	O	B	S	Z	E
R	N	W	L	A	Z	D	R	T	V	S	G	R	D	L	A	F	Z	L	K	T	I	L	O	V
O	I	H	B	E	T	N	R	G	K	V	G	H	E	Q	D	O	A	L	E	A	V	R	K	J
N	L	A	L	K	A	L	I	N	E	E	A	R	T	H	M	E	T	A	L	U	V	Y	D	T
W	T	W	W	H	U	S	H	G	Z	Z	R	L	Q	F	G	P	L	A	D	E	J	W	Q	M
R	Y	E	L	Q	A	A	T	Q	N	F	O	H	H	H	Z	K	S	J	A	E	H	M	O	Z

7

Chemical Compounds

Find the following terms in the word search puzzle.

- ✓ molecule
- ✓ ion
- ✓ covalent bond
- ✓ chemical formula
- ✓ molecular element
- ✓ molecular compound
- ✓ cation
- ✓ anion
- ✓ ionic compound
- ✓ catalyst

N	O	I	N	A	I	J	O	T	V	E	O	X	Q	A	I	U	X	W	D	H	H	N	X	K
B	S	Y	J	D	V	Q	P	H	G	I	C	Q	D	O	Q	H	R	P	H	N	X	Q	M	F
Q	A	T	H	Z	E	Z	V	E	F	R	O	X	N	N	A	V	E	Z	J	B	G	I	R	X
L	H	C	D	Q	Y	P	H	X	J	U	X	I	I	Q	G	W	I	W	U	W	L	G	Z	K
K	H	S	H	K	H	J	I	M	C	C	C	J	A	V	Y	B	T	Z	F	F	K	I	A	N
Q	C	V	T	P	B	S	K	K	F	C	S	G	A	C	J	S	V	G	E	B	H	D	M	O
H	M	H	U	M	R	Y	O	V	O	X	N	R	W	B	Y	B	H	E	A	Z	N	I	D	V
B	U	X	E	B	W	Y	L	M	E	T	O	N	L	L	E	A	M	Y	F	X	T	B	A	D
F	F	F	Z	M	U	N	P	Z	W	B	Z	L	A	W	K	M	L	M	N	G	G	V	S	F
E	O	T	L	E	I	O	B	X	B	B	K	T	E	R	F	O	C	V	M	L	E	L	C	N
B	O	R	P	D	U	C	H	W	I	Y	A	W	G	X	L	L	Y	Y	T	I	Q	H	K	Z
G	F	Y	V	N	K	I	A	D	G	C	G	M	J	W	K	E	D	M	M	C	G	G	Y	S
L	V	H	D	V	A	M	H	L	D	X	N	M	Y	V	K	C	M	O	I	S	E	S	K	B
W	P	S	C	F	G	A	E	F	F	Q	X	D	B	S	P	U	A	H	L	C	M	N	H	J
F	T	Q	V	K	Y	P	E	I	Y	O	G	W	L	M	U	L	R	G	C	G	O	J	K	E
X	T	T	X	E	B	F	M	E	G	Y	R	A	M	B	T	E	W	A	S	H	L	M	O	T
C	P	W	U	E	Q	H	H	Q	P	Q	W	M	N	C	X	W	T	H	Z	E	E	A	F	W
R	J	W	G	Z	G	T	J	C	S	H	J	E	U	D	S	I	K	X	M	J	C	Z	S	X
M	H	P	R	V	S	H	F	T	N	S	N	K	K	L	O	U	P	L	G	M	U	T	V	O
F	Y	Z	F	F	W	L	J	S	N	F	Z	Y	E	N	A	B	D	X	G	O	L	M	B	R
I	M	F	Z	R	U	K	J	Z	M	M	V	T	U	Z	L	N	C	H	Z	L	A	N	S	D
T	J	F	U	Q	K	I	P	Y	P	J	H	Q	M	D	O	O	M	R	B	E	R	Z	P	E
X	S	B	E	R	R	T	T	Z	V	P	N	X	S	B	D	F	H	K	X	C	E	V	A	U
C	E	O	V	I	Q	Q	R	Q	U	P	Z	T	C	U	Z	I	I	J	U	L	R	P	B	
H	L	V	U	V	L	I	A	C	S	A	M	N	T	E	C	S	X	F	W	L	E	I	C	E
C	R	D	D	V	L	S	V	X	S	F	E	V	W	V	Q	X	V	S	Z	A	M	K	L	X
B	M	E	R	C	G	U	P	L	N	L	T	Y	Y	F	C	M	A	X	A	R	E	W	V	J
C	O	B	P	Q	X	B	J	K	A	P	L	R	W	W	B	R	J	o	N	C	N	P	Z	A
H	F	Y	X	M	A	Y	L	V	J	Y	N	X	L	F	Z	X	A	J	C	O	T	A	A	R
O	D	D	T	T	Y	H	O	W	I	G	F	S	G	E	A	A	S	W	A	M	Z	K	M	D
M	H	A	J	T	U	C	B	Y	S	Y	X	W	E	A	F	G	N	N	Y	P	J	Q	F	K
O	O	T	S	V	M	T	G	J	M	Q	B	N	O	G	N	R	H	N	E	O	R	Z	B	Z
M	B	L	L	K	S	G	Z	E	K	I	R	R	W	E	A	K	R	O	X	U	R	R	Z	C
H	N	B	K	S	W	A	V	T	F	I	Q	U	V	J	V	A	L	I	V	N	N	J	S	U
P	Z	H	I	M	Y	M	C	I	N	S	R	J	O	M	P	H	R	R	V	D	Y	E	J	D

Atoms, Elements, and Compounds

C

Find the following terms in the word search puzzle.

- ✓ particle theory of matter
- ✓ mechanical mixture
- ✓ physical property
- ✓ viscosity
- ✓ chemical change
- ✓ density
- ✓ boiling point
- ✓ compound
- ✓ metalloid
- ✓ alkaline earth metal
- ✓ period
- ✓ proton
- ✓ mass number
- ✓ Bohr-Rutherford diagram
- ✓ molecular element
- ✓ cation
- ✓ covalent bond
- ✓ pure substance
- ✓ solution
- ✓ qualitative property
- ✓ physical change
- ✓ precipitate
- ✓ freezing point
- ✓ element
- ✓ metal
- ✓ chemical family
- ✓ noble gas
- ✓ atom
- ✓ neutron
- ✓ isotope
- ✓ molecule
- ✓ molecular compound
- ✓ anion
- ✓ catalyst
- ✓ mixture
- ✓ alloy
- ✓ quantitative property
- ✓ chemical property
- ✓ characteristic physical property
- ✓ melting point
- ✓ element symbol
- ✓ non-metal
- ✓ alkali metal
- ✓ halogen
- ✓ electron
- ✓ atomic number
- ✓ atomic mass
- ✓ chemical formula
- ✓ ion
- ✓ ionic compound

K	C	I	L	E	D	A	G	D	N	U	O	P	M	O	C	C	I	N	O	I	E	K	X	C	
R	A	L	K	A	L	I	M	E	T	A	L	T	O	U	A	W	O	N	O	T	O	R	P	W	
Y	Z	E	P	O	T	O	S	I	A	K	C	K	M	L	T	J	B	W	A	W	M	G	O	D	
T	N	Z	T	X	S	S	W	F	A	A	O	E	B	Y	I	A	O	T	N	N	A	L	J	D	
R	O	P	N	J	C	F	H	C	L	T	W	Y	V	J	O	D	I	E	E	O	R	A	I	N	
E	B	X	I	J	H	G	N	Y	K	O	V	F	G	B	N	P	L	M	X	I	G	T	Q	O	
P	L	E	O	R	A	R	F	T	A	M	H	G	T	F	I	P	I	I	K	N	A	E	B	B	
O	E	G	P	E	R	E	Y	R	L	I	B	C	P	C	S	F	N	X	G	A	I	M	D	T	
R	G	N	G	T	A	B	Z	E	I	C	J	V	E	E	O	X	G	T	W	D	D	N	N	N	
P	A	A	N	T	C	M	C	P	N	M	X	R	Y	E	G	X	P	U	F	P	D	X	U	E	
E	S	H	I	A	T	U	H	O	E	A	P	Y	J	G	S	B	O	R	E	E	R	D	O	L	
V	I	C	Z	M	E	N	E	R	E	S	C	H	O	Z	E	N	I	E	G	R	O	E	P	A	
I	J	L	E	F	R	S	M	P	A	S	G	C	V	V	W	V	V	N	N	N	I	F	C	M	V
T	U	A	E	O	I	S	I	E	R	J	J	O	Q	F	J	S	T	Y	A	O	R	N	O	O	
A	D	C	R	Y	S	A	C	V	T	C	P	M	Y	H	N	T	O	C	H	D	E	A	C	C	
T	J	I	F	R	T	M	A	I	H	S	Y	P	U	M	F	L	H	Z	C	Z	H	T	R	O	
I	B	M	N	O	I	G	L	T	M	L	J	O	T	K	L	E	E	B	L	C	T	S	A	T	
T	S	E	I	E	C	Q	F	A	E	G	E	U	P	A	M	D	B	T	A	O	U	B	L	N	
N	T	H	O	H	P	Q	A	T	T	S	K	N	Y	I	D	D	H	N	C	A	R	U	U	I	
A	N	C	N	T	H	G	M	I	A	J	B	D	C	I	P	J	Y	E	I	W	R	S	C	O	
U	E	G	Y	E	Y	A	I	L	L	S	X	A	O	E	Q	H	T	M	S	P	H	E	E	P	
Q	M	U	V	L	S	N	L	A	T	W	L	L	J	X	Q	Y	I	E	Y	H	O	R	L	G	
E	E	S	Q	C	I	L	Y	U	J	P	L	G	L	A	P	X	S	L	H	S	B	U	O	N	
L	L	O	Y	I	C	K	K	Q	R	A	M	O	T	A	T	L	N	E	P	N	T	P	M	I	
E	E	L	P	T	A	Y	S	O	T	N	O	J	B	L	A	T	E	M	N	O	N	B	N	T	
C	R	U	V	R	L	N	P	E	M	O	L	E	C	U	L	E	D	G	R	Q	E	M	U	L	
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R	L	I	U	P	R	G	G	O	D	P	P	S	T	O	U	V	C	F	J	G	V	J	T	M	
O	U	O	P	T	O	O	Q	Y	G	A	T	O	M	I	C	N	U	M	B	E	R	O	M	Q	
N	C	N	Y	Z	P	L	L	O	B	M	Y	S	T	N	E	M	E	L	E	L	D	H	Y	S	
C	E	P	W	B	E	A	G	M	E	C	H	A	N	I	C	A	L	M	I	X	T	U	R	E	
N	L	W	Z	L	R	H	A	U	O	J	L	J	E	D	S	V	I	S	C	O	S	I	T	Y	
E	O	O	A	Y	T	R	E	P	O	R	P	L	A	C	I	S	Y	H	P	A	S	E	K	C	
L	M	C	W	M	Y	O	O	W	C	D	C	A	T	A	L	Y	S	T	H	Z	U	R	G	L	
D	J	S	B	N	R	N	E	U	T	R	O	N	T	J	C	P	I	N	H	H	P	X	K	L	

Our Place in Space

8

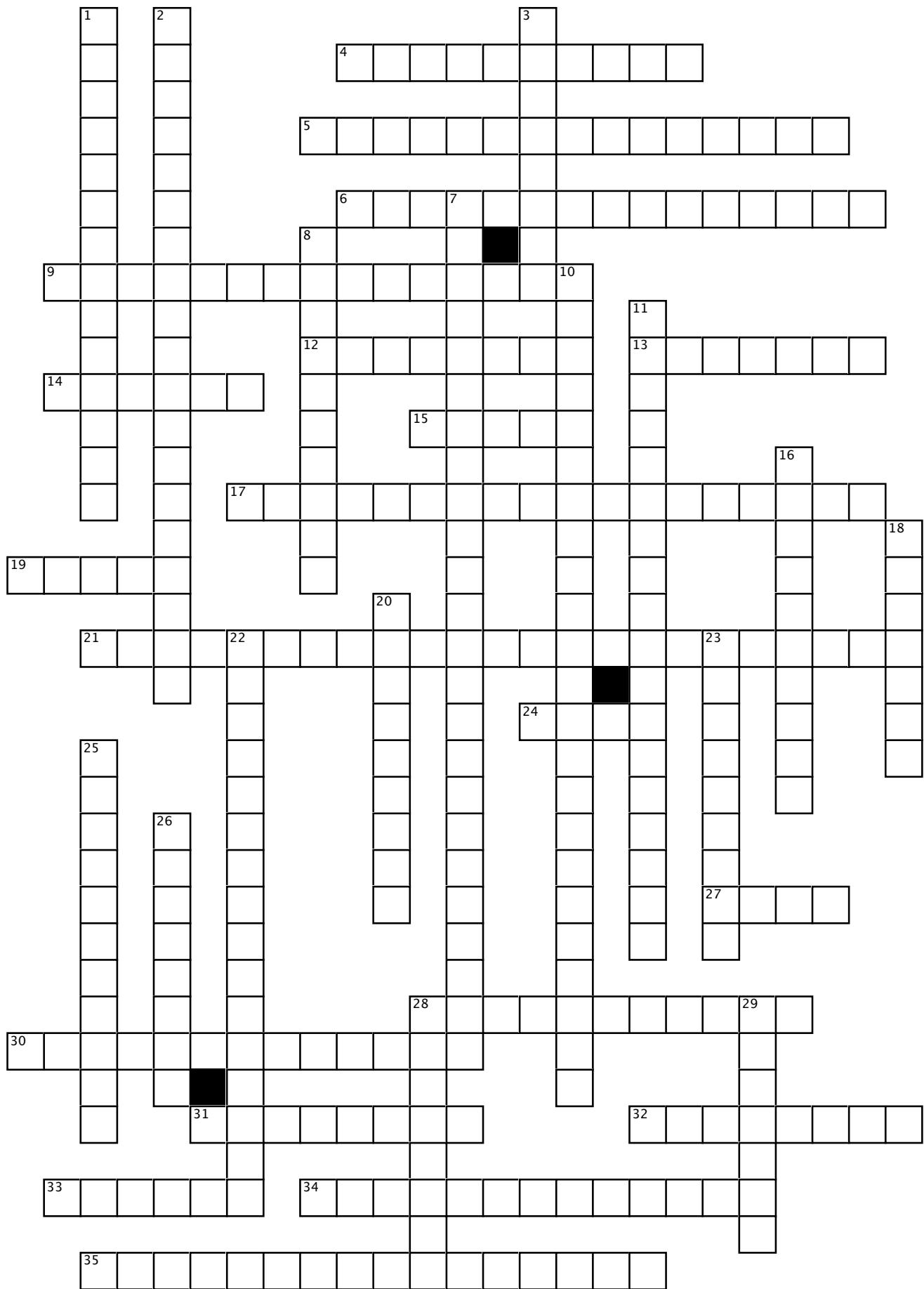
Use the clues to complete the crossword puzzle. Terms with multiple words are written without spaces.

ACROSS

4. all of the phases of the moon (two words)
5. the imaginary sphere that rotates around Earth, onto which all celestial objects are projected (two words)
6. any object that exists in space (two words)
9. low-energy gas eruptions from the Sun's surface that extend thousands of kilometres into space (two words)
12. the angular height a celestial object appears to be above the horizon; measured vertically from the horizon
13. the time of year when the hours of daylight equal the hours of darkness
14. a huge, rotating collection of gas, dust, and billions of stars, planets, and other celestial objects
15. a chunk of ice and dust that travels in a very long orbit around the Sun
17. the force of attraction between all masses in the Universe (two words) 19. the closed path of a celestial object or satellite as it travels around another celestial object
21. a group of satellites that work together to determine the positions of given objects on the surface of Earth (three words)
24. a massive collection of gasses, held together by its own gravity and emitting huge amounts of energy
27. the alternate rising and falling of the surface of large bodies of water; caused by the interaction between Earth, the Moon, and the Sun
28. the sun and all the objects that travel around it (two words)
30. a grouping of stars, as observed from Earth
31. everything that exists, including all energy, matter, and space
32. producing and giving off light; shining
33. a large, round celestial object that travels around a star
34. the average distance between an object in the Solar System and the Sun (two words)
35. the apparent motion of an object in the sky, usually a planet, from east to west, rather than in its normal motion from west to east (two words)

Down

1. a display of shifting colours in the northern sky caused by solar particles colliding with matter in Earth's upper atmosphere (two words)
2. the use of positions of stars to determine location and direction when travelling (two words)
3. the path across the sky that the Sun, Moon, the planets, and the zodiac constellations appear to follow over the course of a year
7. energy emitted from matter, consisting of electromagnetic waves that travel at the speed of light (two words)
8. gases and charged particles expelled above an active sunspot (two words)
10. the range of wavelengths of electromagnetic radiation, extending from radio waves to gamma rays, and including visible light (two words)
11. an orbital path directly over Earth's equator with a period equal to the period of Earth's rotation (two words)
16. the changing direction of Earth's axis
18. the horizontal angular distance from north measured eastward along the horizon to a point directly below a celestial body
20. the scientific study of what is beyond Earth
22. approximately 150 million kilometres; the average distance from Earth to the Sun (two words)
23. a celestial object that travels around a planet or dwarf planet
25. a celestial object that orbits the Sun and has a spherical shape but does not dominate its orbit (two words)
26. dark spots appearing on the Sun's surface that are cooler than the area surrounding them
28. an astronomical event that occurs two times each year, when the tilt of Earth's axis is most inclined toward or away from the Sun, causing the position of the sun in the sky to appear to reach its northernmost or southernmost extreme
29. a darkening of a celestial object due to the position of another celestial object



9

Beyond the Solar System

Use the clues to complete the crossword puzzle. Terms with multiple words are written without spaces.

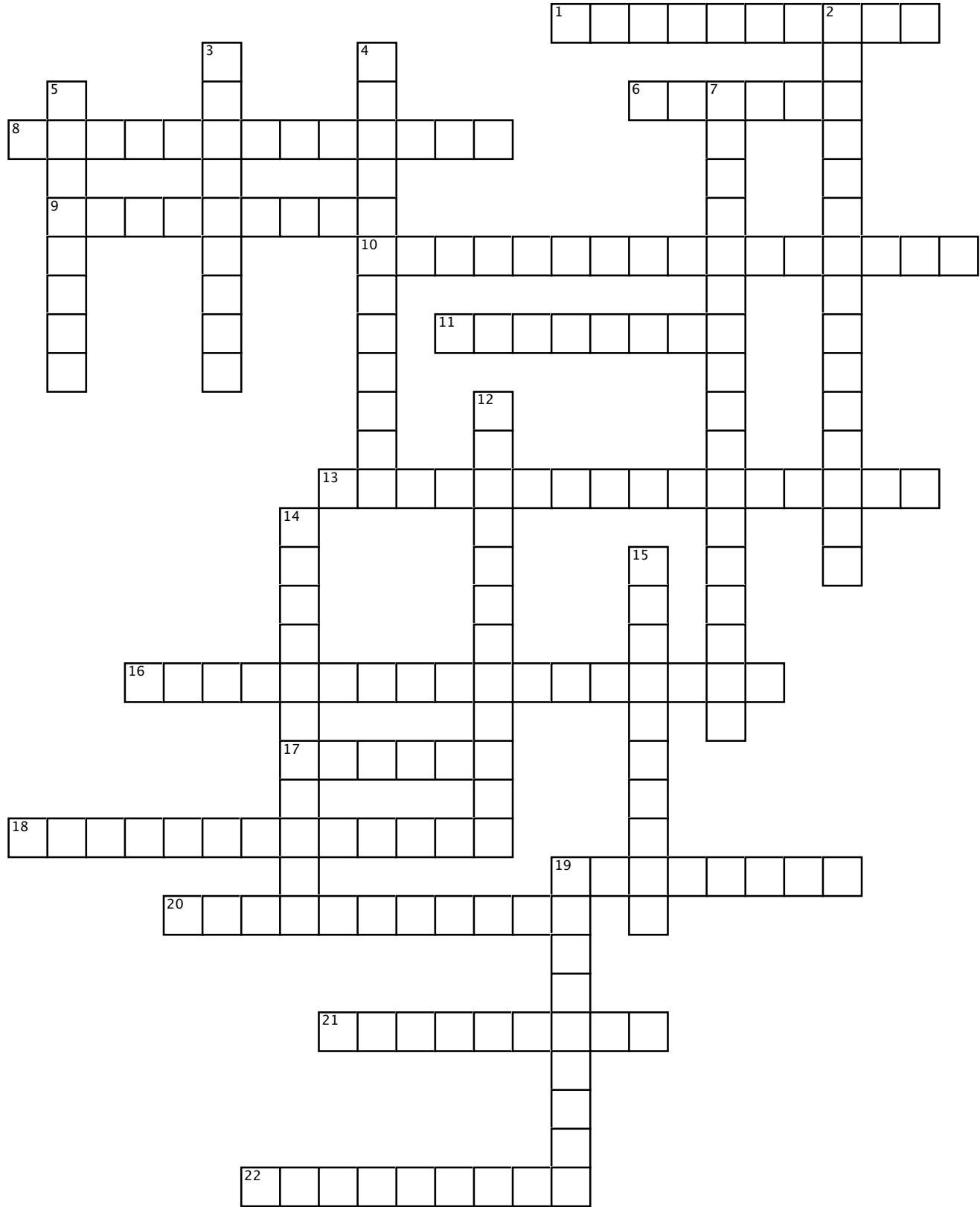
ACROSS

1. the total amount of energy produced by a star per second
6. a distant, young galaxy that emits large amounts of energy produced by a supermassive black hole at its centre
8. a star near the end of its life cycle with a mass that is 10 times (or more) larger than that of the Sun; it becomes larger and redder as it runs out of hydrogen fuel (two words)
9. a value used to describe the masses of galaxies and stars other than our Sun; equal to the mass of the Sun (two words)
10. a large group of stars that together make an elliptical or oval shape (two words)
11. a star near the end of its life cycle with a mass that is equal to or smaller than the mass of the Sun; it becomes larger and redder as it runs out of hydrogen fuel (two words)
13. a large group of stars that together make a shape that has a central bulge but no spiral arms (two words)
16. the brightness of stars in the night sky as they appear from Earth (two words)
17. a massive cloud of interstellar gas and dust; the beginning of a star
18. the theory that the Universe began in an incredibly hot, dense expansion approximately 13.7 billion years ago (three words)
19. the apparent change in position of an object as viewed from two different locations that are not in a line with the object
20. a group of stars held together by gravity (two words)

21. an extremely dense quantity of matter in space from which no light or matter can escape (two words)
22. the distance that light travels in a vacuum in 1 year (two words)

DOWN

2. a large group of stars that together make an irregular shape (two words)
3. a stellar explosion that occurs at the end of a massive star's life
4. the stars (including the Sun) that form a narrow band across the Hertzsprung-Russell diagram from the upper left to the lower right (two words)
5. the phenomenon of light from galaxies shifting toward the red end of the visible spectrum, indicating that the galaxies are moving away from Earth (two words)
7. the brightness of stars as if they were all located 33 lightyears from Earth (two words)
12. a large group of stars that together make a spiral shape (two words)
14. an immensely dense star made up of tightly packed neutrons; results when a star over 10 solar masses collapses (two words)
15. a small, hot, dim star created by the remaining material that is left when a red giant dies (two words)
19. a massive concentration of gas and dust thought to eventually develop into a star after the nebula collapses



Space Research and Exploration

10

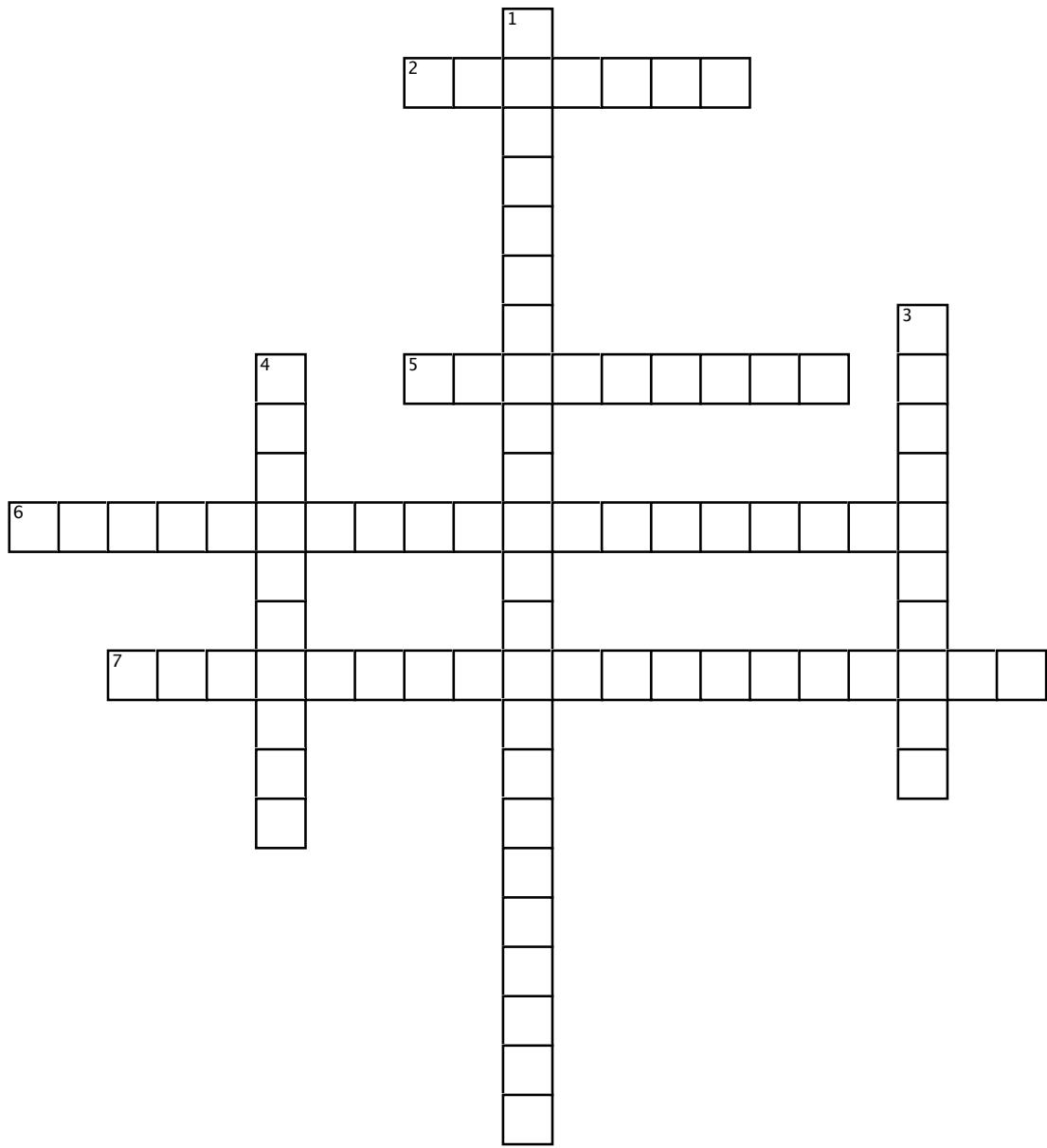
Use the clues to complete the crossword puzzle. Terms with multiple words are written without spaces.

ACROSS

2. a technology originally designed for a particular purpose, such as space technology, that has made its way into everyday use
5. debris from artificial objects orbiting Earth (two words)
6. an optical telescope that uses mirrors to gather and focus light (two words)
7. an optical telescope that uses glass lenses to gather and focus light (two words)

DOWN

1. an environment in which objects behave as though there is very little gravity affecting them (two words)
3. a robotic spacecraft sent into space to explore celestial objects such as planets, moons, asteroids, and comets (two words)
4. a human-occupied or robotic vehicle used to explore space or celestial objects



The Study of the Universe

D

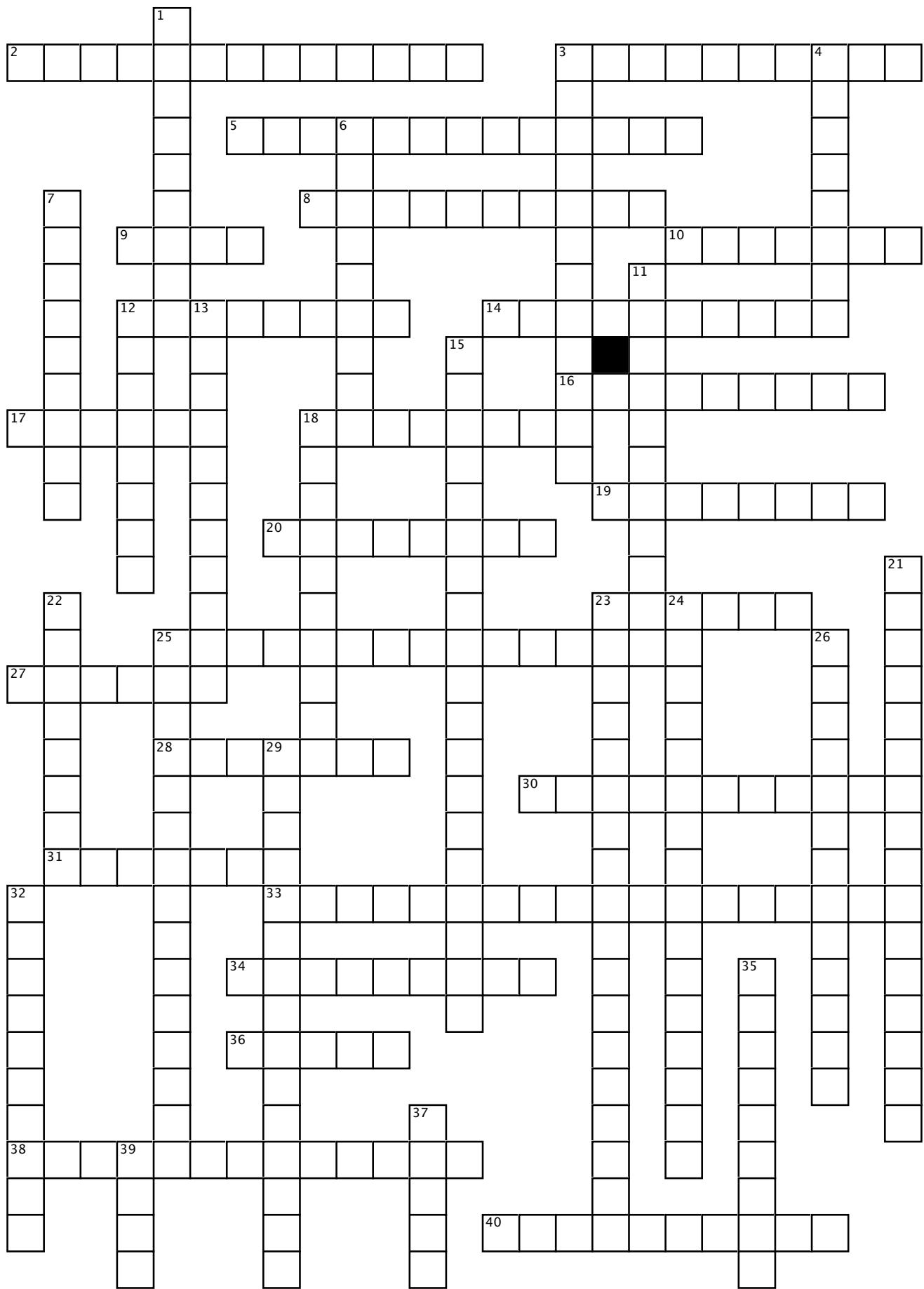
Use the clues to complete the crossword puzzle. Terms with multiple words are written without spaces.

ACROSS

2. the theory that the Universe began in an incredibly hot, dense expansion approximately 13.7 billion years ago (three words)
3. gases and charged particles expelled above an active sunspot (two words)
5. a star near the end of its life cycle with a mass that is 10 times (or more) larger than that of the Sun; it becomes larger and redder as it runs out of hydrogen fuel (two words)
8. a human-occupied or robotic vehicle used to explore space or celestial objects
9. the alternate rising and falling of the surface of large bodies of water; caused by the interaction between Earth, the Moon, and the Sun
10. the horizontal angular distance from north measured eastward along the horizon to a point directly below a celestial body
12. a star near the end of its life cycle with a mass that is equal to or smaller than the mass of the Sun; it becomes larger and redder as it runs out of hydrogen fuel (two words)
14. a robotic spacecraft sent into space to explore celestial objects such as planets, moons, asteroids, and comets (two words)
16. the scientific study of what is beyond Earth
17. a distant, young galaxy that emits large amounts of energy produced by a supermassive black hole at its centre
18. the apparent change in position of an object as viewed from two different locations that are not in a line with the object
19. everything that exists, including all energy, matter, and space
20. the path across the sky that the Sun, Moon, the planets, and the zodiac constellations appear to follow over the course of a year
23. a huge, rotating collection of gas, dust, and billions of stars, planets, and other celestial objects
25. the imaginary sphere that rotates around Earth, onto which all celestial objects are projected (two words)
27. a large, round celestial object that travels around a star
28. the time of year when the hours of daylight equal the hours of darkness
30. a group of stars held together by gravity (two words)
31. a darkening of a celestial object due to the position of another celestial object
33. the force of attraction between all masses in the Universe (two words)
34. an extremely dense quantity of matter in space from which no light or matter can escape (two words)
36. the closed path of a celestial object or satellite as it travels around another celestial object
38. a grouping of stars, as observed from Earth
40. a small, hot, dim star created by the remaining material that is left when a red giant dies (two words)

DOWN

1. a celestial object that travels around a planet or dwarf planet
3. a large group of stars that together make a spiral shape (two words)
4. the angular height a celestial object appears to be above the horizon; measured vertically from the horizon
6. a stellar explosion that occurs at the end of a massive star's life
7. debris from artificial objects orbiting Earth (two words)
11. an immensely dense star made up of tightly packed neutrons; results when a star over 10 solar masses collapses (two words)
12. the phenomenon of light from galaxies shifting toward the red end of the visible spectrum, indicating that the galaxies are moving away from Earth (two words)
13. a celestial object that orbits the Sun and has a spherical shape but does not dominate its orbit (two words)
15. the use of positions of stars to determine location and direction when travelling (two words)
18. the changing direction of Earth's axis
21. the apparent motion of an object in the sky, usually a planet, from east to west, rather than in its normal motion from west to east (two words)
22. an astronomical event that occurs two times each year, when the tilt of Earth's axis is most inclined toward or away from the Sun, causing the position of the sun in the sky to appear to reach its northernmost or southernmost extreme
23. an orbital path directly over Earth's equator with a period equal to the period of Earth's rotation (two words)
24. a large group of stars that together make a shape that has a central bulge but no spiral arms (two words)
25. any object that exists in space (two words)
26. the average distance between an object in the Solar System and the Sun (two words)
29. a large group of stars that together make an irregular shape (two words)
32. all of the phases of the moon (two words)
35. the distance that light travels in a vacuum in 1 year (two words)
37. a chunk of ice and dust that travels in a very long orbit around the Sun
39. a massive collection of gasses, held together by its own gravity and emitting huge amounts of energy



Our Place in Space

Find the following terms in the word search puzzle.

- ✓ astronomy
- ✓ star
- ✓ Solar System
- ✓ galaxy
- ✓ sunspots
- ✓ aurora borealis
- ✓ comet
- ✓ solstice
- ✓ lunar cycle
- ✓ constellation
- ✓ ecliptic altitude
- ✓ celestial object
- ✓ luminous
- ✓ satellite electromagnetic radiation
- ✓ solar flare
- ✓ astronomical unit
- ✓ orbital radius
- ✓ equinox eclipse
- ✓ celestial sphere
- ✓ retrograde motion
- ✓ global positioning system
- ✓ Universe
- ✓ planet
- ✓ orbit
- ✓ electromagnetic spectrum
- ✓ solar prominence
- ✓ dwarf planet
- ✓ gravitational force
- ✓ precession
- ✓ tide
- ✓ celestial navigation
- ✓ azimuth
- ✓ geostationary orbit

P	N	U	N	I	V	E	R	S	E	Q	U	I	N	O	X	X	A	M	Y	D	P	M	K	T	
L	C	O	N	S	T	E	L	L	A	T	I	O	N	G	C	E	W	D	G	L	B	J	W	L	
Z	Z	L	S	D	Q	Z	Q	A	L	T	I	T	U	D	E	Q	D	X	Z	X	F	Q	W	E	
G	E	O	S	T	A	T	I	O	N	A	R	Y	O	R	B	I	T	O	P	E	Y	Q	C	Y	
D	W	I	E	C	L	I	P	S	E	D	L	U	M	I	N	O	U	S	Z	L	F	R	L	L	
O	Z	T	C	O	M	E	T	K	H	W	L	W	C	H	H	C	P	Q	S	I	O	O	N	U	
W	N	I	D	O	P	X	K	J	H	A	D	Z	N	Y	L	U	X	M	D	F	Q	X	F	N	
Y	U	L	Y	X	C	I	C	F	R	R	I	V	D	C	X	E	H	B	L	V	L	I	N	V	
B	Q	C	E	O	W	U	U	J	T	I	F	Q	S	W	D	D	P	F	A	C	I	Z	S	F	A
L	U	N	A	R	C	Y	C	L	E	P	S	E	B	F	H	Q	N	Z	E	J	S	T	M	W	
C	P	C	Y	H	M	O	U	G	D	L	J	S	J	O	E	W	P	L	C	Z	A	Q	C		
H	W	E	L	E	C	T	R	O	M	A	G	N	E	T	I	C	S	P	E	C	T	R	U	M	
S	O	L	S	T	I	C	E	P	N	N	K	P	I	T	I	Z	U	E	S	M	F	F	S	P	
B	E	E	F	B	I	M	H	A	K	E	P	L	A	S	J	D	S	I	T	N	O	Q	M	V	
S	E	S	I	T	A	D	B	N	G	T	L	T	Y	F	T	H	E	T	I	V	T	F	U	U	
O	W	T	D	B	G	X	T	K	S	E	I	H	W	I	O	W	Y	Q	A	U	V	M	Z	U	
L	U	I	A	H	W	M	T	S	T	V	A	P	P	E	I	D	G	A	L	A	R	C	W	F	
A	C	A	Z	F	Y	H	M	A	A	A	T	F	L	N	A	T	K	E	S	K	L	X	K	L	
R	W	L	I	K	R	I	S	R	A	I	J	F	A	Z	G	U	F	T	P	P	P	A	Y	P	
P	A	O	M	L	A	O	G	I	P	J	Y	N	N	L	V	X	J	Q	H	B	T	R	G	W	
R	L	B	U	F	U	H	G	A	R	Z	A	Y	E	C	P	X	Y	P	E	Z	J	K	N	V	
O	A	J	T	G	H	D	M	K	Y	L	X	G	T	P	A	A	S	T	R	O	N	O	M	Y	
M	S	E	H	Z	J	B	Z	F	W	A	Y	P	Q	A	C	V	V	F	E	W	H	E	D	H	
I	G	C	O	R	B	I	T	A	L	R	A	D	I	U	S	G	W	J	B	O	C	M	B	T	
N	P	T	U	Q	C	P	G	A	M	D	Z	R	J	L	F	P	B	B	V	N	T	I	X	X	
E	D	G	U	A	H	L	G	W	A	S	T	R	O	N	O	M	I	C	A	L	U	N	I	T	
N	W	C	G	U	I	Q	H	C	P	K	S	O	L	A	R	S	Y	S	T	E	M	W	R	G	
C	O	R	B	I	T	U	R	V	R	L	S	O	L	A	R	F	L	A	R	E	G	O	P	T	
E	L	E	C	T	R	O	M	A	G	N	E	T	I	C	R	A	D	I	A	T	I	O	N	B	
P	R	G	L	O	B	A	L	P	O	S	I	T	I	O	N	I	N	G	S	Y	S	T	E	M	
A	W	P	Q	F	U	J	E	C	L	I	P	T	I	C	Y	H	O	X	G	M	U	L	Y	P	
Y	I	A	U	R	O	R	A	B	O	R	E	A	L	I	S	C	C	C	H	D	E	S	F	F	
S	H	D	B	R	E	T	R	O	G	R	A	D	E	M	O	T	I	O	N	C	A	B	U	F	
C	E	L	E	S	T	I	A	L	N	A	V	I	G	A	T	I	O	N	B	J	T	B	F	Q	
E	H	S	J	Z	S	U	N	S	P	O	T	S	R	W	P	R	E	C	E	S	S	I	O	N	

9

Beyond the Solar System

Find the following terms in the word search puzzle.

- ✓ light year
- ✓ absolute magnitude
- ✓ main sequence
- ✓ supernova
- ✓ elliptical galaxy
- ✓ quasar
- ✓ parallax
- ✓ solar mass
- ✓ red giant
- ✓ neutron star
- ✓ spiral galaxy
- ✓ red shift
- ✓ luminosity
- ✓ nebula
- ✓ red supergiant
- ✓ black hole
- ✓ lenticular galaxy
- ✓ Big Bang theory
- ✓ apparent magnitude
- ✓ protostar
- ✓ white dwarf
- ✓ star cluster
- ✓ irregular galaxy

P	N	U	N	I	V	E	R	S	E	Q	U	I	N	O	X	X	A	M	Y	D	P	M	K	T	
L	C	O	N	S	T	E	L	L	A	T	I	O	N	G	C	E	W	D	G	L	B	J	W	L	
Z	Z	L	S	D	Q	Z	Q	A	L	T	I	T	U	D	E	Q	D	X	Z	X	F	Q	W	E	
G	E	O	S	T	A	T	I	O	N	A	R	Y	O	R	B	I	T	O	P	E	Y	Q	C	Y	
D	W	I	E	C	L	I	P	S	E	D	L	U	M	I	N	O	U	S	Z	L	F	R	L	L	
O	Z	T	C	O	M	E	T	K	H	W	L	W	C	H	H	C	P	Q	S	I	O	O	N	U	
W	N	I	D	O	P	X	K	J	H	A	D	Z	N	Y	L	U	X	M	D	F	Q	X	F	N	
Y	U	L	Y	X	C	I	C	F	R	R	I	V	D	C	X	E	H	B	L	V	L	I	N	V	
B	Q	C	E	O	W	U	U	J	T	I	F	Q	S	W	D	D	P	F	A	C	I	Z	S	F	A
L	U	N	A	R	C	Y	C	L	E	P	S	E	B	F	H	Q	N	Z	E	J	S	T	M	W	
C	P	C	Y	H	M	O	U	G	D	L	J	S	J	O	E	W	P	L	C	Z	A	Q	C		
H	W	E	L	E	C	T	R	O	M	A	G	N	E	T	I	C	S	P	E	C	T	R	U	M	
S	O	L	S	T	I	C	E	P	N	N	K	P	I	T	I	Z	U	E	S	M	F	F	S	P	
B	E	E	F	B	I	M	H	A	K	E	P	L	A	S	J	D	S	I	T	N	O	Q	M	V	
S	E	S	I	T	A	D	B	N	G	T	L	T	Y	F	T	H	E	T	I	V	T	F	U	U	
O	W	T	D	B	G	X	T	K	S	E	I	H	W	I	O	W	Y	Q	A	U	V	M	Z	U	
L	U	I	A	H	W	M	T	S	T	V	A	P	P	E	I	D	G	A	L	A	R	C	W	F	
A	C	A	Z	F	Y	H	M	A	A	A	T	F	L	N	A	T	K	E	S	K	L	X	K	L	
R	W	L	I	K	R	I	S	R	A	I	J	F	A	Z	G	U	F	T	P	P	P	A	Y	P	
P	A	O	M	L	A	O	G	I	P	J	Y	N	N	L	V	X	J	Q	H	B	T	R	G	W	
R	L	B	U	F	U	H	G	A	R	Z	A	Y	E	C	P	X	Y	P	E	Z	J	K	N	V	
O	A	J	T	G	H	D	M	K	Y	L	X	G	T	P	A	A	S	T	R	O	N	O	M	Y	
M	S	E	H	Z	J	B	Z	F	W	A	Y	P	Q	A	C	V	V	F	E	W	H	E	D	H	
I	G	C	O	R	B	I	T	A	L	R	A	D	I	U	S	G	W	J	B	O	C	M	B	T	
N	P	T	U	Q	C	P	G	A	M	D	Z	R	J	L	F	P	B	B	V	N	T	I	X	X	
E	D	G	U	A	H	L	G	W	A	S	T	R	O	N	O	M	I	C	A	L	U	N	I	T	
N	W	C	G	U	I	Q	H	C	P	K	S	O	L	A	R	S	Y	S	T	E	M	W	R	G	
C	O	R	B	I	T	U	R	V	R	L	S	O	L	A	R	F	L	A	R	E	G	O	P	T	
E	L	E	C	T	R	O	M	A	G	N	E	T	I	C	R	A	D	I	A	T	I	O	N	B	
P	R	G	L	O	B	A	L	P	O	S	I	T	I	O	N	I	N	G	S	Y	S	T	E	M	
A	W	P	Q	F	U	J	E	C	L	I	P	T	I	C	Y	H	O	X	G	M	U	L	Y	P	
Y	I	A	U	R	O	R	A	B	O	R	E	A	L	I	S	C	C	C	H	D	E	S	F	F	
S	H	D	B	R	E	T	R	O	G	R	A	D	E	M	O	T	I	O	N	C	A	B	U	F	
C	E	L	E	S	T	I	A	L	N	A	V	I	G	A	T	I	O	N	B	J	T	B	F	Q	
E	H	S	J	Z	S	U	N	S	P	O	T	S	R	W	P	R	E	C	E	S	S	I	O	N	

Space Research and Exploration

10

Find the following terms in the word search puzzle.

- ✓ refracting telescope
- ✓ reflecting telescope
- ✓ spacecraft
- ✓ space probe
- ✓ microgravity environment
- ✓ space junk
- ✓ spinoff

P	N	U	N	I	V	E	R	S	E	Q	U	I	N	O	X	X	A	M	Y	D	P	M	K	T	
L	C	O	N	S	T	E	L	L	A	T	I	O	N	G	C	E	W	D	G	L	B	J	W	L	
Z	Z	L	S	D	Q	Z	Q	A	L	T	I	T	U	D	E	Q	D	X	Z	X	F	Q	W	E	
G	E	O	S	T	A	T	I	O	N	A	R	Y	O	R	B	I	T	O	P	E	Y	Q	C	Y	
D	W	I	E	C	L	I	P	S	E	D	L	U	M	I	N	O	U	S	Z	L	F	R	L	L	
O	Z	T	C	O	M	E	T	K	H	W	L	W	C	H	H	C	P	Q	S	I	O	O	N	U	
W	N	I	D	O	P	X	K	J	H	A	D	Z	N	Y	L	U	X	M	D	F	Q	X	F	N	
Y	U	L	Y	X	C	I	C	F	R	R	I	V	D	C	X	E	H	B	L	V	L	I	N	V	
B	Q	C	E	O	W	U	U	J	T	I	F	Q	S	W	D	D	P	F	A	C	I	Z	S	F	A
L	U	N	A	R	C	Y	C	L	E	P	S	E	B	F	H	Q	N	Z	E	J	S	T	M	W	
C	P	C	Y	H	M	O	U	G	D	L	J	S	J	O	E	W	P	L	C	Z	A	Q	C		
H	W	E	L	E	C	T	R	O	M	A	G	N	E	T	I	C	S	P	E	C	T	R	U	M	
S	O	L	S	T	I	C	E	P	N	N	K	P	I	T	I	Z	U	E	S	M	F	F	S	P	
B	E	E	F	B	I	M	H	A	K	E	P	L	A	S	J	D	S	I	T	N	O	Q	M	V	
S	E	S	I	T	A	D	B	N	G	T	L	T	Y	F	T	H	E	T	I	V	T	F	U	U	
O	W	T	D	B	G	X	T	K	S	E	I	H	W	I	O	W	Y	Q	A	U	V	M	Z	U	
L	U	I	A	H	W	M	T	S	T	V	A	P	P	E	I	D	G	A	L	A	R	C	W	F	
A	C	A	Z	F	Y	H	M	A	A	A	T	F	L	N	A	T	K	E	S	K	L	X	K	L	
R	W	L	I	K	R	I	S	R	A	I	J	F	A	Z	G	U	F	T	P	P	P	A	Y	P	
P	A	O	M	L	A	O	G	I	P	J	Y	N	N	L	V	X	J	Q	H	B	T	R	G	W	
R	L	B	U	F	U	H	G	A	R	Z	A	Y	E	C	P	X	Y	P	E	Z	J	K	N	V	
O	A	J	T	G	H	D	M	K	Y	L	X	G	T	P	A	A	S	T	R	O	N	O	M	Y	
M	S	E	H	Z	J	B	Z	F	W	A	Y	P	Q	A	C	V	V	F	E	W	H	E	D	H	
I	G	C	O	R	B	I	T	A	L	R	A	D	I	U	S	G	W	J	B	O	C	M	B	T	
N	P	T	U	Q	C	P	G	A	M	D	Z	R	J	L	F	P	B	B	V	N	T	I	X	X	
E	D	G	U	A	H	L	G	W	A	S	T	R	O	N	O	M	I	C	A	L	U	N	I	T	
N	W	C	G	U	I	Q	H	C	P	K	S	O	L	A	R	S	Y	S	T	E	M	W	R	G	
C	O	R	B	I	T	U	R	V	R	L	S	O	L	A	R	F	L	A	R	E	G	O	P	T	
E	L	E	C	T	R	O	M	A	G	N	E	T	I	C	R	A	D	I	A	T	I	O	N	B	
P	R	G	L	O	B	A	L	P	O	S	I	T	I	O	N	I	N	G	S	Y	S	T	E	M	
A	W	P	Q	F	U	J	E	C	L	I	P	T	I	C	Y	H	O	X	G	M	U	L	Y	P	
Y	I	A	U	R	O	R	A	B	O	R	E	A	L	I	S	C	C	C	H	D	E	S	F	F	
S	H	D	B	R	E	T	R	O	G	R	A	D	E	M	O	T	I	O	N	C	A	B	U	F	
C	E	L	E	S	T	I	A	L	N	A	V	I	G	A	T	I	O	N	B	J	T	B	F	Q	
E	H	S	J	Z	S	U	N	S	P	O	T	S	R	W	P	R	E	C	E	S	S	I	O	N	

The Study of the Universe

D

Find the following terms in the word search puzzle.

- ✓ astronomy
- ✓ star
- ✓ Solar System
- ✓ galaxy
- ✓ sunspots
- ✓ aurora borealis
- ✓ comet
- ✓ solstice
- ✓ lunar cycle
- ✓ constellation
- ✓ ecliptic
- ✓ altitude
- ✓ light year
- ✓ apparent magnitude
- ✓ nebula
- ✓ red giant
- ✓ supernova
- ✓ star cluster
- ✓ lenticular galaxy
- ✓ red shift
- ✓ reflecting telescope
- ✓ microgravity environment
- ✓ celestial object
- ✓ luminous
- ✓ satellite
- ✓ electromagnetic radiation
- ✓ solar flare
- ✓ astronomical unit
- ✓ orbital radius
- ✓ equinox
- ✓ eclipse
- ✓ celestial sphere
- ✓ retrograde motion
- ✓ global positioning system
- ✓ parallax
- ✓ absolute magnitude
- ✓ protostar
- ✓ red supergiant
- ✓ neutron star
- ✓ elliptical galaxy
- ✓ irregular galaxy
- ✓ Big Bang theory
- ✓ spacecraft
- ✓ space junk
- ✓ Universe
- ✓ planet
- ✓ orbit
- ✓ electromagnetic spectrum
- ✓ solar prominence
- ✓ dwarf planet
- ✓ gravitational force
- ✓ precession
- ✓ tide
- ✓ celestial navigation
- ✓ azimuth
- ✓ geostationary orbit
- ✓ luminosity
- ✓ solar mass
- ✓ main sequence
- ✓ white dwarf
- ✓ black hole
- ✓ spiral galaxy
- ✓ quasar
- ✓ refracting telescope
- ✓ space probe
- ✓ spinoff

P	N	U	N	I	V	E	R	S	E	Q	U	I	N	O	X	X	A	M	Y	D	P	M	K	T	
L	C	O	N	S	T	E	L	L	A	T	I	O	N	G	C	E	W	D	G	L	B	J	W	L	
Z	Z	L	S	D	Q	Z	Q	A	L	T	I	T	U	D	E	Q	D	X	Z	X	F	Q	W	E	
G	E	O	S	T	A	T	I	O	N	A	R	Y	O	R	B	I	T	O	P	E	Y	Q	C	Y	
D	W	I	E	C	L	I	P	S	E	D	L	U	M	I	N	O	U	S	Z	L	F	R	L	L	
O	Z	T	C	O	M	E	T	K	H	W	L	W	C	H	H	C	P	Q	S	I	O	O	N	U	
W	N	I	D	O	P	X	K	J	H	A	D	Z	N	Y	L	U	X	M	D	F	Q	X	F	N	
Y	U	L	Y	X	C	I	C	F	R	R	I	V	D	C	X	E	H	B	L	V	L	I	N	V	
B	Q	C	E	O	W	U	U	J	T	I	F	Q	S	W	D	D	P	F	A	C	I	Z	S	F	A
L	U	N	A	R	C	Y	C	L	E	P	S	E	B	F	H	Q	N	Z	E	J	S	T	M	W	
C	P	C	Y	H	M	O	U	G	D	L	J	S	J	O	E	W	P	L	C	Z	A	Q	C		
H	W	E	L	E	C	T	R	O	M	A	G	N	E	T	I	C	S	P	E	C	T	R	U	M	
S	O	L	S	T	I	C	E	P	N	N	K	P	I	T	I	Z	U	E	S	M	F	F	S	P	
B	E	E	F	B	I	M	H	A	K	E	P	L	A	S	J	D	S	I	T	N	O	Q	M	V	
S	E	S	I	T	A	D	B	N	G	T	L	T	Y	F	T	H	E	T	I	V	T	F	U	U	
O	W	T	D	B	G	X	T	K	S	E	I	H	W	I	O	W	Y	Q	A	U	V	M	Z	U	
L	U	I	A	H	W	M	T	S	T	V	A	P	P	E	I	D	G	A	L	A	R	C	W	F	
A	C	A	Z	F	Y	H	M	A	A	A	T	F	L	N	A	T	K	E	S	K	L	X	K	L	
R	W	L	I	K	R	I	S	R	A	I	J	F	A	Z	G	U	F	T	P	P	P	A	Y	P	
P	A	O	M	L	A	O	G	I	P	J	Y	N	N	L	V	X	J	Q	H	B	T	R	G	W	
R	L	B	U	F	U	H	G	A	R	Z	A	Y	E	C	P	X	Y	P	E	Z	J	K	N	V	
O	A	J	T	G	H	D	M	K	Y	L	X	G	T	P	A	A	S	T	R	O	N	O	M	Y	
M	S	E	H	Z	J	B	Z	F	W	A	Y	P	Q	A	C	V	V	F	E	W	H	E	D	H	
I	G	C	O	R	B	I	T	A	L	R	A	D	I	U	S	G	W	J	B	O	C	M	B	T	
N	P	T	U	Q	C	P	G	A	M	D	Z	R	J	L	F	P	B	B	V	N	T	I	X	X	
E	D	G	U	A	H	L	G	W	A	S	T	R	O	N	O	M	I	C	A	L	U	N	I	T	
N	W	C	G	U	I	Q	H	C	P	K	S	O	L	A	R	S	Y	S	T	E	M	W	R	G	
C	O	R	B	I	T	U	R	V	R	L	S	O	L	A	R	F	L	A	R	E	G	O	P	T	
E	L	E	C	T	R	O	M	A	G	N	E	T	I	C	R	A	D	I	A	T	I	O	N	B	
P	R	G	L	O	B	A	L	P	O	S	I	T	I	O	N	I	N	G	S	Y	S	T	E	M	
A	W	P	Q	F	U	J	E	C	L	I	P	T	I	C	Y	H	O	X	G	M	U	L	Y	P	
Y	I	A	U	R	O	R	A	B	O	R	E	A	L	I	S	C	C	C	H	D	E	S	F	F	
S	H	D	B	R	E	T	R	O	G	R	A	D	E	M	O	T	I	O	N	C	A	B	U	F	
C	E	L	E	S	T	I	A	L	N	A	V	I	G	A	T	I	O	N	B	J	T	B	F	Q	
E	H	S	J	Z	S	U	N	S	P	O	T	S	R	W	P	R	E	C	E	S	S	I	O	N	

Static Electricity

11

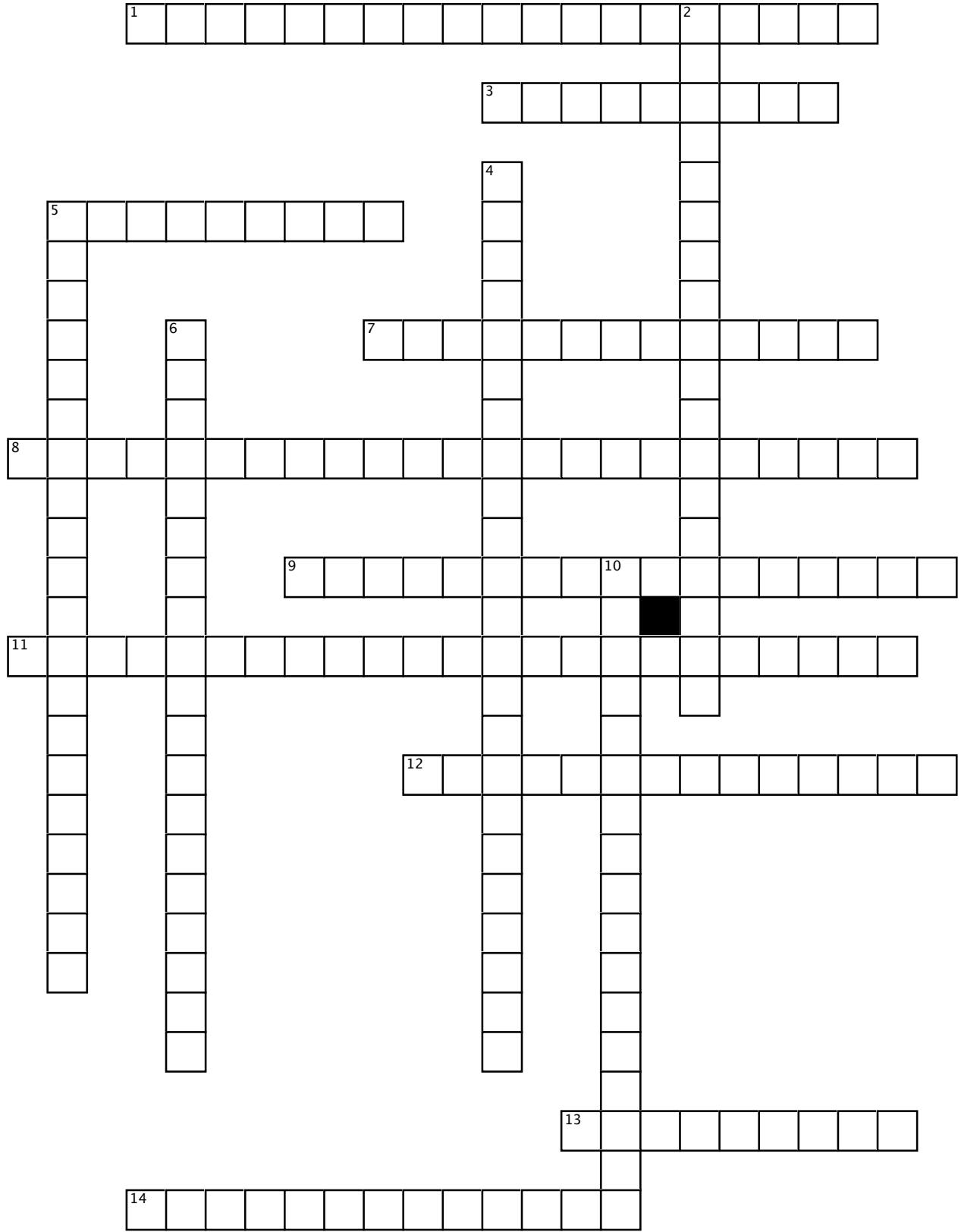
Use the clues to complete the crossword puzzle. Terms with multiple words are written without spaces.

ACROSS

1. charging a neutral object by bringing another charged object close to, but not touching, the neutral object (three words)
3. a material that does not easily allow the movement of electrons through it
5. a material that lets electrons move easily through it
7. an object that has equal numbers of protons and electrons (two words)
8. a shift in the position of electrons in a neutral object that occurs when a charged object is brought near it (three words)
9. an imbalance of electric charge on the surface of an object (two words)
11. an object that has fewer electrons than protons (three words)
12. a form of charge, either positive or negative, that exerts an electric force (two words)
13. connecting an object to a large body, like Earth, that is capable of effectively removing an electric charge that the object might have
14. the force exerted by an object with an electric charge; can be a force of attraction or a force of repulsion (two words)

DOWN

2. the transfer of electrons between two neutral objects (made from different materials) that occurs when they are rubbed together or come in contact (touch) (three words)
4. an object that has more electrons than protons (three words)
5. charging an object by contact with a charged object (three words)
6. a list of materials arranged in order of their tendency to gain electrons (two words)
10. the rapid transfer of electric charge from one object to another (two words)



Electrical Energy Production

12

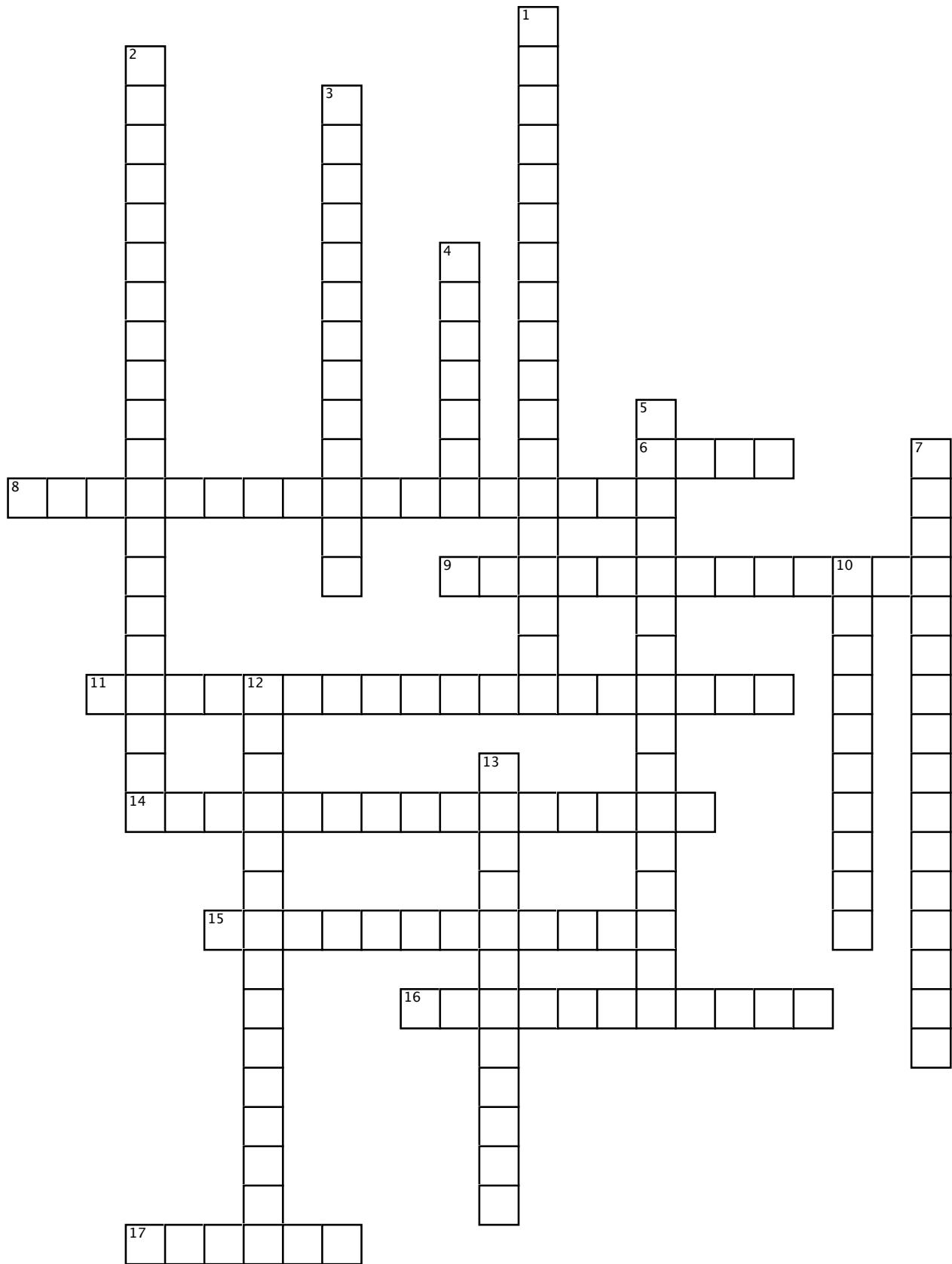
Use the clues to complete the crossword puzzle. Terms with multiple words are written without spaces.

ACROSS

6. the part of an electric circuit that converts electrical energy into other forms of energy
8. natural energy resource that is unlimited or can be replenished by natural processes in a relatively short period of time (two words)
9. a flow of electrons in one direction through an electric circuit (two words)
11. the controlled flow of electrons through a conductor (two words)
14. the rate at which electrical energy is produced or used (two words)
15. the SI unit for measuring electrical energy usage; the use of one kilowatt of power for one hour
16. a electric cell that may only be used once (two words)
17. a device in an electric circuit that controls the flow of electrons by opening (or closing) the circuit

DOWN

1. a flow of electrons that alternates in direction in an electric circuit (two words)
2. a resource that cannot be replaced as quickly as it is consumed (two words)
3. an electric cell that can be recharged (two words)
4. any biological material (including plants and animals)
5. the energy provided by the flow of electrons in an electric circuit (two words)
7. a device that converts light energy from any source directly into electrical energy (two words)
10. comparison of the energy output of a device with the energy supplied
12. a continuous path in which electrons can flow (two words)
13. a device that converts chemical energy into electrical energy (two words)



Electrical Quantities in Circuits

13

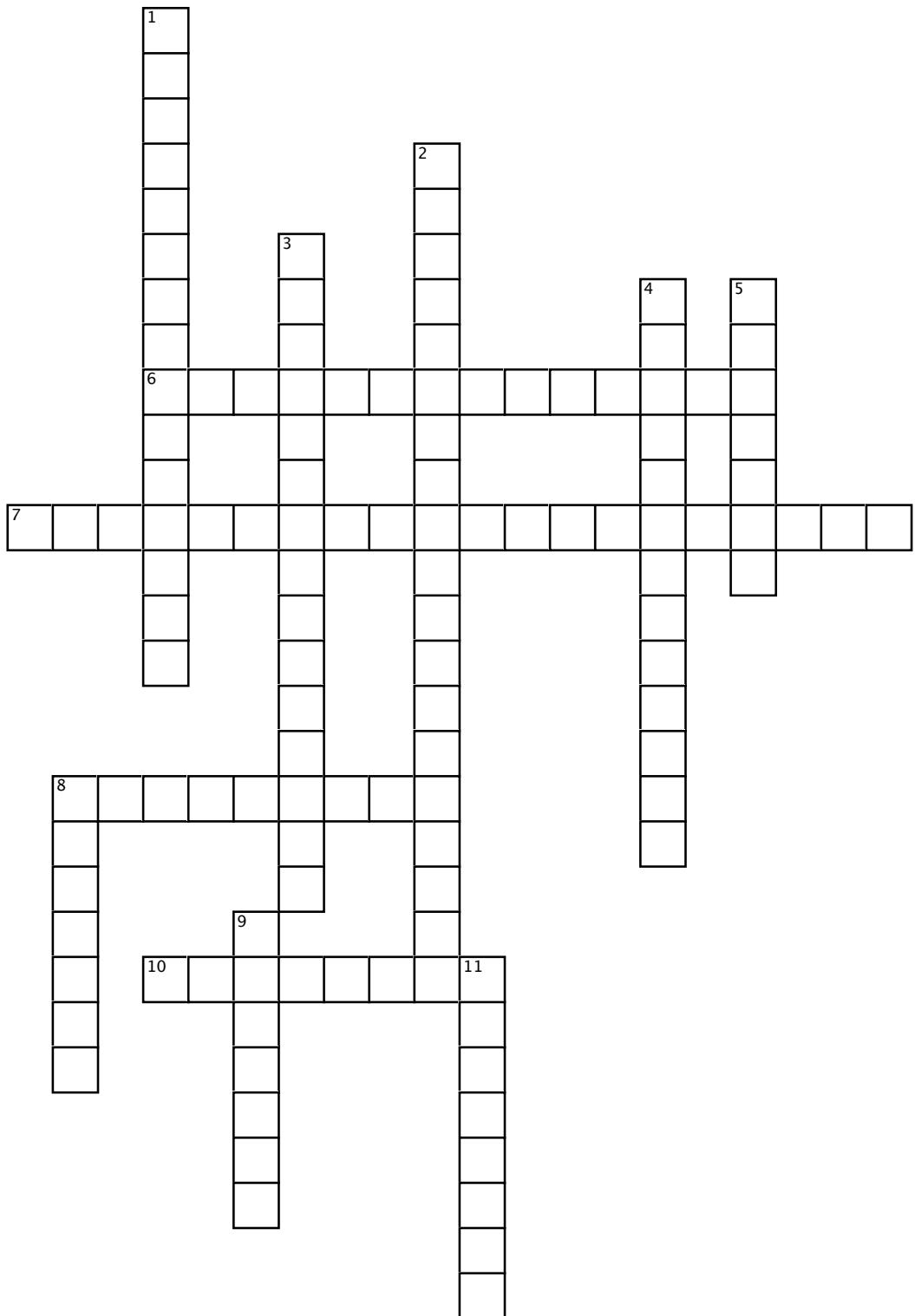
Use the clues to complete the crossword puzzle. Terms with multiple words are written without spaces.

ACROSS

6. a way of drawing an electric circuit using standard symbols (two words)
7. the ability of a material to oppose the flow of electric current; measured in ohms (two words)
8. a device used to measure potential difference (voltage)
10. a device used to measure resistance

DOWN

1. a circuit in which the loads are connected by branches so that there are two or more paths for electrons to flow (two words)
2. the difference in electrical potential energy per unit charge measured at two different points; measured in volts (two words)
3. a measure of the rate of electron flow past a given point in a circuit; measured in amperes (two words)
4. a circuit in which the loads are connected end to end so that there is only one path for electrons to flow (two words)
5. the straight-line relationship between voltage and current (two words)
8. the difference in electrical potential energy per unit charge measured at two different points; measured in volts
9. a device used to measure electric current
11. a device that reduces the flow of electric current



The Characteristics of Electricity



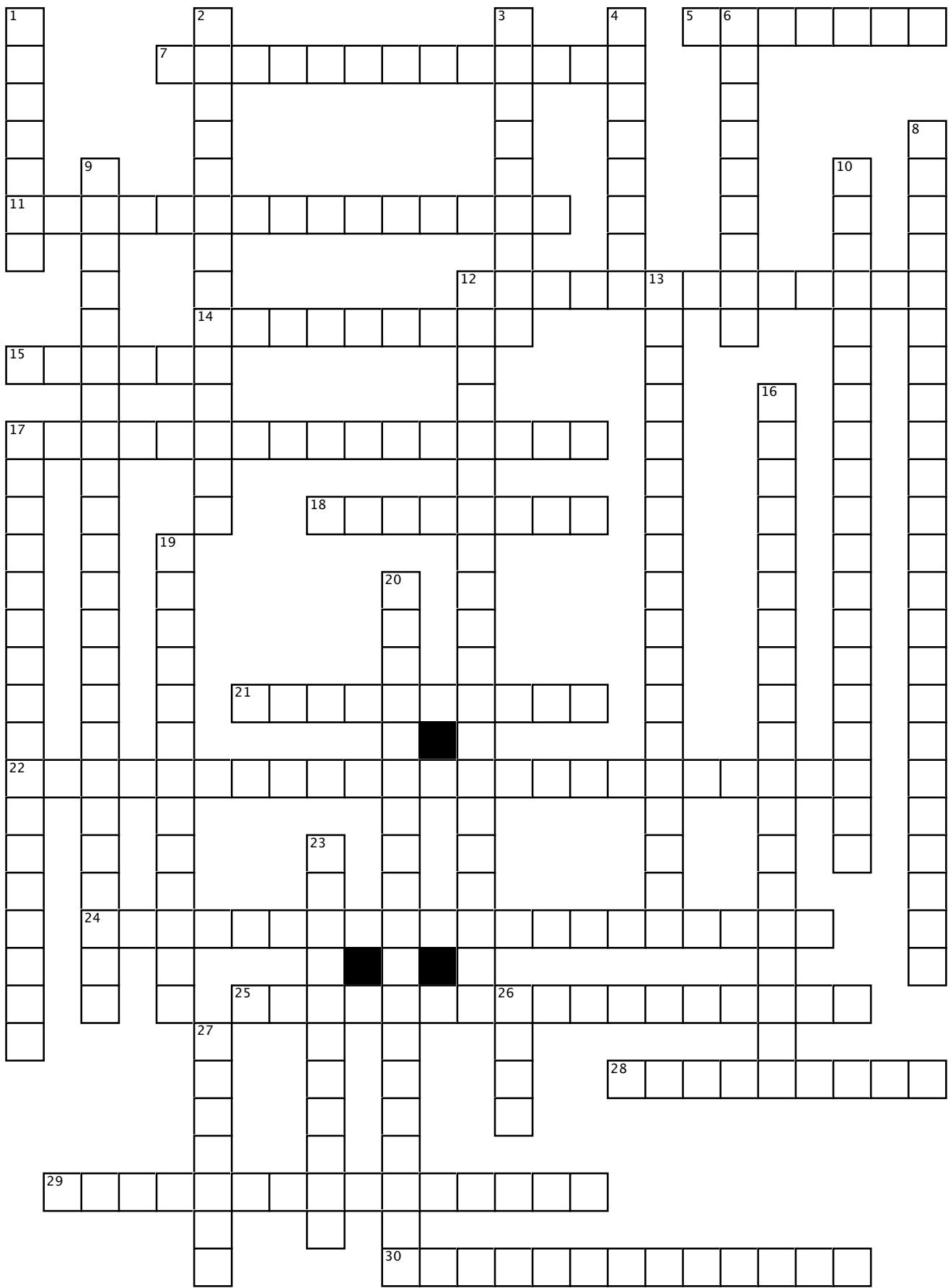
Use the clues to complete the crossword puzzle. Terms with multiple words are written without spaces.

ACROSS

5. any biological material (including plants and animals)
7. the force exerted by an object with an electric charge; can be a force of attraction or a force of repulsion (two words)
11. the rate at which electrical energy is produced or used (two words)
12. an object that has equal numbers of protons and electrons (two words)
14. a material that lets electrons move easily through it
15. a device in an electric circuit that controls the flow of electrons by opening (or closing) the circuit
17. the energy provided by the flow of electrons in an electric circuit (two words)
18. a device used to measure resistance
21. comparison of the energy output of a device with the energy supplied
22. a shift in the position of electrons in a neutral object that occurs when a charged object is brought near it (three words)
24. the ability of a material to oppose the flow of electric current; measured in ohms (two words)
25. an imbalance of electric charge on the surface of an object (two words)
28. connecting an object to a large body, like Earth, that is capable of effectively removing an electric charge that the object might have
29. a circuit in which the loads are connected by branches so that there are two or more paths for electrons to flow (two words)
30. a circuit in which the loads are connected end to end so that there is only one path for electrons to flow (two words)

DOWN

1. a device used to measure electric current
2. a form of charge, either positive or negative, that exerts an electric force (two words)
3. a device used to measure potential difference (voltage)
4. a device that reduces the flow of electric current
6. a material that does not easily allow the movement of electrons through it
8. an object that has fewer electrons than protons (three words)
9. an object that has more electrons than protons (three words)
10. the difference in electrical potential energy per unit charge measured at two different points; measured in volts (two words)
12. a resource that cannot be replaced as quickly as it is consumed (two words)
13. a flow of electrons that alternates in direction in an electric circuit (two words)
16. charging a neutral object by bringing another charged object close to, but not touching, the neutral object (three words)
17. the rapid transfer of electric charge from one object to another (two words)
19. a flow of electrons in one direction through an electric circuit (two words)
20. a list of materials arranged in order of their tendency to gain electrons (two words)
23. an electric cell that may only be used once (two words)
26. the part of an electric circuit that converts electrical energy into other forms of energy
27. the straight-line relationship between voltage and current (two words)



Static Electricity

Find the following terms in the word search puzzle.

- ✓ electric charge
- ✓ positively charged object
- ✓ induced charge separation
- ✓ charging by conduction
- ✓ insulator
- ✓ neutral object
- ✓ static electricity
- ✓ charging by friction
- ✓ grounding
- ✓ charging by induction
- ✓ negatively charged object
- ✓ electric force
- ✓ electrostatic series
- ✓ conductor
- ✓ electric discharge

R	O	T	A	L	U	S	N	I	E	M	X	W	Q	X	J	D	H	F	H	V	X	R	I	K
Z	A	A	G	V	Q	E	E	A	V	Q	L	N	S	S	I	K	S	J	J	E	Y	O	P	K
Q	J	C	K	H	S	A	G	A	F	P	X	D	G	M	F	C	Z	D	B	K	V	P	E	A
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T	K	N	Q	A	T	E	E	I	O	C	D	O	L	X	B	K	T	L	I	A	V	J	C	S
P	T	N	E	R	R	J	M	U	T	R	I	M	W	B	A	T	L	Q	W	A	O	X	M	C
G	E	K	R	W	I	A	R	X	H	C	H	R	A	Y	C	Z	U	W	T	H	E	A	V	I
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O	I	V	S	R	C	B	R	D	F	L	G	F	L	Y	Y	R	N	R	R	D	Z	B	H	O
W	Z	V	R	Q	H	X	G	X	A	L	C	R	L	E	I	B	O	I	U	J	T	O	Y	R
H	L	A	P	D	A	L	N	R	K	R	J	J	A	C	C	T	G	M	G	V	H	Q	A	T
X	U	I	I	O	R	W	T	M	O	B	N	U	C	H	C	T	B	N	A	R	E	Z	G	C
T	M	Z	Z	Z	G	U	L	C	D	U	V	H	G	U	C	I	R	F	I	W	A	G	Z	E
X	H	E	E	R	E	P	H	E	I	H	A	E	D	V	S	D	J	I	I	G	Q	H	L	L
C	J	I	G	N	C	B	Q	B	T	R	B	N	H	C	N	J	E	G	C	M	R	X	C	E
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Z	T	Y	H	K	Z	O	M	E	D	C	P	B	W	V	R	G	U	I	U	F	O	U	H	Z
W	K	R	Y	W	F	E	N	J	O	S	M	D	B	Q	G	B	A	S	B	D	J	R	V	C
R	S	N	F	A	P	O	X	F	A	R	I	B	U	Y	K	F	V	J	A	W	N	C	C	P
A	J	U	F	W	E	L	U	S	X	T	P	L	D	M	Y	S	B	U	Y	U	T	I	X	E
K	T	R	M	U	L	O	U	E	W	K	R	U	L	G	Q	U	Z	Q	A	G	U	V	J	O
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T	U	N	G	J	F	L	G	L	B	A	K	X	T	P	R	U	M	K	B	F	Z	E	D	E
R	Q	Y	M	T	N	R	S	L	M	Z	B	P	I	L	N	M	Z	P	E	A	X	F	L	F

Electrical Energy Production

12

Find the following terms in the word search puzzle.

- ✓ current electricity
- ✓ electrical energy
- ✓ direct current
- ✓ biomass
- ✓ efficiency
- ✓ electric circuit
- ✓ electric cell
- ✓ alternating current
- ✓ photovoltaic cell
- ✓ load
- ✓ primary cell
- ✓ renewable resource
- ✓ electrical power
- ✓ switch
- ✓ secondary cell
- ✓ non-renewable resource
- ✓ kilowatt-hour

Z	U	E	E	T	T	U	P	J	F	T	L	L	E	C	C	I	R	T	C	E	L	E	I	N
A	U	G	D	X	Q	H	V	V	W	S	A	T	U	Z	L	X	U	F	M	L	M	H	U	U
W	B	A	Y	D	E	C	R	U	O	S	E	R	E	L	B	A	W	E	N	E	R	N	O	N
S	K	E	L	I	U	K	Y	W	Y	F	D	U	I	H	K	K	S	C	J	R	M	S	K	N
L	D	T	Y	W	Y	W	C	E	D	I	D	O	M	N	G	P	Z	E	X	U	L	A	H	B
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Z	W	B	V	E	C	R	U	O	S	E	R	E	L	B	A	W	E	N	E	R	O	P	I	K
A	E	N	F	U	K	S	A	K	W	A	F	M	Y	U	F	P	G	C	S	T	Q	R	M	I
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R	R	Y	W	O	M	N	L	I	T	M	P	R	L	G	R	R	M	R	X	I	V	R	L	A
A	S	Z	O	Z	K	U	E	R	I	R	P	E	U	L	R	P	T	T	E	P	N	U	U	U
D	C	B	E	B	M	B	C	O	U	T	C	O	Y	E	C	E	D	C	Q	E	N	O	A	A
N	H	O	E	Z	I	O	T	M	C	T	J	Y	N	B	O	F	J	E	S	P	N	H	L	V
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C	V	S	M	B	J	L	I	I	I	B	V	K	M	Q	Y	P	Q	E	J	S	G	T	W	M
E	U	A	P	V	Z	H	C	W	C	O	L	I	O	S	C	V	L	T	U	V	L	A	U	K
S	S	F	T	F	Y	A	A	Q	C	E	P	P	I	D	N	E	B	N	L	H	L	W	L	K
S	F	P	D	R	L	W	L	N	I	B	X	T	A	P	E	R	T	E	E	R	H	O	F	W
Z	A	R	Y	P	W	W	E	D	R	H	N	I	C	M	I	X	W	R	T	Y	G	L	B	Z
S	O	M	O	O	O	A	N	I	T	K	B	S	B	C	C	W	S	R	G	V	L	I	U	H
M	M	W	F	D	X	J	E	V	C	P	W	D	O	I	I	S	C	U	B	K	Z	K	V	K
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A	E	E	D	X	W	D	K	A	I	V	D	X	J	W	Q	N	W	T	O	U	G	T	B	L

Electrical Quantities in Circuits

13

Find the following terms in the word search puzzle.

- ✓ circuit diagram
- ✓ ammeter
- ✓ electrical resistance
- ✓ series circuit
- ✓ potential difference
- ✓ ohmmeter
- ✓ parallel circuit
- ✓ voltage
- ✓ resistor
- ✓ electric current
- ✓ voltmeter
- ✓ Ohm's law

C	N	G	B	K	M	H	M	M	Z	H	L	T	M	H	D	K	Z	Y	C	D	M	K	H	H	
X	U	M	H	L	Q	R	V	Q	U	C	Z	W	J	N	X	B	I	K	I	B	A	L	Y	P	
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Y	J	U	X	T	Z	R	B	R	Y	L	X	M	S	X	O	L	Z	H	E	D	J	I	O		
Y	X	X	M	O	B	W	G	D	W	C	R	D	K	G	V	A	S	O	L	C	R	S	F	I	
O	R	J	U	K	J	O	X	T	E	N	F	S	C	G	W	V	O	F	D	N	W	F	Q	B	
A	U	W	F	D	N	J	L	L	M	Y	C	N	K	F	Y	R	H	C	W	E	B	M	P	X	
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B	A	E	F	B	V	A	V	Q	S	T	J	Y	P	K	Y	Z	P	I	B	E	M	L	N	I	
E	T	R	T	N	E	R	R	U	C	I	R	T	C	E	L	E	E	F	F	X	I	N	N		
Y	C	V	G	I	X	I	N	Y	Y	S	F	J	G	B	O	K	Z	S	F	F	Z	H	C	B	
B	L	R	V	A	T	E	A	C	U	K	Z	T	L	C	Z	B	H	U	G	I	Y	K	R	T	
P	I	C	D	J	I	T	X	X	U	H	P	B	Y	C	G	P	H	B	X	D	Z	S	X	G	
X	Z	B	R	L	A	D	A	D	S	L	K	A	B	K	J	R	V	W	M	L	Y	P	N	F	
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P	R	W	P	K	I	M	Q	M	U	K	M	G	O	Z	S	Q	Z	S	X	T	Y	A	H	V	
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X	M	T	T	Y	T	J	N	T	N	I	R	C	H	N	S	R	M	X	C	E	F	L	K	V	
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S	O	N	Y	L	S	V	Y	Q	V	F	Y	N	K	R	C	U	B	Y	O	A	Y	J	I	R	
J	O	X	W	C	T	B	T	T	F	K	T	C	K	H	C	B	B	O	V	T	P	C	G	P	
D	W	U	N	I	U	Z	H	P	F	I	D	V	F	F	E	L	C	X	Q	L	E	R	T	E	
I	V	Z	T	E	C	N	A	T	S	I	S	E	R	L	A	C	I	R	T	C	E	L	E	D	

The Characteristics of Electricity

E

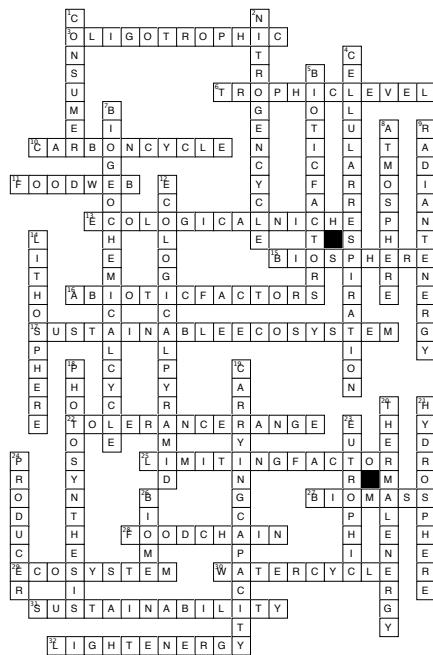
Find the following terms in the word search puzzle.

- ✓ electric charge
- ✓ positively charged object
- ✓ induced charge separation
- ✓ charging by conduction
- ✓ insulator
- ✓ current electricity
- ✓ switch
- ✓ primary cell
- ✓ alternating current
- ✓ biomass
- ✓ kilowatt-hour
- ✓ series circuit
- ✓ ammeter
- ✓ voltmeter
- ✓ resistor
- ✓ neutral object
- ✓ static electricity
- ✓ charging by friction
- ✓ grounding
- ✓ charging by induction
- ✓ electric circuit
- ✓ electrical energy
- ✓ secondary cell
- ✓ renewable resource
- ✓ photovoltaic cell
- ✓ efficiency
- ✓ parallel circuit
- ✓ potential difference
- ✓ electrical resistance
- ✓ Ohm's law
- ✓ negatively charged object
- ✓ electric force
- ✓ electrostatic series
- ✓ conductor
- ✓ electric discharge
- ✓ load
- ✓ electric cell
- ✓ direct current
- ✓ non-renewable resource
- ✓ electrical power
- ✓ circuit diagram
- ✓ electric current
- ✓ voltage
- ✓ ohmmeter

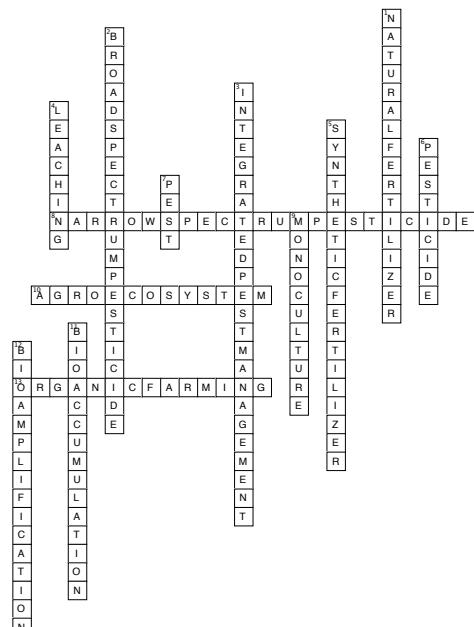
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S	O	J	G	E	G	R	A	H	C	S	I	D	C	I	R	T	C	E	L	E	T	N	V	N
W	E	L	E	C	T	R	I	C	C	I	R	C	U	I	T	F	X	X	G	H	H	Y	P	G
T	L	V	M	S	A	Z	C	E	L	E	C	T	R	I	C	A	L	P	O	W	E	R	X	F
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O	H	R	N	O	Y	H	Y	Z	P	D	S	H	S	E	Q	I	K	W	L	O	C	I	S	P
J	G	R	I	Y	O	R	P	D	A	U	M	F	Z	C	K	N	Y	R	V	V	P	C	W	
O	M	Y	R	E	V	H	A	N	V	L	K	O	N	R	J	C	E	G	P	O	G	I	R	Z
O	N	S	E	E	S	M	M	M	C	N	G	B	O	O	Q	R	U	R	O	C	A	O	N	S
V	V	E	E	Y	S	C	Y	S	I	K	Z	I	I	F	K	I	T	E	T	P	V	E	O	J
O	S	C	G	L	G	I	I	J	L	R	P	O	T	C	C	C	R	N	E	A	N	G	N	S
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C	L	U	E	W	T	C	I	T	C	Q	W	A	R	R	N	E	L	L	T	G	I	T	E	L
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Unit B: Sustainable Ecosystems

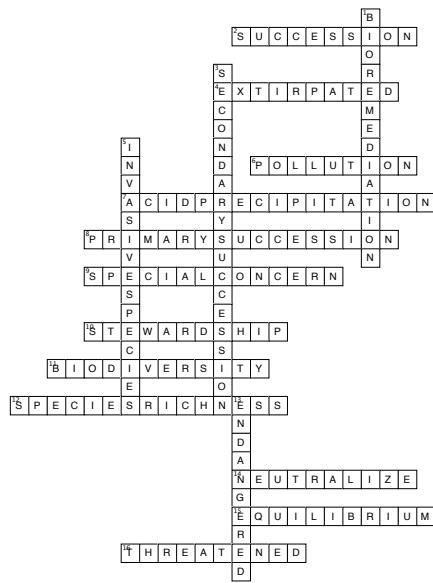
NATURAL ECOSYSTEMS AND STEWARDSHIP



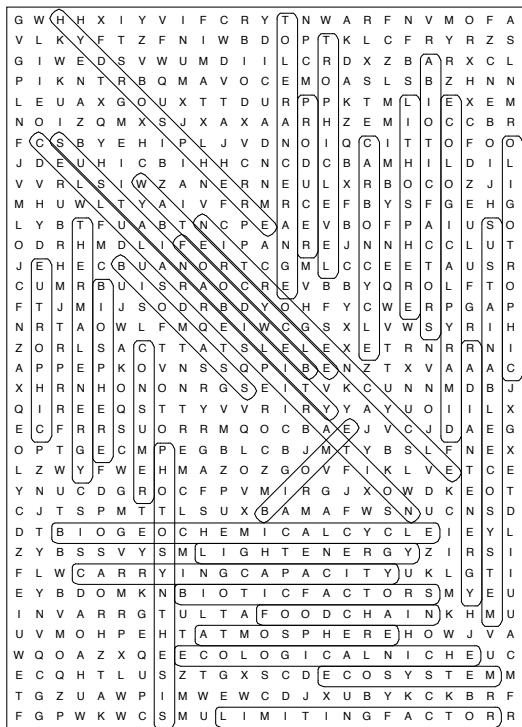
ECOSYSTEMS BY DESIGN



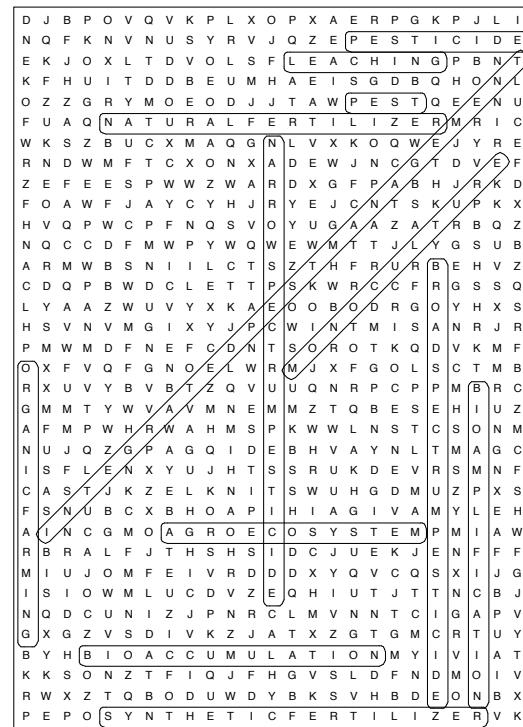
SUSTAINABLE ECOSYSTEMS



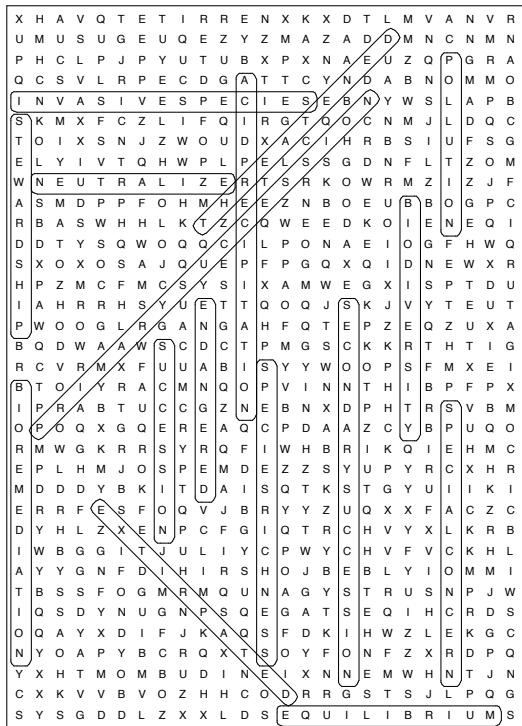
UNDERSTANDING ECOSYSTEMS



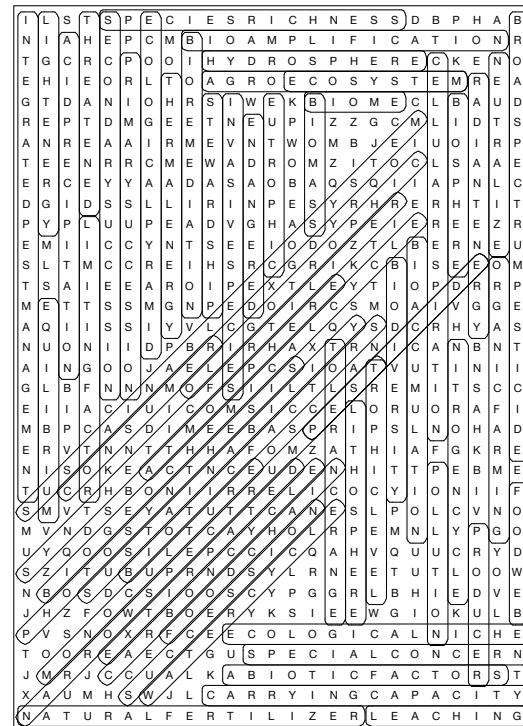
ECOSYSTEMS BY DESIGN



NATURAL ECOSYSTEMS AND STEWARDSHIP

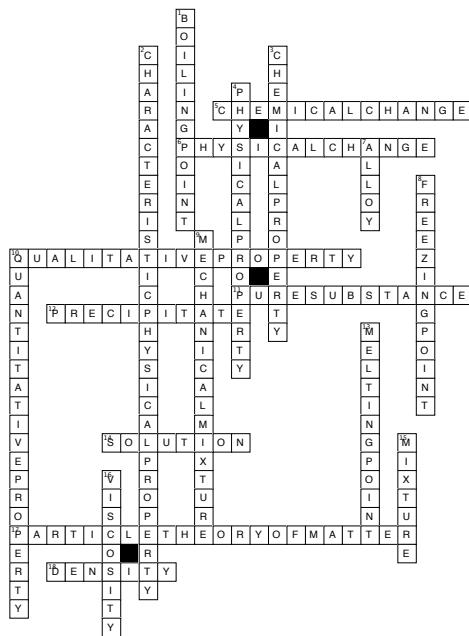


SUSTAINABLE ECOSYSTEMS

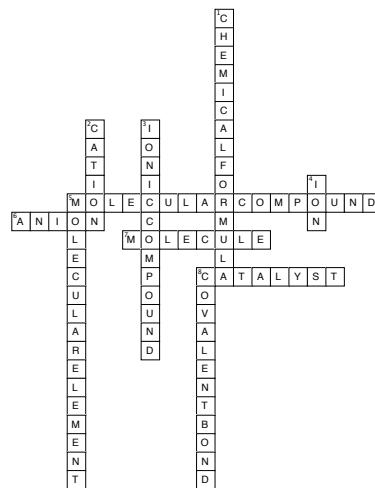


Unit C: Atoms, Elements, & Compounds

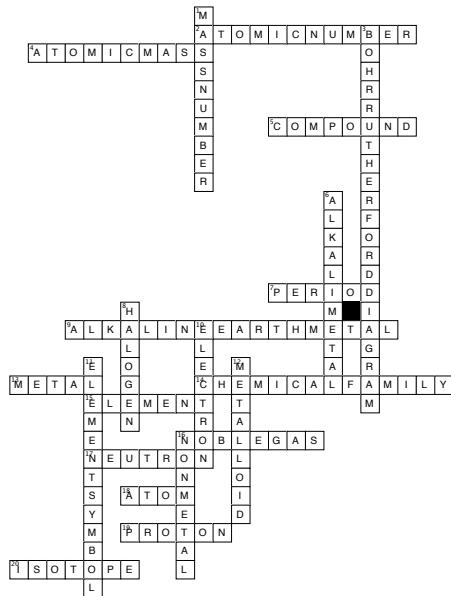
PROPERTIES OF MATTER



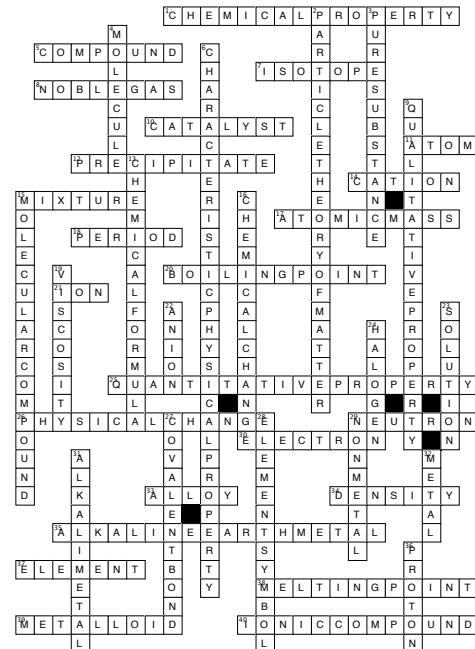
CHEMICAL COMPOUNDS



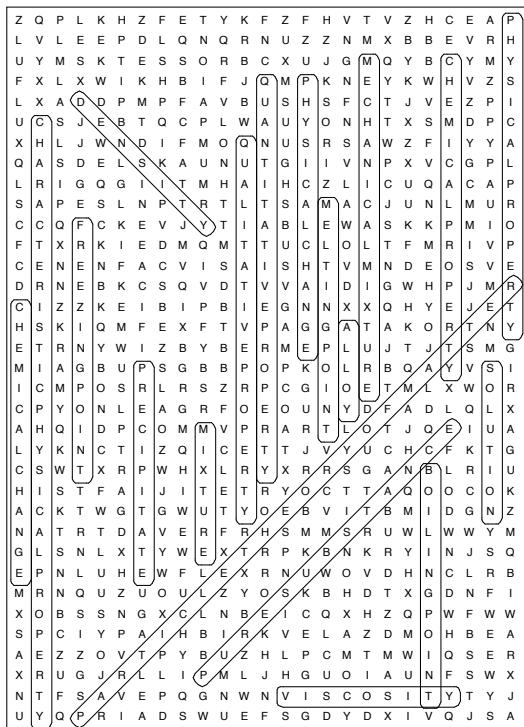
ELEMENTS AND THE PERIODIC TABLE



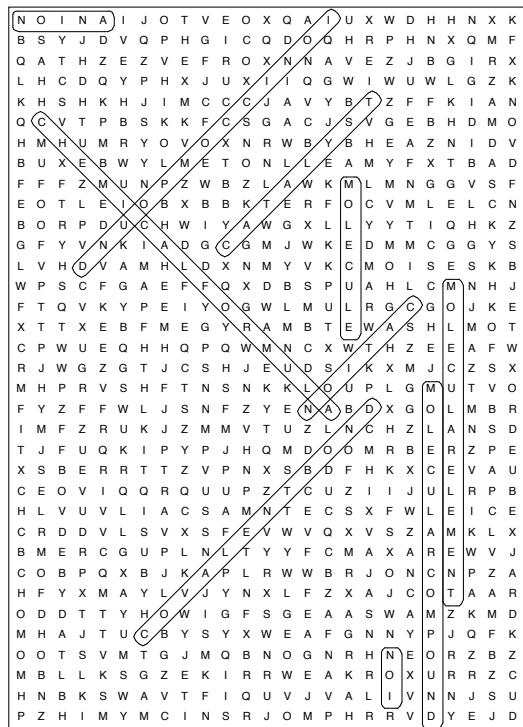
ATOMS, ELEMENTS, AND COMPOUNDS



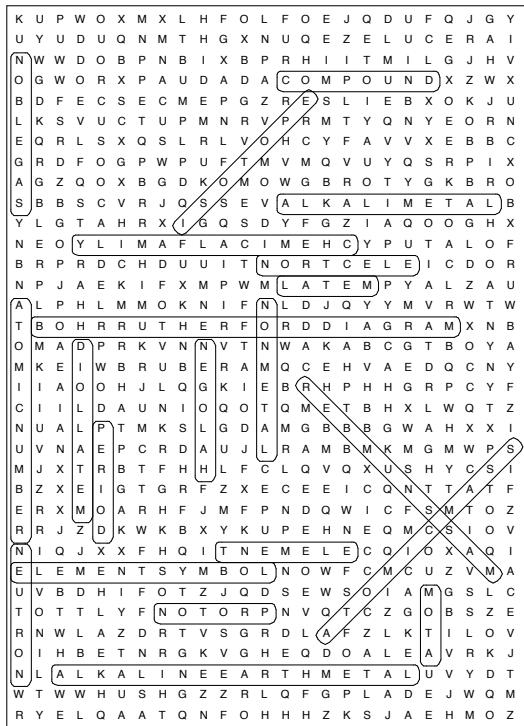
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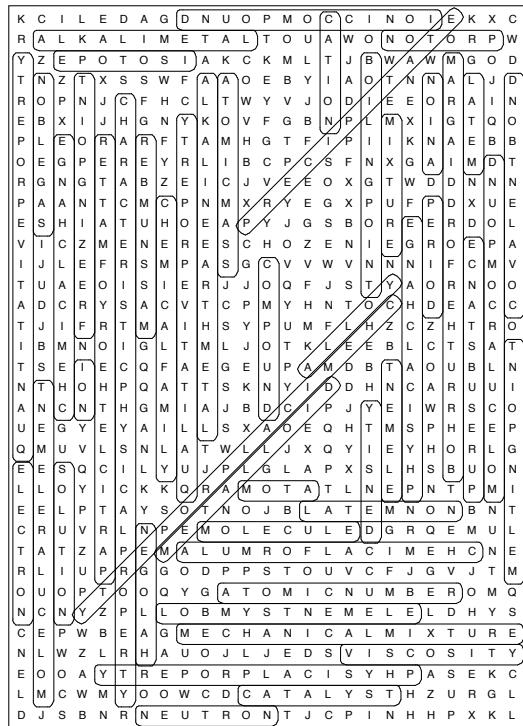
CHEMICAL COMPOUNDS



ELEMENTS AND THE PERIODIC TABLE

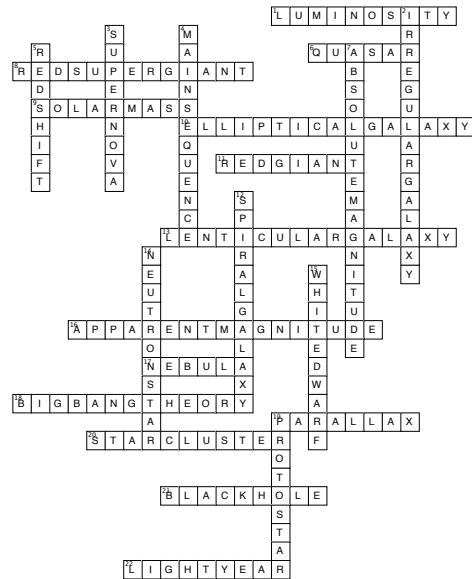


ATOMS, ELEMENTS, AND COMPOUNDS

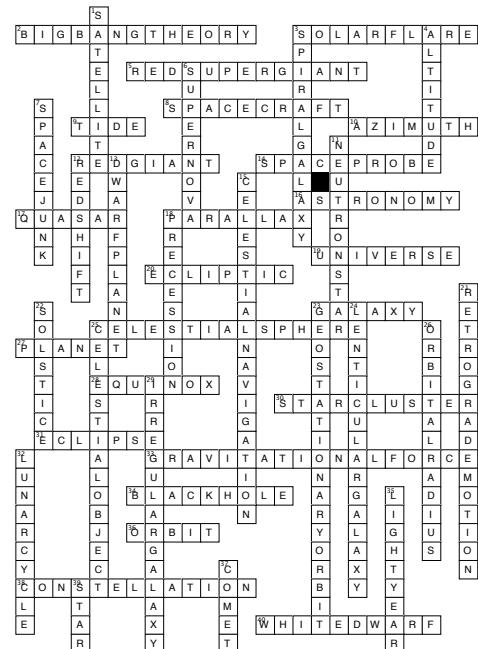


Unit D: The Study of the Universe

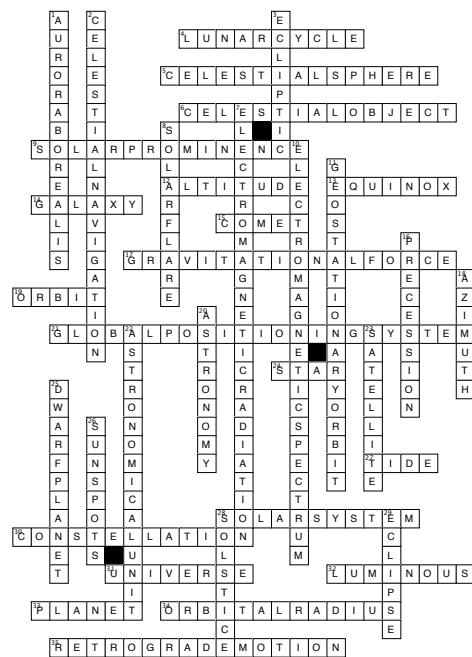
BEYOND THE SOLAR SYSTEM



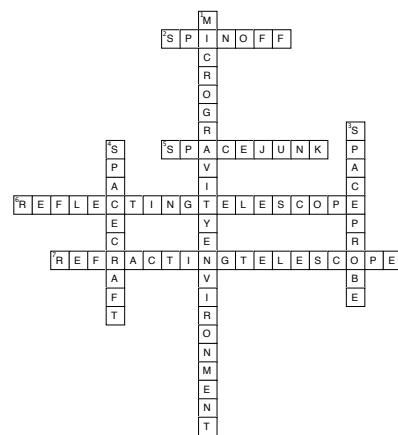
THE STUDY OF THE UNIVERSE



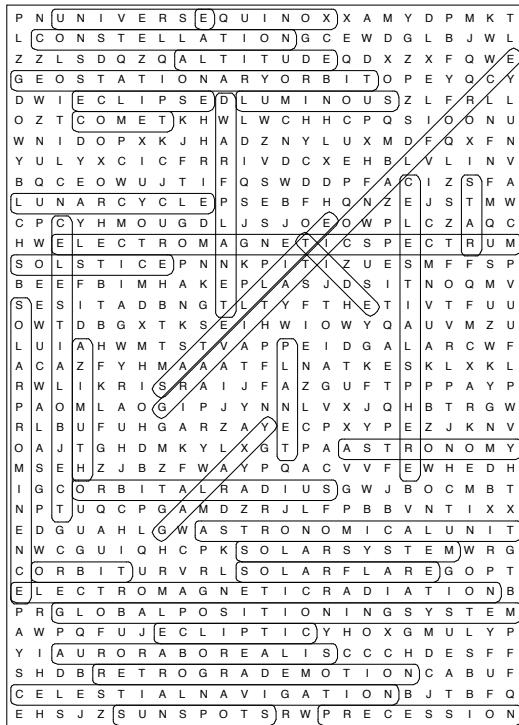
OUR PLACE IN SPACE



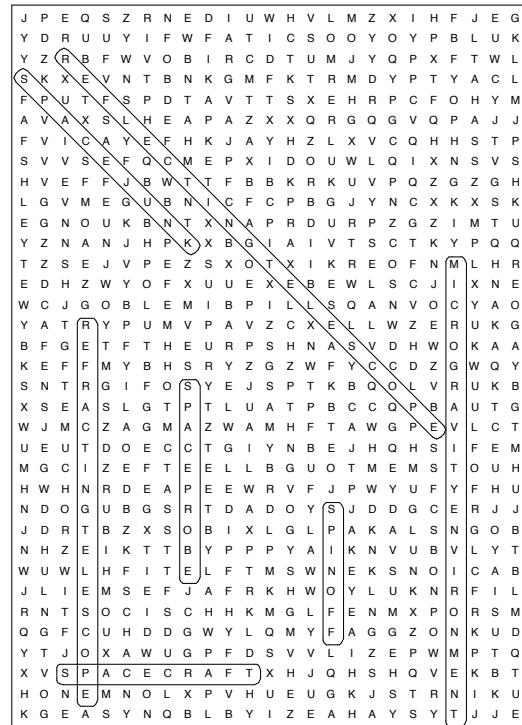
SPACE RESEARCH AND EXPLORATION



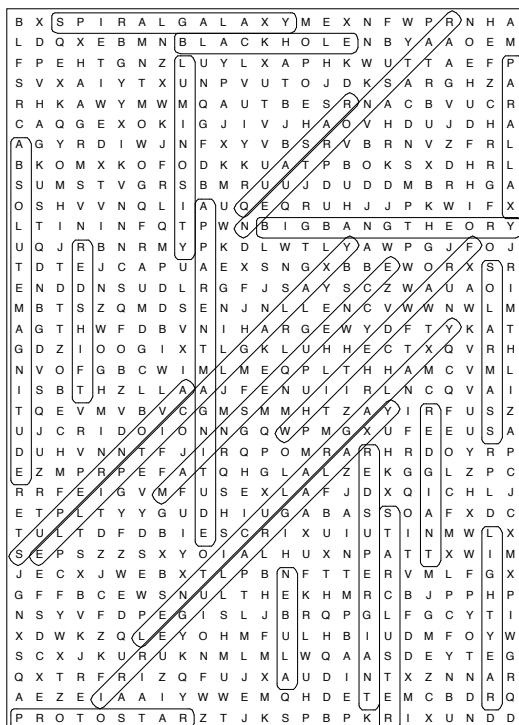
OUR PLACE IN SPACE



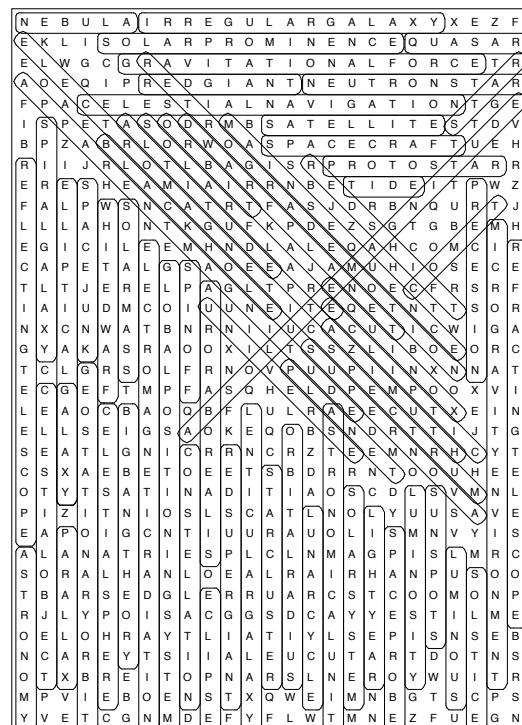
SPACE RESEARCH AND EXPLORATION



BEYOND THE SOLAR SYSTEM

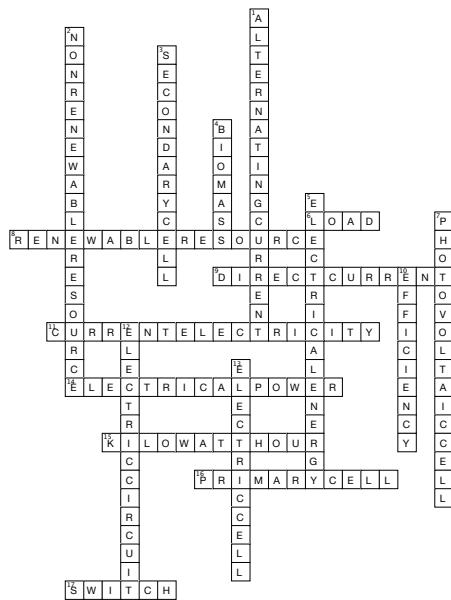


THE STUDY OF THE UNIVERSE

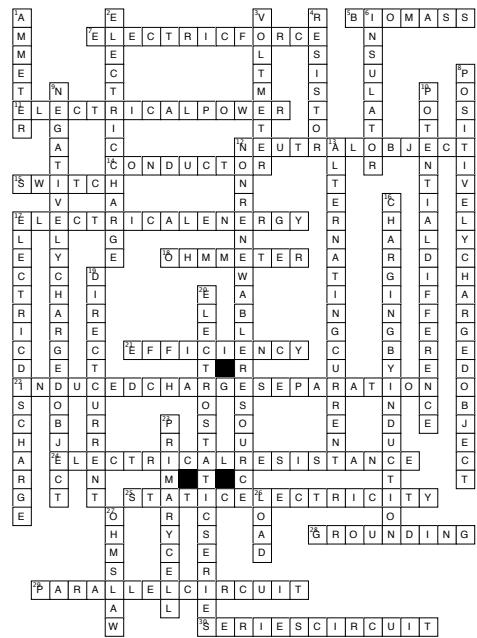


Unit E: The Characteristics of Electricity

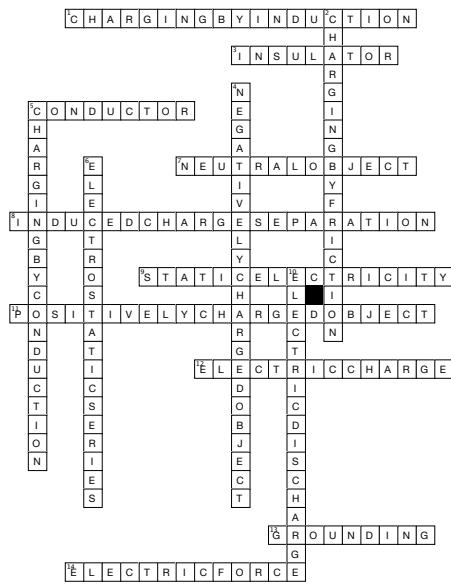
ELECTRICAL ENERGY PRODUCTION



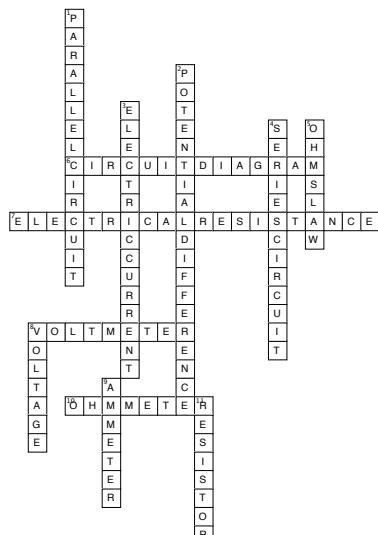
THE CHARACTERISTICS OF ELECTRICITY



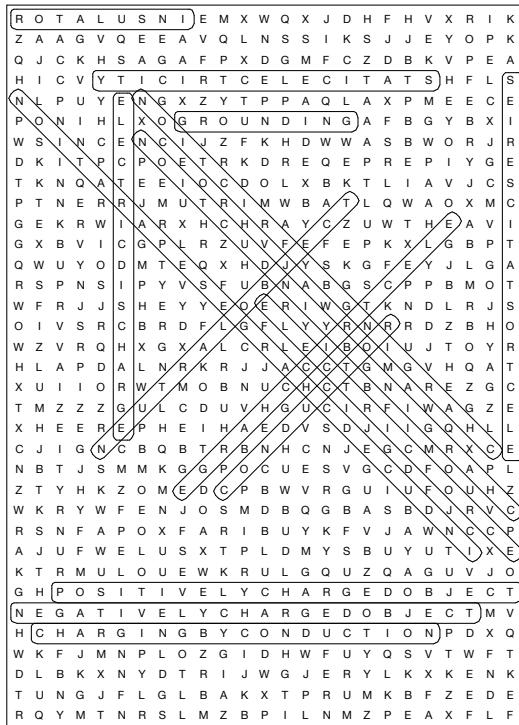
STATIC ELECTRICITY



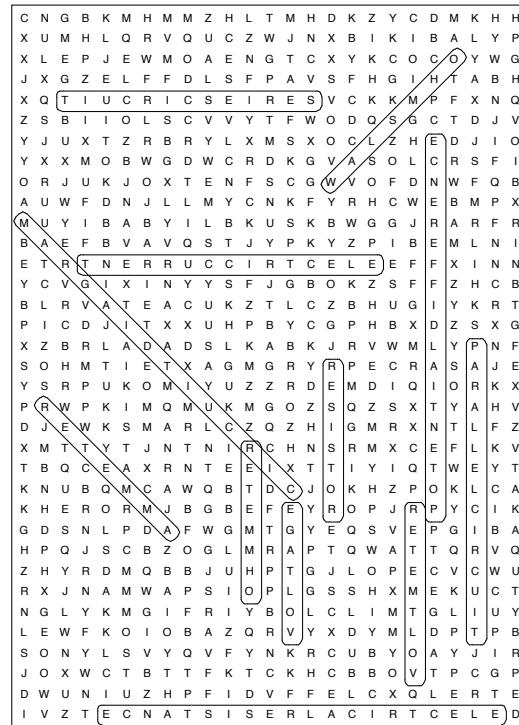
ELECTRICAL QUANTITIES IN CIRCUITS



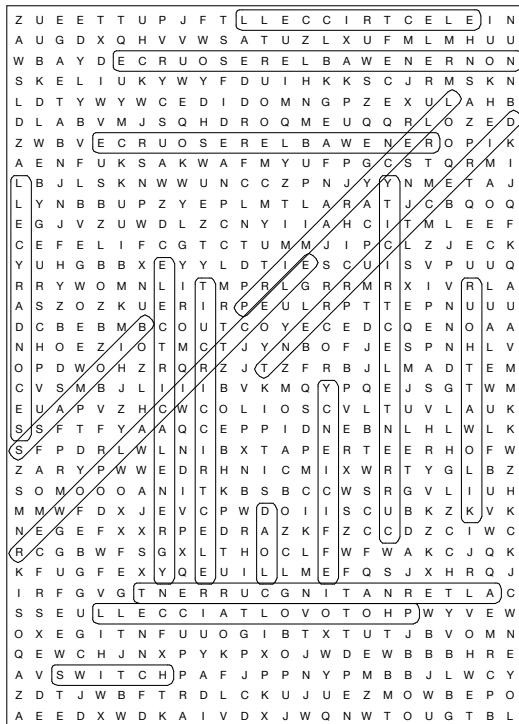
STATIC ELECTRICITY



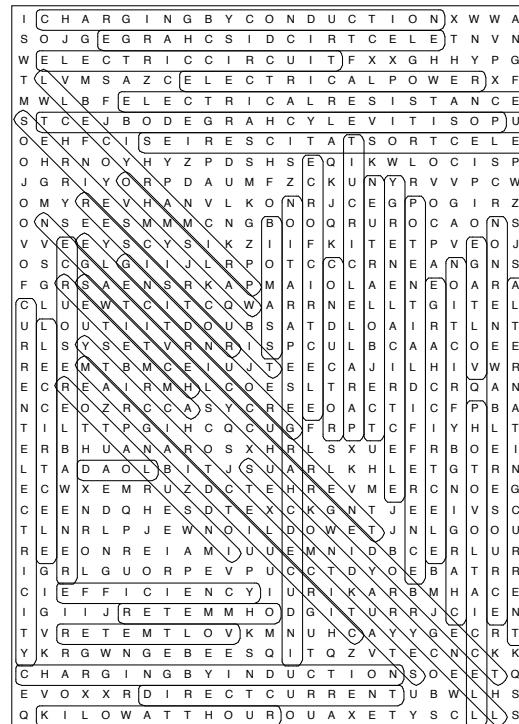
ELECTRICAL QUANTITIES IN CIRCUITS

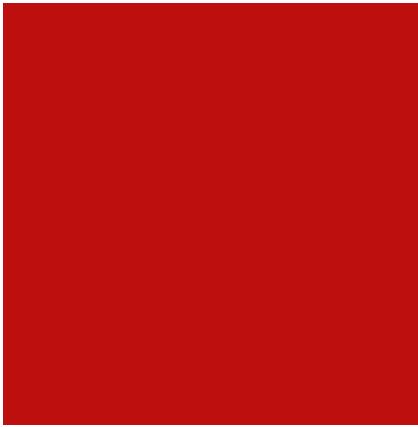


ELECTRICAL ENERGY PRODUCTION



THE CHARACTERISTICS OF ELECTRICITY





*Science is the great antidote to
the poison of enthusiasm and
superstition.*

Adam Smith