KS3 SCIENCE · PHYSICS

Magnets and electromagnets

Word search

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

Find these 9 words

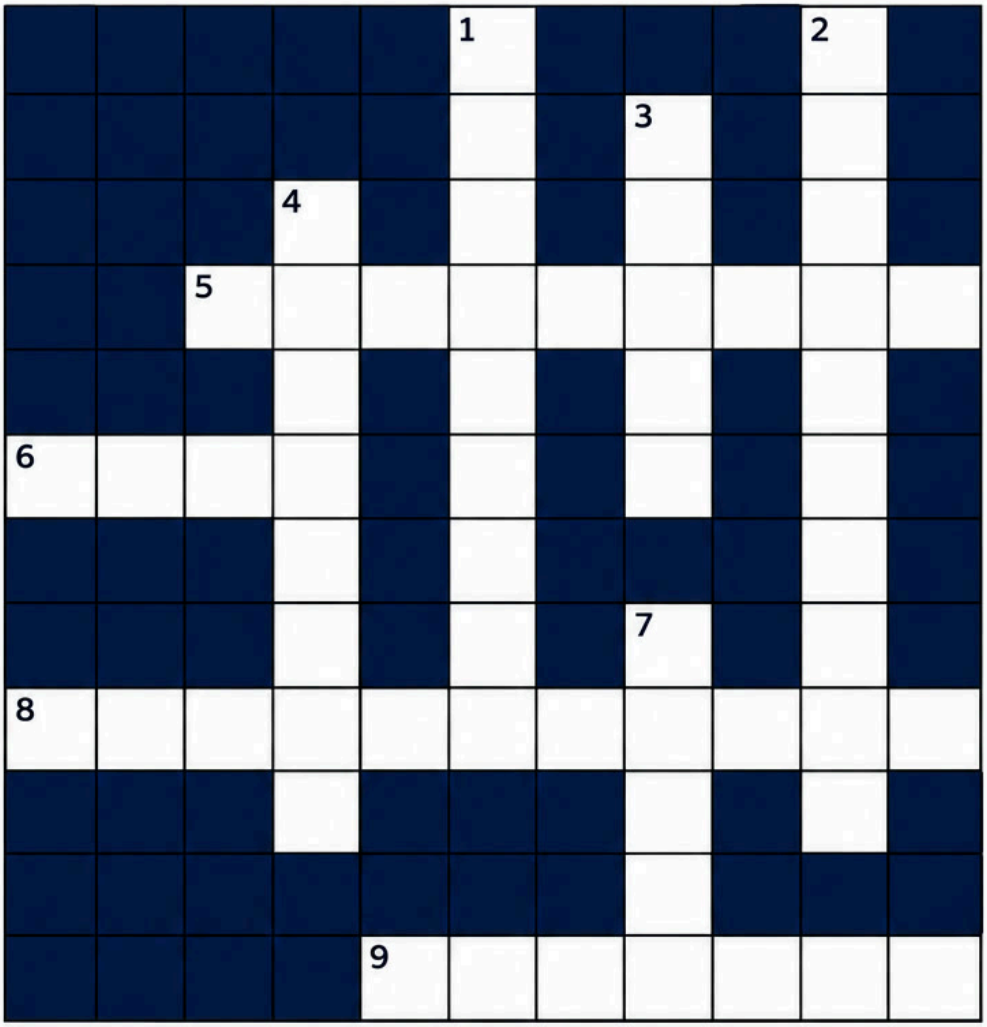
- ☐ ATTRACT
- ☐ CORE
- ☐ FIELD LINES
- ☐ LIKE POLES
- ☐ MOTOR
- ☐ NORTH POLE
- ☐ REPEL
- ☐ SOLENOID
- ☐ SOUTH POLE

Words go across, down or diagonally. Spaces are left out.

KS3 SCIENCE · PHYSICS

Magnets and electromagnets

Crossword



Across

5 The end of a magnet that points north when the magnet can turn freely (5,4)

6 The piece of soft iron that a coil is wound round (4)

8 Two different poles, which attract (6,5)

9 Pull towards each other (7)

Down

1 The end of a magnet that points south when the magnet can turn freely (5,4)

2 Lines with arrows that show the direction and strength of a magnetic field (5,5)

3 Push away from each other (5)

4 Wire wound into a tight coil (8)

7 A machine in which a coil with a current in it spins between the poles of a magnet (5)

The number in brackets is how many letters the answer has.

KS3 SCIENCE · PHYSICS

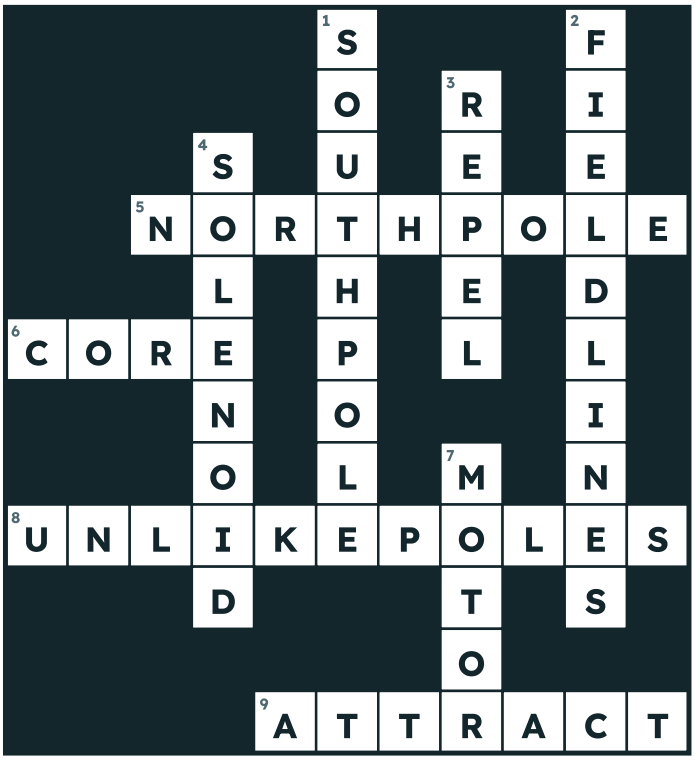
Magnets and electromagnets

Answers

Word search

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

Crossword



Across

5 North pole
The end of a magnet that points north when the magnet can turn freely (5,4)

6 Core
The piece of soft iron that a coil is wound round (4)

8 Unlike poles
Two different poles, which attract (6,5)

9 Attract
Pull towards each other (7)

Down

1 South pole
The end of a magnet that points south when the magnet can turn freely (5,4)

2 Field lines
Lines with arrows that show the direction and strength of a magnetic field (5,5)

3 Repel
Push away from each other (5)

4 Solenoid
Wire wound into a tight coil (8)

7 Motor
A machine in which a coil with a current in it spins between the poles of a magnet (5)

In the word search, words go across, down or diagonally, and spaces are left out. The same puzzles can be played on the Magnets and electromagnets page of the KS3 Science revision site.

KS3 PHYSICS · MAGNETS AND ELECTROMAGNETS · LESSON 1

Magnetic poles

Word search

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

Find these 7 words

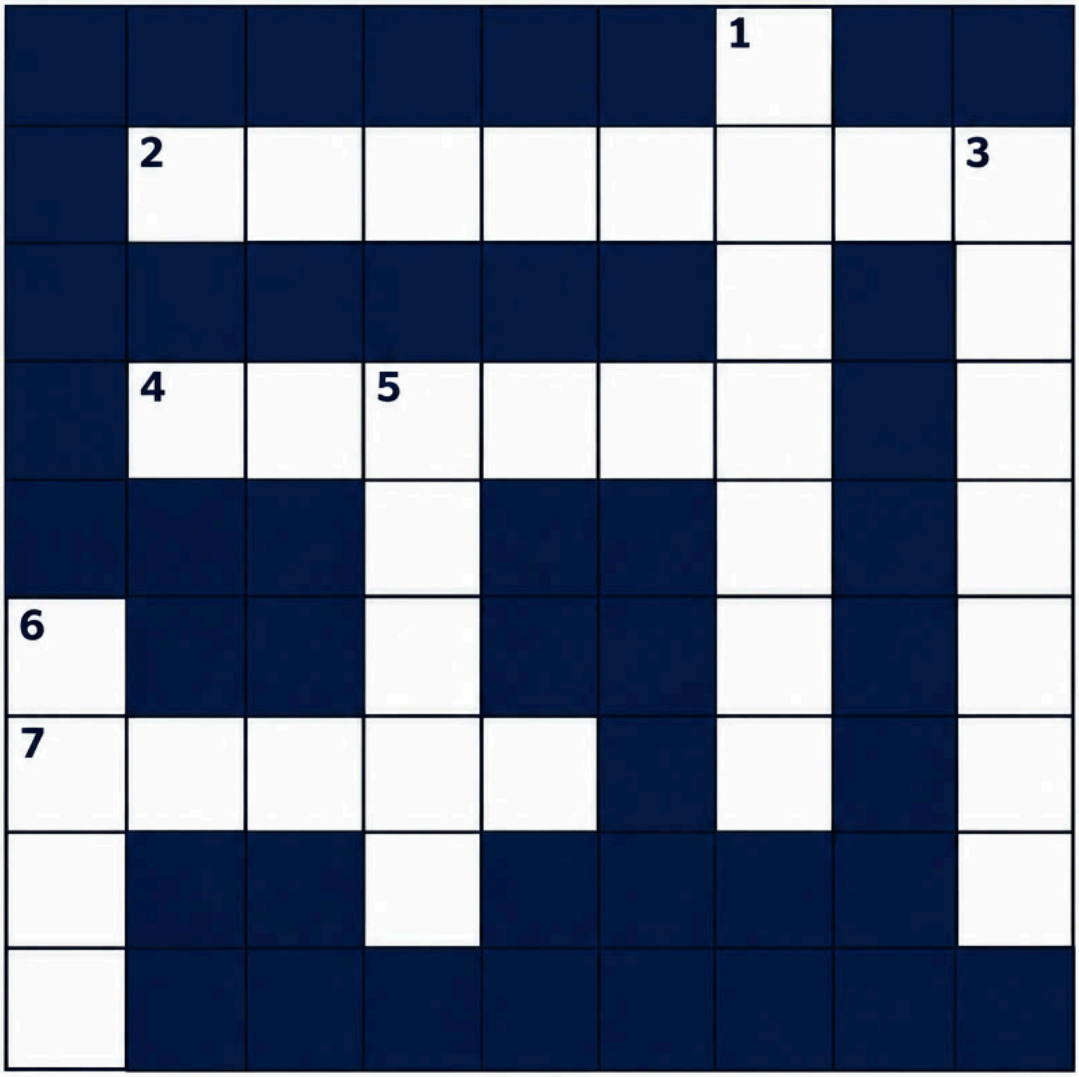
- ☐ ATTRACT
- ☐ CONTACT
- ☐ COPPER
- ☐ IRON
- ☐ MAGNETIC
- ☐ POLES
- ☐ REPEL

Words go across, down or diagonally. Spaces are left out.

KS3 PHYSICS · MAGNETS AND ELECTROMAGNETS · LESSON 1

Magnetic poles

Crossword



Across

2 The word for a material that a magnet pulls on (8)

4 A metal that a magnet cannot pull (6)

7 Two of the same kind, such as two norths, push each other away (5)

Down

1 A north and a south do this to each other: pull together (7)

3 A magnet's pull works without this (7)

5 The two ends of a magnet, called north and south (5)

6 The metal used for the core of an electromagnet (4)

The number in brackets is how many letters the answer has.

KS3 SCIENCE · PHYSICS · MAGNETS AND ELECTROMAGNETS

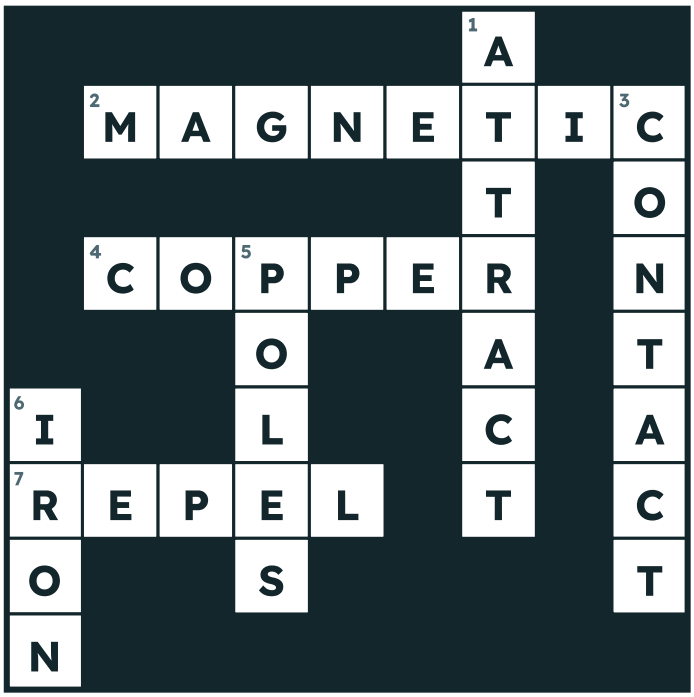
Lesson 1: Magnetic poles

Answers

Word search



Crossword



Across

2 Magnetic
The word for a material that a magnet pulls on (8)

4 Copper
A metal that a magnet cannot pull (6)

7 Repel
Two of the same kind, such as two norths, push each other away (5)

Down

1 Attract
A north and a south do this to each other: pull together (7)

3 Contact
A magnet's pull works without this (7)

5 Poles
The two ends of a magnet, called north and south (5)

6 Iron
The metal used for the core of an electromagnet (4)

In the word search, words go across, down or diagonally, and spaces are left out. The same puzzles can be played on the Magnets and electromagnets lesson 1 page of the KS3 Science revision site.

KS3 PHYSICS · MAGNETS AND ELECTROMAGNETS · LESSON 2

Magnetic fields

Word search

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

Find these 8 words

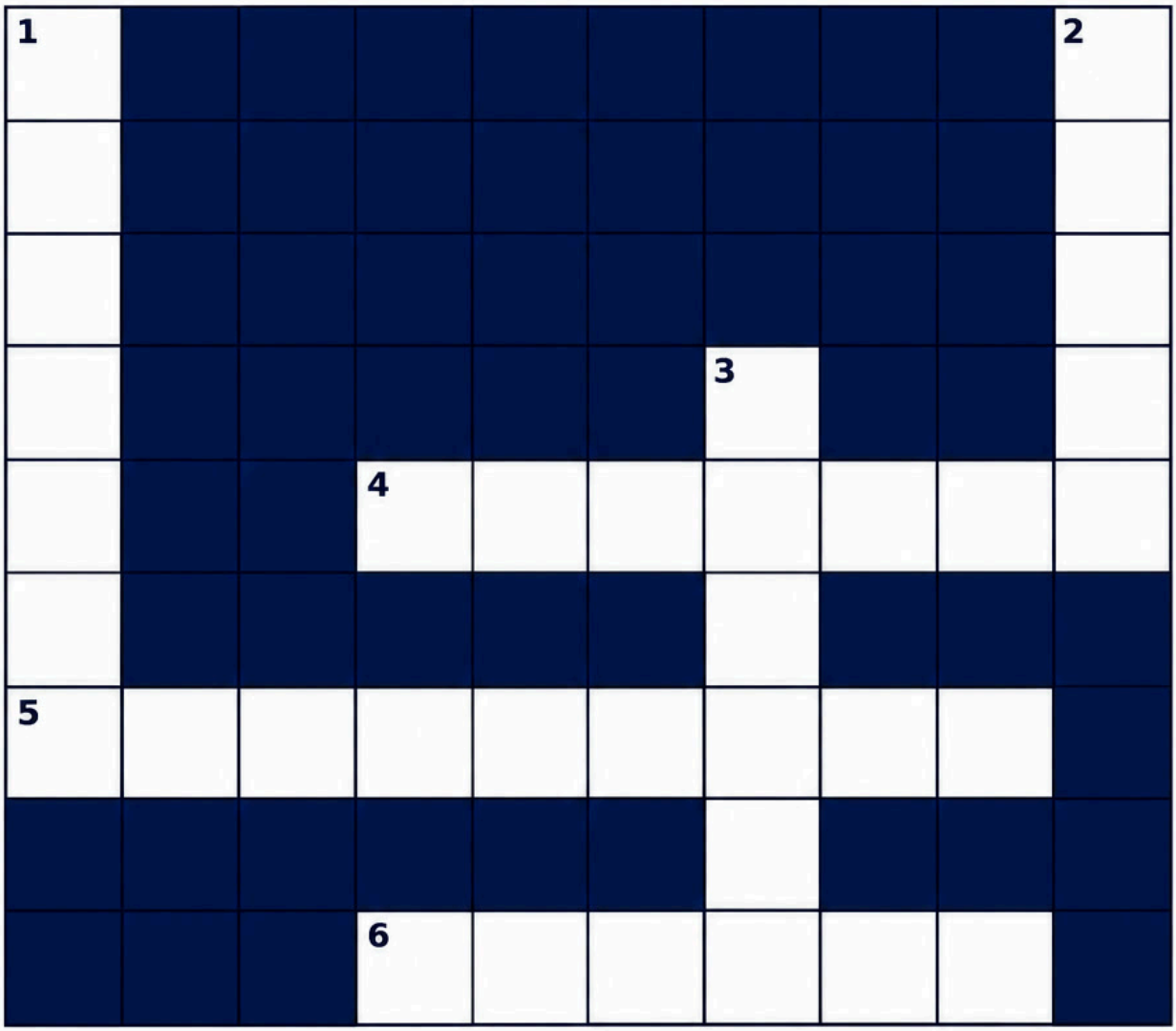
- ☐ CROSS
- ☐ FILINGS
- ☐ LINES
- ☐ NEEDLE
- ☐ POLES
- ☐ SPREAD
- ☐ STRONGEST
- ☐ WEAKER

Words go across, down or diagonally. Spaces are left out.

KS3 PHYSICS · MAGNETS AND ELECTROMAGNETS · LESSON 2

Magnetic fields

Crossword



Across

4 A small instrument used to find which way the field points (7)

5 Where the curves are closest together, the field is this (9)

6 The thin pointer that turns to show the field's direction (6)

Down

1 Iron bits sprinkled round a magnet to show the shape of its field (7)

2 The two ends of a bar magnet, where the curves are closest together (5)

3 As the field gets less strong, the curves do this, moving apart (6)

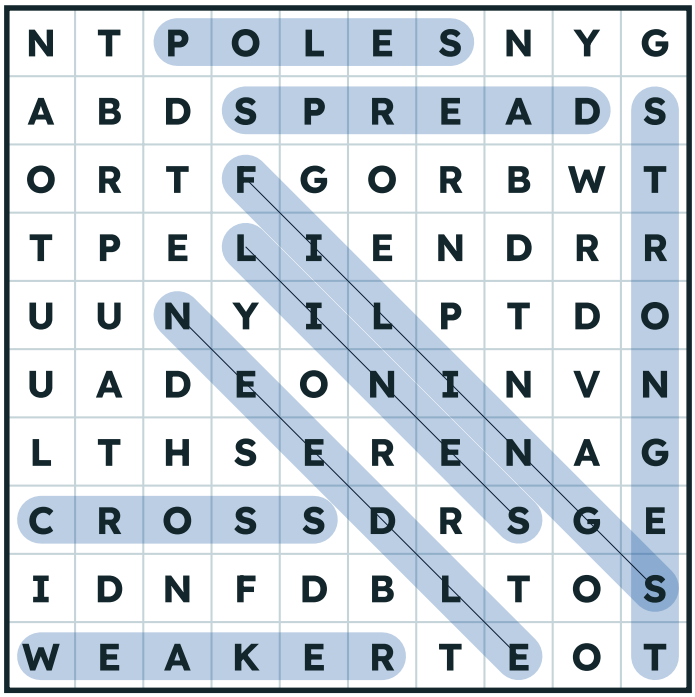
The number in brackets is how many letters the answer has.

KS3 SCIENCE · PHYSICS · MAGNETS AND ELECTROMAGNETS

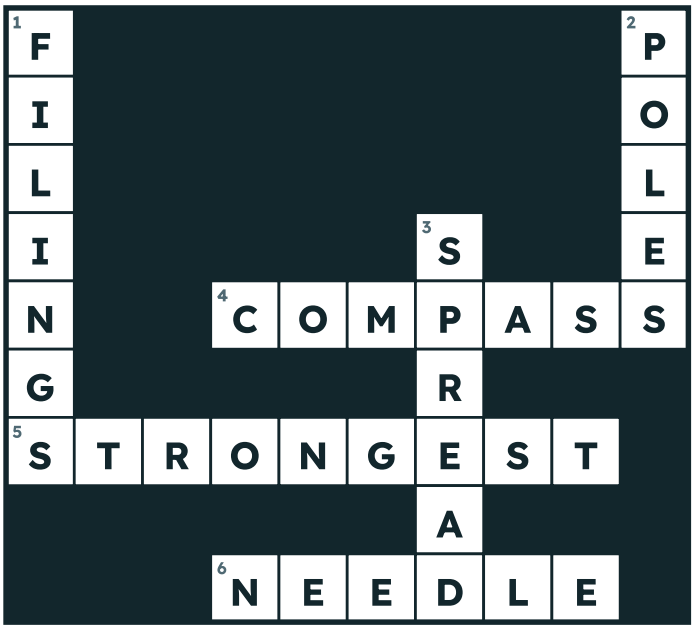
Lesson 2: Magnetic fields

Answers

Word search



Crossword



Across

4 Compass
A small instrument used to find which way the field points (7)

5 Strongest
Where the curves are closest together, the field is this (9)

6 Needle
The thin pointer that turns to show the field's direction (6)

Down

1 Filings
Iron bits sprinkled round a magnet to show the shape of its field (7)

2 Poles
The two ends of a bar magnet, where the curves are closest together (5)

3 Spread
As the field gets less strong, the curves do this, moving apart (6)

In the word search, words go across, down or diagonally, and spaces are left out. The same puzzles can be played on the Magnets and electromagnets lesson 2 page of the KS3 Science revision site.

KS3 PHYSICS • MAGNETS AND ELECTROMAGNETS • LESSON 3

The Earth's magnetism

Word search

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

Find these 8 words

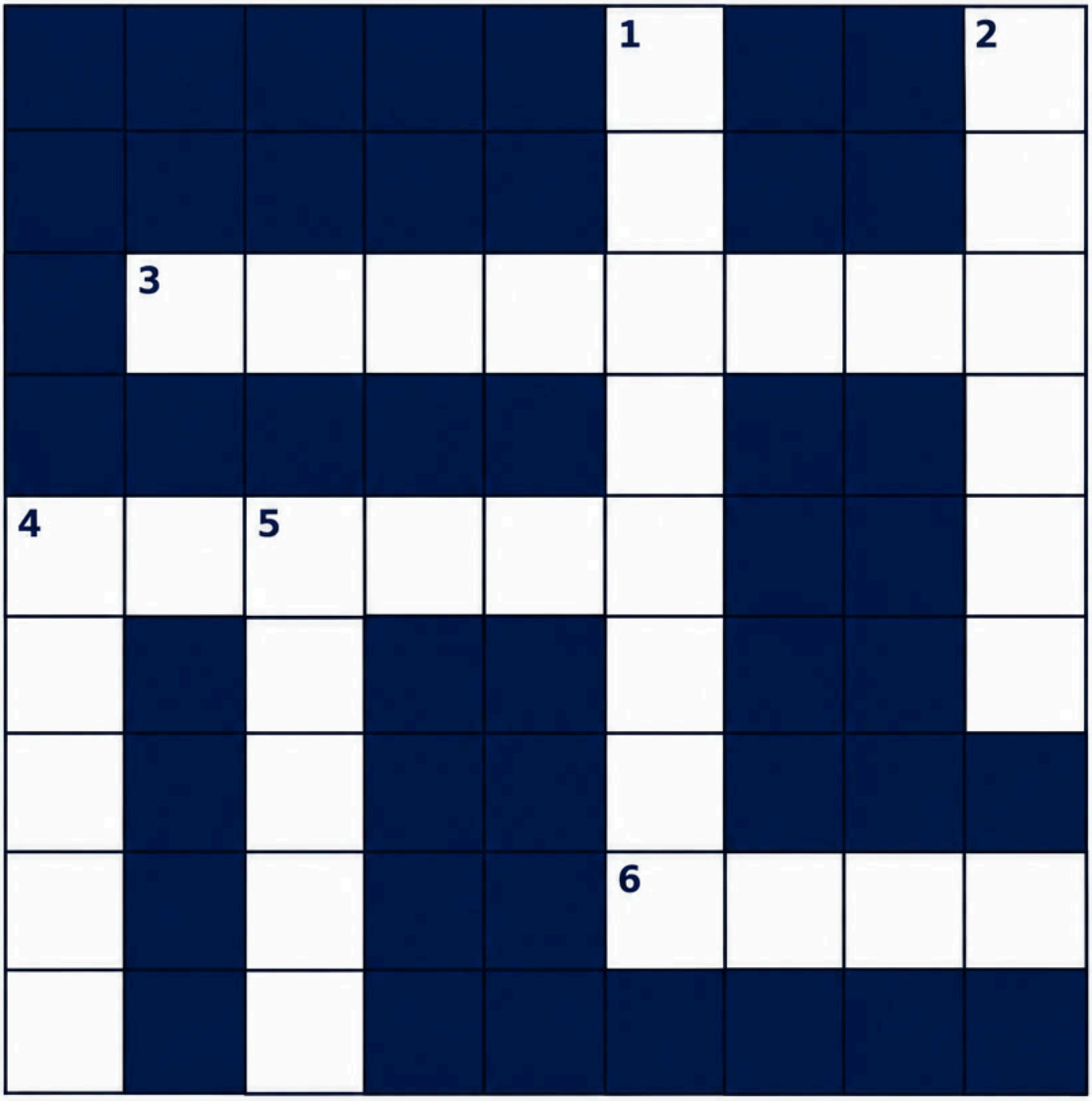
- ☐ COMPASS
- ☐ CORE
- ☐ EARTH
- ☐ FREELY
- ☐ MAGNETIC
- ☐ NAVIGATE
- ☐ NEEDLE
- ☐ NORTH

Words go across, down or diagonally. Spaces are left out.

KS3 PHYSICS · MAGNETS AND ELECTROMAGNETS · LESSON 3

The Earth's magnetism

Crossword



Across

3 To find your way from place to place (8)

4 The small magnet on a pivot that lines up with the planet's field (6)

6 The central part of the planet (4)

Down

1 The kind of field the planet has all round it (8)

2 With nothing stopping its turning, so that the pointer can line up (6)

4 The direction opposite south (5)

5 The planet we live on, which acts like a giant bar magnet (5)

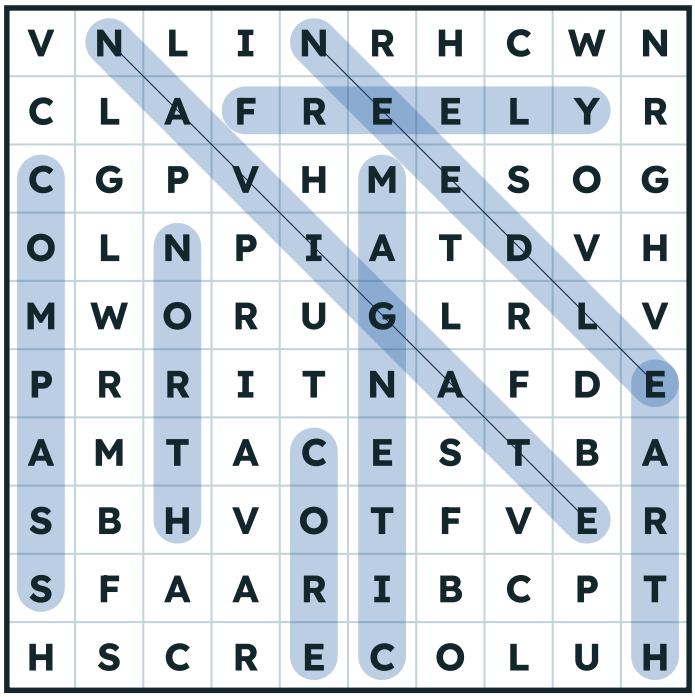
The number in brackets is how many letters the answer has.

KS3 SCIENCE · PHYSICS · MAGNETS AND ELECTROMAGNETS

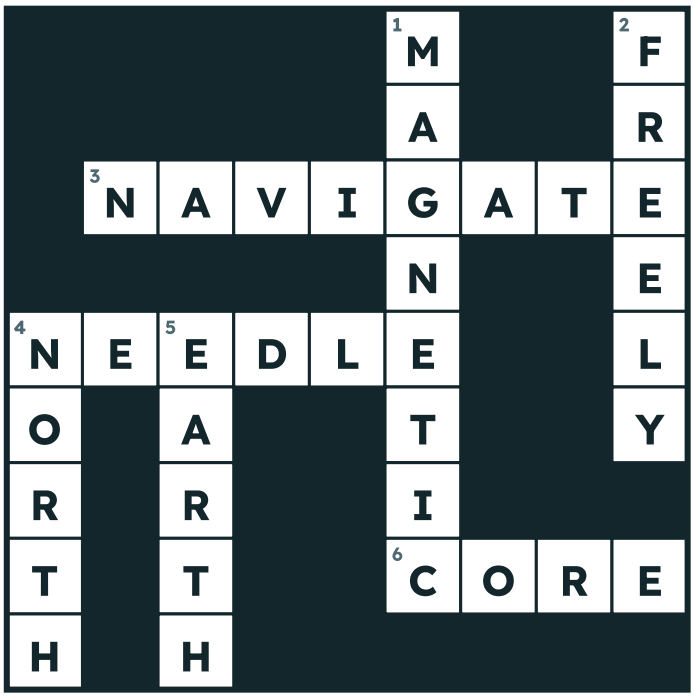
Lesson 3: The Earth's magnetism

Answers

Word search



Crossword



Across

3 Navigate
To find your way from place to place (8)

4 Needle
The small magnet on a pivot that lines up with the planet's field (6)

6 Core
The central part of the planet (4)

Down

1 Magnetic
The kind of field the planet has all round it (8)

2 Freely
With nothing stopping its turning, so that the pointer can line up (6)

4 North
The direction opposite south (5)

5 Earth
The planet we live on, which acts like a giant bar magnet (5)

In the word search, words go across, down or diagonally, and spaces are left out. The same puzzles can be played on the Magnets and electromagnets lesson 3 page of the KS3 Science revision site.

KS3 PHYSICS · MAGNETS AND ELECTROMAGNETS · LESSON 4

Electromagnets

Word search

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

Find these 6 words

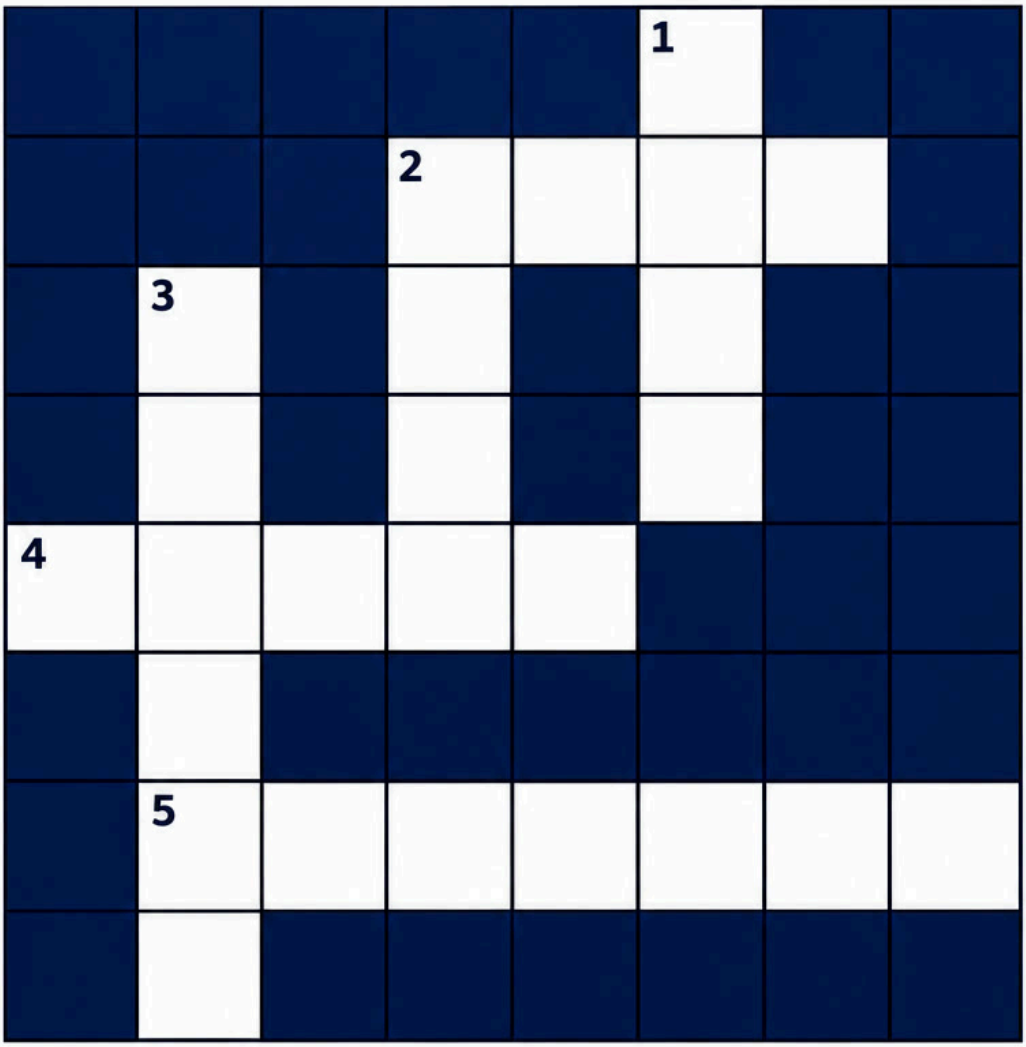
- ☐ COIL
- ☐ CORE
- ☐ CURRENT
- ☐ FIELD
- ☐ IRON
- ☐ SWITCH

Words go across, down or diagonally. Spaces are left out.

KS3 PHYSICS · MAGNETS AND ELECTROMAGNETS · LESSON 4

Electromagnets

Crossword



Across

2 The part inside the wound wire whose name means ‘centre’ (4)

4 The space around a magnet where its force acts: a magnetic ___ (5)

5 Electric ___ flowing through the wound wire makes an electromagnet work (7)

Down

1 The metal that makes the magnetic force much stronger when it is inside (4)

2 Wire wound round and round into a spiral (4)

3 In the circuit, open it and the magnetic force goes away (6)

The number in brackets is how many letters the answer has.

KS3 SCIENCE · PHYSICS · MAGNETS AND ELECTROMAGNETS

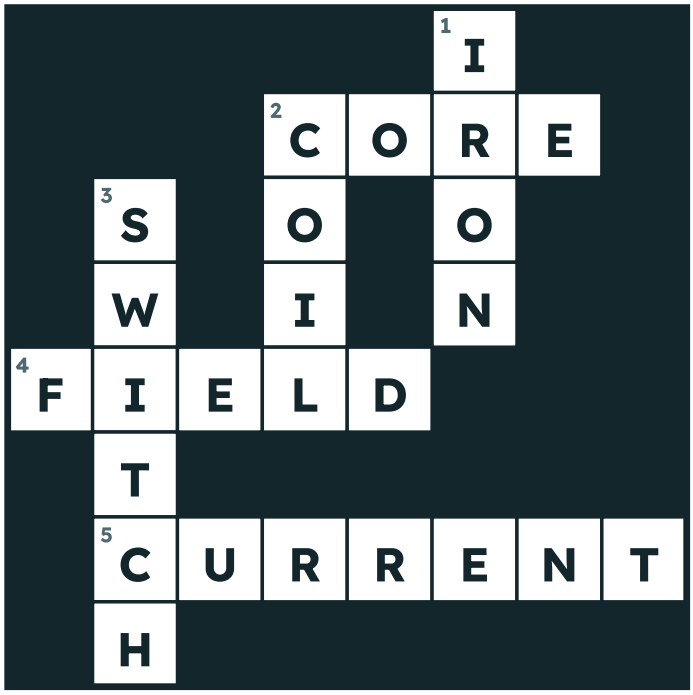
Lesson 4: Electromagnets

Answers

Word search

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

Crossword



Across

2 Core
The part inside the wound wire whose name means 'centre' (4)

4 Field
The space around a magnet where its force acts: a magnetic ___ (5)

5 Current
Electric ___ flowing through the wound wire makes an electromagnet work (7)

Down

1 Iron
The metal that makes the magnetic force much stronger when it is inside (4)

2 Coil
Wire wound round and round into a spiral (4)

3 Switch
In the circuit, open it and the magnetic force goes away (6)

In the word search, words go across, down or diagonally, and spaces are left out. The same puzzles can be played on the Magnets and electromagnets lesson 4 page of the KS3 Science revision site.

KS3 PHYSICS · MAGNETS AND ELECTROMAGNETS · LESSON 5

Stronger electromagnets

Word search

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

Find these 8 words

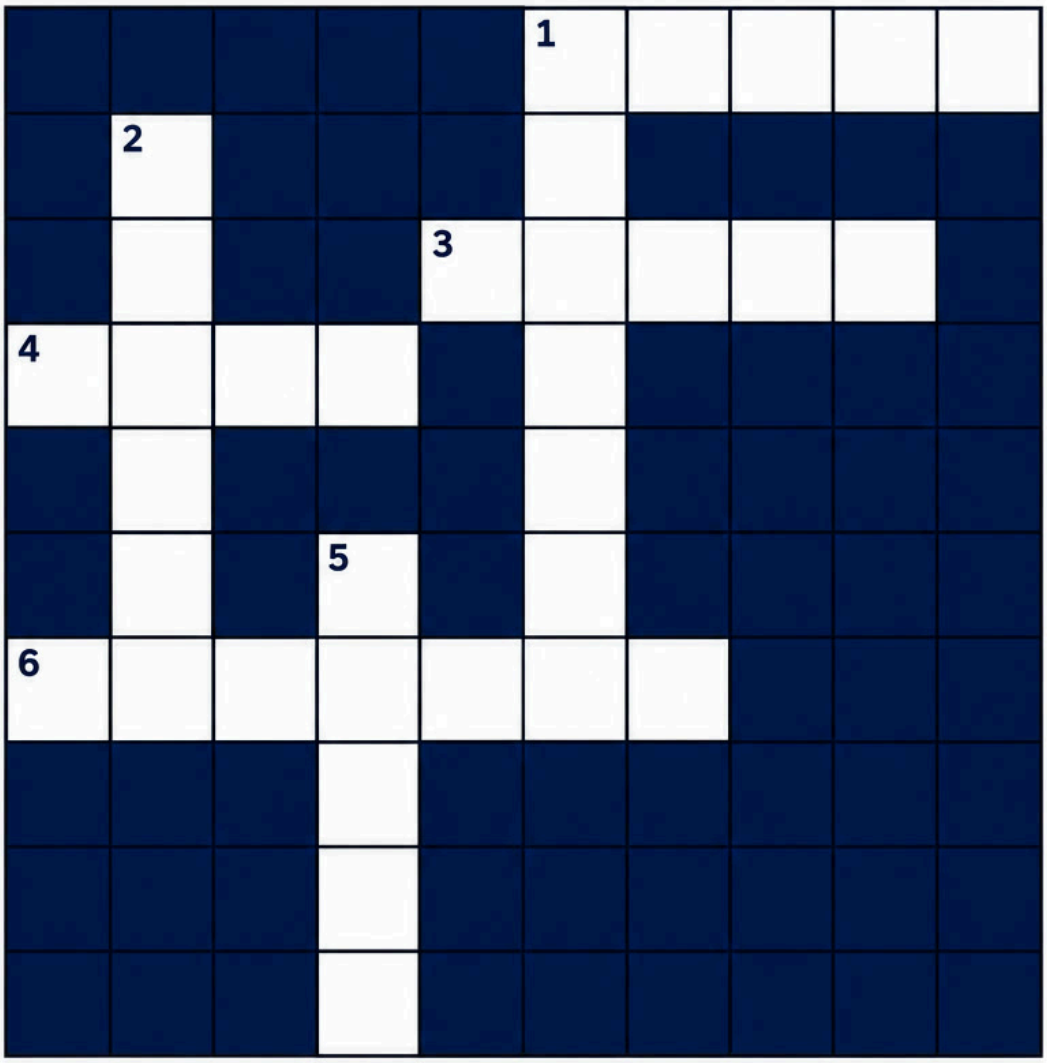
- ☐ CHANGE
- ☐ CLIPS
- ☐ CORE
- ☐ CURRENT
- ☐ FAIR
- ☐ RESULTS
- ☐ STRENGTH
- ☐ TURNS

Words go across, down or diagonally. Spaces are left out.

KS3 PHYSICS • MAGNETS AND ELECTROMAGNETS • LESSON 5

Stronger electromagnets

Crossword



Across

1 Paper ___ are counted to test the magnet (5)

3 A chart used to plot measurements from an investigation (5)

4 The kind of test where only one thing is altered (4)

6 The numbers you collect in the test (7)

Down

1 Electric ___ through the wire can be increased to make an electromagnet stronger (7)

2 In a test, make one ___ at a time and keep everything else the same (6)

5 The complete loops of wire counted on a coil: more of them, a stronger magnet (5)

The number in brackets is how many letters the answer has.

KS3 SCIENCE · PHYSICS · MAGNETS AND ELECTROMAGNETS

Lesson 5: Stronger electromagnets

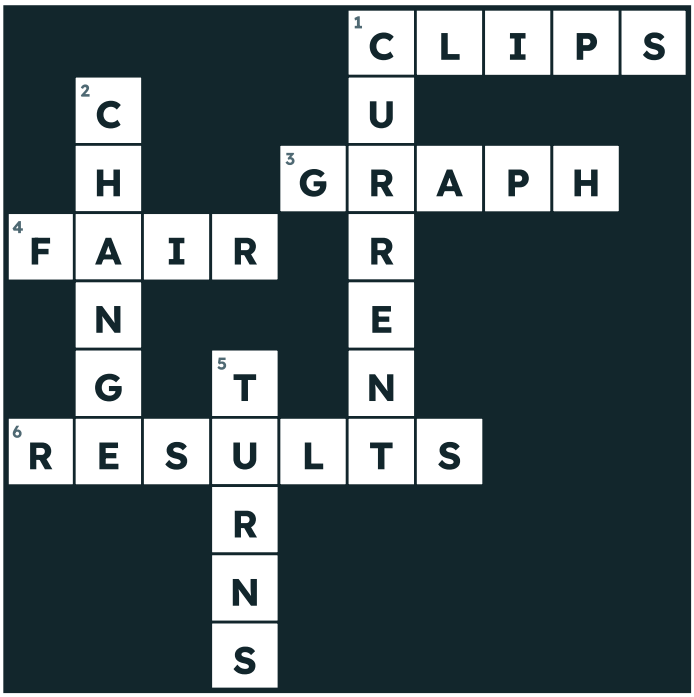
Answers

Word search



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

Crossword



Across

1 Clips
Paper ___ are counted to test the magnet (5)

3 Graph
A chart used to plot measurements from an investigation (5)

4 Fair
The kind of test where only one thing is altered (4)

6 Results
The numbers you collect in the test (7)

Down

1 Current
Electric ___ through the wire can be increased to make an electromagnet stronger (7)

2 Change
In a test, make one ___ at a time and keep everything else the same (6)

5 Turns
The complete loops of wire counted on a coil: more of them, a stronger magnet (5)

In the word search, words go across, down or diagonally, and spaces are left out. The same puzzles can be played on the Magnets and electromagnets lesson 5 page of the KS3 Science revision site.

KS3 PHYSICS · MAGNETS AND ELECTROMAGNETS · LESSON 6

Using electromagnets

Word search

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

Find these 8 words

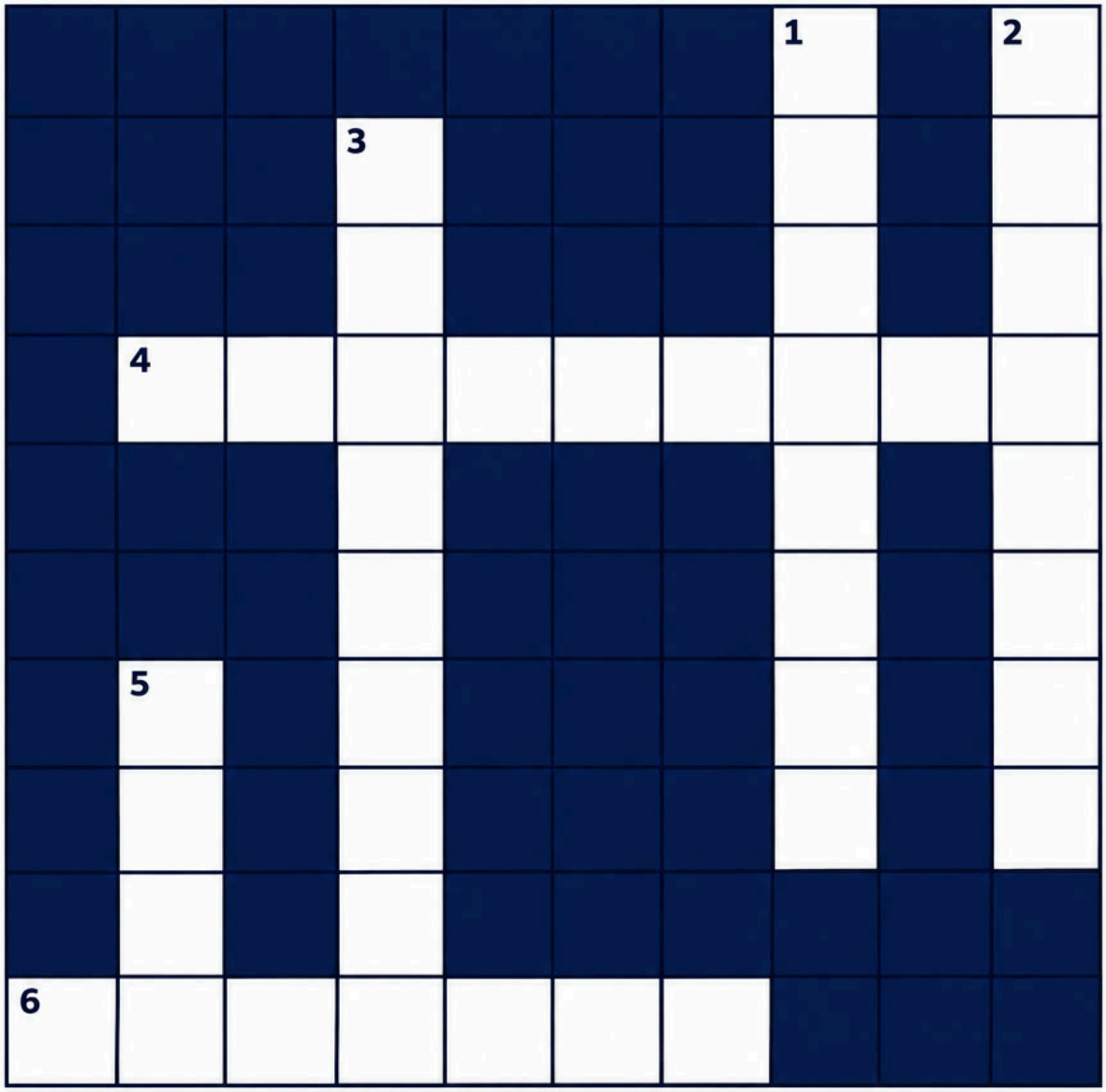
- ☐ BELL
- ☐ CRANE
- ☐ LOUDSPEAKER
- ☐ PERMANENT
- ☐ SCRAPYARD
- ☐ SLIDING
- ☐ STRENGTH
- ☐ SWITCHED

Words go across, down or diagonally. Spaces are left out.

KS3 PHYSICS · MAGNETS AND ELECTROMAGNETS · LESSON 6

Using electromagnets

Crossword



Across

4 A ___ magnet is magnetic all the time (9)

6 Contacts that rub against a moving part are called ___ contacts (7)

Down

1 How powerful an electric magnet is can be changed (8)

2 An electromagnet can be ___ on and off (8)

3 A place full of old metal, where a big magnet lifts steel (9)

5 An electric ___ uses an electromagnet to make a ringing sound (4)

The number in brackets is how many letters the answer has.

KS3 SCIENCE · PHYSICS · MAGNETS AND ELECTROMAGNETS

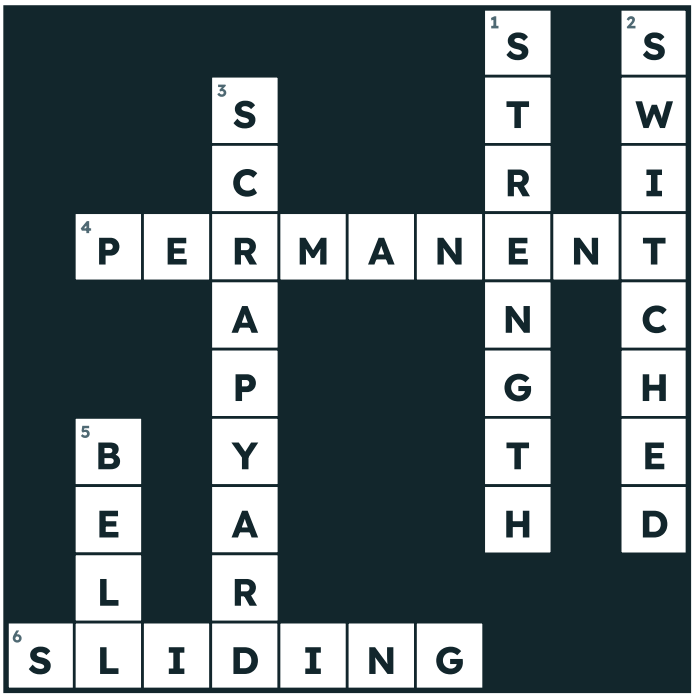
Lesson 6: Using electromagnets

Answers

Word search

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

Crossword



Across

4 Permanent
A ___ magnet is magnetic all the time (9)

6 Sliding
Contacts that rub against a moving part are called ___ contacts (7)

Down

1 Strength
How powerful an electric magnet is can be changed (8)

2 Switched
An electromagnet can be ___ on and off (8)

3 Scrapyard
A place full of old metal, where a big magnet lifts steel (9)

5 Bell
An electric ___ uses an electromagnet to make a ringing sound (4)

In the word search, words go across, down or diagonally, and spaces are left out. The same puzzles can be played on the Magnets and electromagnets lesson 6 page of the KS3 Science revision site.