

**TEACHER PACK – TASKS and ANSWERS**

**C) ENGINE ROOM**



# **Beeleigh Mill Restoration Group (BMRG)**

## **Beeleigh Mill – The Engine Room**

Beam – a pivoted metal or wooden bar.

Cast Iron – metal made in a mould formed from iron and carbon.

Coal – vegetation under pressure over millions of years to form a carbon rock.

Condense – a liquid turning from a gas to a liquid.

Elephant Boiler – a domed ended steam boiler

Fly Wheel – a revolving wheel used to increase a machines momentum.

Governor – a rotating set of weights moved by gravity.

James Watt – the ‘father’ of the industrial steam revolution.

Momentum – an amount of motion.

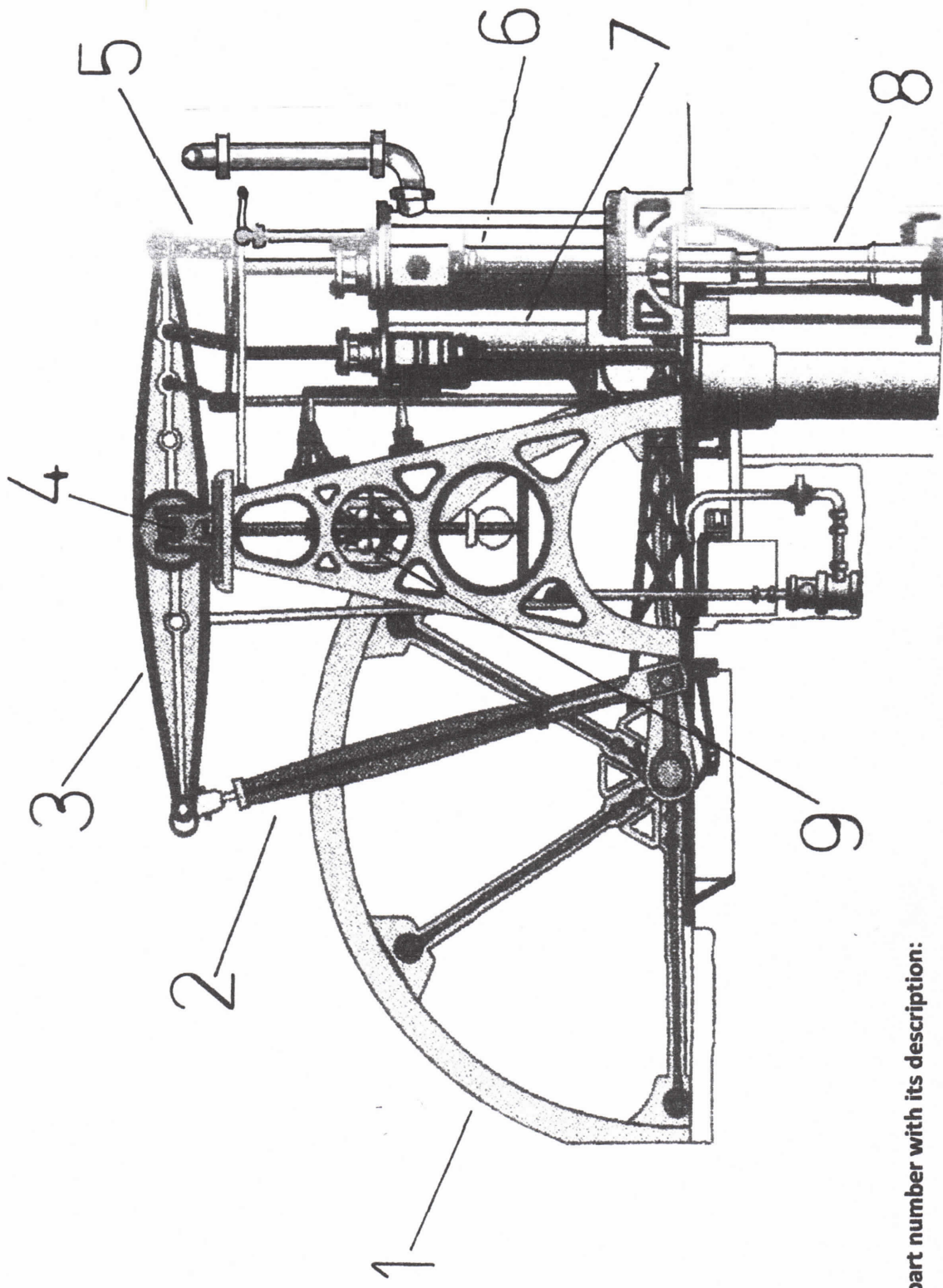
Parallel Motion – movement based on fixed and moving pivots, from an arc to a vertical

Pressure – when molecules are compressed.

Steam – water turned into a gas from a liquid.

Water – an essential liquid for all life on earth.

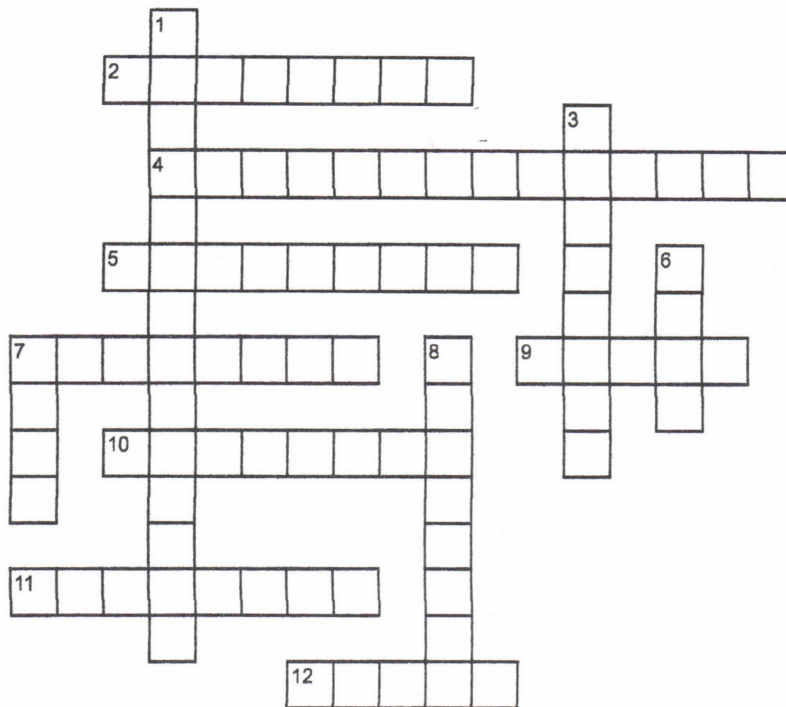
# Beeleigh Mill – The Wentworth Engine



Place the correct part number with its description:

Great Fly Wheel	Fulcrum	Governor	Parallel Motion
Beam	Condenser	Low Pressure	High Pressure
Con Rod			

## Beeleigh Mill - The Engine Room



### Across

- 2 revolving wheel used to increase a machines momentum
- 4 movement based on fixed and moving pivots, from an arc to a vertical
- 5 father of the industrial steam revolution
- 7 metal cast in a mould made from iron and carbon
- 9 water turned into a vapour when heated
- 10 how vapour cools to become water, from a gas to a liquid
- 11 a rotating set of weights moved by gravity
- 12 an essential liquid for all life on earth

### Down

- 1 a dome-ended steam boiler
- 3 an amount of motion
- 6 a pivoted metal/wooden bar
- 7 vegetation pressed over time to form a carbon rock
- 8 when molecules are compressed

# Beeleigh Mill - The Engine Room

Complete forward, backward or diagonal words, circle or cross through

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

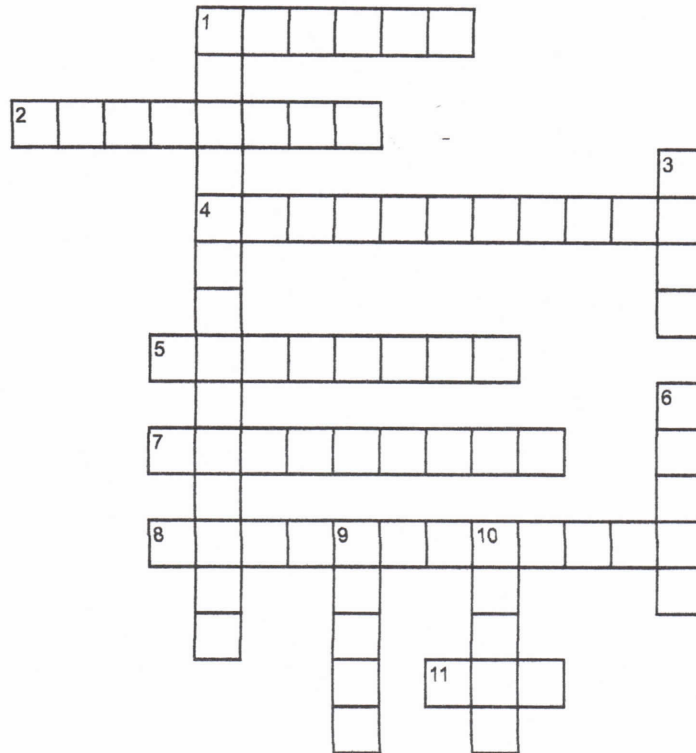
BEAM  
CAST IRON  
COAL  
CONDENSE  
ELEPHANT BOILER

FLY WHEEL  
GOVERNOR  
JAMES WATT  
MOMENTUM  
PARALLEL MOTION

PRESSURE  
STEAM  
WATER

# Wentworth Beam Engine

Complete forward, backward or diagonal words, circle or cross through



**Across**

- 1 part of an engine which is driven under pressure
- 2 a device used to control the supply of steam or water and so limit speed
- 4 when pressure is lessened or below normal
- 5 a large revolving wheel used to increase a machines speed
- 7 a mechanism which changes vapour to a liquid
- 8 when pressure is concentrated or increased above normal
- 11 a shape attached to a rotating axle or beam to give variable motion

**Down**

- 1 a linkage which moves vertical motion to a beam in an arc
- 3 a long metal or wooden support
- 6 a condensed state of vapour
- 9 the centre point about which a shaft or beam is in balance
- 10 a vapour state of water

# Wentworth Beam Engine

Forward, backward or diagonal.

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

BEAM  
CAM  
CONDENSER  
ENGINE

FLY WHEEL  
GOVERNOR  
HIGH PRESSURE  
PARALLEL MOTION

PISTON  
PIVOT  
STEAM  
WATER

# Wentworth Beam Engine

Forward, backward or diagonal.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Q	C	L	G	S	V	G	J	O	G	M	G	C	C	A	L	A	A
2	W	K	E	U	T	W	W	Y	W	W	K	L	R	M	L	G	F	
3	Y	J	W	R	I	O	B	D	N	B	Z	Q	E	F	L	R	P	D
4	H	L	E	F	U	I	V	S	H	M	A	S	A	K	U	A	W	S
5	B	G	U	T	T	S	M	I	C	C	N	R	G	A	R	M	P	T
6	G	Y	X	R	E	O	S	D	P	E	K	O	Q	A	H	S	I	M
7	Y	E	N	G	I	N	E	E	D	O	V	G	L	Y	Z	H	S	U
8	Y	R	J	R	Y	J	B	N	R	E	G	L	O	N	H	V	T	P
9	F	O	O	J	M	G	O	U	R	P	E	I	I	A	L	B	O	G
10	G	A	M	A	C	C	R	N	O	L	H	L	V	M	R	N	N	E
11	H	J	Q	R	X	I	O	E	M	X	I	G	Y	K	I	E	W	D
12	T	Z	C	Q	S	R	P	O	T	E	H	J	I	I	C	A	H	E
13	J	K	Y	N	Z	I	T	F	Y	A	L	E	E	H	W	Y	L	F
14	O	D	N	M	M	I	O	N	J	M	W	V	M	N	E	X	A	S
15	T	C	B	V	O	A	W	X	Z	M	T	X	X	B	I	Z	H	Y
16	V	L	Z	N	T	T	E	N	N	P	A	B	H	H	E	K	D	Y
17	K	E	J	M	B	N	G	T	R	G	P	U	N	Q	N	A	Y	U
18	S	N	U	F	H	F	F	T	S	Y	M	J	Q	G	B	L	M	H

## Word Search Answer/Hints

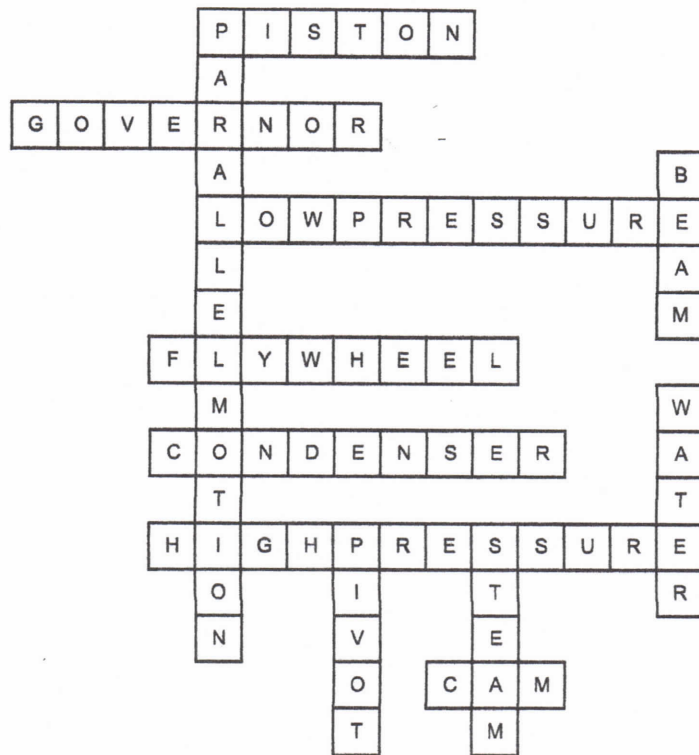
The words below are listed with their starting row and column

BEAM 15:14	FLY WHEEL 13:18	PISTON 5:17
CAM 10:5	GOVERNOR 5:13	PIVOT 6:9
CONDENSER 10:6	HIGH PRESSURE 13:14	STEAM 18:9
ENGINE 7:2	PARALLEL MOTION 3:17	WATER 14:11



# Wentworth Beam Engine

Complete forward, backward or diagonal words, circle or cross through



## Across

- 1 part of an engine which is driven under pressure
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## Beeleigh Mill - The Engine Room

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1	E	X	N	W	G	Q	H	Z	F	P	X	C	F	P	V	C	M	W
2	N	L	G	O	A	C	S	T	V	L	O	X	A	R	O	K	A	T
3	E	J	E	O	R	N	F	P	S	P	Y	R	W	A	M	T	E	T
4	V	K	S	P	Q	O	R	K	G	D	A	W	L	N	W	F	T	A
5	J	K	D	V	H	E	Y	I	B	L	L	G	H	W	T	F	S	W
6	J	Z	K	L	S	A	W	M	L	S	A	T	K	E	X	S	P	S
7	B	V	A	S	M	N	N	E	I	X	H	G	E	U	E	R	J	E
8	Y	W	U	G	H	I	L	T	C	Y	B	Y	B	L	W	L	U	M
9	W	R	F	A	G	M	K	N	B	A	W	B	E	A	M	P	P	A
10	E	Q	Q	R	O	C	T	K	E	O	S	A	Q	E	C	T	M	J
11	G	Q	F	T	H	O	E	M	W	M	I	T	T	N	X	N	M	Q
12	C	F	I	R	E	N	O	X	O	T	Y	L	I	E	L	B	I	W
13	B	O	S	P	M	D	G	Z	K	M	F	I	E	R	R	Q	K	G
14	N	B	W	L	G	E	E	E	W	R	E	I	Q	R	O	K	F	C
15	O	T	W	Y	D	N	G	O	V	E	R	N	O	R	K	N	Q	Y
16	U	G	A	U	L	S	U	T	I	J	V	E	T	S	H	W	N	K
17	M	X	T	X	R	E	R	H	D	A	I	M	T	U	Q	D	L	G
18	X	R	C	W	J	E	T	K	V	L	J	J	Y	B	M	Z	P	S

### Word Search Answer/Hints

The words below are listed with their starting row and column

BEAM 9:12	FLY WHEEL 1:9	PRESSURE 3:8
CAST IRON 8:9	GOVERNOR 15:7	STEAM 5:17
COAL 1:16	JAMES WATT 10:18	WATER 9:11
CONDENSE 10:6	MOMENTUM 11:8	
ELEPHANT BOILER 1:1	PARALLEL MOTION 1:14	