

TEACHER PACK – TASKS and ANSWERS

D) MISCELLANEOUS TASKS

Materials
Simple Machines
Canal Lock
General Milling



Beeleigh Mill – Materials

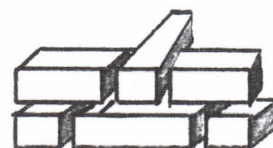
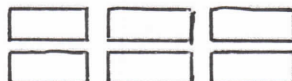
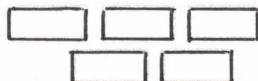
- 1) The characteristics of a material are called its '**Properties**'. Make a list of 3 **materials** and their **properties** when used to build the mill in the box below:

Material			
Property			

- 2) Circle 3 materials from the list below which can be used to make concrete:

Sand Oil Water Flour Cement powder Pebbles

- 3) Tick below which brick pattern is the strongest for a wall:



- 4) The 3 states of matter are:

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- 5) Which type of matter is air-like and shapeless?

- 6) Water boils at: -10 C 0 C 100 C

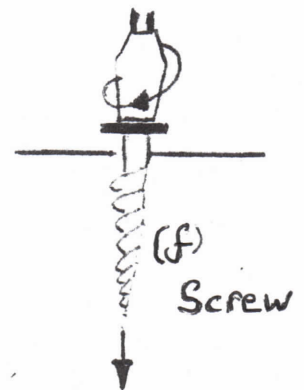
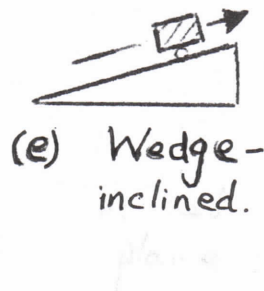
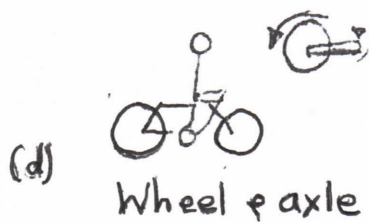
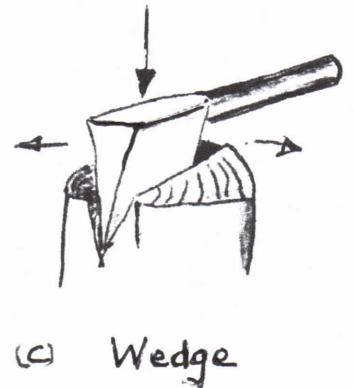
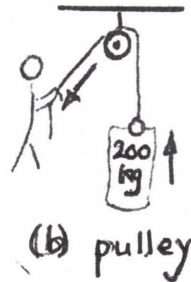
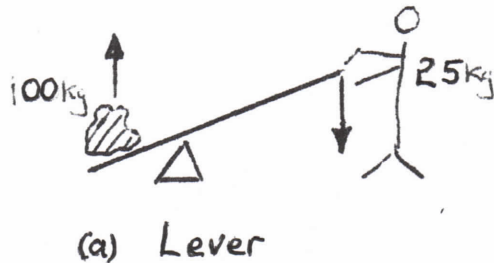
- 7) Boiling Water into a **Vapour** (gaseous state) involves the process of:

- 8) Water changes from a **Liquid** to a **Solid** state at : +1 C 100 C -1 C

- 9) The **property** of allowing heat to pass through a material involves its **conductivity**. A poor **conductor** is a good **insulator**. Which material from (1) above is the best insulator?

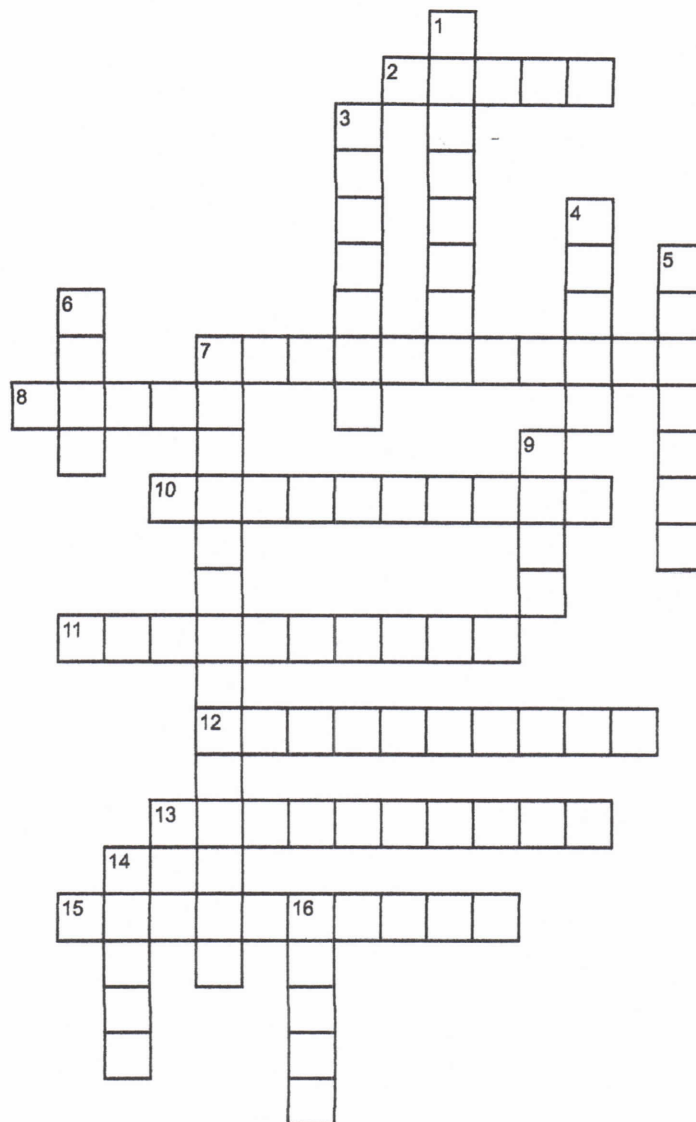
Beeleigh Mill - Simple Machines

Simple Machines



- 1) Which method(s) above can be used for lifting a 100kg sack of flour 200cm above the ground?
- 2) In (a), if the lever (beam) is in balance with a person sitting at one end, what are the balance distances either side of the fulcrum?
- 3) Effort is the force used to do: housework, homework or mechanical work
- 4) Load is the volume, density or force used by a machine to do work.
- 5) The fulcrum is a fixed point around a point around which a machine can turn.
True/False
- 6) If the Mechanical Advantage (MA) = Effort Arm / Load Arm, what is the MA for diagram (a)?

Beeleigh Mill



Across

- 2 water affected by tides due to the phases of the moon
- 7 building which houses the steam engine
- 8 man-made waterway controlled by locks
- 10 ground floor for collecting flour and houses hurst mechanism to drive millstones
- 11 first floor which housed millstones
- 12 river in Essex which flows south and east into the North Sea
- 13 horizontal fixed bed stone and runner stones for milling grain
- 15 a mechanical device for trapping energy from running water using paddles

Down

- 1 a diverted channel from waterway towards a mill
- 3 area which held raw coal as fuel for the boiler
- 4 end result of milling a grain, e.g wheat
- 5 river in Essex which flows east 65km into the the Blackwater Estuary
- 6 a stone or wooden platform used for unloading and loading from a waterway
- 7 horizontal cast iron boiler providing hot water for steam
- 9 device for raising and lowering boats and other water craft
- 14 a flat-bottomed boat used on canals and rivers for freight
- 16 a grain used in making flour

Beeleigh Mill

Forward, Backward or diagonal - cross through or circle

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

BARGE
BLACKWATER
CANAL
CHELMER
COAL PIT
ELEPHANT BOILER

ENGINE HOUSE
FLOUR
LOCK
MILLRACE
MILLSTONES
QUAY

SPOUT FLOOR
STONE FLOOR
TIDAL
WATER WHEEL
WHEAT

Beeleigh Mill

Forward, Backward or diagonal - cross through or circle

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

Word Search Answer/Hints

The words below are listed with their starting row and column

BARGE 15:7	ENGINE HOUSE 1:4	SPOUT FLOOR 16:15
BLACKWATER 8:18	FLOUR 9:14	STONE FLOOR 14:15
CANAL 11:9	LOCK 6:5	TIDAL 2:16
CHELMER 18:16	MILLRACE 10:2	WATER WHEEL 4:12
COAL PIT 10:7	MILLSTONES 1:16	WHEAT 2:14
ELEPHANT BOILER 17:2	QUAY 16:9	