Y4 Design and Technology

TERM 1

Conflicts – Britain at war
MECHANISMS
(simple circuits, Morse code machine and switches)
DT WEEK FOCUS – MORSE CODE MACHINES

Key knowledge

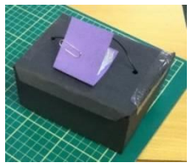
To know Morse code uses dots and dashes to communicate letters and numbers.

To know electrical devices can use a variety of switches including pressure, pivot, slide.

To know a 3D box can be made from a 2D printed net.

To know pressure switches are the most effective for a Morse code machine.

To understand and implement the key parts of the design process (design, make, evaluate).



Key skills

To be able to use research and develop design criteria.

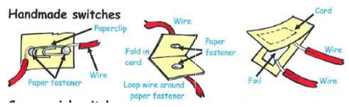
To be able to construct different types of switches using a variety of materials.

To be able to join a variety of components together to create a series circuit with a buzzer.

To be able to construct boxes.

To be able to use tools safely – Stanley knife, cutting board, metal ruler with – assistance.

To be able to create a written evaluation commenting on more than one aspect of the design criteria with justifications.



Enquiry/question/outcome/activity/genre of unit/text
To design and make a Morse code machine (linked to science).

Key vocabulary (tier 2)
battery
break
buzzer
cables
cell
circuit
dash
dot
series
signal
switch

Key vocabulary (tier 3)
component
conductor
insulator
iterative
Morse code
parallel
pivot
pivot switch
pressure switch
slide switch

TERM 2

Civilisation – Ancient Greece
MECHANISMS

Key knowledge

To know mechanisms/mechanical systems use related components that act together to create a movement.

To know motion is movement from one place to another.

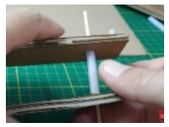
To know a pivot is a turn on a central point.

To know the lever is the simplest type of mechanism. A lever is a stiff bar which moves around a pivot.

To know linkage is the part of the mechanism used to join one or more levers to produce the type of movement required.

To know a loose pivot joins the levers together.

To know a fixed pivot joins the levers to the overall object.



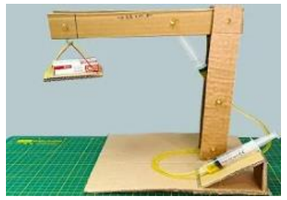
Key skills

To be able to use research and develop design criteria.

To be able to construct different types of levers and mechanisms using a variety of materials.

To be able to describe how a hydraulic lever system works.

To be able to write an evaluation commenting on more than one aspect of the design criteria with justifications.



Enquiry/question/outcome/activity/genre of unit/text
To design and make a hydraulic lever system (linked to science and learning themes of the ancient Greeks).

Key vocabulary (tier 2)
backwards
direction
down
fixed
forward
left
loose
motion
movement
pull
push
right
stiff
up

Key vocabulary (tier 3)
design criteria
fulcrum
hydraulic
justification
lever
linkage
pivot
syringe
system

TERM 3

Change
(Food – healthy and varied diet including cooking and nutrition)
Healthy wrap

Key knowledge

To know and name a variety of everyday foods and the five food groups.

To know the food pyramid shows us how much of each food group we need.

To know healthy wraps need balanced ingredients.

To understand the key parts of the design process (design, make, evaluate).

Key skills

To be able to independently cut using a knife.

To be able to grate using a grater.

To be able to chop using a knife.

To be able to prepare food hygienically.

To be able to increase confidence in using the claw grip and bridge hold grip to safely use knives.

To be able to write an evaluation commenting on more than one aspect of the design criteria with justifications.

Enquiry/question/outcome/activity/genre of unit/text
To design, prepare and make a healthy snack.

Key vocabulary (tier 2)
balanced
chop
cut
evaluate
fats
food groups
fruit
grate
healthy
mix
peel
sugars
variety
vegetables

Key vocabulary (tier 3)
bridge hold
carbohydrates
claw grip
dairy
food pyramid
hygienic
protein