

# THORPE PARK

[www.ietfaraday.org](http://www.ietfaraday.org)


## IET Faraday Challenge Day



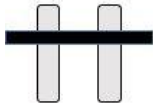



**Shop Manager Balance Sheet**    School .....    Date .....

Faradays spent at each visit to the shop	Team 1	Team 2	Team 3	Team 4	Team 5	Team 6	Team 7
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
<b>TOTAL FARADAYS SPENT</b>							

## Shop manager resource sheet

### Items to buy

Electrical components				
Item		Description	Unit	Cost
Crocodile leads		Lead with crocodile clips at each end	Each	2 Faradays
Insulated wire – red or black		Can be used to create a circuit using terminal blocks or used for electro-magnets	Per 30 cms	2 Faradays
Terminal blocks		Can be used to connect insulated wire	Each	2 Faradays
Piezo buzzer		Connect in a circuit to give a sound output	Each	6 Faradays
LED – various colours		Light Emitting Diode which lights up when connected in a circuit. Choose from red, orange, green or blue.	Each	6 Faradays
2.5V Bulb with bulb holder		Used as a light in a circuit. <b>NOTE:</b> Will not work with an LDR	Each	6 Faradays
Motor		Connect in a circuit to create clockwise or anti-clockwise movement.	Each	6 Faradays
Motor holder		Used to fix a motor or a syringe in position. <b>NOTE:</b> you will need the insert to connect a syringe.	Each	4 Faradays
Gear attachment for motor		Used to connect a motor to a cog	Each	2 Faradays

Pulley attachment for motor		Used to connect a motor to a pulley wheel – will need connector (e.g. elastic band)	Each	2 Faradays
Light Dependent Resistor		Component that detects the light level and changes resistance in a circuit.	Each	8 Faradays
Moisture sensor		Component which detects moisture in the surroundings. Can also be used to detect materials which conduct electricity.	Each	8 Faradays
Potentiometer		Can be used to vary the resistance in a circuit	Each	8 Faradays
2AA cells in battery holder with battery snap		Used to provide power for your circuit	Each	6 Faradays
Push button switch		Connects a circuit when pushed down and breaks the circuit when released.	Each	6 Faradays

Construction materials			
Item	Description	Unit	Cost
Correx	Used to create structures	Piece	6 Faradays
Plastic syringes with tube	Used to develop pneumatic system	Pair of syringes with plastic tube	8 Faradays
Nail	Used to build an electro-magnet	Each	2 Faradays
Small cog	Used in gear systems with motors	Each	2 Faradays
Medium cog	Used in gear systems with motors	Each	2 Faradays
Large cog	Used in gear systems with motors	Each	4 Faradays
Dowel	Piece of solid cylindrical wooden rod used to create structures	Each	4 Faradays

Straws	Can be used in structures	Each	2 Faradays
Pulley wheel 54cm	Used to connect to pulley attachments on motor	Each	6 Faradays
Wooden wheel 54cm	Used with motors to drive something	Each	4 Faradays
Plastic reel	Used in construction	Each	4 Faradays
Polyfoam	A5 foam sheet – assorted colours	Each	4 Faradays
Coloured card	A4 sheet of card – assorted colours	Each	4 Faradays
Tin foil	A conductive material which can be used to make pressure pads or switches ( <b>MUST NOT</b> be used in place of connecting wires)	10cm strip	6 Faradays
Masking tape	Can be used to secure light parts in your design. <b>NOTE:</b> excessive use of tape will result in an additional charge	Roll	6 Faradays
Sponge	Can be used to make pressure switches or enhance your design.	Each	6 Faradays
Paperclip	Used to create switches or in construction	Each	1 Faraday
Paper fastener	Used to create switches or in construction	Each	1 Faraday
Elastic bands	Used to hold or create working parts	Each	1 Faraday
Cable ties	Can be used to hold your structures in place	Each	2 Faradays
Green wire	Used to connect structures ( <b>MUST NOT</b> be used in your electrical circuit)	20 cm piece	4 Faradays
String	Can be used as part of your product design	30cm piece	4 Faradays
Access card	Use this to collect various items from the shop – see next sheet	One per team	6 Faradays



### Available with your access card

These items can be used with your access card. You will need to take it to the shop to get use of one of these items. You may only get one item at a time.

Stapler	Used to staple soft materials only
Hole punch	Used to make small holes in soft materials
Rulers	Used to measure any part of your product or additional items
Scissors	Used for soft materials only
Screwdriver	Used to connect insulated wire in terminal blocks or to bulb holders.
Wire strippers	Used to cut or strip insulated wire.

### Free to use

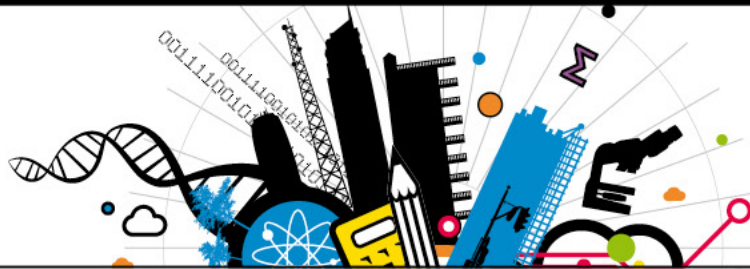
The cutting station – craft knives and junior hacksaws may be used at any point **BUT** only 3 people will be allowed at this station at any one time. Please take care when using this equipment.

## Account sheet

**Team**.....

You will need to keep an accurate record of all the purchases your team makes.

Materials/resources purchased	Quantity	Cost		Faradays remaining
		Spent	Received (if sold back)	
Total Faradays remaining:				



# For taking part in the **Faraday Challenge Day**

**Awarded to**

\_\_\_\_\_

**of**

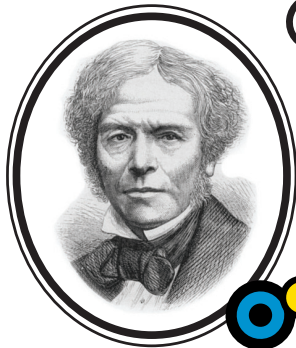
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# Faraday

## Faraday Reserve Note **ONE FARADAY**

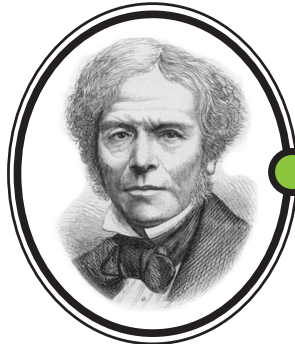


Michael Faraday



# Faraday

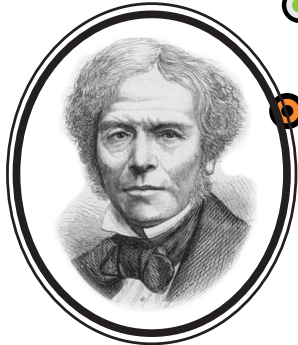
## Faraday Reserve Note **FIVE FARADAYS**



Michael Faraday

# Faraday

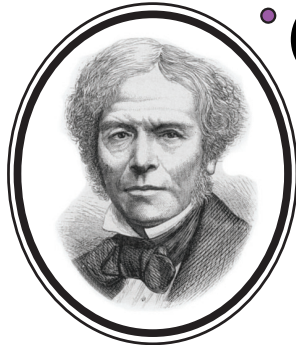
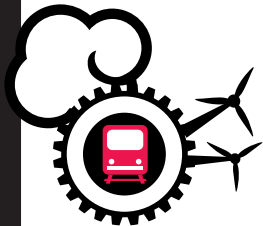
## Faraday Reserve Note **TEN FARADAYS**



Michael Faraday

# Faraday

## Faraday Reserve Note **TWENTY FARADAYS**



Michael Faraday



Crocodile leads

F2:00



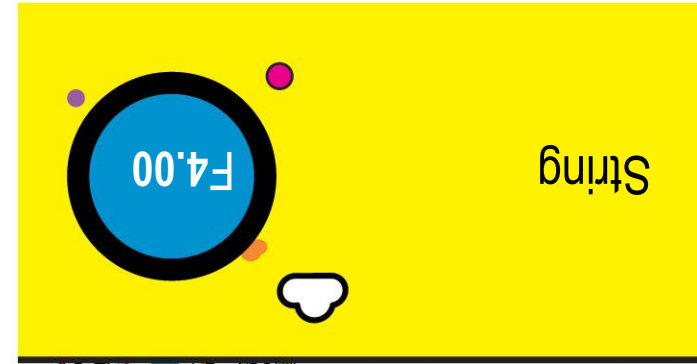
Crocodile leads

F2.00



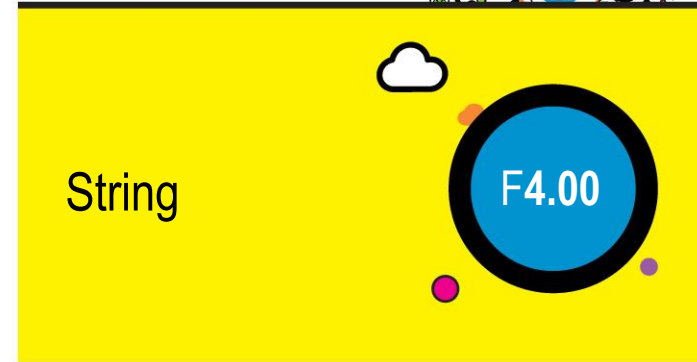
String

F4.00



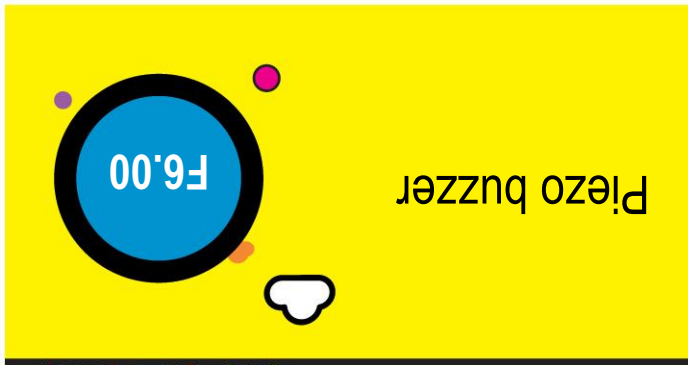
String

F4.00



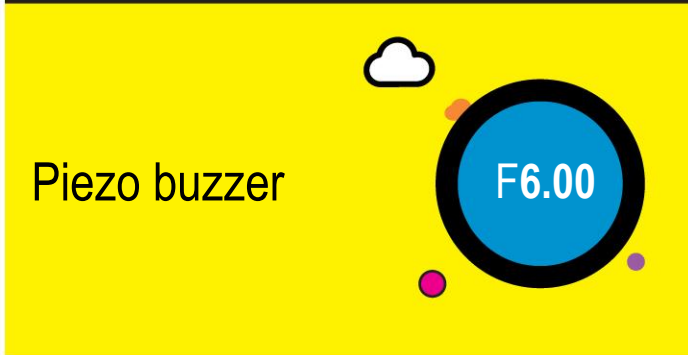
Piezo buzzer

F6.00

A yellow rectangular label with a blue circle containing the text 'F6.00'. The text 'Piezo buzzer' is to the right of the circle. There are small pink and purple dots and a white cloud icon.

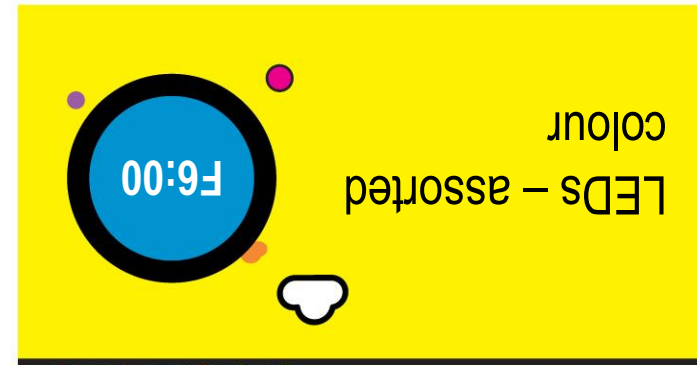
Piezo buzzer

F6.00

A yellow rectangular label with a blue circle containing the text 'F6.00'. The text 'Piezo buzzer' is to the left of the circle. There are small pink and purple dots and a white cloud icon.

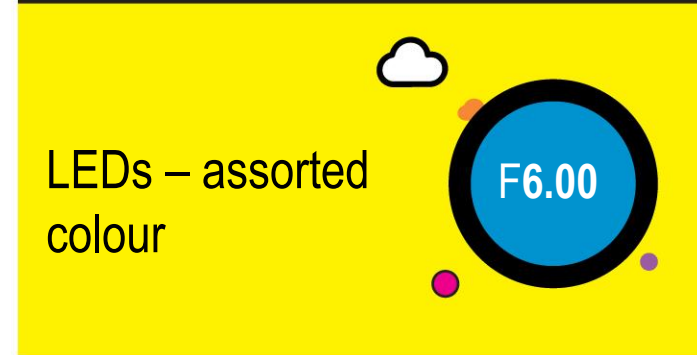
LEDs – assorted  
colour

F6.00

A yellow rectangular label with a blue circle containing the text 'F6.00'. The text 'LEDs – assorted colour' is to the right of the circle. There are small pink and purple dots and a white cloud icon.

LEDs – assorted  
colour

F6.00

A yellow rectangular label with a blue circle containing the text 'F6.00'. The text 'LEDs – assorted colour' is to the left of the circle. There are small pink and purple dots and a white cloud icon.



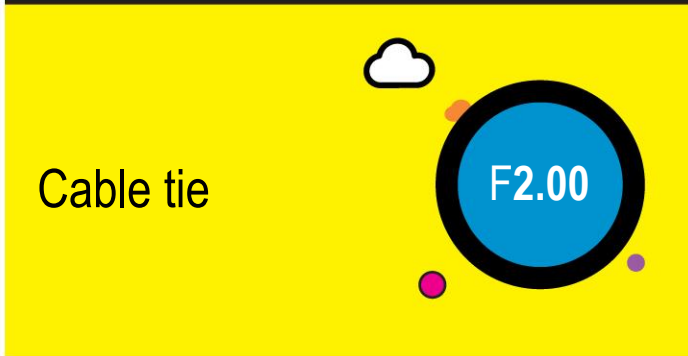
Cable tie

F2:00



Cable tie

F2.00



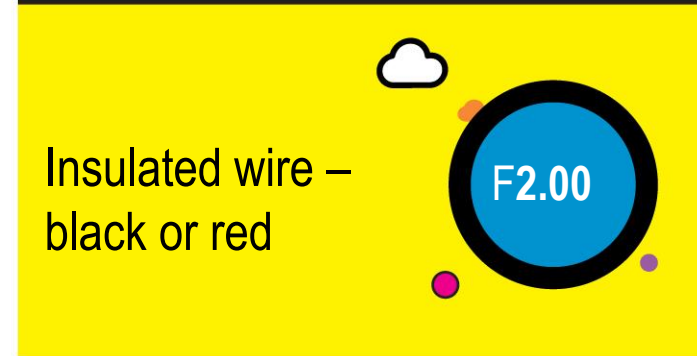
Insulated wire –  
black or red

F2:00



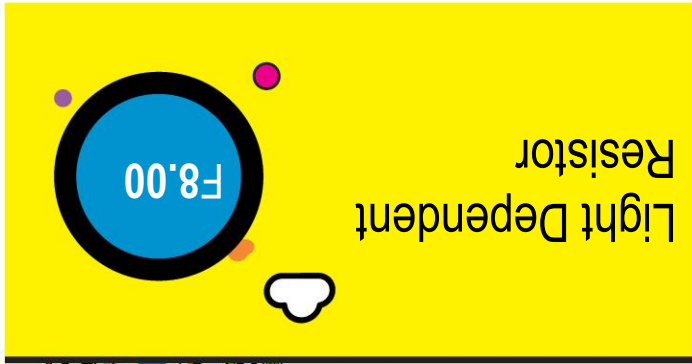
Insulated wire –  
black or red

F2.00



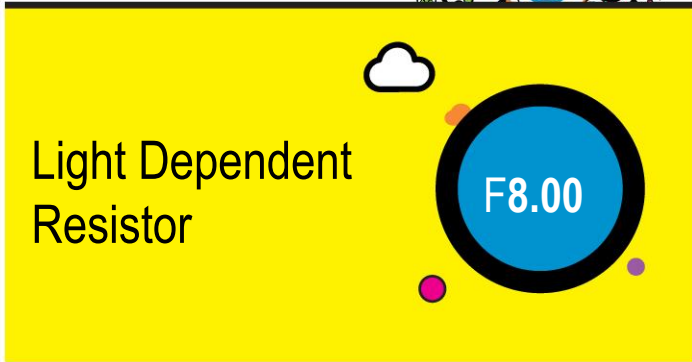
Light Dependent Resistor

F8.00



Light Dependent Resistor

F8.00



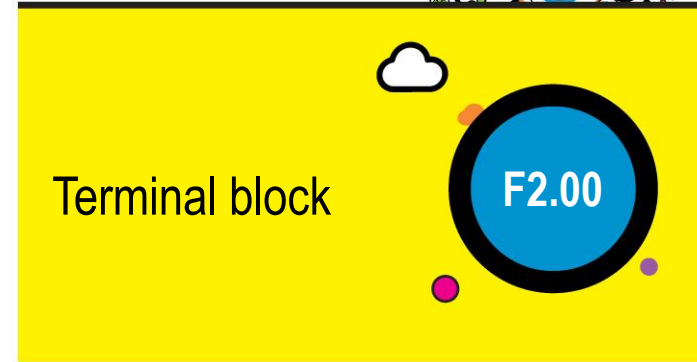
Terminal block

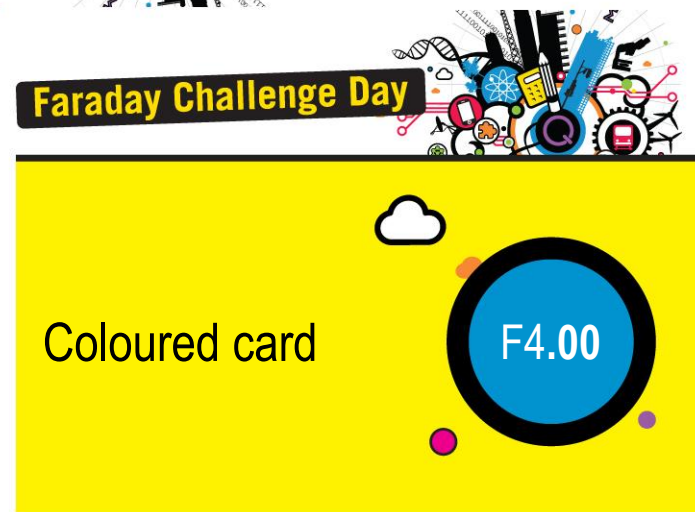
F2.00

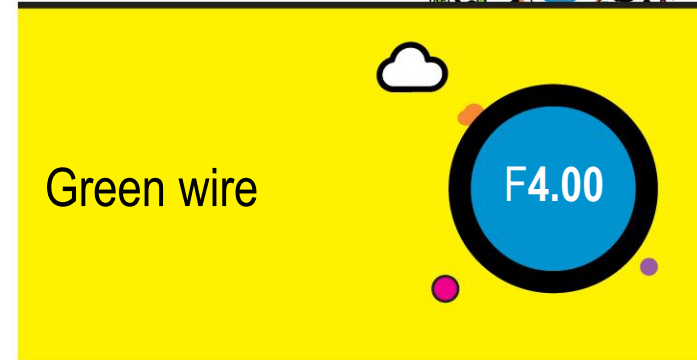
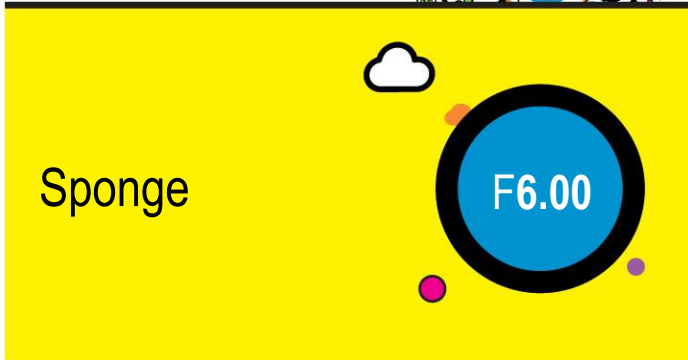
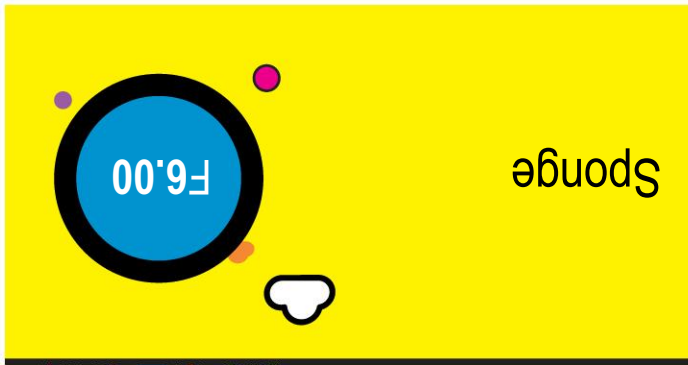


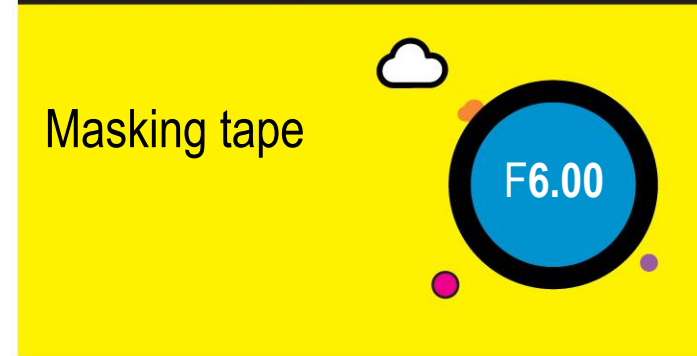
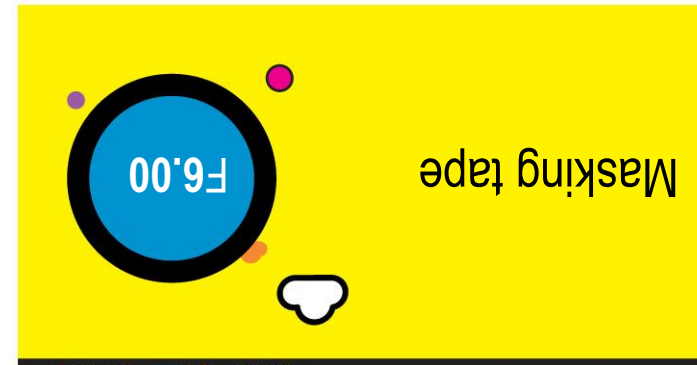
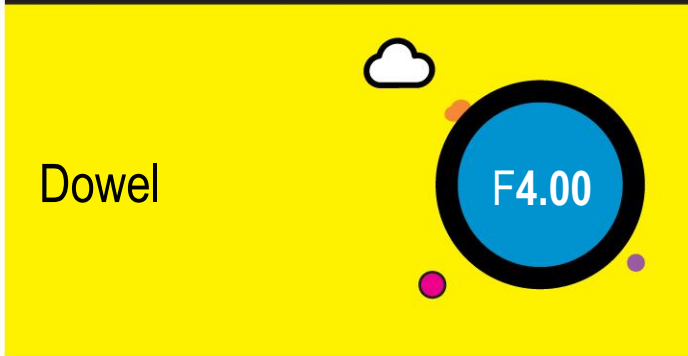
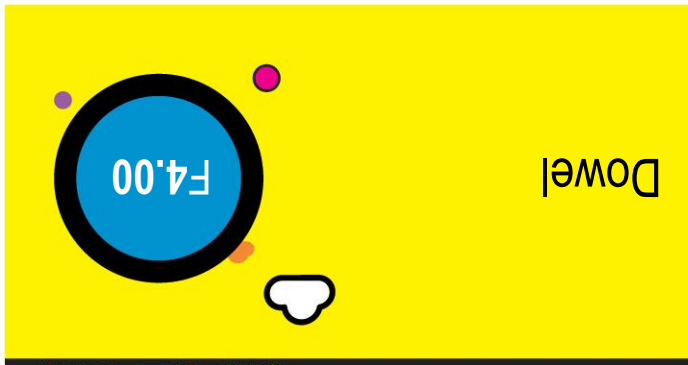
Terminal block

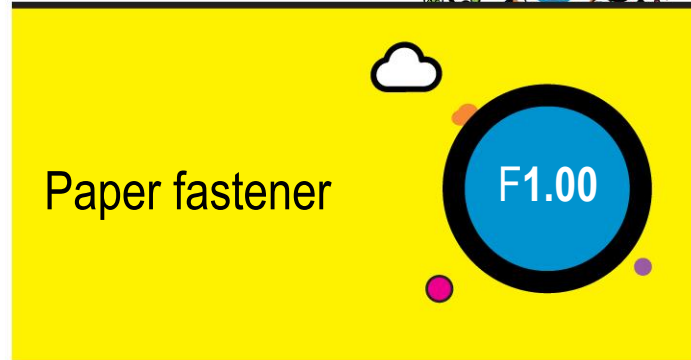
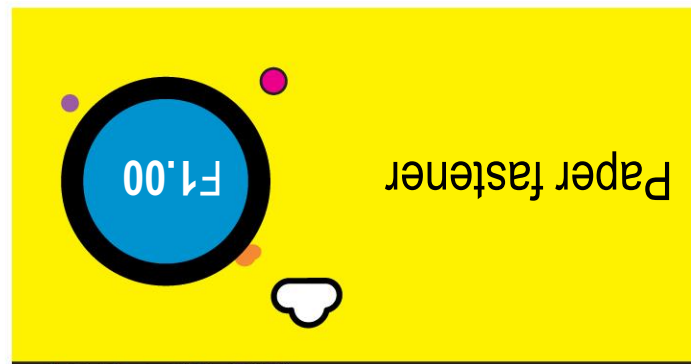
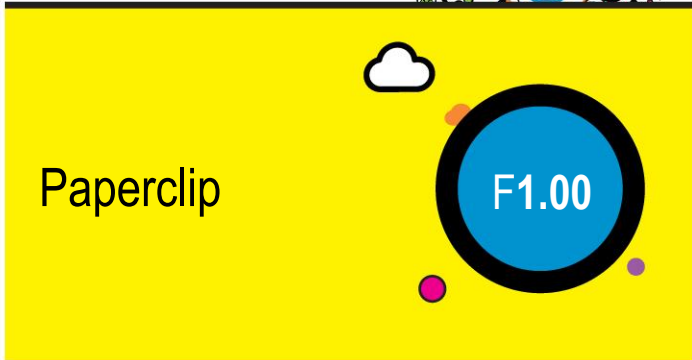
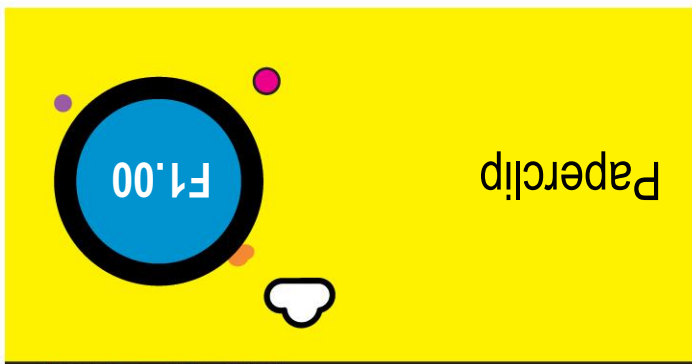
F2.00



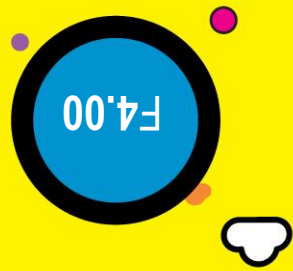












Plastic reel



Faraday Challenge Day



Plastic reel



Tin foil



Faraday Challenge Day



Tin foil



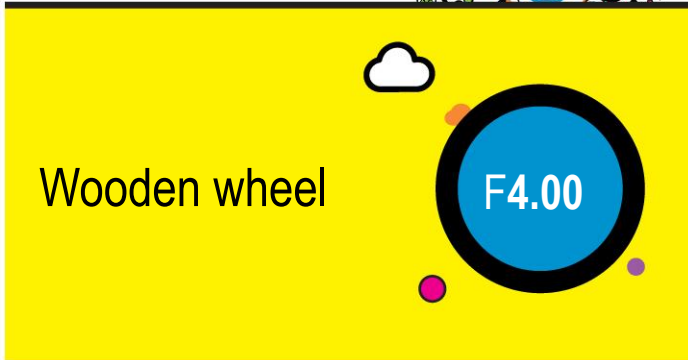
Wooden wheel

F4.00



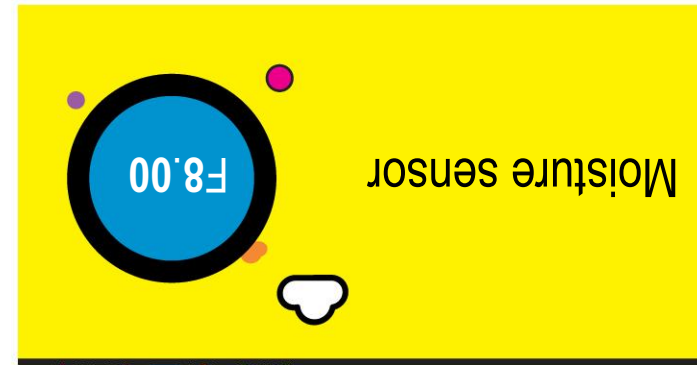
Wooden wheel

F4.00



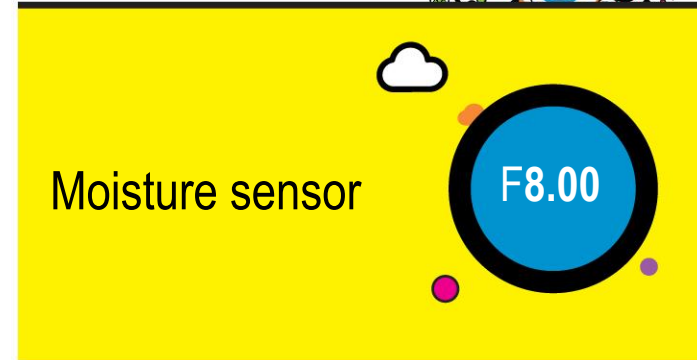
Moisture sensor

F8.00



Moisture sensor

F8.00



Battery with holder  
and battery snap –  
AA size

F6.00



Battery with holder  
and battery snap –  
AA size

F6.00

Elastic band

F1.00



Elastic band

F1.00

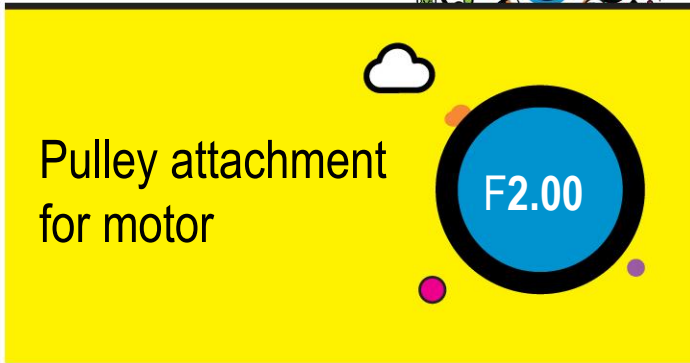
Pulley attachment  
for motor

F2.00



Pulley attachment  
for motor

F2.00



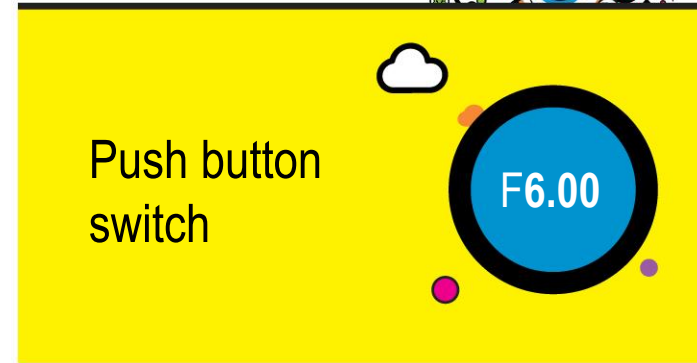
Push button  
switch

F6.00



Push button  
switch

F6.00



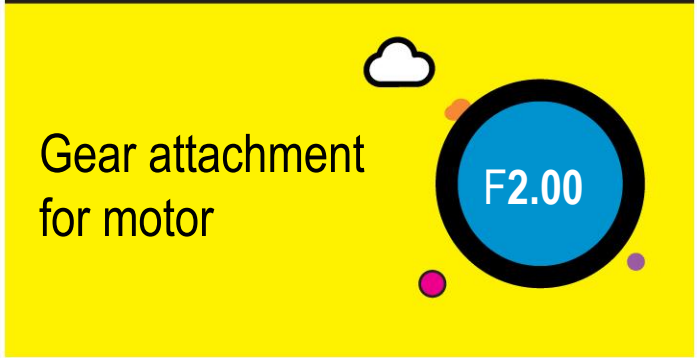
Gear attachment  
for motor

F2.00



Gear attachment  
for motor

F2.00



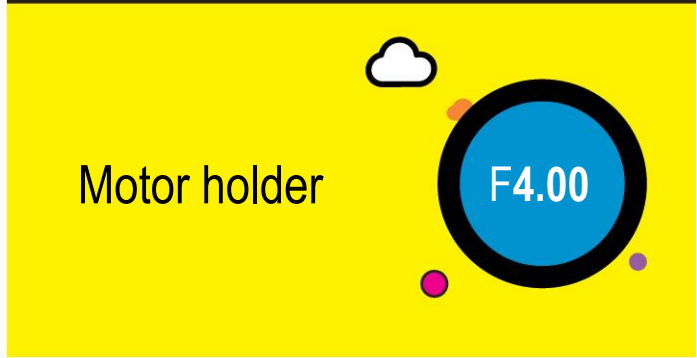
Motor holder

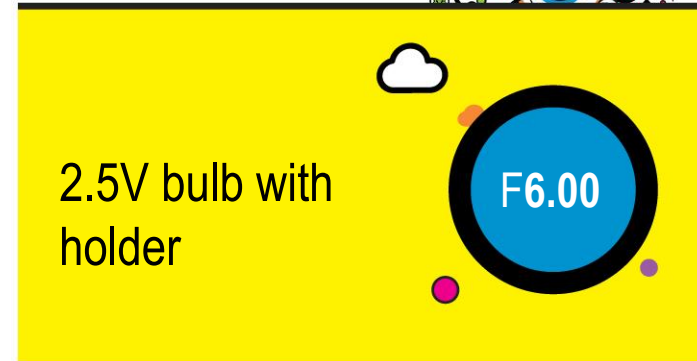
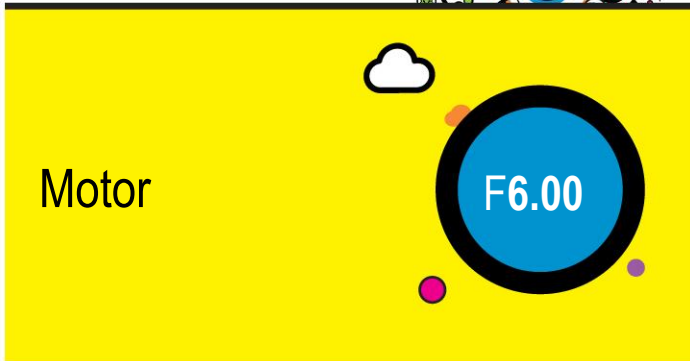
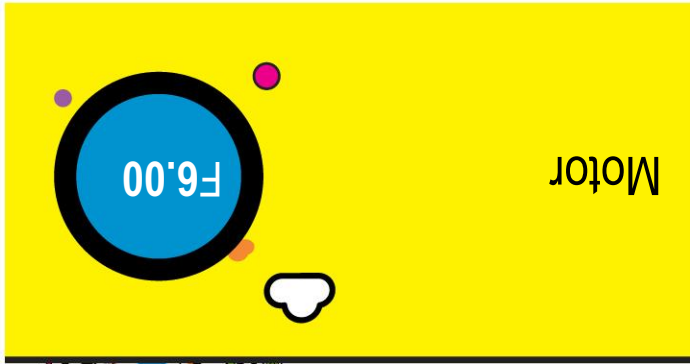
F4.00



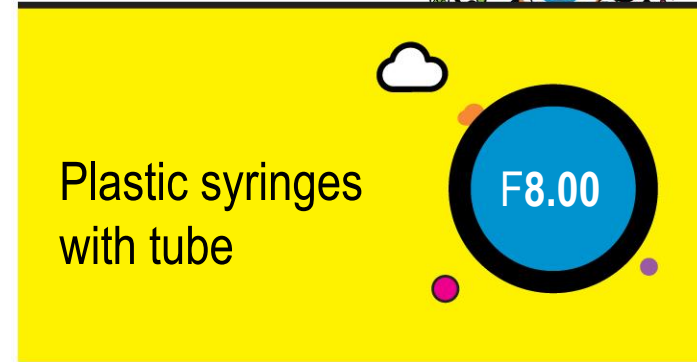
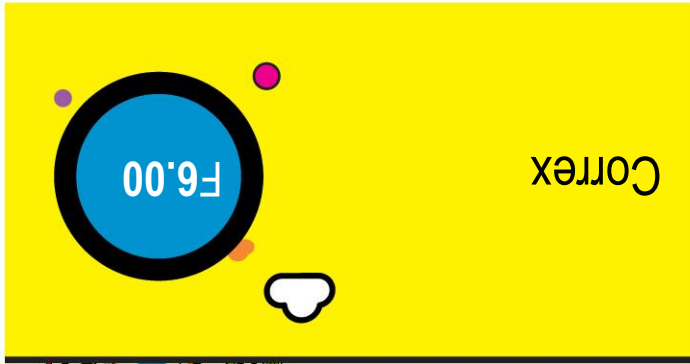
Motor holder

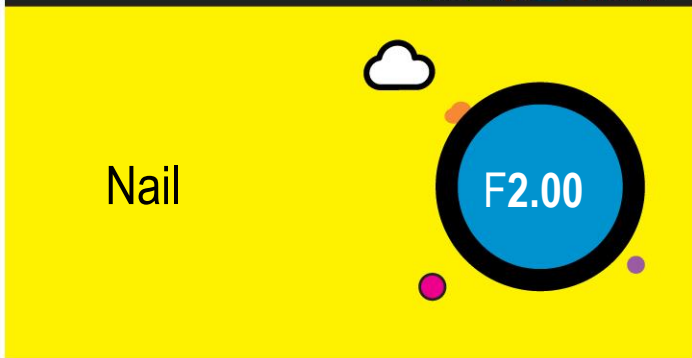
F4.00





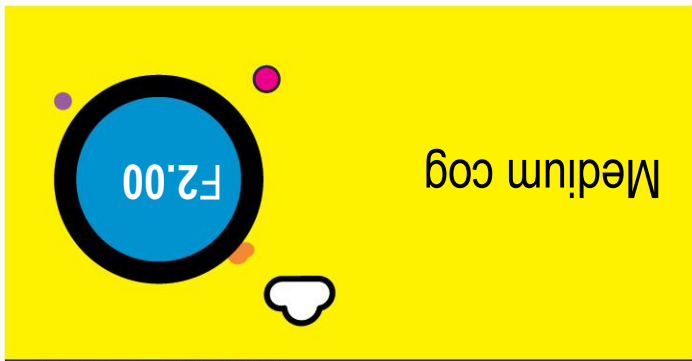






Medium cog

F2.00



Medium cog

F2.00



Large cog

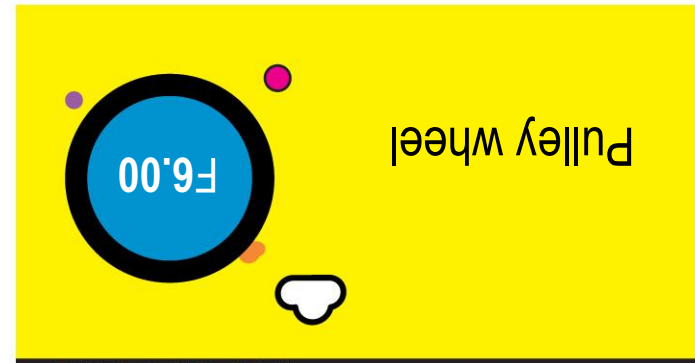
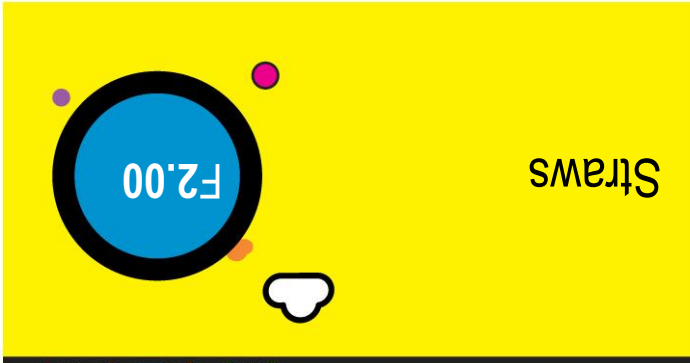
F2.00



Large cog

F4.00





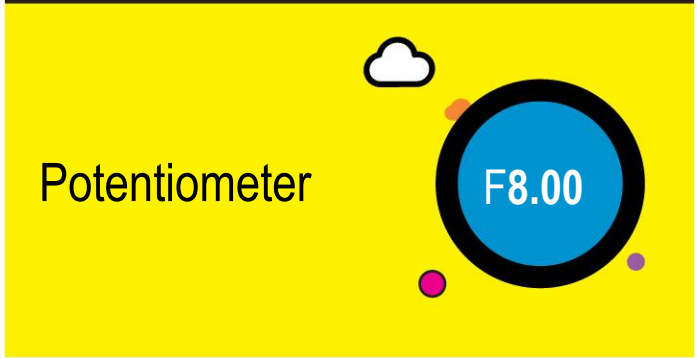
Potentiometer

F8.00



Potentiometer

F8.00



ACCESS CARD  
ITEMS

1 item only at a time

FREE  
WITH  
CARD



ACCESS CARD  
ITEMS

1 item only at a time

FREE  
WITH  
CARD





**ACCESS CARD**

**TEAM 2**


F6.00



**ACCESS CARD**

**TEAM 1**


F6.00



**ACCESS CARD**

**TEAM 3**


F6.00



**ACCESS CARD**

**TEAM 4**

F6.00





**TEAM 6**

**ACCESS CARD**

**F6.00**

**Faraday Challenge Day**

**Faraday Challenge Day**

**ACCESS CARD**

**TEAM 5**

**F6.00**

**TEAM 7**

**ACCESS CARD**

**F6.00**

**Faraday Challenge Day**

**Faraday Challenge Day**

**ACCESS CARD**

**TEAM 7**

**F6.00**



**Faraday Challenge Day**

Name

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Role

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**Faraday Challenge Day**

Name

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Role

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**Faraday Challenge Day**

Name

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Role

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**Faraday Challenge Day**

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**Faraday Challenge Day**

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**Faraday Challenge Day**

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