

# Spreadsheets

## Lesson 3 & 4

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# Starter

- What is a Budget
- Why do we set a budget
- What sort of budget will you set for your party.



# Simple Functions

Cell Range for Total, Max & Min (Jan Sales).

Cell Range for Total & Average (Monthly Sales).

```
=SUM(B6:G6)
```

The **=Sum Function** will calculate the **total (Sum)** of the numbers in the range.

```
=AVERAGE(B6:G6)
```

The **=Average Function** will calculate the **average of the numbers within the range.**

	January	February	March	April	May	June	Total	Average
iPhone 6	15	15	15	40	15	15	115	19.167
Samsung s5	18	18	18	18	18	18	108	18
Sony Xperia	5	5	5	5	5	5	30	5
Other	6	2	30	4	1	10	53	8.8333
Total:	44	40						
Max:	18	18						
Min	5	2						

```
=MAX(B6:B9)
```

The **=Max Function** will find the **highest** number in the **range**.

```
=MIN(B6:B9)
```

The **=Min Function** will find the **lowest** number in the **range**.

**Functions are predefined formulas and are already available in Excel.**

# Lesson Overview

## Objectives

Understand the effects of changing data within your spreadsheet (modelling).

Understanding cell referencing and the use of simple formulas.

Understanding the use of functions and absolute cell referencing

## Outcomes

## Time

<b>Task 1</b>	You will complete the second expenditure sheet.	
<b>Task 2</b>	You will use absolute cell referencing to work out the total Expenditure including Tax.	
<b>Task 3</b>	You will insert functions (max, min, average) to help you reduce costs – change data.	

# Task 2 – Simple formulas

- You will complete the second expenditure sheet using the items from the catalogue provided.

Decoration	Shop	Amount	Cost	Total
			Decoration Total	

  

Entertainment	Hours	Cost P/H	Total
		Entertainment Total	

  

Venue	Hours	Cost P/H	Total

1. Enter **Item** and **shop name**.

2. Enter the **amount** you want for each item.

For **Entertainment** and **Venue** enter the **amount of hours**.

3. Enter the **cost or cost per hour**.

4. Use a **formula** to work out the **total cost for each item**.

5. Use the **Sum Function** to work out the **Decoration and Entertainment total**.

# Absolute Reference & Relative Reference

Task 2: Percentages				
	10%			25%
Price	Student Discount	New Student Price		Staff Discount
119.95	£ 12.00	£ 107.95	→	=B6*\$E\$3
229.45	£ 22.95	£ 206.51	→	
360.59	£ 36.06	£ 324.53	→	
439.95	£ 44.00	£ 395.96	→	
539.99	£ 54.00	£ 485.99	→	

When you use **AutoFill** to **duplicate a formula** into the cells **below** then you must use **absolute cell referencing** if you want the cells to be **referencing** to **one particular cell**.

Absolute cell referencing will **lock** in a particular cell. To absolute cell reference you must insert a **dollar sign** **before Letter and number of the cell**.

=B6\*\$E\$3

All the prices will be multiplied by the % in E3.

The **Price** is **relative referencing**. When the formula is **dragged down** the **formula references** to the next price in the cell below.

	E	F
Percentages		
	25%	
Staff Discount		New Staff Price
36	£ 29.99	£ 36

In the example to the left if you do not use **absolute cell referencing** on the **25%** then the Price will be multiplied against the content in E4.

# Task 2 – Absolute Cell Referencing

- Complete the Total Expenditure table. You need to insert the total **Costs** and work out the **VAT** (Absolute Cell referencing).
- Insert a formula to work out the Total (**Cost + VAT**).
- Insert a Function work the expenditure total.

## Cell Reference

### 120

Needs to be absolute cell referenced by **pressing F4** on your keyboard.

Total Expenditure		
Type	Cost	VAT
Drinks	£ 382.75	=J14*\$I\$20
Food	£ 1,055.00	
Decoration	£ 5,796.00	
Entertainment	£ 1,950.00	
Venue	£ 675.00	

Left Click on the square in the bottom right corner of the cell and drag down to replicate the formula.

VAT	
£	57.41
£	158.25
£	869.40
£	292.50
£	101.25
Total	

# Task 3 – Functions

- Insert the **Min**, **Max** and **Average** function for the Food and Drink tables. Try and reduce your overall costs.

The screenshot shows a spreadsheet titled "Party - Expenditure". A context menu is open over row 16, with the "Insert" option highlighted. The spreadsheet contains two tables: "Drinks" and "Food". Both tables have columns for name, shop/store, amount, cost, and total. Summary rows for "Total", "Min", "Max", and "Average" are present at the bottom of each table. A yellow callout box provides instructions on how to insert a row.

Drinks (name)	Shop	Amount	Cost	Total
coke	asda	35	£ 1.00	£ 35.00
fanta	asda	40	£ 1.00	£ 40.00
dr pepper	tesco	25	£ 1.00	£ 25.00
vimto	asda	50	£ 0.90	£ 45.00
7 up	asda	45	£ 0.85	£ 38.25
milk shake	tesco	60	£ 1.00	£ 60.00
lilt	morrisons	10	£ 1.00	£ 10.00
pepsi	asda	50	£ 0.65	£ 32.50
ribena	asda	30	£ 0.90	£ 27.00
smoothies	tesco	70	£ 1.00	£ 70.00
<b>Total</b>			<b>£ 382.75</b>	
<b>Min</b>			<b>£ 10.00</b>	
<b>Max</b>			<b>£ 70.00</b>	
<b>Average</b>			<b>£ 38.28</b>	

  

Food (name)	Store	Amount	Cost	Total
fried chicken	kansas	50	£ 3.00	£ 150.00
burgers	sainsburys	50	£ 1.00	£ 50.00
chips	asda	100	£ 1.00	£ 100.00
hot dog	tesco	50	£ 2.00	£ 100.00
lamb chops	tesco	50	£ 3.00	£ 150.00
meat pizza	asda	20	£ 3.00	£ 60.00
kebabs	asda	50	£ 4.50	£ 225.00
cocktails	asda	70	£ 1.00	£ 70.00
sweets	asda	100	£ 1.00	£ 100.00
spring rolls	tesco	50	£ 1.00	£ 50.00
<b>Total</b>			<b>£ 1,055.00</b>	
<b>Min</b>			<b>£ 50.00</b>	
<b>Max</b>			<b>£ 225.00</b>	
<b>Average</b>			<b>£ 105.50</b>	

**To insert a row you have to right click on the row number and then click on insert.**



# Plenary – Refer to the Lesson Objectives

## Objectives

Understand the effects of changing data within your spreadsheet (modelling).

Understanding cell referencing and the use of simple formulas.

Understanding the use of functions and absolute cell referencing

## Plenary Task (Q&A)

1. What is the main advantage of using a spreadsheet for modelling purposes.
2. Have you managed to reduce costs?
3. Describe how the use of formulas and Functions has enabled you to reduce your overall costs.