

# LEARNER GUIDE



## **MS Excel Advanced**

Unit standard 116943

Level 4 credits 3

Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

## TABLE OF CONTENTS

<b>TABLE OF CONTENTS.....</b>	<b>1</b>
<b>PERSONAL INFORMATION .....</b>	<b>3</b>
<b>INTRODUCTION .....</b>	<b>4</b>
Programme methodology .....	4
What Learning Material you should have .....	5
Different types of activities you can expect.....	7
Learner Administration .....	8
Assessments .....	8
Learner Support.....	9
Learner Expectations .....	11
<b>UNIT STANDARD 116943 .....</b>	<b>13</b>
<b>CREATE AND EDIT A GRAPH/CHART .....</b>	<b>15</b>
Chart Types.....	15
Create Column And Bar Charts .....	27
Chart elements .....	27
Edit Chart Elements .....	30
Select chart data.....	30
Customise individual chart elements.....	32
Formative assessment .....	32
Add a data series to a chart.....	32
Add data to an embedded chart .....	32
Copy worksheet data to a chart .....	33
Change the data in an existing chart .....	33
Remove data from a chart.....	37
Formative assessment .....	37
Create and Format Pie Charts.....	40
Enter the Chart Data .....	40
Formative assessment .....	42
Select a Pie Chart Type.....	42
Format the pie chart.....	43
Create an XY (Scatter) Chart.....	44
Formative assessment .....	47
Format the line graph .....	48

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet

Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 1

Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

Select a different chart type .....	49
Sparklines .....	50
Show data trends .....	50
Enter Sparklines Data .....	50
Exercise .....	51
Create a Line Sparkline .....	51
What is the difference between copy and move? .....	53
SmartArt .....	55
<b>LOAD DATA FROM AN EXTERNAL SOURCE .....</b>	<b>56</b>
Importing data .....	56
Working with Access data in Excel .....	57
Import data from the Web .....	58
<b>INSERT AND EDIT OBJECTS IN A SPREADSHEET .....</b>	<b>63</b>
Introduction .....	63
Insert Clip Art .....	63
Insert a screen image in a document .....	68
Insert a picture from a web page .....	68
Formative Assessment .....	71

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 2

Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

## PERSONAL INFORMATION

NAME	
CONTACT ADDRESS	
Code	
Telephone (H)	
Telephone (W)	
Cellular	
Learner Number	
Identity Number	

EMPLOYER	
EMPLOYER CONTACT ADDRESS	
Code	
Supervisor Name	
Supervisor Contact Address	
Code	
Telephone (H)	
Telephone (W)	
Cellular	

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet

Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 3

Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

## INTRODUCTION

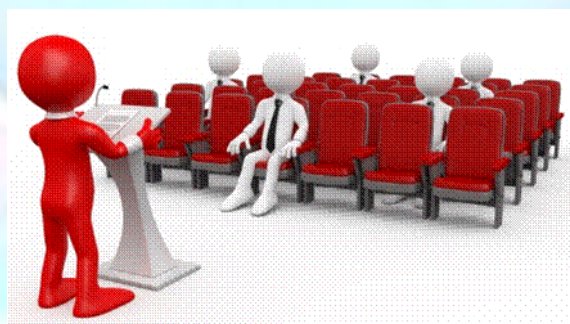
### *Welcome to the learning programme*

Follow along in the guide as the training practitioner takes you through the material. Make notes and sketches that will help you to understand and remember what you have learnt. Take notes and share information with your colleagues. Important and relevant information and skills are transferred by sharing!



This learning programme is divided into sections. Each section is preceded by a description of the required outcomes and assessment criteria as contained in the unit standards specified by the South African Qualifications Authority. These descriptions will define what you have to know and be able to do in order to be awarded the credits attached to this learning programme. These credits are regarded as building blocks towards achieving a National Qualification upon successful assessment and can never be taken away from you!

### Programme methodology



The programme methodology includes facilitator presentations, readings, individual activities, group discussions and skill application exercises.

**Know what you want to get out of the programme from the beginning and start applying your new skills immediately. Participate as much as possible so that the learning will be interactive and stimulating.**

The following principles were applied in designing the course:

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 4



Compiled by: Smartscrip	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

- ✓ Because the course is designed to maximise interactive learning, you are encouraged and required to participate fully during the group exercises
- ✓ As a learner you will be presented with numerous problems and will be required to fully apply your mind to finding solutions to problems before being presented with the course presenter's solutions to the problems
- ✓ Through participation and interaction the learners can learn as much from each other as they do from the course presenter
- ✓ Although learners attending the course may have varied degrees of experience in the subject matter, the course is designed to ensure that all delegates complete the course with the same level of understanding
- ✓ Because reflection forms an important component of adult learning, some learning resources will be followed by a self-assessment which is designed so that the learner will reflect on the material just completed.

This approach to course construction will ensure that learners first apply their minds to finding solutions to problems before the answers are provided, which will then maximise the learning process which is further strengthened by reflecting on the material covered by means of the self-assessments.


### ***Different role players in delivery process***

- ✓ Learner
- ✓ Facilitator
- ✓ Assessor
- ✓ Moderator


### **What Learning Material you should have**

This learning material has also been designed to provide the learner with a comprehensive reference guide.

It is important that you take responsibility for your own learning process; this includes taking care of your learner material. You should at all times have the following material with you:

<p><b><i>Learner Guide</i></b></p> 	<p><b><i>This learner guide is your valuable possession:</i></b></p> <p>This is your textbook and reference material, which provides you with all the information you will require to meet the exit level outcomes.</p> <p>During contact sessions, your facilitator will use this guide and will facilitate the learning process. During contact sessions a variety of activities will assist you to gain knowledge and skills.</p> <p>Follow along in the guide as the training practitioner takes you through the material. Make notes and sketches that will help you to understand and remember what you have learnt. Take and share information with your colleagues.</p>	
Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
<b>Revision number</b>	<b>Date revised</b>	<b>Page number</b>
Rev 1	14/11/2012	Page 5

Compiled by: Smartscrip	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

	<p>Important and relevant information and skills are transferred by sharing!</p> <p>This learning programme is divided into sections. Each section is preceded by a description of the required outcomes and assessment criteria as contained in the unit standards specified by the South African Qualifications Authority. These descriptions will define what you have to know and be able to do in order to be awarded the credits attached to this learning programme. These credits are regarded as building blocks towards achieving a National Qualification upon successful assessment and can never be taken away from you!</p>
<p><b>Formative Assessment Workbook</b></p> 	<p>The Formative Assessment Workbook supports the Learner Guide and assists you in applying what you have learnt.</p> <p>The formative assessment workbook contains classroom activities that you have to complete in the classroom, during contact sessions either in groups or individually.</p> <p>You are required to complete all activities in the Formative Assessment Workbook.</p> <p>The facilitator will assist, lead and coach you through the process.</p> <p>These activities ensure that you understand the content of the material and that you get an opportunity to test your understanding.</p>

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet

Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 6




Compiled by: Smartscrip	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

## Different types of activities you can expect

To accommodate your learning preferences, a variety of different types of activities are included in the formative and summative assessments. They will assist you to achieve the outcomes (correct results) and should guide you through the learning process, making learning a positive and pleasant experience.



The table below provides you with more information related to the types of activities.

<b><i>Types of Activities</i></b>	<b><i>Description</i></b>	<b><i>Purpose</i></b>
<b><i>Knowledge Activities</i></b> 	You are required to complete these activities on your own.	These activities normally test your understanding and ability to apply the information.
<b><i>Skills Application Activities</i></b> 	You need to complete these activities in the workplace	These activities require you to apply the knowledge and skills gained in the workplace
<b><i>Natural Occurring Evidence</i></b> 	You need to collect information and samples of documents from the workplace.	These activities ensure you get the opportunity to learn from experts in the industry.  Collecting examples demonstrates how to implement knowledge and skills in a practical way

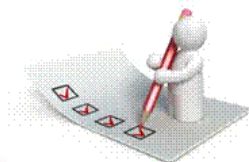
Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet

<b>Revision number</b>	<b>Date revised</b>	<b>Page number</b>
Rev 1	14/11/2012	Page 7



Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

## Learner Administration



### **Attendance Register**

You are required to sign the Attendance Register every day you attend training sessions facilitated by a facilitator.

### **Programme Evaluation Form**

On completion you will be supplied with a "Learning programme Evaluation Form". You are required to evaluate your experience in attending the programme.

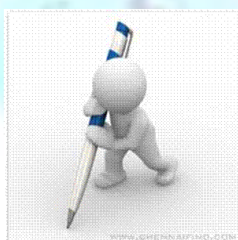
Please complete the form at the end of the programme, as this will assist us in improving our service and programme material. Your assistance is highly appreciated.

## **Assessments**

The only way to establish whether a learner is competent and has accomplished the specific outcomes is through the assessment process. Assessment involves collecting and interpreting evidence about the learners' ability to perform a task.

**To qualify and receive credits towards your qualification, a registered Assessor will conduct an evaluation and assessment of your portfolio of evidence and competency.**

**This programme has been aligned to registered unit standards. You will be assessed against the outcomes as stipulated in the unit standard by completing assessments and by compiling a portfolio of evidence that provides proof of your ability to apply the learning to your work situation.**



Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 8

Compiled by: Smartscrip	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

## ***How will Assessments commence?***

### ***Formative Assessments***

The assessment process is easy to follow. You will be guided by the Facilitator. Your responsibility is to complete all the activities in the Formative Assessment Workbook and submit it to your facilitator.

### ***Summative Assessments***

You will be required to complete a series of summative assessments. The Summative Assessment Guide will assist you in identifying the evidence required for final assessment purposes. You will be required to complete these activities on your own time, using real life projects in your workplace or business environment in preparing evidence for your Portfolio of Evidence. Your Facilitator will provide more details in this regard.

**To qualify and receive credits towards your qualification, a registered Assessor will conduct an evaluation and assessment of your portfolio of evidence and competency.**

## **Learner Support**

**The responsibility of learning rests with you, so be proactive and ask questions and seek assistance and help from your facilitator, if required.**



Please remember that this Skills Programme is based on outcomes based education principles which implies the following:

- ✓ You are responsible for your own learning – make sure you manage your study, research and workplace time effectively.
- ✓ Learning activities are learner driven – make sure you use the Learner Guide and Formative Assessment Workbook in the manner intended, and are familiar with the workplace requirements.
- ✓ The Facilitator is there to reasonably assist you during contact, practical and workplace time for this programme – make sure that you have his/her contact details.
- ✓ You are responsible for the safekeeping of your completed Formative Assessment Workbook and Workplace Guide
- ✓ If you need assistance please contact your facilitator who will gladly assist you.

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 9

Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

- ✓ If you have any special needs please inform the facilitator



Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 10

Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

## Learner Expectations

Please prepare the following information. You will then be asked to introduce yourself to the instructor as well as your fellow learners



Your name:
The organisation you represent:
Your position in organisation:
What do you hope to achieve by attending this course / what are your course expectations?

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
<b>Revision number</b>	<b>Date revised</b>	<b>Page number</b>
Rev 1	14/11/2012	Page 11

Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	



Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet

Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 12



Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

## UNIT STANDARD 116943

### ***Unit standard title***

Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet

### ***NQF Level***

4

### ***Credits***

3

### ***Purpose***

This unit standard is intended for people who need to enhance spreadsheet appearance using a Graphical User Interface (GUI)-based spreadsheet application either as a user of computers or as basic knowledge for a career in the ICT industry.

The performance of all elements is to a standard that allows for further learning in this area

### ***Learning assumed to be in place***

The credit value of this unit standard is calculated assuming a person has the prior knowledge and skills to:

- ✓ Understand the concepts of Information and Communication Technology (ICT)
- ✓ Operate a personal computer system
- ✓ Use Graphical User Interface (GUI)-based operating systems
- ✓ Operate and maintain personal computer peripheral equipment
- ✓ Use a Graphical User Interface (GUI)-based spreadsheet application to create and edit spreadsheets
- ✓ Use a Graphical User Interface (GUI)-based spreadsheet application to solve a given problem

### ***Unit standard range***

- ✓ This standard is applicable to any spreadsheet application that runs on any Graphical User Interface(GUI) operating systems
- ✓ Where wording is not exact for the chosen operating system, the learner can choose the equivalent item or option to demonstrate competence in the specific outcome or assessment criteria

### ***Specific outcomes and assessment criteria***

Specific outcome 1: Create and edit a graph/chart

#### **Assessment criteria**

- ✓ The major graph/chart types are defined in terms of their purpose: At least 3 of: Pie, Bar, Column, Line, Scatter, Area

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 13

Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

- ✓ A graph/chart is created from a given data source: At least 2 of: Pie, Bar, Column, Line, Scatter, Area
- ✓ A graph/chart is edited: At least 3 of: Graph/chart title, axis titles, data labels, background colour, line or bar colour
- ✓ The graph/chart type is changed
- ✓ A graph/chart is copied: Within a worksheet, to a different worksheet, to a different spreadsheet file
- ✓ A chart is moved: Within a worksheet, to a different worksheet, to a different spreadsheet file
- ✓ A chart is resized
- ✓ A chart is deleted

Specific outcome 2: Load data from an external data source to produce a given spreadsheet result

#### **Assessment criteria**

- ✓ The external data file is checked to ensure that the input into a spreadsheet will achieve the required results
- ✓ The format of the input file is determined to ensure correct input into a spreadsheet: Tables from another source
- ✓ The data is copied into the spreadsheet
- ✓ The resulting spreadsheet is in accordance with the given spreadsheet result

Specific outcome 3: Insert and edit objects in a spreadsheet: Any 2 of the following objects: pictures, images, charts, autoshapes

#### **Assessment criteria**

- ✓ A graphic is inserted into a spreadsheet: At least 2 of the following: picture, image, chart, autoshape
- ✓ A selected graphic is manipulated in a spreadsheet: At least 2 of the following: move, copy, resize
- ✓ Use a drawing tool to draw an object in the spreadsheet

#### **Critical cross field outcomes**

- ✓ Identify and solve problems in which responses display that decisions using critical and creative thinking have been made
- ✓ Organise and manage oneself and one's activities responsibly and effectively.
- ✓ Collect, analyse, organise, and critically evaluate information
- ✓ Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written persuasion when engaging with the subject
- ✓ Use science and technology effectively and critically, showing responsibility towards the environment and health of others

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 14

Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

# CREATE AND EDIT A GRAPH/CHART

## Outcome

Create and edit a graph/chart

## Assessment criteria

- ✓ The major graph/chart types are defined in terms of their purpose: At least 3 of: Pie, Bar, Column, Line, Scatter, Area
- ✓ A graph/chart is created from a given data source: At least 2 of: Pie, Bar, Column, Line, Scatter, Area
- ✓ A graph/chart is edited: At least 3 of: Graph/chart title, axis titles, data labels, background colour, line or bar colour
- ✓ The graph/chart type is changed
- ✓ A graph/chart is copied: Within a worksheet, to a different worksheet, to a different spreadsheet file
- ✓ A chart is moved: Within a worksheet, to a different worksheet, to a different spreadsheet file
- ✓ A chart is resized
- ✓ A chart is deleted

## Chart Types

Charts are visual representations of your data, and, as the old adage states, "A picture is worth a thousand words". Add a chart to your worksheet and save yourself from having to use those thousand words to explain your worksheet data

Graph and charts should be clearly labelled to show the variables that are being presented and the units being used. There are three things to remember when putting data in a graph:

- ✓ Make your data stand out
- ✓ Avoid clutter on the graph
- ✓ Use visual perception to get the facts to others.

An excellent example of a graph is shown in one the next page. This graph is the one Stats SA distributed with the age information in the previous example.

The impact of this graph along with its clarity of presentation is striking. This type of graph is called a pyramid or butterfly graph because of its shape and it belongs in the category of bar charts.

The vertical axis displays the age categories and the horizontal axis displays the percentage of each age group according to male and female. The data for the male groups is in green and is shown on the left while that for the female groups is shown on the right. This type of graph allows you to compare two groups of items at the same time.

I'm giving a bit of interpretation of this graph so that you can get the feel of looking at a picture and still see data. The very top of the graph shows that there are very few of us in the

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 15

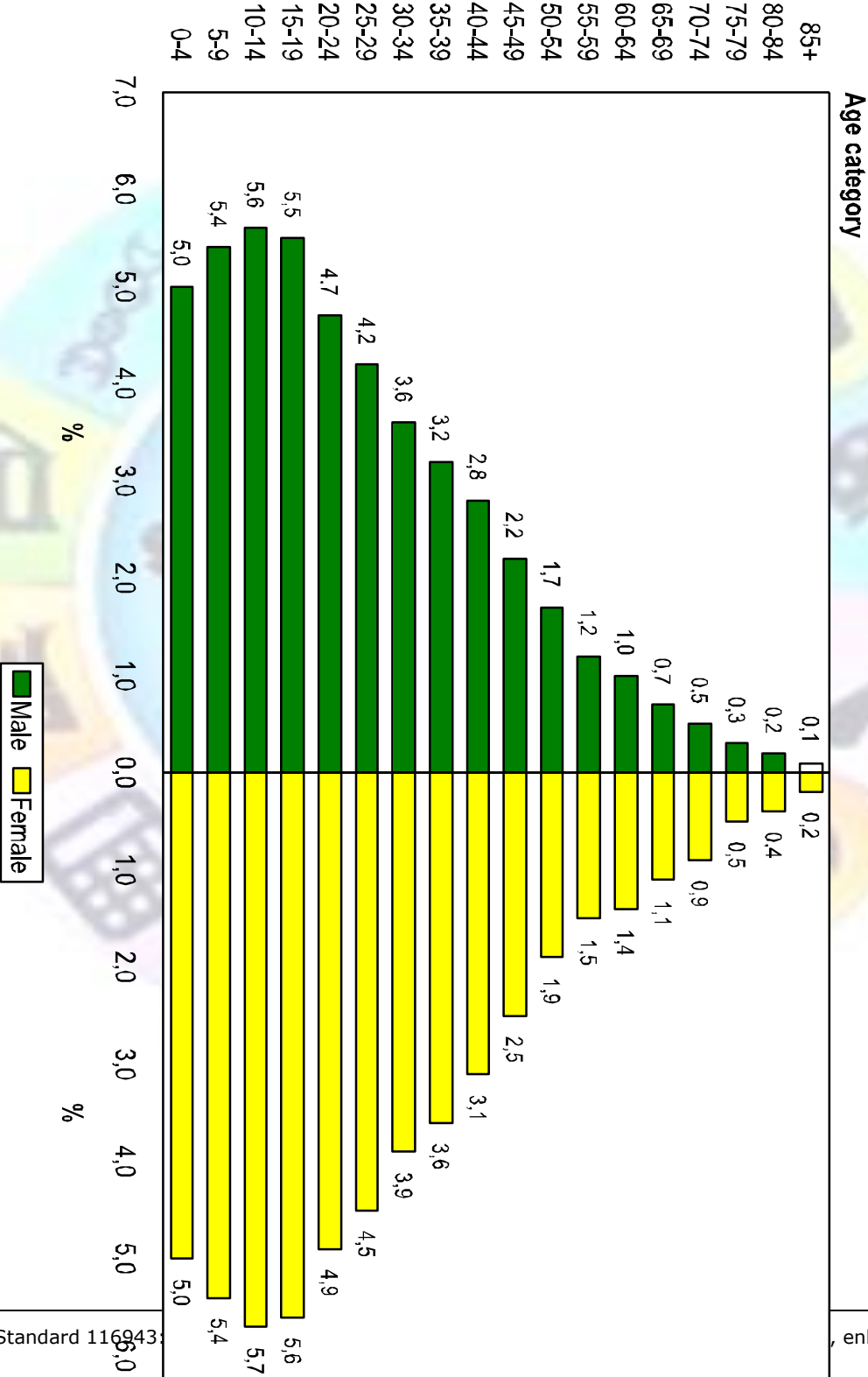
omplied by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

85+ year group. This makes sense because as the population ages its population declines. In other words, the further the green or yellow lines are from the centre the more people there are in that age group. Conversely, the closer the green or yellow lines are to the centre the fewer people there are in that age group.



Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 16

**AGE DISTRIBUTION OF MALES AND FEMALES IN THE TOTAL POPULATION, CENSUS 2001**





Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

In addition, the female population slightly outnumbers the male population in every category with the exception of the bottom two where they are approximately equal. This makes sense from two viewpoints. Firstly, the female population is slightly greater than the male population (52% to 48%, respectively). Secondly, females tend to live about five years longer than males. This may also be seen in the top end of the graph (above the 35-39 year group) where the male to female ratio starts declining. At the 70-74 year groups and up the number of females is approximately double the number of males.

When planning a chart, one of the main decisions to make is to choose the chart type. There are fourteen main types to choose from in Excel. The following are the most commonly used types:

<b>Bar chart</b>	to compare values
<b>Column or Line</b>	to compare values often over a period of time
<b>Area</b>	to compare values over time and show how the total value breaks down
<b>Pie</b>	to show how a total breaks down

## Uses of charts

### Bar Chart and Column Chart

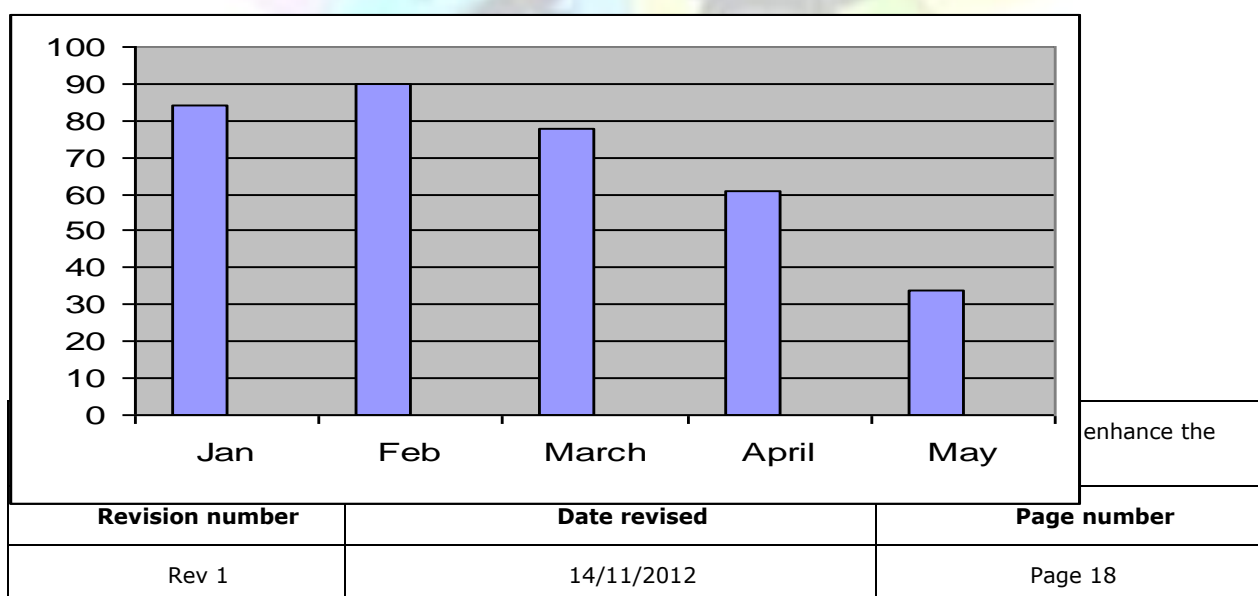
Bar chart	Compares measurements at intervals, the bars run horizontally
Column Chart	Compares measurements at intervals and provide a view of data at a specific time - a snapshot. Column charts are available in 2-D and 3-D format. The bars run vertically. They are stacked and 100% stacked types are available.

Bar graphs compare measurements at intervals, the bars run horizontally. Column charts compare measurements at intervals and provide a view of data at a specific time. The bars run vertically

The example below shows a column chart indicating how many ice creams were sold from January to May.

If you use a bar chart, the bars will run horizontally and not vertically as with a column chart.

### NUMBER OF ICE CREAMS SOLD



Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

In a bar chart, the heights of the bars are important.

When you draw a bar graph, state clearly what you are representing on the two axes. This means that you have to label the axes. Also insert it on the graph above.



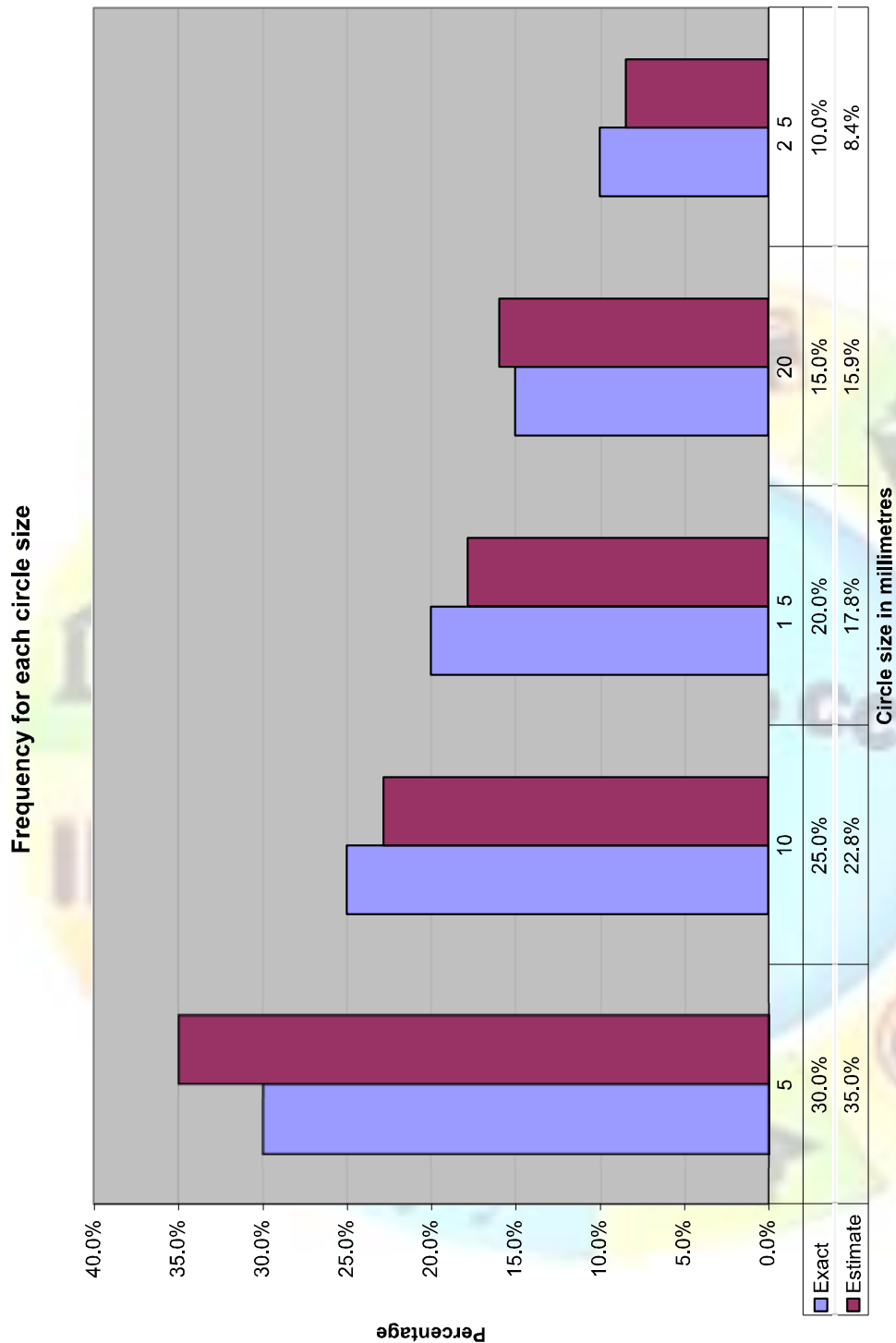
Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 19

Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

- ✓ Draw the axes at right angles to each other
- ✓ Choose a scale for the vertical axis and write in the units.
- ✓ Use a ruler to help you read off the height of a bar.
- ✓ The bars of the chart may be vertical or horizontal. They may touch each other as shown in the figure or they may overlap each other or be separated from each other. But be careful when creating your own bar chart! Each bar must have the same width because our eyes and mind respond to the area of the bars. When the bars have the same width and a height that varies with the variable then the area (height times width) also varies and our eyes and brains receive the correct impression.



Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 20



Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet

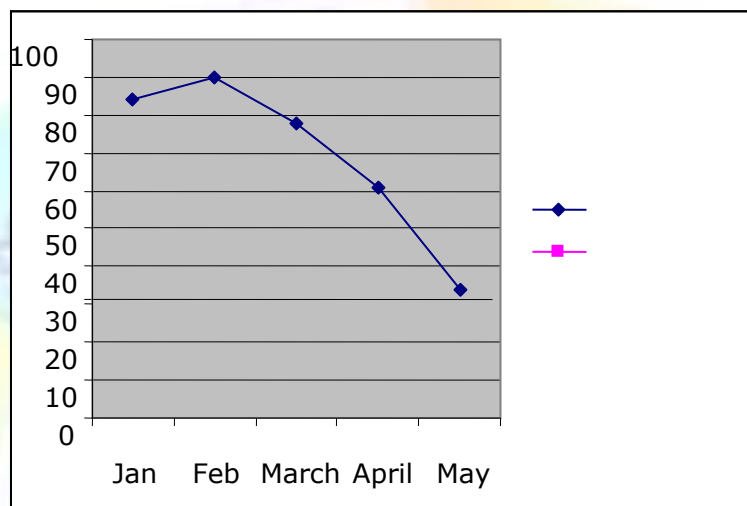
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 21

Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

## Line Charts

Show the changes in data or trends over a given period of time. They are used to emphasize rather than compare.

We use a dot to show the height of each bar. If we join the dots, we get a line graph.



Line graphs show the behaviour of a variable over time. Time is placed on the horizontal axis and the variable being plotted is shown on the vertical axis.

A good example of a time based line graph is the food index from Stats SA. You will find this chart on the page following the ice cream chart.

The graph makes it clear that the food index rose sharply between January 2002 and January 2003 after which its rise slowed somewhat.

As you can see in the graph, time (years and months) is displayed on the horizontal axis and the index value is displayed on the vertical axis. All time periods are of a fixed length and the length is the same for each month. I am pointing this out because I have seen graphs that try to distort facts by altering the graph in some respects.

A very handy feature with the line chart is that you may have several graphs on the same chart. This makes them a bit easier to compare. The line chart shows the Consumer Price Index for the historical metropolitan areas (CPI), the Consumer Price Index excluding interest rates on mortgage bonds (CPIX) and the Food Price Index (FPI). The FPI was shown on the last two figures.

In this graph we can see the same as before with the FPI, however, the CPI and CPIX are also shown in comparison. The interpretation of these index figures is not discussed here, however, you can see that more than one graph may be represented and comparisons may be made. The FPI represents the price of food, as you probably have already guessed. In comparison to the CPI and the CPIX note how sharply the FPI rose from about July 2002. If you remember,

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 22

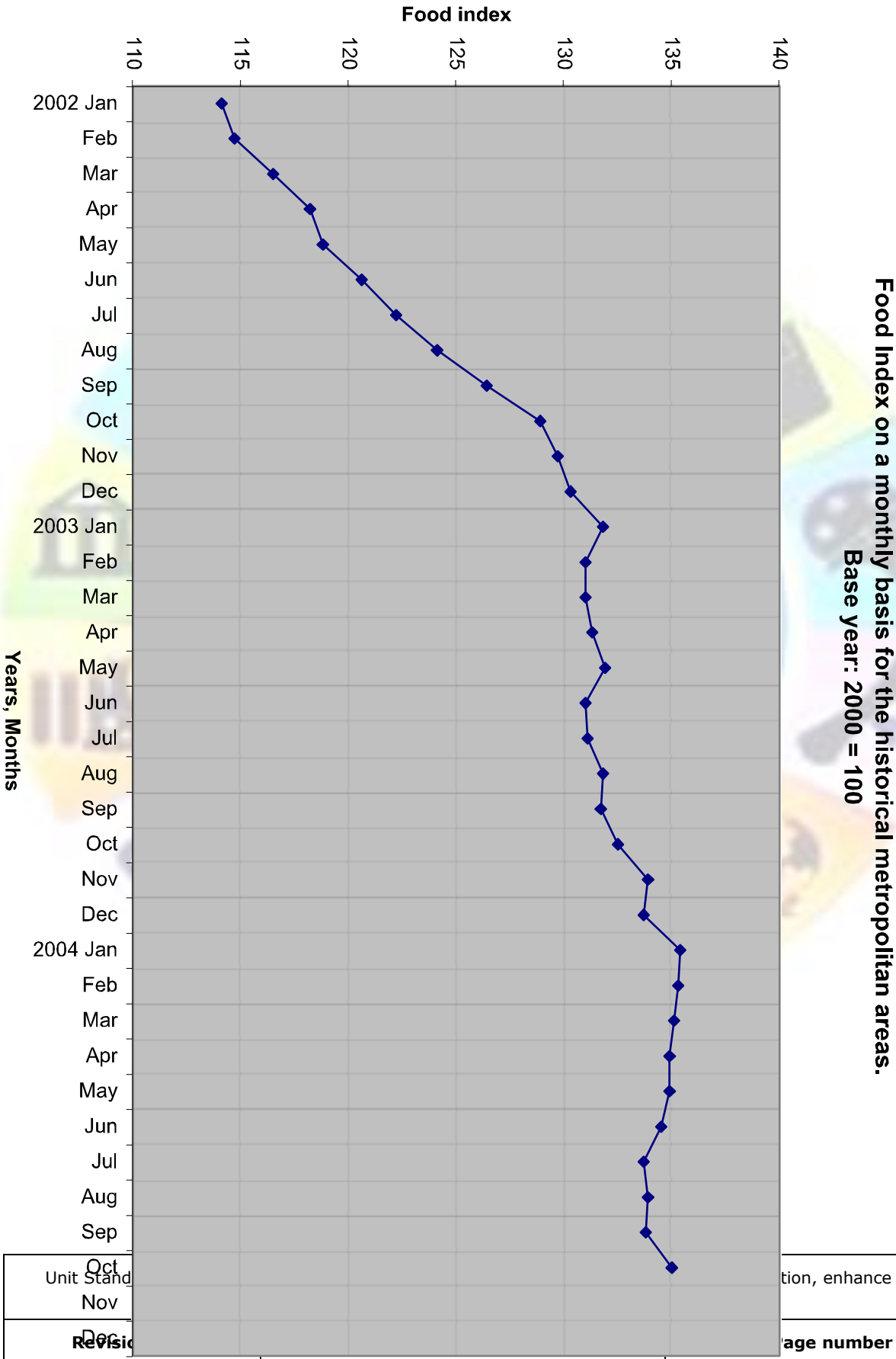


omplied by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

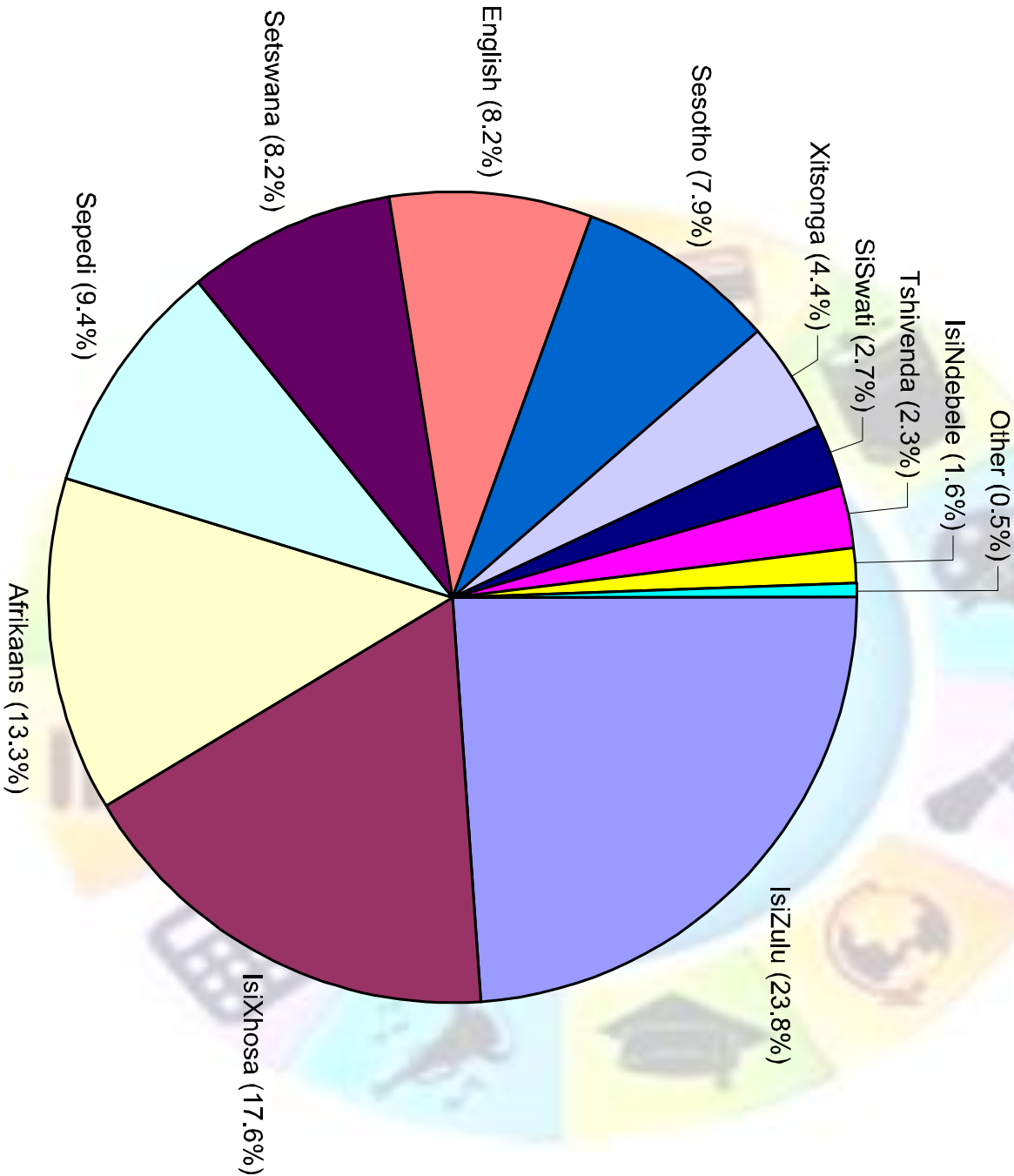
there was a big outcry concerning the cost of food and, in particular, basic food prices near the end of 2002. This graph shows you that rise.



Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 23



Home languages, Census 2001



Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

## ***Pie Charts***

Show the breakdown of a total. The pie can be exploded into slices to emphasize certain data.

A pie chart is a good way to show how a fixed number is divided. The whole circle (360°) represents the total number (or 100%) and we express each part as a fraction or percentage of the whole. A pie chart is constructed by converting the share of each component into a percentage of 360 degrees.

The pie chart is a good option to choose when you want to show the relationships that parts have to the total. In this example, all the home languages are compared. They have been ordered from largest (IsiZulu) to the smallest (Other) and are displayed in this manner in the pie chart. The legend on the right as well as the labels and colouring of each section of the pie make the pie chart easy to understand.

Pie charts show us the parts that make up the whole but humans don't see angles as clearly as we see length.

For this reason, the pie chart is not a good choice to compare sizes of various parts with the whole. In addition, the divisions used in the example of the pie chart are causing the graph to become a bit crowded.

If I tried to do a pie chart of the age groups, it would probably look pretty messy! If not messy, it certainly would look crowded. I also think the 85+ year group would be hard to see. There are alternatives to the pie chart!

## ***XY (Scattered Charts)***

Show a degree of correspondence between two series of numbers. These are scientific charts.

## ***Area Charts***

Show the amount of change in a set of values over a specific interval of time. They are similar to line charts but are used to emphasize the rate of change rather than the amount of change

## ***Doughnut Charts***

Display several series of data in successive rings, as opposed to a Pie Chart that will only display single data series

## ***Radar Charts***

Display the best and worst combinations of values. Colours and patterns are used to designate areas with the same value.

## ***Bubble Charts***

Are used in the same way as an XY Scatter chart, only displaying bubbles of different sizes at the data points to indicate the value of a third number.

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 26

omplied by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

## **Create Column And Bar Charts**

Data for a chart has to be laid out in a table with column and row headings, but you do not have to select all the data. Bar, column and line charts are made up of:

- ✓ The data series (the values that are plotted),
- ✓ The value axis (displaying the range of values in the data series)
- ✓ And the category axis (displaying the range of items providing the values)

### **Chart elements**

In Excel, a chart consists of elements:



1. The chart area of the chart. This includes the entire chart and all the elements
2. The plot area of the chart. In a 2-D chart, the plot area is bounded by the axes, including all the data series. When you use a 3-D chart, the plot area will include: the area bounded by the axes, the data series, category names, tick mark labels and axis titles
3. The data points of the data series that are plotted in the chart. Data points are individual values plotted in a chart and are represented by bars, columns, lines, etc.
4. The horizontal (category) and vertical (value) axis along which the data is plotted in the chart.

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet

Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 27



omplied by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

5. The legend of the chart. The legend explains the patterns and colours that are assigned to the data series and categories in your chart.
6. A chart and axis title that you can use in the chart.
7. A data label that identifies the details of the data point in a data series

Excel allows you to change the display of the chart elements by moving them to other locations in the chart, resizing them, or by changing the format. You can also remove chart elements that you do not want to display.

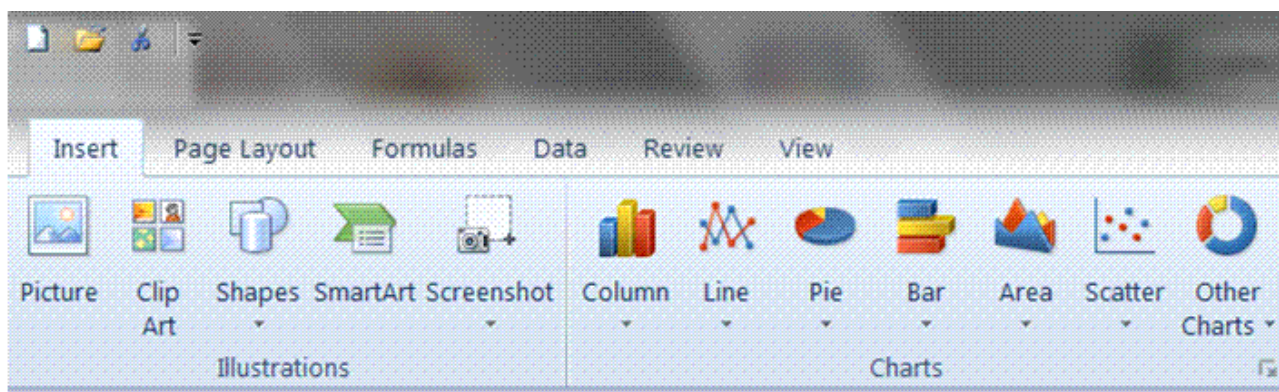



Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 28

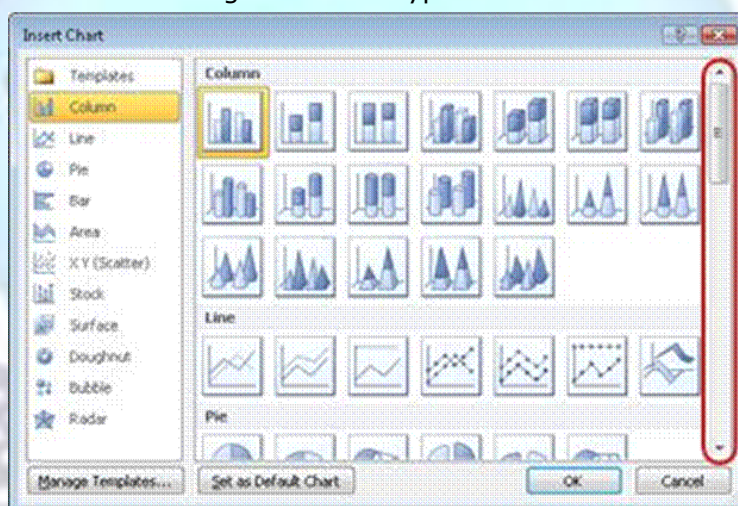
Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

## Create a chart

You can create a basic chart by clicking the chart type that you want on the Insert tab in the Charts group.



- ✓ To see all available chart types, click  to launch the Insert Chart dialog box, and then click the arrows to scroll through the chart types.



**Tip** When you rest the mouse pointer over any chart type, a ScreenTip displays its name.

- ✓ On the worksheet, arrange the data that you want to plot in a chart


**Tip** For the following charts, arrange the data in columns and rows: column, bar, line, area, surface, or radar chart

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 29

Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

- ✓ Select the cells that contain the data that you want to use for the chart. If you select only one cell, Excel will automatically plot all cells that contain data that are next to that cell into a chart.

**Note** *If the cells that you want to plot in a chart are not in a continuous range, you can select nonadjacent cells or ranges as long as the selection forms a rectangle.*

- ✓ On the **Insert** tab, in the **Charts** group, click the chart type, and then click a chart subtype that you want to use.
- ✓ You can also click  to launch the **Insert Chart dialogue** box. This will allow you to see all available chart types. Click the arrows to scroll through the chart types.
- ✓ Your chart will be placed on the worksheet as an embedded chart by default

**Tip** *An embedded chart is a chart that is placed on a worksheet and therefore becomes part of the worksheet.*

- ✓ For a bar or column chart, Excel will automatically determine the best way to plot the data in the chart.
- ✓ Excel will automatically give the chart a name, e.g. Chart 1, if it is the first chart you create on a worksheet.
- ✓ To change the name of the chart, **click** the chart
- ✓ Go to the **Properties** group, **Layout** tab and select the **Chart Name** text box
- ✓ Type the name of the chart in the text box and press **Enter**
- ✓ The new name of the chart will be displayed.

**Tip** *Pie charts and bubble charts will require a special arrangement of the data.*

## Create a chart in a separate chart sheet

- ✓ Select the embedded chart by clicking in it. The **Chart Tools** as well as **Design**, **Layout**, and **Format** tabs will be displayed
- ✓ On the **Design** tab, in the **Location** group, click **Move Chart**.
- ✓ Under **Choose where you want the chart to be placed**, do one of the following:
  - To display the chart in a chart sheet, click New sheet.
  - To display the chart as an embedded chart in a worksheet, click Object in, and then click a worksheet in the Object in box.



## Edit Chart Elements

### Select chart data

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 30

Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

## ***Using the mouse***

Drag select with the mouse button to highlight the cells containing the data to be included in the pie chart.

## ***Using the keyboard***

- ✓ Click on the top left of the pie charts's data.
- ✓ Hold down the SHIFT key on the keyboard.
- ✓ Use the arrow keys on the keyboard to select the data to be included in the pie chart.

***Note: Be sure to select any column and row titles that you want included in the chart.***



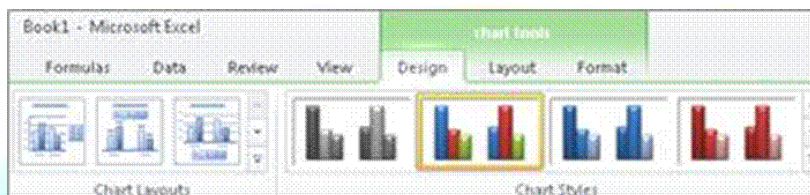
Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 31



Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

## Customise individual chart elements

- ✓ Use the Chart Tools to add chart elements such as titles and data labels, and to change the design, layout, or format of your chart.
- ✓ If you don't see the Chart Tools, click anywhere inside the chart to activate it.



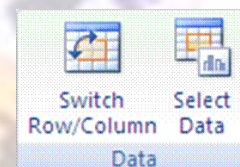
- ✓ You can also access design, layout, and formatting features that are available for specific chart elements (such as chart axes or the legend) by right-clicking those chart elements in the chart

## Formative assessment 1


To get a good idea of what you can add to or change in your chart, click the Design, Layout, and Format tabs, and then explore the groups and options that are provided on each tab.

### Add a data series to a chart

- ✓ Click the chart to which you want to add another data series. The **Chart Tools**, adding the **Design**, **Layout**, and **Format** tabs will be displayed.
- ✓ Go to the **Design** tab and select **Data** in the **Data** group.
- ✓ The **Select Data Source** dialogue box will display.
- ✓ Click **Add** under **Legend Entries** (Series). The **Edit Series** dialogue box will display.
- ✓ In the **Series** name box, type the name that you want to use for the series, or select the name on the worksheet.



OR

- ✓ In the **Series** values box, type the reference of the data range of the data series that you want to add, or select the range on the worksheet.
- ✓ You can also click the **Collapse Dialogue** button , at the right end of the **Series name** or **Series values** box, and then select the range that you want to use for the table on the worksheet. When you finish, click the **Collapse Dialogue** button again to display the whole dialog box.

### Add data to an embedded chart

For the following procedure, the chart that you want to add data to must be on the same worksheet as the data used to create the chart

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 32



Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

If you created an embedded chart from adjacent worksheet cells, you can add data by dragging the **sizing handles** of source data ranges.

- ✓ On the worksheet, type the data and labels that you want to add to the chart in cells that are adjacent to the existing worksheet data.
- ✓ Click the chart to display the sizing handles around the source data on the worksheet.
- ✓ To add new categories and data series to the chart, drag a blue sizing handle to include the new data and labels in the rectangle.

**OR**



- ✓ To add new data series only, drag a green sizing handle to include the new data and labels in the rectangle.

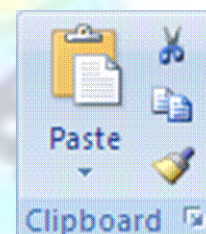
**OR**

- ✓ To add new categories and data points, drag a purple sizing handle to include the new data and categories in the rectangle.

## Copy worksheet data to a chart

Excel allows you to copy additional worksheet data into the chart.

- ✓ Select the cells that contain the data that you want to add to the chart.
- ✓ If you want the column or row label for the new data to appear in the chart, include the cell that contains the label in the selection.
- ✓ Go to the **Home** tab, the **Clipboard** group, and click **Copy**  Tip For a keyboard shortcut press CTRL+C.
- ✓ Click the chart sheet or the embedded chart into which you want to paste the copied data.
- ✓ To paste the data in the chart, on the Home tab, in the Clipboard group, click Paste , to paste the data



**Tip** For a keyboard shortcut press CTRL+V.

- ✓ If you want to specify how the copied data should be plotted in the chart, go to the **Home** tab, **Clipboard** group. Click the arrow on the **Paste** button, click **Paste Special**, and then select the options that you need.

## Change the data in an existing chart

To change the data in an existing chart, you can:

- ✓ change the cell range that the chart is based on

**OR**


- ✓ edit the individual data series that are displayed in the chart.

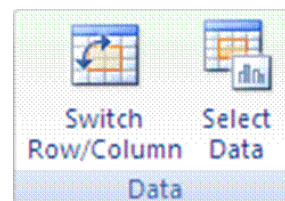
**Tip** You can also change the axis labels on the horizontal (category) axis.

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 33

Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

## Change the cell range that a chart is based on

- ✓ Select the chart for which you want to change the cell range of the source data.
- ✓ The **Chart Tools**, as well as the **Design**, **Layout**, and **Format** tabs will be displayed
- ✓ Select **Data** from the Design tab, in the Data group
- ✓ The **Select Data Source** dialogue box will display. Make sure that the whole reference in the **Chart data** range box is selected.
- ✓ Select the cells on the worksheet, that contain the data that you want to appear in the chart.
- ✓ You can also use the Collapse Dialogue button , at the right end of the Chart data range box to select the range that you want to use for the table on the worksheet.



Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 34


Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

## ***Rename or edit a data series that is displayed in a chart***

Take the following steps to modify the name and values of an existing data series without affecting the data on the worksheet.

- ✓ To display the **Chart Tools**, as well as the **Design**, **Layout**, and **Format** tabs, **click** the chart that contains the data series that you want to change.
- ✓ In the **Data** group, click **Select Data**.
- ✓ The **Select Data Source** dialogue box will display. Select the data series that you want to change under **Legend Entries (Series)**, and then click **Edit**.
- ✓ To rename the data series, in the Series name box, type the name that you want to use for the series, or select the name on the worksheet. The name that you type appears in the chart legend, but is not added to the worksheet.

**OR**

- ✓ To change the data range for the data series, in the Series values box, type the reference of the data range of the data series that you want to add, select the range on the worksheet, or enter the values in the boxes. The values that you type are not added to the worksheet.
- ✓ If the chart is an xy (scatter), the Series X values and Series Y values boxes appear so you can change the data range for those values.
- ✓ If the chart is a bubble chart, the Series X values, Series Y values, and Series bubble sizes boxes appear so you can change the data range for those values.
- ✓ You can also use the Collapse Dialogue button , at the right end of the Chart data range box to select the range that you want to use for the table on the worksheet.

## ***Change the order of the data series***

- ✓ To display the **Chart Tools**, as well as the **Design**, **Layout**, and **Format** tabs, **click** the chart that contains the data series that you want to change.
- ✓ In the **Data** group, click **Select Data**.
- ✓ The **Select Data Source** dialogue box will display. Select the data series that you want to move to a different location in the sequence.
- ✓ Click the **Move Up** or **Move Down** arrows to move the data series.
- ✓ Repeat for all data series that you want to move.


## ***Change the horizontal (category) axis labels***

**Note** When you change the horizontal (category) axis labels, all horizontal axis labels will be changed. You cannot change individual, horizontal axis labels.

2. To display the **Chart Tools**, as well as the **Design**, **Layout**, and **Format** tabs, **click** the chart that contains the data series that you want to change.
3. In the **Data** group, click **Select Data**.

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 35

Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

- ✓ Under **Horizontal** (Category) Axis Labels, click **Edit**. The Axis label range box will display
- ✓ Type the reference of the data range of the data series that you want to use for the horizontal axis labels, or select the range on the worksheet.
- ✓ You can also use the Collapse Dialogue button , at the right end of the Chart data range box to select the range that you want to use for the table on the worksheet.



Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 36



Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

## Remove data from a chart

**Note** With calculation options set to automatic (Formulas tab, Calculation group, Calculation Options button, Excel Options, Formulas category), data that is deleted from the worksheet will automatically be removed from the chart.

You can also remove data from the chart without affecting the source data on the worksheet.

### Delete source data on the worksheet

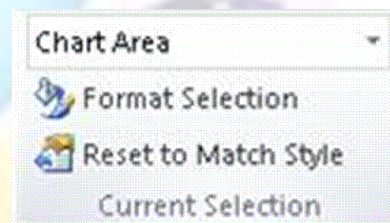
- ✓ Select the cell or range of cells on the worksheet that contains the data that you want to remove from the chart, and then press **delete**.
- ✓ When you remove data from selected cells, empty cells are plotted in the chart.
- ✓ If a column is deleted, the whole data series will be removed from the chart.
- ✓ You may receive an error message when you delete a row. When you click **OK**, the chart may display one or more data points of the data series that you deleted. You can click those data points, and then press **DELETE**.

### Remove a data series from the chart

- ✓ Click the chart or the data series that you want to remove

**OR**

- ✓ Select the chart or data series from a list of chart elements by taking the following steps:
  - To display the **Chart Tools**, as well as the **Design**, **Layout**, and **Format** tabs, **click** the chart that contains the data series that you want to change.
  - On the **Format** tab, in the **Current Selection** group, click the arrow next to the **Chart Elements** box, and then **click** the chart element that you want to use.
- ✓ If you selected the chart, do the following:
  - In the **Data** group on the **Design** tab, click **Select Data**. The **Select Data Source** dialogue box will display. **Under Legend Entries** (Series), select the data series that you want to remove, and then click Remove.
- ✓ If you selected a data series on the chart, press **delete**.



## Formative assessment 2

- ✓ Enter the following data into a worksheet

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 37



omplied by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

	A	B	C	D
1	Income summary: The Sweetie Shoppe			
2		2008	2009	2010
3	total revenue	95327	94650	98290
4	total expenses	63870	62350	66540
5	profit/loss	31457	32300	31750
6				



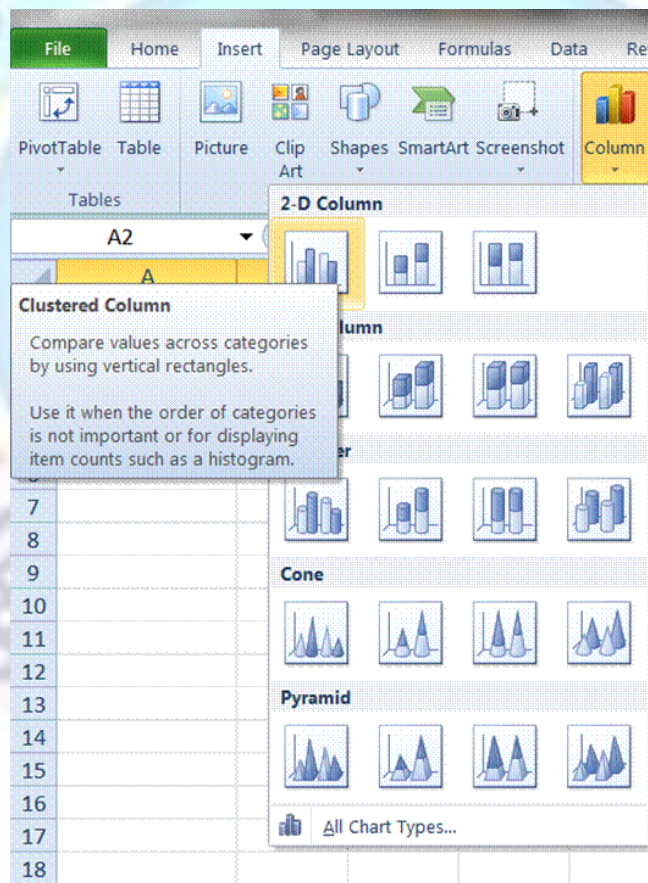
Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
<b>Revision number</b>	<b>Date revised</b>	<b>Page number</b>
Rev 1	14/11/2012	Page 38

omplied by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

- ✓ Select the range of cells from A2 to D5, which includes the column titles and the row headings

	A	B	C	D
1	Income summary: The Sweetie Shoppe			
2		2008	2009	2010
3	total revenue	95327	94650	98290
4	total expenses	63870	62350	66540
5	profit/loss	31457	32300	31750
6				

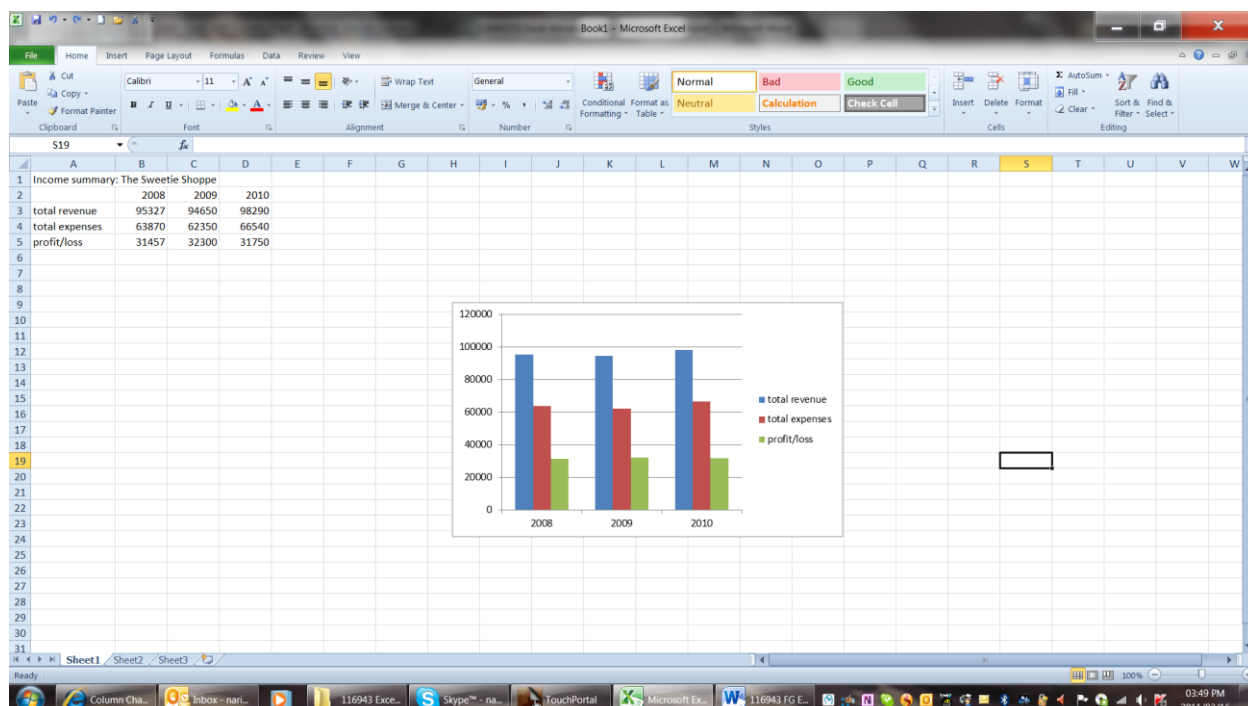
- ✓ Select a chart type as follows: Go to Insert, Column and select the 2-D clustered column



- ✓ A basic column chart will be created and placed on your worksheet

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 39

omplied by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	



## Create and Format Pie Charts

**Note** The formatting in this section also applies to all other charts in Excel.

The creation of a pie chart will be done step-by-step as a practical exercise.

### Enter the Chart Data

- ✓ The first step in creating a pie chart is to enter the data into the worksheet. When entering the data, keep these rules in mind:
  - Don't leave blank rows or columns when entering your data.
  - Enter your data in columns.

**Note:** When laying out your spreadsheet, list the names describing the data in one column and, to the right of that, the data itself.

- ✓ If there is more than one column of data, try to list the data to be used in the chart next to the column containing the list of names in order to simplify creating the chart.

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet

Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 40

Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

**Tip**     *A pie chart is a percentage chart, so only one series of data will be used in the chart.*



Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet

Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 41

Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

- ✓ Select the data

The Cookie Shop Sales 2011	
Peanut butter	15500
Chocolate chip	27589
Oatmeal Raisin	24980
Lemon	14708

### Formative assessment 3

Enter the data below in the cells indicated to create the pie chart as we go along.

#### Cell - Data

A1 - The Cookie Shop 2011 Revenue from Sales

A2 - Peanut Butter

A3 - Chocolate Chip

A4 - Oatmeal Raisin

A5 - Lemon

B2 - R15,500

B3 - R27,589

B4 - R24,980

B5 - R14,768

- ✓ Highlight the block of cells from A2 to B5, which includes the row headings.

### Select a Pie Chart Type

Select the Insert tab and click on a chart category to display the drop down list of available chart types.

**Tip** *Hovering your mouse pointer over a chart type will bring up a description of the chart type*

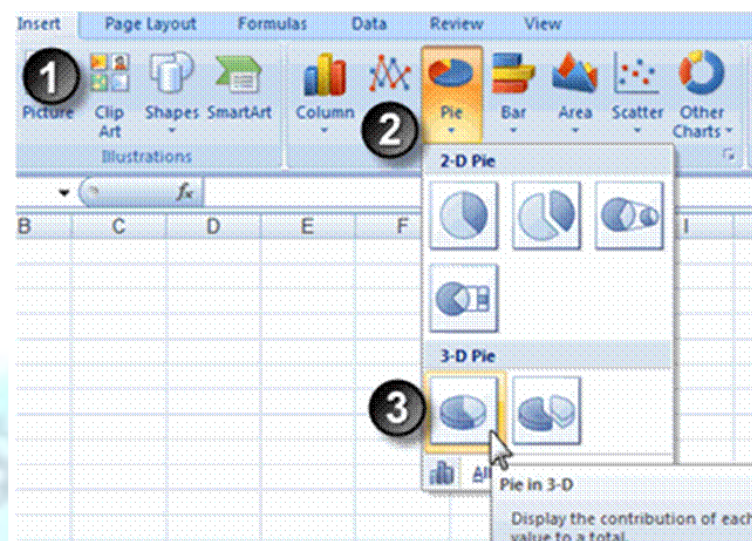
- ✓ Click on a chart type to select it.
- ✓ Choose Insert > Pie > Pie in 3-d.

You will see that a basic pie chart is created and placed in the worksheet.

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 42



omplied by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	



## Format the pie chart

**Note** When you click on a chart, three tabs - the **Design**, **Layout**, and **Format** tabs are added to the ribbon under the title of **Chart Tools**.

### Choose a style for the Pie chart

- ✓ Click on the pie chart, select the **Design** tab and choose a style from **Chart Styles**
- ✓ For your exercise, choose style 6 of the **Chart Styles**

### Explode a piece of the pie chart

Excel allows you to explode a piece of pie out from the rest of the chart which will emphasize that section.

- ✓ Click once on the pie chart to highlight it.
- ✓ Click once on the Peanut Butter slice of the pie chart to select just that piece of the chart.
- ✓ Click and drag the Peanut Butter slice out from the pie chart to explode it.

### Add a title to the chart

- ✓ Go to the **Layout** tab and click on **Chart Title** under the **Labels** section.
- ✓ Select the option you require
- ✓ For your exercise, select the third option - **Above Chart** and type in the title "The Cookie Shop 2011 Revenue from Sales"

### Remove a legend

- ✓ Choose **Layout**, select **Legend** and then select **None**.

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet

Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 43

Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

## Add data labels to the chart

- ✓ Go to **Layout, Data** Labels and select **Best Fit** to add data labels.

OR

(do the following for your exercise)

- ✓ Go to **Layout, Data** Labels and select **More Data Label Options** to display the **Format Data Labels** dialogue box.
- ✓ Remove the ticks from **Value** and **Show Leader Lines** under **Label Options** in the right hand window.
- ✓ Select Category Name and Percentage under Label Options in the right hand window.

## Add a drop shadow to the title

- ✓ Select the chart title and click on the **Format** tab.
- ✓ Select **Text Effects** and then **Shadow, Offset Right**.

Add a drop shadow to your exercise pie chart

## Colour the chart background

- ✓ Select the chart background and go to the Format tab.
- ✓ Select the following:
  - Shape Fill, Gradient, Theme Colours, Purple, Accent 4, Lighter 80%.
  - Shape Fill, Gradient, From Centre option.

Add the above fill to your pie chart

## Bevel the chart edge

- ✓ Click on the chart background.
- ✓ Click on the Format tab.
- ✓ Choose Shape Effects, Bevel, Divot.

Bevel the edge of your pie chart

## Create an XY (Scatter) Chart

An XY (Scatter) chart has **two** value axes. Unlike other charts, markers are positioned on the chart according to value only - they are not organised into categories.

Data for a scatter chart is normally laid out in a two-column table. The first column or row in the table contains X values (horizontal axis); the second column or row contains Y values (vertical axis).

In the example, Distance from Sun provides values for the X axis; Temperature provides values for the Y axis. You can see that, with the exception of Venus, temperatures are lower the farther a planet is from the sun.

	A	B	C	
		<i>Distance from Sun (Millions of Kilometers)</i>	<i>Temperature (° C)</i>	
1				
2	Mercury	57.91	350	
3	Venus	108.21	480	
4	Earth	149.6	22	
5	Mars	228	-23	
6	Jupiter	778.3	-123	
7	Saturn	1429.39	-180	
8	Uranus	2875	-214	
9	Neptune	4501	-220	
10	Pluto	5913	-230	

Unit Standard 116943: Using a Graphical Spreadsheet application, enhance the functionality of the spreadsheet

Revision number

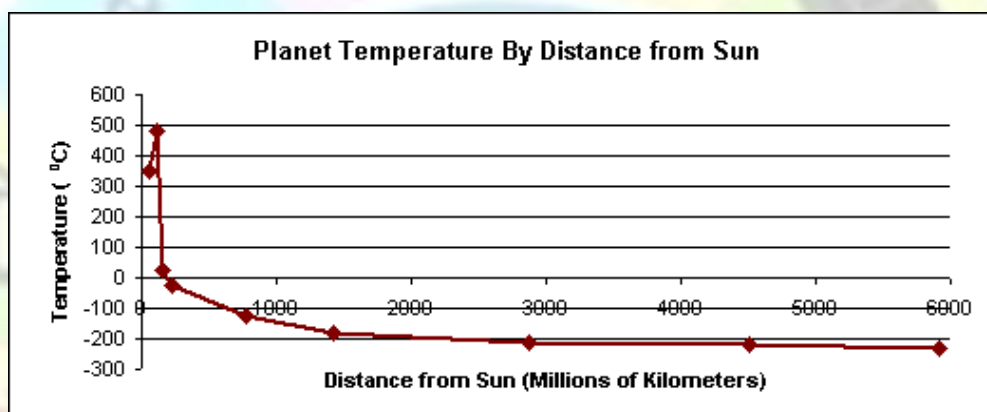
Rev 1

Page number

Page 44

omplied by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

### SOURCE DATA FOR CHART



### SCATTER GRAPH WITH SMOOTHED LINE

**Note** A scatter chart with a line drawn on it may look like a line chart but the underlying data is very differently organised. A line chart displays data at regular intervals, using categories on the Y axis. A scatter chart is used to display clusters of data (where lots of values may occur at the same point in the chart). A line chart cannot do this.

A scatter graph is not always drawn with a line to connect the points - an important use of scatter graphs is to show the **distribution** of values rather than to compare data sets.

A variation on a scatter graph is the **bubble chart**. A bubble chart shows a **third** value, indicated by the size of the data point (the bubble).

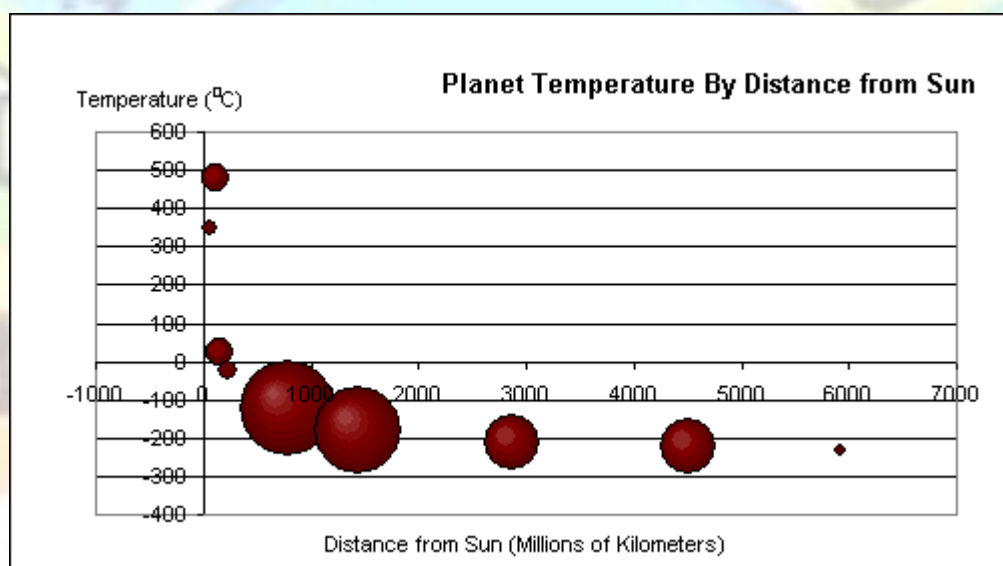
In the following example, each planet's diameter has been represented on the bubble chart.

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 45

omplied by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

	A	B	C	D
1		<i>Distance from Sun (Millions of Kilometers)</i>	<i>Temperature (<sup>o</sup> C)</i>	<i>Diameter (Kilometers)</i>
2	<i>Mercury</i>	57.91	350	4880
3	<i>Venus</i>	108.21	480	12104
4	<i>Earth</i>	149.6	22	12756
5	<i>Mars</i>	228	-23	6792
6	<i>Jupiter</i>	778.3	-123	143844
7	<i>Saturn</i>	1429.39	-180	120536
8	<i>Uranus</i>	2875	-214	51118
9	<i>Neptune</i>	4501	-220	49532
10	<i>Pluto</i>	5913	-230	2310

### SOURCE DATA FOR BUBBLE CHART



### 3-D BUBBLE CHART

## Create an XY (Scatter) or bubble chart in Excel

**Note: What many of us call a line graph is referred to, in Excel, as a line chart**

One change to creating line graphs in Excel 2011 and 2007 from earlier versions is that the Chart Wizard is no longer available. It has been replaced by chart options listed under the Insert ribbon.

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 46

Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

## ***Enter data***

No matter what type of chart or graph you are creating, the first step in creating an Excel chart is always to enter the data into the worksheet

When entering the data, keep the following rules in mind:

- ✓ Don't leave blank rows or columns when entering your data.
- ✓ Enter your data in columns.
- ✓ When laying out your worksheet, list the names describing the data in one column and, to the right of that, the data itself.
- ✓ If there is more than one data series, list them one after the other in columns with the title for each data series at the top.

## **Formative assessment 4**

Enter the data below in the cells indicated to create the line graph covered in this tutorial.

### **Cell - Data**

A1 - Average Precipitation (mm)

A3 - January

A4 - April

A5 - July

A6 - October

B2 - Acapulco

B3 - 10

B4 - 5

B5 - 208

B6 - 145

C2 - Amsterdam

C3 - 69

C4 - 53

C5 - 76

C6 - 74

### ***Select the data and select the chart type***

- ✓ When you select the data for the chart, make sure that you select all the column and row titles that you want included in the graph.
- ✓ When you click on a chart category, the drop down list of available graph types will open

**Note** *Hovering your mouse pointer over a graph type will bring up a description of the graph*

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet

Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 47



omplied by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

- ✓ Click on a graph type to select it.

For your activity

- ✓ Select the data, then select Insert, Line, Line with Markers.
- ✓ A basic line graph is created and placed on your worksheet

	A	B	C
1	Average Precipitation (mm)		
2		Acapulco	Amsterdam
3	January	10	69
4	April	5	53
5	July	208	76
6	October	145	74
7			

## Format the line graph

- ✓ Select the line graph and click on the **Design** tab.
- ✓ Follow the steps as described for a Pie Chart to select from the following options and change the formatting of the graph:
  - Choose a style
  - Add a title
  - Change the font colour
  - Change the background colour
  - Bevel the edges of the chart

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet

Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 48

Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

For your exercise:

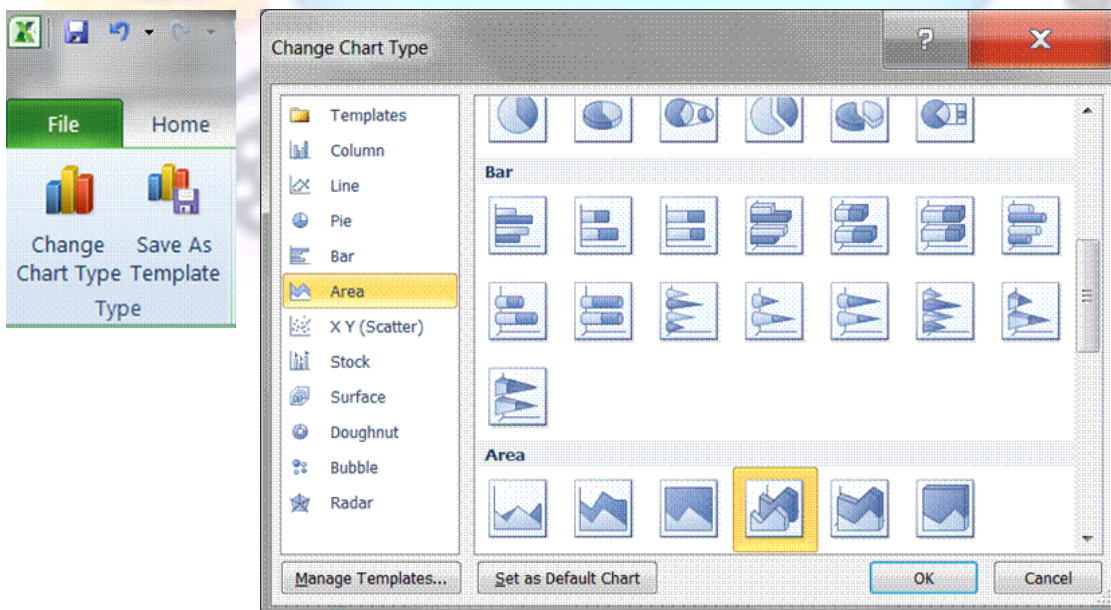
- ✓ Choose Style 4 of the Chart Styles
- ✓ Add the title "Average Precipitation (mm)" above the chart
- ✓ Change the font colour to Dark Red
- ✓ Change the font colour of the graph legend to Dark Red
- ✓ Change the font colour of the axis labels to Dark Red
- ✓ Change the colour of the graph legend as follows: Choose Red, Accent 2, Lighter 80 % from the **Theme Colours** section of the menu.
- ✓ Colour the plot area background
- ✓ Bevel the graph edge as follows: click on the **Shape Fill** option to open the drop down menu. Choose **Bevel, Cross** from the menu.

## **Select a different chart type**

- ✓ For most 2-D charts, you can change the chart type of either a data series or the entire chart.
- ✓ For bubble charts, you can change only the type of the entire chart.
- ✓ For most 3-D charts, changing the chart type affects the entire chart. For 3-D bar and column charts, you can change a data series to the cone, cylinder, or pyramid chart type.

Do one of the following:

- ✓ Select the chart to display the **Chart Tools**.
- ✓ On the **Design** tab,, click **Change Chart Type**.
- ✓ Make your selection



Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet

Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 49

Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

## **Sparklines**

### **Show data trends**

**Note**    *A sparkline is a tiny chart in a worksheet cell that provides a visual representation of data.*

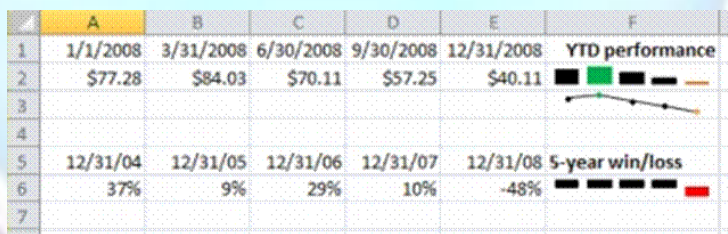
You can use sparklines to show trends in a series of values, such as seasonal increases or decreases, economic cycles, or even to highlight maximum and minimum values.

Data presented in a row or column is useful, but patterns can be hard to spot at a glance. The context for these numbers can be provided by inserting sparklines next to the data. Taking up a small amount of room, a sparkline can display a trend based on adjacent data in a clear and compact graphical representation.

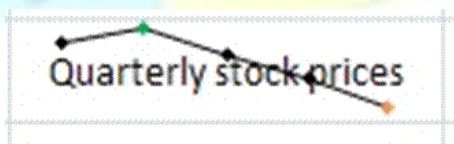
For the greatest impact, a sparkline should be positioned near its data.

Sparklines are not objects, but rather a tiny chart in the background of a cell. The following picture shows a column sparkline in cell F2 and a line sparkline in F3.

- ✓ Both of these sparklines get their data from cells A2 through E2 and display a chart inside a cell that shows the performance of a stock.
- ✓ The charts show the values by quarter, highlight the high value (3/31/08) and the low value (12/31/08), show all the data points, and show the downward trend for the year.



- ✓ A sparkline in cell F6 shows the 5-year performance for the same stock, but displays a Win/Loss bar chart that shows only whether the year had a gain (as in the years 2004 through 2007) or a loss (2008). This sparkline uses values from cells A6 through E6.
- ✓ Because a sparkline is a tiny chart embedded in a cell, you can enter text in a cell and use a sparkline as its background, as shown in the following picture.



### **Enter Sparklines Data**

No matter which of the three sparklines you are creating, the first step is always to enter the data into the worksheet.

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 50



Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

The following rules apply when you enter data for a sparkline:

- ✓ Don't leave blank rows or columns when entering your data. Even though sparklines can adjust to blank cells, it is best to avoid them whenever possible.
- ✓ Enter the data in columns.
- ✓ When laying out your data, , list the names describing the data in one column and, to the right of that, the data itself.
- ✓ If there is more than one data series, , list them one after the other in columns with the title for each data series at the top.

## Exercise

Enter the following data into cells A1 to F2 in a worksheet. Substitute the \$ sign for R

	A	B	C	D	E	F
1	The Cookie Shop Sales Revenue					
2	Cookie	January	February	March	April	Trends
3	Peanut Butter	\$1,292	\$1,156	\$1,208	\$1,195	
4	Chocolate Chip	\$2,047	\$1,987	\$1,999	\$2,045	
5	Oatmeal	\$1,250	\$1,345	\$1,287	\$1,267	
6	Total	\$4,589	\$4,488	\$4,494	\$4,507	
7						

## Create a Line Sparkline

Go to the Insert tab and click on the **Line sparkline** icon to open the **Create Sparklines** dialogue box

Click in the line next to **Data Range** in the dialogue box.

Enter the cell references into the data range line by selecting and dragging cells B3 to E6 in the worksheet

To select the cells where the sparklines will be located, click in the line next to **Location Range** in the dialogue box.

Select and drag cells F3 to F6 to enter the cell references into the location range line.

Click **OK**.

Line sparklines should display in cells F3 to F6. The rise and fall in each sparkline should reflect the increases and decreases in sales over the four months for each cookie type.

## Format the Sparklines

sparklines are small, so the default formatting applied to them by Excel does not always make it easy to follow the highs and lows or pick out trends that may be unique to one sparkline in a group.

- ✓ To make sparklines easier to see and interpret, you could do the following:

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
<b>Revision number</b>	<b>Date revised</b>	<b>Page number</b>
Rev 1	14/11/2012	Page 51

Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

- Add several data points or markers - such as start and end points and high and low points.
- Change the line colour.
- Change the marker colour.
- ✓ When you click on a sparkline located in a worksheet cell, the Sparkline Tools Design tab is added to the ribbon.
- ✓ Sparklines are grouped through their data ranges. As a result it is not necessary to highlight all the sparklines in order to make changes. Change one and you will change them all.

### ***Adding points to the sparklines***

- ✓ Click on the sparkline to display the Sparkline Tools Design tab
- ✓ Click on this tab to look at the available options
- ✓ Select the boxes for High Point, Low Point, First Point and Last Point as needed to add these markers to the sparkline.

For your exercise:

- ✓ Click on the sparkline in cell F3 to bring up the Sparkline Tools Design tab.
- ✓ Click on the Sparkline Tools Design tab to view the available ribbon options.
- ✓ Check the boxes for High Point, Low Point, First Point and Last Point to add these markers to the sparkline.

### ***Change the line colour of the sparklines***

- ✓ Select the Sparkline Tools Design tab and select the style you want to use

For your exercise:

- ✓ Click on the sparkline in cell F3.
- ✓ Click on the Sparkline Tools Design tab and then click on Style 5 under the Style option on the ribbon to change the line and point colour to blue.

### ***Change the point colour***

You can change the colours of all or only some of the points. It is also possible to make each point a different colour.

- ✓ Click on the sparkline in cell F3.
- ✓ Select the Sparkline Tools Design tab and then click on the down arrow next to the Marker Colour option on the ribbon to open the drop down menu.
- ✓ Select the options you need

For your exercise:

- ✓ Click on the High Point option in the drop down menu to open the Colours side menu.
- ✓ Click on the orange coloured box on the far right of the top row of colour options in the Colours side menu to change the colour of the highest point to orange.
- ✓ Repeat these steps substituting the Low, First and Last points for the High Point option to change these points to orange as well.

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 52



Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

## What is the difference between copy and move?

- ✓ When you copy a part of your workbook, or even the whole workbook, it is similar to photo copying a document: you have the original and the photocopy. With Excel it works like this - the original remains in its place in the workbook and you have a copy that you can paste in a new location.
- ✓ When you move a part of your workbook, or the entire workbook, it is like cutting out the part that you want to move. This means that the portion that you are moving will no longer be in its original position. You will have the original portion that you are going to paste into a new place (location).

### Move or copy cell data

When you copy a cell by clicking Cut or Copy, and Paste, Microsoft Excel copies the entire cell, including formulas and their resulting values, comments, and cell formats.

If the selected copy area includes hidden cells, Microsoft Excel also copies the hidden cells. If the paste area contains hidden rows or columns, you might need to unhide the paste area to see all of the copied cells.

### Move or copy whole cells with the drag-and-drop method

- ✓ **Select** the cells you want to move or copy.
- ✓ Point to the **border** of the selection. To move the cells, drag the selection to the upper-left cell of the paste area. Microsoft Excel will replace any existing data in the paste area.
- ✓ To **copy** the cells, hold down **CTRL** as you drag.
- ✓ To insert the cells between existing cells, hold down **SHIFT** (if moving) or **SHIFT+CTRL** (if copying) as you drag.
- ✓ To drag the selection to a different sheet, hold down ALT and drag over a sheet tab.

### Copy data within a row or column

- ✓ **Select** the cells that contain the data you want to copy.
- ✓ Drag the **fill handle** across the cells you want to fill, and then release the mouse button.
- ✓ Existing values or formulas in the cells you fill are replaced, and formatting is copied.

### Copy one selection to several locations

- ✓ Select the cells you want to move or copy. Click **Copy**.
- ✓ Hold down **CTRL** and select the upper-left cell of each paste area. Click **Paste**.
- ✓ To paste the same copy area again on a different worksheet, switch to the other sheet and repeat steps 3 and 4.
- ✓ To cancel the moving border after you finish copying, press ESC.

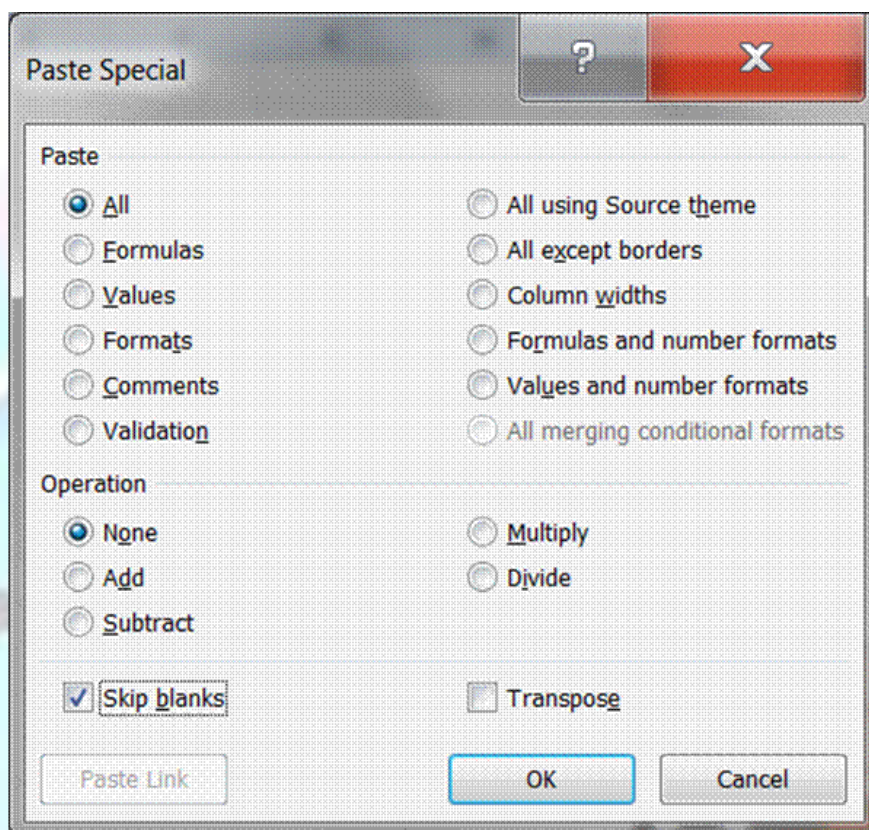
### Prevent copied blank cells from replacing existing data

If you copy a range that includes blank cells, use this procedure to prevent pasting blank cells over existing data.

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 53

omplied by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

- ✓ Select the cells you want to copy. Click **Copy**
- ✓ Select the upper-left cell of the paste area. On the **Home** tab, **Clipboard** group, select **Paste Special**.
- ✓ Select the **Skip blanks** check box.



Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 54

Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

## Using Paste Special

- ✓ Select the cells you want to move or copy. On the **Home** tab, **Clipboard** group, select **Cut**.
- ✓ Select the upper-left cell of the paste area. On the **Home** tab, **Clipboard** group, click **Paste Special**.
- ✓ Make the necessary selections. You can choose whether you want to paste all the information, only formulas, or only formats or only columns widths, for example.

## SmartArt

SmartArt graphic is a visual representation of information and ideas, and a chart is a visual illustration of numeric values or data. Basically, SmartArt graphics are designed for text and charts are designed for numbers.

Use the information below to decide when to use a SmartArt graphic and when to use a chart.

### ***Use a SmartArt graphic if you want to do any of the following:***

- ✓ Create an organization chart.
- ✓ Show hierarchy, such as a decision tree.
- ✓ Illustrate steps or stages in a process or workflow.
- ✓ Show the flow of a process, procedure, or other event.
- ✓ List information.
- ✓ Show cyclical or repetitive information.
- ✓ Show a relationship between parts, such as overlapping concepts.
- ✓ Create a matrix illustration.
- ✓ Show proportional or hierarchical information in a pyramid illustration.
- ✓ Create an illustration quickly by typing or pasting your text and having it automatically positioned and arranged for you.

### ***Use a chart if you want to do any of the following:***

- ✓ Create a bar chart or column chart.
- ✓ Create a line or XY scatter (data point) chart.
- ✓ Create a stock chart, used to graph various stock prices.
- ✓ Create a surface, donut, bubble, or radar chart.
- ✓ Link to live data in a Microsoft Excel workbook.
- ✓ Update your chart automatically when numbers in a Microsoft Excel workbook are updated.
- ✓ Use "what-if" calculations, and you want to be able to change numbers and see the changes automatically and immediately reflected in the chart.
- ✓ Automatically add legends or gridlines that are based on your data.
- ✓ Use chart-specific functionality, such as error bars or data labels.

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 55

Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

# LOAD DATA FROM AN EXTERNAL SOURCE

## Outcome

Load data from an external data source to produce a given spreadsheet result

## Assessment criteria

- ✓ The external data file is checked to ensure that the input into a spreadsheet will achieve the required results
- ✓ The format of the input file is determined to ensure correct input into a spreadsheet: Tables from another source
- ✓ The data is copied into the spreadsheet
- ✓ The resulting spreadsheet is in accordance with the given spreadsheet result

## Importing data

Microsoft Office provides drivers that you can use to retrieve data from the following data sources:

- ✓ Microsoft SQL Server OLAP Services (OLAP provider)
- ✓ Microsoft Access
- ✓ dBASE
- ✓ Microsoft FoxPro
- ✓ Microsoft Excel
- ✓ Oracle
- ✓ Paradox
- ✓ SQL Server
- ✓ Text file databases
- ✓ Third-party providers

By importing data, you don't have to retype the data you want to analyze in Microsoft Excel. You can also update your Excel reports and summaries automatically from the original source database whenever the database is updated with new information.

## Importing data from databases and files

You can import data to Excel from most data sources by going to the **Data** tab, **Get External Data** group

**Note** To bring external data into Microsoft Excel, you must have access to the data. If the external data source you want to access is not on your local computer, you might need to contact the administrator of the database for a password, user permission, or other connection information.


Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet

Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 56




Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	


- ✓ You can retrieve data from the following data sources:




**From SQL Server**  
Create a connection to a SQL Server table. Import data into Excel as a Table or PivotTable report.




**From Analysis Services**  
Create a connection to a SQL Server Analysis Services cube. Import data into Excel as a Table or PivotTable report.



**From XML Data Import**  
Open or map a XML file into Excel.



**From Data Connection Wizard**  
Import data for an unlisted format by using the Data Connection Wizard and OLEDB.



**From Microsoft Query**  
Import data for an unlisted format by using the Microsoft Query Wizard and ODBC.

- ✓ You can use **objects** (data such as text, pictures, spreadsheets, and so on) in Word, Excel, PowerPoint, and Outlook by **copying** data from the source application and pasting in the target file (or by using drag-and-drop).
- ✓ You can also **insert** whole new objects in a file and edit them in their source application. Using objects like this is called **embedding**.
- ✓ When you embed an object, you can edit it using the original application that created it. However, if you want to insert data that is regularly updated (for example, sales data from a spreadsheet inserted in a company report) you can create a **link** to the source file. This saves you from copying and pasting a new object every time the source file is updated.

## Working with Access data in Excel

You may want to work with Access data in an Excel workbook in order to take advantage of the data analysis and charting features, the flexibility in data arrangement and layout, or the functions in Excel that are not available in Access.

To bring data into Excel from Access, you can

- ✓ copy data from an Access datasheet and paste it into an Excel worksheet,

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 57



Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

- ✓ connect to an Access database from an Excel worksheet, or
- ✓ export Access data into an Excel worksheet

### ***Connecting to Access data from Excel***

To bring refreshable Access data into Excel, you can create a connection to the Access database and retrieve all of the data from a table or query. For example, you may want to update an Excel summary budget report that you distribute every month so that it contains the current month's data.

- ✓ Go to the **Data** tab, **Get External Data** group and select **From Access**
- ✓ Select the file containing the data you need

### ***Exporting Access data to Excel***

- ✓ By using the Export Wizard in Access, you can export an Access database object (such as a table, query, or form), or selected records in a view into an Excel worksheet. When you perform an export operation in Access, you can save the design of that operation for future use and even schedule the export operation to run automatically at specified intervals.

**OR**

- ✓ Copy the data from the access datasheet and paste it into your Excel worksheet

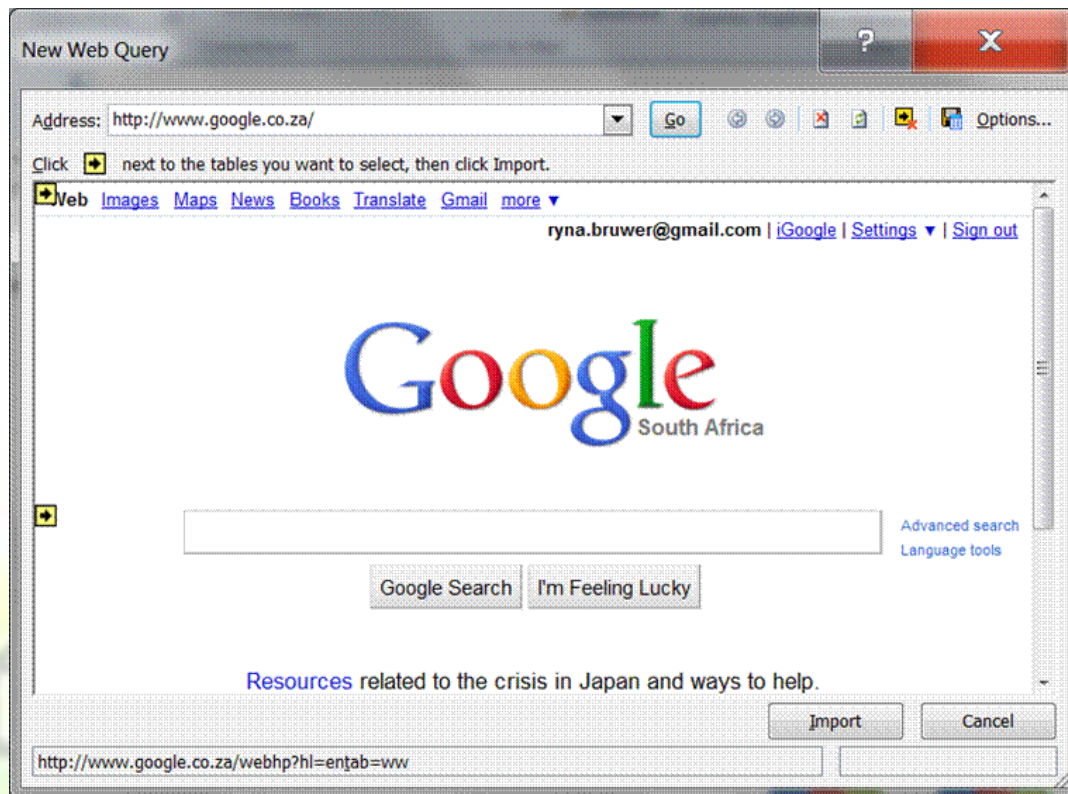
### **Import data from the Web**

Web pages often contain information that is perfect for analysis in Excel. For example, you can analyse stock quotes in Excel by using information that comes directly from a Web page.

- ✓ Go to the **Data** tab, **Get External Data** group and select **From Access**

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 58

Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	



- ✓ Enter the URL of the web page that has the information you need
- ✓ Follow the steps as dictated by dialogue boxes

You can use a Web query to retrieve data stored on your intranet or the Internet, such as a single table, multiple tables, or all of the text on a Web page, and analyse the data by using the tools and features in Excel. With the click of a button, you can easily refresh the data with the latest information from the Web page. For example, you can retrieve and update stock quotes from a public Web page, or retrieve and update a table of sales information from a company Web page.

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 59

Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

## Formative Assessment 5

***If you are learning to use Excel, try creating Excel charts that look the same as the ones in this exercise.***

- ✓ Create a new file (PowerPoint presentation or Word document)
- ✓ Insert a new chart object
- ✓ In the datasheet, enter the data as shown below

		A	B	C	D
		2000	2001	2002	2003
1	English	45	57	56	63
2	Mathematics	12	24	13	9
3	French	20	21	15	6

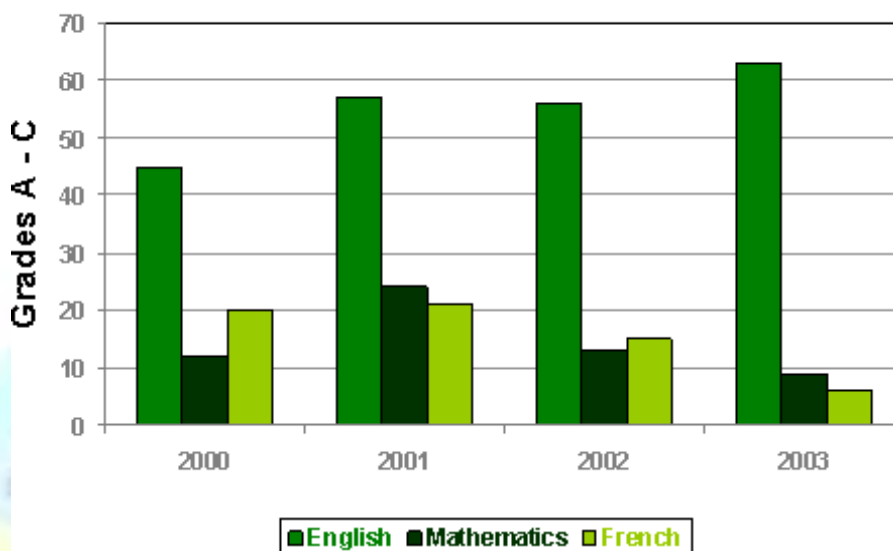
- ✓ Change the **Chart Type** to a **2-D column** chart
- ✓ Change the colours of each of the data series
- ✓ Re-position the **Legend** to the **bottom** of the chart, use a smaller font size for the legend text, and change the font colours to match the series colour (also, move the **plot area** if the legend is not shown clearly)
- ✓ Add the following **Title** - "Exam Passes" - and format with underline
- ✓ Add the following **Value Y Axis** - "Grades A - C"
- ✓ Use a smaller font size for the axes
- ✓ Add **Data Labels** to show the value of each column
- ✓ Format the axes and gridlines as grey and change the font colours of the axes labels to grey too
- ✓ If there is one, remove the border from the **Plot Area**

The chart should look similar to the one shown below.

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 60

omplied by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

## Exam Passes



- ✓ In the same file, add a new chart on a new slide/page
- ✓ Change the datasheet as shown below

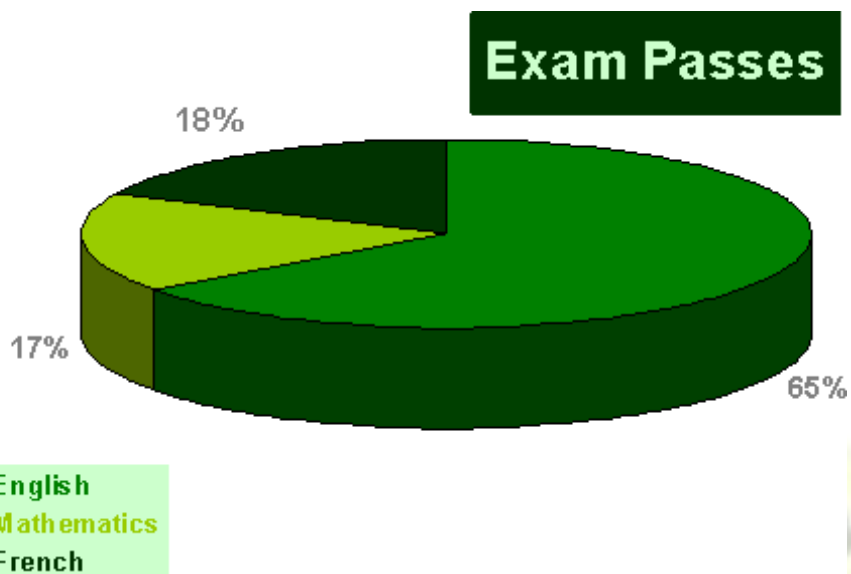
		A	B	C	D
		Exam Passes			
1	English	221			
2	Mathematics	58			
3	French	62			

- ✓ Format the chart so that it resembles the example shown

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet

Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 61

omplied by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	



- ✓ Save the file as **Exam Passes** and close it

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 62



Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

# INSERT AND EDIT OBJECTS IN A SPREADSHEET

## Outcome

Insert and edit objects in a spreadsheet: Any 2 of the following objects: pictures, images, charts, autosshapes

## Assessment criteria

- ✓ A graphic is inserted into a spreadsheet: At least 2 of the following: picture, image, chart, autosshape
- ✓ A selected graphic is manipulated in a spreadsheet: At least 2 of the following: move, copy, resize
- ✓ Use a drawing tool to draw an object in the spreadsheet

## Introduction

Office uses **Object Linking and Embedding (OLE)** to share data between Office applications and with other Windows software.

You can use **objects** (data such as text, pictures, spreadsheets, and so on) in Word, Excel, PowerPoint, and Outlook by **copying** data from the source application and pasting in the target file (or by using drag-and-drop). You can also **insert** whole new objects in a file and edit them in their source application. Using objects like this is called **embedding**.

When you embed an object, you can edit it using the original application that created it. However, if you want to insert data that is regularly updated (for example, sales data from a spreadsheet inserted in a company report) you can create a **link** to the source file. This saves you from copying and pasting a new object every time the source file is updated.

One example of an object is a picture. Using one or more pictures in a document makes it much more interesting to look at or read. A picture may also be very informative (for example, a photograph or technical diagram) or may help to brand the document (for example, a company logo). You can obtain pictures from many different sources, such as:

- ✓ Clip art.
- ✓ Office drawings and pictures.
- ✓ Drawings or bitmap picture files created in other programs.
- ✓ Screenshots (of Windows applications and dialogue boxes) .
- ✓ A scanner or digital camera attached to your computer.

## Insert Clip Art

The **Microsoft Clip Organiser** contains a variety of pictures, photographs, sounds, and video clips. It provides a good way to look through and select clips.

### To insert a clip using the Clip Art task pane

- ✓ On the **Insert** tab, **Illustrations** group, select **Clip Art**

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 63

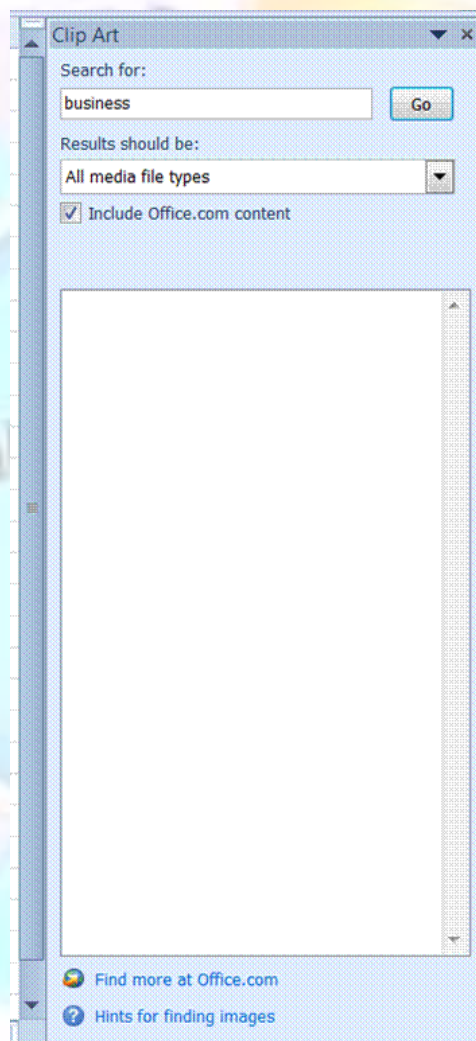
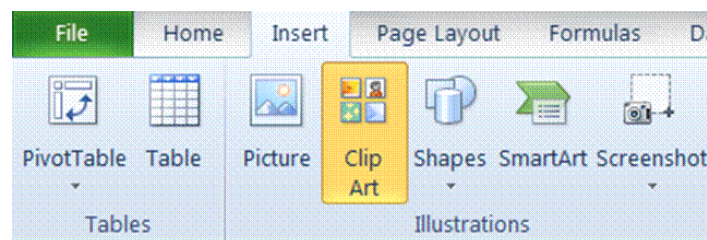
omplied by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

- ✓ The **Clip Art** task pane is displayed.
- ✓ Each clip has keywords associated with it. This allows you to search for clips on a particular subject by typing search terms into the **Search for:** box. Type in a keyword that describes the picture you want to use



Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 64

omplied by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	



**Note** *A collection is a category of clip art, such as Office or Animals. The Office collection represents clips available from your Office Setup disks. The Web collection represents clips you have downloaded from the web. You can define your own collections using the Clip Organizer.*

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 65

omplied by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

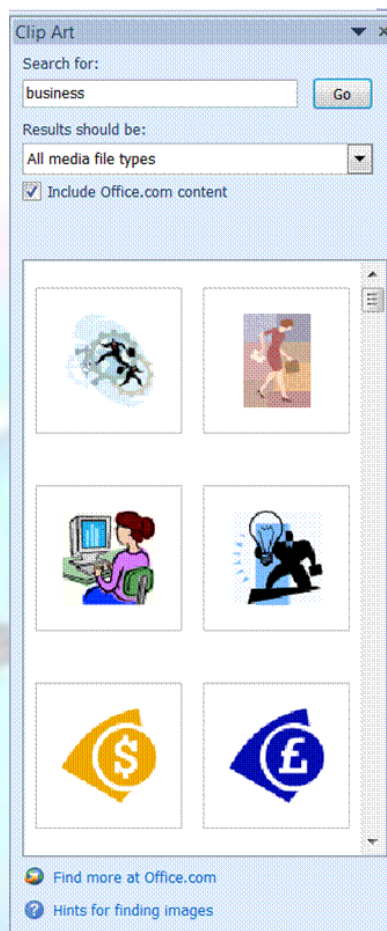
- ✓ From the **Results should be:** box, you can select the type of media files that are returned on completion of the search
- ✓ Click **Go**




Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 66

omplied by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

- ✓ The results of the search are displayed in the **Clip Art** task pane.
- ✓ Click on an image to insert the image into the document
- ✓ The clip art selected is inserted in your worksheet file.



- ✓ To carry out a new search, enter different search terms and click **Go**
- ✓ When you have finished adding clips, click Close  to close the task pane

**Tip** *If you cannot find the picture, music, sound, video, or animation clip you want, click Find more at Office.com to connect to the Microsoft website where you can preview and download additional clips.*

## Insert a Picture from a File

As well as clip art you can use picture files or images that you might have created in a computer art application, scanned, or taken with a digital camera.

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 67



Compiled by: Smartscrip	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

## Insert a picture from a file

- ✓ On the **Insert** tab, **Illustrations** group, select **Picture**
- ✓ The **Insert Picture** dialogue box is displayed.
- ✓ From the **Files of type:** box, select **All Pictures**
- ✓ From the **Look in:** box, select the folder containing the picture you want
- ✓ Select the picture file and click **Insert**
- ✓ The picture is embedded in your worksheet.

Embedding a picture stores the picture in your worksheet. You can edit the picture from within the Office file using the original application that you used to create it.

For example, if you created a picture using Microsoft Paint, double-clicking the picture object in your worksheet would start the Paint application for you (Paint's toolbars and menus would replace those of Word's or PowerPoint's) to use to edit the picture.

**Tip** You can also use the copy and paste tools to insert a graphic object into an Office document.

## Insert a screen image in a document

Screen prints can be very useful for recording data displayed on the screen or writing training manuals.

- ✓ Click in the worksheet where you want to paste the graphic
- ✓ Press **Print Scrn** to capture the screen image as a graphic

**OR**

- ✓ Press **Alt** + **Print Scrn** to capture the **active** window or dialogue box as a graphic

**OR**

- ✓ On the **Insert** tab, **Illustrations** group, select **Screenshot**. From the dialogue box, select the screenshot you require
- ✓ Click **Paste** (SpeedKey: **Ctrl** + **V**)

## Insert a picture from a web page

You can save a picture from a web page to your computer then insert it into a document like any other file. Obtain permission from the picture's creator to use it first.

- ✓ In your web browser, open the web page containing the picture then right-click it and select **Save Picture As...**

## Modify a Picture

You can control the appearance (for example, adjust brightness, contrast, and size or add a border) of most pictures using the **Format** tab.

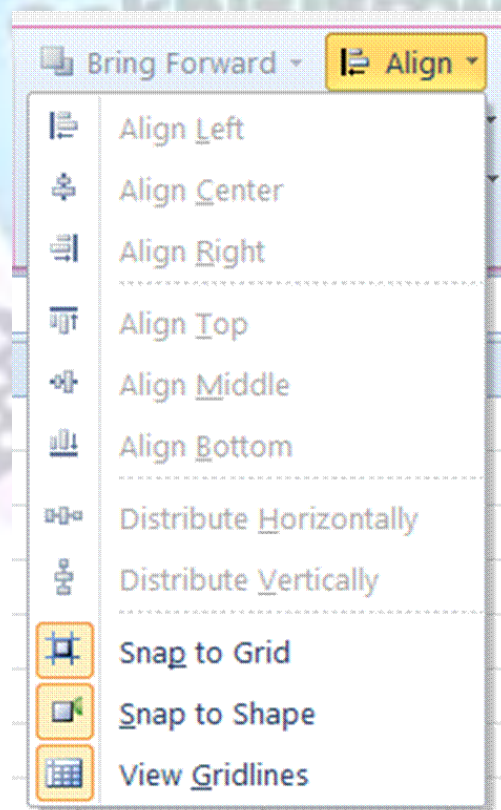
You have the following choices:

Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 68

Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

- ✓ Corrections: to adjust the brightness and contrast between the different colours used in the graphic object.
- ✓ Colour: allows you to change the colours of pictures such as clipart. You can, for example, change the selected graphic object to a scale of grey, black and white, a washout or even transparency
- ✓ Compress Pictures: Display the Compress Pictures dialogue box. Set options to compress the file size of the picture dependent on the resolution
- ✓ Reset picture: Returns the graphic to its original settings.
- ✓ Picture styles: changes the frame of the picture
- ✓ Picture border
- ✓ Picture effects
- ✓ Picture layout
- ✓ Group or ungroup more than one picture, which allows you to move them as though they were one picture
- ✓ Rotate the picture to the left or right by 90 degrees.
- ✓ The cropping tool allows you to remove sections of the graphic.
- ✓ Change the wrapping style of the picture

You can also change the alignment of the picture



Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet


Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 69

omplied by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

## ***To crop an image using the Crop tool***

Cropping an image hides part of the image, but does not delete it.

- ✓ Click the picture once to select it
- ✓ click the **Crop** tool

The cursor changes to show the crop tool .

- ✓ Point to one of the handles on the image border then click-and-drag to crop the picture
- ✓ Repeat for any other borders you want to crop
- ✓ Click the **Crop** tool again to finish (*SpeedKey*: **Esc**)
- ✓ You can use the **Reset Picture** button to remove the crop

## ***Move and resize a picture***

- ✓ To move and resize a picture, click-and-drag it.
- ✓ To resize a graphic, click-and-drag the handles on its border.
- ✓ If you want one picture to appear in front of another, right-click it and select Order then Bring to Front.



Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 70

Compiled by: Smartsript	Approved By:
This document is strictly confidential and may on no account be reproduced, copied or divulged without prior authorisation.	

## Formative Assessment 6

- ✓ Create a new file and save it as **Pictures** followed by your name. This exercise will be easiest to complete using PowerPoint, but you can use Word or Excel if you prefer
- ✓ Start with a blank page, slide, or worksheet
- ✓ Select **Clip Art** from the **Insert** tab, **Illustrations** group
- ✓ Select an image to insert
- ✓ Repeat the process until you have 3 images
- ✓ Crop to remove part of one picture
- ✓ Modify the other two images, e.g. by changing the brightness and contrast or the style of the picture
- ✓ Insert a screen image in your worksheet
- ✓ Save and close the file



Unit Standard 116943: Using a Graphical User Interface (GUI)-based spreadsheet application, enhance the functionality and apply graph /charts to a spreadsheet		
Revision number	Date revised	Page number
Rev 1	14/11/2012	Page 71