

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

MATHS: Higher Level Statistics

# Higher Level Maths

## Statistics

It is not necessary to carry out all the activities contained in this unit.

Please see *Teachers' Notes* for explanations, additional activities, and tips and suggestions.

<b>Theme</b>	<b>Higher Level Statistics</b>
<b>Levels</b>	<b>A1 – B1</b>
<b>Language focus</b>	Key vocabulary, word identification, sentence structure, extracting information from text, writing text, grammar.
<b>Learning focus</b>	Using Maths textbooks and accessing curriculum content and learning activities.
<b>Activity types</b>	Matching, word identification, structuring sentences and text, cloze, multiple choice, reading comprehension, categorising vocabulary, recording learning, developing a learning resource.
<b>Acknowledgement</b>	<b>Extracts from <i>Shortcuts to Success. Maths. Junior Certificate Higher Level. Mark Halpin. Gill &amp; Macmillan.</i></b>  We gratefully acknowledge Gill & Macmillan for the right to reproduce text in some of these activities.
<b>Learning Record</b>	A copy of the Learning Record should be distributed to each student.  Students should: <ol style="list-style-type: none"><li>1. Write the subject and topic on the record.</li><li>2. Tick off/date the different statements as they complete activities.</li><li>3. Keep the record in their files along with the work produced for this unit.</li><li>4. Use this material to support mainstream subject learning.</li></ol>

## Making the best use of these units

- **At the beginning of the class**, make sure that students understand **what** they are doing and **why**. *'We are doing the exercise on page (12) to help you to remember key words / to help your writing skills / to help with grammar'* etc.
- You can create your **personal teaching resource** by printing these units in full and filing them by subject in a large ring binder.
- **Encourage students to:**
  - Bring the relevant **subject textbooks** to language support class. It does not matter if they have different textbooks as the activities in these units refer to vocabulary and other items that will be found in all subject textbooks. These units are based on curriculum materials.
  - Take some **responsibility for their own learning** programmes by:



Developing a **personal dictionary** for different subjects, topics, and other categories of language, on an on-going basis. This prompt is a reminder.

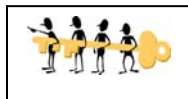


Recording what they have learnt on the **Learning Record**, which should be distributed at the start of each unit.



Keeping their own **files** with good examples of the work produced in language support for different subjects and topics. This file will be an invaluable **learning resource** in supporting mainstream learning.

- Don't forget that many of the activities in these units are suitable as **homework** tasks, for **self-study**, or for use in the **subject classroom** with the agreement of the subject teacher.



Indicates that answers may be found at the end of the unit.

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

**MATHS: Higher Level Statistics**

**Keywords**

The list of keywords for this unit is as follows

**Nouns**

amount  
angle  
area  
axis  
bar chart  
chart  
class  
curve  
data  
distribution  
exam/examination  
fraction  
frequency  
frequency distribution table  
frequency table  
graph  
group  
height  
histogram  
information  
interval  
mark  
mean  
median  
methods  
mode  
number  
ogive  
percentage  
pie chart  
pupils  
quartile  
rectangle  
result  
table  
trend  
width

**Verbs**

to calculate  
to group  
to illustrate  
to prefer  
to receive  
to record  
to represent  
to simplify  
to solve

**Adjectives**

above  
below  
cumulative  
curved  
favourite  
important  
interquartile  
mean  
modal  
smallest  
total

**Adverb**

always  
when

**Other**

above  
definitely  
hence = so = therefore  
by means of  
in terms of  
in the following example

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_  
MATHS: Higher Level Statistics

### Vocabulary file 1

This activity may be done in language support class or in the mainstream subject classroom.

<b>Word</b>	<b>Meaning</b>	<b>Word in my language</b>
total		
received		
calculate		
frequency		
illustrate		
number		
angle		

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_  
MATHS: Higher Level Statistics

### Vocabulary file 2

This activity may be done in language support class or in the mainstream subject classroom.

Word	Meaning	Word in my language
amount		
mean		
method		
trend		
to represent		
percentage		
result		



Get your teacher to check this and then file it in your folder so you can use it in the future.

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

**MATHS: Higher Level Statistics**

**Level:** A1

**Type of activity:** pairs or individual

**Focus:** vocabulary

**Suggested time:** 20 minutes



**Working with words**

**1. Tick the correct answer**



- a) this is a photograph
- b) this is a bar chart
- c) this is an advertisement
- d) this is a pie chart



- a) this is a photograph
- b) this is a bar chart
- c) this is an advertisement
- d) this is a pie chart

**2. Tick the best answer.**

*Statistics is about*

- a. presenting facts and figures
- b. presenting ideas
- c. presenting people

**3. Tick the best answer.**

*Bar charts and pie charts are used*

- a. for food and drink
- b. for presenting information
- c. for symbols

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

MATHS: Higher Level Statistics

Level: A1

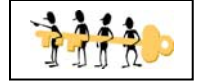
Type of activity: pairs or individual

Focus: vocabulary, sentence structure

Suggested time: 30 minutes

## Sentences

1. Tick the correct answer, you can use your dictionary



In maths this word equals:

- a) unkind
- b) to intend to do something
- c) the average

mean

In maths this word equals:

- a) a way of doing something
- b) the value that occurs most frequently
- c) in fashion.

mode

In maths this word means

- a) the direction of figures
- b) fashionable
- c) to bend

trend

2. Put these words in the correct order to form sentences.

commonly bar charts are used

---

making suitable bar charts are for comparisons

---

can vertical bar charts be horizontal or

---

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

**MATHS: Higher Level Statistics**

**Level:** A1 / A2

**Type of activity:** pairs or individual

**Focus:** word identification, vocabulary

**Suggested time:** 20 minutes



### Odd One Out

1. Circle the word which does not fit with the other words in each line.

*Example:*    *apple*    *orange*    *banana*    **taxi**

total                      modal                      car                      mean

number                      pie                      blue                      chart

table                      gardening                      distribution                      frequency

calculate                      illustrate                      represent                      chicken

2. Find these words in your textbook. Then put them in short sentences in your own words. Use a dictionary if necessary.

to calculate \_\_\_\_\_

to illustrate \_\_\_\_\_

to record \_\_\_\_\_

to represent \_\_\_\_\_

to solve \_\_\_\_\_



Check that these key words are in your personal dictionary.



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

**MATHS: Higher Level Statistics**

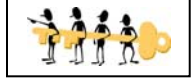
**Level:** A2 / B1

**Type of activity:** individual

**Focus:** key vocabulary

**Suggested time:** 20 minutes

## Maths Keywords



1. Fill in the missing letters of the keywords listed below.

On the line beside each word, write whether the word is a noun, an adjective or a verb.

fa\_\_ur\_te \_\_\_\_\_

fre\_\_e\_cy \_\_\_\_\_

rep\_\_sen\_\_ng \_\_\_\_\_

ca\_\_ul\_te \_\_\_\_\_

2. Write as many words as possible related to **statistics / this unit**. You have 3 minutes!

---

---

---

---

---

---

---

---

---

---

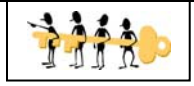
NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

**MATHS: Higher Level Statistics**

**Level:** A1 / A2

**Type of activity:** pairs or individual

**Focus:** key vocabulary, spelling  
**Suggested time:** 20 minutes



### Unscramble the letters

1. A part of a number CANTRIFO

**Answer** \_\_\_\_\_

2. The way something is spread out or shared BUTRONITIIDS

**Answer** \_\_\_\_\_

3. Explain something using a picture STRILTELUA

**Answer** \_\_\_\_\_

4. Something you like best of all VOFAITURE

**Answer** \_\_\_\_\_



### Solve the secret code

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

example: (code) OLQKXY = PRINCE (English)



**OQY XGBLMD BLY VWK! =**

---

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

**MATHS: Higher Level Statistics**

**Level:** A2/B1

**Type of activity:** pairs or individual

**Focus:** vocabulary, basic sentence structure

**Suggested time:** 30 minutes



## Completing sentences

The sentences on this page are all instructions from your textbooks. Fill in the blanks in these sentences. Use words from the Word Box below.

1. Draw a vertical bar chart to \_\_\_\_\_ this information.
2. Represent these figures by a bar chart. Express each of the following angles as a \_\_\_\_\_ of  $360^\circ$
3. Calculate the \_\_\_\_\_ in each of the sectors.
4. \_\_\_\_\_ the size of the angle  $x$  in sector A.
5. Use the trend \_\_\_\_\_ to answer the following questions.
6. Find the \_\_\_\_\_ of each of this array of numbers.
7. \_\_\_\_\_ was the mean price of the cars?
8. Copy and complete the \_\_\_\_\_ table shown below.
9. \_\_\_\_\_ that 4 is the mean of the following frequency distribution.
10. Draw a bar chart to \_\_\_\_\_ the data.

### Word box:

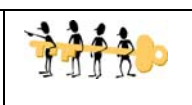
angle	frequency	fraction	what	illustrate
represent	graph	mean	calculate	verify

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

**MATHS: Higher Level Statistics**

**Level:** A2 / B1  
**Type of activity:** individual

**Focus:** key vocabulary, topic information, reading comprehension  
**Suggested time:** 30 minutes



## Multiple Choice

Read the text below and choose the best answer.

(a) The ages of 15 people were recorded as follows 14, 15, 13, 13, 15, 16, 15, 12, 15, 12, 16, 13, 14, 12, 15.

(i) Using a frequency distribution table, illustrate the above data.

(ii) Calculate the mean age of the group.

(iii) Calculate the modal age.

(b) (i) Illustrate the frequency table from part (a) by means of a bar chart.

(ii) Calculate the percentage of people who were 15 years or older.

### Question 2

(a) (i) The mean of 4, 2, 1,  $a$ , 6 is 3. Calculate  $a$ .

(ii) Hence find the mode.

(b) The methods by which 24 students travel to school, are shown below:

Travel method	Walk	Car	Bus	Bicycle
Number of pupils	5	7	10	2

Illustrate the information above using a pie chart. Check your answer.

1. In Question 1, how many people's ages were recorded?

- a) 12    b) 14  
c) 15    d) 2

2. How are you asked to illustrate the data of people's ages, in part (a)?

- a) bar chart    b) trend graph  
c) frequency distribution table                          d) pie chart

3. What are you asked to calculate in Question 2 (a)?

- a)  $a$     b) 2  
c) 3    d) 6

4. In Question 2 (b), do 7 pupils walk to school?

- a) Yes    b) No

5. Should you check your answer to Question 2 (b)?

- a) Yes    b) No

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

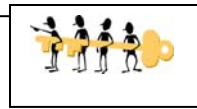
**MATHS: Higher Level Statistics**

**Level:** A2/B1

**Type of activity:** individual and pairs

**Focus:** comparing adjectives

**Suggested time:** 30 minutes



## Grammar points

### Comparison of adjectives

1. Study these sentences from your maths textbook

What is the difference in temperature between the hottest and the coldest months?

Find the greatest number of matches that could have ended in a draw.

2. In statistics we compare facts and figures. Work with a partner and fill in the grid below. Study the examples first.

adjective	comparing (2)	superlative (more than 2)
wet	wetter	The wettest
expensive	More expensive	The most expensive
tall		
cheap		
modern		
old		
exciting		
rich		
poor		
important		
numerous		
high		

3. Can you work out the rule for comparing adjectives. Write up the rule then check it in the answer key.

short adjectives:

longer adjectives

4. Go to the unit on statistics in your maths textbook. Give yourself ten minutes to find as many examples as possible of comparison and superlative of adjectives. See who in the class found the most!

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

**MATHS: Higher Level Statistics**

**Levels A1 and A2 - Alphaboxes**

Using your textbook, find **one** word beginning with each of the letters of the alphabet. Write the word in the relevant box. You could also write the word in your own language.

a	b	c
d	e	f
g	h	i
j	k	l
m	n	o
p	q	r
s	t	u
v	w	xyz

Do you understand all these words?

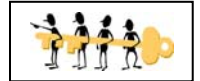


Get your teacher to check this, then file it in your folder so you can use it in the future.

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

**MATHS: Higher Level Statistics**

**Word Search Level: All levels**



Find the words in the box below.

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

ABOVE	FAVOURITE	MEAN	REPRESENT
AMOUNT	FRACTION	MODAL	TABLE
ANGLE	FREQUENCY	MODE	TOTAL
CALCULATE	GRAPH	NUMBER	TREND
CHART	ILLUSTRATE	PIE	
DISTRIBUTION	MARK	PUPILS	

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

MATHS: Higher Level Statistics

## Play Snap

Make Snap cards with 2 sets of the same keywords. See *Notes for teachers* for ideas about how to use the cards.



<b>favourite</b>	<b>favourite</b>
<b>amount</b>	<b>amount</b>
<b>represent</b>	<b>represent</b>



NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

**MATHS: Higher Level Statistics**

<b>illustrate</b>	<b>illustrate</b>
<b>fraction</b>	<b>fraction</b>
<b>frequency</b>	<b>frequency</b>

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

**MATHS: Higher Level Statistics**

<b>graph</b>	<b>graph</b>
<b>number</b>	<b>number</b>
<b>total</b>	<b>total</b>

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

**MATHS: Higher Level Statistics**

<b>mean</b>	<b>mean</b>
<b>pie chart</b>	<b>pie chart</b>
<b>calculate</b>	<b>calculate</b>

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

MATHS: Higher Level Statistics

## Answer key

### Working with words, page 6

1. b,d
2. a.
3. 2. b

### Sentences, page 7

1. c,b,a
2. Bar charts are commonly used.  
Bar charts are suitable for making comparisons.  
Bar charts can be vertical or horizontal.

### Odd one out, page 8

Car, blue, gardening, chicken

### Key words, page 9

Favourite (adjective), frequency (noun and adjective), representing (verb), calculate (verb)

### Unscramble the letters, page 10

Fraction, distribution, illustrate, favourite  
Secret code: pie charts are fun

### Completing Sentences, page 11

- Draw a vertical bar chart to **represent** this information.
- Represent these figures by a bar chart. Express each of the following angles as a **fraction** of  $360^\circ$
- Calculate the **angle** in each of the sectors.
- **Calculate** the size of the angle  $x$  in sector A.
- Use the trend **graph** to answer the following questions.
- Find the **mean** of each of this array of numbers.
- **What** was the mean price of the cars?
- Copy and complete the **frequency** table shown below.
- **Verify** that 4 is the mean of the following frequency distribution.

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

**MATHS: Higher Level Statistics**

- Draw a bar chart to **illustrate** the data.

**Multiple choice, page 12**

1c,2c,3a,4b,5a

**Grammar points, page 13**

2.

<b>adjective</b>	<b>comparing (2)</b>	<b>superlative (more than 2)</b>
wet	wetter	The wettest
expensive	More expensive	The most expensive
tall	taller	The tallest
cheap	cheaper	The cheapest
modern	More modern	The most modern
old	older	The oldest
exciting	More exciting	The most exciting
rich	richer	The richest
poor	poorer	The poorest
important	More important	The most important
numerous	More numerous	The most numerous
high	higher	The highest

3. Short adjectives: add **er** and **est** to the end of the adjective

Longer adjectives: put **more** and **most** before the adjective

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

**MATHS: Higher Level Statistics**

**Word Search:**

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