

Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										



General Certificate of Education
Advanced Level Examination
June 2011

Geography

GEO4A

Unit 4A Geography Fieldwork Investigation

Friday 17 June 2011 9.00 am to 10.30 am

You will need no other materials.
You may use a calculator.

Time allowed

- 1 hour 30 minutes

Instructions

- Use black ink or black ball-point pen. Use pencil only for drawing.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work that you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 60.
- You will be marked on your ability to:
 - use good English
 - organise information clearly
 - use specialist vocabulary where appropriate.

Advice

- You are advised to spend about 60 minutes on **Section A** and about 30 minutes on **Section B**.

For Examiner's Use	
Examiner's Initials	
Question	Mark
1	
2	
3	
4	
5 (a)	
5 (b)	
TOTAL	



Answer **all** questions in the spaces provided.

State the aim(s) of your fieldwork investigation.

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(8 marks)



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- 2 Describe and justify how you made sure that the data collected were as accurate and reliable as possible.

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Explain why you used it and evaluate its effectiveness in showing the data you collected.

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[illegible]

4 In the light of your results, suggest how your investigation could be further developed and/or extended.

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SECTION B

Answer **all** questions in the spaces provided.

- 5** **Figure 1** is a map of wards in Leicester. Four of the wards have been shaded. **Figure 2a** shows the population of the four shaded wards in 2001 by ethnic group. For the purpose of conducting a Chi-squared test, these data become the observed frequencies (O). **Figure 2b** shows the calculated expected frequencies (E) for these wards in a contingency table.

For this Chi-squared test, the hypothesis (H_1) is:

'There is a difference in the distribution of population in different ethnic groups within selected wards in Leicester.'

The null hypothesis (H_0) to be tested is:

'There is no significant difference in the distribution of population in different ethnic groups within selected wards in Leicester.'

Figure 1

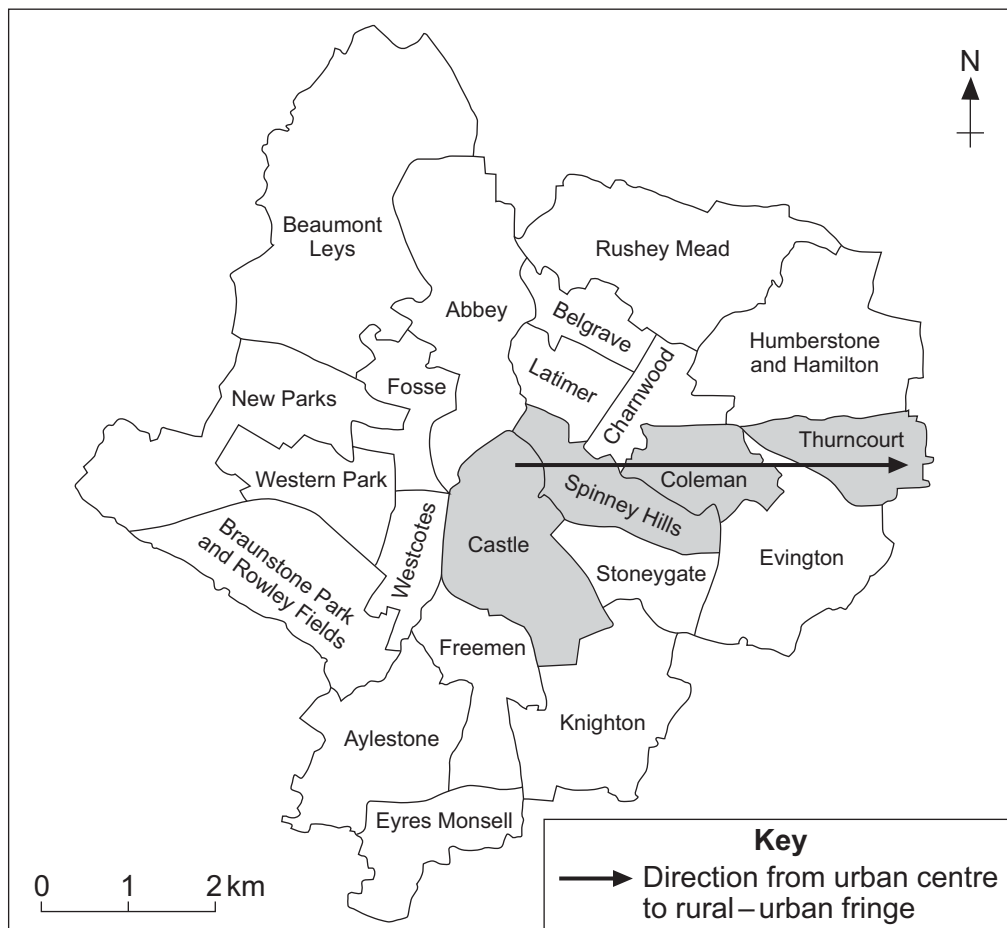


Figure 2a – Observed frequencies (O)

Ethnic group	Ward				Total
	Castle	Spinney Hills	Coleman	Thurncourt	
White	10 221	3 739	4 653	8 258	26 871
Asian	1 786	15 402	6 488	1 266	24 942
Black	731	1 461	582	174	2 948
Other	727	647	376	238	1 988
Total	13 465	21 249	12 099	9 936	56 749

Source: Census data (2001)

Figure 2b – Expected frequencies (E)

These are calculated for each cell using the formula $\frac{\text{row total} \times \text{column total}}{\text{grand total}}$.

Ethnic group	Ward			
	Castle	Spinney Hills	Coleman	Thurncourt
White	6 376	10 062	5 729	4 705
Asian	5 918	9 339	5 318	4 367
Black	699	1 104	629	516
Other	472	744	424	348

A Chi-squared test was applied to these data, using the formula $\chi^2 = \sum \frac{(O - E)^2}{E}$.

Chi-squared was calculated as 18 995 and was significant at both the 95% and 99% significance levels.

- 5 (a) With reference to the **outcome of the Chi-squared test** and **Figures 1, 2a and 2b**, comment on the distribution of ethnic groups in the selected wards in Leicester.

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Question 5 continues on the next page

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(12 marks)

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ANSWER IN THE SPACES PROVIDED**

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Figure 2a: www.leicester.gov.uk Reproduced under the terms of the Click-Use Licence.

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