

Mark Scheme (Results)

Summer 2007

GCSE B

GCSE Geography (1313) Paper 3H

1313/3H Summer 2007

1. a) The proportion of population living in cities in LEDCs has risen (1)
 e.g. between 1950 and 2000 it rose from 17% to 40% (1)
 it grew by 7% between 1950 and 1970 (1)
 it grew most rapidly between 1970 and 2000 from 24% to 40% (1)
 Credit any other correct change identified if supported by correct data (population % or dates). 3
- b) i) (approx.) 8 million (1) (approx) doubled (1) by about 100% (1) 1
- ii) High birth rate (1) immigration / migration from surrounding rural areas / rural-urban migration (1) NOT just migration. 2
- c) 2 of: Better living conditions, better / reliable food supply, better diet, opportunity for education, opportunity for jobs / income, more medical care / doctors / hospitals
 1 mark for factor plus further mark for explanation / development
 e.g. better living conditions (1) because housing is permanent (1) or there is a healthier lifestyle (1) 2+2 = 4
- d) 2 of: Poor living conditions / housing, lack of running water / sewage, poor / unreliable food supply / agriculture, poor diet, lack of education, lack of jobs, poverty, drought, famine, disease, lack of medical care / doctors / hospitals
 1 mark for factor plus further mark for explanation / development
 e.g. unreliable food supply (1) because of drought (1) 2+2 = 4
- NB Do not credit opposites in each part
 e.g. credit lack of jobs in c), but NOT opportunity for jobs in d)
- Total 14
2. a) Houses made from rubbish / plastic / sheets (1) on stilts (1)
 next to river / water (1) not permanent (1) Likely to collapse (1)
 dirty (1) litter / rubbish lying around (1) etc. N.B. Must be from the photograph 3
- b) Lack of infrastructure (1) lack of waste collections (1) Lack of money/bad financial management (1)
 public unwillingness to dispose of waste responsibly/lack of public awareness
 NB Credit **only** those responses linked to the resources 2
- c) Unhygienic (1) creates a hazard (1) and smell (1)
 may attract rats / vermin (1) may lead to disease (1)
 increasing the death rate / infant mortality (1)
 contamination of water (1) 4
- Total 9
3. a) More old people living on their own (1) More young people living in flats (1)
 More marriages ending in divorce (1) More single people (1)/later marriages (1)
 NOT second homes. 2

- b) Likely to be more waste created (1) although more recycling may occur (1) 2
 More places to collect waste from (1)
 More money needed for waste collection (1)

Total 4

4. a) i) Household waste is waste produced in the home / garden (1) such as food waste, paper, glass / bottles, plastics, grass cuttings etc. (any two or more for the second mark) NOT waste produced in the house(hold) 2
- ii) Commercial waste is waste produced by shops / retailers / offices/business/ service industry (1) (not just 'by commerce')(not industry) such as paper, boxes / packaging, waste food from restaurants etc. (any two or more for the second mark) 2
- b) i) Composting is allowing organic / vegetable matter/garden waste to decay / decompose 1
- ii) Recycled increased (1) whereas landfill decreased (1) from 15.6% to 19.0% (1) from 75% to 72% (1) (or 22.1 m tonnes to 20.9 m tonnes) 3
 Max. 2 marks if no data given.
- c) i) High cost / expensive (1) Releases greenhouse gases (1) contributing to global warming (1) Gases and smoke produced can cause cancer (1) or contribute to acid rain (1) ash is left over (1) 2
- ii) Advantages:
 Methane gas generated can be used as an energy source (1)
 Can be enclosed (1) can be monitored / made sanitary or clean (1)
 Can keep waste buried for long periods / years (1) 3

Total 13

5. a) i) 2000 1
- ii) Recycling rate has increased (1) from 7.6% to 18% (1) Increased more rapidly or at an increasing rate (1) since 2002 (1) 2
- b) i) East Anglia, South East, South West (all three required) 1
- ii) There has been an increase in the recycling rate (in virtually all areas) (1)
- Over half of the areas were below 10% in 1999 (1)
 whereas over half were above 15% in 2004 (1)
 Only a few areas were above 15% in 1999 (1)
 Whereas only a few were below 15% in 2004 (1)
 Credit identified changes for each region
 1 mark for 4 regions, 2 marks for 8 regions

Greatest increase in Northern/E. Anglia (1)
Smallest increase in NW/Yorks and Humberside/SE/ Sunderland (1)

4

Total 8

6. No mark for choice of policies.

Credit valid reasons for candidates' choices of two policies and rejection of the other two.

Criteria include:

- relevance to Sunderland's history of waste production (increasing at 3.5% per year until 2002/03 but then falling for the first time in 2003/04)
- relevance to Sunderland's changing population (slightly decreasing) and number of households served
- requirement for Sunderland to meet EU and UK government aims
- impact on the environment - local and national (e.g. pollution - visual, noise, atmospheric etc.), and global (e.g. global warming / climate change)
- health and safety issues
- cost and cost effectiveness

Some suggested advantages and disadvantages / possible reasons for choosing / rejecting each Option

<p><u>Option 1</u> To reduce the amount of waste the Council has to handle</p>	<p>Option 2 To increase the sorting of waste</p>	<p>Option 3 To increase the incineration of waste</p>	<p>Option 4 To reduce the use of landfill sites</p>
<p>ADVANTAGES / possible reasons for choosing the Option</p>	<p>ADVANTAGES / possible reasons for choosing the Option</p>	<p>ADVANTAGES / possible reasons for choosing the Option</p>	<p>ADVANTAGES / possible reasons for choosing the Option</p>
<ul style="list-style-type: none"> - Up to 2003 waste was increasing by 3.5% a year [cf. 3% for UK] - but since 2003 the amount has decreased [2003 = 165,385 tonnes, 2004 = 157,954 tonnes] - we need to maintain that decrease - Reduces need for / frequency of kerbside collections and street cleaning - Reduces amount of sorting needed at MRFs - Reduces amount of landfill / incineration needed - vital as 89.7% of Sunderland's household waste went to landfill in 2005 - Cheaper for council - so may reduce council tax for householders - Encourages individual responsibility for sorting / recycling / composting - One compost bin reduces green waste by 170kg per year - Incineration is expensive as waste has to be sent 50kms to Cleveland - so if less waste is produced / sent, cost is reduced 	<ul style="list-style-type: none"> - More efficient - Would make kerbside collections easier / cheaper - Reduces the need for council to sort waste at MRFs - Reduces amount of landfill / incineration needed - vital as 89.7% of Sunderland's household waste went to landfill in 2005 - Cheaper for council - so may reduce council tax for householders - Encourages individual responsibility for sorting / recycling / composting - Encourages households to take sorted / recycled waste to bring sites [only 2% currently] - Would help to maintain the fall in cost of waste collection [£26.10 in 1999, £24.61 in 2001 - below the national ave.] 	<ul style="list-style-type: none"> - Building new modern incinerator in Sunderland means waste would not have to be sent 50kms to Cleveland, which is costly - Could handle 30% of Sunderland's waste by 2015 [only 0.003% in 2005] (Ave. for England in 2004 was almost 9%) - Burning solid waste is now more efficient due to modern technology - Energy recovered could provide heat for up to 5000 households. This would help to achieve Govt. target of recovering value from 67% of municipal waste by 2015, and reduce use of coal / oil / gas - Reduces waste by up to 75% in weight / 90% in volume, so less landfill is needed 	<ul style="list-style-type: none"> - In 2005 Sunderland sent 89.7% of waste to 5 landfill sites [cf. only 72% for England in 2004] - Landfill is costly to council - £20 per tonne, and this is to increase due to UK Landfill Tax - Landfill sites are eyesores - They produce dust, smell - They pose health risks e.g. by attracting vermin - They pose environmental risks e.g. fires and toxic gases / chemicals - Greenhouse gases esp. methane can be generated, contributing to global warming - Leachate can get into water supply - Fewer landfill sites means more land for farming / more brownfield sites can be used for housing etc.

<p>- By encouraging householders to recycle / compost waste, it would help to achieve Govt. targets for recycling / composting (33% by 2015) [in 2005 only 9.2% was recycled, and 1.1% composted] [cf. UK ave. of 19%]</p> <p>- Cheaper for householders as home compost bins only £15 from council (cf. £25-40 from garden centres)</p>			
<p>DISADVANTAGES / possible reasons for not choosing the Option</p>	<p>DISADVANTAGES / possible reasons for not choosing the Option</p>	<p>DISADVANTAGES / possible reasons for not choosing the Option</p>	<p>DISADVANTAGES / possible reasons for not choosing the Option</p>
<p>- Reducing waste might mean reduced collections which could require provision of more bring sites with additional costs</p> <p>- Difficult to monitor if compost bins are being used</p> <p>- Composting produces CO₂ which is a greenhouse gas contributing to global warming</p> <p>- unlikely to be achievable as decreasing population is offset by increasing number of households</p>	<p>- Some people might be unwilling to sort waste</p> <p>- Need to provide additional / separate bins for different types of waste, so extra cost</p> <p>- Still requires unsorted waste to be handled / processed, and incinerated / sent to landfill</p> <p>- May result in increased cost of kerbside collections, which is at present below the National ave. [£24.61 in 2001 cf. National ave. £30.35]</p> <p>- Sorting / taking waste to bring sites is only possible for car owners, which encourages car use / pollution etc.</p>	<p>- Building new incinerator in Sunderland would be very expensive / cost c.£30m</p> <p>- Incineration releases greenhouse gases which contribute to global warming</p> <p>- Gases / smoke can also contribute to acid rain</p> <p>- Gases / smoke can be toxic / cause cancer</p> <p>- Not all the waste is disposed of / ash is left</p> <p>- Safety precautions increases cost of incineration</p> <p>- Possible energy production for 5000 homes is only a very small amount [4% of households]</p>	<p>- Landfills can eventually provide reclaimed land for farming, housing etc., especially if done efficiently</p> <p>- Technology means gases such as methane can be monitored / controlled / used as an energy source, so there is no need to reduce landfilling</p> <p>- Landfills, despite their problems, are still preferable to incineration, which can affect more people e.g. because of smoke / air pollution</p> <p>- Landfills can be an efficient way of reclaiming derelict land to enable it to be used</p>

<p>Level 1 1-4 marks</p>	<p>Only considers a few relevant criteria Probably only uses obvious points from figure 11</p> <p>Makes simple points lifted from the Resource Booklet e.g.</p> <p>The slight reduction in population in Sunderland means less waste will be produced</p> <p>Composting provides humus for garden soil</p> <p>Increased waste collections will mean less pollution outside homes</p> <p>Incineration results in a reduction in volume and weight of waste materials</p> <p>Landfill can eventually provide more land for agriculture</p> <p>Composting produces carbon dioxide, a greenhouse gas</p> <p>Incineration causes harmful atmospheric emissions</p> <p>Landfill creates smell, dust and vermin</p> <p>For the top mark, makes several simple points.</p>
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<p>Level 2</p> <p>5-8 marks</p>	<p>Considers a number of relevant criteria May use more sources than figure 11</p> <p>Makes a number of simple points, but also includes at least one developed (D) point (i.e. elaborates with more detail, or explanation, or makes comparisons).</p> <p>The 3.5% annual increase in waste handled up to 2002/03 means that Sunderland council must encourage householders to compost at home (D)</p> <p>The falling cost of kerbside waste collections (by £1.49 per household) means that Sunderland council should be able to afford to increase collections, and sorting at MRFs (D)</p> <p>The 90% volume reduction gained by incineration means that much less landfill is needed (D)</p> <p>Energy gained during incineration can reduce our use of coal, oil and gas, so that these will last longer, and the UK's reliance on them will be reduced (D)</p> <p>Landfill can be used to reclaim derelict or useless land such as quarries which can then be made productive e.g. for agriculture (D)</p> <p>Householders will never be able to recycle a significant amount of waste via bring sites - Sunderland only achieves 2% of its recycling is gained in this way (D)</p> <p>Solid and liquid residues from incineration create environmental pollution, the amount and impact of which is difficult to measure (D)</p> <p>Landfill is dangerous to human health because 'leachate' can get into the water supply (D)</p> <p>For the top mark:</p> <ul style="list-style-type: none"> - Includes a few developed (D) points - Writes in sentences with a clear and structured style. Spells, punctuates and uses the rules of grammar with considerable accuracy.
<p>Level 3</p> <p>9-12 marks</p>	<p>Considers a range of criteria May explicitly prioritise between them</p> <p>Includes <u>many</u> developed (D) points (i.e. elaborates with more detail, or explanation, or makes comparisons).</p> <p>May see some implications not mentioned in the Resource Booklet.</p> <p>Composting provides humus as a garden soil conditioner, which could help to reduce weeds - reducing green waste, and retaining moisture - reducing consumption of water (D)</p> <p>Incineration enables recovery of metals which can reduce the need for mining e.g. in LEDCs, conserving resources and meaning a net reduction in atmospheric and land pollution (D)</p> <p>Recycling at 'bring' sites can really only be done by car owners so recycling rates may be lower in poorer areas (D)</p>

Probably acknowledges some problems, as well as advantages, of chosen options (and vice versa for rejected options).

Although composting is seen as environmentally friendly, it can produce CO₂, which is a greenhouse gas, which can contribute to global warming (D)

Incineration itself produces pollution via atmospheric emissions - although the energy generated can reduce fossil fuel use, so that there could be a net reduction in emissions (D)

Although landfill is seen as unsightly and environmentally unfriendly, it is still preferable to incineration and its polluting effects on the air (D)

May include some well developed (WD) points.

A slightly decreasing population is being offset by an increasing number of households, particularly comprising the elderly; this means waste production is likely to rise, whilst the ability to compost and recycle reduces (WD). This in turn means that incineration and landfill are likely to have to be continued - but incineration and its reduction in volume and weight of waste material, will mean that landfill capacity will not be as problematic as suggested. (WD)

The increase in the number of households receiving weekly rubbish collections, and the increasing amount of home sorting and recycling of waste materials, means that the need for incineration and landfill will inevitably reduce (WD). This will be beneficial not only because incineration and landfill cause visual and atmospheric pollution, but also because the recycling will reduce our consumption of new resources, whilst enabling the government to reach its landfill reduction and increased recycling targets. (WD)

For the top mark:

- Makes some well developed (WD) points in a thoroughly argued, balanced answer
- Writes in sentences that are clear, structured and coherent.
Spells, punctuates and uses the rules of grammar with few errors, using specialist terms appropriately and with precision.

Total 12

Paper Total 60