Name_____ **Date**_____

Eurovision Numeracy Assignment

1. An estimated one hundred and twenty five million people across the world watch the Eurovision Song Contest every year. Write this number in figures.

2. Complete the table below.

	2004	2005	2006	2007	2008	2009
Calls	4,551,698	3,892,330	4,312,155		4,257.583	4,517,933
SMS	2,631,177	2,662,975	4,228,169	5,073,894	4,570,944	
Total votes		6,555,305		8,778,480		10,680,682

3. The table below shows the scores for some of the countries that entered in 2003

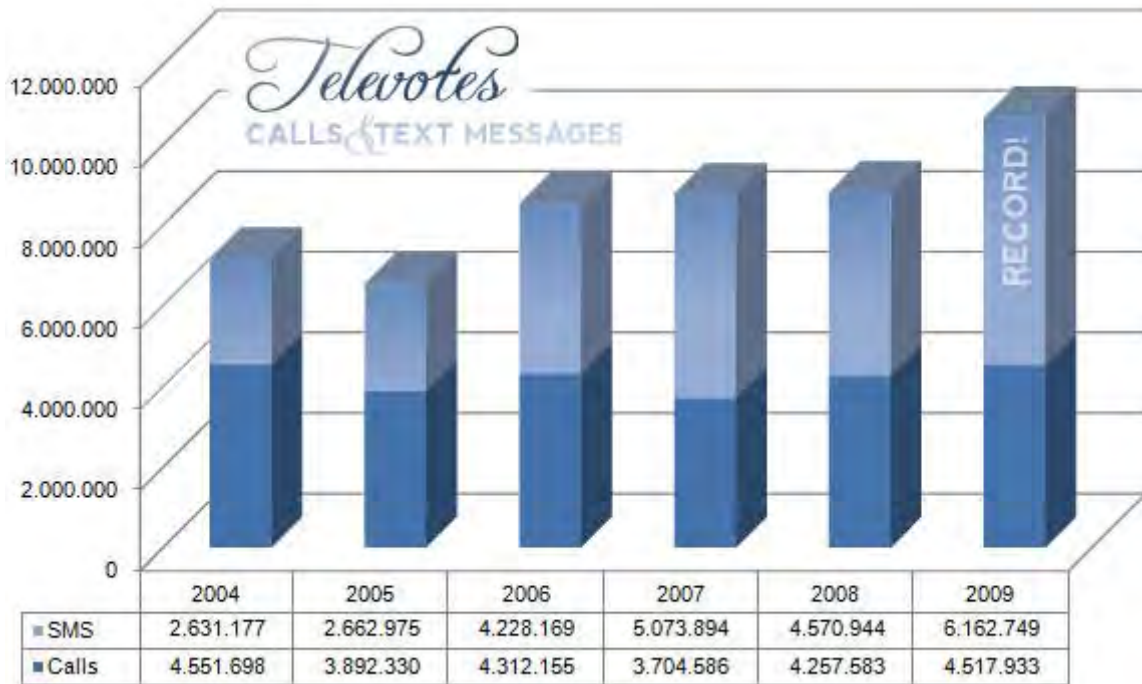|			
Turkey	167	Germany	53
Belgium	165	Ukraine	30
Russia	164	Croatia	29
Norway	123	Bosnia Herzegovina	27
Sweden	107	Greece	25
Austria	101	France	19
Poland	90	Israel	17
Spain	81	Cyprus	15
Iceland	81	Estonia	14
Romania	73	Portugal	13
Ireland	53	Slovenia	7

Work out the mean, mode, median and range of the scores.
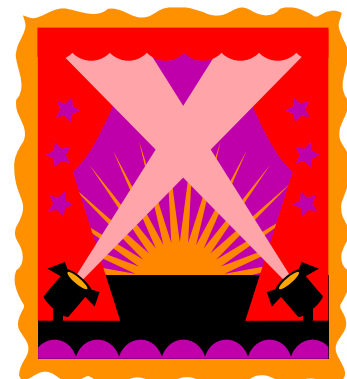
Name_____ Date_____

Eurovision Numeracy Assignment

4. Look at your completed table in Question 2. How many more votes were there in 2006 than 2005?

5. Describe at least one trend shown on the graph.

	2004	2005	2006	2007	2008	2009
■ SMS	2.631.177	2.662.975	4.228.169	5.073.894	4.570.944	6.162.749
■ Calls	4.551.698	3.892.330	4.312.155	3.704.586	4.257.583	4.517.933

Televotes — CALLS & TEXT MESSAGES

6. The highest score each country can give is 12. In 2010 there will be 39 contestants. What is the highest score the winner could get? Remember! They can't give themselves points!

7. The stage is 15m x 10m. What is its area?

8. What is the perimeter of the stage?

Name_____ **Date**_____

Eurovision Numeracy Assignment

9. The arena holds 90,000 people. 65% of the tickets sold on the first day. How many were left over?

10. The contestant from Luxembourg is planning to spring out of a box. The dimensions are: length 3m, width 200cm, height 1.5m. What is the volume of the box?

11. There are 39 entries in 2010. Each song has a maximum limit of 3 minutes. There also needs to be two intervals of 15 minutes and the voting takes an hour. What is the minimum length of time needed for the show?

12. All tickets cost 1600 NOK (Norwegian Kroner) and there is a booking fee of 45 NOK per ticket. How much will it cost for 5 adults?

13. The exchange rate is 1NOK = 0.11p. How much does it cost per person in £?

Kindly contributed by Carrie Bray, Northampton College.
Covers many L1 and L2 number, measure and data elements. Also suitable for underpinning Functional Mathematics.

Name_____ **Date**_____

Eurovision Numeracy Assignment

14. You decide to go and watch the live final. The flight costs £150. The hotel costs £40 per night per person. You are staying two nights. Don't forget the cost of your ticket! How much will it cost in total?

15. You take out a small loan for your trip. The total interest you will pay will be 5.5%. How much do you pay back in total?
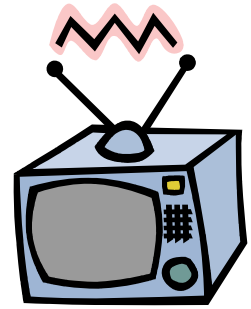
16. You decide to pay back the total amount of the loan in installments of £50 per month. How long will it take you to pay it back?

17. If the arena is full, how much money will the organisers make from ticket sales in UK pounds?

18. Round this number to the nearest ten thousand.

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Name_____ **Date**_____

Eurovision Numeracy Assignment

19. 70% of all home viewers home decide to vote. a) What is this as a fraction? b) How many home viewers voted?

20. You leave your hotel at 5.55pm and arrive at the arena at 6.35pm. How long did it take you to get there?

21. The bar staff expect 30% of the audience to buy a bottle of beer at the interval. How many bottles of beer do they need to order?

22. If there is a ratio of women to men in the audience is 2:1, how many men are there?

23. In 54 years, Norway has come last 10 times. Write this as a fraction and simplify.

24. In 54 years, Norway has won 3 times. Write this as a fraction and simplify.

25. In 2005 6,555,305 people voted. Round this number to the nearest thousand.

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Covers many L1 and L2 number, measure and data elements. Also suitable for underpinning Functional Mathematics.

Name_____ **Date**_____

Eurovision Numeracy Assignment

26. The UK has a population of 60,587,000. Ireland has a population of 4,339,000. Germany has a population of 82,315,000. If everyone in these countries votes, how many votes would that be in total?

27. How many more people are there in Germany than in the UK?

28. Look at the populations of these countries. What is the range of the populations?

Iceland	Sweden	Finland	Norway	Denmark
312,900	9,143,000	5,298,000	4,770,000	5,471,000

29. What is the median of the populations?

30. It costs 15p to vote from a landline. You really like 6 of the entries and decide to vote for all of them, How much will it cost?

31. Each country gives points from 1-8 and then 10 points and 12 points. How many points does each country give?

32. In 1998, there were 25 countries. How many points were given in total?

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Covers many L1 and L2 number, measure and data elements. Also suitable for underpinning Functional Mathematics.

Name_____ **Date**_____

Eurovision Numeracy Assignment

33. The show starts at the time shown on the clock. How would you write this in the 24 hour clock?

34. The Romanian song lasted for 167 seconds. Is this within the 3 minute time limit?

35. One third of the songs are sung in English. What is this as a %?

36. This year Israel is entering a song called "Symmetry and Tessellation". They want shapes with at least 2 lines of symmetry that tessellate for their stage set. Name at least 3 shapes they could use.

37. Copy out the words EUROVISION SONG CONTEST. Mark the lines of symmetry on each letter and any right angles.

38. The hotel you are staying at has 150 rooms. On average, each room needs 10 clean towels per week. Show the calculation for approximately how many towels are needed per month.

39. You put a £10 bet on the UK to win. If 40 countries enter what is the likelihood of you winning your bet?

40. You decide to place two bets. One for the UK and one for Spain. What chance do you have of winning your bet now?

Eurovision Numeracy Assignment
Answers | Teaching notes | Functional Maths mapping

1 125,000,000

2

	2004	2005	2006	2007	2008	2009
Calls	4,551,698	3,892,330	4,312,155	3,704,586	4,257,583	4,517,933
SMS	2,631,177	2,662,975	4,228,169	5,073,894	4,570,944	6,162,749
Total votes	7,182,875	6,555,305	8,540,324	8,778,480	8,828,527	10,680,682

3 Mean: 66.09 Modes: 53 and 81 Median: 53 Range: 160

4 Look at the table below. How many more votes were there in 2006 than 2005? 1,985,019

5 Describe at least one trend shown on the graph. For example: The total number of votes has increased every year since 2004 (with the exception of 2005). Over the same period of time the number of text votes (SMS) has also increased except for a dip in 2005.

6 The highest score each country can give is 12. In 2010 there will be 39 contestants. What is the highest score the winner could get? They can't give themselves points! 12 x 38=456

7 The stage is 15m x 10m. What is its area? 150m^2

8 What is the perimeter of the stage? 15+15+10+10= 50m

9 The arena holds 90,000 people. 65% of the tickets sold on the first day. How many were left over? 58500 sold, 31500 left

10 The contestant from Luxembourg is planning to spring out of a box. The dimensions are: length 3m, width 200cm, height 1.5m. What is the volume of the box? 9m^3

11 There are 39 entries in 2010. Each song has a maximum limit of 3 minutes. There also needs to be an interval of 15 minutes and the voting takes an hour. What is the minimum length of time needed for the show? 207 mins / 3 hr 27 min

12 Tickets cost 1600 NOK and there is a booking fee of 45 NOK. How much will it cost for 5 adults? 8225 NOK

13 The exchange rate is 1NOk = 0.11p. How much does it cost per person in £? 8225 NOK x 0.11 = £904.75 then divide by 5 to get £180.95 per person

14 You decide to go and watch the live final. The flight costs £150. The hotel costs £40 per night per person. You are staying two nights. Don't forget the cost of your ticket! How much will it cost in total? 150 + 80 + 180.95= £410.95 per person

15 You take out a small loan for your trip. The total interest will be 5.5%. How much do you pay back in total? 410.95 + 22.60= £433.55

16 You decide to pay back the amount in installments of £50 per month. How long will it take you to pay it back? 9 months (the last installment would only be £33.55)

17 If the arena is full, how much money will the organisers make from ticket sales in UK pounds? £16,285,500

18 Round this number to the nearest ten thousand. 16,290,000

19 70% of all home viewers decide to vote. a) 7/10 b) How many home viewers voted? 125 million divided by 100 = 1,250,000 (i.e. 1%). 1,250.000 x 70 = 87,500,000

20 You leave your hotel at 5.55pm and arrive at the arena at 6.35pm. 40 mins

21 The bar staff expect 30% of the audience to buy a bottle of beer at the interval. How many bottles of beer? 90,000 divide by 10 = 9000 (i.e. 10%). 9,000 x 3= 27000

22 If there is a ratio of women to men in the audience is 2:1, how many men are there? 30,000

23 In 54 years, Norway has come last 10 times. Write this as a fraction and simplify. 5/27

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Eurovision Numeracy Assignment
Answers | Teaching notes | Functional Maths mapping

24 In 54 years, Norway has won 3 times. Write this as a fraction and simplify. 1/18

25 In 2005, 6,555,305 people voted. Round this number to the nearest thousand. 6,555,000

26 The UK has a population of 60,587,000. Ireland has a population of 4,339,000. Germany has a population of 82,315,000. If everyone in these countries votes, how many votes would that be in total? 147,241,000

27 How many more people are there in Germany than in the UK? 21,728000

28 Look at the populations of these countries. What is the range of the populations? 9,143,000 - 312,00 = 8,830,100

29 What is the median of the populations? 5,298,000

30 It costs 15p to vote from a landline. You really like 6 of the entries and decide to vote for all of them, How much will it cost? 90p

31 Each country gives points from 1-8 and then 10 points and 12 points. How many points does each country give? 58 (1+2+3+4+5+6+7+8+10+12)

32 In 1998, there were 25 countries. How many points were given in total? 25x58=1450

33 The show starts at the time shown on the clock. How would you write this in the 24 hour clock? 19:15

34 The Romanian song lasted for 167 seconds. Is this within the 3 minute time limit? Yes

35 One third of the songs are sung in English. What is this as a %? 33.3%

36 This year Israel is entering a song called "Symmetry and Tessellation." They want shapes with at least 2 lines of symmetry that tessellate for their stage set. Name at least 3 shapes they could use. Squares, rectangles, hexagons

37 **E U** R **O V I** S **I O** N S **O** N G **C O** N **T E** S **T**. Blue/bold = has one or more lines of symmetry. T and E have right angles

38 The hotel you are staying at has 150 rooms. Each room needs 10 clean towels per week. Show the calculation for how many towels are needed per month. 150 x 10 x 4 = 6,000

39 You put a £10 bet on the UK to win. If 40 countries enter what is the likelihood of you winning your bet? 1/40

40 You decide to place two bets. One for the UK and one for Spain. What chance do you have of winning your bet now? 2/40 = 1/20

Level 1 and Level 2 Adult Numeracy

This assignment covers many aspects of L1 and L2 adult numeracy (whole numbers; decimals, fractions and percentages; common measures and data handling). Strictly, if being used for L1 and L2 numeracy exam practice, calculators should not be permitted but tutors should use their judgment as some questions are rather tedious if done by hand!

Functional Maths

This resource is also ideal for underpinning many Functional Maths coverage and range statements at Levels 1 and 2 (see page 10). However, in Functional Mathematics exams it is the process skills that are assessed (again, see page 10); these are key to successful Functional Maths teaching and must always be developed and stressed during teaching.

If using this assignment for Functional Maths practice calculators should be allowed and students should be encouraged to not only show all their working out but to also show evidence that they have checked their answers.

Eurovision Numeracy Assignment
Answers | Teaching notes | Functional Maths mapping

Functional Skills criteria – highlighting indicates main skills covered in this resource, although these will vary with the student group and how the resource is used by the teacher. In Functional Mathematics the process skills must be developed and stressed during teaching (see page 9).

Process Skills (all levels)		
Representing – selecting the mathematics and information to model a situation	**Analysing** – processing and using mathematics	**Interpreting** – interpreting and communicating the results of the analysis
Skill Standards (Level 2)		
• understand routine and non-routine problems in familiar and unfamiliar contexts and situations • identify the situation or problems and identify the mathematical methods needed to solve them • choose from a range of mathematics to find solutions	• apply a range of mathematics to find solutions • use appropriate checking procedures and evaluate their effectiveness at each stage	• interpret and communicate solutions to multistage practical problems in familiar and unfamiliar contexts and situations • draw conclusions and provide mathematical justifications
Skill Standards (Level 1)		
• understand practical problems in familiar and unfamiliar contexts and situations, some of which are non-routine • identify and obtain necessary information to tackle the problem • select mathematics in an organised way to find solutions	• apply mathematics in an organised way to find solutions to straightforward practical problems for different purposes • use appropriate checking procedures at each stage	• interpret and communicate solutions to practical problems, drawing simple conclusions and giving explanations

Coverage and Range statements (indicative only)
Coverage and range statements provide an indication of the type of mathematical content candidates are expected to apply in functional contexts. Relevant content can also be drawn from equivalent National Curriculum levels & Adult Numeracy standards.

Level 2	
• understand and use positive and negative numbers of any size in practical contexts • carry out calculations with numbers of any size in practical contexts, to a given number of decimal places • understand, use and calculate ratio and proportion, including problems involving scale • understand and use equivalences between fractions, decimals and percentages • understand and use simple formulae and equations involving one or two operations	• recognise and use 2D representations of 3D objects • find area, perimeter and volume of common shapes • use, convert and calculate using metric and, where appropriate, imperial measures • collect and represent discrete and continuous data, using information and communication technology (ICT) where appropriate • use and interpret statistical measures, tables and diagrams, for discrete and continuous data, using ICT where appropriate. • use statistical methods to investigate situations • use probability to assess the likelihood of an outcome

Level 1	
• understand and use whole numbers and understand negative numbers in practical contexts • add, subtract, multiply and divide whole numbers using a range of strategies • understand and use equivalences between common fractions, decimals and percentages • add and subtract decimals up to two decimal places • solve simple problems involving ratio, where one number is a multiple of the other • use simple formulae expressed in words for one- or two-step operations	• use data to assess the likelihood of an outcome • solve problems requiring calculation, with common measures, including money, time, length, weight, capacity & temperature • convert units of measure in the same system • work out areas and perimeters in practical situations • construct geometric diagrams, models and shapes • extract and interpret information from tables, diagrams, charts and graphs • collect and record discrete data and organise and represent information in different ways • find mean and range

References: Ofqual (2009), *Functional Skills criteria for Mathematics: Entry 1, Entry 2, Entry 3, level 1 and level 2.*
http://www.ofqual.gov.uk/files/2009-11-functional-skills-criteria-for-mathematics.pdf
Further functional skills documents available at http://www.ofqual.gov.uk/

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