

Teaching Mathematics through Hurling, Football and Camogie

By Seán Delaney

In a recent article in the *Sunday Tribune* (December 12th 2001) Joe Lee wrote that sport is too important in our lives to be left to the sports pages of newspapers. He went on to say that 'the first maths that many can see as relevant is being able to read league tables. It's amazing how [children's] arithmetic can improve when they want to follow the fortunes of their team.' I have been aware for some time now that this is indeed true and that our own Gaelic games offer many opportunities for children to practise their maths. Here are some suggestions for integrating maths with Gaelic games in senior classes in the primary school.

NUMBER

1. If the final score in a match is Galway 1-9 and Kerry 0-15, who won the game? By how much did they win?

(Obj.: Solve word problems involving addition and subtraction, 3&4)

2. Here are the seating capacity figures for some of our well known GAA stadia:

Stadium	Seating Capacity
Nowlan Park, Kilkenny	30,000
Croke Park, Dublin	80,000
Páirc Uí Chaoimh, Cork	43,500
Semple Stadium, Thurles	55,000
St Tiernach's Park, Clones	33,000
St. Jarlath's Stadium, Tuam	25,000
McHale Park, Castlebar	34,000
Gaelic Grounds, Limerick	32,000

(a) Write out these venues in order of seating capacity starting with the stadium with the highest capacity. Read out your list for the boy or girl sitting beside you and see if they are the same.

(b) If a match in Nowlan Park in Kilkenny took place when the stadium was filled to $\frac{2}{3}$ of its capacity how many spectators were present?

(c) If Páirc Uí Chaoimh was filled to 50% of its seating capacity how many spectators would there be?

(d) Write a number that is between the seating capacities of Clones and Castlebar stadia.

(e) If Croke Park was filled with adults and children in the ratio of 4 to 1 how many children were present?

(f) For the same game, if tickets cost €19 for adults and if children were admitted free how much money was collected on the gate?

(Obj. Solve problems involving operations with whole numbers, fractions, decimals and simple percentages, 5 & 6; Read, write and order whole numbers, 5 & 6; understand and use simple ratios, 6)

ALGEBRA

3. In most Gaelic games each player tries to 'mark' the corresponding player during a game. E.g. a full back marks a full forward. If every player marks their

corresponding players and if each player is wearing the correct jersey, what will be the sum of the numbers on each pair's jerseys?

(Obj.: Solve one-step number sentences and equations, 5 & 6)

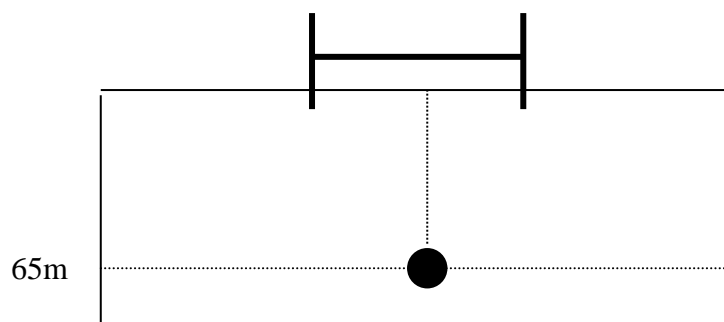
SHAPE AND SPACE

4. What shape is a gaelic games pitch?

(Obj.: Identify, describe and classify 2-D shapes, 3)

5. What shape is a football in Gaelic football? Why is this a suitable shape? Can you suggest a shape that would be unsuitable as a football?

(Obj. Explore, describe and compare the properties of 3-D shapes, 3)



6. What word describes the line that is formed by the crossbar? What word describes the line that is formed by one goalpost?

7. How would you describe the relationship between the two goal posts?

8. How would you describe the relationship between the goal posts and the crossbar?

(Obj.: Identify, describe and classify vertical, horizontal and parallel lines, 3; Identify, describe and classify oblique and perpendicular lines, 4)

9. What angles can you recognise in the goal posts?

10. The player at the black dot is going to take a 65 m puck. What kind of an angle will the line of the ball make with the goal?

(Obj.: Recognise, classify and describe angles and relate angles to shape and the environment, 5)

11. Do the goal posts have line symmetry?

12. Name one other shape at a sports stadium that has line symmetry.

(Obj. Identify line symmetry in the environment, 3 & 4)

MEASURES

13. If the dimensions of a Gaelic games pitch are 137 m long and 82 m wide, what is the area of the pitch? What is the perimeter?

14. What are the dimensions of your school pitch? Is its area larger or smaller than the pitch described above?

(Obj. Estimate, compare and measure the area of regular and irregular shapes, 4; Estimate, compare, measure and record lengths of a wide variety of objects using appropriate metric units and selecting suitable instruments of measurement, 3 & 4)

15. Hold a sliotar. Estimate what it weighs in grams. Check your estimate. The rules specify that it should weigh between 100g and 300g. Does this sliotar meet the requirements of the rules? Name a sports ball that is heavier than/lighter than this.

(Obj.: Estimate, compare, measure and record the weight of a wide variety of objects using appropriate metric units, 3)

16. A game consists of two halves of 35 minutes each and a 10 minute interval. If a game begins at 3:30pm, at what time should it end?

17. The centenary of the first public camogie match will occur in 2004. In what year was the first camogie match played? In what century was that?

18. The first hurling All-Ireland was held in 1887. One was held every year since then, except in 1888. How many all-Ireland hurling finals have there been to date?

(Obj.: Solve and complete practical tasks..involving times and dates and the addition and subtraction of hours and minutes, 4)

DATA HANDLING

19. Check the details of the players in a newspaper prior to a big game. Compare the average age, height and/or weight of the players on two teams.

(Obj.: Explore and calculate averages of simple data sets, 5&6)

20. Here are the statistics regarding the winners of the all-Ireland hurling finals:

Cork	(28)
Kilkenny	(26)
Tipperary	(25)
Limerick	(7)
Dublin	(6)
Wexford	(6)
Galway	(4)
Offaly	(4)
Clare	(3)
Waterford	(2)
Kerry	(1)
Laois	(1)

London (1)

(a) Display the information on a bar chart

(Obj.: Collect, organise and represent data using pictograms, block graphs and bar charts, 3)

The use of a calculator is permitted for the following questions:

(b) What fraction of the finals have been won by Cork? What is this as a percentage?

(c) What fraction of Irish counties (Republic) have never won an all-Ireland hurling final? What is this as a percentage?

(Obj.: Read and interpret tables, pictograms, block graphs and bar charts, 3)

(d) Given the above statistics which of these words: possible, impossible, might, certain, not sure, best describe the chances of the following teams winning this year's All-Ireland hurling final: Cork, Laois, Offaly, Kilkenny, Kerry, your county. (The answer to this will vary depending on the number of championship matches that have been played).

(Obj.: Use vocabulary of uncertainty and chance, 3 & 4)

The questions that are included here represent samples that can be adapted for classroom use according to the location of the school, the time of the year and the interests of the children. Newspaper reports of inter-county games, local games and attendance at inter-school matches can inspire additional questions or ways of adapting the suggestions given here. If you would like to suggest further items for inclusion in a later article or if you have any questions or comments regarding the items above, please write to me at: sdelaney@mie.ie.

I consulted these two websites in compiling these questions: www.gaa.ie and www.ireland.com (gaa section).

Solutions:

1. Kerry (3 points); 2.(a)Croke Park, Semple Stadium, Páirc Uí Chaoimh, McHale Park, St. Tiernach's Park, Gaelic Grounds, Nowlan Park, St. Jarlath's (b)20,000 (c)21750 (d)e.g. 33,650 (e)16,000(f)€1,216,000; 3.17; 4.rectangle; 5.sphere-will roll-cube, pyramid, cone etc; 6.Horizontal, vertical; 7.Parallel; 8.Perpendicular; 9.right and straight; 10.90°; 11.Yes; 12.e.g. the pitch itself; 13.11,234m² and 438m; 14 and 15 Answers will vary; 16.4:50pm; 17.1904; 20th century; 18.114;19. Will vary; 20. (b)¹⁴/₅₇ = 25% approx. (c)⁷/₁₃ = 54% approx.; (d)Should lead to a good class discussion!