

A Mathematical Project for Students

Barbara Healy BSc BEd





Quality educational content

Kilbaha Pty Ltd ABN 47 065 111 373 trading as Kilbaha Education PO Box 2227 Kew Victoria 3101 Australia Tel: (03) 9018 5376



+61 3 9018 5376

<u>kilbaha@gmail.com</u> <u>https://kilbaha.com.au</u>

© Barbara Clarice Healy 2020 (Third Edition) First published 2000

All publications from Kilbaha Education are digital and are supplied to the purchasing school with a school site licence to reproduce for students in both print and electronic formats

National Library of Australia Cataloguing-in-Publication entry Author: Healy, Barbara Clarice, author. Title: In Search of the Holy Grail: a mathematical project for students / Barbara Clarice Healy ; William Paul Healy (editor). Edition: Third Edition. ISBN 9781876324117 (WORD, static PDF and interactive PDF files) Subjects: Mathematics--Problems, exercises, etc. –Juvenile literature Mathematics--Study and teaching--Activity programs. Mathematics--Computer-assisted instruction. Other Authors/Contributors: Healy, William Paul, editor. Dewey Number: 510.76

IMPORTANT COPYRIGHT NOTICE

This material is copyright. Subject to statutory exception and to the provisions of the relevant collective licensing agreements, no reproduction of any part may take place without the written permission of Kilbaha. The contents of this work are copyrighted. Unauthorised copying of any part of this work is illegal and detrimental to the interests of the author. For authorised copying within Australia please check that your institution has a licence from <u>https://www.copyright.com.au.</u> This permits the copying of small parts of the material, in limited quantities, within the conditions set out in the licence.All of these pages must be counted in Copyright Agency Limited (CAL) surveys. This file must not be uploaded to the Internet.

My name is	
• I commenced my search for the Holy Grail	
at (time)	
on (day)	
date	-
• I found the Holy Grail	
at (time)	
on (day)	
date	-

• The time taken on my journey to find the Holy Grail was

A NOTE TO TEACHERS AND PARENTS.

• It has been found that this activity occupies a year 8 student for approximately one week including class time and homework.

INSTRUCTIONS TO STUDENTS.

- The purpose of this unit of work, based on the theme "In search of the Holy Grail", is to help you to revise your mathematics in the context of a problem solving activity.
- Diagrams in this book are not drawn to scale. Use the measurements on each of the diagrams in your calculations.
- When you have found the answers to the clues, put the points on the graph sheet at the back of the book. When you join these points in the order given towards the end of the booklet you will find the Holy Grail.
- Use pencil for all graph work and number the points on your graph paper with the number of the clue.



You are to join Sir Galahad, Sir Lancelot, Sir Bors, Sir Percival and Sir Arthur as they set out to find the Holy Grail. They leave from Camelot where they farewell the beautiful Lady Gweneveir. The City of Camelot, from where they depart, can be located by the co-ordinates (0,0). Follow the clues, mapping the points on your graph page and see if you can find the Holy Grail.

As you mark each point on your graph, put the number of the clue beside the point.

CLUE 1.

Starting at (0, 0) move 2 units up the y axis. Write the co-ordinates of the point you have found in the space below. Now mark this point on the graph paper at the back of this booklet and label it 1.

CLUE 1

Use the graph paper below to work out your answer to Clue 2.

CLUE 2.

Using pencil, draw the line y = -2 on your graph. Reflect your answer to Clue 1 in the mirror placed along the line y = -2. Write the co-ordinates of the point you have found in the space below. Now mark this point on the graph paper at the back of this booklet and label it 2.

CLUE 2

Use the graph paper below to work out your answer to Clue 3.

CLUE 3.

Complete the following tables for

(a)
$$y = x - 5$$

x	-3	-2	-1	0	1	2	3
у							

(b) y = -2x - 2

x	-3	-2	-1	0	1	2	3
у							

- Plot both of these lines on the graph paper below.
- Find the co-ordinates of the point where these lines cross.
- Write the co-ordinates of the point you have found in the space below.
- Now mark this point on the graph paper at the back of this booklet and label it 3.

CLUE 3

CLUE 4.

For the line y = 4x - 6 state the gradient of the line and the y intercept.

(a) gradient =

(b) y intercept =

- Your answers to (a) and (b) form the co-ordinates (a, b).
- Write the co-ordinates of the point you have found in the space below.

CLUE 4

• Plot this point on your graph

CLUE 5.

For the line x + 2y = 13 find the y value when x = 1

Write this co-ordinate in the space below

CLUE 5

(1,)

• Plot this point on your graph.

You can now return with the

Holy Grail to Camelot and

live happily ever after!

		Îv	
		9	
		8	
		7	
	5 6 6 7		-6
		6	
		5	
			_
		4	
		3	
		2	10
		1	
			x
-9 -8 -7 -6 -5 -		0 1 2 3 4 5 6 7 8 9	10 ×
-3 -6 -7 -0 -3 -			
			L.
		0 1 2 3 4 5 6 7 8 9 -1	-
		-2-	
		-2 -3	
		-2-	
		-2	
		-2 -3	
		-2 -3 -4 -5	
		-2	
		-2 -3 -4 -5 -6	
		-2 -3 -4 -5	
		-2 -3 -4 -5 -6 -7 -7 -7 -7 -2 -3 -4 -5 -6 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7	
		-2 -3 -4 -5 -6	
		-2 -3 -4 -5 -6 -7 -8	
		-2 -3 -4 -5 -6 -7 -7 -7 -7 -2 -3 -4 -5 -6 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7	
		-2 -3 -4 -5 -6 -7 -8	

Plot all your points on this graph.

Mathematical Projects for Students

- Bring mathematics to life with these projects for students.
- Introduce new topics and revise work
- Provide extra work for mathematically gifted students
- Give a sense of achievement to students who find mathematics difficult.

In Search of The Holy Grail Barbara Healy BSc BEd

ISBN 9781876324117

Published by	
KILBAHA EDUCATION	TEL: (03) 9018 5376
PO BOX 2227	
KEW VIC 3101	kilbaha@gmail.com
AUSTRALIA	https://kilbaha.com.au/



Fantastic mathematics for the postponed Olympic Year! Olympic Games Tokyo Japan.

Olympics Mathematics

Kilbaha Education (Est. 1978) ABN 47 065 111 373 PO Box 2227	Tel: (03) 9018 5376
Kew Vic 3101	Email: kilbaha@gmail.com
Australia	Web: https://kilbaha.com.au
SCHOOL ORDER NUMBER (required)D	DATE
NAME	
SCHOOL	
ADDRESS	
POSTCODETEL	
EMAIL	

- Mathematics project workbooks exciting mathematics for the classroom
 Use the DDE file on mathematics work for one work based on the Olympic
- Use the PDF file as mathematics work for one week based on the Olympics
- Use the WORD file to modify the workbooks for your classes
- Classroom trials show that students love doing these projects
 Each workbook provides a maths activity lasting one week (including homework)
- Teaching notes and answers included
- Print as many copies as you need. School site licence.
- Proven workbooks that students really enjoy using while learning heaps of great mathematics
- All workbooks supplied in both WORD format for easy editing and PDF format for easy printing
- School site licence is included.
- Print hard copies or modify the files for suit your class.
- Add to your school Intranet or put on all devices in your classroom.

Please mark (X) those required.

In the Running for the Olympics (58 pages) (Recommended for Classes 5 – 8)	\$30
In Training for the Olympics (57 pages) (Recommended for Classes 6 – 9)	\$30
In Search of the Holy Grail (Based on a Medieval Theme) (32 pages) (Recommended for Classes 7 – 10)	\$30

Total Amount = \$_____ (All prices include GST)

Email to kilbaha@gmail.com

Buy and download immediately at https://kilbaha.com.au