

# TEEJAY PUBLISHERS

Curriculum For Excellence - Mathematics (Apr '09)

FIRST LEVEL

Tying up - Curriculum for Excellence - 5 to 14 Strands - TeeJay Books A to C for the 1st Level.

Curriculum for Excellence is about introducing a more modern approach to the delivery of a comprehensive mathematics education to pupils, a need for a change of emphasis in the teaching methodology (particularly in the Secondary Sector) and making children more accountable for what, how and when they learn the fundamentals of Mathematics and Arithmetic (Numeracy).

The basic order of the actual curriculum cannot really be altered, since mathematics and numeracy are, by their nature sequential.

In this booklet, we have tied up the CfE outcomes to our existing Textbooks and the 5 - 14 strand checklist.

The problem lies in the "vagueness" of the outcomes, For example :-

I can share ideas with others to develop ways of estimating the answer to a calculation or problem, work out the actual answer, then check my solution by comparing it with the estimate. **MNU 101A**

Questions are "up to what value ? - single digits, 100's, 1000's 10000's ? What operations ? Degree of Accuracy "?

No answer is forthcoming in the document - Is it then up to the teacher to decide ? - Remember that Level 1 covers the three year period from P2 to P4 - Quite a range from which the teacher has to interpret both the content and the depth.

This is TeeJay's interpretation of what is required - (but we will obviously update this on our web-site as more information becomes available).

**Remember :- TeeJay provides, as do most other publishers, a RESOURCE - not a COURSE.**

**\*\* (Over 2200 schools in Scotland, (out of 2500), now use our resources and/or textbooks)\*\*.**

## Mathematics Framework

| CfE Level | Stage  | 5-14 Level/Qualification  | TeeJay Resources   |
|-----------|--|---|--|
| Early     | Pre school to P1 (or later ?)  | (About $\frac{2}{3}$ of Level A)  | Book A   |
| First     | P2 to P4 (or earlier/later ?)  | (A) and B + $\frac{2}{3}$ of Level C  | (Book A) Book B and $\frac{2}{3}$ of Book C  |
| Second    | P5 to P7 (or earlier/later ?)  | (C) and D and Most (all) of E   | (Book C) Book D and $\frac{2}{3}$ (all) of Book E  |
| 3rd/4th   | S1 to S3 (or earlier ?)<br>The 4th level equates to SCQF*<br>(Grade 4) i.e. Int1/General | (D & E) and some of Book F<br>or E and New General<br>(or equivalent to Intermediate 1) | Books D and E (Some/all of Book F)<br>TeeJay's books G3 and G4 (or Int 1)<br>Possibly A New "General" Textbook |
| Senior    | S4 to S6 (and beyond)  | New Advanced General<br>Credit or Intermediate 2<br>Higher & Adv Higher                 | TeeJay's IC1 and IC2<br>TeeJay's Advanced Higher Notes<br>(Possible New TeeJay Higher Book)                    |

### \* THE SCOTTISH CREDIT AND QUALIFICATIONS FRAMEWORK

| SCQF Level | SQA National Units, Courses and Group Awards | Higher Education   | Scottish Vocational Qualifications |
|------------|--|--|------------------------------------|
| 12         |  | Doctorates   |                                    |
| 11         |  | Masters  | **SVQ 5                            |
| 10         |  | Honours Degree<br>*Graduate Diploma/Certificate                |                                    |
| 9          |  | Ordinary Degree<br>*Graduate Diploma/Certificate               |                                    |
| 8          |  | Higher National Diploma<br>Diploma of Higher Education         | **SVQ 4                            |
| 7          | Advanced Higher                              | Higher National Certificate<br>Certificate of Higher Education |                                    |
| 6          | Higher                                       |  | **SVQ 3                            |
| 5          | Intermediate 2<br>Credit Standard Grade      |  | **SVQ 2                            |
| 4          | Intermediate 1<br>General Standard Grade     |  | **SVQ 1                            |
| 3          | Access 3<br>Foundation Standard Grade        |  |                                    |
| 2          | Access 2                                     |  |                                    |
| 1          | Access 1                                     |  |                                    |

\*These qualifications are differentiated by volume of outcomes and may be offered at either level.  
**\*\*Scottish Vocational Qualifications (SVQs)** are currently being credit-rated.  
 The results are available on [www.scaf.org.uk](http://www.scaf.org.uk) and [www.sqa.org.uk](http://www.sqa.org.uk).

## FIRST LEVEL

P2 - P4 (or earlier)

End-Level A to Mid-Level C

The following 6 pages, (pages 4 - 9), give a detailed outline of how we, at TeeJay Publishers, think the **curricular content** of the new Curriculum for Excellence can be covered using the 5 - 14 National Guidelines Document in conjunction with TeeJay's Maths Books (middle of) A to (middle of) C.

The following points should be noted :-

- Our Textbooks provide what we believe is a sound and imaginative Resource - (*it is not a Course*) - it is not a scheme of work, rather it supports and enhances the work done in class, developed in the school by the practising class teacher.
- The First Level stretches from P2 to P4, so this is our interpretation of the depth and pace of the course. It is difficult, without greater details, to accurately predict how much and how far into a topic a teacher should take a class, but we have attempted to do so.
- We have studied closely the 5 - 14 curricular content, as outlined in the document, and in nearly every case we discovered there to be a fairly close correlation between what is required for CfE and what is present in 5 - 14, and in our resources.
- Hence, schools should not, (*and in the present economic situation cannot*), be expected to consider purchasing a new set of resources when, (*as over 2200 schools will agree*), the Teejay Textbooks and the Homework, Assessments, Consolidation/Revision and Mental photocopiable resources already provide a more than adequate solution.
- We do not expect you to use a mixture of Books A, B and C just to follow a particular order. This is unwieldy and unworkable. Rather, you should continue to use one Level at a time - that was the very reason TeeJay produced the books, (to follow a single level in its entirety).
- In the few instances where a new topic is being introduced, (e.g. in the "Impact of Mathematics on the World"), TeeJay will develop the topic, (possibly as a set of free downloadable photocopy sheets), or will try to source an alternative set of suitable resources).

We hope the details below are of use to Head Teachers and Principal Teachers in their course planning, and to class teachers in their implementation of the new Curriculum for Excellence at the First Level.

# FIRST Level

(P2 - P4 or possibly P3)  
(End of Level A, plus B and some of Level C)


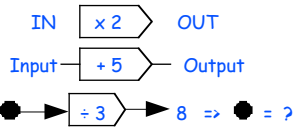
\*\*\* This is **NOT** meant as any form of course outline. It is simply an attempt to show that, by continuing to follow the (curricular) content and the order of 5 to 14, (preferably using TeeJay's Resources), schools will have also covered the curricular content of the 1st Level of Curriculum for Excellence.

## Number, Money and Measure

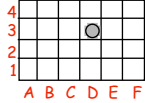
|   | Curriculum for Excellence Outcomes   | 5-14 equivalent (Level A)   | 5-14 equivalent (Level B)   | 5-14 equivalent (Level C)  | TeeJay Resources  |
|---|--|---|---|--|---|
| <b>Estimating &amp; Rounding</b>                          | I can share ideas with others to develop ways of estimating the answer to a calculation or problem, work out the actual answer, then check my solution by comparing it with the estimate. <b>MNU 1-01a</b>         | -   | Round 2 digit whole number to nearest ten (e.g. when estimating/checking calculations like :-<br>$27 + 18$ is about $30 + 20$ (= 50).   | Round 3 digit whole number to nearest ten (e.g. when estimating/checking calculations like :-<br>$134 + 23$ is about $130 + 20$ (= 150).   | B - Chapter 1<br>(18 + W/Sh 1:7)<br><br>C - Chapter 5<br>(60 - 62)  |
| <b>Number Processes</b>                                   | I have investigated how whole numbers are constructed, can understand the importance of zero within the system and use my knowledge to explain the link between a digit, its place and its value. <b>MNU 1-02a</b> | Whole numbers 0 to 20, (count, order, read/write statements, displays on calculators).<br>Halves - (practical applications only). | Whole numbers up to 100 and then up to 1000, (count, order, read/write).<br>Quarter - (practical applications only).  | Whole numbers up to 10000 (count, order, read/write).<br>Decimals to 2 places when reading/recording money and using calculator displays :-<br>2 pounds & 5 pence = £2.05.   | A - Book A1, A2, A3, A7<br><br>B - Chapter 1<br>(11 - 17 + W/Sh 1:1-1.6)<br><br>C - Chapters 1<br>(8 - 10)  |
| <b>Addition Subtraction Multiplication &amp; Division</b> | I can use addition, subtraction, multiplication and division when solving problems, making best use of the mental strategies and written skills I have developed. <b>MNU 1-03a</b>                                 | Add/Subtract mentally from 0 to 10. (in applications in number, measurement, money, including payments/change to 10p).            | Add/Subtract mentally from 0 to 20; in some cases beyond. ( $36 + 5$ or $20 + 40$ ).<br>No Calculator for 2 digit numbers.<br>Calculator for 2 digits added to/subtracted from 3 digits. (in applications in number, measurement, money, including payments/change to £1)<br>Mult/Divide mentally by 2, 3, 4, 5 and 10.<br>No Calculator for 2 digit numbers mult/divide by 2, 3, 4, 5 or 10.<br>Calculator for 2 digit numbers mult/divide by any digit.<br>(in applications in number, measurement, money, including payments/change to £1) | Add/Sub mentally 1 digit whole numbers to/from whole no. up to 3 digits<br>Mentally for subtraction by "adding on".<br>No Calculator for 2 digits to/from up to 3 digit whole number.<br>With calcr for 3 digit whole number.<br>Mult/Divn mentally within 2 - 10 times tables. and 2/3 digit number by 10.<br>No calcr - 2 digits (whole) x single digit.<br>Calcr 2 or 3 digits x 1 or 2 digit (whole number), in applications money/measure to £20. | A - Book A5, A6<br><br>B - Chapter 3, 4, 7 and 9<br>(27-37 + W/S 3:1-3:4)<br>(38-48 + W/S 4:1-4:4)<br>(64-79 + W/S 7:1-7:9)<br>(90-118 + W/S 9:1-9:8)<br><br>C - Chapters 1, 3 and 5<br>(11 - 16, 28 - 30)<br>(50 - 68) |



|   | Curriculum for Excellence Outcomes   | 5-14 equivalent (Level A)   | 5-14 equivalent (Level B)  | 5-14 equivalent (Level C)  | TeeJay Resources   |
|---|--|---|--|--|--|
| <b>Time</b>   | I can tell the time using 12 and 24 hour clocks, explain how it impacts on my daily routine and ensure that I am organised and ready for events throughout my day.<br><b>MNU 1-10a</b>           | Place events in time sequences.<br>Days of the week and Seasons and sets of pictures of activities in non-standard units.<br>Tell time using analogue and digital displays in hours only. | Place events in time sequences.<br>Include months in a year.<br>Tell time using analogue displays and terms like quarter to/past and half past.<br>Read time in hours & mins using digital displays.   | Use 12 hour times for simple timetables<br>Times of TV programmes.<br>Conventions for recording time :-<br>1.40 am = twenty to two in the morning  | A - Book A8 (pages 11-15)<br>B - Chapter 13<br>(155-162+W/S 13-2-13-4)<br>C - Cha pters 4<br>(35 - 42)   |
|   | I can use a calendar to plan and be organised for key events for myself and my class throughout the year. <b>MNU 1-10b</b>   | Knowledge of days of the week & Seasons.  | Knowledge of months of the year.   | Simple timed activities for 1 - 5 minute periods.<br>Use of calendars.<br>Recording of dates 05.03.07, 5/3/07<br>5th March 2007.   | A - Book A8 (pages 9-10)<br>B - Chapter 13<br>(152-154+W/S 13-1)<br>C - Cha pters 4<br>(46 - 47)   |
|   | I have begun to develop a sense of how long tasks take by measuring the time taken to complete a range of activities using a variety of timers. <b>MNU 110c</b>                                  | Time activities in non-standard units.  | Time activities in minutes.  | Work with hours and minutes for short durations such as morning break.   | B - Chapter 13<br>(161))<br>C - Cha pters 4<br>(43 - 49)   |
| <b>Measurement</b>  | I can estimate how long or heavy an object is, or what amount it holds, using everyday things as a guide, then measure or weigh it using appropriate instruments and units.<br><b>MNU 1-11a</b>  | Measure in non-standard units -(e.g hand-spans) - length, weight, area, volume.<br>Place pairs of objects in order.<br>Estimate lengths in convenient non-standard units.                 | Measure in easily handled units and fractions of them.<br>Length - m, $\frac{1}{2}$ m, $\frac{1}{4}$ m, cm.<br>Weight - kg, $\frac{1}{2}$ kg.<br>Place sets of objects in order.<br>(1 metre 25 centimetres = 1m 25 cm = 125 cm)<br>Read scales on measuring devices to nearest graduation (each grad labelled). | Estimate lengths and heights in easily handled standard units :- m, $\frac{1}{2}$ m, $\frac{1}{10}$ m and cm.<br>Measure in standard units -<br>- weight, accuracy extended to 20g weights - know 1 kg = 1000 g.<br>- volumes litre $\frac{1}{2}$ litre and $\frac{1}{4}$ litre<br>Select approp measuring devices and units, metre tape or stick - metres or centimetres. | A - Book A12 (pages 1-12)<br>B - Chapter 15, 18<br>(176-185+W/S 15-1-15-2<br>(198-204+W/S 18-1-18-2<br>C - Cha pter 12, 15<br>(137- 138)/(160 - 172) |
|   | I can estimate the area of a shape by counting squares or other methods.<br><b>MNU 1-11b</b>   | -   | -  | Measure the areas of shapes composed of rectangles/squares or irregular shapes using tiles or grids in square centimetres or metres  | C - Cha pter 12<br>(143-146)   |
| <b>Mathematics Impact on the world past, present and future</b> | I have discussed the important part that numbers play in the world and explored a variety of systems that have been used by civilisations throughout history to record numbers. <b>MTH 1-12a</b> | To be developed or sourced.   | To be developed or sourced.  | To be developed or sourced.  |  |

|                                     | Curriculum for Excellence Outcomes  | 5-14 equivalent (Level A)  | 5-14 equivalent (Level B)   | 5-14 equivalent (Level C)   | TeeJay Resources   |
|-------------------------------------|---|--|---|---|--|
| <b>Patterns &amp; Relationships</b> | I can continue and devise more involved repeating patterns or designs, using a variety of media. <b>MTH 1-13a</b>   | Work with patterns & sequences :-<br>Simple numbers sequences ;<br>(8 + 0 = 8, 7 + 1 = 8, 6 + 2 = 8, .....<br>Missing number(s) in sequence 1 to 10. | Work with patterns & sequences :-<br>Even and odd numbers.  | Work with patterns & relationships within and among multiplication tables e.g the link between the 3 and the 9 times tables.  | A - Book A12 (pages 13-15)<br><br>B - Chapter 16<br>(186-191+W/S 16-1-16-2)<br><br>C - Chapter 13<br>(148-153)                     |
|                                     | Through exploring number patterns, I can recognise and continue simple number sequences and can explain the rule I've applied. <b>MTH 1-13b</b>   | Copy, continue and describe simple patterns or sequences of objects of shapes of different colours.  | Whole number sequences within 100 (e.g. 10, 15, 20, 25, ..... ) or (89, 79, 69, ...).<br>More complex shape sequences :-<br> | Copy, continue and describe sequences of numbers relating to the times tables.<br>8, 16, 24, 32, .....<br>55, 49, 43, 37, .....   | A - Book A3 (page 15)<br>Book A7 (pages 11-15)<br><br>B - Chapter 16<br>(186-191+W/S 16-1-16-2)<br><br>C - Chapter 13<br>(148-153) |
| <b>Expressions &amp; Equations</b>  | I can compare, describe and show number relationships, using appropriate vocabulary and the symbols for equals, not equal to, less than and greater than. <b>MTH 1-15a</b>              | -  | -   | -   | B - Chapter 10<br>(122-124)<br><br>C - Chapter 7<br>(81-88)  |
|                                     | When a picture or symbol is used to replace a number in a number statement, I can find its value using my knowledge of number facts and explain my thinking to others. <b>MTH 1-15b</b> | -  | Find missing numbers in statements where symbols are used for unknown numbers or operators.<br><br>$4 + * = 7$ , or $4 \square = 9$ .<br>What is * and $\square$ ?  | Find the missing numbers in statements like $4 + * = 7$ , $4 \square = 20$ . (Level B)<br>Use simple function machines for operations like doubling, halving, adding or subtracting.<br><br> | B - Chapter 10<br>(119-123)<br>+ W/S 10-1a/10-1b<br><br>C - Chapter 7<br>(81-88)   |

# Shape, Position & Movement

|   | Curriculum for Excellence Outcomes   | 5-14 equivalent (Level A)   | 5-14 equivalent (Level B)   | 5-14 equivalent (Level C)  | TeeJay Resources  |
|---|--|---|---|--|---|
| <b>Properties of 2D Shapes and 3D Objects</b> | I have explored simple 3D objects and 2D shapes and can identify, name and describe their features using appropriate vocabulary. <b>MTH 1-16a</b>              | Collect, discuss and make use of 2D and 3D shapes.<br>Classify shapes by simple properties :- Those that roll, stack, slide, have straight or curved sides.<br>Identify & name squares, rectangles, triangles and circles.<br>Identify & name cubes, cuboids, cylinders, cones and spheres.<br>Create/copy 3 D shapes using blocks or everyday objects. | Collect, discuss and make use of 2D and 3D shapes.<br>Respond to written, or oral descriptions which refer to features of shape such as faces, edges, corners, sides, angles.<br>Identify & name triangular prism and square based pyramid.<br>Use construction kits.<br>Make 3D shapes from diagrams or from pictures. | Collect, discuss and make use of 2D and 3D shapes.<br>Identify 2D shapes within 3D shapes.<br>Recognise 3D shapes from 2D drawings.<br>Draw circles using a variety of methods.  | A - Book A9<br>B - Chapter 8, 17 (80-89 + W/S 8-1-8-2) 192-194+W/S 17-1-17-4<br>C - Chapter 8, 14 (89-91 + 94-100), (154-156) |
|   | I can explore and discuss how and why different shapes fit together and create a tiling pattern with them. <b>MTH 1-16b</b>                                    | -   | Find shapes that will tile and continue tilings using tiles or grids.   | -  | B - Chapter 8 (86-88 + W/S 8-3)<br>C - Chapter 8 (91 - 93)  |
| <b>Angle, Symmetry and Transformation</b>     | I can describe, follow and record routes and journeys using signs, words and angles and associated with direction and turning. <b>MTH 1-17a</b>                | Discuss position & movement like behind, in front of, above, below.<br>Locate an object in the classroom.<br>Move forwards backwards, left, right by "walking out" or using a programmable toy.   | Use a template to draw or check for a right angle.<br>Give/understand instructions for turning through a right angle.<br>Quarter and half turn, (clockwise etc.)<br>Recognise/name 4 points of compass.<br>Give & follow directions to create a square or rectangle, by "walking out" or by using a programmable toy.   | Know that a right angle is 90°<br>Use right, acute, obtuse to describe an angle.<br>Know that a "straight" angle is 180°.<br>Describe main features of a familiar journey or route.<br>Create paths on squared paper described by Forward 5, right 90°, Forward 7 .... (Use paper or programmable toys). | A - Book A11<br>B - Chapter 5, 14 (49-54 + W/S 5-1-5-2) (163-169+W/S14-1-14-2)<br>C - Chapter 9, 11 (101-108) (120-129)       |
|   | I have developed an awareness of where grid reference systems are used in everyday contexts and can use them to locate and describe position. <b>MTH 1-18a</b> | -   | Level B - Use grid references to read or plot location on a grid. => D3    | -  | B - Chapter 14 (170-173+W/S14-3-14-4)<br>C - Chapter 11 (130-134)   |
|   | I have explored symmetry in my own and the wider environment and can create and recognise symmetrical pictures, patterns and shapes. <b>MTH 1-19a</b>          | -   | Recognise symmetrical shapes by folding or by using a mirror.   | Find lines of symmetry of shapes drawn on squared grids.<br>Complete the "other" half of a simple symmetrical shape or pattern on a grid.  | B - Chapter 2 (21-26+W/S2-1-2-5)<br>C - Chapter 2 (17-25)   |

# Information Handling

Curriculum for Excellence Outcomes

5-14 equivalent (Level A)

5-14 equivalent (Level B)

5-14 equivalent (Level C)

TeeJay Resources

| <p><b>Data &amp; Analysis</b></p>               | <p>I have explored a variety of ways in which data is presented and can ask and answer questions about the information it contains. <b>MNU 1-20a</b></p>                                 | <p>Can interpret from displays by locating and counting.</p> <p>From pet display picto-graph :-</p> <ul style="list-style-type: none"> <li>How many dogs ?</li> <li>How many pets ?</li> </ul>  | <p>Can interpret from displays by asking specific questions including some similarities and some differences.</p> <p>From eye-colour graph, answer :-</p> <ul style="list-style-type: none"> <li>How many have blue eyes ?</li> <li>How many more have blue than grey ?</li> <li>Which eye-colour is most common ?</li> </ul>   | <p>Can interpret from displays/databases</p> <ul style="list-style-type: none"> <li>by retrieving specific records.</li> <li>by identifying the most and the least frequent items.</li> <li>and/or by using computer packages.</li> </ul> | <p>A - Book A8 (pages 1-8)</p> <p>B - Chapter 11 (125-138+W/S11-1-11-3)</p> <p>C - Chapter 6 (69-80)</p>                        |        |  |        |  |  |  |
|---|--|---|---|---|---|--------|--|--------|--|--|--|
|   | <p>I have used a range of ways to collect information and can sort it in a logical, organised and imaginative way using my own and others' criteria. <b>MNU 1-20b</b></p>                | <p>Tallying collections of objects.</p> <p>Counting.</p> <p>Sorting into specific sets (shape, colour, texture .....).</p> <p>Obtain info from a picture, video or story collected about themselves. (How many have red jumpers ?).</p>           | <p>Enter data using a tally sheet with individual ticks for each item.</p> <table border="1" data-bbox="1182 528 1496 632"> <tr> <th colspan="2">TUCK SHOP SALES</th> </tr> <tr> <td>Crisps</td> <td>       </td> </tr> <tr> <td>Apples</td> <td>     </td> </tr> </table> <p>Use simple databases where teacher defines the headings or fields.</p> <p>Use a computer package where appropriate.</p> <p>Conduct a class survey on hair colour.</p> | TUCK SHOP SALES   |   | Crisps |  | Apples |  | <p>Collect data from a task using simple yes/no questionnaires from a survey. Use grouped tally marks.     </p> <p>Enter data into a table using row and column headings.</p> <p>Use databases where teacher defines the headings or fields.</p> <p>Use a computer package where appropriate.</p> <p>Conduct a survey that extends beyond the class :- e.g. litter outside local shops</p> | <p>A - Book A8 (pages 1-8)</p> <p>B - Chapter 11 (125-138+W/S11-1-11-3)</p> <p>C - Chapter 6 (69-80)</p> |
| TUCK SHOP SALES                                 |  |   |   |   |   |        |  |        |  |  |  |
| Crisps  |  |   |   |   |   |        |  |        |  |  |  |
| Apples  |  |   |   |   |   |        |  |        |  |  |  |
|   | <p>Using technology and other methods, I can display data simply, clearly and accurately by creating tables, charts and diagrams, using simple labelling and scale. <b>MTH 1-21a</b></p> | <p>Use real objects like record favourite drinks with sets of cartons.</p> <p>Use pictures (pictographs).</p> <div data-bbox="837 959 1070 1110"> </div> <p>Simple diagrams like 1 to 1 mappings.</p> <div data-bbox="837 1158 1070 1286"> </div> | <p>Construct tables, charts, diagrams, such as mapping one to many;</p> <p>Construct a bar graph with axes graduated in units and with discrete categories of information.</p> <div data-bbox="1211 1031 1464 1174"> </div> <p>Use a computer package where possible.</p>   | <p>Construct a table or chart.</p> <p>Construct a bar graph with axes graduated in multiple units.</p> <div data-bbox="1570 935 1850 1078"> </div> <p>Use a computer package where possible.</p>  | <p>A - Book A8 (pages 1-8)</p> <p>B - Chapter 11 (125-138+W/S11-1-11-3)</p> <p>C - Chapter 6 (69-80)</p>                        |        |  |        |  |  |  |
| <p><b>Ideas of Chance &amp; Probability</b></p> | <p>I can use appropriate vocabulary to describe the likelihood of events occurring, using the knowledge and experiences of myself and others to guide me. <b>MNU 1-22a</b></p>           | <p>-</p>  | <p>-</p>  | <p>-</p>  | <p>TeeJay's Book 3G, Chapter 18 will be posted as a free download on our web-site later for introduction at Levels D and E.</p> |        |  |        |  |  |  |