EMWA Professional Development Programme

# Using readability tools to help edit biomedical research articles (LWF15)

**Language and writing, Foundation Level, 3.5 hours**

**Dr John Dixon, Libra Scientific Communications**

## Pre-workshop assignment

### Objectives

1. Review some techniques that help writers produce clear, concise language
2. Analyse a piece of your own writing for 'readability' using Microsoft Word's inbuilt Readability Statistics.

### Content

Please see 'Instructions' below.

### Assessment criteria

There will be no formal assessment, but please bring to the workshop your analysis.

### Instructions and questions

1. Read the three articles in *Medical Writing* cited below. You don't need to do the exercises in the articles, but they are useful if you have the time.
2. Analyse a piece of your own writing using Microsoft Word's Readability Statistics. Please refer to the detailed instructions below and the attached article 'How to analyse a piece of text in Microsoft Word using readability statistics'.

   The analysis is usually simple, but occasionally things don't work. Don't worry! If you are having trouble, please do contact me, John Dixon, on john@librasciencecomms.co.uk.

### Resources and materials

**For reading:**

Møller, C. 2017. Removing the dead wood. *Medical Writing*, 26, 14-16.
Available at: http://journal.emwa.org/writing-better/removing-the-dead-wood/

Every, B. 2017. Writing economically in medicine and science: Tips for tacking wordiness. *Medical Writing*, 26, 17-20.
Available at: http://journal.emwa.org/writing-better/writing-economically-in-medicine-and-science-tips-for-tackling-wordiness/

Lang, T. 2017. How to shorten a text by up to 30% and improve clarity without losing information. *Medical Writing*, 26, 21-25.
Available at: http://journal.emwa.org/writing-better/how-to-shorten-a-text-by-up-to-30-and-improve-clarity-without-losing-information/

### Time required

2 hours

## Analyse a piece of your own writing using Microsoft Word's Readability Statistics

**Notes**

- This is not an exercise to test whether your writing style is 'good' or 'poor'.
- However, the exercise of using readability statistics can illustrate some useful points. In the workshop, we'll go into more detail and identify what the scores are telling us.
- The readability formulas used in MS Word (Flesch Reading Ease and Flesch–Kincaid Grade Level) were never designed for and validated against scientific and technical documents.
- They usually yield 'poor' scores for such documents; the scores are adversely influenced by technical vocabulary that you often cannot avoid.
- So, don't be concerned if you get scores that suggest readability could be improved!

**Choose an example of your own writing**

Select an example of **your own writing of about 500–750 words.** Suitable writing examples include the following: part of an assignment, report, Abstract, Introduction or Discussion to a paper you have written, a literature review or the non-technical parts of a fellowship application.

- It's best to choose something written in full sentences and paragraphs, rather than lists or notes.
- Try to avoid material that is highly technical or full of data and formulas.
- Ideally, delete in-text citations, references, equations, figures, tables and statistics.
- You will get more out of analysing work in progress, rather than something that has already been read and edited by other people.

If you don't have an example of your own, you could write a short piece specifically for the course or bring someone else's text (but please, nothing that will cause offence to the original author if constructive criticisms are made!).

**Now follow the instructions in the document below: 'How to analyse a piece of text in Microsoft Word using readability statistics'**

**Write your results in the table and have them to hand during the workshop.**

| | |
|---|---|
| Average words per sentence | |
| Flesch Reading Ease | |
| Flesch–Kincaid Grade Level | |
| Passive sentence % | |

# How to analyse a piece of text in Microsoft Word using readability statistics

## Important notes

**Macs and PCs differ in the way settings are adjusted**

- These instructions apply to Macs and PCs, and separate instructions are provided for each.

**Removing elements that interfere with readability statistics**

- The readability formulas used in Microsoft Word count the total number of sentences, total number of words and average word length (in syllables).
- Everything that MS Word considers as a 'word' is counted, and this includes in-text citations, references, equations, figures, tables and statistics.
- Therefore, to get an accurate assessment of text readability, it's better to remove in-text citations, references, equations, figures, tables and statistics – as one would not usually want to include these when assessing the readability of a document.

**When things go wrong**

Sometimes readability statistics don't appear. Interference can sometimes occur if documents are divided into separate sections or have particular formatting. Here are some suggestions if statistics don't appear.

(a) **Analyse unformatted text in a completely new document**. Copy the text in your document. Open a new Word document and paste the unformatted text into the new document. Here's how:

> Copy all text from the original document

> Open a new blank Word document

> Paste / Paste Special / Unformatted Text or

> Paste [dropdown menu] / Keep Text Only

(b) **Create and run a macro.** At the end of this document are instructions on how to create and run a simple macro in MS Word on a PC. This will provide readability statistics without needing to change any settings and without performing a document check ('Editor' or 'Spelling and Grammar' check). Unfortunately, this macro cannot be used on Macs.

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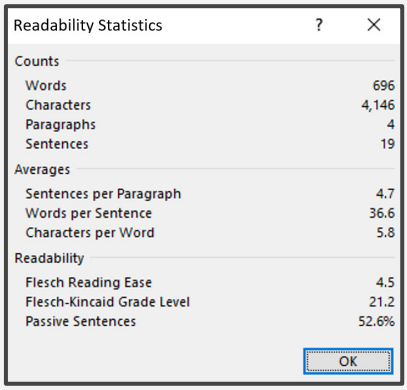
# What you are aiming to see

## Here's what you are aiming to see

**On a PC**

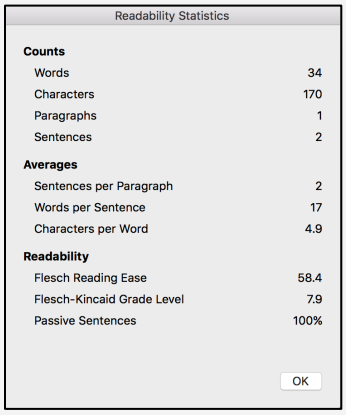


Readability Statistics

| | |
|---|---|
| **Counts** | |
| Words | 696 |
| Characters | 4,146 |
| Paragraphs | 4 |
| Sentences | 19 |
| **Averages** | |
| Sentences per Paragraph | 4.7 |
| Words per Sentence | 36.6 |
| Characters per Word | 5.8 |
| **Readability** | |
| Flesch Reading Ease | 4.5 |
| Flesch-Kincaid Grade Level | 21.2 |
| Passive Sentences | 52.6% |

OK

**On a Mac**



Readability Statistics

| | |
|---|---|
| **Counts** | |
| Words | 34 |
| Characters | 170 |
| Paragraphs | 1 |
| Sentences | 2 |
| **Averages** | |
| Sentences per Paragraph | 2 |
| Words per Sentence | 17 |
| Characters per Word | 4.9 |
| **Readability** | |
| Flesch Reading Ease | 58.4 |
| Flesch-Kincaid Grade Level | 7.9 |
| Passive Sentences | 100% |

OK

## Here's an interpretation of results if you are analysing a scientific/technical document

| | |
|---|---|
| Flesch reading ease | low values e.g. < 20 suggest readability could be improved |
| Flesch–Kincaid grade level | high values, e.g. > 16 suggest readability could be improved |

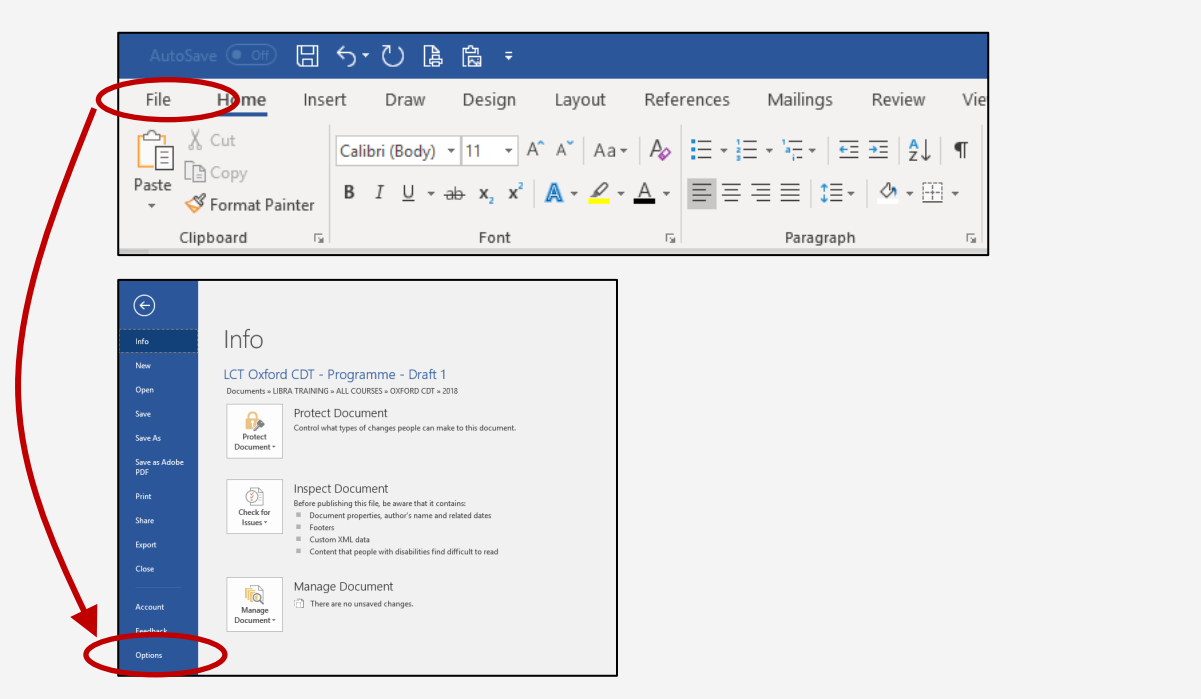
## Notes

- The readability formulas used in MS Word (Flesch Reading Ease and Flesch–Kincaid Grade Level) were never designed for and validated against scientific and technical documents.
- They usually yield 'poor' scores for such documents; the scores are adversely influenced by technical vocabulary that you often cannot avoid.
- So, don't be concerned if you get scores that 'suggest' readability could be improved!
- However, the exercise of using readability statistics can illustrate some useful points. In the workshop, we'll go into more detail and identify what the scores are telling us.

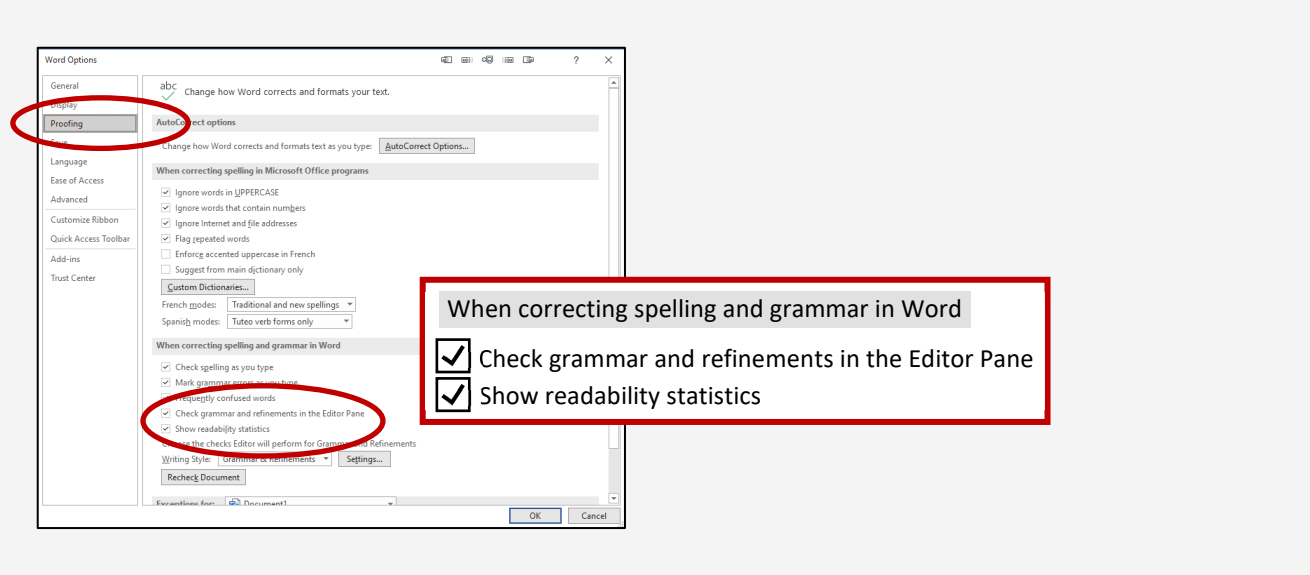
# For PC users

## Change settings in Microsoft Word so that readability statistics will display after performing a document check ('Editor' or 'Spelling and Grammar' check)

- Open a document in Microsoft Word.
- Ideally, remove items that artificially interfere with readability statistics results. These include in-text citations, references, equations, figures, tables and statistics.
- Select File / Options.



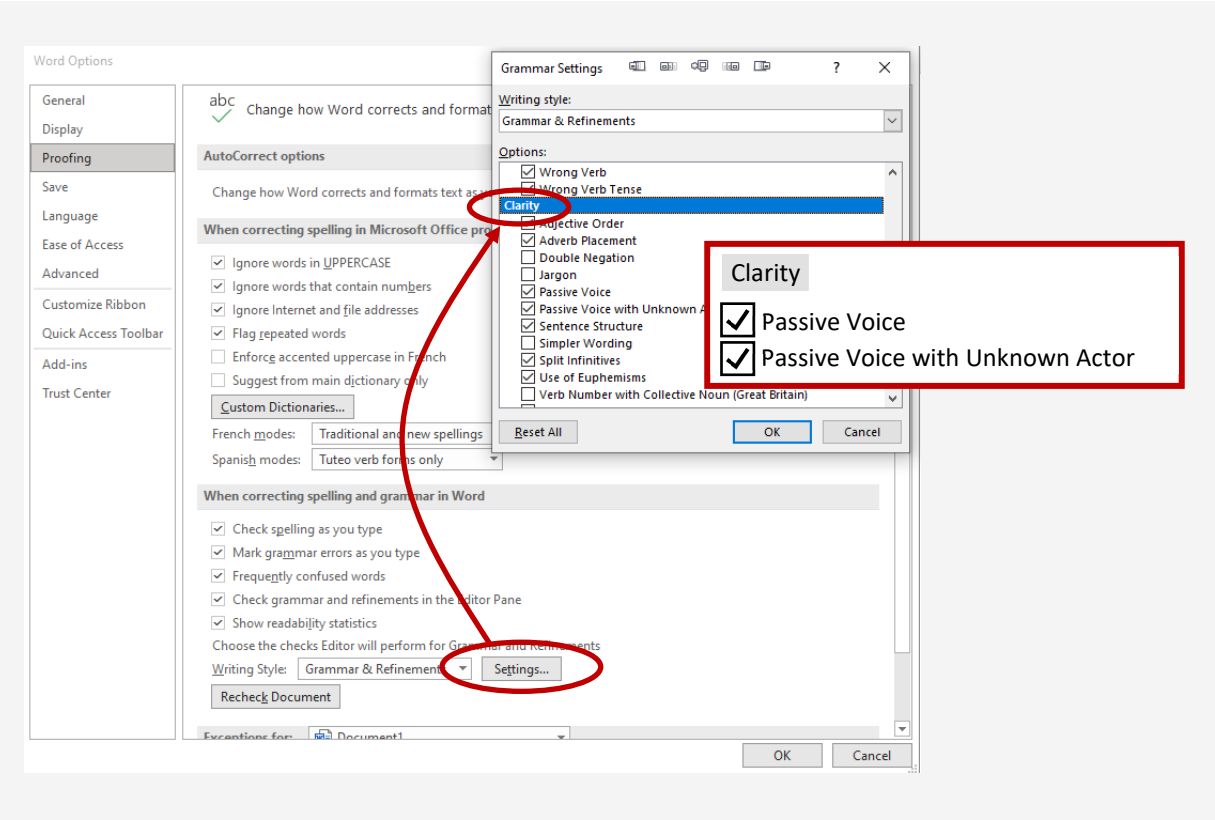

- Select the Proofing tab.



- Under the section 'When correcting spelling and grammar in Word' check 'Show readability statistics' (and make sure 'Check grammar and refinements in the Editor Pane' is also selected).

- In the same window, select the 'Settings' tab.

- Scroll down the 'Options' in the window that appears and under the sub-heading of 'Clarity' and select any options mentioning 'Passive Voice'




- Now select 'OK' to exit this window and 'OK' again to finish changing the settings.

## Run the 'Editor' (or in earlier versions of MS Word a 'Spelling and Grammar' check or 'Check Document') – after which readability statistics will appear

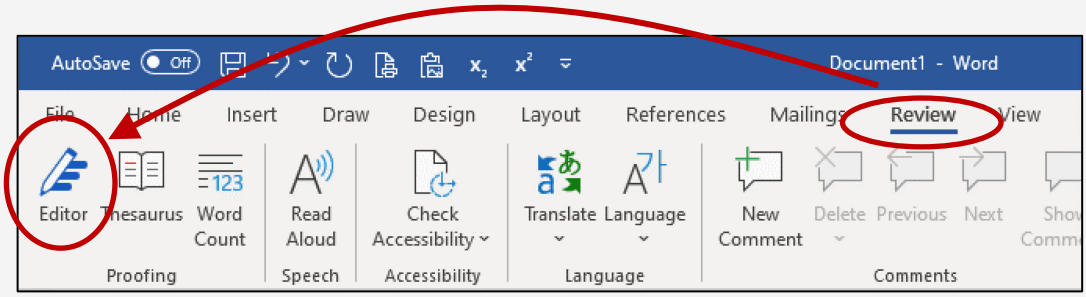
- Place your cursor at the beginning of the document.

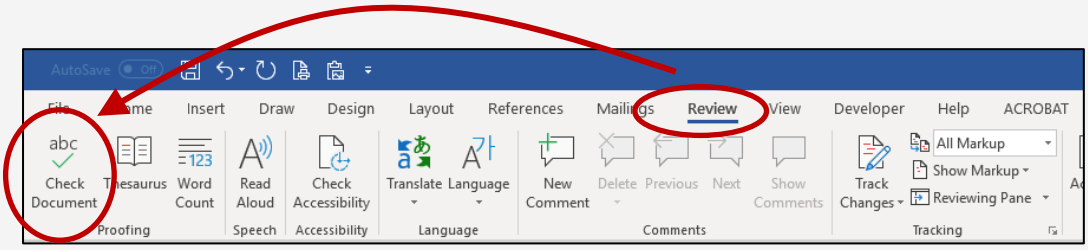
- Run the 'Editor', (or in other Word versions a 'Spelling and Grammar' check or 'Check Document') … BUT

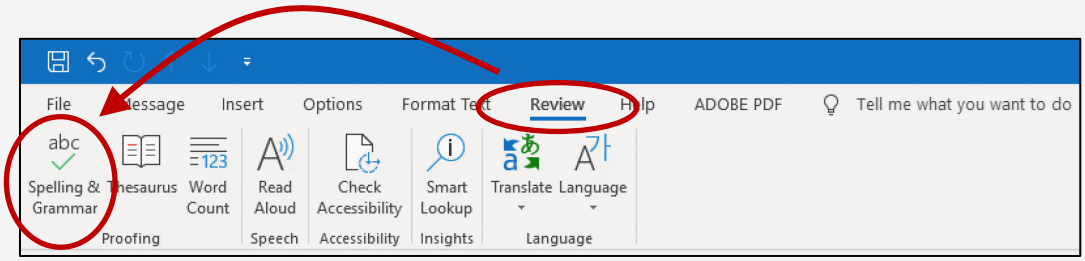
- … IGNORE any corrections offered. So just select 'Ignore All' whenever this shows (or 'Ignore Once' if this only appears) until you have completely finished the document check.

- NOTE: Microsoft has changed the name of the document checker over the years. It is now called 'Editor' but previous names include 'Spelling and Grammar' and 'Check Document'. These versions are illustrated below.

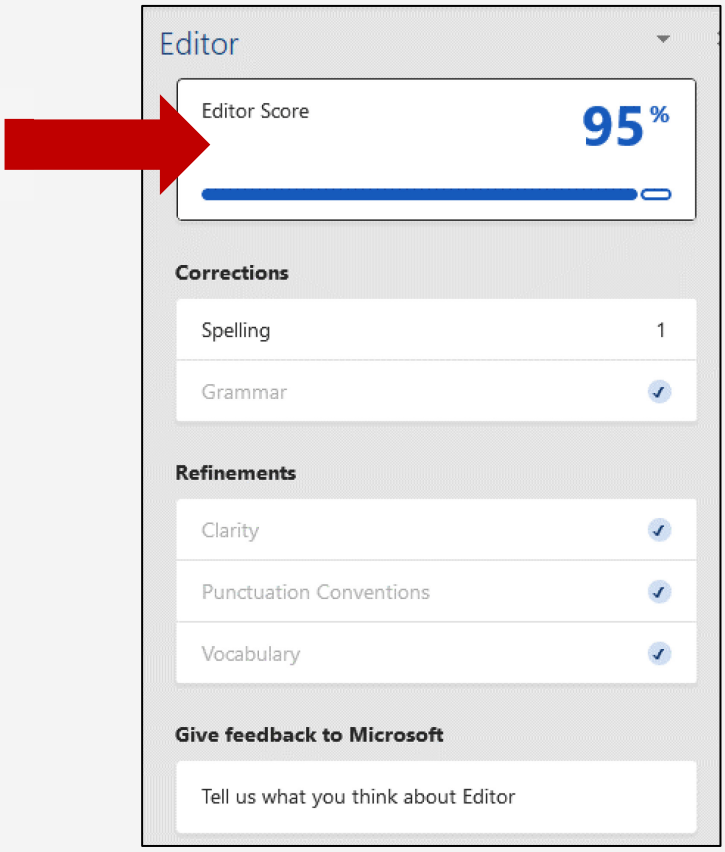
## MS Word 'Editor, 'Check Document' or 'Spelling and Grammar' checkers



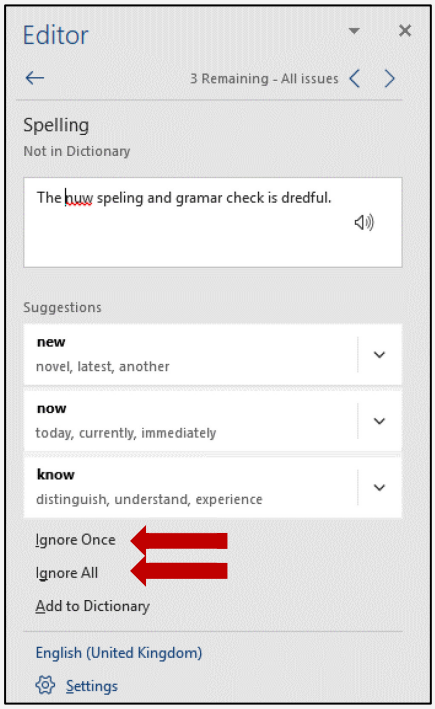



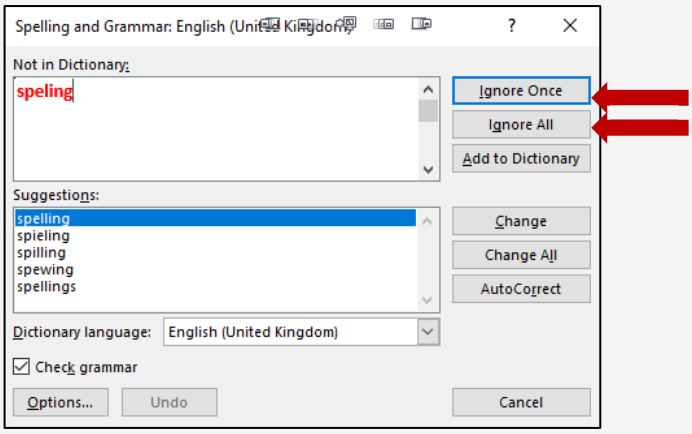




**Click to run the Editor**

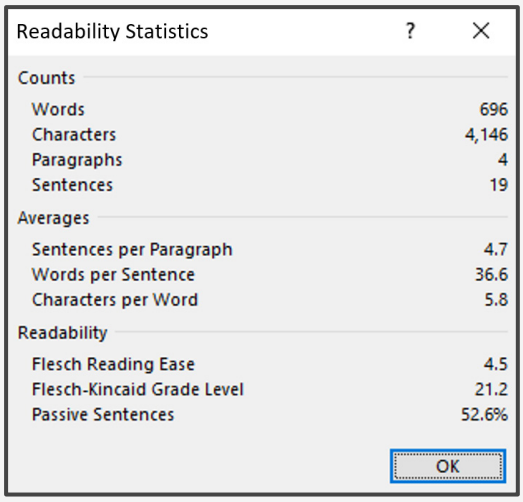


**Ignore every suggested correction (use 'Ignore All' if this shows, otherwise 'Ignore Once')**




After completing the 'Spelling and Grammar' check, you should now see your document's readability statistics.



# For Mac users

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**PLEASE NOTE: as with MS Word on a PC, the menus/submenus and names of icons may differ depending on your version of MS Word for Macs.**

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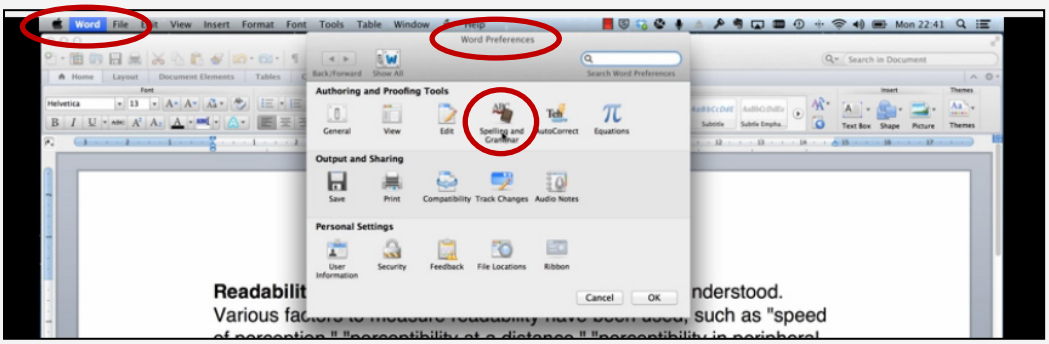
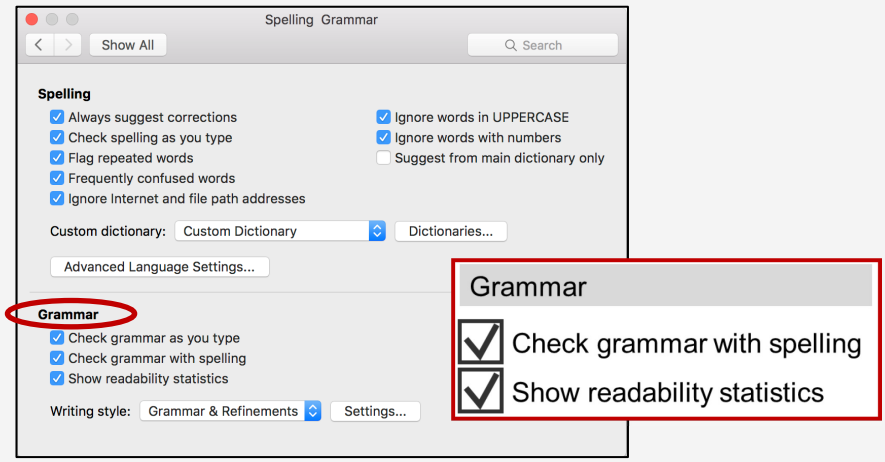
## Change settings in Microsoft Word so that readability statistics display after performing a 'Spelling and Grammar' or similar document check

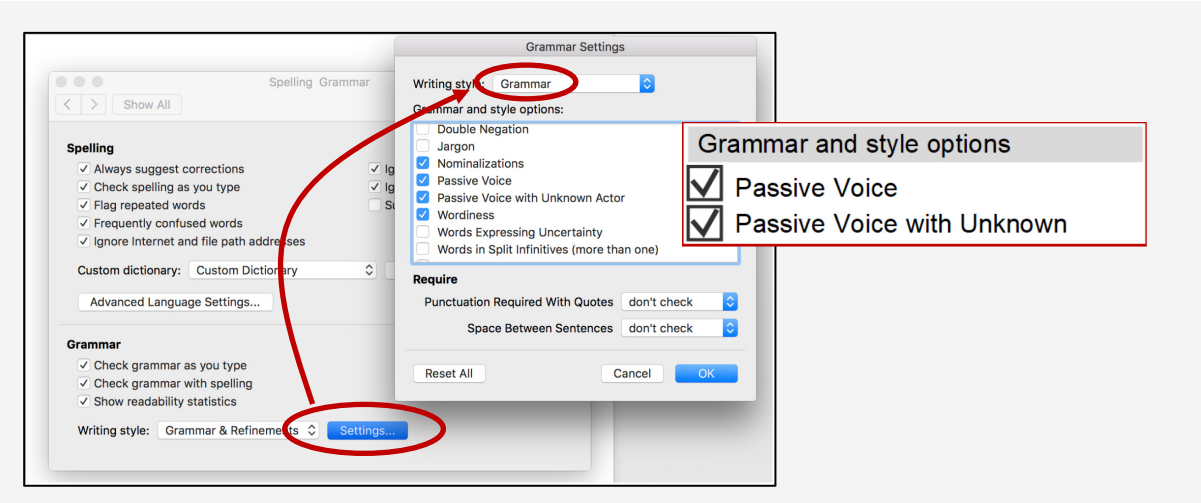
- Open a document in Microsoft Word.
- Ideally, remove items that artificially interfere with readability statistics results. These include in-text citations, references, equations, figures, tables and statistics.
- Select Word / Word Preferences / Spelling and Grammar.




- Under the section 'Grammar', check 'Show readability statistics' (and make sure 'Check grammar with spelling' is also checked).



- In the same window, select the ‘Settings’ tab




- Scroll down the options that appear in the window subtitled ‘Grammar and style options’ and check any options mentioning ‘Passive’.

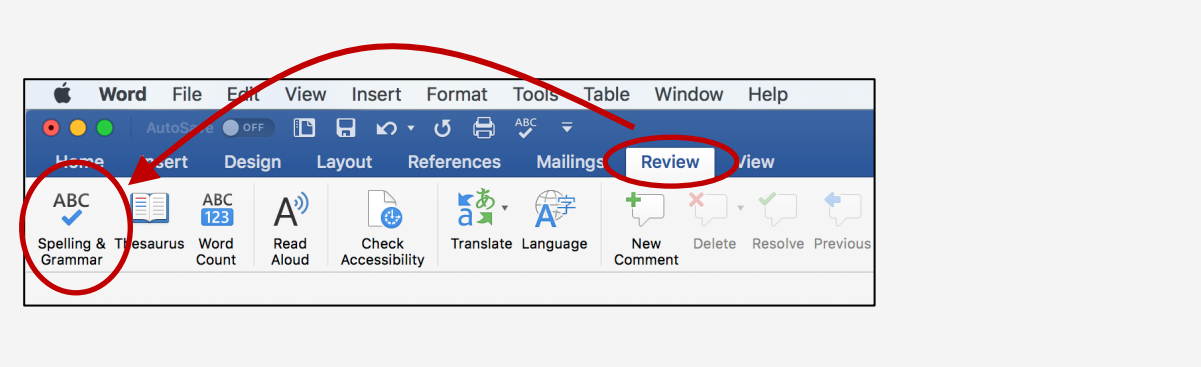
- Now select ‘OK’ to exit this window and exit the Spelling Grammar window.

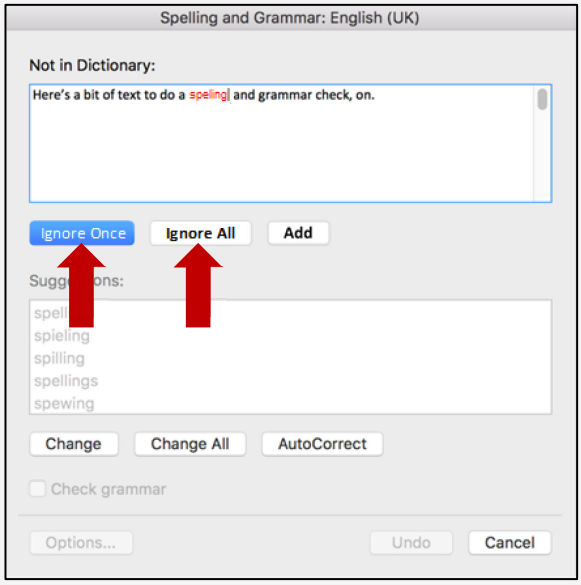
**Run through a ‘Spelling and Grammar’ check – after which readability statistics will appear**

- Place your cursor at the beginning of the document.

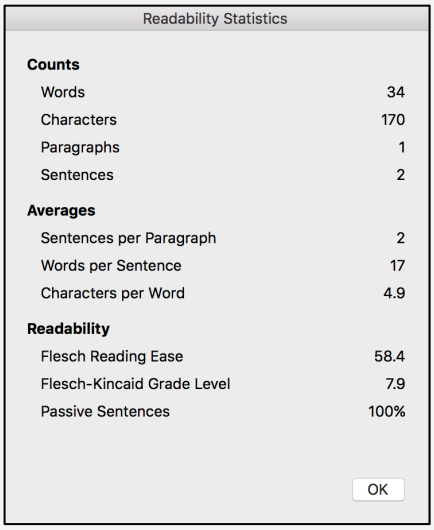
- Start a ‘Spelling and Grammar’ check by selecting ‘Review’ and the ‘Spelling and Grammar’ icon ( ABC ) … BUT

- … IGNORE any corrections offered. So just select ‘Ignore All, or ‘Ignore Once’ until you have completely finished the ‘Spelling and Grammar’ check.



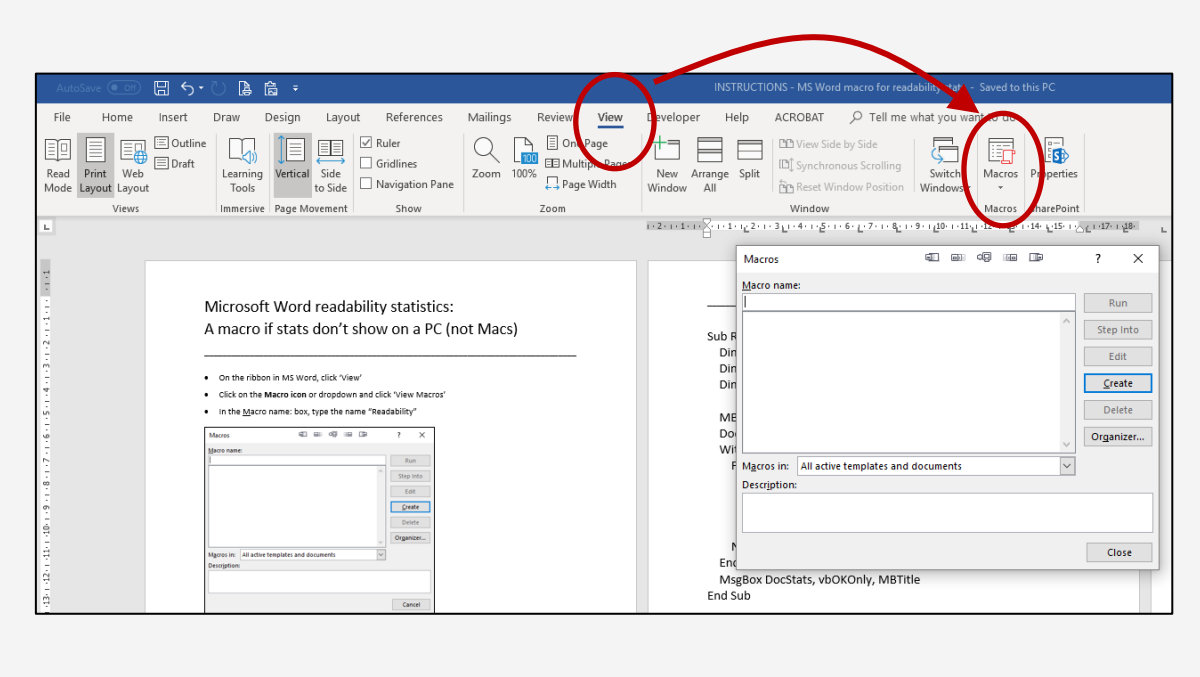



- After completing the 'Spelling and Grammar' check, you should now see your document's readability statistics.

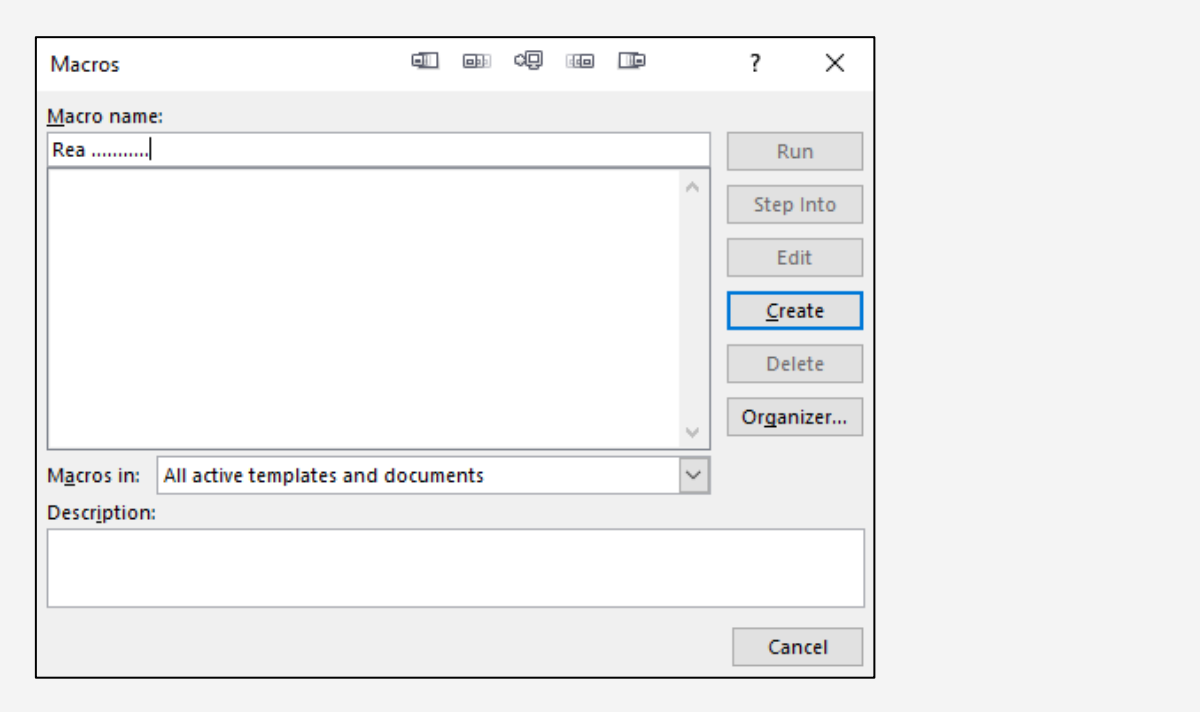


# A macro if readability stats don’t show on a PC (not Macs)

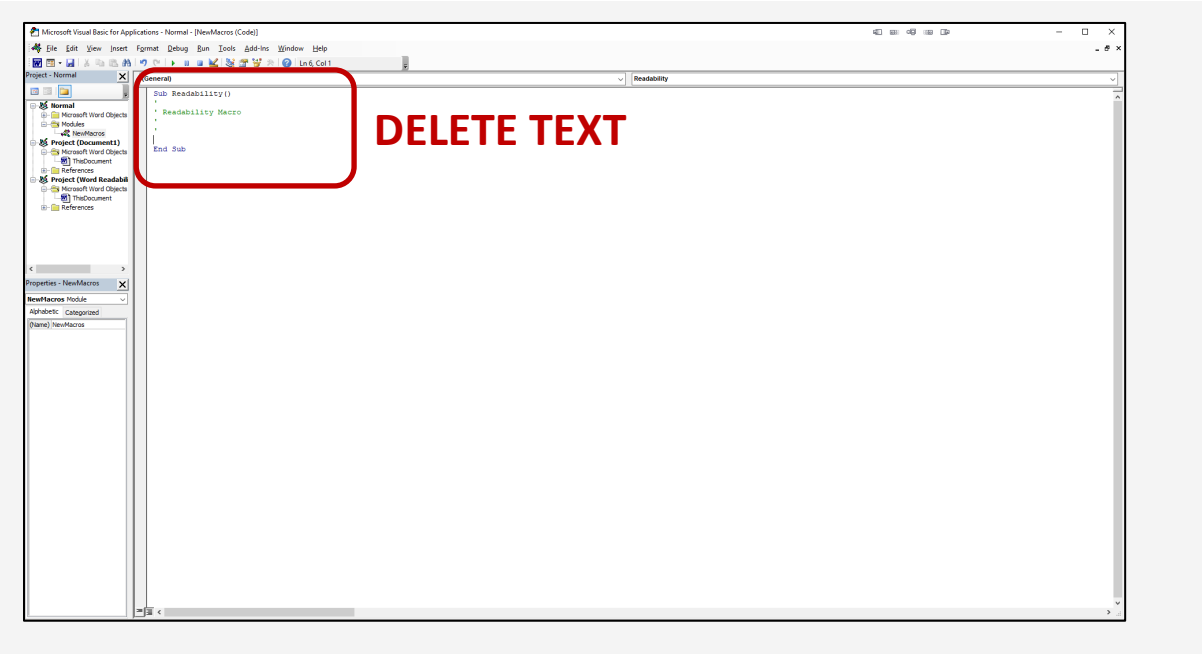
- On the ribbon in MS Word, click ‘View’.
- Click on the **Macro icon** or dropdown and click ‘View Macros’.




- In the Macro name box: type the name “Readability”.



- Click ‘Create’ – the Microsoft Visual Basic for Applications (MVBA) window will appear.

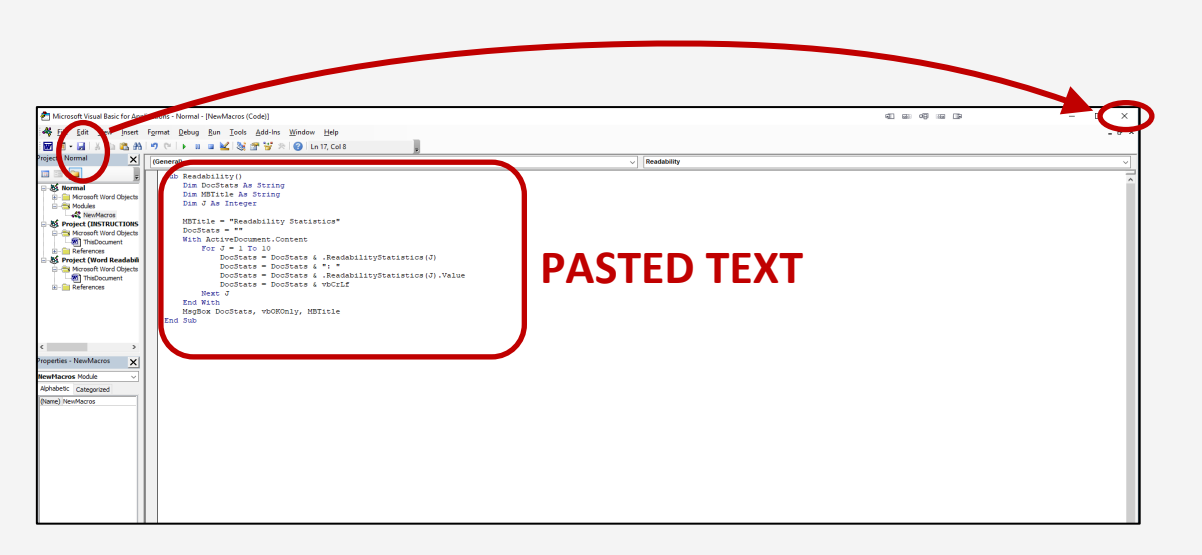



- Delete all text in the large window.

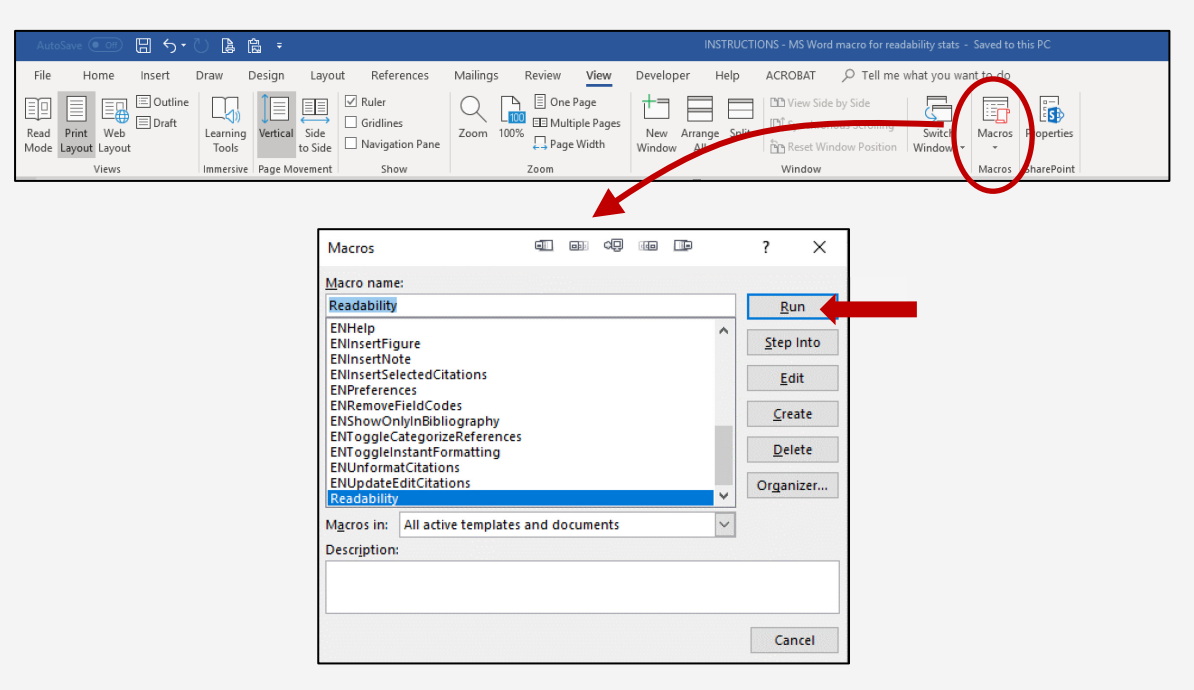
- Copy all the text below and paste it into the window.

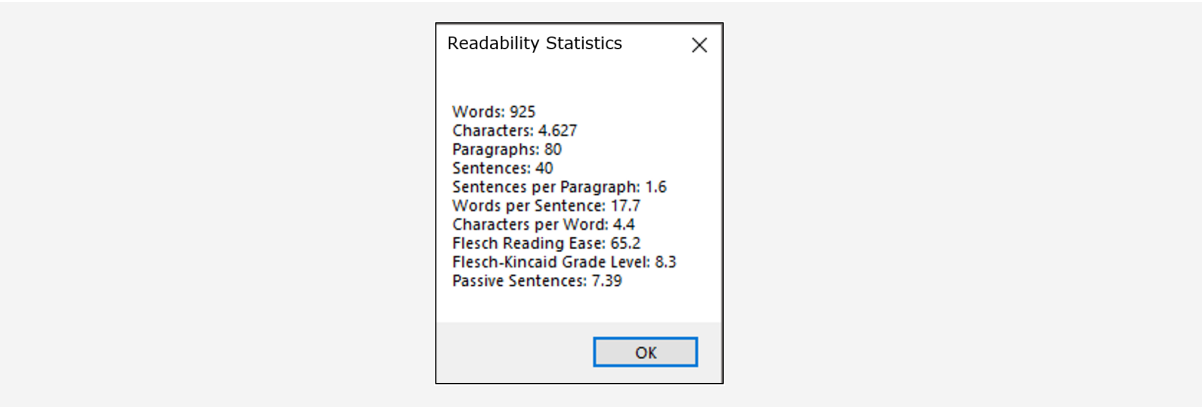
```
Sub Readability()
   Dim DocStats As String
   Dim MBTitle As String
   Dim J As Integer

   MBTitle = "Readability Statistics"
   DocStats = ""
   With ActiveDocument.Content
      For J = 1 to 10
         DocStats = DocStats & .ReadabilityStatistics(J)
         DocStats = DocStats & ": "
         DocStats = DocStats & .ReadabilityStatistics(J).Value
         DocStats = DocStats & vbCrLf
      Next J
   End With
   MsgBox DocStats, vbOKOnly, MBTitle
End Sub
```

- Click on the **Save icon** and **close** the MVBA window




- Now click on the **Macro icon** or dropdown 'View Macros', and scroll to/select the macro "Readability", which should then appear in the **Macro name: box**.




- Click on 'Run' and readability statistics should appear after a short delay.