

Blogging

Workshop for the Health Education
England Genomics Education
Programme



writing point >

Today's programme

- Why blog?
- Identifying blog ideas and target readers
- Turning information into an engaging article
- Avoiding the blank sheet
- Messaging structures
- Information flow
- Effective paragraphs
- Writing definitions
- Editing for successful sentences
- Choosing the right words
- Readability metrics

Statistical health warning!

This presentation includes a number of **internet facts** for which it has proved impossible to trace the original source or verify the methodology of the research....

“The main problem with communication is the illusion that it has been accomplished.”

George Bernard Shaw

**Where do you
start?**

**Clear
writing
needs
clear
thinking**





Clear thinking: writing in stages

- Plan
- Write a first draft
- Edit for content and structure
- Edit for clear sentences
- Edit for word choice
- Proofread

Why blog?

Why science blogging matters

Blogs continue to be an effective platform for communicating your science to major stakeholders – and the public

Blogs play a major part in:

- **sparking collaborations**
- **conveying crucial information**
- **strengthening scientific communities**

In a 2017 study, 40 out of 43 randomly selected science bloggers reported getting more than 1,000 views within a few days for a typical post

- 40% of readers surveyed said they were already pursuing careers in science**
- 16% said they were interested in science careers**

In a survey of 865 scientists born 1981 or later:

- **Almost 70% agreed communicating science can help to advance a researcher's career**
- **Nearly 90% said communicating science could help recruit more bright minds to science**

Prometheus blog

Former science policy blog at the Center for Science and Technology
Policy Research at the University of Colorado

**“Blogging has become really inseparable
from academic life in a lot of respects”**

- Roger Pielke, original Prometheus blogger

**Achievements through the
blog**

Acquired numerous
collaborators

Authored publications – including
two high impact ones – that were
directly informed by blog discussion

Oceanography blog - activities

- Press releases of key papers: in 6 months, covered by **440 media outlets** with a BBC news online article getting more than **734,000 readers in one day**
- Created <http://www.thesearethevoyages.net/>
- Daily updates, with chat and comment facilities. **200,000 visitors** from **90 countries** in just over 2 years. Linked to Twitter, YouTube etc
- Talks in local community and schools
- Outreach activities targeting users of marine environment through un-traditional venues such as the Southampton Boat Show

Dr Jon Copley, Associate Professor of Ocean Exploration and Public Engagement,
University of Southampton

<http://www.sciconnect.co.uk/blog/2012/07/can-outreach-make-you-a-better-scientist-2/>

Oceanography blog - results

- Raising profile has led to new research opportunities and resources e.g. funding from National Geographic, new collaborators from different fields, more proposals, more papers
- Generating wider societal impact – have collected evidence in terms of reach and significance
- Gaining broader perspectives of research problems = particularly from talking to retiree groups – questions have made them look at problems in new ways
- Boosting morale, renewing determination

“A few years ago, answers to the question ‘why do you want to study marine biology?’ at UCAS interviews often involved sharks, dolphins, whales and other ‘charismatic megafauna’.

But nowadays you’re just as likely to get exploration of the deep ocean and hydrothermal vents as an answer. And through our outreach, we’re recognised for doing research in that area, and hence a place to come and study if that interest is your motivation.”

Dr Jon Copley, Associate Professor of Ocean Exploration and Public Engagement, University of Southampton

“Sharing our research
with wider audiences is
simply part of how we do
our science.”

Dr Jon Copley, Associate Professor of Ocean
Exploration and Public Engagement, University
of Southampton

Bringing ecology blogging into the scientific fold:

measuring reach and impact of science community blogs

- Prior studies have shown most readers visit original blogs mainly for **opinions and analysis**
- Blogs allow **rapid communication** of ideas, opinions and observations that can **enhance scientific discourse**
- Blogs give opportunities for **career exposure** and **networking** with national and international colleagues
- Discussion of personal experiences can **help junior researchers** and scientists from underrepresented groups
- Blogs can be treated as a **primary source**
- Reach is not synonymous with impact

[Royal Society 2017](#)

Big picture planning

Create a list of topics

Think:

What

Where

When

Who

How

Why



Article planning

Who is the target reader?

What do you want them to:

- know?
- think?
- feel?
- do?

Create a value proposition

This blog is for [target audience]

It will....

So they

Finding an angle; telling a story



Headlines: 3 internet facts

- 8 out of 10 people will read the headline
- Reader numbers can vary by as much as 500% based on the headline
- Specific titles outperform vague ones by 15




Ask a question

- **Psychiatric genomics
– a double edged
sword?**
- **Polygenic risk scores:
how useful are they?**
- **Do Adult Brains
Make New Neurons?
A Contentious New
Study Says No**



Describe the content

- **Bioengineered plants help defend against Ebola and other deadly diseases**
- **Tuberculosis: new approaches to an old disease**
- **Hidden viruses in the human genome**



Give 'How to' guidance

- **Review our guide to returning genomic test results**
- **Making sense of mitochondrial disease**
- **Spot the difference: genomic sub-types of leukaemia**
- **Nursing in the 21st century: demystifying rare disease**

Other 'How to...' ideas include:

The beginner's guide to...

Introduction to...

...in 5 minutes

Tips to help you...



Announce news

- **World first with genome edited inside patient's body**
- **Congenital heart disease study reveals inheritance factor**
- **'Universal fingerprint' in cancer DNA points to potential blood test. But it's not ready for patients**

When announcing news...


Make it clear the article is about something new – use words like:

- First**
- Reveals**
- Shows**
- New**
- Discovery**



Comment on news

- **Viewpoint: Why the USDA decided not to over-regulate CRISPR crops—and what it means for agriculture's future**
- **Birth of the world's first gene-edited babies sparks outcry**



Use the 'curiosity gap': teasers

- You won't believe what this genomics blogger did
- New evidence shows that everything you thought you knew about writing genomics blogs is wrong

Putting curiosity into context:

Genomics, the land, and the promise of new drugs

The missing genomic link between smoking and cancer



**Surprise
the reader**

- **The Blind Fish
That Should
Have Diabetes,
But Somehow
Doesn't**



Use numbers


- **New liquid biopsy can detect eight common cancers**
- **Genomics in 2018: 3 key predictions**

✓ **Ten ways to write better headlines**

✓✓ **6 ways to write better headlines**

✓✓✓ **7 ways to write better headlines**

✓✓✓✓ **55 ways to write better headlines**




Use negative wording

- **The 30 worst things to do in a science blog ever – *or...***
- **30 ways to dramatically increase traffic to your science blog**

Doesn't have to be negative emotion:

- **10 things to stop doing today to make your science blogs better**



**Link to
public/patient
benefits
available
now**

- **A genomic tool for better antenatal care**
- **Making chemotherapy kinder for childhood leukaemia**




Offer hope

- **Gene therapy hope for sickle cell anaemia patients**
- **How new tests might help find treatments for cancers with no known origin**



Talk to the reader about themselves

- **How your brain is wired to just say 'yes' to opioids**
- **Hot-air dryers suck in nasty bathroom bacteria and shoot them at your hands**
- **Your invaluable genome**



**Promise
the reader
a personal
benefit**

- **How you can learn to love writing genomics blogs**
- **Help for genomics professionals struggling to blog**



That's me!



Be specific

- **This 1,000-year-old oak tree survived Hurricane Harvey**



**Give insider
insights/
personal
experiences**

- **Day in the life: clinical bioinformatician**
- **Meet the scientists taking on 3 of the biggest-challenges-in-cancer-research**



The patient perspective

- **Living with a brain tumour – Sue's story**
- **The story of my blood clot**
- **How our family's hidden heart disease shows through our hair and skin**

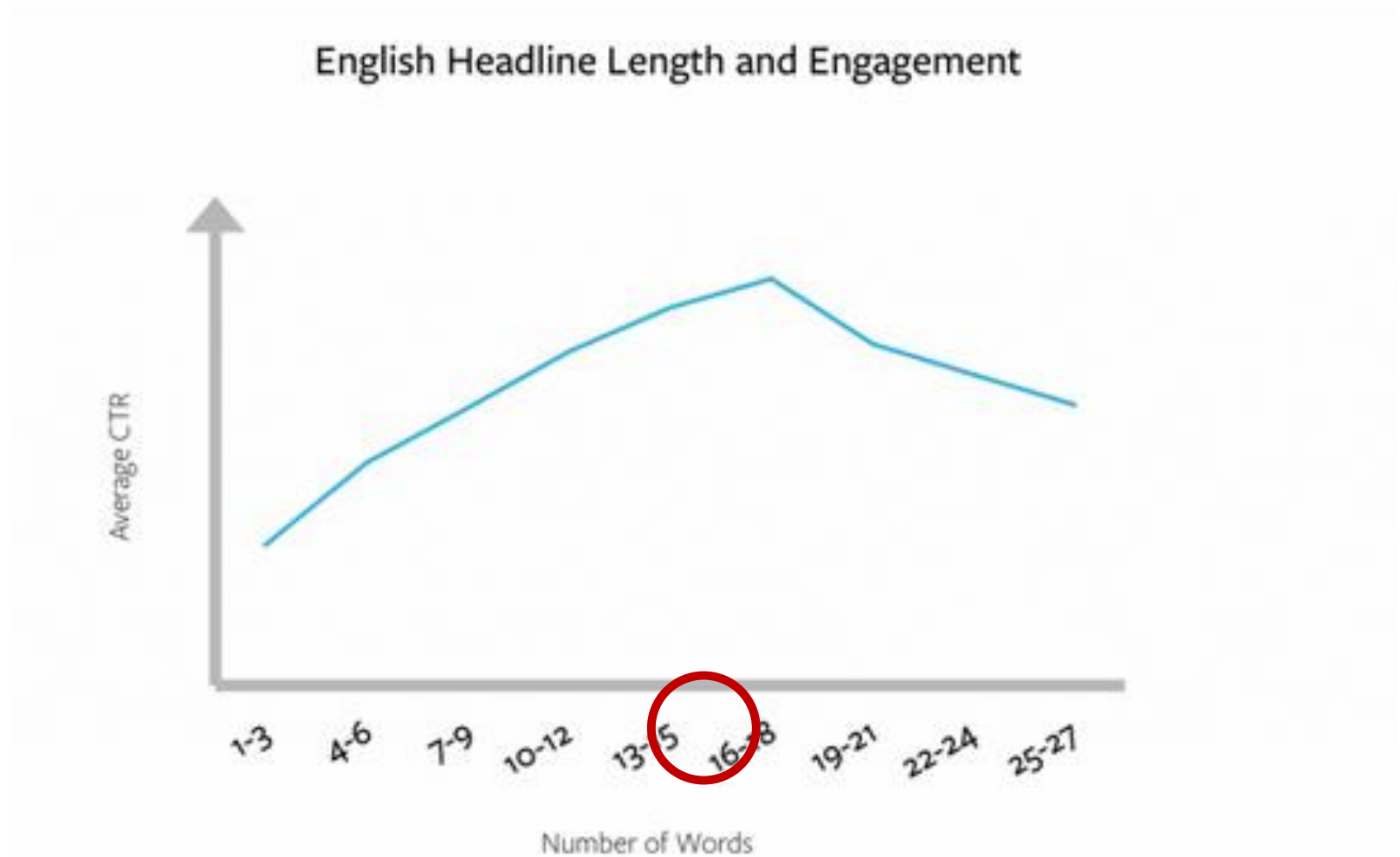


Combine ideas

- **A snowball's chance in hell? How understanding probability can change your life**
- **Do your research! Six ways to find science you can trust online**
- **Love bugs? Here's 5 key facts about the microbiome**

Headline length

Content promotion platform Outbrain ran an analysis of 100,000 blog titles



“Headlines optimization is a dangerous game. Realtime click data causes many publishers to over-optimize and manipulate readers into clicking stories they don't actually want to read... In most cases it would be better for readers if the information was included in the headline so you only click if you actually are interested in reading the whole story.”

Avoiding the blank sheet

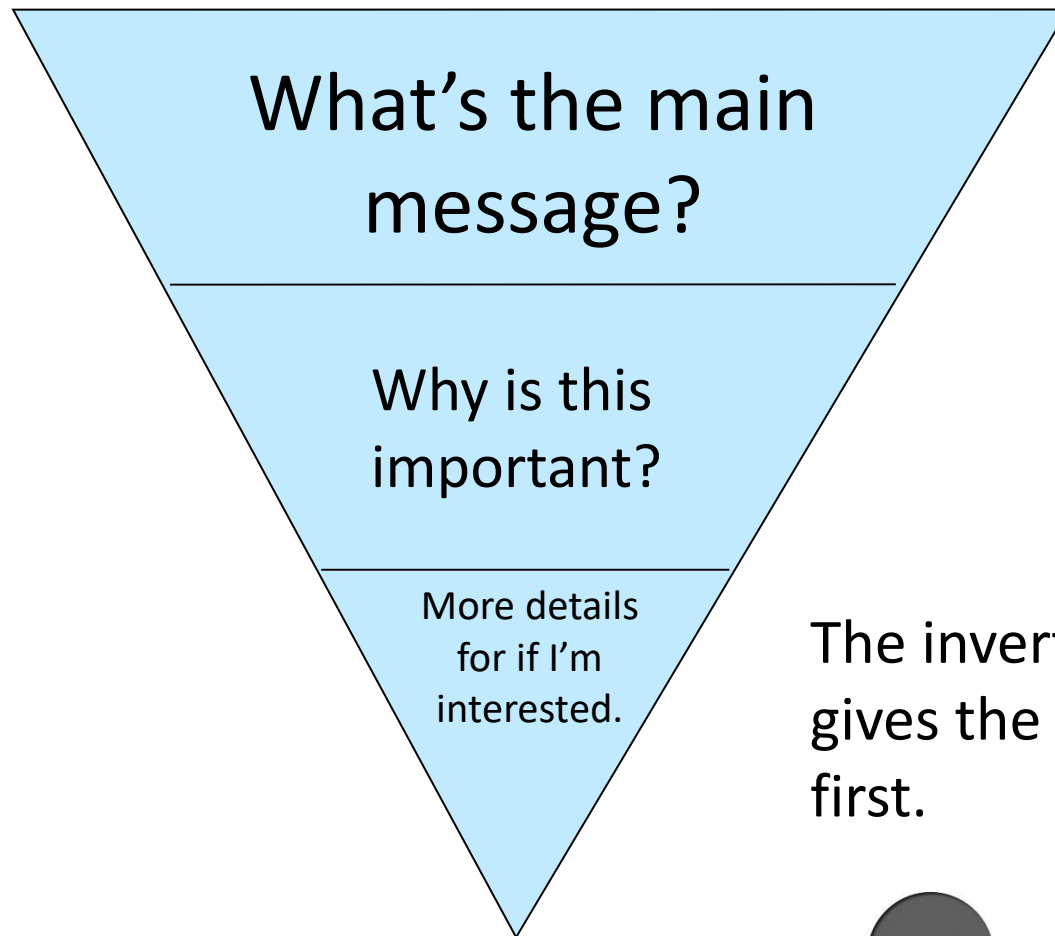
Writing the first draft

Mind mapping

Focused freewriting

Messaging structures

The Inverted Pyramid



The inverted pyramid gives the **conclusion** first.

Inverted pyramid example

Chimpanzees Are Going Through a Tragic Loss

By fragmenting forests and killing off individuals, humans are stopping the flow of ideas among our closest relatives.

Imagine that an alien species landed on Earth and, through their mere presence, those aliens caused our art to vanish, our music to homogenize, and our technological know-how to disappear. That is effectively what humans have been doing to our closest relatives—chimpanzees.

Ed Yong, The Atlantic

AIDA

Attention

Interest

Desire

Action

Editing for content, relevance and structure

Content and relevance

- Highlight the key points in your mind map or draft.
- Bearing in mind your audience and your goal, which points are relevant? Which aren't?
- Is there any information missing?
- Will any points need further explanation?

Structure

- Is the structure logical: does it tell your story
- Will scan readers understand the gist?

Outlining

Key points for paragraphs

1.

2.

3.

4.

5.

.

Ending

Focus of paragraph 1:

Point 1

Point 2

Point 3

Focus of paragraph 2:

Point 1

Point 2

Point 3

Editing for effective paragraphs

Chunk information

- Use topic sentences for each paragraph
- Check that each point in the paragraph is relevant to the topic sentence
- Keep paragraphs short – for blogs, 3-5 lines works well.

Create flow:

Transitional words (connectors)

Examples:

However

Though

Still

When

But

Since

And

Following

Create flow:

Masterplans that show how points will be linked

Examples:

There are three kinds of schools. The first ...The second ...
The third ...

There are three kinds of schools: 1) Good ones, which...2)
Bad ones, which..., and 3) Indifferent ones, which....

There are good, bad and indifferent schools. Good
ones...Bad ones...Indifferent ones...

Create flow:

Add signposts

Examples:

Backwards signposts:

This suggestion...

Such proposals...

The idea that...

Forwards signposts:

Recent advances include...

It will be important to explore ideas around...

Both directions signposts

This view has been rejected by some who claim

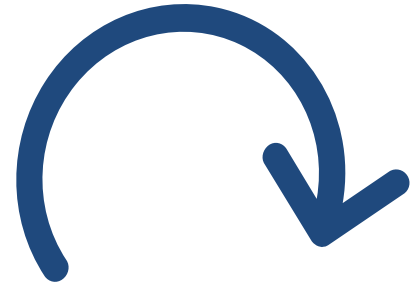
Adding weight to the theory is the evidence from



Create flow: Add bridges

Of the many indications that romantic love is an addiction, however, perhaps none is more convincing than the growing data from neuroscience. **Using fMRI**, several scientists have shown that feelings of intense romantic love engage regions of the brain's reward system.

*Helen Fisher, 'Romantic Love and Addiction' in
'This Idea Must Die' (Harper)*



Create flow: repeat words and terms or use synonyms/antonyms

Above the beginner's level, the important fact is that writing cannot be taught exclusively in a course called English composition. Writing can only be taught by the united efforts of the entire teaching staff. This holds good of any school, college, or university. Joint effort is needed, not merely to enforce the rules; it is needed to ensure accuracy in every subject.

Jacques Barzun

Some people are comfortable in conditions that most of us would find unacceptably cold. The YAGA Indians of Tierro del Fuego lived through the snow and ice of the Patagonian winter without any clothing (they had fires, which gave the land its name). The Australian Aborigines and the Kalahari Bushmen dwell in desert areas in which the temperature falls precipitately at night and may drop below freezing in winter. The aborigines traditionally slept naked on the ground with only a windbreak for shelter. They allow their core temperature to cool at night to around 35°C and their skin temperature also falls. The Kalahari Bushmen show a similar response. White Europeans exposed to the same conditions maintain their temperature at 36°C by shivering and thrashing about continuously, and thus are unable to sleep. Individuals differ in their ability to cope with cold. My sister's home is freezing. She finds mine uncomfortably hot.

Give clear definitions

Term – class – characteristics

Examples

Carbohydrates are a food group including sugars, starches, and fibre.

Influenza is a highly contagious acute infection of the respiratory tract which occurs sporadically or in epidemics and lasts up to a month.

Extended definition

What further information will best help your target reader understand?

Use brackets, bullet points, abc lists.

Editing for successful sentences

Vary sentence length

- Aim for an average sentence length of 14-20 words
- Include longer sentences where you need to give fuller explanations
- Use shorter sentences to add impact, supplement explanations, and move the action on quickly.

Include only one idea per sentence

Hard-to-digest multi-idea sentence:

To separate the hot and cold oil, one tank was used that took advantage of the thermocline principle, which uses the rock and sand bed and the variation of oil density with temperature (8% decrease in density over the range of operating temperatures) to overcome natural convection between the hot and cold regions.

The 5 ideas

- The question of how to separate the hot and cold oil in the rock and sand bed
- The fact there is only a single tank
- The tank took advantage of the variation of oil density with temperature
- This overcomes the problems of natural convection between hot and cold regions
- The concept is called the thermocline principle

Cut down on the use of commas enclosing non-essential information

We concluded, after careful study of the data,
that the proposed correlations, in spite of their
obvious appeal, do not stand up to scrutiny.

Cut down on the use of commas enclosing non-essential information

We concluded, ~~after careful study of the data,~~
that the proposed correlations, ~~in spite of their~~
~~obvious appeal,~~ do not stand up to scrutiny.

Put nouns and verbs close together

What's the problem here?

Bettabricks Ltd, in anticipation of increased demand following the decision to re-surface the seriously-eroded Yellow Brick Road, has increased production at its Land of Oz factory

Put nouns and verbs close together

Better?

Bettabricks Ltd has increased production at its Land of Oz factory, in anticipation of increased demand following the decision to re-surface the seriously-eroded Yellow Brick Road.

Use the active voice



The cupboard
was sat on by
the cat

The cat sat on
the cupboard

Use the active voice



~~The cupboard
was sat on by
the cat~~

The cat sat on
the cupboard

Free buried verbs

made the arrangement
- arranged

performed the analysis
- analysed

conducted the investigation
- investigated

Editing for word choice

Choose your words carefully



**Write
for a
12-
year
old**

Description of the Royal Society's approach to explaining science, 1667

...a constant resolution to reject all the amplifications, digressions, and swellings of style....a close, naked, natural way of speaking; positive expressions, clear sense, a native easiness...preferring the language of artisans, countrymen and merchants before that of wits or scholars

Thomas Sprat



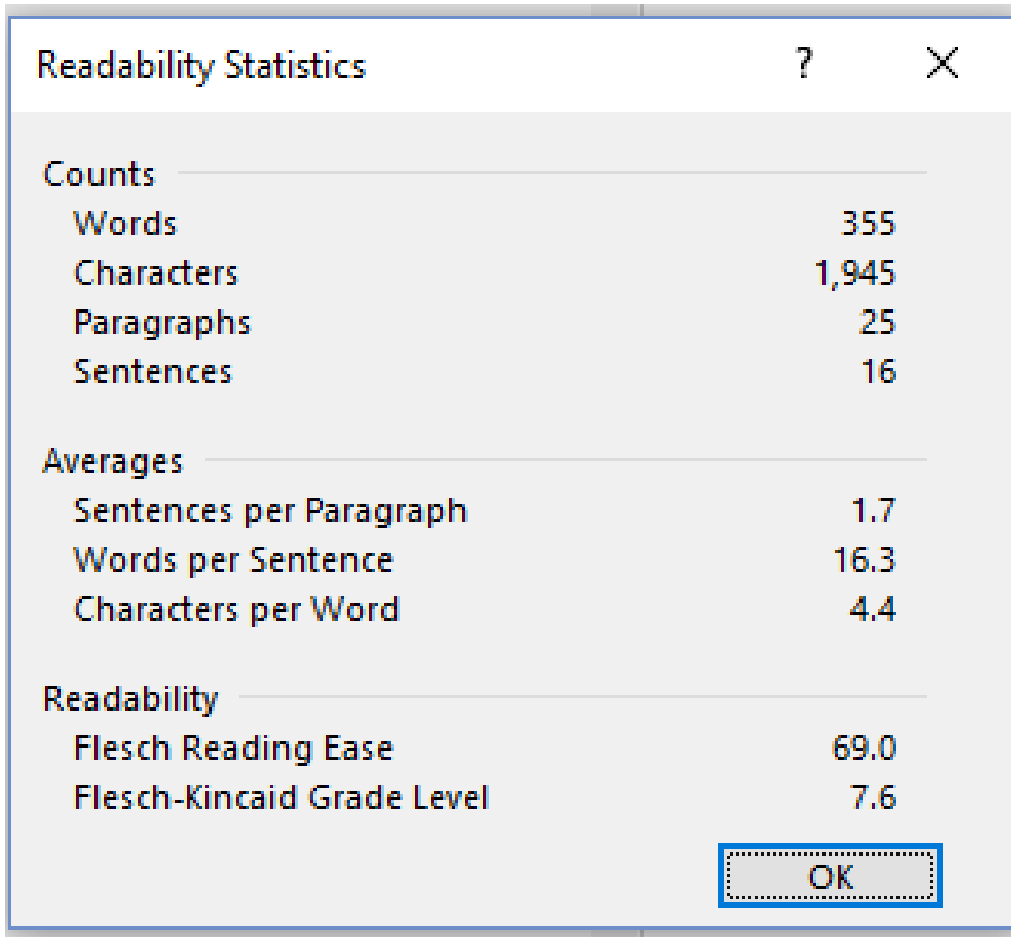
Model



**Use
keywords
and phrases
appropriately**



Checking readability



Readability Statistics	
Counts	
Words	355
Characters	1,945
Paragraphs	25
Sentences	16
Averages	
Sentences per Paragraph	1.7
Words per Sentence	16.3
Characters per Word	4.4
Readability	
Flesch Reading Ease	69.0
Flesch-Kincaid Grade Level	7.6
OK	

Run a readability check in Word

Think about layout

Clear headings and sub-headings help people scan

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nullam nec rhoncus tortor. Integer blandit eget nisl ac semper. Praesent non lectus et dui convallis aliquam. Maecenas vel enim sed ligula viverra auctor.

We've already talked about short paragraphs

Aliquam metus lorem, aliquet non accumsan quis, interdum eget leo. Proin dolor erat, dapibus in commodo eget, dignissim et felis.

And everyone loves a bullet point list

- Lorem ipsum dolor
- Proin dolor erat
- Praesent non lectus

Homework:

Read science blogs!



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