

How to Give a good (maths) talk

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Structure of this talk

1. Practicalities
2. Content
3. Slide design
4. How to present maths
5. Some helpful approaches to help with confidence
6. Summary

2. Practicalities

What to use

- Powerpoint
- Beamer
- Whiteboard or visualiser as supplement
- If you can check out the room beforehand then do
- Notes:
 - Can use crib notes
 - Or use bullet points to remind you!

Technical (IT) things to consider

- Are you using a machine that is unfamiliar?
- Work out how to move through slides ahead of time- check if there is a pointer
- If you are using your laptop make sure you have the right connecting cables and back up on USB
- If you are using animation or video make sure they work on the equipment you have
- If you need it check that the sound works
- If a microphone is available use it
- If you are online, make sure you know how to share “properly”

2. Content

What is your message

- The key issues in the preparation of a talk are:
 - The message: What do I want the audience to know when I am finished?
 - The audience: How do I present my talk such that the audience will understand and remember what I have to say?
 - Tell a story

Who are the audience

- How technical should you be?
- How much mathematical detail?
- You will very rarely be speaking to a room full of people who are experts in your area
- Could be other disciplines/ communities/ industry
- There is a (n incorrect) view that it makes you look clever if make it unintelligible

Structure of the talk

- Tell them what you are going to tell them and why
- tell them what you have done
- Tell them what you have shown them and what it meant
- Reiterate key points and tie aims at beginning to solutions at the end

What to include

Select the results you want to share and order them

- Chronological order you performed them not necessarily best
- If something does not contribute to your message, then leave it out
- You will always have less time than you think!

Opening and Introduction

- First few sentences catches lots of attention
- Speak slowly, with emphasis, and look at the audience
- prepare and rehearse the opening carefully

Introduction is key

- Think about your audience
- Don't presume they know what you are doing and why
- Set up the problem clearly
- Give background, perhaps some history, examples and motivation
- Use simpler examples to help illustrate or give context where appropriate- link to other research areas?

Timing

Communication, not necessarily performing

- Use everyday language wherever possible
- Trying to use lots of jargon, acronyms, etc. will not impress, just leave your audience confused or bored

Timing – Absolutely necessary

- Does everything fit in the available time?
- Use a watch – watch the chairperson
- Typically you will need to cut down on material
 - Practice it and time it!

How Fast?

- Not too fast, please.....!
 - If the talk is rehearsed too much, may speak too fast
 - Even though this may allow all material to be covered in the time limit, it is not in the interest of the audience
- But try to vary your pace
 - Key ideas, complicated points, or concluding remarks are best presented at a slower pace.

Ending

Conclusion and Ending

- Announce properly to regain full attention
- Present concise conclusion in relation to questions raised
- Repeat the take-home message of your talk
- Know your last sentence
- “thank you for listening”
- **Not** “any questions?”

3. Slide design

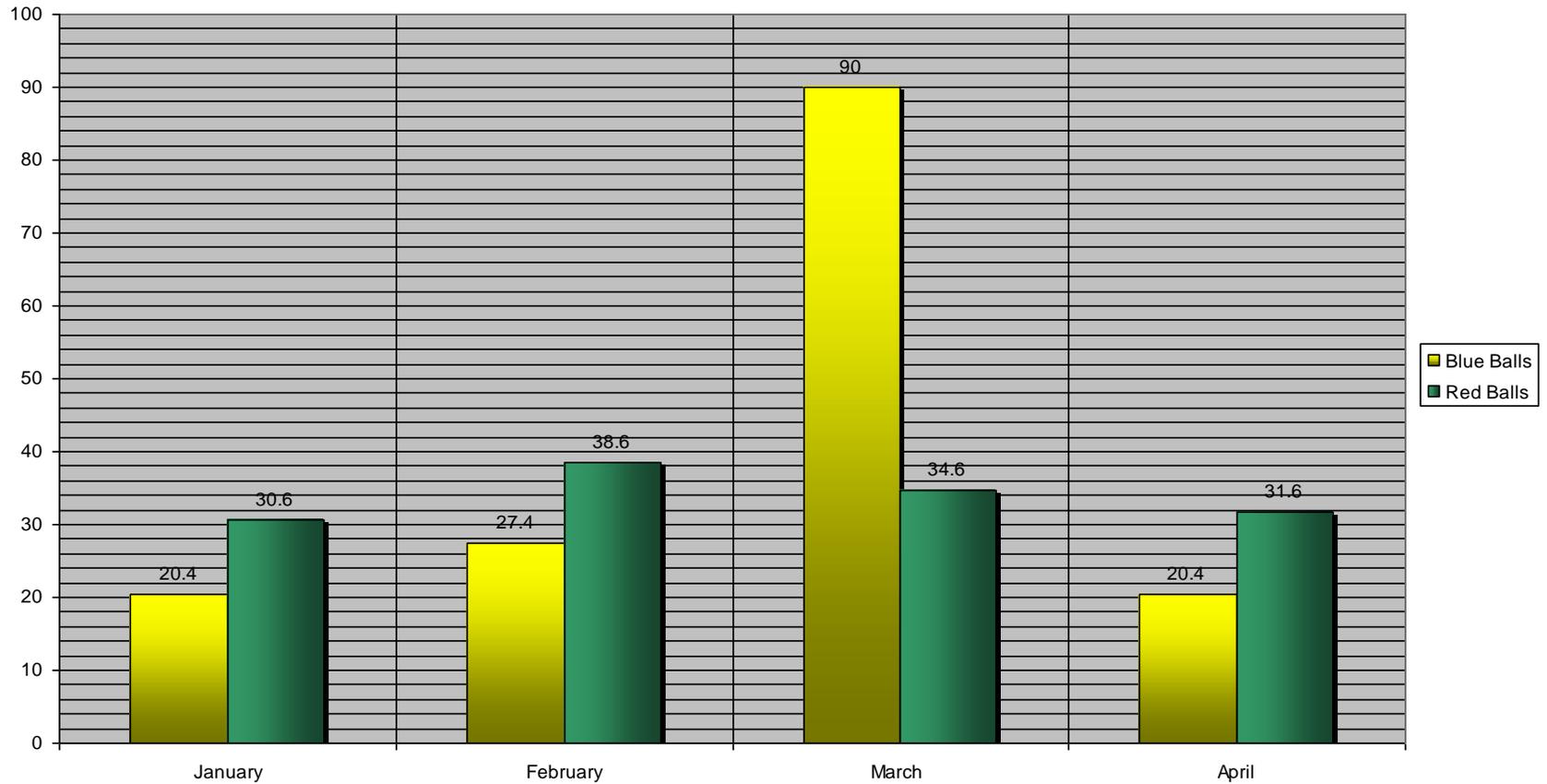
Slide design



Spelling and Grammar

- Proof your slides for:
 - spelling mistakes
 - the use of of repeated words
 - grammatical errors you might have make

Graphs - Bad

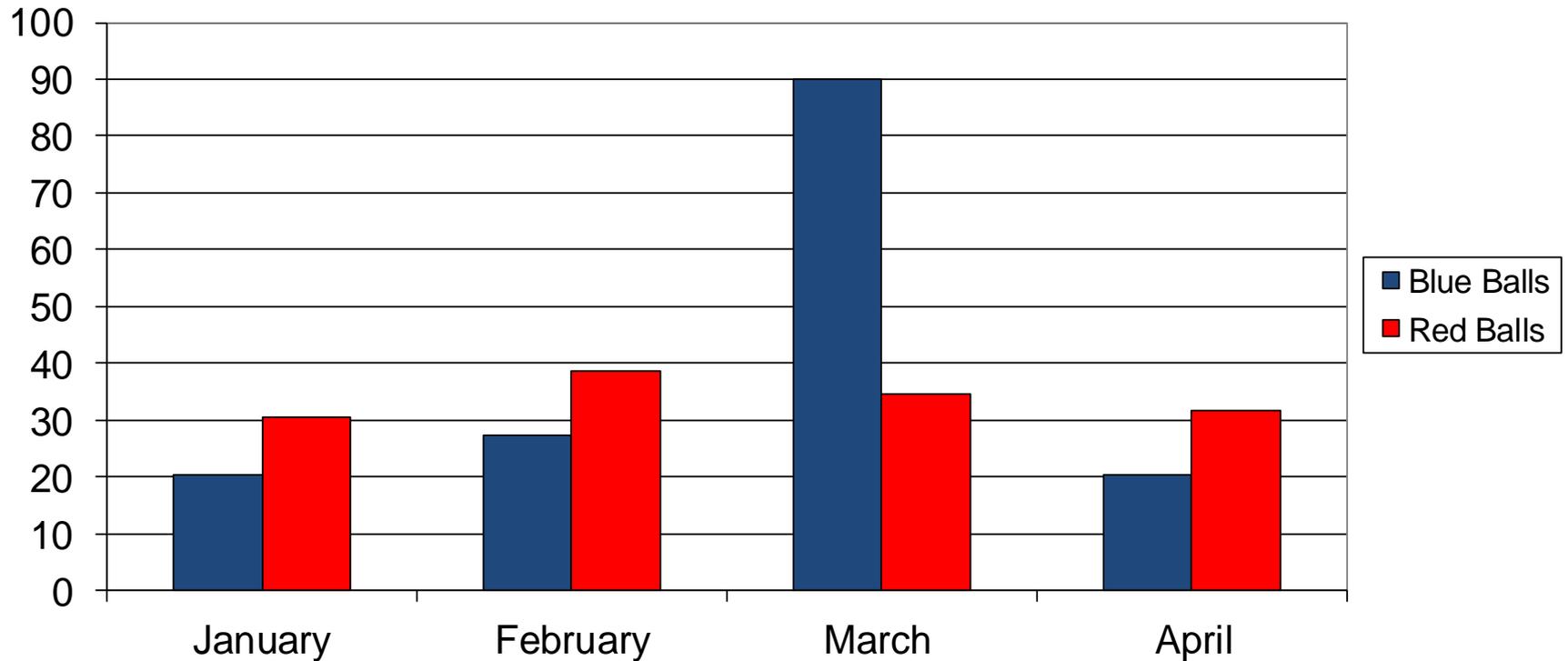


Graphs - Bad

- Minor gridlines are unnecessary
- Font is too small
- Colors are illogical
- Title is missing
- Shading is distracting

Graphs - Good

Items Sold in First Quarter of 2002



Slide design

Making Your Slides

- Preferably use landscape format
- Use large lettering
- Use pictures, figures, with a title, a short, clear caption
- If you use text than no more than 8-12 lines per slide in 4-5 bullets
- Avoid complete sentences, use “headlines”

Slide Structure – Good

- Use 1-2 slides per minute of your presentation
- Write in point form, not complete sentences
- Include 4-5 points per slide
- Avoid wordiness: use key words and phrases only

Slide Structure - Bad

- This page contains too many words for a presentation slide. It is not written in point form, making it difficult both for your audience to read and for you to present each point. Although there are exactly the same number of points on this slide as the previous slide, it looks much more complicated. In short, your audience will spend too much time trying to read this paragraph instead of listening to you.

Slide Structure – Good

- Show one point at a time:
 - Will help audience concentrate on what you are saying
 - Will prevent audience from reading ahead
 - Will help you keep your presentation focused

How to present the maths

Sweeping generalisations

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 - If that helps with explaining the mathematics

5. How to improve confidence

Emotions

Are you nervous? Hopefully you are!

- Few people are natural born speakers
- Nervousness not a sign of being incapable of delivering a good presentation
 - Body getting ready for something important
 - Athletes, performers, musicians recognize these symptoms and appreciate them – even worry if they stay away

During talk

- Don't talk to the board/screen
- Look at the audience
- Speak clearly
- If you want to come back to an equation you could write it on a board- you could do this in advance

Demonstrate enthusiasm

- Show your passion for the project
- Most speakers have room to add some flair to their presentations.
 - Inject your own personality into it.
- Most speakers get into presentation mode and feel as though they have to strip the talk of any fun.
 - If you are not enthusiastic about your work then who will be?

Rehearse, rehearse, rehearse

- Practice in front of a friendly audience, if you can, who can point out issues with slides, or areas that need more or less explanation. Practices timing
- Good practice to have a peer group who can do this – but supervisors should also help
- Watch other people talk- what do you like about what they do

Summary

Take home messages

- Check the tech
- Prepare- proof read slides and practice talk
- Make sure your motivations and messages are clear
- Practice opening and closing- make sure people know you have finished.