from Alan F. Beardon, "Creative Mathematics" CUP 2009

Giving a Presentation

Giving a good presentation is difficult. If a presentation does not go well don't be discouraged, but make sure you learn from the experience. All of us have given a good presentation, and a bad presentation. Here are some guidelines which might help you to deliver a good presentation. First you have to prepare for the presentation; then you have to present it to the audience.

The preparation

First think about who your audience will be; this is very important and will govern what you say in your talk. If you are giving a mathematical lecture it is important to know the age and stage of development of the audience; you would give a very different talk to children than to graduate students!

Decide upon your message: what is the purpose of your talk? What do you want the audience to know and understand? Plan how to get your main points across effectively. It is best to begin with something simple or familiar to everyone and then build up to a difficult point later. Choose the main points of your talk carefully, and consider how much time you have to explain these points, and what you can reasonably expect your audience to understand. A good way to do this is to make a list of what you *might* include, and then eliminate some of the items from the list until you have a reasonable amount of material left. Do not give too much, or too little, information: if you give too little the audience's thoughts will wander, while if you give too much the audience will

stop concentrating. It is also very important to decide *what not to tell your audience* – some things are too complicated to include in a talk, and you will not have time to explain everything you know about the subject.

It is best to prepare more than you think you will need; then you will not run out of things to say if the earlier material took less time than you thought it would. In addition, if the audience seems confused you will be able to switch to a different topic; if they seem to be finding the material difficult, you can switch to an easier topic.

The presentation

Perhaps the most important point is to time your presentation carefully. Do not rush at the beginning (even if you are nervous), for if you lose the audience at the start they will not concentrate fully for the rest of the talk. Also, do not spend too long explaining one point, even if the audience appears not to understand it. If you are using prepared slides, or electronic equipment, beware: there is always a tendency to present the material too quickly. One advantage of writing during the lecture is that it slows the lecturer down to a pace that is more suited to the audience. Above all, keep the time spectrum in your mind, and remember to pace yourself. Throughout the lecture you should be thinking about what you said five minutes ago, what you are saying now, and what you want to say in five minutes time. This is not an easy skill to master!

If you are giving your presentation in a language other than your own, or to people who would not normally speak your own language, you will need to prepare for your presentation even more carefully. Keep your language as simple as possible, and deliver the talk at a slower pace than you normally would.

Try to relax and be natural; this is easier to do if you can speak without notes. If your manner is friendly and relaxed the audience is more likely to feel comfortable, and to concentrate on what you are saying. The first sentence is often the most difficult (especially as you may feel nervous at the start), so it is worthwhile to memorise a simple opening sentence or two. Do not be too formal, for this will make the audience feel uncomfortable. *Make eye contact with individuals in the*

audience frequently; this will allow you to assess whether or not the audience understands what you are saying. If people look confused you can slow your pace, or omit difficult material; if people look bored you can speed up.

Make sure you that you pause after a difficult point to give the audience time to absorb what you have said. Remember that although you may have rehearsed this many times, it is probably new to them. However, you must time the length of the pause carefully; if it is too short it will not serve its purpose; if it is too long, the audience will start to think of other things. Do not think about other matters during the pause; it will disconnect you from the audience (or even your talk). Instead, spend the time watching and assessing the audience; the pause should be of benefit to you as well as the audience.

You will have a much better chance of holding the audience's attention if you move around during your talk. Also, vary the pace, tone and volume of your voice. Move into a quieter mode just before an important point that you want the audience to remember; then you can raise your voice, or wave your hands, in order to emphasise the point. Don't be afraid to repeat an important point – several times if necessary. Think of yourself as an actor; a good actor engages the audience.

It is clear that the way you present your conclusion is most important. Make sure that you leave enough time to summarise your main ideas and leave the audience with a clear but simple message to take away. Do not introduce new ideas at this stage except possibly to suggest further avenues for investigation.

Finally, it is hardly necessary to say that you can only follow these suggestions if you are totally familiar with the content of the talk. For most of us these suggestions demand our full attention, and there is usually very little mental energy to spare to think about the content of the talk while giving it.