

# Ten Tips for Communicating Astronomy with Children

## Lee Pullen

Freelance Science Communicator  
E-mail: leempullen@hotmail.com

### Key Words

Science Communication  
Children  
Best Practices  
Outreach

## Summary

Science communicators must tackle many difficult audiences as part of their jobs, but among the most challenging are audiences of young children. If you are not used to this type of work it can seem like a daunting task, but a few simple tips will help a great deal to prepare you. Get some experience now and you will also be in a good position to help with the International Year of Astronomy 2009.

## Be Enthusiastic

Children will take their lead from you, so the most important tip is to be lively, engaged and interested. Your audience will follow suit, making it an enjoyable experience. If you are bored yourself then this will be reflected in their behaviour, and it will not be long before attention wanes. The danger is that if you act too enthusiastically, you will be seen as an entertainer figure. This might be what you are after, but usually you want to keep the children's respect! Remember to be enthusiastic about any work the children produce and questions that they ask.

## Keep Things Simple

It is sometimes easy to forget that concepts adults take for granted can be lost on a younger audience and this is even more apparent with topics like astronomy. Almost every aspect will have to be simplified to some degree. As for how much you will need to simplify, just watch the children's faces as you speak — it will be obvious if they do not understand what you are saying! Detailed information and figures should be avoided as it will just confuse. Use analogies to help get your point across. For example, instead of saying that the average Earth/Mars distance is 225 million km, explain that Mars is

so far away that even in a fast rocket ship it would take six months to get there.

## Encourage Creativity

Astronomy is a brilliant topic for children to flex their creative muscles. They love to imagine advanced spaceships, strange planets and weird aliens. Although their ideas may not be the most scientific, avoid stifling their imaginations and gently direct them to more realistic notions. The children will be entertained and the activities memorable. When children are allowed some control over their work more pride is taken in what they do. Allowing children to be creative will also help them realise that science can be fun.

## Be Prepared

A key to success when communicating astronomy to children is to be prepared. Make sure you know exactly what is expected of you. What age range will you be dealing with? How many children? Are you giving a ten-minute presentation or leading a whole day's workshop? Are there certain objectives you must meet? Ensure you have the whole picture before you begin. Having suitable materials will also make your life easier. Children appreciate visual aids, so any talk

over ten minutes long should feature some large, colourful images. Luckily the field of astronomy has plenty of these! If you are required for an hour or more, prepare a lesson plan. This will provide structure and help you keep to time.



Figure 1. Children need visual aids to help them understand difficult concepts. Credit: Jennifer Barrett.



Figure 2. Allowing the children to work in groups is often an effective approach. Credit: Lee Pullen.

## Know Your Stuff

It is important to do research before you present. If the relevant topic is unfamiliar you may be tempted to skip background reading as your audience will know very little, if anything, about the subject. However, children can be good at spotting when you are pretending to be an authority! Make sure you have a reasonable level of knowledge. You never know which questions you will be asked, so be prepared. Having a mental list of interesting facts and analogies will help.

## Spark Discussions

An excellent way of keeping children involved is to encourage discussion and participation. A simple way of doing this is to avoid giving a straightforward presentation and ask questions instead. For example, if you are planning on giving a talk about the Solar System, start off by asking, "Hands up who can tell me something about the Sun?" You will probably get an answer like "it's hot". Build on that in your next question. "That's right, so would you be able to stand on the surface? Hands up who thinks yes."



Figure 3. Let creativity flourish! Credit: Lee Pullen.

You will be guiding the discussion but the children will be providing information and will enjoy the opportunity to answer. They will be much more interested if you use this approach. Try not to completely dismiss any ideas or incorrect ideas, as this may knock their confidence, but compliment them on a good guess and gently offer a more sensible answer.

## Encourage Friendly Competition

Children are naturally competitive and this can be used to our advantage. A good idea is to prepare an astronomy quiz based on the information that you will have given them. Select questions carefully, ensuring nothing is too obscure and that they have a chance to answer everything. If you are not sure of the ability level you may like to prepare easy and advanced questions, allowing you to use whichever is more appropriate. Children like rewards, so certificates (an A4 word processed sheet, for example) for winners are a cheap and easy way of congratulating them. If you can, prepare participatory certificates too, so no child feels left out. Mention at the beginning that there will be a quiz and then if any child becomes distracted during the session simply remind them that anything they learn could come up in the quiz, so they should best pay attention. This works every time!

## Be Understanding

Individuals within a group of children will naturally vary greatly in ability, interests and

learning styles. This may seem obvious, but if you ignore this fact you will become frustrated with anyone who lags behind the activities you set out. Every child will have an area that they are particularly good at. If they have trouble writing, then perhaps a drawing exercise will suit better. If that fails, maybe they have a good speaking voice and can explain information that way. Some children may have special educational needs and require much more attention than others. Try to arrange for specialists, such as the children's regular teacher, to be on hand if this is likely. Be as sensitive as you can to anyone having difficulties. For example, some children will have handwriting that is difficult to read. Asking "What does that say?" may hurt their confidence, so instead say, "Why don't you read this out loud to me?"

## Be Aware of Legal Issues

These will vary depending on the country you are working in, but a few general tips are applicable to all. Make sure that you are fully insured, as this will give financial protection against any mishaps. If you are going to an institution like a school then it is quite possible that they will have their own insurance, but do check this. Organising insurance yourself can prove to be very costly, and is something to bear in mind if you will be working in a freelance capacity. Make sure you know about fire regulations and what to do in an emergency. It is very useful (and sometimes legally required) for someone usually in a position of responsibility such as a teacher or parent to be present at all times.

## Realise That You Are Appreciated

By taking the time to help communicate astronomy to children you will not only educate, but also inspire the next generation to take an interest and perhaps study the Universe in which we live. For communicators not used to dealing with younger age groups it can be intimidating and difficult, but you will learn new skills and improve your own abilities. Ultimately, the children will greatly appreciate your efforts and will gain much from the experience.

### Biography

**Lee Pullen** puts his astronomy degree and science communication master's to good use engaging a wide range of hard-to-reach audiences. He has taught several thousand children about the cosmos and also works as a science journalist. His website can be viewed at [www.leepullen.co.uk](http://www.leepullen.co.uk).