

# Science communication skills

Telling the story of science

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## The Backstory

Science communication is a rapidly growing area of communications. Over the past decade the world has seen an explosion in the use of social media and other forms of digital communication. This has made it easier than ever to access all sorts of scientific content. However, this growth has also been accompanied by the emergence of misinformation and fake news, often designed to cast doubt around evidence dating back decades and even centuries. Never before has there been such a need for those involved in science to share evidence based science with the world.

Having spent the last few years away from the classroom carrying out biochemistry research, I became very involved in science communication. It gave me the opportunity to fuse my teaching and research experience together, and then test myself at engaging non-scientific audiences on complex issues. As I prepared to return to education, I wanted to bring this experience back into my role as a secondary school teacher. That desire to bring science communication into secondary schools and the support and expertise of The British Council would evolve and develop into this toolkit.

Some students might view science as just a school subject that has no relevance to their lives, which could lead to their disengagement with scientific disciplines. With this toolkit we want to change this and hope to:

- 1) Introduce Transition Year students to the concept of science communication
- 2) Give students the tools and confidence to develop the core skills for effective science communication
- 3) Demonstrate to students the diversity of the science communication field
- 4) Help increase engagement and inspire passion for science communication

I believe that achieving these objectives will equip students with a skill set to help them communicate science, and more of them will see that science and all its different disciplines are a part of all our lives.

***Eoin Murphy from Beyond The Lab SciCom***

## What is this toolkit and who is it for?

This toolkit, comprising of six units, is created to help students develop core communication skills to enable them to tell the stories of science.

The toolkit is designed for both the teacher and the students. Activities have been created to allow for students to work independently but also in collaboration with their teacher.

## Toolkit user guide

To receive the full experience of the toolkit, we recommend completing all six units, if possible. However, this is a flexible resource and we encourage teachers to **decide on an approach which suits them best**, depending on the size of the group, format of delivery or allocated hours.

The Toolkit and the Communication Activity Resource Sheet include a lot of icebreakers and activities. It's up to you to decide whether you'd like go through all of them or select a few, opt for a particular type of activity (audio-visual or kinaesthetic) depending on your students strengths, or maybe even come up with your own if you feel they suit the topic of the unit.

We recommend you see each unit in two parts. The first part involves introducing the unit theme to the students and engaging them in *Icebreaker* exercises and specific *Activities* (see Part A). The second part includes students undertaking *Assessment for Learning* tasks to understand what they have learned through the unit (see Part B). Students should be assigned these tasks at the end of Part A.

If your students complete all six units and fancy another sci-com challenge, they might even want to prepare and present their own FameLab-style three-minute talk!

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## Part A

1. Students and teachers read the description for the unit and discuss the learning objectives.
2. The teacher introduces the theme of the unit through icebreakers of their choice.
3. Students complete all or some of the activities listed in the unit. (All videos are available on the FameLab Ireland YouTube channel).
4. Optional: teachers carry out a communication activity as described in the Communication Activity Resource Sheet, accompanying this toolkit.

## Part B

5. Students present assessment for learning (AFL) tasks during these class periods.
6. The AFL section could begin with a review of the students' findings in their *Research* task.
7. This would then be followed by a report on their *Action* task before giving a short presentation to the group (*Performance* task).

A man with dark skin and short hair is performing on stage. He is holding a microphone to his mouth with his right hand and has his left arm raised high in the air. He is wearing a dark t-shirt with a graphic design. The background is a large screen displaying a colorful, abstract image with green, blue, and red hues. In the top left corner, there is an orange square with a white number '1.' inside. In the bottom right corner, there is a small orange circle with a white number '5' inside.

1.

# Storytelling

# Introduction

**Storytelling** is a universal human trait. It's a method of cognitive play, which allows us to simulate the world around us and then carry out a form of imaginative practice in preparation for different situations. Evidence from brain scans indicates that reading and hearing stories activate parts of the cortex known to be involved in social and emotional processing, thus the more people read fiction the more empathetic they become to others.

One of the oldest stories is the Epic of Gilgamesh. The story was written over 4000 years ago and it deals with a range of themes, but one, which is common to many famous stories, is that of the hero who must undertake a journey or quest in search of knowledge. Even before these ancient stories, cave paintings of animals have been discovered at Chavet and Lascaux dating back over 30,000 years ago.

Storytelling would have been a key part in human evolution as growing populations meant that we had to live in larger communities. The success of these larger populations required increased cooperation. Our stories, which have evolved with us, match what are considered the right social norms. To this day, no matter where you travel in the world, cooperation is seen as a common theme in stories.

## Objectives

- Students develop an understanding for the role of storytelling in human evolution
- Students recognise the importance of storytelling in communication
- Students appreciate that storytelling can be applied in communication of messages of all forms





## Teaching and Learning Approach (Icebreakers)



### Visual

- Students look at images from children's stories demonstrating the power of a still image in telling a story
- Students watch selected clips from animated stories highlighting some common themes, such as "hero and villain", which are seen throughout stories new and old



### Audio

- Students listen to audio clips of famous fairy tales highlighting the language used in storytelling
- Students listen to selected songs whose lyrics demonstrate storytelling



### Read and write

- Students read short excerpts from different forms of stories: fairy tales, fiction and non-fiction
- Students write a beginning of different types of stories to fall into these different categories



### Kinaesthetic

- Students watch selected clips from silent movies and observe the actions of the actors
- Students describe how different gestures and body movements can be used to tell a story



## Videos



## Activities

- 1: **Audio-visual:** Students watch the *Storytelling* best practice video  
**Student activity:** Students have an open discussion on what their understanding of storytelling is.
- 2: **Audio-visual:** Students watch the full length talks from the three FameLab alumni speakers featured in the best practice video  
**Student activity:** Students discuss the videos and try to identify where storytelling was used as a technique in the video clip.
- 3: **Audio-visual:** Students watch Emer Maguire's FameLab talk and her Q and A session. They then have a discussion about how she uses storytelling throughout her talk.
- 4: **Communication\***
  - "Yes" and "no" game
  - One minute speak

\*See Communication Activity Resource Sheet for full description of activities.



## Assessment for Learning

### Research

Students carry out research on what are the oldest recorded human stories. They then compile a list of 3-5 ancient stories and write a short paragraph summarising common themes across these stories.

### Action

Students select a scientific topic or discovery and write a short essay using storytelling to communicate the chosen piece of information.

### Performance

Students convert the essay they have written into a 1-minute short presentation within their group/class. The presentation should be structured using storytelling as a means of communicating their message.

## Summary

For as long as humans have lived in groups, storytelling has been part of our culture. In this section of the toolkit we have focused on the use of storytelling as a method of communicating a scientific message.

When trying to explain a new or complicated idea to someone, building the information into the form of a story can be an effective way to help communicate the message. Practicing and developing your storytelling skills can allow you to become a skilled communicator not only in science, but across all areas of life.

### FameLabber: Emer Maguire

Emer Maguire flawlessly blends laugh out loud musical comedy, science, and Northern Irish charm. Emer is a TEDx performing musical comedian, an international award-winning science communicator and a double Irish Radio Award winning BBC radio presenter.

She won FameLab UK in 2015 with a talk on the science of love and then went on to win International Science Stars in 2017. Her debut solo show Emer Maguire: Hilarious Humans is fresh from a sell-out run at the 2019 Edinburgh Fringe Festival.

Emer's performances take an uproariously funny (and sometimes scientific) look at the oddities of human behaviour through her ingenious musical comedy.

From the nuances of being a middle child, to social awkwardness and online dating, Emer explores what it means to be human. Off stage, Emer is a presenter of 'Science and Stuff' on BBC Radio Ulster, and is also co-creator and presenter of elements focused podcast 'Elementary My Dear'.





2.

Humour



# Introduction

**Humour** comes in all different forms and what is funny to one person may not be to another. But there are some similarities across humour, such as seeing familiar situations through new eyes. Humour challenges expectations, making connections between normally conflicting ideas or emotions and then surprising the reader/audience with something they didn't see coming.

Not always, but in most cases humans respond to humour by laughing. Laughter creates a positive emotion releasing endorphins, and when we see something funny it becomes more memorable. Laughter can even be described as a social phenomenon, with people being 30 times more likely to laugh when they are with others. We have all experienced laughter that becomes contagious. Situations like this allow for empathy to be built by those who share the laughter.

From a communication point of view, humour can allow you to approach sensitive or difficult topics while keeping your audiences attention. Humour makes characters seem more realistic by highlighting their weaknesses, faults and individual quirks. In addition, when speaking, humour can create rhythm in the story. Nowadays, you might see a lot of drama on TV, but comedies are still the most popular type of program in many parts of the world.

## Objectives

- Students develop an understanding of the different forms of humour
- Students recognise the importance of humour in building empathy with those around you
- Students develop the ability to use humour as a structural tool when telling a story



## Teaching and Learning Approach (Icebreakers)



### Visual

- Students read a selection of humorous cartoon strips
- Students watch a selection of old vs modern animated cartoons
- Students watch selected scenes from different TV and film comedies



### Audio

- Students listen to selected clips of famous people telling jokes
- Students listen to selected clips of different types of laughter



### Read and write

- Students read selected examples of different types of comedy pieces
- Students attempt to write a short story which contains an element of humour



### Kinaesthetic

- Students watch selected clips from mime artists
- Students discuss how facial expressions and body movements can indicate humour



## Videos



## Activities

- 1: **Audio-visual:** Students watch the *Humour* best practice video  
**Student activity:** Students have a discussion on how they think the speakers added humour to their talks.
- 2: **Audio-visual:** Students watch the full length talks from the three FameLab alumni speakers featured in the *Humour* video  
**Student activity:** Having watched the full talks, students discuss the use of humour in each video and share their opinion on if it improved the talks.
- 3: **Audio-visual:** Students watch the Q and A session video with FameLabber Sharon Omiwole.
- 4: **Communication\***
  - Listening and talking
  - Dictionary - the power of persuasion

\*See Communication Activity Resource Sheet for full description of activities.



## Assessment for Learning

### Research

Students research funny and unusual science stories. Make a list of 3-5 funny, unusual or entertaining science stories.

### Action

Students write a short explanation as to why they believe the stories they have compiled in the *Research* assessment task are funny. This is a great opportunity to demonstrate the different forms of humour that exist within even a small group of people.

### Performance

Students develop one of the funny stories they discovered in the *Research* assessment task into a 1-minute short talk. The main objective here is to try and allow the humorous aspect to come through in their presentation.

## Summary

We can all think of a time when something funny happened in our lives. Even if this memory is from long ago, sometimes we can remember it in such detail, that it feels as if it only happened yesterday. This phenomenon, whereby we remember something better if it happened along with something funny, can be referred to as the humour effect.

For science communicators, humour can be a very powerful tool in helping to explain complicated ideas. Although it may be difficult at first to see how you can build humour into explaining something scientific, with practice and learning about the different forms of humour, it can be done. Some people even become so good at it, they can do stand-up comedy shows around science ideas!

### FameLabber: Sharon Omiwole

Sharon Omiwole is a medical student with a keen interest in science. She credits her father, a doctor, for inspiring her to pursue medicine. In 2018, she was crowned the FameLab Ireland National Champion. She has been featured on the radio talking about the effects of coffee, SFI's Science Week and also Bright Club. She aspires to educate children, especially young girls, about the field of science as well as medicine, with the hope of stirring up their curiosity and consideration of going into such fields when they grow up.



click to play



3.

# Body language



# Introduction

**Body language** is a non-verbal communication we use when expressing our true emotions and feelings at that time. Examples of body language include nodding your head, hand movements, posture and facial gestures.

For a story to be effectively communicated, content is extremely important. However, when attempting to communicate a message, often how the content is delivered can be more important than the content itself. This is where body language can play a key role. Having an understanding of positive and negative body language and how they can be utilised, are powerful tools in communication.

## Objectives

- Students recognise the presence of body language in communication
- Students understand the difference between positive and negative body language
- Students develop the ability to use positive body language to help communicate their message more effectively



## Teaching and Learning Approach (Icebreakers)



### Visual

- Students watch classic Disney cartoons illustrating the use of body language and facial gestures
- Students look at a selection of still cartoon images representing emotions through body position and facial gesture
- Students watch a range of selected clips from sporting events showing happiness and sadness through body language



### Audio

- Students listen to a selection of famous historical speeches and then attempt to match the facial gestures and body language with the words
- Students listen to a selection of different paced songs attempting to predict how dancing would change according to the song



### Read and write

- Students write 3 different short speeches for a range of emotional issues - and match the body language which should accompany each scenario
- Students write out different messages and another student must then attempt to act out that emotion



### Kinaesthetic

- Students act out different emotions using body language alone and without the use of words. The other students must then try to predict what emotions they are trying to communicate.



## Videos



## Activities

- 1: **Audio-visual:** Students watch the *Body Language* best practice video  
**Student activity:** Students have a discussion on the examples of body language they observed in the video.
- 2: **Audio-visual:** Students watch the full length talks from the three FameLab alumni speakers featured in the *Body Language* video  
**Student activity:** Having watched the full talks, students discuss the use of body language in each video and make a list of moments where they observed the speakers using body language to help communicate their message.
- 3: **Audio-visual:** Students watch the Q and A session video with FameLabber Hayden Wilkinson.
- 4: **Audio-visual:** Students watch the Q and A session with FameLabber Joanna Bagniewska, as well as her FameLab talk  
**Student activity:** Having watched the talk, students discuss the challenges in giving a talk in a language other than your native tongue.
- 5: **Communication\***
  - Tell me a story... without talking



## Assessment for Learning

### Research

Students research talks on the FameLab YouTube site and make notes on the use of body language in a selected talk.

### Action

Students write a short summary of the FameLab talk they have selected in their *Research* assessment task.

### Performance

Students present a 1-2 minute summary of the selected FameLab video, summarising the main ideas and highlighting the use of body language by the speaker in communicating their message.

## Summary

Body language is something we all use everyday. Without thinking, we communicate our feelings and emotions with body movements, facial gestures and non-verbal sounds. If we were to watch someone giving a talk without body language, more than likely we would lose interest in the speaker very quickly.

By understanding how body language is used to support verbal communication, we can then begin to make it a bigger part of our own presentation style. If body language is used properly, it can allow us to bring the audience to a level of understanding, which may not be possible otherwise.



### FameLabber: Hayden Wilkinson

Hayden is currently finishing a research masters of science (major in medicine) at University College Dublin, studying glycobiology - the science of sugars. His job is to identify why sugar chains in our brains change upon the onset of Parkinson's disease, to try and find the bad sugars that might be causing the problem.

He got into science communication to share with the world what he was studying, and how it affected literally everybody every day. He loves old black and white science documentaries and wanted to follow in the footsteps of the greats like Richard Feynman and Carl Sagan. An Aussie at heart, he traveled to Ireland following a girl and wound up exactly where he wanted to be. Studying and communicating science.



### FameLabber: Joanna Bagniewska

Dr Joanna Bagniewska is a zoologist and a science communicator. She obtained her MSc and doctorate from Oxford University's Zoology Department, specialising in behavioural ecology and conservation biology. She then lectured at Nottingham Trent University and the University of Reading.

In parallel, she developed her passion for science communication through a range of outreach activities, such as successfully competing in FameLab (where she was awarded the International Alumni Prize) and "I'm a Scientist, get me out of here!", presenting at TEDxWarsaw and Soapbox Science, and exploring science stand-up comedy. Joanna currently splits her time between two roles: Senior Lecturer in Environmental Sciences at Brunel University London, and Communications and Public Engagement Officer at Oxford University's Department of Paediatrics. In her spare time, she is a freelance popular science writer, presenter and communications coach.





4.

# Audience participation

# Introduction

**Audience participation** can be an effective way to reinforce your message. If audience participation can be incorporated into your story, it should lead to higher levels of engagement, which allow for increased understanding of your message.

If used appropriately it can be the difference between a good experience and a great experience. It doesn't have to be anything major, small and subtle interactions throughout your talk/story can make the audience feel they are sharing the experience with you.

## Objectives

- Students recognise the use of audience participation as a tool in science communication
- Students learn common audience participation techniques
- Students discuss the pros and cons of using audience participation as a science communication tool





## Teaching and Learning Approach (Icebreakers)



### Visual

- Students watch selected clips from talks/presentations/performances where audience participation was used as a communication tool



### Audio

- Students listen to recordings from music and comedy performances where audience participation was used and discuss why the performer may have decided to take this approach



### Read and write

- Students read scripts from famous speeches and consider if audience participation could have been used
- Students write why they themselves believe audience participation can be both a positive and a negative



### Kinaesthetic

- Students are given a set of short talks/songs/performances and asked to communicate the piece using gestures, which could encourage audience participation
- The other students try to guess which of the talks/songs/performances the gestures match



## Videos



## Activities

- 1: Audio-visual:** Students watch the *Audience Participation* best practice video  
**Student activity:** Students have a discussion on the examples of audience participation they observed in the video.
- 2: Audio-visual:** Students watch the full length talks from the three FameLab alumni speakers featured in the *Audience Participation* video  
**Student activity:** Having watched the full talks, students discuss the use of audience participation in each video and make a list of moments where they observed the speakers using different methods to invite audience participation.
- 3: Audio-visual:** Students watch the Q and A session video with FameLabber Fiona Malone.
- 4: Communication\***
  - Can I have a volunteer?

\*See Communication Activity Resource Sheet for full description of activity.



## Assessment for Learning

### Research

Students research examples of audience participation in science talks, magic shows and stand-up comedy.

### Action

Students make a list of different methods of audience participation they have found in the *Research* assessment task.

### Performance

Students present a 1-2 minute summary of the different types of audience participation they observed and listed in the *Action* assessment task. Students comment on the differences they may have found.

## Summary

Audience participation can be a difficult skill to master and whether or not it's appropriate for your talk should be carefully considered. But developing a greater understanding of the range of audience participation techniques which exist, can allow you to see the full potential of your talk.

Good science communicators find ways to involve their audience in their talks. It creates greater levels of engagement and can make the audience believe that what you are speaking about is important to them.



### FameLabber: Fiona Malone

Dr Fiona Malone is an award winning biomedical engineer and lecturer based in Galway Mayo Institute of Technology (GMIT). Her PhD investigated the trajectory paths of blood clots through 3D printed models of ischaemic stroke patient vasculature. Her work has been since published in international engineering and medical journals. Following her PhD, her Research Fellowship involved working with Boston Scientific on an Enterprise Ireland innovation partnership through the Medical and Engineering Technology Gateway at GMIT. This project involved building an oesophageal bio-simulator for medical device testing.



5.

SCIENCE

# Language tricks



# Introduction

As language developed over thousands of years, with it evolved techniques, skills and tricks which can all be used to persuade people to change their point of view.

Through the use of persuasive language, people can begin to see the world you see, believe something they thought was impossible or even cross over to a new level of understanding on a difficult concept. Most of us will unknowingly use some of these skills everyday. But for those who can develop the ability to pick and choose from this skillset at any moment, language becomes a powerful tool.

Just like telling any story, science communication relies on the speaker using the same language skills. The more complicated a topic, the more it may be necessary to use different language devices to help your audience understand your message.

As discussed earlier, storytelling has been a key part of human language throughout history and is believed to have played a major role in driving our advances. For this reason, storytelling is still considered one of the most effective ways of communicating a message. This may mean framing the story/message you want to express around the hero/villain narrative, the theme of struggle and redemption or perhaps building tension and triumph into your story. Whatever approach taken, if you can convince your audience to become emotionally invested in your story, you're onto something good.

## Objectives

- Students recognise that language can be used to persuade people of their point of view and beliefs
- Students learn the core tools for telling a convincing story
- Students use persuasive language to build an argument for or against a topic



## Teaching and Learning Approach (Icebreakers)



### Visual

- Students watch selected clips from famous/historic speeches e.g. John F. Kennedy in 1963 (Berlin), Martin Luther King in 1963 (Washington), and Taoiseach Leo Varadkar in March 2020 (Dublin)



### Audio

- Students listen to examples of poetry and readings of other famous speeches
- Students discuss some of the language skills used by the speaker and identify elements of good practice



### Read and write

- Students read speeches and attempt to connect the pattern of emotions introduced into the speech by the speaker
- Students write their own speech on a chosen topic introducing a range of emotions to capture the audience's attention



### Kinaesthetic

- Students select a speech from samples given and then mime to the group, how they believe body language should match the words
- The other students attempt to identify the speech being mimed by the presenter



## Videos



## Activities

- 1: Audio-visual:** Students watch the *Language Tricks* best practice video  
**Student activity:** Students have a discussion on the examples of persuasion and language tricks they observed in the video.
- 2: Audio-visual:** Students watch the full length talks from the three FameLab alumni speakers featured on the language tricks video  
**Student activity:** Having watched the full talks, students discuss the use of language tricks and persuasion in each video. They then create a list of moments from the talks where they observed different language tricks and persuasion being used by the speaker.
- 3: Student activity:** In her talk, Niamh Kavanagh creates an emotional rollercoaster by using descriptive and dramatic language. Students write a short fictional story using emotional and dramatic language with the objective of capturing the reader's interest immediately.
- 4: Communication\***
  - The comparison game | • The big interview

\*See Communication Activity Resource Sheet for full description of activity.





## Assessment for Learning

### Research

Students research the use of the persuasive language skills in famous historical speeches.

### Action

Students make a list of 3 famous speeches from anywhere in history and make a note of examples of persuasive language in them.

### Performance

Students present a 1-2 minute persuasive story on a science topic of their choice.

## Summary

Language is full of skills and techniques which can help us to convince an audience that the story we are telling is important to them. Being aware of these techniques can help you to build a persuasive talk, which communicates your message in a clear and concise manner.

Once you have developed an understanding of these language tricks, you will have to decide which are appropriate for the story you are telling. Good science communicators will learn how to adjust their talks and presentations to suit their audience. Being able to read the mood of your audience and think on your feet will allow you to quickly make the small changes necessary to successfully communicate your message.

### FameLabber: Niamh Kavanagh

Dr Niamh Kavanagh is a scientific consultant and award-winning communicator. She has been named one of “6 Rising Stars of Irish Research”, “20 incredible women leading the way to scientific advancement” and “13 women helping women in STEM” by Silicon Republic (Ireland’s leading technology news service).

Her PhD research was dedicated to designing, building, and optimising an optical communications system to provide alternatives for future internet growth. Today, Dr Kavanagh is self-employed and works as a consultant scientific products specialist with M Squared Lasers, a leading developer of photonics and quantum technology on a mission to harness the power of light to change the world. M Squared Lasers is addressing some of society’s greatest challenges in science, climate change and healthcare.

Dr Kavanagh is a passionate advocate for equity, diversity, and inclusion. She is co-chair of House of STEM (Ireland’s first network for LGBTQ+ people in STEM), has driven several gender equality initiatives and is an award-winning mentor for her work with disadvantaged youth. She is Assistant Vice President of Equity and Diversity for the IEEE Photonics Society and a 2020 OSA ambassador.



6.





# Introduction

Audience attention spans are dropping rapidly; by some estimates goldfish now have better attention spans than humans! How did that happen?

But all is not lost. We have a very effective method of capturing their attention: **creative communication**. Being creative can come in many forms, including poetry, song/rap, dance, use of props or even performing a stunt.

Whatever form of creativity you use, what's important is that it captures your audience's attention, disrupts their expectations and guides them to a place where they can engage with your story.

You may be faced with barriers when attempting to communicate with a group. But having a good understanding of your audience, the environment in which you're communicating and any other important factors such as cultural differences, can all help you to find the optimum method of delivering your message.

Creative communication gives you the licence to use your own imagination to create an environment or transport your audience's imagination and attention to a place where they will be most receptive to the message you are delivering. The only limit is your imagination. This is a space to experiment and create.

## Objectives

- Students develop an understanding for the role of creativity in effective communication
- Students identify examples of creative communication
- Students appreciate that creativity in communication can be adjusted to match the audience, the environment and the topic of discussion



## Teaching and Learning Approach (Icebreakers)



### Visual

- Students watch selected clips from poetry readings, stand up comedy, spoken word, interpretive dance and presentations using props as examples of how creativity can be used to communicate a message



### Audio

- Students listen to rap and spoken word songs as examples of creative communication
- Students discuss how using these alternative approaches to traditional methods of communication can allow messages and information to reach a larger audience



### Read and write

- Students read lyrics from songs and identify the language in these songs which strengthens the communication of the message within the song
- Students write their own song/poem/spoken word piece with the objective of using creative communication to tell a story in an alternative way



### Kinaesthetic

- Students select a topic and design a simple and short dance or performance involving body movements in order to communicate the message



## Videos



## Activities

- 1: Audio-visual:** Students watch the *Creativity* best practice video  
**Student activity:** Students have a discussion on the examples of creativity they observed in the video.
- 2: Audio-visual:** Students watch the full length talks from the three FameLab alumni speakers featured on the *Creativity* video  
**Student activity:** Having watched the full talks, students discuss the use of creativity in each video.
- 3:** Students watch the Q and A session video with FameLabber Adam Murphy.
- 4: Communication\***
  - The power of an image

\*See Communication Activity Resource Sheet for full description of activity.



## Assessment for Learning

### Research

Students research iconic images from history which are based around scientific discoveries, e.g. the moon landing.

### Action

Students make a list of 3 iconic images from history and write a short paragraph on each explaining their scientific significance.

### Performance

Students give a 1-2 minute presentation detailing the scientific story behind one of the images listed in the *Action* assessment task.

## Summary

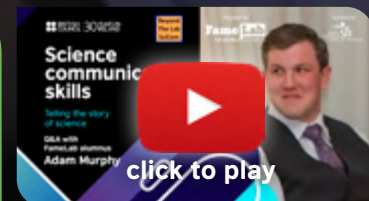
Creativity in science communication gives you the freedom to not only capture your audience's interest but to also maintain it throughout your talk. By using a range of engagement tools, you can communicate complex scientific concepts through unexpected and imaginative methods.

If you can succeed in capturing the imagination and attention of your audience, this will allow you to communicate scientific messages that might otherwise prove impossible. As a science communicator you will learn how to strike the balance between the correct amount of creativity and scientific content in your talk. Through practice you will start to see that all science stories can be communicated, we just need to find the right way to introduce them to our audience.



### FameLabber: Adam Murphy

Adam is a physicist turned science communicator from Dublin. When not talking to anyone within earshot about science, he can be found watching worrying amounts of superhero television, attempting to play ukulele, or twirling around a ballroom floor. He currently works as a producer for the Naked Scientists Podcast.





## Resources

The following list of resources has been carefully selected to support students and teachers when using this toolkit. The resources can be used to aid teachers in delivering the toolkit or as additional reading for students.

- **Storytelling**
  - BBC Culture, *Our fiction addiction: Why humans need stories*
  - Scientific American, *The Future of Science Storytelling*
  - Britannica, *Epic of Gilgamesh*
- **Humour**
  - National Geographic, *To challenge misguided beliefs about science, try satire*
  - RTE Brainstorm, *Who's laughing now? The science of humour*
- **Body Language**
  - Silicon Republic, *7 secrets of successful science communication*
- **Language Tricks**
  - Nature, *How can we use the 'science of stories' to produce persuasive scientific stories?*

## What's next?

Did you enjoy this toolkit and now want to learn more about science communication?

Below is a list of some events and organisations, all with excellent resources and information to help you continue your science communication journey.

- **FameLab**
- **Science Week**
- **Smart Futures**
- **ReelLife Science**
- **Engineers Ireland - STEPS**
- **SciFest**
- **The SOPHia Project**
- **I'm a Scientist/Engineer Ireland**
- **Cell Explorers**
- **OurKidsCode**
- **Career Mathways**

**The British Council** is the UK's international organisation for cultural relations and educational opportunities. We have been working in Ireland since 1990, partnering with Irish organisations to encourage cultural, scientific and other educational cooperation between Britain and Ireland. We enable Irish and UK organisations and individuals to share their insight, expertise and knowledge in culture, higher education and science, which results in bespoke programmes and partnerships to mutually benefit Ireland and the UK. Founded in 1934, we are a UK charity governed by Royal Charter and a UK public body. In 2020, we marked our 30th anniversary in Ireland with a series of events celebrating cultural relations and exchange between the UK and Ireland.

[www.britishcouncil.ie](http://www.britishcouncil.ie)

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**FameLab®** is an international competition to find and support the world's most talented new science communicators. Participants have three minutes to win over the judges and audience with a scientific talk that excels for its content, clarity and charisma. FameLab is owned and created by Cheltenham Festivals in the UK. The British Council has licence to deliver the competition in over 30 countries internationally. FameLab Ireland is funded by Science Foundation Ireland and is supported by Cpl Resources Plc and Henkel Ireland Limited. It is managed by British Council Ireland in collaboration with Newstalk 106-108fm, Science Gallery Dublin, Dublin City University, NUI Galway, Royal College of Surgeons in Ireland, Trinity College Dublin, University College Cork, University College Dublin, University of Limerick and multiple science research centres.

[www.cheltenhamfestivals.com](http://www.cheltenhamfestivals.com)

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**Eoin Murphy** is a biochemist, educator and science communicator. He graduated with a BSc in Biotechnology before completing an MSc in Biochemistry. Eoin is a former winner of the HEA/Irish Independent Making an Impact award, Researchfest and Famelab Ireland runner-up.

He created and led a workshop for NUI Galway's Threesix competition in 2019 on the use of storytelling for communicating research. Previous to this, he had assisted science communication and public engagement specialist, Malcolm Love, in delivering the British Council's Scientifically Speaking workshop.

Eoin is currently completing a part-time MSc in Science and Health Communication. Having returned to education he is working on innovative means of bringing science communication to secondary schools as well as the wider general public.

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