

POPULAR SCIENCE SCIENTIFIC OUTREACH WORKSHOP

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WHAT IS SCIENCE OUTREACH?

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**HAVE SCIENTIFIC
KNOWLEDGE**

**SKILLS IN
COMMUNICATION**

**WHY IS SCIENCE
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WHAT IMAGE
DOES SOCIETY
HAVE OF
SCIENTISTS?

SCIENCE IS VERY
DIFFICULT FOR
ME; I CAN'T
UNDERSTAND IT.

SOME SCIENTIFIC TOPICS
ARE CONTROVERSIAL IN
SOCIETY.

GIVE YOUR
OPINION

WHY SHOULD WE INVEST IN
SCIENCE? WHERE DOES MY
MONEY GO?

WHY IS SCIENCE OUTREACH IMPORTANT?

- **Civil responsibility**
 - To provide the necessary information for society to acquire an opinion on issues related to the progress of science and its repercussions.
 - To help individuals to think critically.
 - Present reasons for investing in science.
 - Helps avoiding misconceptions and fake news.

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- **To promote curiosity**

- Creating new entertainment.
- Educate new generations of scientists.

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- **Helps to humanise the image of the scientist**

- Science belongs to everyone, not just to scientists.
- Reinforces our scientific reputation.

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- **Create scientific culture**



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**WHAT ARE THE
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1. CONTENT

2. CLARITY

3. CHARISMA

LESS IS MORE

1. CONTENT

- Be clear about what you want to speak about

2. CLARITY

- Prepare key messages to take away the main ideas

3. CHARISMA

- Keep it simple

We all know you want to share a lot with your audience, but remember that you have been studying for years, and it's very difficult for a non-expert to understand many things in just a few minutes. Think about the message you want to communicate and repeat it, explaining it in different ways.

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EXERCISE

Find a partner. One of you will be a scientist, and the other will be a journalist who will conduct a brief interview.

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BE CAREFUL WITH TECHNICAL JARGON

1. CONTENT

2. CLARITY

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- Use language that is **neither too complicated nor overly simple**
- **Don't assume any prior knowledge** from the audience
- **Change one word for another** to make the message work better
- If you can't replace a word, don't worry! Just **explain it**

ANALOGIES HELP

1. CONTENT

2. CLARITY

3. CHARISMA

- Don't bombard with facts
- Finding similarities between scientific concepts and everyday things helps with explanations
- Examples also help to connect with the audience
- However, remember to explain the concepts. Avoid making your only explanation rely on an experience you expect the audience to have had



Example: explain a chemical reaction using the example of the reaction between blood and hydrogen peroxide. Times change, and now many people don't use hydrogen peroxide on wounds, so they might not know what you're talking about

MAKE YOUR STORY MEMORABLE

1. CONTENT

2. CLARITY

3. CHARISMA

- Your interest can be contagious to the audience
- Unexpected, surprising...
- Think that you want to tell other people and will form your memorable message
 - Introduction: create a frame for your story
 - Climax o Conflict
 - Resolution o Conclusion

A STORY NEEDS TO BE WORKED ON, REFINED,
AND PRESENTED TO FRESH EYES IN ORDER TO
IMPROVE IT.

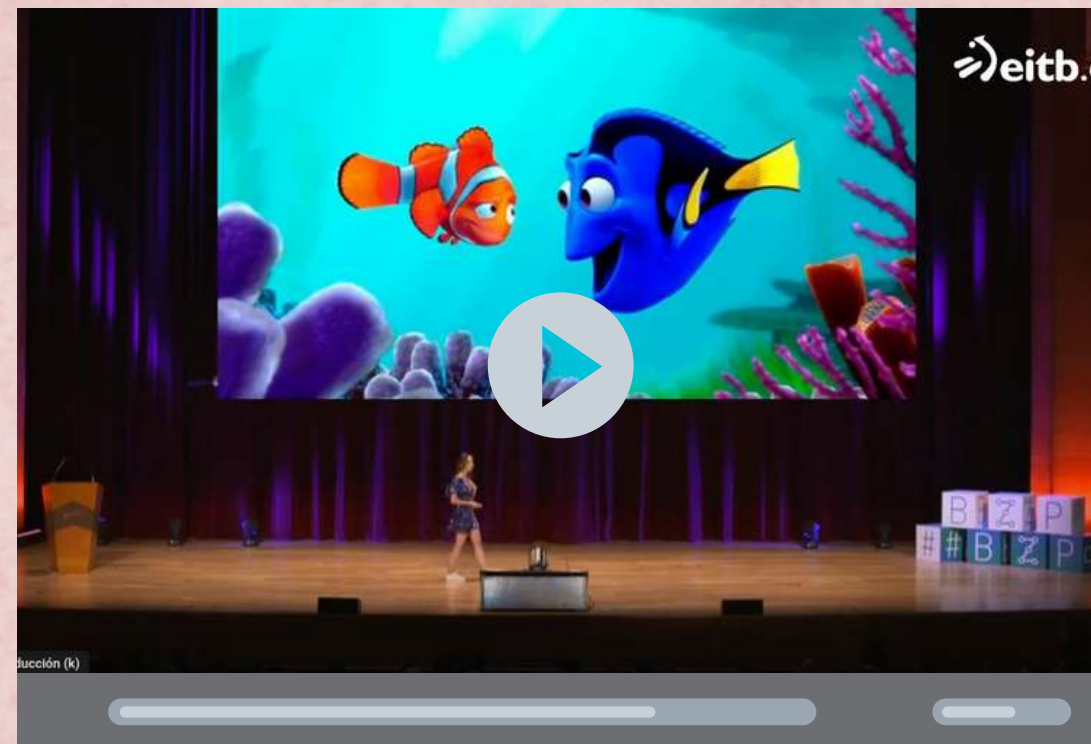
MAKE YOUR STORY MEMORABLE

1. CONTENT

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- Introduction: Is the Universe governed by simple mathematical rules?
- Climax: What happens between Mars and Jupiter
- Resolution: Discovery of the asteroid belt
- General idea: How do we search for things we don't know exist?



CLOSE THE DISTANCE WITH YOUR AUDIENCE

1. CONTENT

2. CLARITY

3. CHARISMA

- **Be natural.** Don't try to be someone you're not.
- The audience usually doesn't want rules.
- No educate people but stimulate their curiosity
- You're not trying to train them to pass an exam
- **Don't be arrogant.**
 - You're not a genius
 - They're not dumb.



PERSONALITY



WHAT ABOUT PROPS?

1. CONTENT

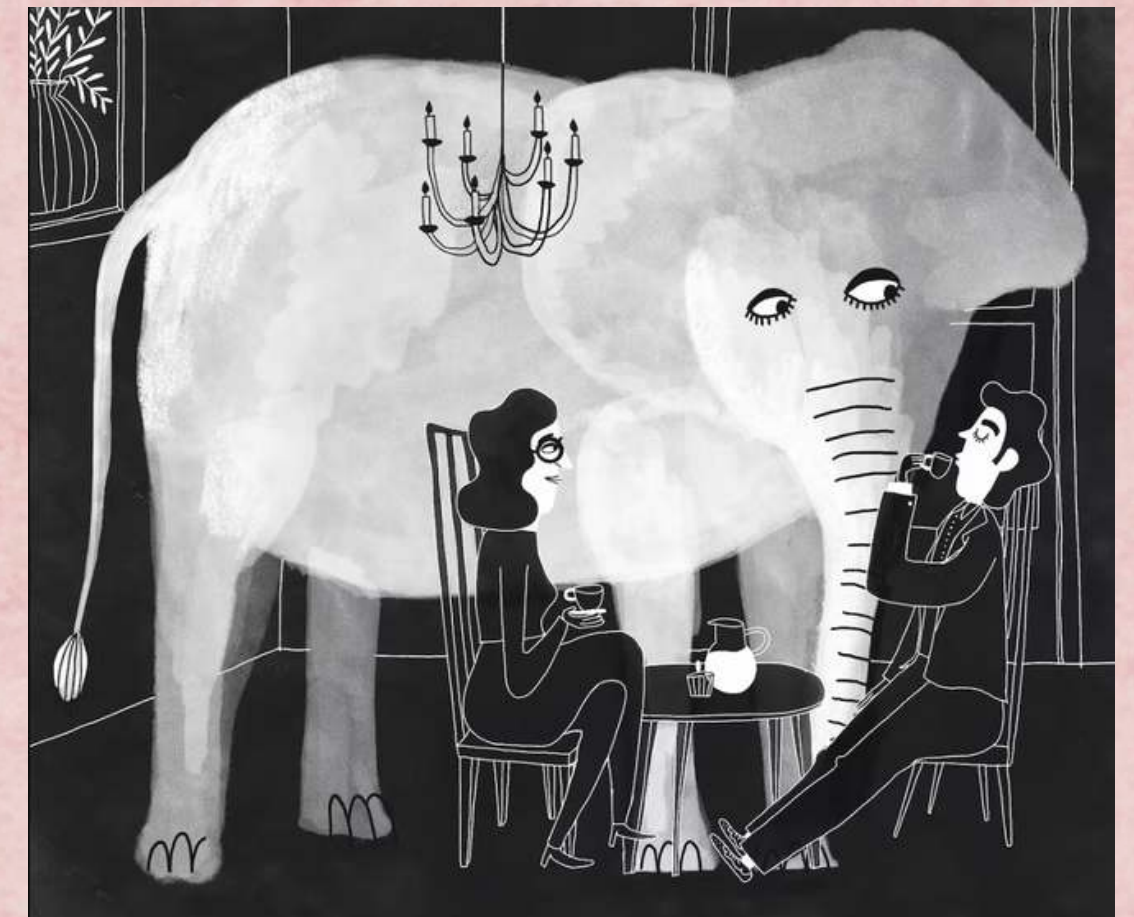
2. CLARITY

3. CHARISMA

- Can help an audience visualise something but...
the prop will distract the audience

Some ideas:

- Make hand gestures
- Use the prop and leave it on the floor when finished.
- Keep the prop hidden and take it out when you are going to use it.
- Have a hidden message in your T-shirt that will be shown when you unbutton your shirt.



BODY LANGUAGE

1. CONTENT

2. CLARITY

3. CHARISMA

Body language is the non-verbal communication expressed through gestures, facial expressions, posture, and movements, revealing our emotions and intentions without words.

- Avoid appearing distracted.
- Avoid showing arrogance.
- Avoid appearing unprepared.
- Avoid appearing sleepy.
- Look at the audience (if there are audience).
- Use non-verbal language to enrich the story.



1. CONTENT

**WHAT DO YOU
SAY?**

2. CLARITY

**HOW DO YOU
SAY IT?**

3. CHARISMA

**BODY
LANGUAGE**

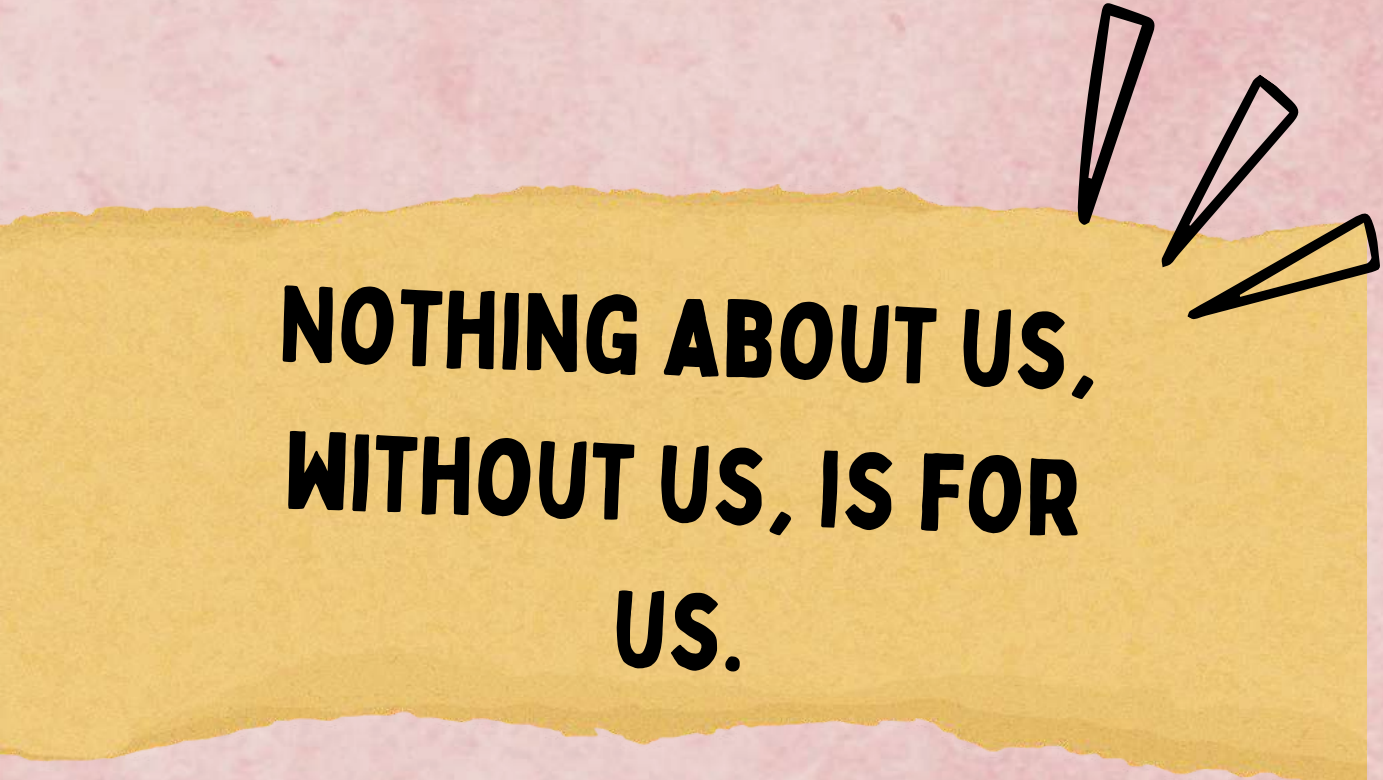


THE AUDIENCE WHO IS YOUR TARGET?

THE AUDIENCE

The best approach is to create something designed for a specific audience, but with the potential to resonate with everyone.

- What experience does your audience have?
- How old are they?
- Where do they live?
- What is their culture?
- ...



**NOTHING ABOUT US,
WITHOUT US, IS FOR
US.**

PERSONAL TIPS

Connect with the audience first and then talk to them about science.

Have fun!



**HOW IS SCIENCE OUTREACH
AND COMMUNICATED?
SCENARIOS AND MEDIUMS
FOR SCIENTIFIC
COMMUNICATION.**

1) INTERNET

It is the priority stage for younger citizens

SOCIAL MEDIA

**PODCAST AND
RADIO DIGITAL**

VIDEOS

WIKIPEDIA

BLOGS

GENERALIST

DIGITAL MEDIA

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2) OUTREACH BOOKS AND SCIENCE MAGAZINES

1) INTERNET

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3) FAIRS AND OTHER SHOWS

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3) FAIRS AND OTHER SHOWS

4) TELEVISION AND RADIO

1) INTERNET

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3) FAIRS AND OTHER SHOWS

4) TELEVISION AND RADIO

5) PERSONAL ENVIRONMENT



NOW IS YOUR TURN!

ACTIVITY

- Form a group of 4 people.
- Decide together what you want to communicate.
- Think about the key messages you want the audience to take away (less is more).
- Think in your audience
- Choose the format in which you want to communicate your message.
- Create a story (organize your ideas).
- You have 10 minutes to organize your project and 5 minutes to present it to the rest of the class.



**THANK YOU
VERY MUCH**