



SIMONA CERRATO | 15 OCTOBER 2021

# SCIENTIFIC COMMUNICATION TECHNIQUES: PUBLIC SPEAKING



# **WHAT ARE THE GOOD ELEMENTS OF A GOOD PRESENTATION?**

**PARTICIPANTS CAN VOTE AT [SLIDO.COM](https://www.slido.com) WITH #765682**

# FOUR QUESTIONS

# MOTIVATIONS

**why...**

**are you telling this particular story?**

**CONTENT**

**what...**

**are you going to tell?**

**AUDIENCE**

**who...**

**are you speaking to?**

**TIME**

**when (and how long)...  
are you going to speak?**

**objectives:** why communicate? what message?

**personal history, self perception, interests and**

**priorities:** to whom I want to communicate?

**relevance, motivation, attention:** why should they care?

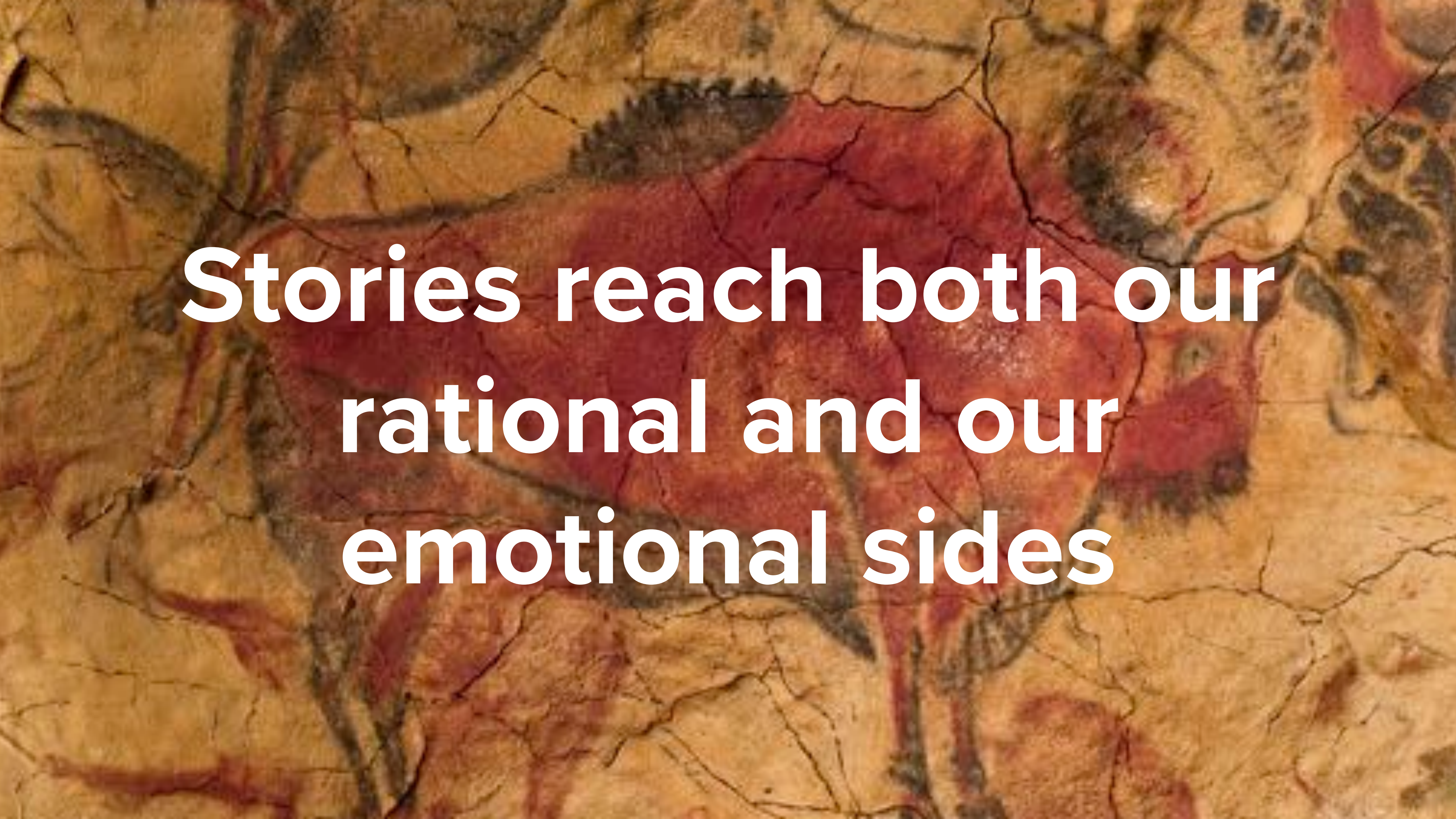
**media:** which is the most appropriate?

**content:** what do they know already? possible links, analogies, stories...?



# HOW TO CREATE A STORY



The background is a piece of marbled paper with a complex, organic pattern of brown, tan, and dark grey veins. A prominent, irregular shape in a deep red or maroon hue is centered in the image, partially overlapping the text. The text is white, bold, and sans-serif, arranged in three lines.

**Stories reach both our  
rational and our  
emotional sides**



# WHAT IS YOUR FAVORITE STORY?





## Red Riding Hood

Her networking strategy, used as a platform for the mobile muffin business

### Red's Mission

- Take home-made muffins to Grandma's house in woods that are suspiciously dark and gloomy and feature a notoriously evil wolf.
- Note: avoid the woodsman who stalks people and carries an axe.

### Red's Time Allocation

Activity	Color
baking	Blue
walking	Yellow
talking	Green
consuming	Purple

### Areas for Improvement

- Don't get eaten by wolves
- Visit grandma more so that she is easily recognized as real grandma, not fake wolf-grandma
- Utilize Ziploc baggies for muffin freshness
- Write thank-you note to heroic-yet-still-creepy woodsman





## Ingredients of a good story

To build a good story keep in mind that the media and non-experts in general are interested in the following:

**Consequences:** the impact of the discovery/application/research on society.

**News / Novelty factor:** whether it's a first, that is, it has never happened before, nor been witnessed or achieved.

**Change:** how the research/application will affect our way of living, working, playing or our way of perceiving our surroundings.

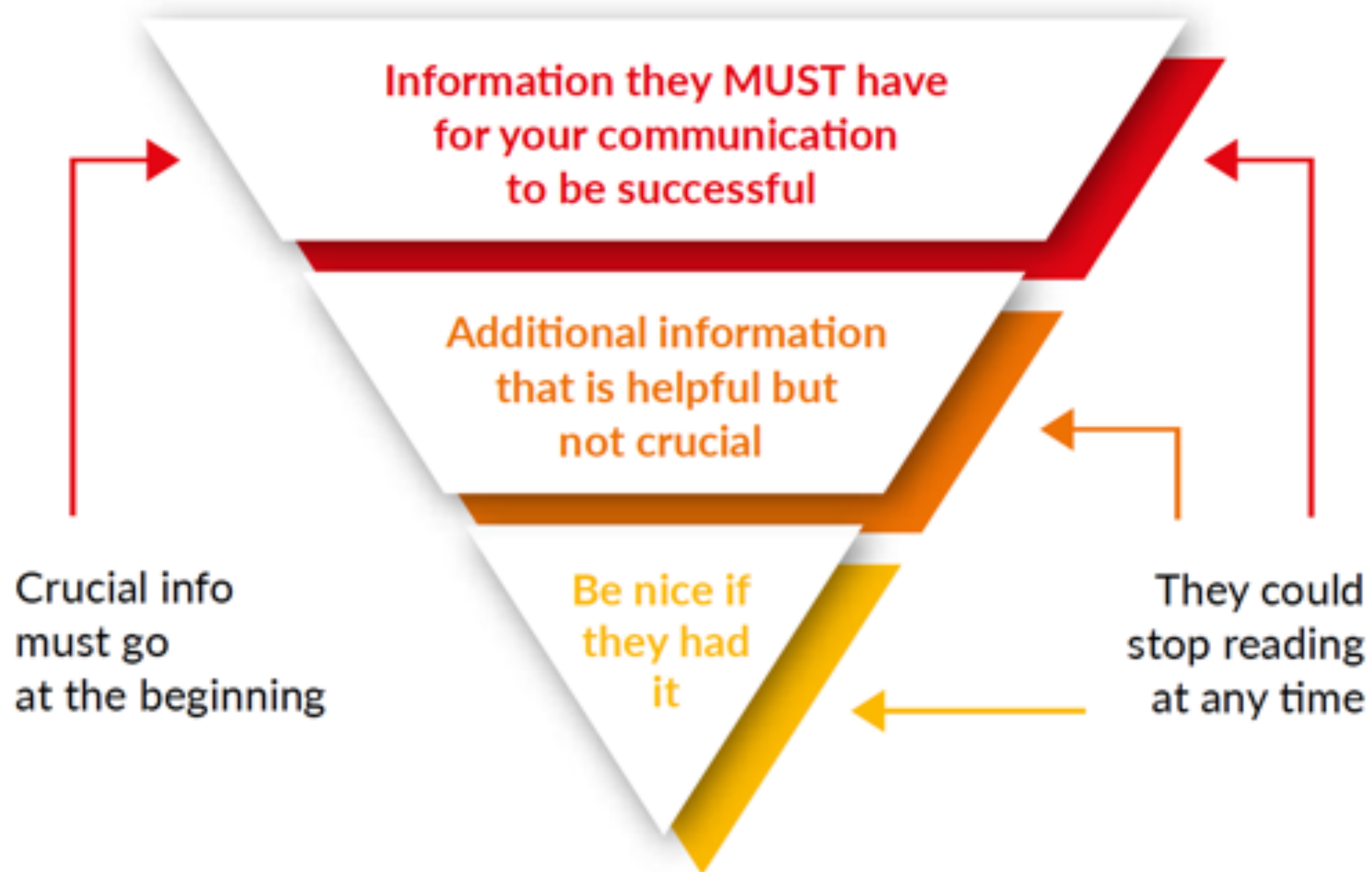
**Conflict:** if there are alternative solutions/models (controversy is always interesting).

**Record-breaking:** something that's unique or that has been very difficult to observe, or is a record in size, length, duration, etc.

**People:** anything to do with real people, their lives and what they actually do.



# The inverted pyramid



*Science* 7 May 2010: Vol. 328. no. 5979, pp. 710 - 722  
DOI: 10.1126/science.1188021

*Research Articles*

## **A Draft Sequence of the Neandertal Genome**

*By Richard E. Green, et al.*

Neandertals, the closest evolutionary relatives of present-day humans, lived in large parts of Europe and western Asia before disappearing 30,000 years ago. We present a draft sequence of the Neandertal genome composed of more than 4 billion nucleotides from three individuals. Comparisons of the Neandertal genome to the genomes of five present-day humans from different parts of the world identify a number of genomic regions that may have been affected by positive selection in ancestral modern humans, including genes involved in metabolism and in cognitive and skeletal development.

We show that Neandertals shared more genetic variants with present-day humans in Eurasia than with present-day humans in sub-Saharan Africa, suggesting that gene flow from Neandertals into the ancestors of non-Africans occurred before the divergence of Eurasian groups from each other.



New Scientist 19:00 06 May 2010

## Neanderthal genome reveals interbreeding with humans

By Ewen Callaway

**How closely are Neanderthals related to us?** They are so closely related that some researchers group them and us as a single species. "I would see them as a form of humans that are a bit more different than humans are today, but not much," says Svante Pääbo, a paleogenetics at the Max Planck Institute in Leipzig, Germany, whose team sequenced the Neanderthal genome. The common ancestor of humans and Neanderthals lived in Africa around half a million years ago. After that, the ancestors of Neanderthals moved north and eventually made it to Europe and Asia. Our ancestors, meanwhile, stuck around Africa until about 100,000 years ago before eventually conquering the globe. Neanderthals died out around 28,000 years ago.

**How did they sequence the Neanderthal genome?** Bone contains DNA that survives long after an animal dies. (...)

*Science reporter, BBC News*

Page last updated at 18:02 GMT, Thursday, 6 May 2010 19:02 UK

## **Neanderthal genes 'survive in us'**

*By Paul Rincon*

**Many people alive today possess some Neanderthal ancestry, according to a landmark scientific study**

The finding has surprised many experts, as previous genetic evidence suggested the Neanderthals made little or no contribution to our inheritance. The result comes from analysis of the Neanderthal genome – the “instruction manual” describing how these ancient humans were put together. Between 1% and 4% of the Eurasian human genome seems to come from Neanderthals. But the study confirms living humans overwhelmingly trace their ancestry to a small population of Africans who later spread out across the world. (...)





Image: © Neanderthal Museum (Mettmann, Germany)



# THE METHOD

- ① Brainstorming
- ② Grouping
- ③ Storyboarding
- ④ Producing text
- ⑤ Producing visuals





# Brainstorming



# 15 minutes

produce ideas, concepts, relations, emotions, etc.

each idea one sticky note

speak aloud

do not comment, judge, discuss, object

set inspiration from the ideas of the others

# Grouping

Sustainable

10  
gain

Different  
methods

Difficult

ball?

Hot  
&  
steak

Poll 1:

# 15 minutes

group the ideas according to the topic  
something missing? and it  
something useless or irrelevant? remove it



# Storyboarding



# 30 minutes

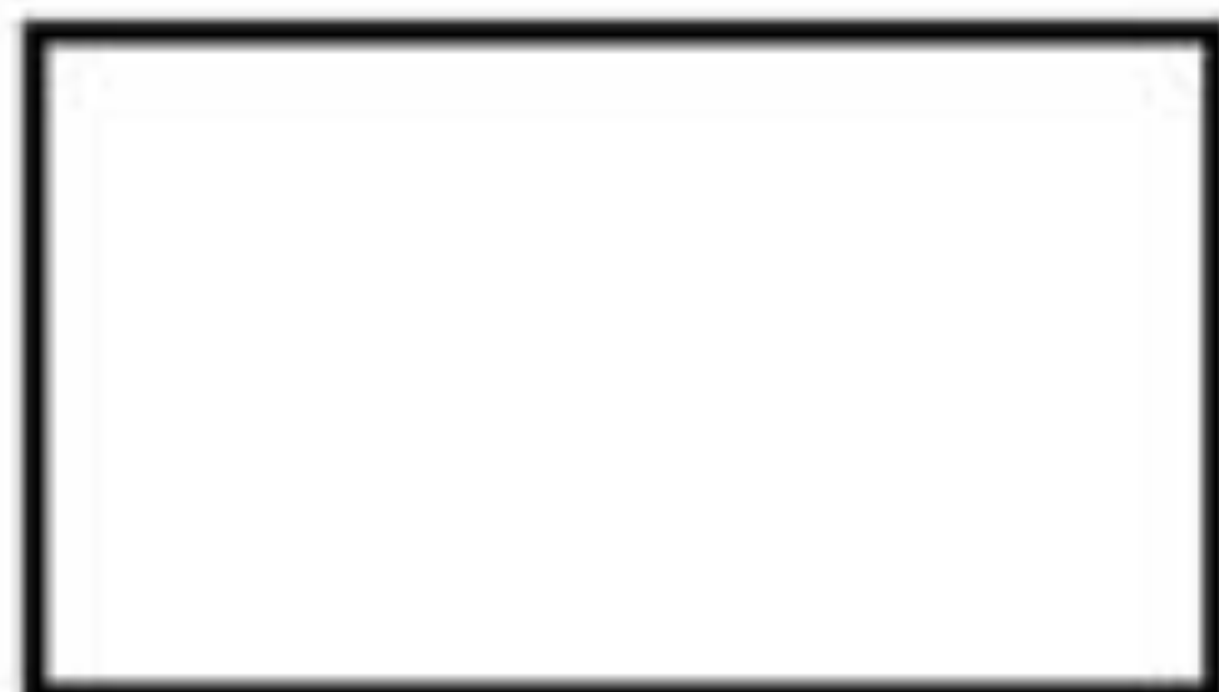
transform the arguments of the previous (Grouping)  
phase into a linear story  
each scene: an image and a text



# STORYBOARD

Production:

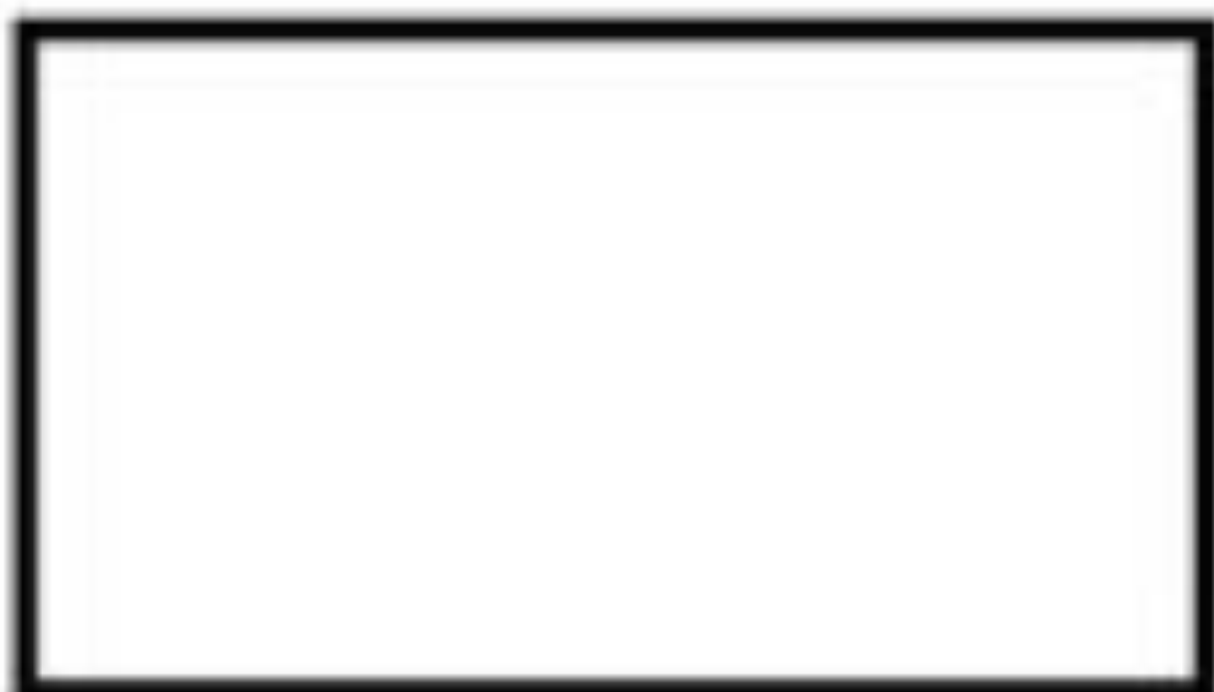
Date:



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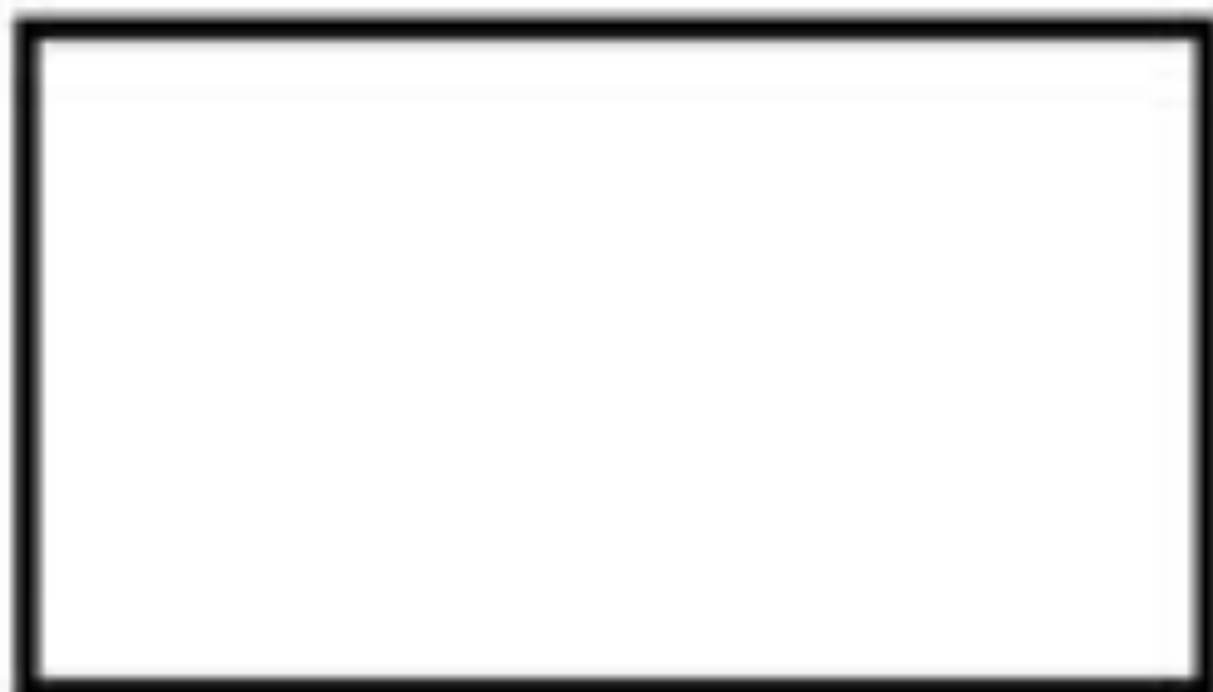
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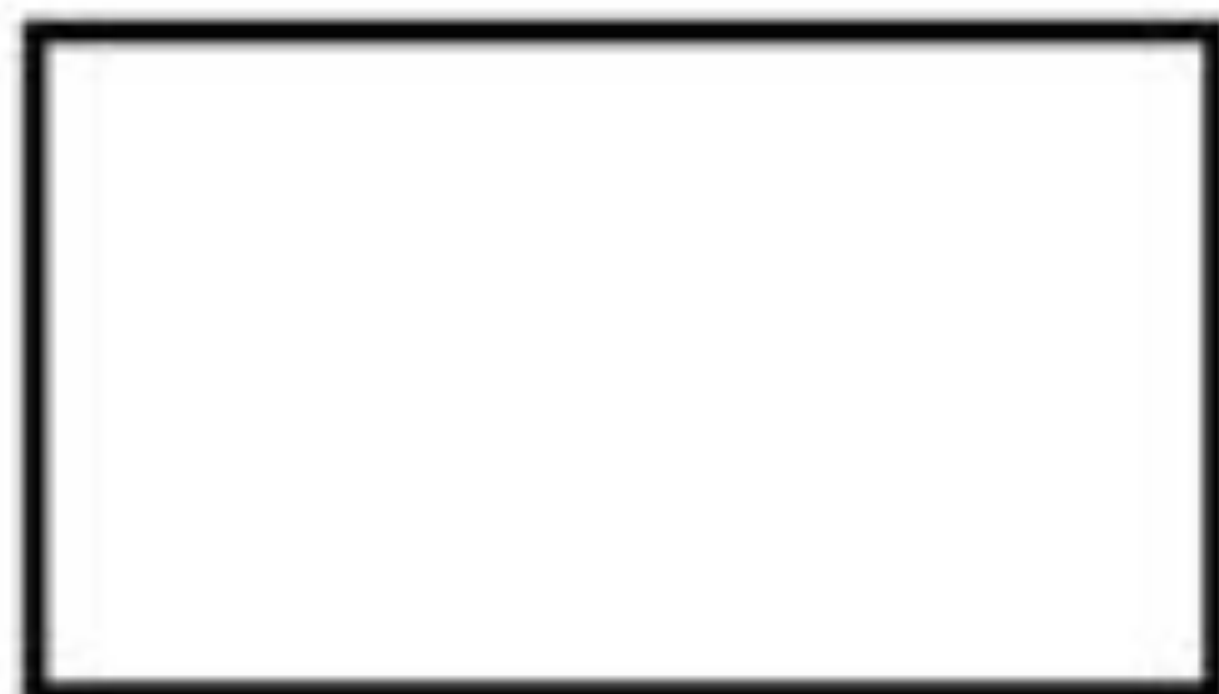
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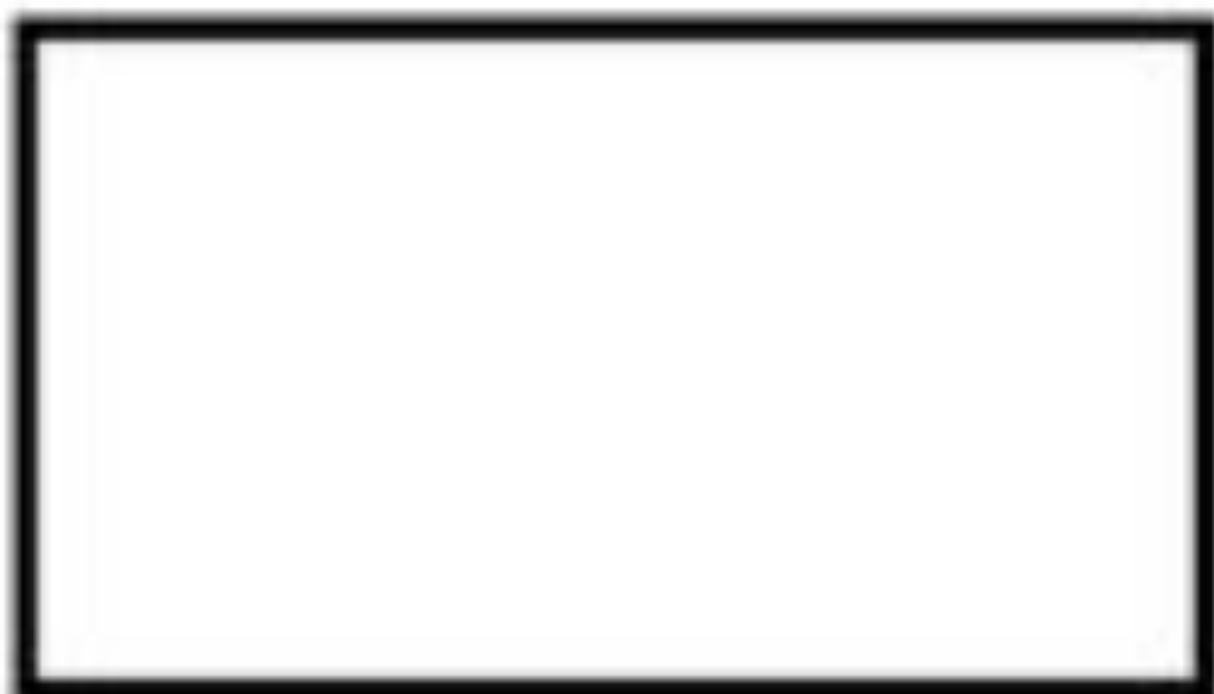
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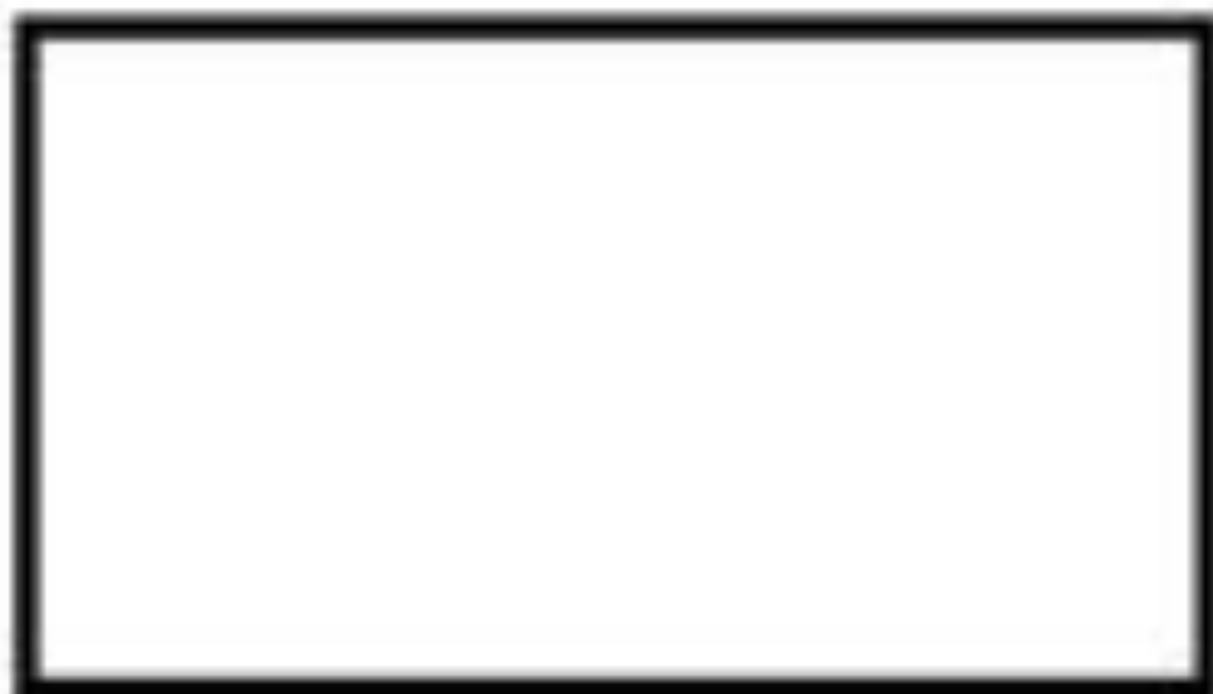
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Jurassic Park - by David Lowery



TIGHT OVER TIM UP TO ROOF. REX AT FENCE  
GOAT HANGING OUT OF ITS MOUTH.  
THE REX SWALLOWS THE GOAT IN ONE BIG  
GULP.





REGIS OPENS DOOR AND RUNS.





WIDE TO VEHICLES. REGIS RUNS PAST GRANT &  
GERHARD IN SECOND VEHICLE





TIM & LEX LOOK OUT WINDOW TOWARD FENCE





OVER TIM & LEX AS THE FENCE IS PUSHED OVER.  
TILT UP! THE SIGN IS HAMMERED AGAINST  
THE DOOR.



31A



WIDE TO BOTH VEHICLES. THE T-REX TEARS  
ITS WAY THRU THE FENCE WIRES AND...





THE T.REX STEPS OVER THE BARRIER ONTO THE  
ROAD AND LOOKS DOWN AT BOTH  
VEHICLES





REXS' FOOT INTO FOREGROUND.



# Producing

Handwritten notes in red ink, possibly including the word "Hand" and other illegible scribbles.

Handwritten word "BANA" in red ink.

Handwritten word "MUDWIPAN" in red ink.



Handwritten word "TIDE" in red ink.



Handwritten word "Hand" in blue ink with an arrow pointing to the right.

Handwritten notes on a yellow sticky note, including the words "Handwritten" and "Handwritten".

Handwritten notes on a white piece of paper, including the words "Handwritten" and "Handwritten".



# 30 minutes

use A4 sheets and markers to prepare the visual support

if you have objects, use them to facilitate the story

choose the spokesperson

rehears rehears rehears



# Presenting

1080  
000 000 km/h