



While waiting please prepare the following:

1. A ten-peso coin

2. Two straws

3. A glass half-filled with water or any drink

4. tape



AST 2: Interest, Conceptual Change and Science Education

Alfons Jayson O. Pelgone

Educating Science Teachers for All

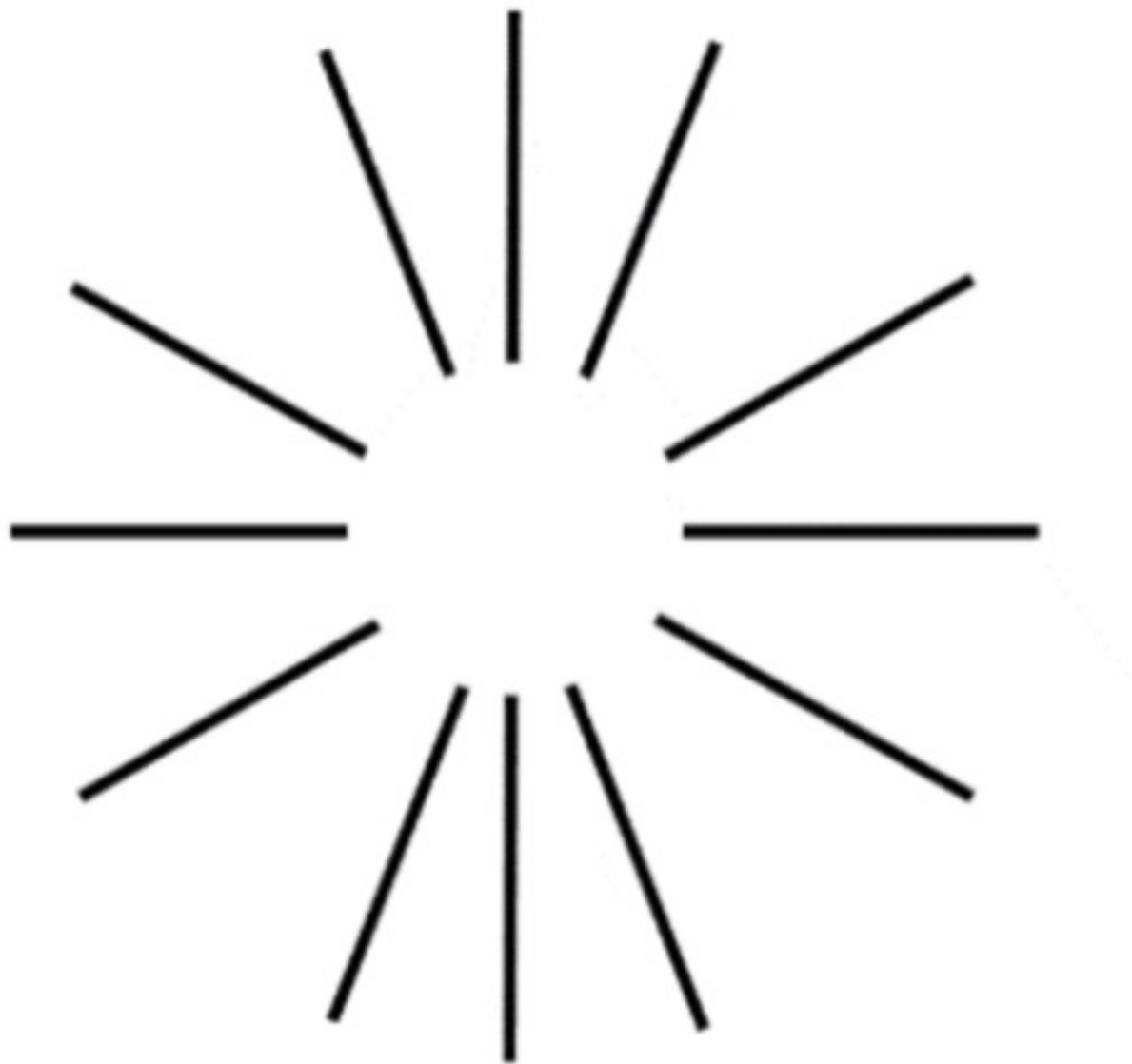
ESTA-PHIL-PNU



How to make Science Teaching more Interesting

Discrepant Event

- Use intriguing visuals
- Experiments (Inquiry-based Activities)





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Discrepant Event

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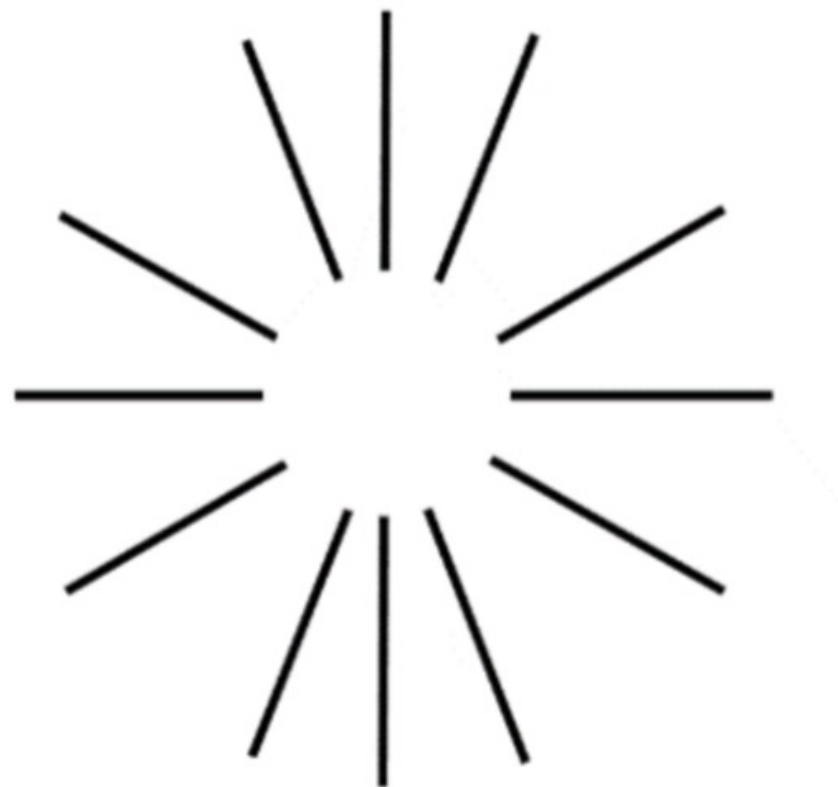


Figure 3: An Ehrenstein figure with radiating lines around a 'circle'.



Let us try some Sample Hooks



Sample Hooks

- **Hook 1: Gravity hand trick**
- ***Subject: Gravity and forces***
- ***Materials: Coin***
- ***Teaching Method:***
 - Give the coin to a student.
 - The student places it in one of his hands.
 - The student stands out of sight from the teacher, but in sight of the class.
 - He places the hand with the coin in the air, with the other hand by his waist.
 - He must do this for one minute.



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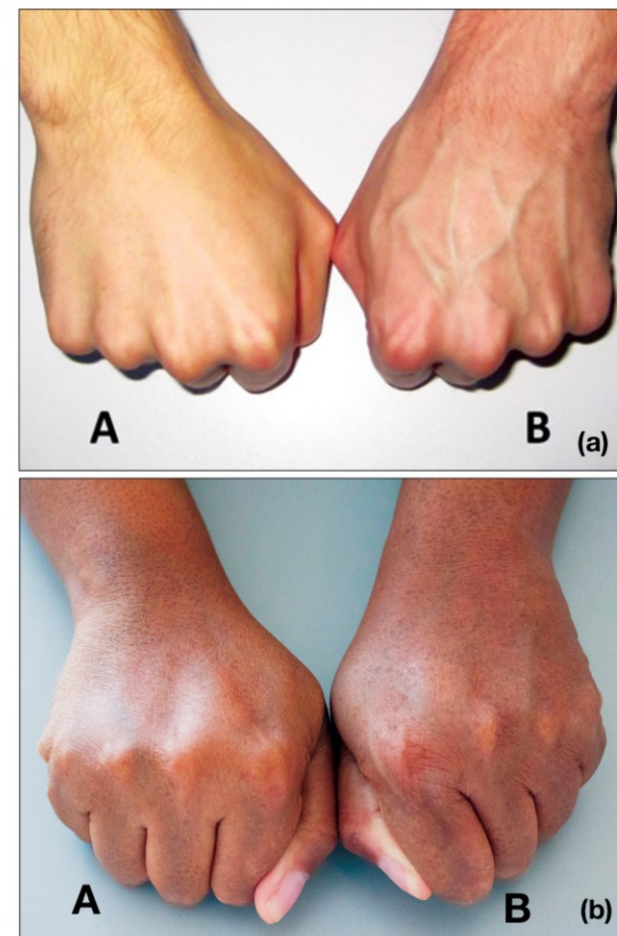


Fig. 1. Shows the difference between a hand held in the air for one minute (A) and one held at the waist (B). In (b) the effect is less pronounced in students with darker complexions, but still sometimes apparent, especially in the definition of the veins



Sample Hooks

- Hook 2: Meal Plate with Circular Hole
- *Subject: Thermodynamics/material science*
- *Materials: Picture of question*
- *Teaching Method:*
 - Students are posed the question at the start of class. It should be noted that for this hook to be effective, students should have prior or experiential knowledge of thermodynamics.

Background:

Consider a metal rectangle with a hole in it (Fig. 2). When the plate is uniformly heated, the diameter of the hole will

- A) increase.
- B) decrease.
- C) stay the same size.

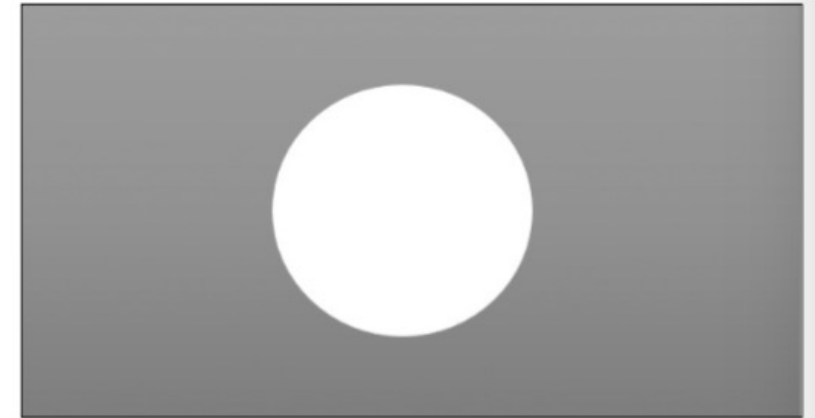


Fig. 2. Illustration of a metal plate with a hole in the center.



Sample Hooks

- Hook 3:

Are two straws better than one?



Sample Hooks

- Hook 3:

Why is it that we are able to 'sip' the liquid up through a straw?

Sample Hooks

- Hook 3:
What if we use two straws?



Fig. 3. Beaker with two straws taped together.



Sample Hooks

- Hook 3:
What if we use two straws?



<https://www.pinterest.ph/pin/432556739180995221/>



Sample Hooks

- Hook 3: Are two straws better than one?
- *Subject: Air pressure*
Materials: Cup/beaker, two straws, water, tape
- *Teaching Method:*
 - Before conducting this demonstration, ask students their opinion on whether the new straw will work.
 - This is a 50/50 question, meaning that a lot of students will guess the correct answer but perhaps without the correct scientific reasoning.



Fig. 3. Beaker with two straws taped together.

How to make Science Teaching more Interesting

Relevance

- Science for everyday use
- Culturally relevant materials

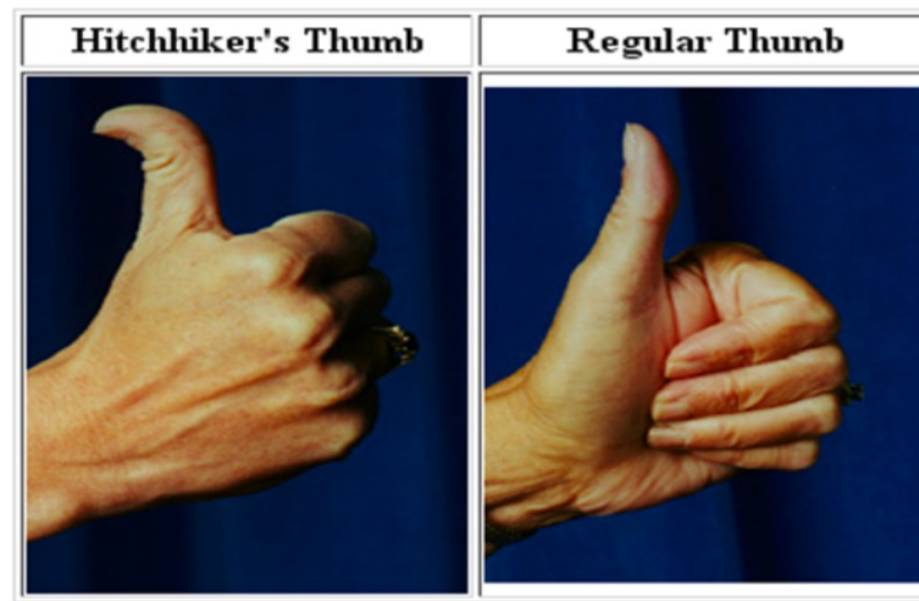


Figure 5: Image with a hitchhiker's thumb and a straight or 'regular' thumb.



How to make Science Teaching more Interesting

Questions and Puzzles

- What is the percentage of water in a watermelon?
- What is the largest land predator on the planet?

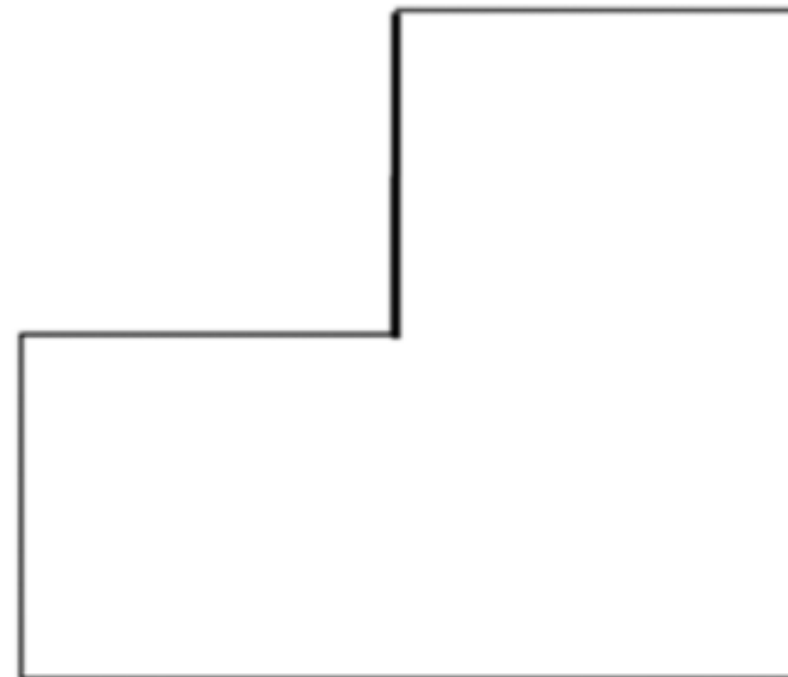




How to make Science Teaching more Interesting

Questions and Puzzles

- Parents need to get a field that is the same shape and size to avoid disagreements among their children



How to make Science Teaching more Interesting

Questions and Puzzles

- Parents need to get a field that is the same shape and size to avoid disagreements among their children.

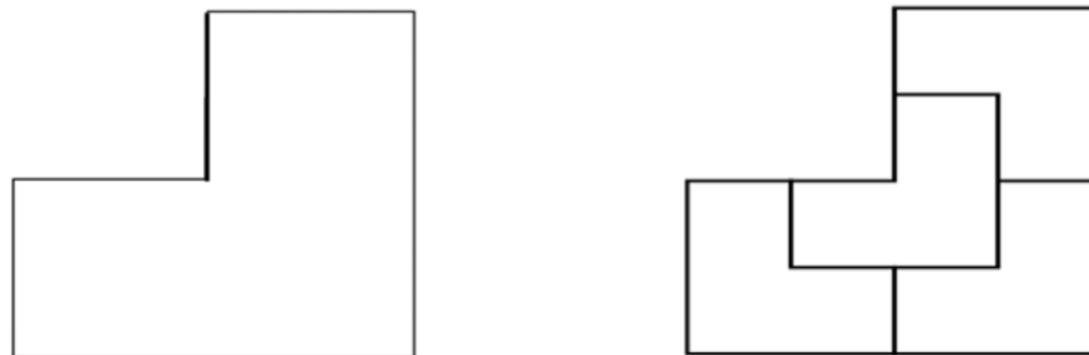


Figure 6: The L shape on the left is first presented to students when setting out the question. The image on the right is the correct answer.



Hooked on Science

Hook
Videos

Blog and
Vlogs



Sample Hooks

Hooked on science

Encouraging your students to create science videos can be a way of catching – and keeping – their attention.

By Martin McHugh and Dr Veronica McCauley

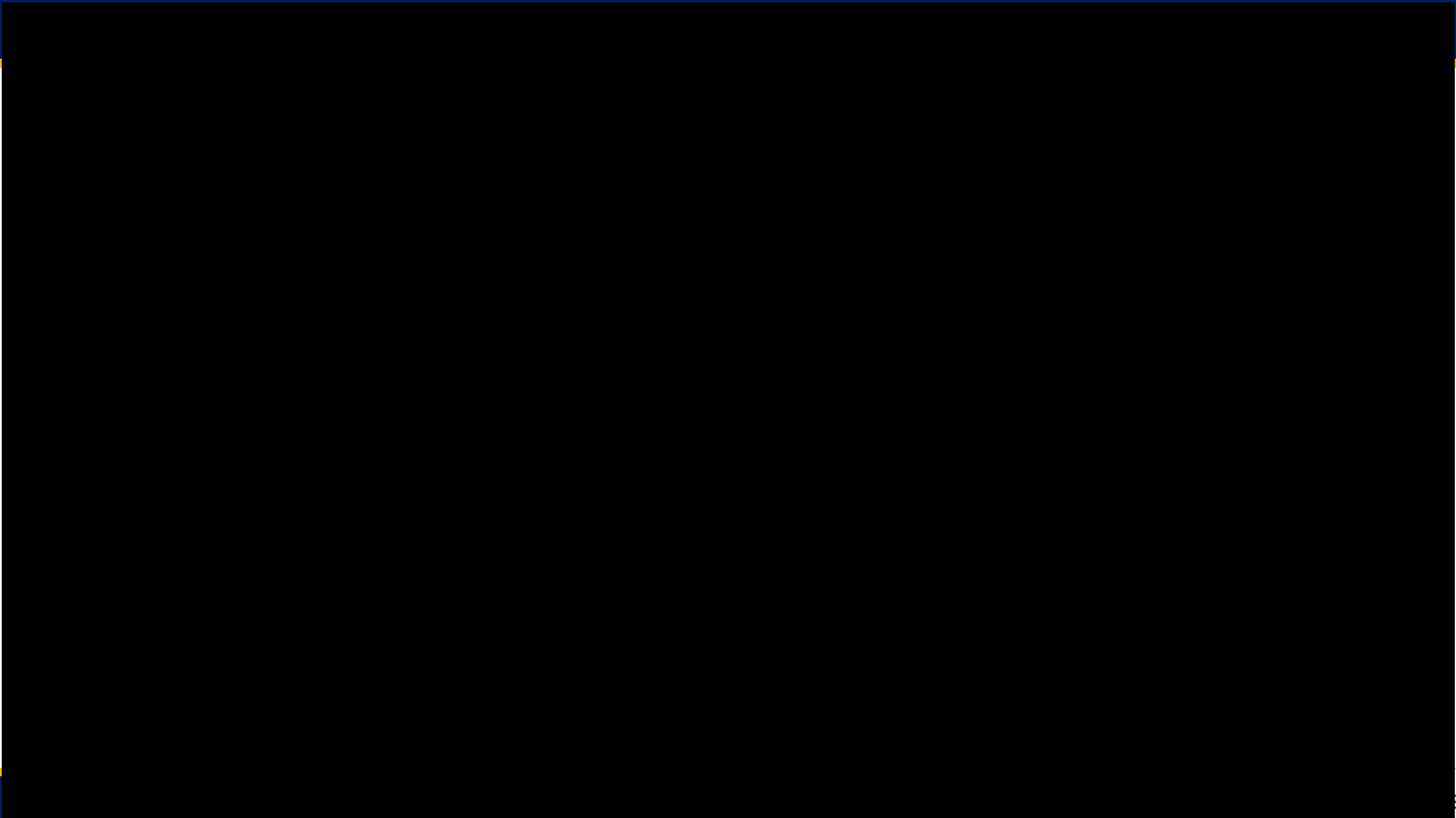
Procedure

1. Introducing hooks
2. Research
3. Development and Testing
4. Storyboarding
5. Filming
6. Replay



Tips for Science Hook Videos

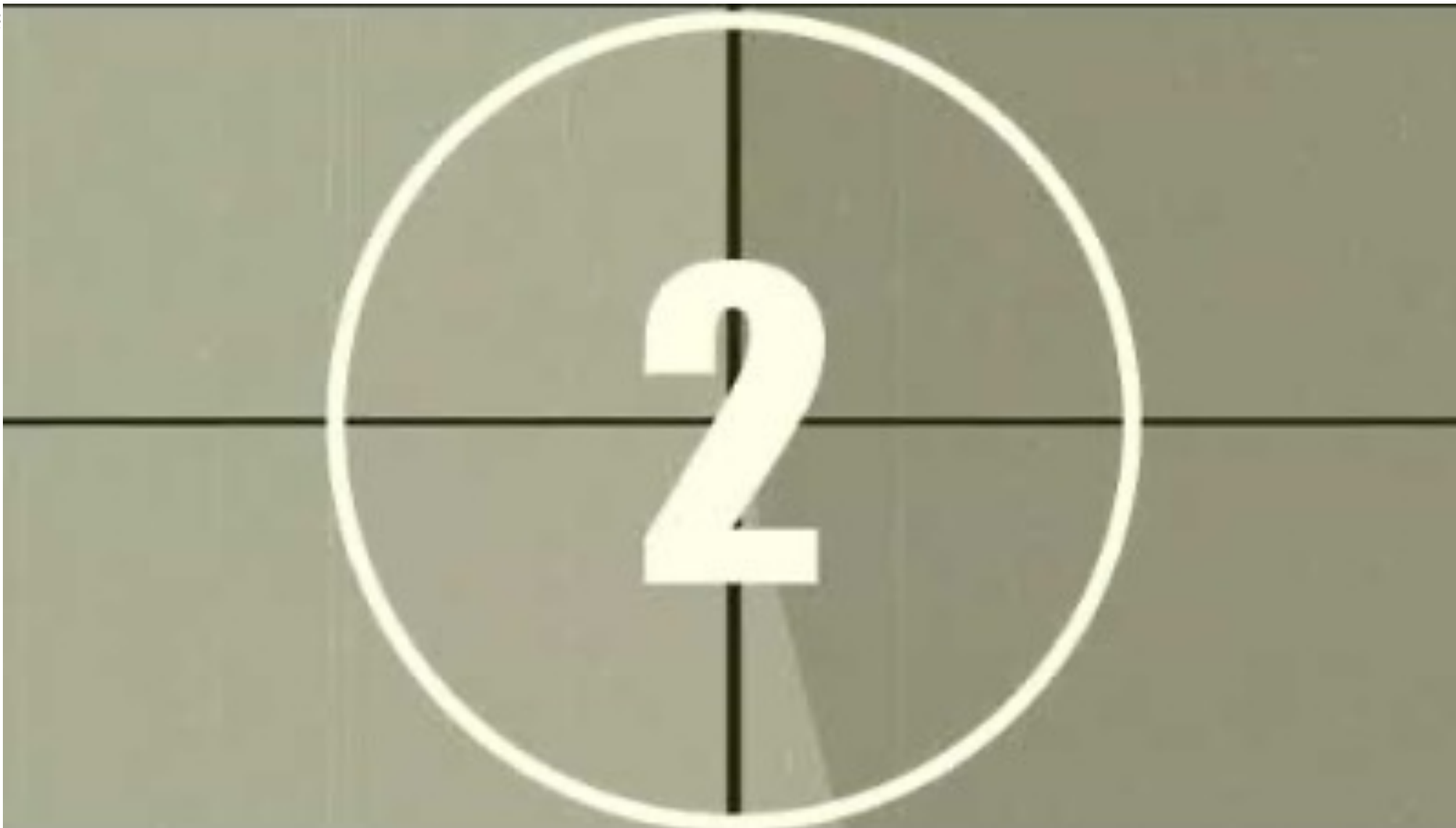
1. MELCs/ essential CLOs
2. PEOE model
3. 5 seconds to think
4. With subtitles in English
5. VO in MT (technical terms in English)
6. Not to exceed 2 mins
7. References

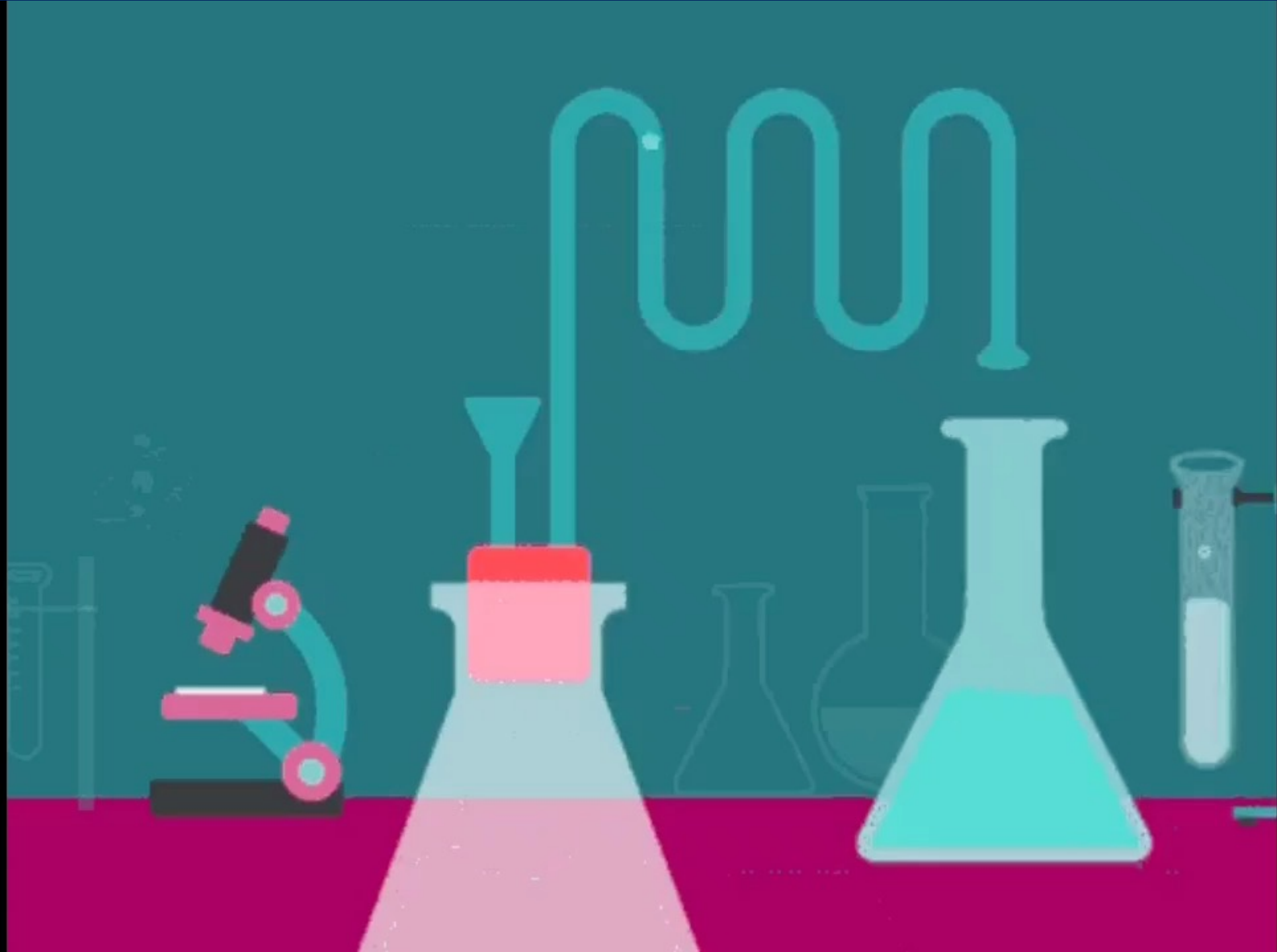




Are you ready to
learn something
new today?









What do teachers need to know to create Science Hook Videos?

- POE
- Science Content
- Video creation and editing
- Science Process Skills
- Communication Skills
- Localization of Materials



Teachers' Realization in Using Science Hooks

Bite size learning.

Simple video has a huge impact to learners

I realized that we have to be creative in teaching the learners for them to be motivated to continue the learning process.

Hook videos boost the interest of students in learning, these videos awakes their excitement to explore. The use of graphics and moving pictures are significant in student's learning

I realized that hook videos must be part of lesson even if there is already face to face class.



For successful CC

1. Supportive Environment
2. Adequate Time for inquiry
3. Planning for instruction
4. Students are asked to evaluate and reflect
5. Teacher knowledge



References

McHugh, M., & McCauley, V. (2016). Getting Hooked on Physics! *The Physics Teacher*, 54(9), 548-550. doi: 10.1119/1.4967896

McHugh, M., & McCauley, V. (2017). Hooked on science. *Science in School The European journal for science teachers*(39), 55-58.

McHugh, M., & McCauley, V. (2017). Hooked on science. *Science in School The European journal for science teachers*(39), 55-58.

<https://esta-project.eu/academic-staff-tour/workshop-4-interest-and-science-education/>



Salamat po mula sa amin!

Educating Science Teachers for All
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