

## Shedding light on a Picasso

# Student worksheet

### Task 1: Picasso's The Blue Room hides a secret painting

In 2014, scientists and art experts [found a hidden painting](#) <sup>[1]</sup> beneath one of Pablo Picasso's first masterpieces, The Blue Room, without even touching it! A bow-tie-wearing man with his head resting on his hand was revealed under the main painting.

But how do you think they might have managed it without destroying the painting? Express your ideas!

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### Task 2: Electromagnetic spectrum

The electromagnetic spectrum is the range of all types of electromagnetic radiation, as you can see below.

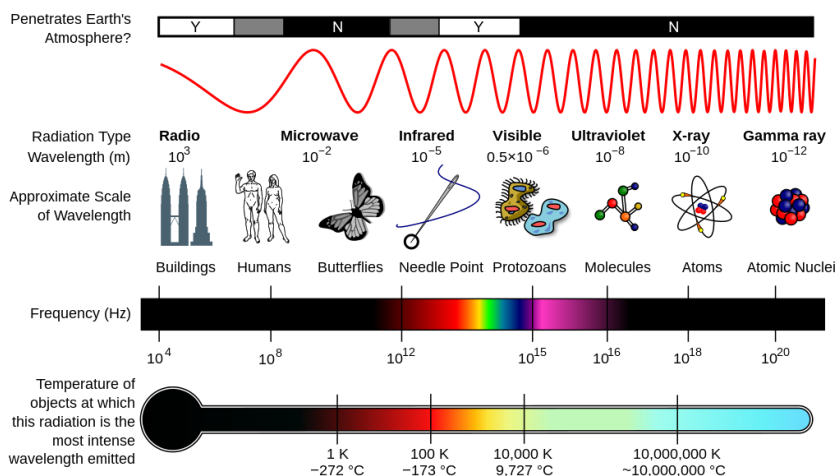


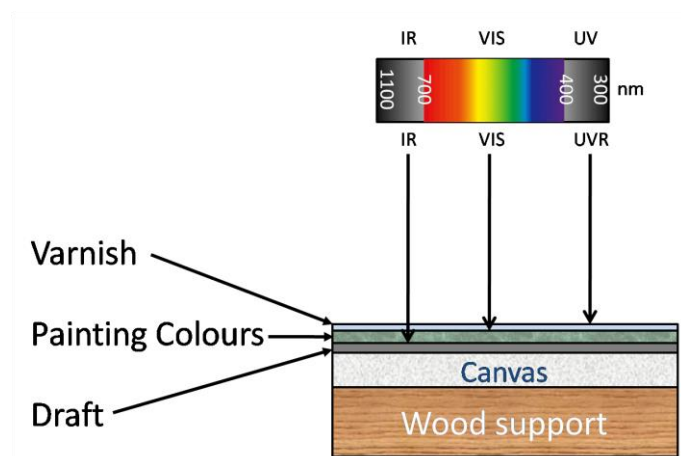
Image: Inductiveload/Wikipedia, CC BY-SA 3.0

Categorize the above radiations into visible and invisible to the human eye.

Visible radiation	Invisible radiation

**Task 3:** Penetration depths of different radiation into an artwork

Observe the following figure.



*Image courtesy of the authors*

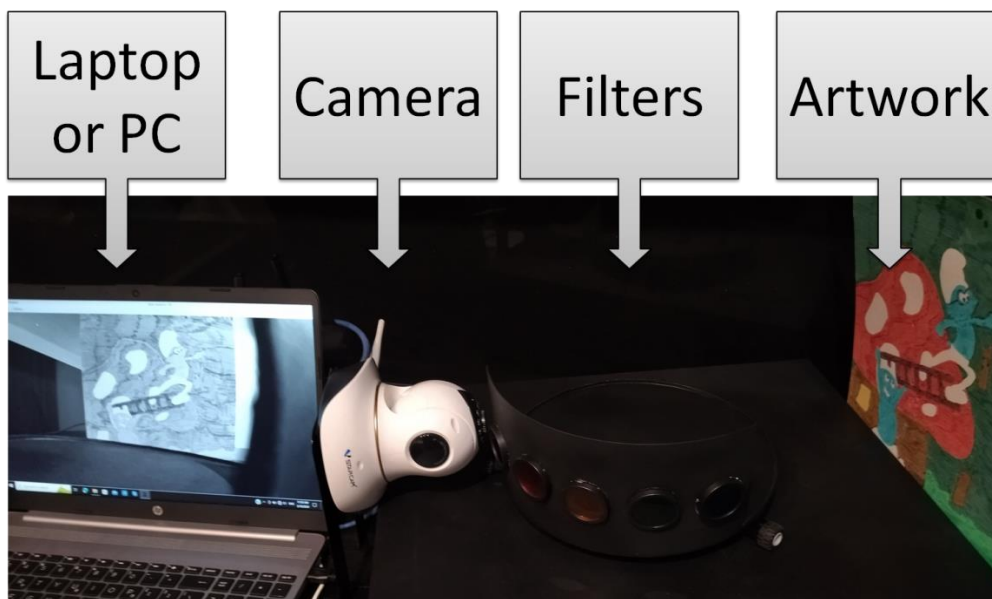
What type of radiation would you use to 'see' the painter's draft?

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**Task 4:** Let's experiment!

- a) Think of a setup to study the different layers of an artwork. Describe it!

- b) Build the following setup.



*Image courtesy of the authors*

- c) Complete the following table and write down your observations. Which parts of the painting appear brighter and which ones darker?

Type of radiation	Hypothesis	Observation
Blue		
Green		
Yellow		
Orange		
Red		
Infrared		

**Task 5:** Again back to the initial question!

How did they manage to see under Picasso’s main painting without even touching it?

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## References

[1] See the secret painting under Picasso’s Blue Room:

<https://www.theguardian.com/artanddesign/2014/jun/17/pablo-picasso-the-blue-room-hidden-painting>