



Prior to the moderation exercise, please complete the following information and submit it to your facilitator with assessment evidence from one learner that you judge to have successfully attained the Es' and Os'.

Experiences and Outcomes:

By exploring radiations beyond the visible, I can describe a selected application, discussing the advantages and limitations. SCN 3-11b

I can consider the impact that layout and presentation will have on my reader, selecting and using a variety of features appropriate to purpose and audience. LIT 3-24a

Learning Intentions:

We are learning about the parts of the non-visible spectrum and discovering what they can be used for.
We are creating fact files in different forms, to inform others about non-visible parts of the spectrum.

Success Criteria:

You will be successful if you

- State the radiations beyond the visible spectrum
- Describe an application of a non-visible radiation
- Discuss the advantages of a non-visible radiation
- Discuss the limitations of a non-visible radiation
- Create an informative presentation using different features.

Briefly outline the context and range of quality learning experiences that have been provided making reference to the chosen design principles.

Breadth – Pupils were able to participate in producing a variety of different presentation techniques.

Challenge and Enjoyment – pupils are challenged by the open nature of the research tasks. Enjoyment through group work tasks and ICT.

Depth – Pupils had the opportunity to add additional success criteria to their homework task.

Personalisation and Choice – Two opportunities were available to show they had met the outcome (group presentation and leaflet. Pupil had the choice of what non-visible electromagnetic wave they would investigate.

Progression – Pupils already understood the variety of waves and were able to categorise electromagnetic waves.

Coherence – Lessons flowed well and all related to researching electromagnetic waves.

Relevance - Links with real life applications and dangers were investigated.

Record the range of assessment evidence that was gathered to meet the success criteria (Say, Write, Make, and Do) considering breadth, challenge and application.

- Initially class were introduced to the idea of the visible spectrum.
- Class were asked if there were are other types of waves they could think of. In groups they came up with different types of waves. Pupils were invited up to the board to write the waves they had thought of up. A screenshot of the mind map produced is included (Evidence 1).
- From this the electromagnetic waves were selected and shown on the spectrum. Pupils took note into jotter on the order of the spectrum. A brief description of what each non-visible part of the spectrum could be used for was introduced to the pupils through use of a powerpoint and class discussion. Pupils wrote an example of an application in their jotters. Jotter evidence is included. (Evidence 2).
- Pupils were issued with a research task to complete in groups. They were issued with success criteria for the task. They were provided with ICT time to complete research and were allowed to display their findings in a variety of interactive forms. A Prezi presentation is included along with pupil self-evaluation. (Evidence 3)
- Pupils completed a homework task to produce an information leaflet investigating another non-visible electromagnetic wave. Leaflet, success criteria and teacher comments are included (Evidence 4).

Briefly outline the oral/written feedback given to the pupil on progress and next steps, referring to the learning intention and success criteria.

Evidence 1 – Pupils were involved in a class discussion. We spoke about a family of waves called the electromagnetic spectrum and some pupil guessed some of the types of waves included in this spectrum. Pupils were given verbal feedback on whether their response was correct.

Evidence 3 – Pupils were issued with written feedback with reference to the success criteria. Pupils completed a self-evaluation on their project work.

Evidence 4 – Pupils leaflet was assessed against the success criteria given to the pupils. The teacher used a 'traffic light' system to show areas of success and areas for development. A teacher comment was also included.

Pupil Voice:

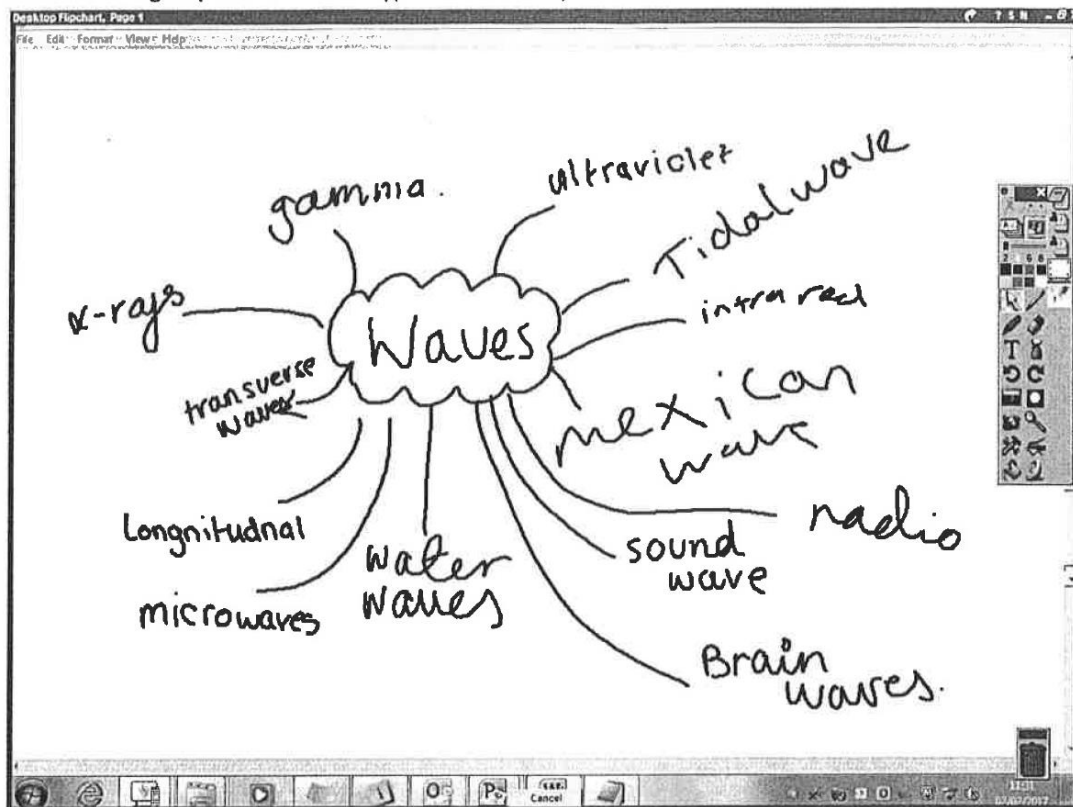
What have you learned? How did you learn? What skills have you developed?

After completing their group project pupils self-evaluated what they had learned. See self-evaluation sheet in Evidence 3.

Did the learner successfully attain the outcomes? YES/NO

Evidence 1

Results from group task on 'What type of waves do you know'



evidence 2

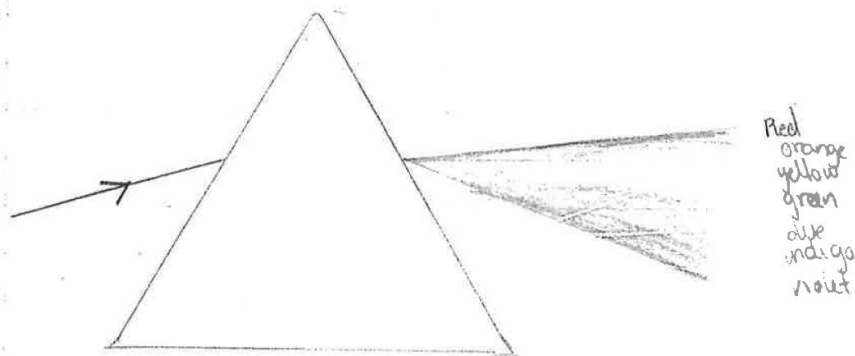
class jotter

13/1/17

Electromagnetic Spectrum

gamma ray | X-ray | ultraviolet | visible | infrared | microwave | radio

The only part we see



Gamma - Nuclear weapons / kill cancer cells

X-ray - test for broken bones

UV - sun burn

IR - cameras

Microwaves - heating up food / mobile phones

Radio waves - car radios / walky-talkies / ...

Evidenti 3 a

03/02/2017

Success Criteria.

Group Presentation on Non-Visible Spectrum

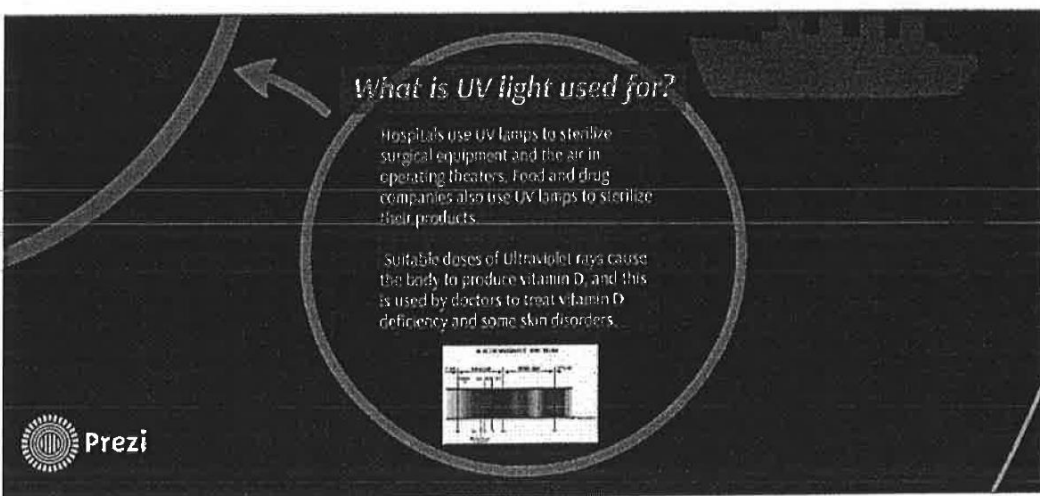
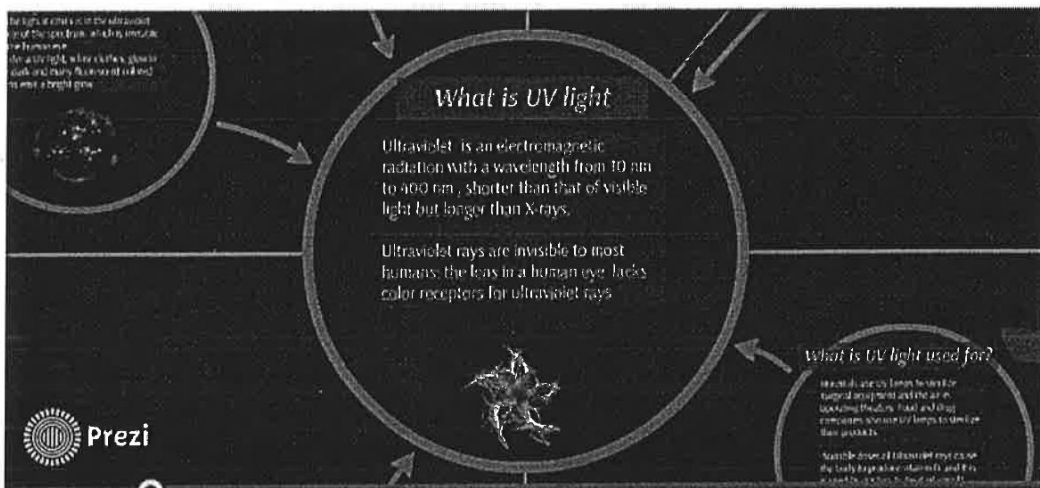
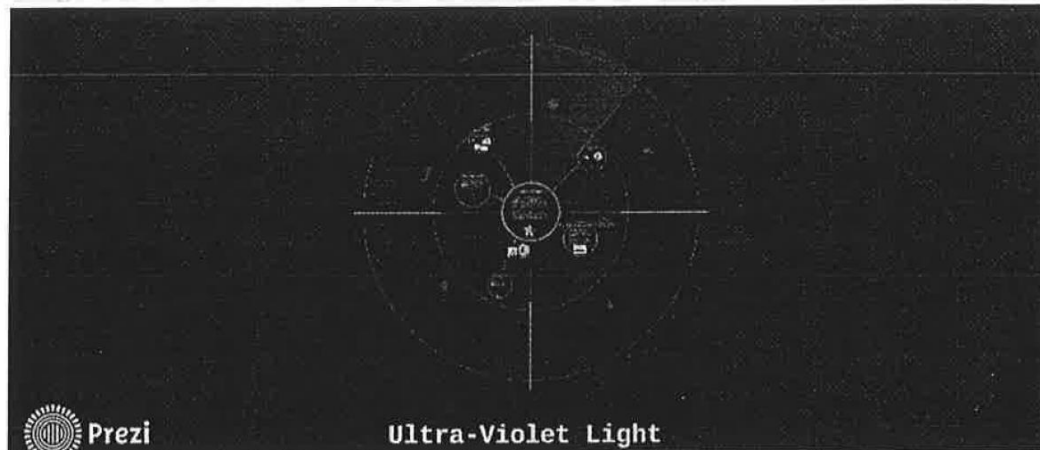
- You are to research a non-visible radiation.
- Your presentation should describe the non visible radiation and at least one way in which it is used.
- You must also mention the advantages and limitations of your chosen application.
- You will be assessed on content, effort, team work and of course presentational skills.

How can I present my findings?

- Information Display
- Powerpoint
- Information booklet
- Short video
- Animoto (film with text from stills - www.animoto.com)
- Prezi (animated presentation tool - www.prezi.com)
- Voki (talking avatars - www.voki.com)
- Toondoo (online comic book tool - www.toondoo.com)

Evidence 3 b

Prezi Presentation



Evidence 3c

Pupil self-evaluation

E-M Spectrum Research Task : Pupil Evaluation

Now that you have completed the E-M Spectrum task, please complete the following...

- 1) What have you learned about non-visible parts of the electromagnetic spectrum?

There are ~~some~~ several different types of waves and frequencies on the E-M spectrum, some of which visible (ROYGBIV) and some not visible (UV, Infrared, Microwaves, Gamma Rays etc)

- 2) How did you learn about E-M Spectrum? What kind of sources did you use? What strategies did you use?

I learnt about it through lessons in class, textbook & practical work and also researching online

- 3) What skills did you develop during this task?

Teamwork skills when creating presentations, New formats (prezi, toondoo, voki) & communication Literacy and numeracy skills

DEFINITION OF GAMMA RAYS

Gamma rays have the smallest wave lengths and the highest frequencies known. They are high energy waves capable of travelling long distances through air.

DEFINITION OF Electromagnetic Waves

Electromagnetic waves are vibrations of magnetic and electric fields. So they don't need air to travel.

- 3
- Success Criteria
- Description of the EM wave you have chose
 - At least 3 facts on the EM wave
 - How the EM wave is made
 - How the EM wave is detected
 - What are the dangers of the EM wave
 - Describe 1 application of the EM wave
 - Easy to read
 - Looks good
 - At least 3 pictures or diagrams

Great homework ☺

You have made sure you have included everything from your success criteria!

Your presentation skill are excellent as usual! Keep up the great work!

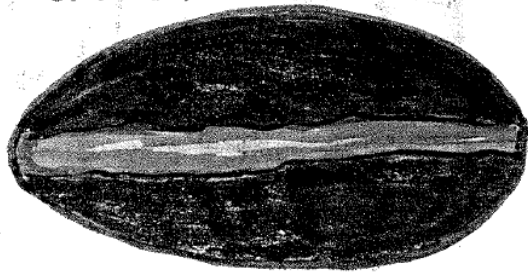
EVIDENCE 4

THE ELECTRO-MAGNETIC SPECTRUM GAMMA RAYS

By Kirsty Dougall ~

HOW GAMMA RAYS ARE MADE

Gamma rays are given off by stars and other radioactive substances.



HOW GAMMA RAYS ARE DETECTED

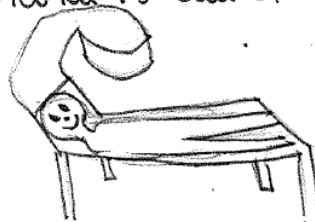
Gamma rays are detected using gamma ray detectors that usually contain densely packed crystal blocks. When gamma rays pass through they collide with electrons in the crystal. The gamma ray strikes an electron and loses energy.

GAMMA RAY -- FACTS

- Gamma rays are the most energetic type of light
- Gamma rays were first identified in 1900 by French chemist Paul Villard
- Doctors often use 'gamma ray knives' to conduct brain surgeries to remove ~~the~~ cancer tumours.

RADIOTHERAPY

Gamma rays can kill living cells so are used to kill cancer cells without having to do difficult surgery - this method is called radiotherapy.



THE DANGERS OF GAMMA RAYS

Gamma rays can cause cell damage and although get rid of some cancers can also cause others. They can also cause mutations in growing tissues which makes unborn babies especially vulnerable. Although gamma rays can have extreme they can also just have mild symptoms such as headaches, hair loss, skin boss and poor healing.

