



EM WAVES

Verse 1:

If you make 1. _____ particles shake they make waves electromagnetically,
That will radiate as a 2. _____ wave through a vacuum infinitely,
There's nothing 3. _____ it's reckoned, going 4. _____ metres every second,
Spreading out in every direction, they're all around us continually.

Verse 2:

Their wavelengths form a spectrum with a range of 5. _____,
The waves are all 6. _____ except the visible light we see,
Some substances transmit them, others 7. _____ them,
If they happen absorb them, we use that to 8. _____ them,
Now we know they've a whole collection of uses and properties.

Chorus

9. _____, their frequency's low,
10. _____ for my mobile phone,
11. _____ feels like heat to me,
12. _____ light is what I see!
13. _____ tans my skin,
14. _____ show me my bones within,
15. _____ may make me scared,
Electromagnetic waves are everywhere.

Verse 3:

Radio waves move 16. _____ in antennae on radios,
We can also use the signals made to send 17. _____ to and fro,
Microwaves beamed to 18. _____ send mobile phone calls day and night,
And TV signals and they're mighty good at heating up your 19. _____.
Infrared cooks your toast and makes you warm when you stand in the sun,
It's in 20. _____ and police use it the dark to catch a thief on the run,
Visible light as a 21. _____ might read your CD's, or fix your eyes,
And fibre optics are carrying light to get broadband down your street,

Chorus

Bridge:

UV, X and Gamma rays have such high 22. _____,
Living cells exposed too long have unwanted chemistry,
They can make cells 23. _____ or kill them completely,
But gamma rays kill cancer too and 24. _____ scalpels for surgery.

Chorus

Complete the following tasks

1. Fill in the blank keywords - if you are not sure, there are clues on the next page.
2. Circle sections in **red** that describe **uses of EM Waves**.
3. Circle sections in **green** that describe **properties of EM waves**.
4. Circle sections in **blue** that describe **dangers of EM Waves**.
5. Rewrite the lyrics in language suitable for an exam.

Each of these words is used once.

X-rays sterilise Radiowaves food reflect
cancerous Gamma Rays Visible remote controls electrons
300 million Microwaves transverse energy
Infrared Ultraviolet wifi detect charged laser
frequencies invisible faster satellites

Definitions

1. A property of electrons and protons that make them attract
2. Describes a wave that has vibrations perpendicular to its direction of travel.
3. Moves more quickly.
4. The speed of light.
5. The number of times something happens per second.
6. Can't be seen.
7. Bounce off of.
8. Sense.
9. The lowest energy EM waves, used for communication.
10. A low energy EM waves used for cooking and communication.
11. An EM wave used for cooking, remote controls, and goggles that see in the dark.
12. Something that can be seen.
13. Present in sunlight and can cause sunburn.
14. Used for looking at bones.
15. Created when atoms radioactively decay.
16. Small negatively charged particles that orbit the nuclei of atoms.
17. Used for sending signals from an internet router to a device.
18. Man-made objects that orbit the Earth.
19. Stuff you eat.
20. Objects used to control devices from a short distance away..
21. Ultra bright and focussed lights.
22. The ability to change something's speed, height or temperature.
23. A disease where genetic mutations cause cells to replicate uncontrollably.
24. Kill all microorganisms.