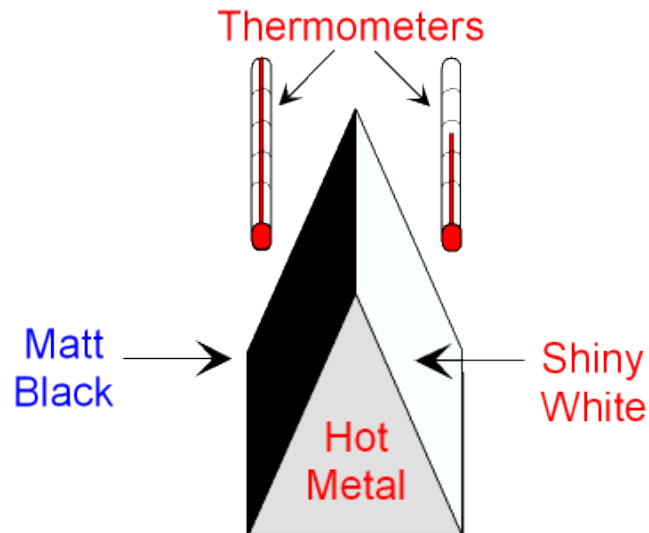


## Black body radiation – PHYSICS ONLY

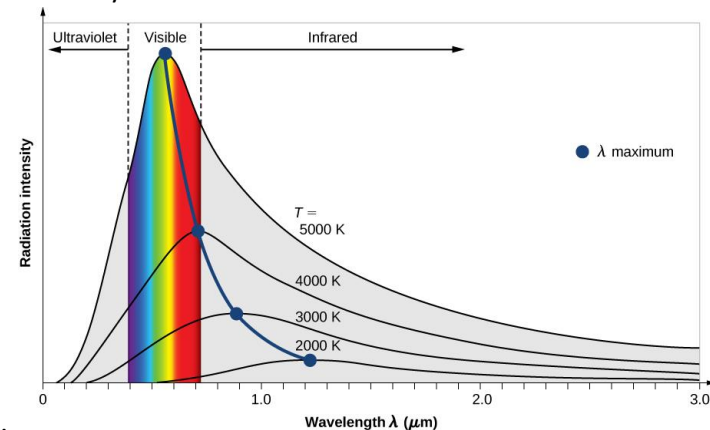
1. All bodies (objects), no matter what temperature, emit and absorb **infrared radiation**.



- 2.
3. Matt black objects absorb more heat than shiny white/silver surfaces (which reflect some of the thermal radiation).
4. The hotter the body, the more infrared radiation it radiates in a given time.
5. A **black body** does not reflect or transmit any radiation.
6. A perfect black body is an object that absorbs all of the radiation on it.
7. Since a good **absorber** is also a good **emitter**, a perfect black body would be the best possible emitter.

8. A body at constant temperature is absorbing radiation at the same rate as it is emitting radiation.
9. The temperature of a body increases when the body absorbs radiation faster than it emits radiation.
10. The temperature of the Earth depends on many factors including: the rates of absorption and emission of radiation and reflection of radiation into space.
11. The temperature of a body is related to the balance between incoming radiation absorbed and radiation emitted.

12. **Intensity** is the power per unit area (the amount of energy transferred to an area in a certain amount of time).
13. Intensity is the size of the wave.



- 14.
15. The intensity of the radiation emitted by an object depends on its temperature.
16. The hotter the object, the higher the intensity of the wavelength.
17. As the object gets hotter, the intensity increases more rapidly for shorter wavelengths.
18. A higher proportion of the radiation emitted by a hot object has a shorter wavelength than a cooler one.
19. The peak of the curve for the hot object is shifted to the left on the graph.