

Name : _____ Family name : _____ Class : _____

1°EURO- PC

About colours

About thermal cameras

1. Which type of radiation is used in thermal cameras or glasses ?

☐ X rays ?

☐ UV rays (Ultra Violet) ?

☐ IR rays (Infra Red) ?

2. When these rays were discovered ?

☐ in 1492 ?

☐ in 1800 ?

☐ in 1905 ?

3. Then, the physicist William Herschel discovered these radiation thanks to a simple experiment. Which tools did he use to highlight them ?

☐ a prism and a thermometer ?

☐ a prism and a meter ?

☐ a spectrophotometer ?

4. To which type of waves the radiation used in the thermal cameras belong to ?

☐ Electromagnetic waves ?

☐ Mechanical waves ?

☐ Sound waves ?

5. What is the advantage of thermal cameras or thermal glasses ?

How do rainbows form ?

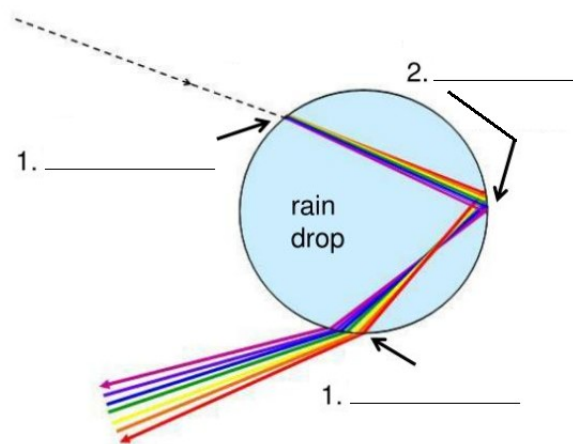
1. What are the 2 natural « elements » required to observe a rainbow ?

2. In the diagram beside, name each of the two optical phenomena involved in the formation of rainbows

3. Would you like to briefly explain the principle behind each of these two phenomena ?

Phenomenon 1 : _____

Phenomenon 2 : _____



About Northern lights

1. Northern light were first named by Galilei ; in 1619 :

☐ aurora borealis ?

☐ Phos Illos ?

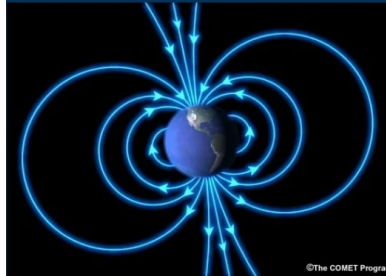
☐ Phoebus genialis ?

2. The starting point for the northern lights is the solar wind. What is it ?

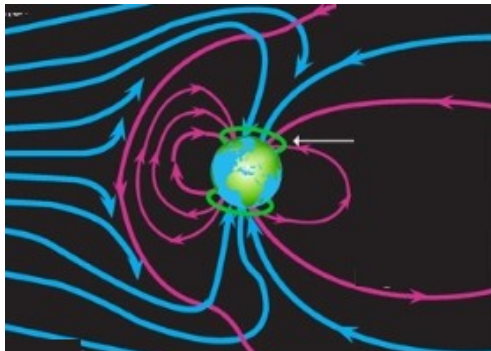
- ☐ air travelling from the atmosphere of the Sun to the Earth.
- ☐ a flow of charged particles released by the atmosphere of the Sun.
- ☐ wind on the surface of the Earth due to its rotation around the Sun.

3. What is shown on this picture ?

- ☐ the magnetic field lines.
- ☐ the electric field lines.
- ☐ the cosmic field lines.



4. Why are these light phenomena most often seen at the Earth's poles ?



5. The Northern lights can be green, pink or blue. What does this colour depend on ?

- ☐ the temperature of the atmosphere.
- ☐ the country where they take place.
- ☐ the nature of the gas with which the solar wind particles collide.

How can we see colors ?

1. Fill beside the additive colours :

Red + Green = _____ ; Blue + Red = _____ ; Green + Blue = _____

2. The light receptors of the human eye are :

a) the _____ , sensitive to _____

and b) the _____ , sensitive to the colour received .

3. How many types of receptors sensitive to coloured lights do we have in our eyes ?

- ☐ 2
- ☐ 3
- ☐ infinity

4. If we stare at a white screen, which colour receptors are stimulated ?

5. Take a red object: what colour(s) does it absorb and what colour(s) does it reflect?
