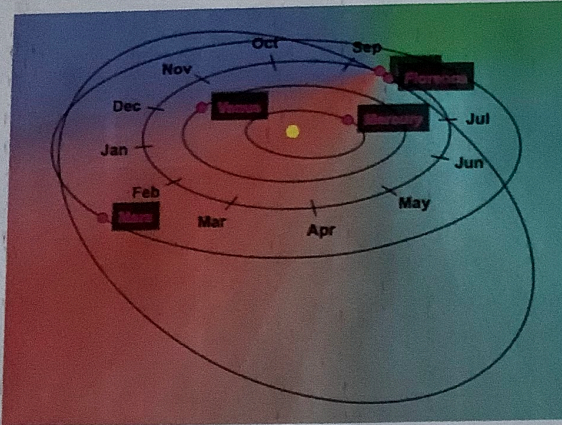


Space Distances

Age 7 to 11
Challenge Level

In the picture below you can see the orbits of Mercury, Venus, Earth (label is slightly hidden) and Mars, along with the orbit of an asteroid called Florence (named after Florence Nightingale). The picture shows their positions in August 2017. Florence was at its nearest position to Earth at the start of September 2017.



Florence's distance from the Sun varies from 150 000 000km at its nearest (during summer 2017) to 375 000 000km when furthest away.

Starting when Florence is nearest to the sun, what distance will it be from the Sun after travelling...

- 1/ 100 km further from the Sun?
- 2/ 1 000 km further from the Sun?
- 3/ 10 000 km further from the Sun?
- 4/ 100 000 km further from the Sun?
- 5/ 1 000 000 km further from the Sun?

Starting with Florence furthest from the sun, what distance will it be from the Sun after travelling...

- 6/ 100 km nearer the Sun?
- 7/ 1 000 km nearer the Sun?
- 8/ 10 000 km nearer the Sun?
- 9/ 100 000 km nearer the Sun?
- 10/ 1 000 000 km nearer the Sun?

Acknowledgement <http://in-the-sky.org> <http://in-the-sky.org>

$$1. 150,000,000 + 100 = 150,000,100$$

$$2. 150,000,000 + 1,000 = 150,001,000$$

$$3. 150,000,000 + 10,000 = 150,010,000$$

$$4. 150,100,000$$

$$5. 151,000,000$$

6 37
7 37
3-
8 3
9 3
10 3

7

$$\textcircled{6} \quad 375,000,000 - \underset{100}{=} 374,999,900$$

$$\textcircled{7} \quad 375,000,000 - \underset{1000}{=} 374,999,000$$

$$\underline{374,999,000}$$

$$\textcircled{8} \quad 375,000,000 - \underset{10000}{=} 374,990,000$$

$$\textcircled{9} \quad 375,000,000 - \underset{100000}{=} 374,900,000$$

$$\textcircled{10} \quad 374,000,000$$

7