**Vincent Willem van Gogh**





**Sunflower, iris**

1 / Which of these plants belong to the monocotyledonous plant species (Liliopsida, Monocotyledonae) and which belongs to the class of dicotyledonous plants (Magnoliopsida)?

………………………………………………………………………………………………………………………………………………………

2 / Write (and briefly describe) at least 3 examples of differences between monocotyledonous and dicotyledonous plants.

|  |  |
| --- | --- |
| monocotyledonous plants | dicotyledonous plants |
| ……………………………………………………………………………………………………………………………………………………………………………………………………………… | …………………………………………………………………………..…………………………………………………………………………..…………………………………………………………………………… |

3/ Sunflowers and irises exist many species. In which continents are these plants found in nature (it is their place of origin)?

Sunflower: …………………………………………………………………………………………………………………………………….

Iris: …..…………………………………………………………………………………………………………………………………

4/ Write at least 3 species of irises found in Europe.

………………………………………………………………………………………………………………………………………………………

………………………………………………………………………………………………………………………………………………………

………………………………………………………………………………………………………………………………………………………

5/ Which locations do a sunflower (underline with a yellow colour) and an iris (underline with a blue colour) prefer?

wetlands floodplain meadows sunny places windless locations

6/ What is the scientific name of the well-known phenomenon known about sunflowers - turning towards the sun during the day?

……………………………………………………………………..

**Correct answers:**

The main difference between monocot and dicot plants is that monocots consist of seed that are a single piece, one example of this is corn. Dicot seeds can be split into two for example peas. The flowers of monocots have petals in multiples of three and dicots have petals in multiples of 4 or 5. The stem vascular bundles are scattered in monocots whereas in the case of dicots these are in a ring. <https://www.youtube.com/watch?time_continue=61&v=DHoogb9Q794>

1/ Monocotyledonous plant species: Iris Dicotyledonous plant species: Sunflower

2/ Possible answers:

|  |  |  |
| --- | --- | --- |
| **Features:** | **Dicotyledonous plant species****“DICOTS”** | **Monocotyledonous plant species****“MONOCOTS”** |
| A number of cotyledons | 2 cotyledons | 1 cotyledon |
| A root type | Main and lateral (taproot) | Bundled (fibrous root) |
| Leaf veins | Netlike leaf veins | Parallel leaf veins  |
| A blossom | Floral parts in fours or fives | Floral parts in threes |
| Vascular bundles | Stem´s vascular bundles are arranged in a ring | Vascular bundles are throughout the stem´s ground tissue |
| A stem | It get thick secondarily (tree rings). It has a pith. | It does not get thick secondarily. It has no pith. |
| Pollen pores | 3 pollen pores | 1 pollen pore |
| Pollen grain | It has three pores or furrow | It has one pore or furrow |

3/ Sunflower - The whole genus contains approximately 55 to 67 species, originating from North America, predominantly from the USA, including the southern regions of Canada. Several species also come from the mountain areas of South America.

Iris - is known about 230-280 species, which are spread in Europe, Asia and North America.

4/ *Iris aphylla* - Europe

*Iris boissieri* – Spain, Portugal, endemic

*Iris cretensis* - Crete

*Iris x florentina*- Mediterranean

*Iris filifolia* - Spain

*Iris foetidissima* - South Europe

*Iris graminea* – Europe

*Iris halophila* – East Europe, Asia

*Iris arenaria* - Europe

*Iris illyrica* – former Yugoslavia

*Iris juncea* – Spain, Sicily

*Iris latifolia* - France, Spain

*Iris lorea* - Italy

*Iris lusitanica* – Portugal

*Iris lutescens* – Southwest Europe

*Iris marsica* – Italy, endemic

*Iris orientalis* – probably an old garden hybrid grown in Greece and Turkey

*Iris orjenii* – former Yugoslavia

*Iris pallida* - Europe

*Iris planifolia* – South Europe

*Iris pontica* – East Europe

*Iris pseudacorus* - Europe

*Iris pseudopumila* – South Europe

*Iris pumila* – Central and South Europe

*Iris reginae* – former Yugoslavia

*Iris reichenbachii* – Southeast Europe

*Iris ruthenica* – East Europe

*Iris serotina* - Spain

*Iris sibirica* - Europe

*Iris sintenisii* – South Europe

*Iris spuria-* Europe

*Iris suaveolens* – Southeast Europe

*Iris triflora* - Italy

*Iris unguicularis* - Crete, Greece

*Iris variegata* - Europe

5/ Blue – wetlands, floodplain meadows Yellow – sunny and windless places

6/ Heliotropism

In fact, the adult sunflower cannot rotate the head on a stiff stem. Only the undeveloped buds (and the leaves are rotating in the sun) rotate at sunrise and gradually turn to the west in the bottom. In the night, it will return to the east. When the sunflower blossoms, the stem stiffens, and the flower usually faces to the east.

Sources:

<https://cs.wikipedia.org/wiki/Kosatec>

<https://cs.wikipedia.org/wiki/Slune%C4%8Dnice>

<https://www.youtube.com/watch?time_continue=61&v=DHoogb9Q794>

<https://sites.google.com/site/plantstructurebhannan/monocot-and-dicot>