Colours Nature quiz

Discover some interesting facts about the colours of nature with our fun rainbow-inspired quiz.

1. **Which of these winter phenomena doesn't really exist?**

   a. *sun dog*
   b. *ice halo*
   c. *snowbow*

2. **Which plant did the Tudors use to dye their cloth red?**

   a. *Madder (Rubia tinctorum)*
   b. *Redcurrant (Ribes rubrum)*
   c. *Dogwood (Cornus sanguinea)*

3. **Why are the carrots we eat orange?**

   a. *William of Orange started a craze for orange carrots.*
   b. *Peter Rabbit made orange carrots popular.*
   c. *Orange carrots are more nutritious.*

4. **Which of these plants is not used as a food dye?**

   a. *Crocus*
   b. *Daffodil*
   c. *Turmeric*

5. **What is the name for the green pigment found in plants?**

   a. *Carotene*
   b. *Chlorella*
   c. *Chlorophyll*

6. **Woad is a plant used to dye cloth blue. What colour are its flowers?**

   a. *Blue*
   b. *Yellow*
   c. *Pink*

7. **Which of these plants has true blue flowers?**

   a. *Rose 'Blue Moon'*
   b. *Himalayan blue poppy*
   c. *Blue flag iris*

8. **Here are the botanical names of 3 plants. Which one has purple leaves?**

   a. *Begonia 'Regal Minuet'*
   b. *Echinacea purpurea*
   c. *Digitalis purpurea*

9. **What is 'bee's purple'?**

   a. *Ultraviolet light seen by bees but not humans.*
   b. *A mix of yellow and ultraviolet seen by bees but not humans.*
   c. *The common name for Monarda didyma.*

10. **What colour are the Northern Lights?**

   a. *Green*
   b. *Pink*
   c. *Blue*

11. **Which of these is a true colour?**

   a. *White*
   b. *Greige*
   c. *Black*

12. ***Dianthus plumarius* are popular garden flowers. Why do we call them 'pinks'?**

   a. *They have pink flowers.*
   b. *They have pink leaves.*
   c. *They have serrated petals.*

1. ***c. snowbow*** Contrary to popular belief, there's no such things as a 'snowbow' - a rainbow seen during snowfall. Rainbows only appear when raindrops are almost perfect spheres, so there's no chance of one occurring from snowflakes with their intricate, feathery structures. Ice halos do exist though and are sometimes mistaken for 'snowbows'. These appear when tiny ice crystals in the atmosphere refract and reflect light to create halos, sundogs and 'upside down rainbows'.

2. ***a. Madder (Rubia tinctorum)*** Madder is an herbaceous perennial from the same family as coffee. A dye for cloth can be produced from the bright red roots. It has been used as a dye for more than 5000 years - traces of it were even found in Tutankhamen's tomb! Madder-dyed cloth was popular in Tudor times as a cheap alternative to red cloth dyed with cochineal and kermes. Not everyone could dress in red though, as Henry VIII decreed that only those above the rank of Knight of the Garter could be seen in it!

3. ***a. William of Orange started a craze for orange carrots.*** The theory goes that Dutch growers first cultivated orange carrots in the 17th century in honour of William of Orange who led the struggle for Dutch independence – they've been popular ever since. Carrots of all colours are packed with nutrients – orange carrots contain more beta-carotene which is good for eyesight, purple carrots have lots of anthocyanins which may prevent heart disease, while yellow carrots are full of lutein which some believe may help to prevent cancer.

4. ***b. Daffodil*** Daffodils are actually quite toxic – especially the bulbs. In fact, Roman soldiers took daffodil bulbs to the battlefield so that they could eat them to bring on a swift death if they were injured. Crocus sativa is a species of crocus grown for its bright red stamens. These are harvested and dried as saffron which we use to colour foods like paella yellow. Turmeric, or Curcuma longa, has golden yellow roots which are used to colour and flavour many Indian dishes. It's becoming popular in Britain as its reputed to help prevent cancer.

5. ***c. Chlorophyll*** Chlorophyll is a green pigment present in all green plants. It allows plants to convert energy from light into sugars in a process known as photosynthesis. Carotene is a pigment found in plants like carrots and oranges – it's what makes gives them their orange-red colour! Chlorella is a type green algae found in ponds.

6. ***b. Yellow*** Commonly called woad, Isatis tinctorial is a plant from the cabbage family with sprays of bright yellow flowers. Blue dye can be extracted from the leaves after they have been dried and fermented. Woad has been used in Europe to dye cloth blue for at least 5000 years. It was also used by Celts like Braveheart as a body paint to frighten enemies away.

7. ***b. Himalayan blue poppy*** The Himalayan blue poppy Meconopsis betonicifolia has bright blue petals and yellow stamens. The blue flag iris (Iris versicolor) and Rosa 'Blue Moon' have flowers in shades of purple. Blue is a fairly elusive colour in the world of plants. Rose breeders have been trying for decades to develop a true blue rose but the best anyone has yet managed is a weak bluish purple.

8. ***a.*** ***Begonia 'Regal Minuet'*** Begonia 'Regal Minuet' is a tender evergreen perennial grown for its large bright purple-magenta leaves. Commonly called purple coneflower, Echinacea purpurea is a tall perennial with large purple-pink cone-shaped flowers. Digitalis purpurea is the purple foxglove – a biennial plant with tall flower stems covered in large bell-shaped pink-purple flowers. 'Purpurea' is one of several words in Botanical Latin used to describe plants with purple flowers, leaves or stems. Others are atropurpureus, blatteus, ianthinus, tyrius and violaceus.

9. ***b.*** ***A mix of yellow and ultraviolet seen by bees but not humans.*** Bees have a different colour spectrum to humans. They have photoreceptors for blue, green and ultraviolet light and see colours in combinations of these. So, bees can't see red but they can see orange, yellow, blue-green, blue, violet and 'bee's purple'. Humans have red, blue and green photoreceptors and can't see ultraviolet light or 'bee's purple'. The common name for Monarda didyma is beebalm because its nectar-rich flowers are beloved by bees.

10. ***a, b & c.*** ***All three.*** The Northern Lights, or aurora borealis, is a natural light display in the night sky that occurs when particles from the sun collide with the earth's magnetic field. The 'lights' usually appear green because most of the solar particles hit the earth's atmosphere between 60 to 150 miles from the crust where they react with oxygen to make the light appear green. Pink or red light appears when solar particles react with oxygen more than 150 miles away, while blue light occurs in the presence of nitrogen. Several plants have been named after the aurora borealis, including sweet pea, begonia, primula, dahlia and rose.

11. ***b.*** ***Greige*** The word 'greige' has been used to describe a colour between grey and beige since 1911. It was possible borrowed from the French grège meaning raw, unfinished (silk). Black and white don't have specific colour wavelengths. Black is really an absence of colour - it isn't a true colour because it absorbs all the colours in the spectrum without reflecting any of them to our eyes. What we see as 'white' is really the presence of all colours and so not a colour in itself. Many plants have the words 'black' or 'white' in their name but the plants aren't really those colours. 'Black' plants are generally dark purple or burgundy while 'white' plants usually have lots of tiny hairs on them which make their grey-green or blue-green leaves look white.

12. ***c.*** ***They have serrated petals.*** Dianthus plumarius are called pinks because the edges of their petals look to have been cut with pinking shears. Most of them do have pink flowers though and it's believed they inspired the colour name 'pink'.