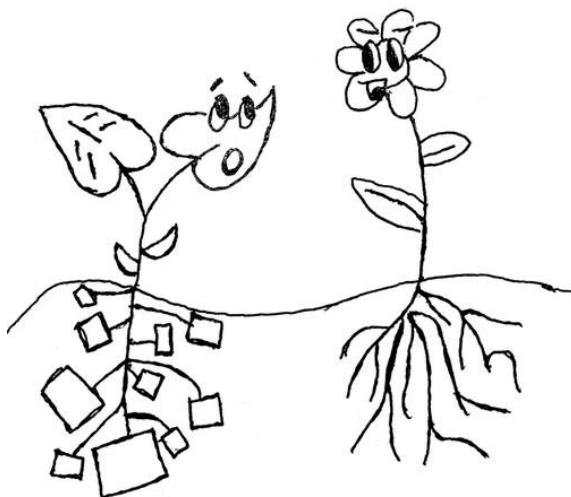


Birmingham Botanical Gardens' KS3/4 Maths Trail

BACK FROM MATH CLASS I SEE.

HOW DID YOU KNOW?

YOU HAVE SQUARE ROOTS!



Introduction

This trail will take you around the Gardens and Glasshouses. The map on the next page shows where you should be to answer each of the 13 questions. Each question has a picture with it, so you know when you are in the right place.

Visitors have been enjoying these beautiful Gardens since 1832 (so how old are the Gardens?). Don't rush your trail and make sure you enjoy the Gardens too!

What do you call a tree that is good at Maths?



Geometree

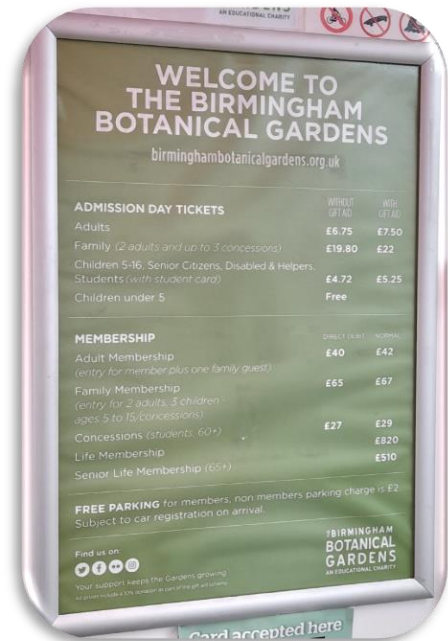
Map



Questions

1. a) Mrs Patel brings her 2 children and her 2 nieces to the Gardens (they are all over 5). Which admission charge would be cheaper (use the Without Gift Aid prices)?

- a family ticket
- 1 adult and 4 children



Working: _____

b) By how much is one cheaper?

Working: _____

2. In 1988, January 1st was a Friday. On what day of the week did Queen Elizabeth, the Queen Mother visit the Gardens (hint: 1988 was a leap year)?

Working: _____



Questions

3. a) What is the temperature and humidity in the Tropical Glasshouse today?



b) The Tropical Glasshouse is only allowed to get to a minimum temperature of 16 °C, so how much warmer is it than that today?

4. The Pavilion Tearoom is roughly north-east of this sign. In which direction is the playground?



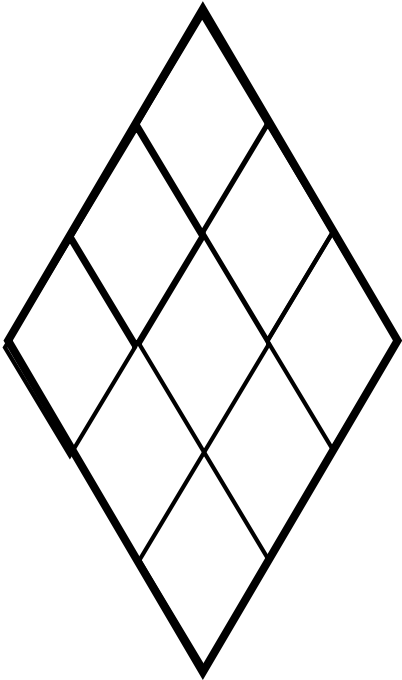
5. How many bricks are in the well base wall? (Is there a quicker way of counting them?)

Working: _____



Questions

6. Can you see the rhombus patterns in the window panes? How many rhombuses are in the design below?





7. The capacity of the fountain is 400,000 mL. How much water is in the fountain if it is $\frac{1}{5}$ full?

Working: _____

8. How many two-litre bottles of water would be needed to fill the fountain (from empty)?

Working: _____

Questions

9. Calculate how many small square window panes there are in our Bandstand, without counting them all (don't count the little basement window).



Working: _____

10. What shape is the ice-cream hut in the playground?



11. a) Each fence panel is 1.2 m long. This fence is 75 m long in total. How many panels did we need for the whole fence?

Working: _____



b) How much did the whole fence cost, if each panel costs £16.75?

Working: _____

Questions

12. The Gardens have 103 different birds in our collection and we buy 28 kg of bird food a week. How many grams of food does each bird eat per day (assume each bird eats the same amount)?

Working: _____



13. Some species of bamboo can grow to be 30 m tall and can grow 91 cm in a day. How many days would it take to reach its maximum height (give your answer to 2 decimal places)?

Working: _____

