



Support for Education in Environment & Development



# Activities at the Botanic Garden



University of  
**Leicester**

**Botanic Garden**

## Contents

The following are freely photocopiable and can be adapted to your needs. If you have developed your own activity we would be very pleased to include it in future editions of this booklet. So please let us know!

### *KS 1/2*

- Whole World Cake - drawings of visit (From Montrose PS)
- Leaf I Spy
- Tree Booklet
- Garden Guide ( From Booth Wood PS)
- Bingo
- Photo trail + blank Botanic Garden map
- Find different leaves (From Elizabeth Woodville PS)
- Find different grasses (From Elizabeth Woodville PS)
- Whole World Cake word searches
- Other ideas

### *KS 1 only*

- Elmer

### *KS 2 only*

- Fibonacci
- Rainforest Survival

## Notes on activities

### Tree Booklet

The measuring part on 'Information about my tree' would need to be blanked out for KS1.

### Photo trail

For younger children each group can tick in the boxes when they find the location of each photograph. Older children could number the pictures and then place them on the correct place on the map.

### Rainforest Survival

The rainforest glasshouse will only house about 10 people at once. So if you use this activity a rota will need to be arranged.

### Elmer

Each group will need the Elmer sheet photocopied onto A3 card and some sellotape.

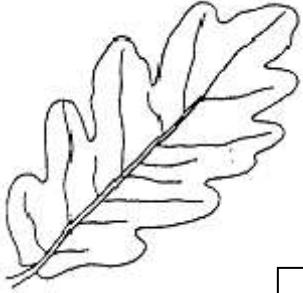


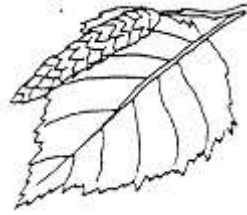


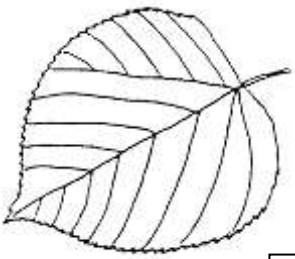




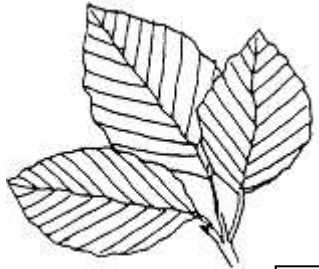


Find and draw these things from the Whole World Cake Trip

|                               |                           |
|-------------------------------|---------------------------|
| <p>The Rainforest</p>         | <p>A Cactus</p>           |
| <p>The Giant Redwood Tree</p> | <p>Cake Ingredients</p>   |
| <p>A Leaf</p>                 | <p>My Favourite Place</p> |

# Leaf I-Spy

Look around the arboretum part of the Garden and see if you can find these leaves

|  |   |   |
|--|---|---|
| <br>Oak <input type="checkbox"/>          | <br>Ash <input type="checkbox"/>     | <br>Horse Chestnut <input type="checkbox"/> |
| <br>Silver Birch <input type="checkbox"/> | <br>Walnut <input type="checkbox"/>  | <br>Alder <input type="checkbox"/>         |
| <br>Lime <input type="checkbox"/>       | <br>Cedar <input type="checkbox"/> | <br>Sycamore <input type="checkbox"/>     |
| <br>Pine <input type="checkbox"/>       | <br>Holly <input type="checkbox"/> | <br>Beech <input type="checkbox"/>        |

**Remember!**

Please don't pick any leaves off trees or bushes, just look at them and record them, leaving them there for the tree and others to enjoy.

## Information about my tree

Is it deciduous or evergreen? \_\_\_\_\_

*Now you need a tape measure and a calculator.*

Measure around the Girth (circumference) of the trunk in centimetres: \_\_\_\_\_

Now divide this number by 2.5 \_\_\_\_\_. This is about the age of the tree.

Ask member of your group to stand next to the trunk of your tree. Measure their height \_\_\_\_\_

Now stand well back so you can see the whole tree. About how many of this person would make up the height of the tree? \_\_\_\_\_

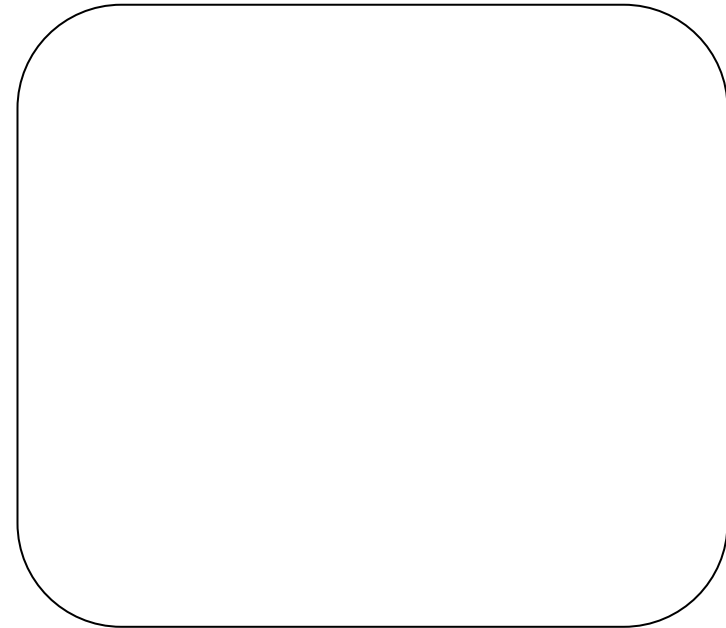
Now multiply their height by the number of times they would make up the height of the tree. \_\_\_\_\_ This is the height of the tree.

## TREE BOOKLET

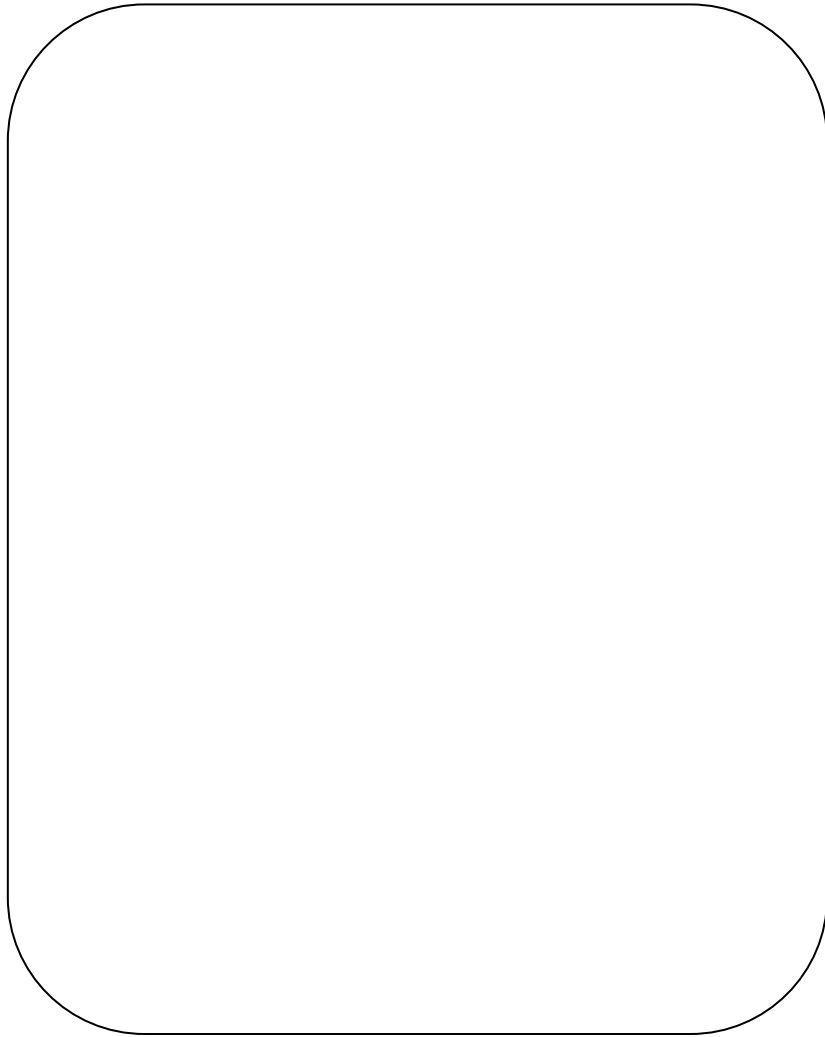
My name

Tree name

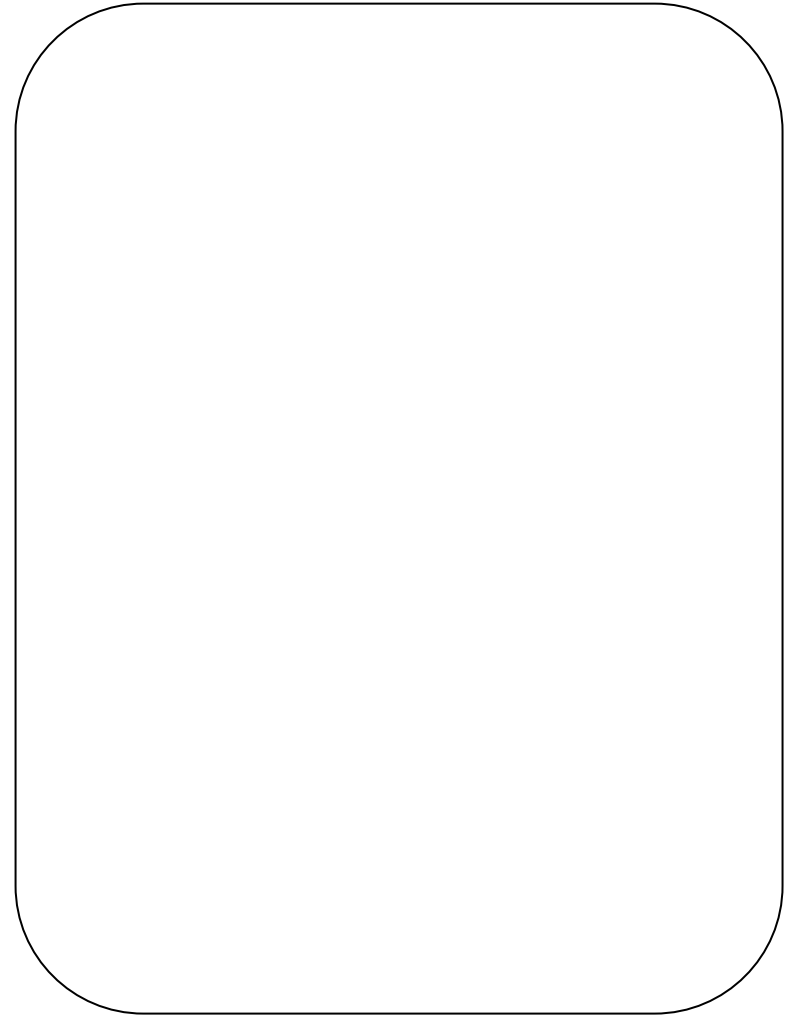
A picture of my tree



**Do a bark-rubbing here**



**Do a leaf rubbing or drawing here**



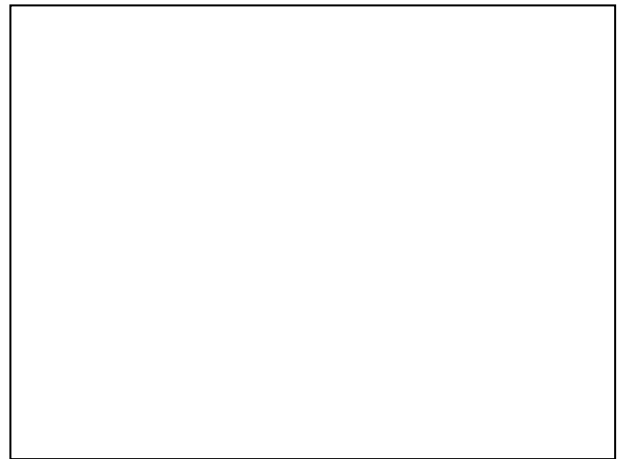
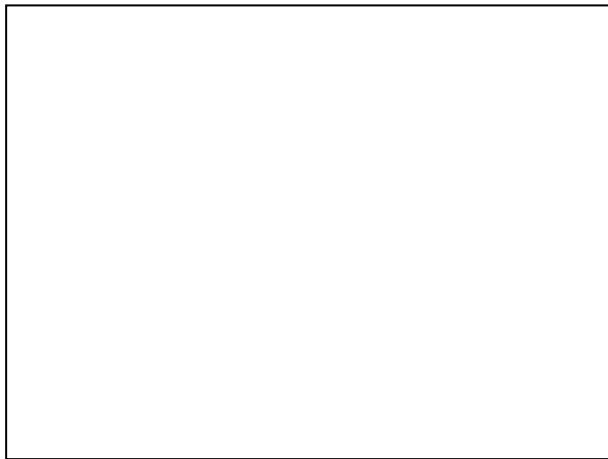


# Botanic Garden Guide



By

Here are six of the many things you can see at the Botanic Garden.



# Bingo

Find as many of these as you can in the Garden.

Remember to only pick things from the ground and not from plants

|                               |                              |                               |                      |
|-------------------------------|------------------------------|-------------------------------|----------------------|
| something yellow              | a green leaf                 | something pink                | a stone              |
| a piece of litter             | something thin               | something long                | something surprising |
| a brown leaf                  | a feather                    | a seed                        | a piece of bark      |
| something red                 | something with a jagged edge | a twig                        | something curly      |
| something an animal has eaten | a yellow leaf                | Something with two colours on | a cone               |

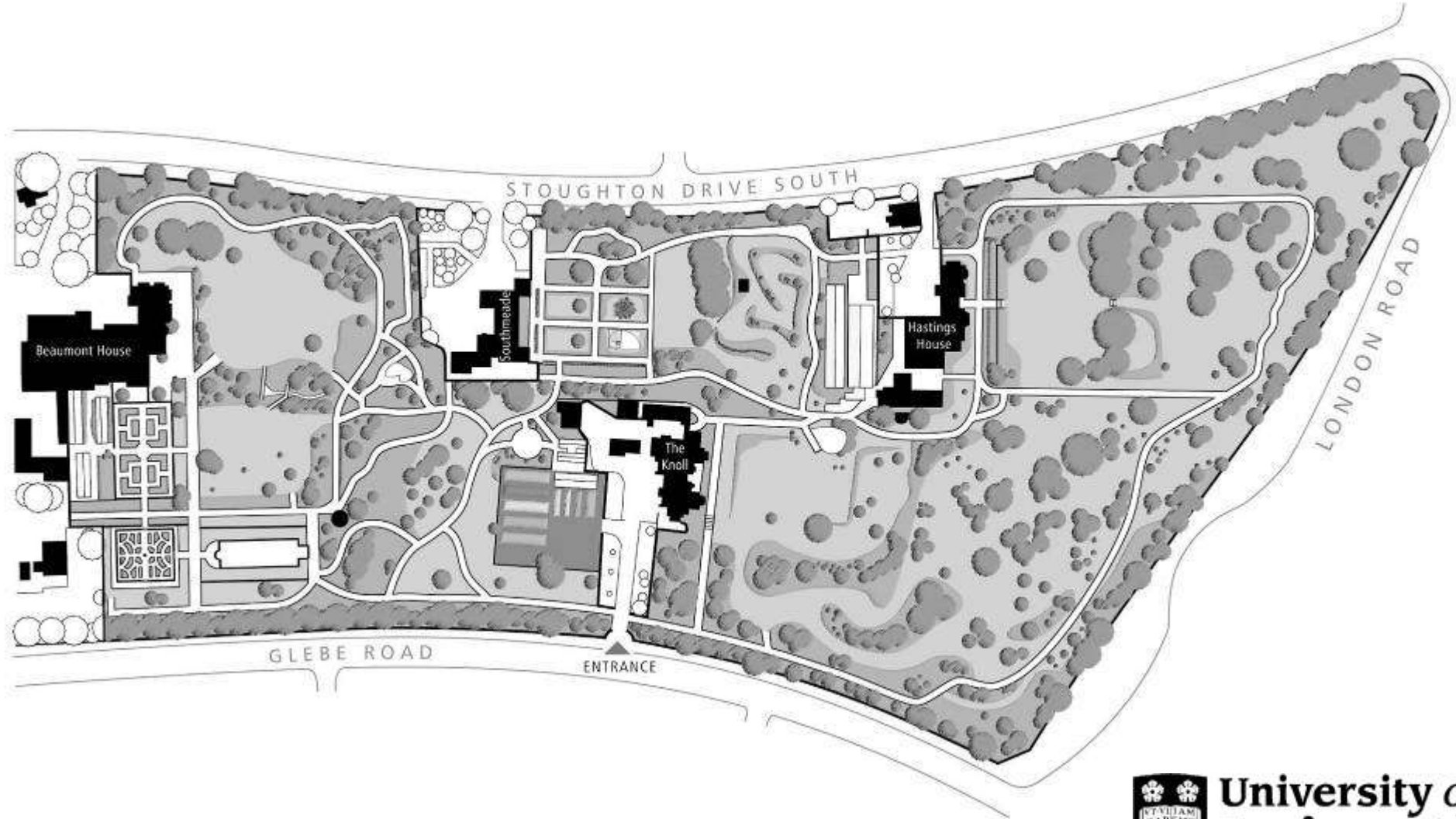
# Can you find where these photographs were taken in the Botanic Garden?

(Note some of these scenes may look different in different seasons)



Try and find where these were taken. These are more challenging!





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Botanic Garden

**How many different leaves can you find?**  
(Remember only take leaves from the ground not from plants)

|                       |                         |                                   |                       |
|-----------------------|-------------------------|-----------------------------------|-----------------------|
| A leaf with one point | A leaf with many points | A leaf with toothed edges         | A rough, knobbly leaf |
| A smooth, shiny leaf  | A hairy leaf            | A leaf with several colours<br>on | A sharp spiky leaf    |

**How many different types of grass can you find?**

|  |  |  |
|--|--|--|
|  |  |  |
|  |  |  |

## Find the ingredients of the Whole World Cake

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| p | i | n | e | a | p | p | l | e | h |
| a | g | h | l | c | o | c | o | a | o |
| p | r | a | i | s | i | n | s | k | h |
| m | a | p | p | l | e | i | e | l | e |
| i | s | s | u | g | a | r | a | v | y |
| l | w | m | n | u | l | e | m | o | n |
| k | d | c | h | e | r | r | y | w | p |
| f | b | a | n | a | n | a | l | i | m |

pineapple

honey

cocoa

milk

cherry

raisins

banana

lemon

sugar

apple

## Find the Whole World Cake ingredients

|   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|
| r | e | d | w | o | p | g | n | i | k | a | b |
| l | p | i | n | e | a | p | p | l | e | t | n |
| c | y | a | r | t | i | s | w | e | k | y | b |
| o | r | s | u | s | o | a | k | m | o | m | m |
| r | r | e | o | t | u | r | l | o | y | i | s |
| a | e | h | l | g | r | g | a | n | l | r | n |
| n | h | u | f | p | t | y | a | k | t | o | i |
| g | c | f | r | a | p | i | g | r | g | a | s |
| e | r | r | o | a | n | a | n | a | b | t | i |
| s | b | c | n | e | c | o | c | y | h | s | a |
| p | o | m | h | o | n | e | y | u | u | s | r |
| c | v | e | n | i | r | a | g | r | a | m | s |

|               |           |
|---------------|-----------|
| honey         | cocoa     |
| banana        | oats      |
| baking powder | milk      |
| flour         | cherry    |
| raisins       | apple     |
| orange        | lemon     |
| sugar         | margarine |
| pineapple     |           |

## Other ideas

### 1) Sketching

This can be inside, outside or both, with or without a theme...

Need: paper, pencils, clipboards

### 2) Design an 'I'm going on a Bear Hunt' photo trail around the Garden

For development as a literacy activity back at school take photos in groups of different places we could travel on the bear hunt - through the trees, by the pond, over the grass...

Need: cameras

### 3) Barnaby Bear

In groups take photographs of Barnaby Bear or another soft toy in different places around the garden.

Need: cameras, Barnaby Bear / soft toys

### 4) Sculptures

Collect cones, leaves, feathers etc. from the ground and form a natural sculpture

Need: collecting bags

### 5) Cards

Design a set of greeting cards for the Botanic Garden. This could be of views, different plants...

This could also include picking up leaves etc. to press

Need: sketching materials or cameras, (collecting bags)

### 6) Colour

a) Pick up something in the garden to match a given colour

Need: colour charts

b) Form a shade progression of items e.g. light brown to dark brown

Need: card + sellotape

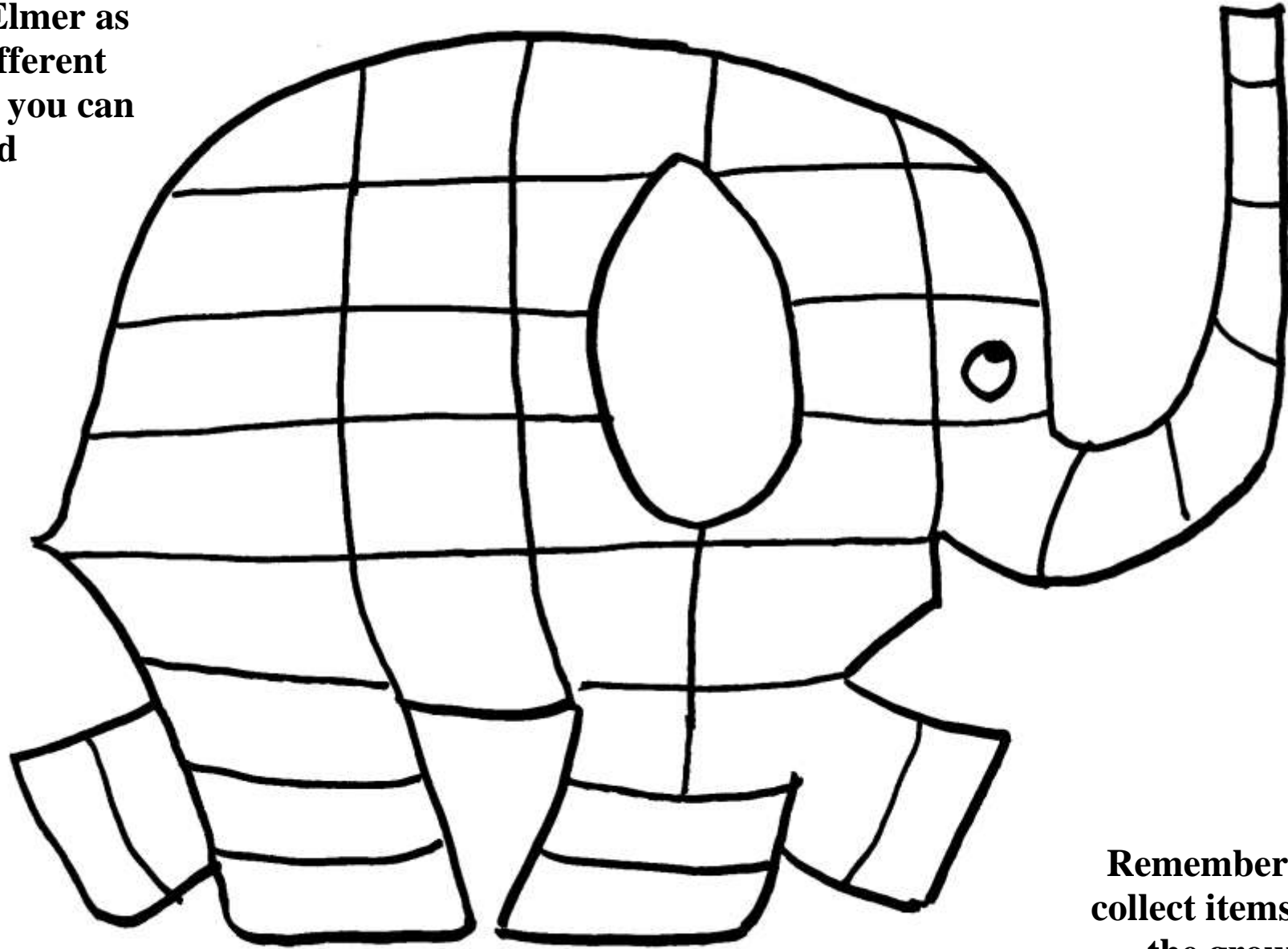
### 7) Interpretation Boards

Look at the information boards around the garden and write a list of facts or questions and answers.

Need: paper, pencils, clipboards



**Stick on Elmer as  
many different  
colours as you can  
find**



**Remember only  
collect items from  
the ground**

# Fibonacci

*Visit our Fibonacci pavements and then see if you can find your own Fibonacci patterns in nature.*

Fibonacci was a famous Italian mathematician who lived 1170 – 1250. He made many discoveries including a number pattern which is known as Fibonacci numbers. To find the next number in the sequence you add together the previous two. These numbers appear a lot in nature.



## 1) Hopscotch



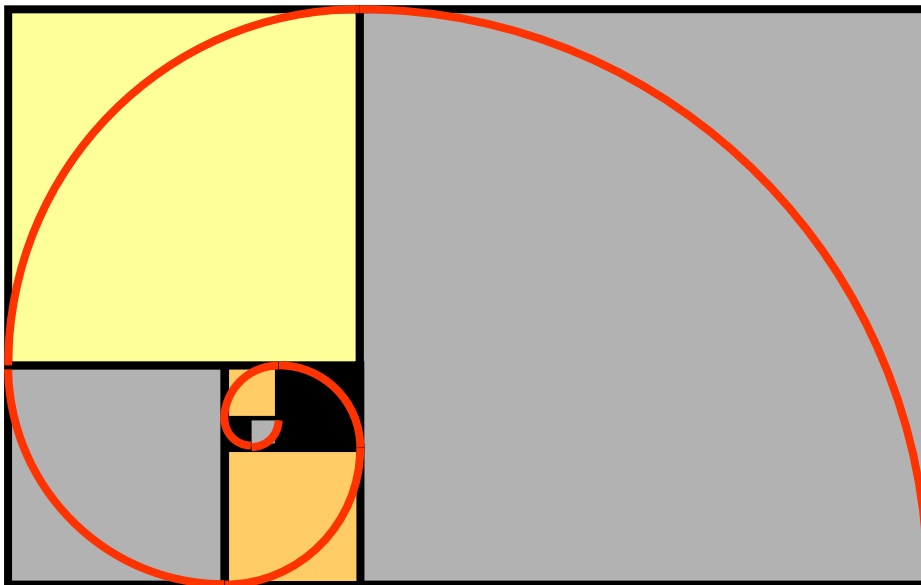
Look at the hopscotch and write the first Fibonacci numbers

1    1    2    3    5    \_\_\_    \_\_\_    \_\_\_    \_\_\_    \_\_\_

## 2) Snail shell



Have a look at our snail shell paving. The Fibonacci numbers start in the middle and are based on the length of the sides of the squares.

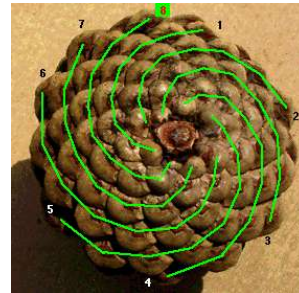
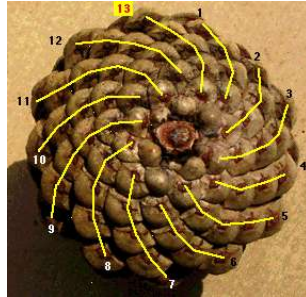


What Fibonacci numbers can you work out by looking at the length of the sides?

1    1    2    3    \_\_\_    \_\_\_    \_\_\_    \_\_\_

### 3) Pine cones

The third pavement is of a pinecone from above.



Jump around the pinecone spiral paving in a clockwise direction going on a different coloured slab each time. How many jumps do you make? \_\_\_\_\_

Now do it in an anti-clockwise direction. What Fibonacci number was this? \_\_\_\_\_



Now find some pine cones and see if you can see the Fibonacci spirals

### 4) Petals on flowers

On many plants, the number of petals is a Fibonacci number: buttercups have 5 petals; lilies and iris have 3 petals; some delphiniums have 8; corn marigolds have 13 petals; some asters have 21 whereas daisies can be found with 34, 55 or even 89 petals.



Now you find some flowers and count the number of petals. Remember look at the flowers and not pick them.

Write down the Fibonacci numbers you find \_\_\_\_\_

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### 5) Cactus spines

These often show the same spirals as we have already seen on pine cones and petals but they are much more clearly visible.



Is this true? Have a look in the cactus house!

## Rainforest Survival

Look around you, what can you find in the rainforest that would help you survive if you lived there?

|  |  |
|--|--|
| <p><b>Shelter</b><br/>What could you use to make a shelter from?</p>       | <p><b>Food</b><br/>Which plants could give you food?</p>                   |
| <p><b>Water</b><br/>What can you find to collect water in?</p>             | <p><b>Spices</b><br/>What could be used to make your food taste nicer?</p> |
| <p><b>Clothes</b><br/>Which plants could be useful for making clothes?</p> | <p><b>Medicines</b><br/>What could help you if you were ill?</p>           |

## Rainforest Survival - Teacher's Notes

A few suggestions:

**Shelter** - banana leaves  
Lianas for rope  
Mahogany tree

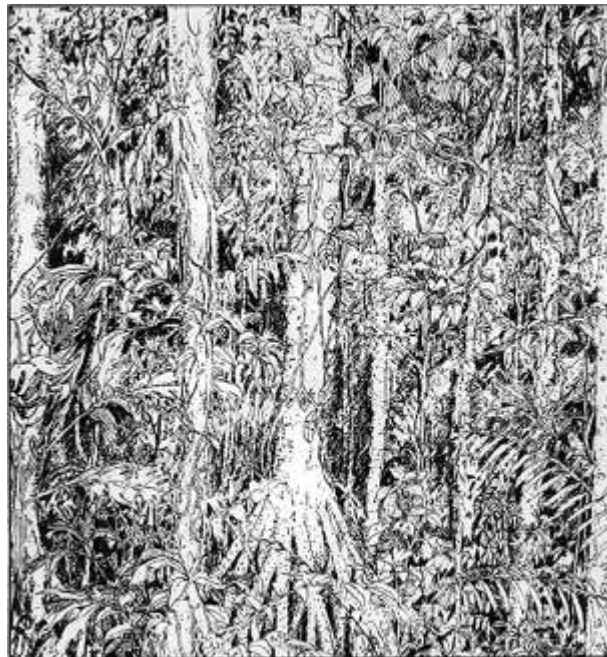
**Food**- pineapple, banana, avocado, rice, papaya, mango, guava, sugar, coffee & cocoa to drink

**Water**- gourds for pots, pitcher plants, also leaves can be wrapped around to form a cup

**Clothes** - Cotton, leaves, grasses

**Medicines**- quinine (for malaria), ginger (for sickness), cardamom (for cleaning teeth & digestion), turmeric (heart disease)

**Spices**- ginger, black pepper, cardamom, vanilla, turmeric, tamarind





## Programmes Available

A wide range of activities and resources are available for visiting schools, youth groups and teachers. Activities that are currently staffed by us for KS1 or 2 include:

- ***Whole World Cake***

Hunt for the ingredients of the whole world Cake. Collect them from around the Garden and find out about their origins, uses and production.

- ***Investigating Different Habitats***

Compare and contrast the different habitats around the Garden including pond dipping. Use data-loggers and differentiated worksheets



- ***Journeys to Christmas***

Follow trails of coloured stars to discover the links between plants and Christmas. Make a Christmas decoration, taste some Christmas foods and uncover the secret of the Global Christmas Pudding!

- ***Garden Pilgrimage***

Bring an experiential approach to RE in a garden setting.

- ***Fun with numbers***

Bring your maths lessons to the Garden. Measure our biggest and smallest plants, interpret shapes and patterns, look for symmetry and discover how spirals are formed



### **And at the Attenborough Arboretum...**

- ***Woodland Adventures***

A series of science activities that takes place at the Attenborough Arboretum. Including tree identification, mini-beast hunting, and a story under our story tree.

CPD courses and workshops are also available.

**SEED, University of Leicester Botanic Garden, Stoughton Drive South  
Oadby, Leics. LE2 2NE                      0116-271-2933  
botanicgarden@le.ac.uk**