

# Maths Trail – Fitzroy Gardens

## THE PEOPLE’S PATHWAY

The People’s Pathway consists of 10, 000 bricks arranged in concentric circles and decorated by Victorians as part of the Arts Victoria '78 Crafts Festival.



What are some of the shapes you can find on the decorated bricks?  
Sketch one of your favourite bricks in the box.

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A large empty rectangular box with a black border, intended for sketching a decorated brick.

- If there are 10, 000 decorated bricks, how many plain bricks have been used? Draw a diagram and explain your thinking.
- If the circumference of the outside circle of decorated bricks is 82 metres and each metre on the circumference has five bricks, calculate the number of bricks in this row.
- If the radius of one of the outer circles is 27 metres, what is the circumference of the circle?
- What is the approximate area of the Peoples Path? Assume a radius of 27 metres.

Answer: .....m<sup>2</sup>.

## THE 'TEMPLE OF THE WINDS' ROTUNDA



The rotunda was built in 1873 at a cost of 275 pounds.

- How much is this in dollars?
- Corinthian columns support the domed roof. Estimate the height of the columns.
- Measure the circumference of a column near its base, then a metre from its base. Are the columns cylindrical?
- What is the approximate volume of a column?



# COOKS' COTTAGE

## Student Investigative Activities:



The single storey section, formerly the stable, is now an information centre and shop.

A large wall map shows Captain James Cook's three major voyages of exploration in coloured lights:

1a. Estimate the distance these voyages represent **or**

1b. These voyages represent a total distance of 200, 000 miles. Convert this to kilometres and compare it with the distance between the earth and the moon.

Captain Cook was charged with sailing the Endeavour to Tahiti to observe the Transit of Venus.

2. What was the expected date of that event?

3. When will the next transit of Venus occur?

4. And the one after that?

5. What scientific purpose was Cook's observations expected to provide?

James Cook was particularly skilled in calculating longitude at sea, often described as the 'greatest scientific problem of the age'.

6. Research the process he used and compare it to navigational processes available today.

One of James Cook's greatest achievements was keeping his crews alive at a time when many seamen died of scurvy on long sea voyages.

7. Research the causes of this disease, the measures that kept the Endeavour crew relatively scurvy free, James Cook's misplaced belief in the therapeutic properties of malt extract (a semi-scientific experiment with too many variables?) and the Vitamin C content of a range of common foods.

The middle of the 18<sup>th</sup> century was known at the time as 'the age of enlightenment' and James Cook's discoveries contributed to that premise.

8. How would you describe the current age? What common beliefs, practices and technologies of this time do you see as being considered very 'unenlightened' in the future?

Acknowledgment:

Sections of the Maths Trial for the Fitzroy Gardens were devised by students at PascoeVale Girls College, supervised by Maths Teacher Lyn Riley. They are reproduced with the kind permission of the Mathematical Association of Victoria.