MathsWorld London

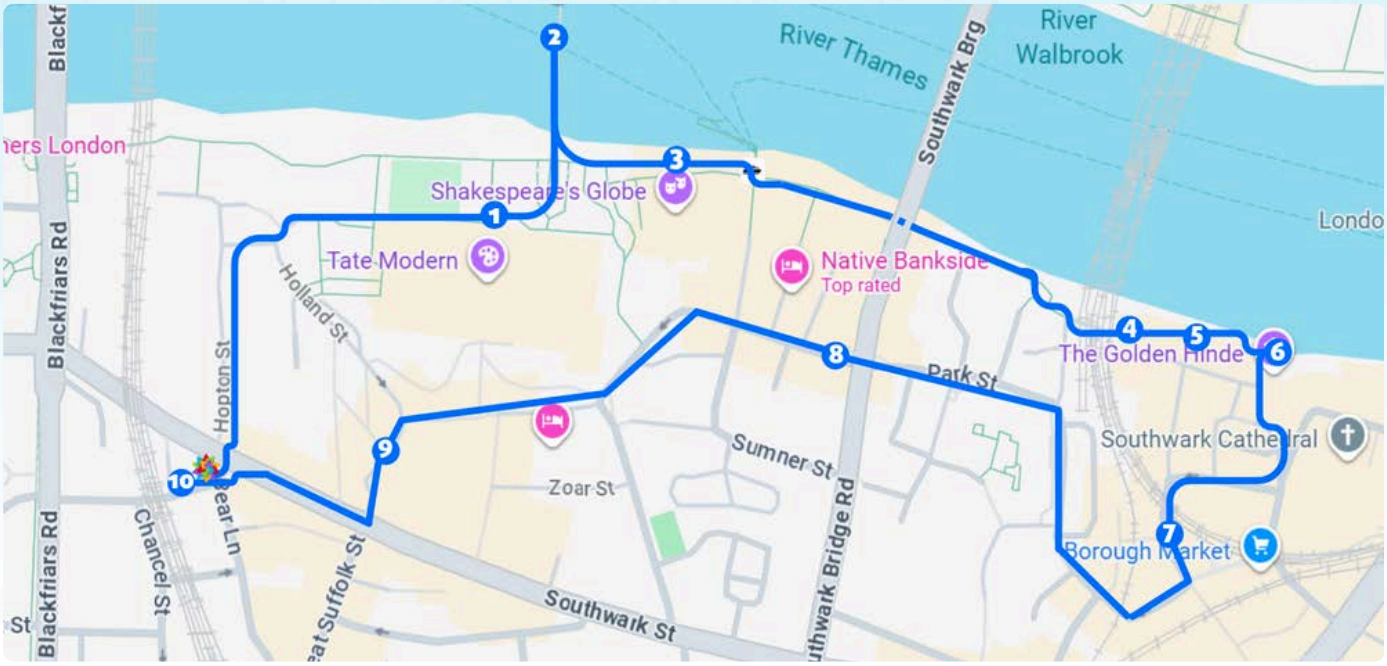
BANKSIDE MATHS TRAIL

This maths trail takes approximately 1 hour to complete and explores the history and culture of the Bankside area through a mathematical lens. We encourage everyone to have a go at this trail.

Take note of the **Number Crunch** answers throughout your journey, you are welcome to look up answers if you get stuck. Good luck!

Start: MathsWorld on Burrell Street

This trail starts at MathsWorld, on Burrell Street. Burrell Street is just off the old Bankside wharves — in the 16th and 17th centuries, this was outside the City of London's control, making it a hotspot for theatres, gambling, and bear-baiting. Maths would have been going on all around here across the centuries: traders would be weighing and paying for goods, sailors would be taking bearings for their next voyage, the theatre managers would be sorting out their accounts, and in pubs and on the streets, people would be playing dice and card games.



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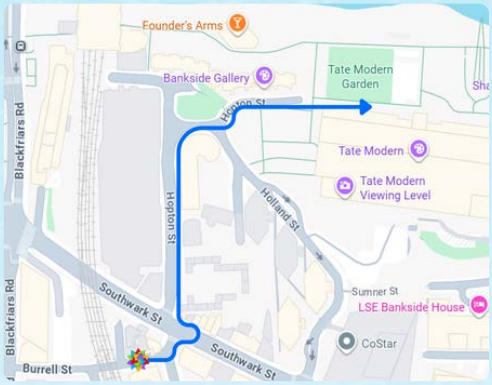
1. Tate Modern (~4 min walk)



From the MathsWorld entrance turn left along Burrell Street, and cross Southwark Street, and walk down Hopton street past the entrance to Tate Modern and to the riverside.

Fun Maths-related Fact:

Tate Modern is housed in the former Bankside Power Station, designed by Sir Giles Gilbert Scott — the same architect who created the red telephone box. Architects use mathematical skills all the time, for example when drawing buildings to scale so they can get the proportions right.

Investigate

Tate Modern has a tall chimney at its centre. Which rectangular shape is the chimney closest to: a TV remote; a school ruler, a Kit Kat finger, or an unsharpened pencil?

2. Millennium Bridge (~2 min walk)

Walk along Bankside till you get to Millennium Bridge, and walk across to the middle of the bridge.

Fun Maths-related Fact:

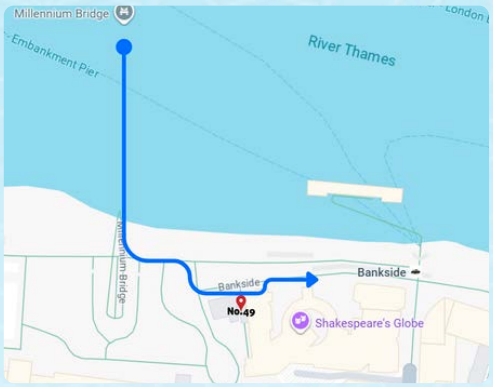
When it opened, the Millennium Bridge swayed unexpectedly due to "synchronous lateral excitation" — footsteps matching the bridge's natural frequency. For a while it was nicknamed The Wobbly Bridge.

Investigate

If you stand in the middle of the bridge, the top of which landmark makes the biggest angle from the ground where you're standing: St Paul's Cathedral, The Shard or Tate Modern?

NUMBER CRUNCH A: In which year did the Millennium Bridge open? _____

3. Shakespeare's Globe (~3 min walk)



After heading back to the south end of Millennium Bridge, head east along Bankside to the Globe theatre.

NUMBER CRUNCH B: How many sides does the Globe Theatre have? _____
(hint: it is also known as an icosagon)

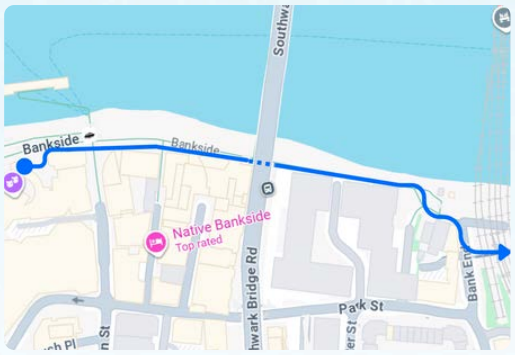
Fun Maths-related Fact:

The original Globe (1599) burned down in 1613 when a stage cannon set fire to the thatched roof during Henry VIII. One man's trousers caught fire — they were put out with ale. The Globe also featured in a Doctor Who episode. The Doctor wrongly claimed that the theatre had 14 sides, the same as the number of lines in one of Shakespeare's sonnets.

Investigate

There's a white plaque on the wall of No.49 Bankside, next door to and just before you arrive at Shakespeare's Globe. A famous mathematician (also an architect) is said to have stayed here during the building of St Paul's Cathedral.

4. The Clink Prison Museum (~8 min walk)



Walk along Bankside, through tunnel under Southwark Bridge Road, past the Anchor pub. Head round to Clink Street, to your left through another railway arch.

Fun Maths-related Fact:

The Clink operated from the 12th century to 1780 and is the origin of the slang "in the clink" for prison. Could maths get you sent to prison in those days? Possibly. In the 16th century, there were some who thought that mathematical symbols looked like witchcraft, and you could be imprisoned for being a witch. And there were everyday crimes that were mathematical too, one of which was using fake dice to help you to win betting games.

NUMBER CRUNCH C: According to the blue plaque, when did the Clink first operate?

_____

5. Winchester Palace (~1 min walk)

Stay on Clink Street – the ruins of Winchester palace are on your right.

Fun Maths-related Fact:

The grand London residence of the Bishops of Winchester from the 12th to the 17th century, Winchester Palace's rose window is a fine example of medieval stone tracery. The stonemasons who created this would have used compasses, squares and straight edges to create the geometric patterns, without any formal maths education.

Investigate

Look up at the rose window, what different shapes can you see within?

NUMBER CRUNCH D: How many sides are there on the regular stone shape in the centre of window?

_____

6. The Golden Hinde (~1 min walk)

Continue to the end of Clink St onto Pickfords Wharf.

Fun Maths-related Fact:

Sir Francis Drake's Golden Hinde was the first English ship to circumnavigate the globe (1577–1580). The replica here has also sailed around the world. Drake would have needed mathematical training to be a navigator. He'd have used devices such as an astrolabe and cross-staff to measure the angles of the sun and stars so that he could plot his exact location on the ocean.

Investigate

You can take bearings here. Due north across the river is Cannon Street station. Less than a mile due east is the Tower of London. What other famous buildings can you spot?

7. Borough Market (~4 min walk)

Walk along Cathedral Street past the cathedral on your left, and when you are under the railway turn right and cut straight through the famous Borough market.
Note: To avoid the crowds you can bypass the market and rejoin the trail from Park Street.

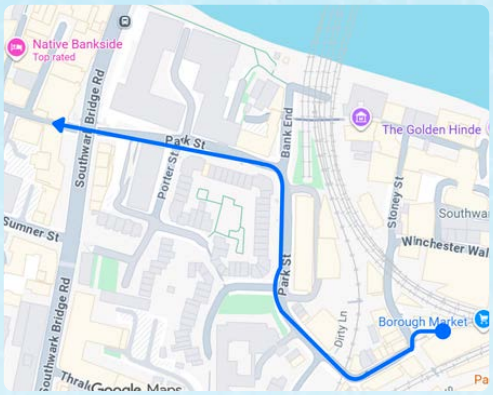
Fun Maths-related Fact:

Fun Maths-related Fact: There has been a market on this site since as early as the 12th century, however the present buildings were built in the 1850s. This was soon after Imperial units were introduced in the UK through the weights and measures acts of 1824. Many old weights, measures, and currencies used a duodecimal system focused around the number 12, compared to the metric system commonly used today that uses a decimal, base 10 system.

NUMBER CRUNCH E: How many inches are there in half a foot? _____

8. Rose Playhouse Site (~7 min walk)

Walk along Park St, and keep following the street as it meanders West, North, and then West again towards and under Southwark Bridge Road. The site of the original Rose Playhouse is on your right – behind some anonymous looking brown double doors.

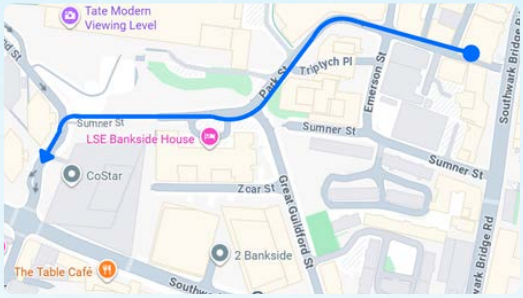


Fun Maths-related Fact:

The Rose, built in 1587, was Bankside's first purpose-built theatre. Rediscovered in 1989 during building work, it sparked a conservation campaign led by actors like Ian McKellen and Judi Dench.

NUMBER CRUNCH F: The Rose Theatre was a tetradecagon. Which means it had...how many sides? _____

9. 'Monument to the Unknown Artist' (~5 min walk)



Keep walking along Park Street, past the back of Tate modern on your right and bear left into Sumner St. On your left you will see a bronze-like statue on a plinth.

Fun Maths-related Fact:

This monument has a unique interactive twist (when it's working!): it mimics the poses of passersby who stand in front of it, using sensors and robotic motors. This is known as animatronics. Robots, rely heavily on mathematics for their creation and functionality. Geometry, trigonometry and algebra are vital in defining the shapes, movements, and interactions of animatronic characters.

10. Back to — Burrell Street Railway Arch (~3 min walk)

Continue down Sumner St and cross over the main road onto Great Suffolk Street. Turn immediately right onto Prices Street (keep an eye out for the writing on the floor behind Kirklady's Testing Works). At the end turn right on Bear Lane and then left onto Burrell Street. MathsWorld is ahead of you.

Fun Maths-related Fact:

MathsWorld is built under a Victorian railway arch which is a segment of a circle. This shape ensures that the arch is strong enough to hold up the railway.

FINAL NUMBER CRUNCH

A =

B =

C =

D =

E =

F =

Time for a calculation with Numbers A,B,C,D,E, and F:

·Divide A by B
·Subtract this from C
·Divide this by D
·Divide this by E
·Multiply this by F.

And... if you've got the right answer, you should be able to look up and see this number under the Burrell Street Railway Arch.

FINAL ANSWER HERE

MathsWorld London

This maths trail was developed in conjunction with Rob Eastaway. To find out more about the mathematics of the Bankside region, particularly Shakespeare and The Globe, we recommend Rob's book "Much Ado About Numbers".