

# Maryam Mirzakhani

Mathematician | b. 1977 d. 2017

30-60  
minutes

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## Starters

5-10  
mins

**Meet Professor Maryam Mirzakhani - born in 1977, Maryam won two gold medals in the International Mathematical Olympiad as a teenager.** She was the first woman and the first Iranian to receive the Fields Medal, often referred to as the Nobel Prize of Mathematics. Her research at Stanford University focused on complex geometry and complex systems.

Listen to Maryam share her story in her own words in this [video](#).

## Video Transcript – Summary



Maryam discusses her initial lack of interest in mathematics, which later developed into a passion, particularly for understanding structures on surfaces. She recounts her educational journey during a stable post-war period, attending a good school. Maryam explores mathematical problems related to geometric structures on surfaces, such as the trajectory of a ball on a billiard table, which remains an open question. She differentiates between studying the properties of a given geometric structure and deforming it to observe new surfaces. Maryam emphasises the importance of these problems for understanding higher-dimensional manifolds and other spaces.

## Maths is a Superpower!

- 1** How does learning about inspiring mathematicians like Maryam Mirzakhani, who explored complex geometry and became the first woman to win the Fields Medal, change the way you think about maths and its possibilities?
- 2** Who are some women who have won prestigious awards like the Nobel Prize or Fields Medal?



**Your next adventure starts here!** Meet inspiring role models like Maryam at a [Stemettes Event](#).

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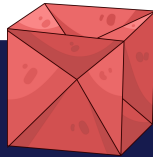
## Main Course



20 mins 1 activity  
40 mins 2 activities



## Make



Your challenge is to make an origami cube.

- Fold the paper in half to crease, then unfold.
- Fold both sides to the centre crease, creating four sections.
- Fold the paper in half again to form a square, then unfold.
- Fold the sides into the centre crease again, then unfold.
- Repeat for the other 5 pieces of paper.

### Ingredients:

- 6 sheets of squared paper
- Internet access

## Dessert



5  
mins

## Show and Tell

Spread the fun and excitement by sharing the challenges you've been exploring with your friends and family.

## Explore

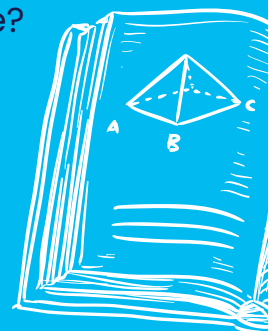


Prof Mirzakhani was the first female to win the Fields Medal in 2014; the Fields Medal is similar to the Nobel Prize. Make a poster about the amazing women who have won either Nobel Prizes or Field Medals. **Choose your favourite female winner and research:**

- What did they win the medal/prize for?
- When did they win?
- A brief summary of their research?
- Are they still alive?

### Ingredients:

- Paper & pens
- Internet access



## Share

We would love to see how you're doing with the challenges. Remember to tag us on social media and use the hashtag **#GGSWExStemettes**