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Bridge: A MindSport For All
Connects People, Challenges Minds

Mini Bridge

A strategic learning tool to enhance
pupils' mathematical thinking

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Scottish Mathematical Council Conference, 16 May 2026

<https://bridgemindsport.org/>

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Mindsports:

Sports that exercise
the mind and build
intellectual capacity

**think
Stirling**

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 Bridging Minds Dynamics & Interactions Read more	 Bridging Gender Attitudes & Inequalities Read more	 Bridging Wellbeing Social Benefits Read more	 Bridging Covid Improvise, Inspire, Invent Read more
 Bridging Organisations Challenges & Opportunities Read more	 Bridging the Gap Lifecourse Transitions Read more	 Bridging Schools Classroom Case Study Read more	 Bridging Sociology Teaching MindSport Read more

Research

Resources

Network

Impact

- Research outputs for each study
- Academic papers
- Accessible summaries

www.bridgemindsport.org

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Bridging Schools project: Bridge, Youth and Mindsport Education

- Explore the **benefits** and **barriers** of bridge and mindsport education
- Develop **social science evidence** to help establish bridge as a mindsport
- Work **with schools** to develop bridge clubs and/or embed bridge in the curriculum



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Survey of **909** young bridge players

Interviews with **40** students, **32** parents, **40** bridge teachers, and **52** schoolteachers, head teachers and school staff members

20 focus groups with pupils

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What is bridge?



BE THE DIFFERENCE

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The card game bridge



Queen of card games:

Endless card combinations



The card version of chess:

Skill, not luck



A classic game:

Played since 1925



A mindsport:

Competition and strategy but no need for athleticism

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A mathematical powerhouse

- **52** cards (no jokers)
- **13** cards dealt per player
- **4** suits
- **4** players
- **2** partnerships

The number of possible different hands one can get is very, very high.

Can you guess?



GAME CONTRACTS:

GAME	NUMBER OF TRICKS	SCORE (non vul)
3 No Trump	$6 + 3 = 9$	400
4 Spades	$6 + 4 = 10$	420
4 Hearts	$6 + 4 = 10$	420
5 Diamonds	$6 + 5 = 11$	400
5 Clubs	$6 + 5 = 11$	400
Small Slam	$6 + 6 = 12$	980
Grand Slam	$6 + 7 = 13$	1510

Let's see...
One point
Two points
Three points.

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What makes bridge competitive?

Pre-dealt cards!

- Optimising deals for **fairness and challenge**
- Play and **score against other tables**
- Compare and **discuss strategies** after the game



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What makes bridge unique?

- **Screen-free** activity
- **Face-to-face** partnership and collaboration
- **Low cost** – just £1 for a pack of cards and bridge clubs can supply materials free of charge



<https://bridgeminisport.org/>

bamsa@stir.ac.uk



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What makes bridge worth preserving?

- Fighting the good fight against the **overuse of AI**
- Preserving **critical thinking skills** in young people
- **Decision-making** with incomplete information



SAMANTHA PUNCH

IN 2022, artificial intelligence reached a milestone that had eluded it for decades – it defeated eight world champions at a key aspect of the card game bridge. Whilst a significant leap for AI, it paled almost unnoticed by many, after all, computers beating humans at games is hardly new. Chess fell in 1997.

Bridge, however, was different. One of the last holdouts, not for lack of computing power, but because it demands reasoning under uncertainty, partnership and human judgement.

While AI can now excel in playing the hand, it still falls short in bidding and defence. It calculates and approximates, but it does not truly think as we do. That distinction matters, because at the very moment AI is becoming more capable of thinking for us, we are at risk of doing less thinking ourselves.

In my work with young people and students, I am struck by a shift towards use of AI as a substitute for thinking, rather than in support of it.

Students are no longer grappling with problems in the same way, they are not doing the intellectual "grind" that builds understanding.

A 2023 study found that higher use of AI tools is associated with lower critical thinking ability, with researchers pointing to "cognitive offloading" – the outsourcing of mental effort – as the underlying cause. When answers are readily available, the incentive to wrestle with a problem disappears.

Studies in education warn that heavy reliance on AI can reduce independent reasoning and critical evaluation, while neuroscientific work from MIT's Media Lab found that people using AI tools show lower levels of brain activity associated with memory, creativity and decision-making.

Their outputs may be faster, but they are often more formulaic, and the thinking behind them is thinner.

If we outsource the thinking process too readily, we risk losing the ability to hold complex problems in our minds, to reason through uncertainty, and to make decisions independently. These are the foundations of judgment, creativity and resilience.

Bridge, perhaps surprisingly, offers a powerful counterbalance. Each hand lasts around seven or eight minutes, and in a typical session you might play 20 hands – 20 separate problems, each demanding a different solution.

Players work with incomplete information, under time pressure, in partnership, while trying to outmanoeuvre two opponents doing the same.

There are no shortcuts or algorithms to rely on, you must engage your brain fully every time. This is what makes bridge such a compelling form of mental fitness. While



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This 100-year-old card game could save us from over-reliance on AI

we prioritise physical health, far less attention is given to maintaining cognitive sharpness. Bridge develops logical reasoning, strategic planning and probabilistic thinking.

As a partnership game, it also demands communication, empathy and trust. You must interpret not only the cards, but your partner's intentions and your opponents' behaviour.

It is, at its core, a profoundly human game.

At the University of Stirling, Bridge: A MindSport for All (BAMSA) research supports what many players instinctively feel. In a study comparing 7,000 bridge players with 10,000 non-players, they found that those who play bridge report higher levels of wellbeing and are more optimistic about the future. They also cite improvements in concentration, memory, sociability and overall life satisfaction.

Bridge develops three critical domains: mathematical thinking, strategic

reasoning and social cooperation. When young people play, teachers consistently report improvements in mental arithmetic and abstract thinking – skills not always prioritised in traditional education.

Yet despite this, bridge remains underappreciated, largely due to perception. In the UK, it is still unfairly seen as a game for older generations, and many young people have never even held a pack of cards. However, when they are introduced to it, the response is overwhelmingly positive.

At a recent youth bridge summer camp, 95% of participants said the game was fun and 88% said they wanted to return.

In China, bridge is actively promoted in schools as a tool for developing cognitive and social skills, free from cultural baggage. The result is a growing base of young players and a strong pipeline of talent.

In contrast, the UK has relied heavily

on generational learning – children picking up card games at home – and that pipeline has weakened. If we want bridge to thrive, we need to be far more intentional in how we introduce it, particularly in education.

The benefits of bridge extend beyond widening access to a game, they lie in preserving a way of thinking. We live in an age of speed, convenience and instant answers, yet many of life's most important decisions come without clear instructions or complete information. They demand judgment, patience and the ability to navigate uncertainty – precisely the skills bridge develops.

Socially, a third of young people in the UK report loneliness linked to screen use. Bridge offers what digital entertainment cannot – face-to-face interaction, shared problem-solving and genuine connection.

It is, in many ways, an antidote to modern isolation. None of this is to dismiss AI, which can

be a powerful tool, but it cannot think for us. As an academic, the most pressing risk posed by AI is not that machines become more intelligent than humans, but that we become less so.

Bridge reminds us what it means to think, actively, collaboratively and under pressure. It challenges us, frustrates us, and ultimately rewards us with a deeper understanding of both the game and ourselves.

Bridge is not a silver bullet, but it is a reminder of something fundamental – that thinking is an active process, one that requires effort, engagement and interaction.

In an age where artificial intelligence is learning to think, the real question may not be what machines can do – but what we choose to keep doing.

Once we lose the habit of thinking for ourselves, it is far from clear how easily we get it back.

Professor Samantha Punch is a sociologist at the University of Stirling, a Scottish International Bridge Player, founder of BAMSA, and a representative of Scottish Bridge Youth Camp on June 19. For those who are curious to learn more to play contact youthcamp@stir.ac.uk

COMMENT AT HERALDSCOTLAND.COM

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How do
you play?



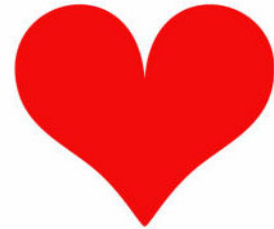
Mini Bridge

4 suits

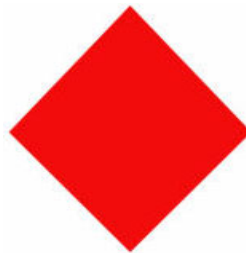
Follow
suit



Spades



Hearts



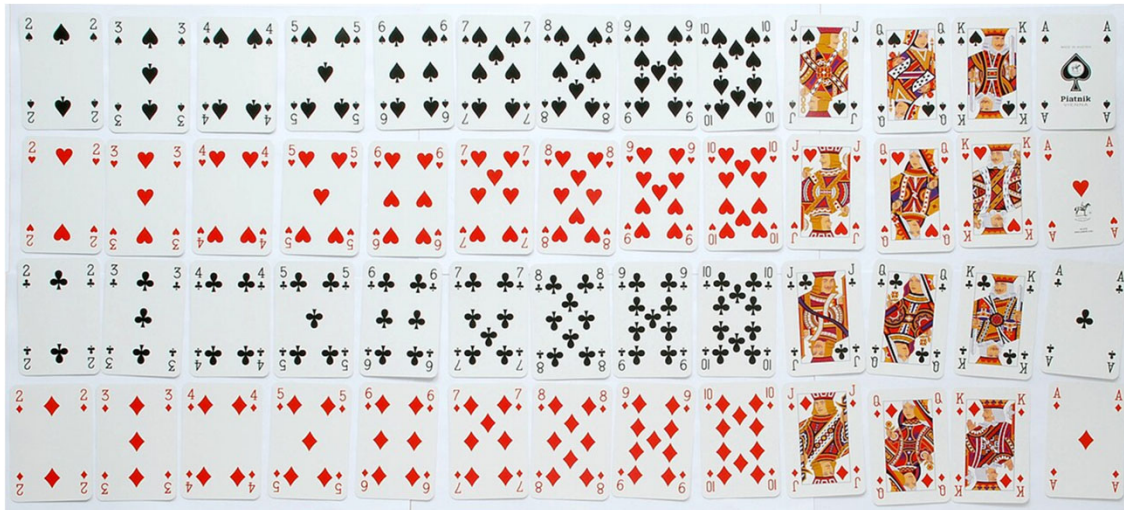
Diamonds



Clubs

Card order from lowest to highest (or weakest to strongest)

➡ A trick: Higher card wins



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Setup

Four players form two partnerships



North and South are partners

East and West are partners



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Minibridge Steps

Deal **13** cards to each player

Sort your hand into suits - like this – low to high, **red** black **red** black



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= 4 points

Count your high card (face card) points



= 3 points

Make sure that the total of everyone's points comes to 40



= 2 points



= 1 point

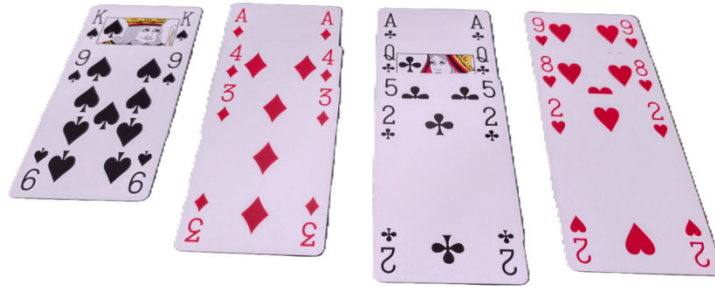


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Minibridge Steps

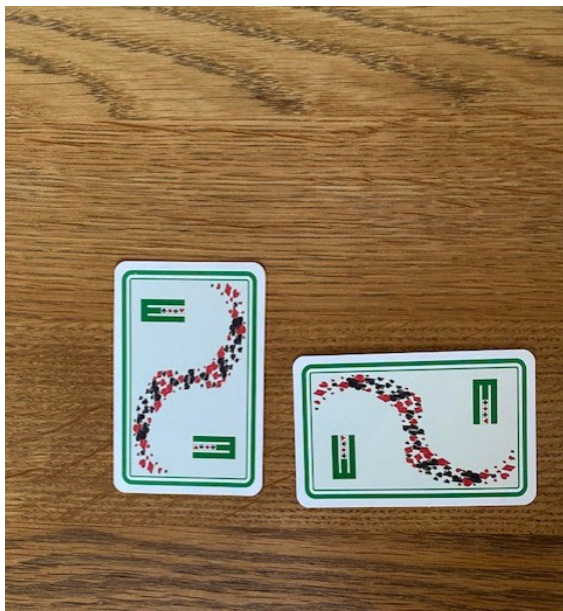
The player with most points plays first.

Their partner becomes 'Dummy' (lays their cards down face up in suit columns)



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Win (vertical) - Lose (horizontal)



Individual player's trick pile
– in front of each player

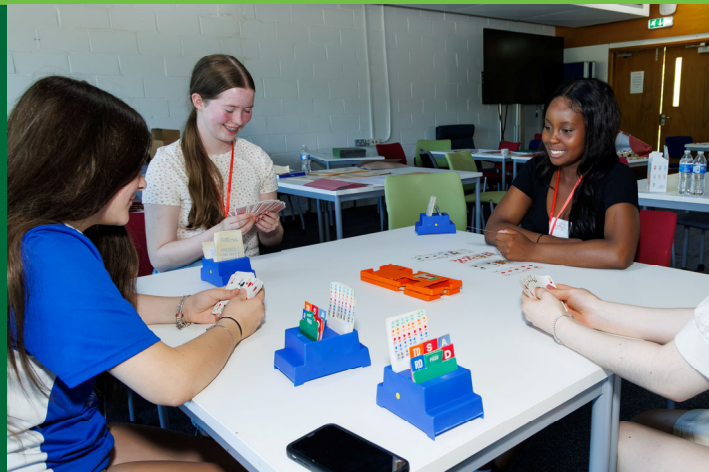


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Combined points**Target no of tricks****21-22****7****23-24****8****25-26****9****27-28****10****29-32****11****33-36****12****37+****13**

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**What the
research
shows**



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Enhanced strategic planning: **81%**

Better concentration: **76%**

Improved memory: **71%**

Improved mathematical thinking: **64%**

92%

Agree that
bridge is an
enjoyable use
of their time

69% will definitely continue playing bridge

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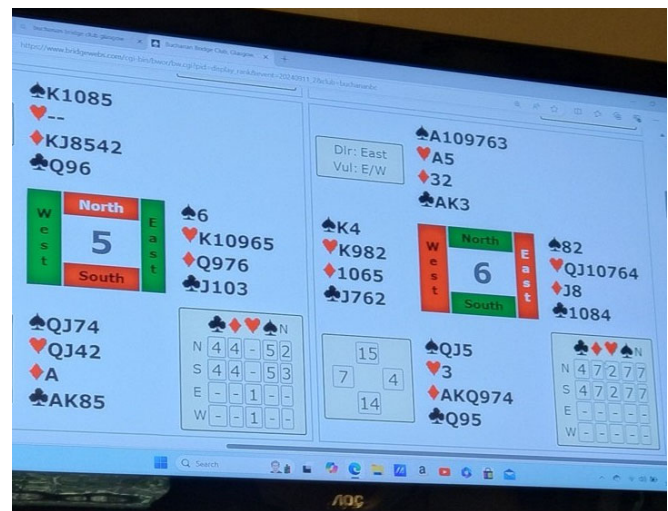
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The #1 benefit of bridge: Intellectual challenge

Being such a **multi-faceted game**, it forces you to stress your mind in a manner that you probably never would outside of bridge, especially at a young age.

It helped me expand my mind and **get comfortable in not knowing something** or not seeing something at first hand but being able to apply previous knowledge to help me learn it faster.

(Anthony, 24, USA)



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Why play bridge? Make friends and develop social skills

*The best bit for me is just the sociality of it, the number of **lifelong friends** who I've met through bridge who I will keep for the rest of my life.*

(Craig, 15, England)

*All parents struggle a bit with this battle against technology. An evening where they play bridge together, and then they realise **they can be in a social setting without their phones**. That's brilliant.*

(Cora, parent, Norway)



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*I just really **enjoyed the mathematical side** to it, to be honest.*

And then I just kept going back because I realised that if I put effort into it, then I could be good at the game.

*It does give you encouragement and motivation that **if you put enough time and effort into something that you can be good at it**.*

(Edwin, 18, England)



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My daughter is in Year 7 and she started bridge last year.

*I think **the maths element is really good** for her because she does sometimes struggle a little bit with her mental maths.*

*This has helped to improve that. She's definitely more confident with it. Her **ability to hold maths information in her head has improved.***

(Emelia, parent, England)



Teachers' and parents' views: Opportunities

- Mindsports like bridge are **unique** and stand out
- Suitable for **non-athletic children and inclusive**: across gender, culture, socio-economic background
- Bridge **brings families together**



Teachers' and parents' views: Challenges

- **Low awareness** of what bridge is or how to play
- Misconception about **difficulty**
- School buy-in and **administrative support**



Teachers' views: Potential applications

Fully integrated into class time

*It's just trying to make learning active, stimulating, and giving it variety as well. **Children love a new concept. They love a new game.** It's a really good hook for them. (Jay, teacher, Scotland)*

*I think Bridge has got to be the thing in itself. It's an escape from reality that employs high level thinking and understanding **skills that you take with you.** (Ava, teacher, England)*

Teacher training

- Career Long Professional Learning (**CLPL**)
- **In-service** (inset) days
- Teacher **get-togethers** (“**Bridge and biscuits**”)
- Linking literacy, **numeracy**, health and well-being



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Feedback from the pre-service teachers at the University of Stirling

Positives:

The interactive, practical demo was **well-received**, informative, and engaging.

Considerations:

There needs to be a **gradual implementation** as teachers learn.

Dummy role:

“Will children **want to be** dummy?” vs encouraging **patience** and **turn-taking**



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How bridge clubs can help

- Bridge **demonstrations**
- Volunteer **help in classroom**
- Teacher **training**
- **Materials:** Cards, bidding boxes, cardholders
- Minibridge **competitions**



Pupils from Troon Primary



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Free of charge

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Free teaching resources available

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Bridge: A MindSport For All
Connects People, Challenges Minds

Teaching resources for youth bridge

Our website offers a 10-lesson programme to help you learn bridge.

This includes animated tutorials, printable lessons, and weekly exercises, which are completely free to use and share!

Scan the QR code to learn bridge today.

WWW.BRIDGEMINDSPORT.ORG/SCHOOL-AND-YOUTH-BRIDGE

Each of the ten beginner lessons focuses on a specific aspect of the game, from basic concepts like tricks and trumps to more advanced elements like card sequences and bidding.

Scan the code to see the first video lesson, which will tell you all about the basic concepts in bridge.

Lesson 1
Tricks

WWW.BRIDGEMINDSPORT.ORG/SCHOOL-AND-YOUTH-BRIDGE

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<https://bridgemindsport.org/school-and-youth-bridge/>

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Learning resources tailored to different ages and skill levels

- ➔ [Petit Bridge \(Primary\)](#)
- ➔ [Mini Bridge \(Secondary\)](#)

[BridgeBattle](#)

[New Tricks](#)

[Bridge Starter pack](#)

[Milan Macura Bridge Academy](#)

[Jump Start Bridge](#)

Play online:

[Tricky Bridge](#)

[BridgeBaseOnline](#)

[Funbridge](#)



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<https://bridgemindsport.org/additional-teaching-resources/>

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Mathematical applications

Dr. Hamilton Bridge Resources
dh2119@gmail.com
[Danny Bridge Blog](#)

HSOG Bidding Survival Guide One page (16M) One page (50M) Bidding Guide Full System	Resources Partnership Bidding Hands Teaching Deals
Minibridge Guides Introduction Strategy Choosing the contract Minibridge to Bridge Count Tricks not Points	Minibridge Powerpoints Short Introduction Full Introduction NT Play Suit Play
Teaching Powerpoints - Introductory Series Taking Tricks #1 - Cashing Top Tricks Taking Tricks #2 - Force Taking Tricks #3 - Long Suits Taking Tricks #4 - The Favourite Taking Tricks #5 - Using Trumps Taking Tricks #6 - Summary Taking Tricks #7 - Playing a Hand Defence #1 - Introduction Bidding #1 - Introduction Bidding #2a - Basic Ranges for opening etc (16M) Bidding #2b - Basic Ranges for opening etc (50M) Bidding #3 - Bidding Game	Teaching Booklets Bridge Booklet 1 - Introduction Bridge Booklet 2 - Declarer Play Bridge Booklet 3 - Defence Bridge Booklet 4 - Bidding 1 Bridge Booklet 5 - Bidding 2 Bridge Booklet Answers
Misc Bridge Master on Bridge Base Declarer Practice on Bridge Base Matchpoints vs IMPs	

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dh2119.com/bridge.html

1. How many high card points does this hand have? 1 point

♥KQJ2 ♠3 ♦A7543 ♣Q32

Your answer _____

2. How many tricks do you need to win to make a 4H contract? 1 point

Your answer _____

3. How many tricks can you afford to lose in a 4H contract? 1 point

Your answer _____

4. Pick the best trump suit for this part score hand: 1 point

♥QJ73 ♠3 ♦A7543 ♣Q32

♥AK52 ♠A43 ♦J8 ♣J765

☐ Spades
☐ Hearts
☐ Diamonds
☐ Clubs
☐ NT

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Questions and suggestions

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What do you think about the educational applications of bridge?

Do you see yourself trying it out?

What are the opportunities and potential barriers?



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Thank you

Visit our stall in the exhibition area for a bridge demo!

Join us at the Bridge Summer Camp:
19-21 June at the University

Contact us for a school demo – year group or class

 <https://bridgemindsport.org>  bamsa@stir.ac.uk

Scottish Bridge Union

Summer Youth Camp

"A joyful, inclusive game that boosts confidence, strategy, and focus."

19-21 June 2026
University of Stirling



Featuring Milan Macura
World Youth Champion
and coach.

Suitable for all skill levels and beginners ages 10-26
Friendly, yet packed with exciting competitions
and outdoor activities



Scan to Register



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