1. Four Rooks Challenge

_Suitable for 1st to 6th class who understand how the rook moves._

**Problem Solving Strategy:** Logical Reasoning

**Aim:** Place four rooks on black squares so that all white squares are attacked.

- [Four Rooks Challenge Video (YouTube Link)](YouTube Link)
- [Tips and solution](#)

2. Eight Queen Conundrum

_Suitable for 1st to 6th class students who understand how the Queen piece moves._

**Problem Solving Strategy:** Logical Reasoning

**Aim:** Fit eight Queens on the chess board in such a way that no Queen is attacking another.

- [Eight Queen Conundrum Video (YouTube Link)](YouTube Link)
- [Tips and solution](#)

3. The Knight's Tour

_Suitable for 3rd to 6th class students who understand how the Knight piece moves._

**Problem Solving Strategy:** Trial and improvement

**Aim:** The Knight must travel around the chess board visiting every square just once.

**Strategy hint:** use pieces of paper numbered 1 to 64 to mark the squares visited.

**Solution hint:** Start with the Knight in an extreme corner (e.g. H8).

- [The Knight's Tour Video (YouTube link with solution included)](YouTube link with solution included)
4. Rook Race to the Corner

*Suitable for 5th and 6th class students who understand how the Rook piece moves.*

**Problem Solving Strategy:** Working backwards from a target

**Aim:** Making use of a physical chess board, place a Rook on h8 of an empty chessboard. The Rook can only move West and South towards a1. Two players take turns moving the Rook. The first player to move the Rook to a1 is the winner. Who wins? The first or second player? Play multiple times to determine perfect play and identify key squares which guarantee victory.

**Strategy hint:** When the game has been played a few times place the Rook on a1 (the finishing square) and work backwards to identify "bad squares" and "good squares". These could be colour coded red and green. Continue to work backwards to h8 to understand the "perfect play journey".

- [Rook Race to the Corner (YouTube Link with solution)](YouTube Link with solution)
- [Tips & Solution](Tips & Solution)

5. Wythoff's Game

*Suitable for 5th and 6th class students who understand how the Queen piece moves.*

**Problem Solving Strategy:** Working backwards from a target

**Aim:** Making use of a physical chess board, place a Queen on h5 of an empty chessboard. The Queen can only move West, South or South West. Two players take turns moving the Queen. The first player to move the Queen to A1 is the winner. Who wins - the first or second player? Play multiple times to determine perfect play and identify key squares which guarantee victory.

**Strategy hint:** When the game has been played a few times place the Queen on a1 (the finishing square) and work backwards to identify "bad squares" and "good squares". These could be colour coded red and green. Continue to work backwards to h5 to understand the "perfect play journey".

- [Wythoff's Game (YouTube Link with Solution)](YouTube Link with Solution)
- [Tips and solution](Tips and solution)