



Mathematics Centre
<http://mathematicscentre.com>

Black Douglas Professional Education Services
4/71 Greenhill Road
Bayswater North Vic 3153
AUSTRALIA

Mob: +61 401 177 775

Email: doug@blackdouglas.com.au

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Aiming High? Dig Deeper

Workshop Video Sections

Section 1 ... 00:00:00

- Preparation

Section 2 ... 00:00:52

- Staircase of natural numbers
- Overview: teaching craft & content and first challenge

Section 3 ... 00:04:56

- What happens if...?
- Two new challenges - patterns, equations (words & symbols), generalisation and more...

Section 4 ... 00:07:09

- Identifying and plotting ordered pairs

Section 5 ... 00:08:55

- Pattern from pattern
- Functions & derived functions

Section 6 ... 00:11:29

- Isometric drawing
- More complex staircase challenges

Section 7 ... 00:13:34

- Same staircase new pattern
- Triangle numbers
- Rectangles and multiplication
- Visual proof

Section 8 ... 00:21:58

- Squares from rectangles
- Staircases in squares
- Triangle numbers from square numbers
- Proof by generalisation

Section 9 ... 00:23:34

- Area of a circle using its corner square

Section 10 ... 00:26:16

- Staircase of triangle numbers
- Constructing and plotting a parabola and its derivative

Section 11 ... 00:32:18

- Area under a curve

Section 12 ... 00:33:13

- Square numbers as the sum of 2 triangle numbers
- Proof by induction

Section 13 ... 00:35:56

- Conclusion
- Workshop review

End ... 00:37:45