

Get inspired for your MSSL project

The best way to produce a successful project for mathematical studies standard level is to choose a topic that inspires you. Look through the links and questions on this poster and see if any of them interest you. Could you use them as the basis for your MSSL project?

IBReviewExtras



Go to www.hoddereducation.co.uk/ibreviewextras for a printable PDF of this poster that you can display in class.

1 What is a triangular number?

- Math Is Fun: www.tinyurl.com/lb2fvbj
- Mathematische Basteleien: www.tinyurl.com/d4zyxl

The second site talks about perfect numbers, palindromic numbers and Smith numbers. What are these?

2 What is a figurate number?

What types exist? Look at:

- www.mayhematics.com/p/figurate.pdf
- <http://mathworld.wolfram.com/FigurateNumber.htm>

Can you prove that some of the formulas are correct? Think about arithmetic sequences and series.

3 Pythagoras proofs

How many proofs of Pythagoras' theorem can you find? One was even discovered by a president of the USA.

Research the Pythagorean brotherhood. Allegedly they murdered one of their members — Hippasus. What had he done to deserve this?

4 Bisecting and trisecting

- Can you bisect/trisect an angle using only a ruler and compass?
- Can you bisect/trisect an angle using Origami?

5 Can you draw an egg?

There is a simple technique for doing this using only a ruler and compass (though you can also use CAD):

- www.tinyurl.com/k2gplrv
- www.tinyurl.com/kt5hv53

6 What is the frog's puzzle?

- www.tinyurl.com/3c48xf
- <http://nrich.maths.org/1246>
- www.tinyurl.com/l8hjm4j



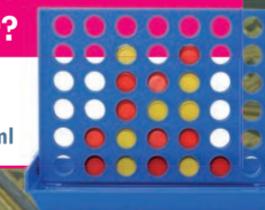
8 Explain the the Tower of Hanoi

The game and its rules: www.tinyurl.com/2n8ubl

9 How many winning lines are there in Connect Four?

Use this online version to start your investigations:

www.mathisfun.com/games/connect4.html



7 What is a Quincunx?

And how is it linked to Pascal's triangle? www.tinyurl.com/p9lqsvk

10 How are Islamic designs constructed?

- Islamic Art and Geometric Design: www.tinyurl.com/mtlcf83
- Islamic Mathematics: www.tinyurl.com/ltr86jw