Positive NET Results

MathFest 2018

Sarah & Lance Bryant
Shippensburg Area Math Circle
for 4th and 5th Graders

Elevator Intro

Us & Our Math Circle

Love of numbers: Local couple holds free Math Circle

By DENISE BONURA / Managing Editor | Posted: Friday, March 4, 2016 6:00 am

Do you have a 4th or 5th grader interested in solving puzzles, strategy games and mathematics?

Then sign them up for the Shippensburg Area Math Circle, which is led by Shippensburg University mathematicians Drs. Sarah and Lance Bryant. The free sessions will be held Saturday mornings in April. Registration deadline is March 14, Pi Day.

Nets Activity

Caveat:

There is more here than you could possibly do in a
1 hour or 1.5 hour session. That's ok.

Being over-prepared with interesting stuff is fine.
But also…you should be ready to be sidelined by even ***more***
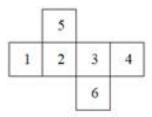interesting questions from your participants.

Inspirational Purchase

$27
amazon.com

Learning Resources Real World Folding Geometric Shape

Inspirational Texts/ Resources

Math Kangaroo in USA
since 1998

International Competition in Mathematics

5. The net of a cube with numbered faces is shown in the diagram. Sasha correctly adds the numbers on opposite faces of this cube. What three totals does Sasha get?

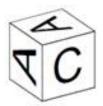A) 4, 6, 11   B) 4, 5, 12   C) 5, 6, 10   D) 5, 7, 9   E) 5, 8, 8

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12. One of the letters A, B, or C, appears on each of the faces of a certain die. The picture shows this die in two different positions. On how many faces of this die does the letter A appear?

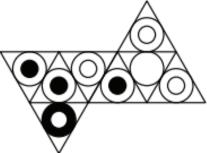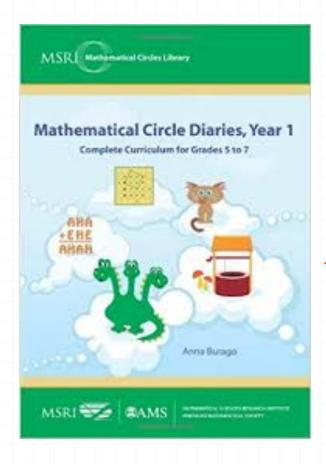A) 1   B) 2   C) 3   D) 4   E) 5

Inspirational Texts/ Resources

MATHCOUNTS Competition Series

29. _____ nets   How many distinct tetrahedron nets, formed from four connected equilateral triangles, can be cut from the figure shown?
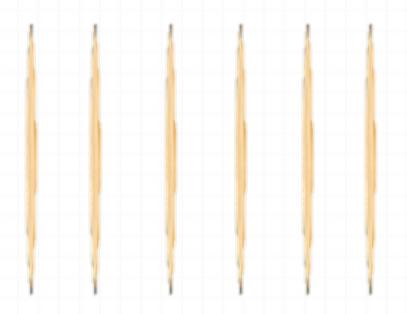
Inspirational Texts/ Resources

Activity Day

0 **Warm-up:** Six toothpicks, four triangles

0 **Intro:** Draw a cube! Establish some vocabulary terms

0 **Real Shapes:** In groups match the net(s) to the object [sneaky: one net is missing]

0 **Quick Draw:** Sketch at least 3 nets for a cube…are there more?

0 **Online App:** Which is a cube net? Do we have them all?

0 **Let's Wonder:** Does every 3D shape (polyhedron) have a net?

0 **Let's Play:** Online app net version of Rubik's cube

Warm-up

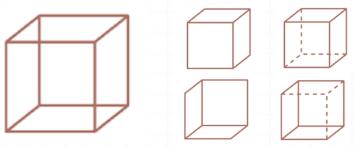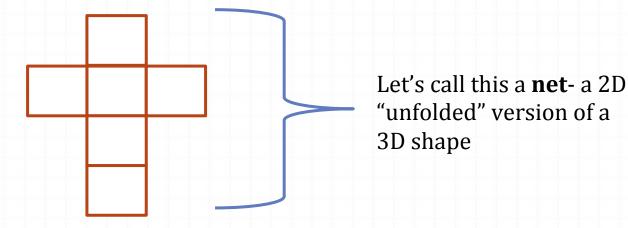Use six toothpicks to make four triangles of equal size and equal shape

Intro

What is a cube?

A shape with six identical square faces

How can we draw a cube on paper?

How is this a drawing of a cube?

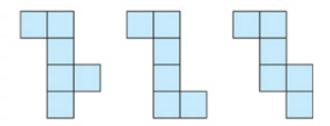Let's call this a **net**- a 2D "unfolded" version of a 3D shape
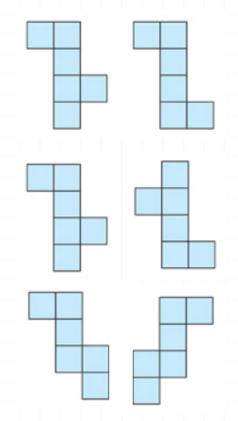
Real Shapes

Quick Draw

Draw three different nets for a cube. Can you find more?

When are two nets different?

Online Apps on the Smartboard

Find the nets

https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Cube-Nets/

Coloring Cubes

https://nrich.maths.org/1140

A Puzzling Cube

Age 7 to 11 ★

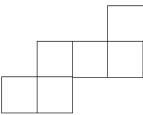Here are the six faces of a cube - in no particular order:
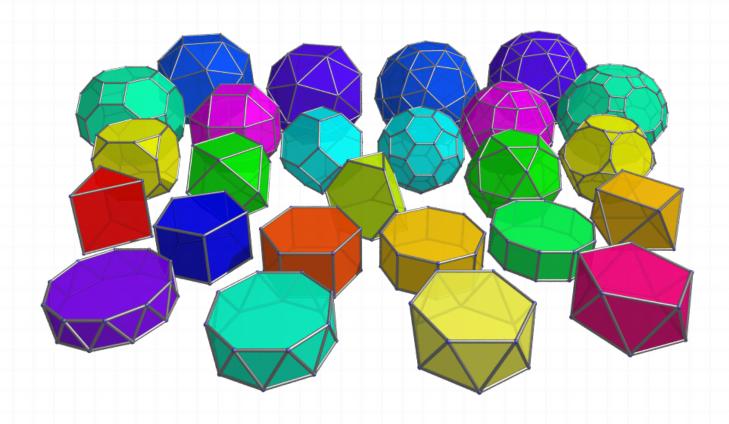

Here are three views of the cube:

Can you deduce where the faces are in relation to each other and record them on the net of this cube?

You can use this interactivity to try out your ideas. You will still have to visualise the cube folded up!
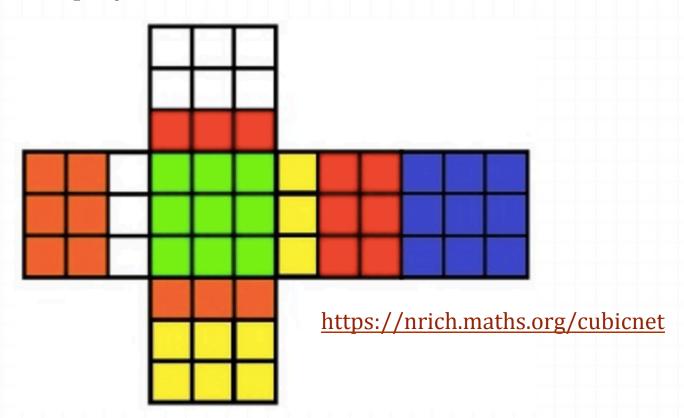
Let's Wonder

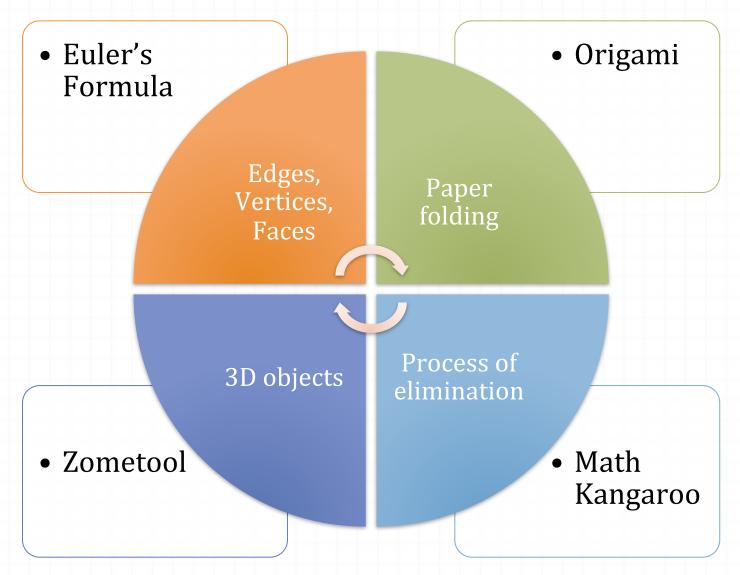Does every 3D shape (polyhedron) have a net?

Let's Play

What would the net of a Rubik's cube look like? How would the puzzle work if we played with the net?

https://nrich.maths.org/cubicnet

Nets: Lots of Connections!

- Euler's Formula

- Origami

- Zometool

- Math Kangaroo

Edges, Vertices, Faces

Paper folding

3D objects

Process of elimination

Thanks!

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