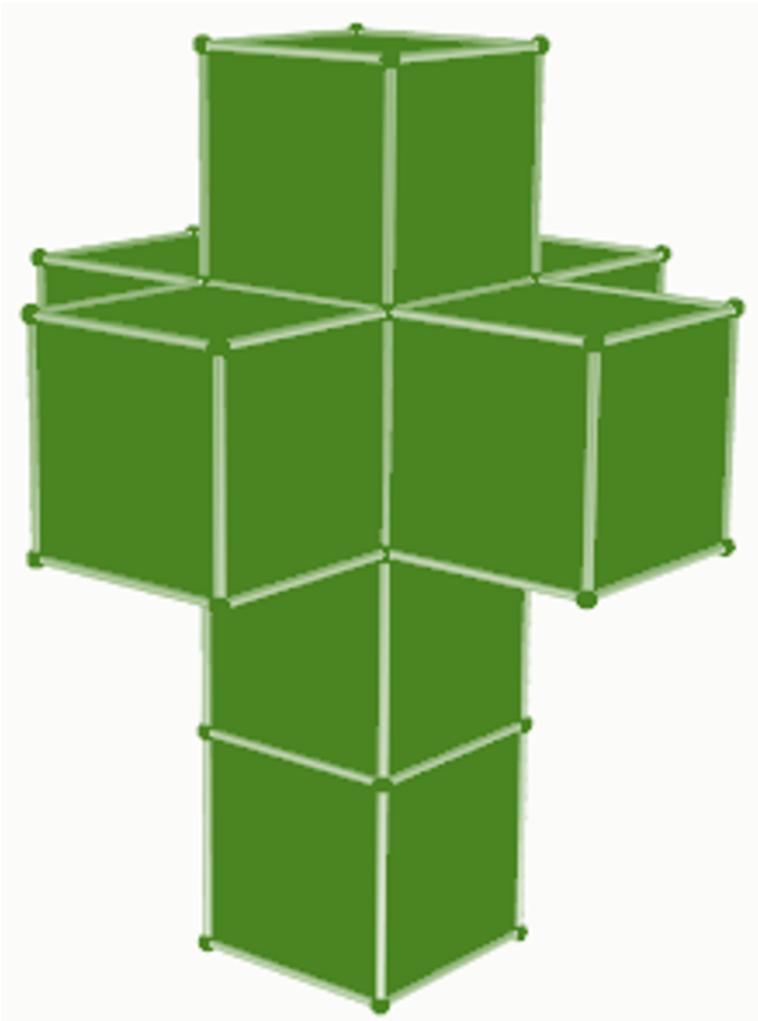# 4D CUBE - TESSERACT

Create the net of a 4D Cube by using 8 cubes. Then print and stick the info labels on each faces of the net.

4D CUBE - TESSERACT

OR simply ask each student

(a class of 24 students would be great)

to come up with a fact about the Tesseract then collect them all to create the faces...

MATH FAN
MATH FUN

WELCOME TO

4TH

DIMENSION

FACE #2

MATH FAN
MATH FUN

THIS SHAPE IS CALLED

4

DIMENSIONAL CUBE

MATH FAN

MATH FUN

IT IS ALSO CALLED A **TESSERACT**

MATH FAN
MATH FUN

The name "Tesseract" comes from the Greek, meaning "four rays", referring to the four mutually perpendicular directions on which it is based.
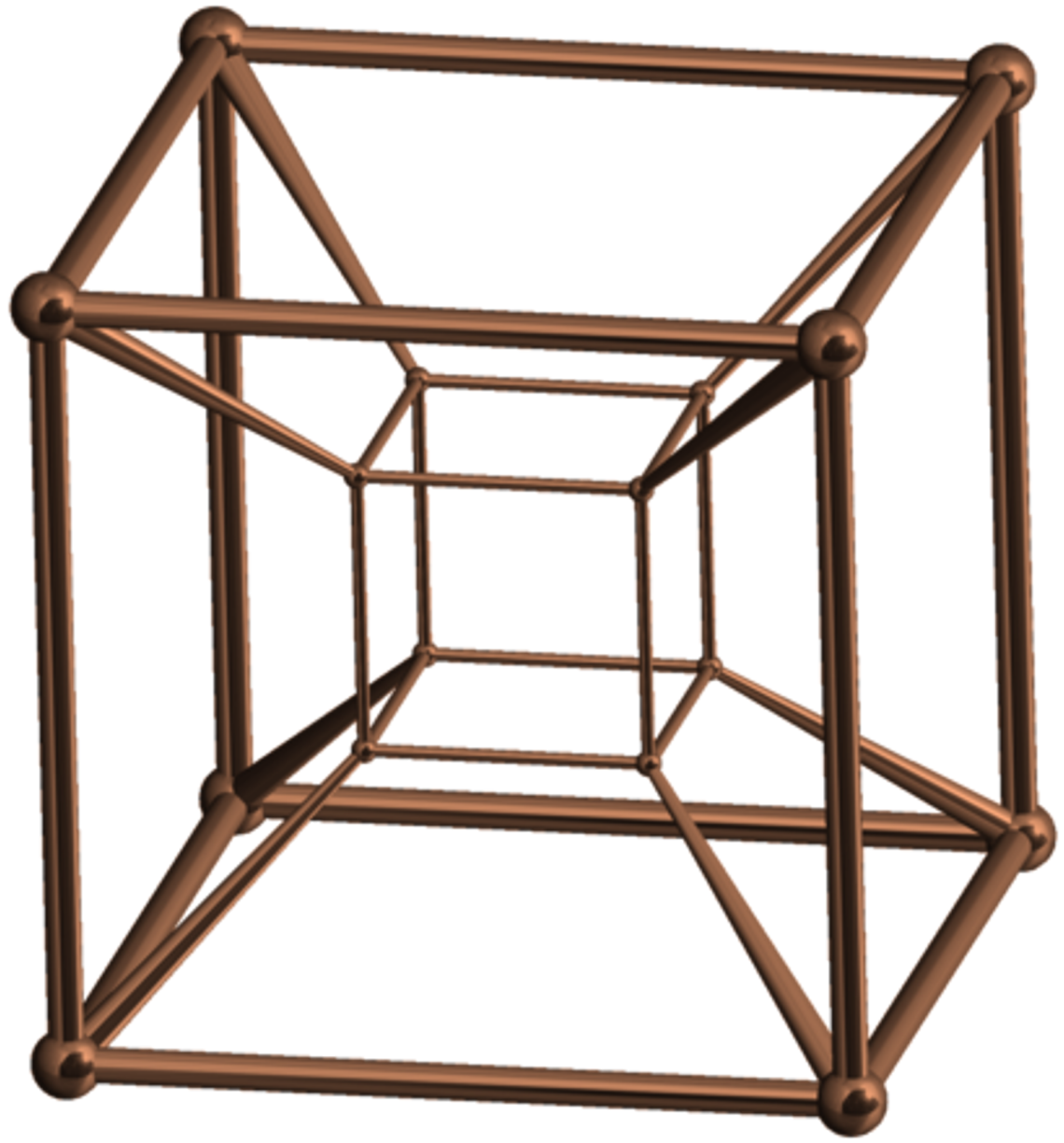
MATH FAN

MATH FUN

IT IS CALLED A 4- HYPERCUBE

FACE #6

MATH FAN
MATH FUN

MATH FAN

MATH FUN

DO YOU REMEMBER WHERE DID YOU HEAR

ABOUT THE WORD «TESSEARACT» BEFORE?

DO YOU NEED A CLUE?

FACE #8

MATH FAN
MATH FUN

THIS IS ACTUALLY THE NET (OPEN FORM) OF A 4D CUBE

FACE #9

MATH FAN
MATH FUN

MATH FAN
MATH FUN
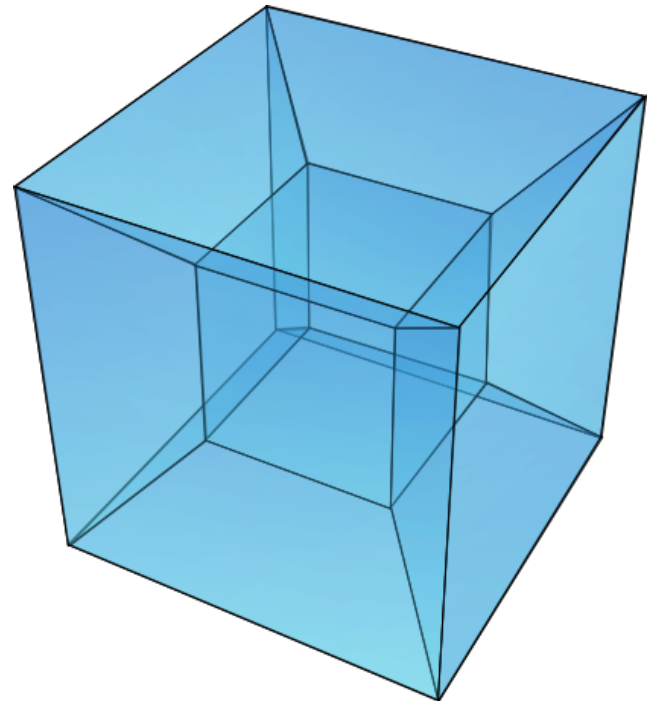
THE NET OF THE TESSERACT CONSISTS OF

8

CUBICAL CELLS

A TESSERACT HAS

24

FACES

MATH FAN
MATH FUN

A TESSERACT HAS

32

EDGES

MATH FAN

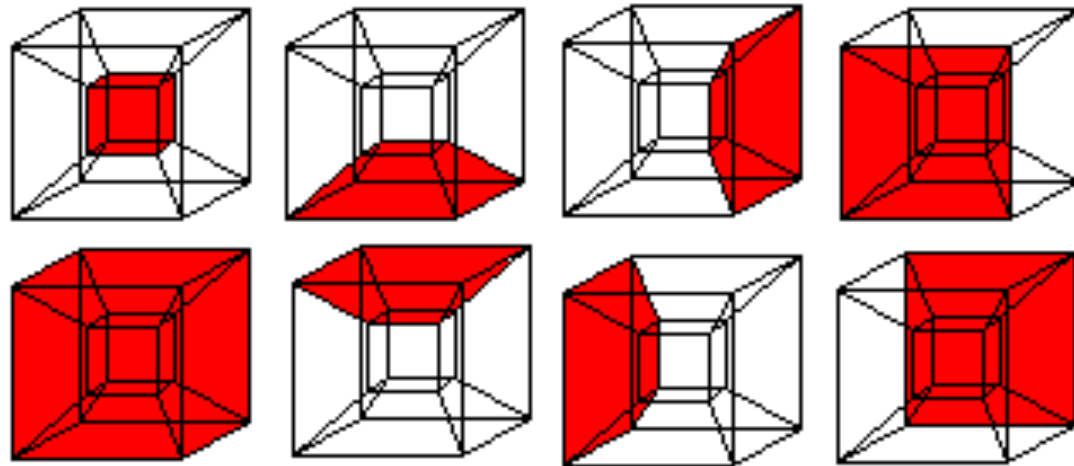MATH FUN

A TESSERACT HAS

16

VERTICES

MATH FAN

MATH FUN

4 cubes, 6 squares, and 4 edges meet at each corner.

3 cubes and 3 squares meet at each edge.
2 cubes meet at each square.

FACE #14

MATH FAN
MATH FUN

CAN YOU GUESS THE NAME OF THE FAMOUS PAINTER WHO ENTERED THE **4TH DIMENSION?**

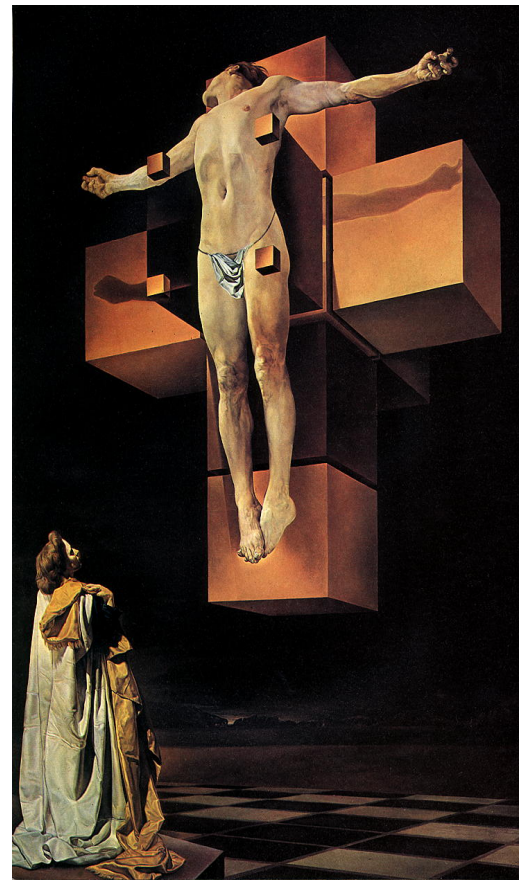A 1954 painting by **SALVADOR DALI** features a mysterious, 4D 'HYPERCUBE'.

MATH FAN
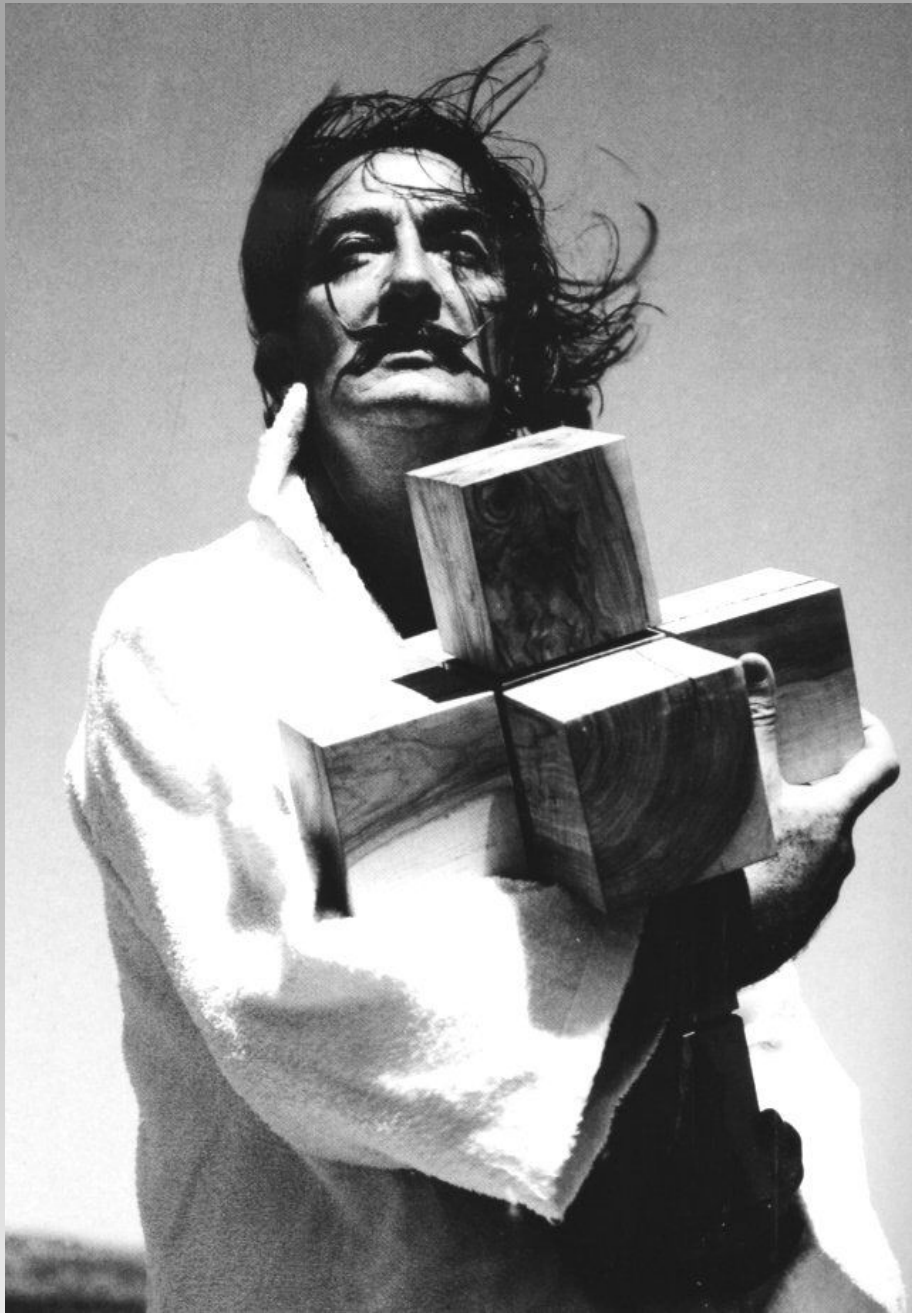MATH FUN

The CRUCIFIXION

MATH FAN
MATH FUN

unites
a classical
portrayal of
Christ
with a shape
that
only exists in
mathematical
theory.

FACE #18

MATH FAN

MATH FUN

MATH FAN

MATH FUN

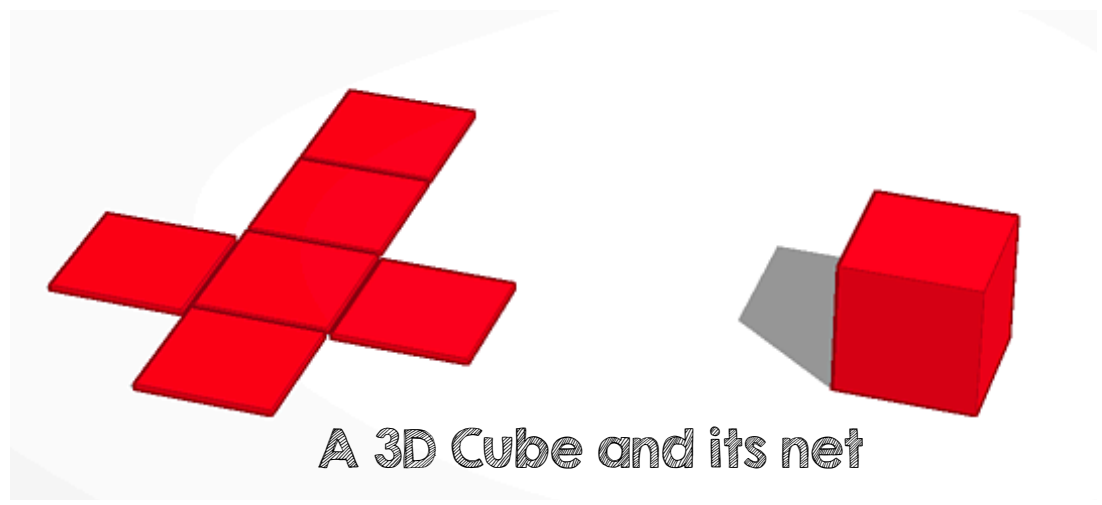It's not possible to see *a 4D cube in our limited 3D universe,* but there are different ways to imagine one.

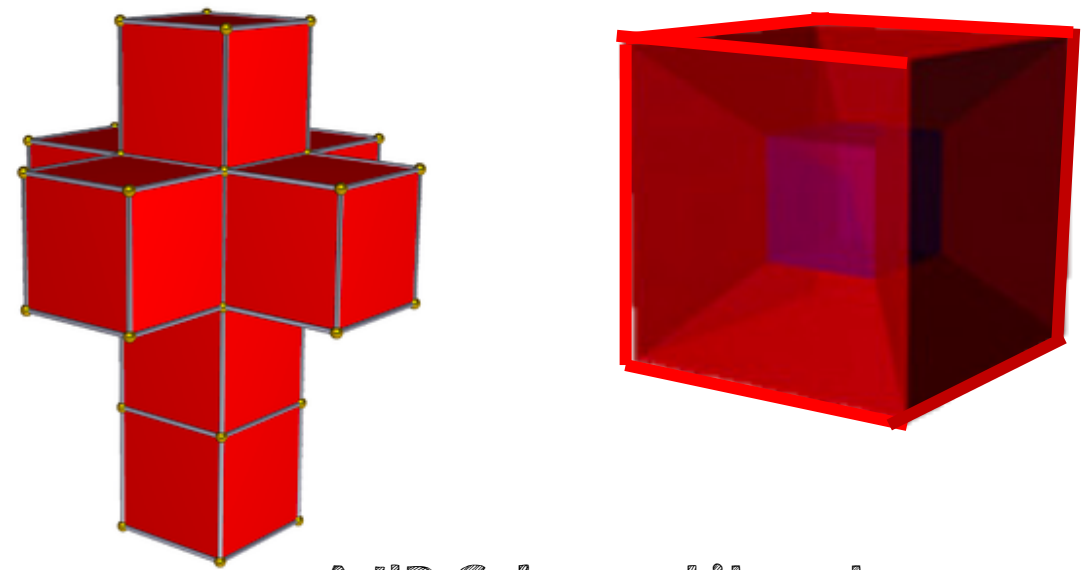*- Marcus du Sautoy*

MATH FAN
MATH FUN

A 3D Cube and its net

A 4D Cube and its net

MATH FAN

MATH FUN

THERE ARE 261 DISTINCT NETS OF THE 4D CUBE

(FOR NOW)

Let's listen the concept of 4D from the Epic Cosmos "Carl Sagan"

https://goo.gl/AbG96F

If we continue to generate a cube
in the next higher dimension..

MATH FAN

MATH FUN

DIMENSION OF THE CUBE					
1	2	3	4	5	6
# of edges					
1	2x2	3x4	4x8	?	?

If we continue to generate a cube in the next higher dimension..

DIMENSION OF THE CUBE

	1	2	3	4	5	6
# of vertices	2	4	8	16	?	?