The Mathematics Zone

VISUAL	AUDIO
WHITE STAR FIELD	Twilight Zone music sting (Rod Serling presentation)
SLIDING LEFT TO RIGHT, RIGHT TO LEFT, AND VERTICALLY, WE SEE CALCULUS EQUATIONS, ALGEBRAIC FORMULATIONS, STATISTICS, TRIGONOMETRY, CHEMICAL FORMULAS, AND GEOMETRY EQUATIONS.	VO - Submitted for your approval ... one massively powerful tool .. A tool exponentially greater than any that have gone before. A medium, whereby one can explore the vast reaches of colliding galaxies or calculate how to make the most clams with a crop of tomatos, or become a top banana on Wall Street ... a land of possibilities and expectations. Another dimension of competence and confidence ... IF you simply cross over ... into the MATHEMATICS zone.
CHYRON, LOWER THIRD, JENIFER LINDSEY, SPECIAL AGENT, FBI	But first, one Jenifer Lindsey. A stunning example of life after university. Proof positive of the powerful interdependence between mathematics and just about everything, everywhere.
VISUAL IN OFFICE COMPUTER SCREEN, VP AQUAPHARM	Appropriate sound bites from Jennifer Segue to Don Doering
OPENING VISUAL OF DNA CRITTERS AND FOOTBALL STADIUM AS BLACK AND WHITE LINE DRAWING. THE CROWDS OF CRITTERS ARE DELINEATED BY A SPOT OF COLOR.	VO - (segue to DNA) And now, join us, if you will as we seek to unravel a problem with many twists and turns.
ECU OF A SINGLE DNA CRITTER	

VISUALS ZOOM IN ON THE STADIUM SCORE BOARD.	Consider the following - the homecoming game at a major university. 104,000 spectators, students, alumni, parents and friends.
CHROMOSOMES APPEAR.	Each individual with 23 pairs of chromosomes in every cell.
VISUALS REFLECT TEXT. A-T T-A C-G G-C	Each chromosome a single DNA molecule. And each of them made of simple repeating units. Four kinds. Double stranded.
WATERFALL COMBINATIONS ACROSS SCOREBOARD	All living things use that alphabet in groups of threes and that gives us 64 possible genetic units of code.
SCOREBOARD FILLS WITH CODE LINES OF 0'S AND 1'S	8 bits to a byte, with every DNA base 2 bits ... the sum total? 1,000 megabytes of information in every human cell. One great big genetic gigabyte.
VISUAL OF NY TIMES FILLING STADIUM WITH CALCULATIONS SUPERED OVER.	There's enough information in that gigabyte to fill 6, perhaps 7 years of NY times Sunday editiions included. That would be, the macro view.
THE NUMBER 10,000 IS DRAWN ON SCREEN BY A BALL POINT PEN. IT TOPPLES OVER AND MASSES OF 'C-T-A-G'S FILL THE SCREEN.	And the micro reality reveals ... 10,000 of these chromosome packages could fit into the tip of a ball point pen. Rock & Roll music in background
PULL OUT TO: FOOTBALL GAME. DNA CRITTERS OF DIFFERENT COLORS	What will happen when each spectator is told to find another member of their home school's fraternity or sorority?
WE SEE CRITTERS BEGIN TO MATCH UP, WITH ACCOMPANYING SFX	How long will it take? How does the concentration affect the rate of reassociation? And do they all find partners?

The question becomes, how do we determine that quantative measure? The answer will reveal all manner of things: from an estimation of the number and complexity of genes to just how a whale is related to a cow. It's even the key to DNA forensics.

ON THE SCOREBOARD WE SEE A DNA HELIX 'LADDER UNZIP & REZIP

Consider then, a lab where all of our double stranded helices have been physically separated, broken into strands, 3000 base pairs long. Our quest is to reunite these separated strands of DNA. To once again form perfect double helices, molecular matchmaking, if you will, the current genetic reality to form an anti-parallel universe.

CRITTERS CONTINUE TO REASSOCIATE IN THE STADIUM

[Music up, crowd sounds intensify.]

Three billion bases. The original collection of human DNA. That means molecules thousands of bases long searching through a million possible partners for that one special complementary strand..

Music and crowd fade into background then out.

The object of the game is to find k. That tells us how fast the re-association is going, and that reveals the complexity of the DNA.

THE CAMERA ZOOMS IN ONCE AGAIN ON THE SCOREBOARD WHERE THE FIRST FORMULA APPEARS.