

HE'S IRRATIONAL AND HE GOES ON AND ON.

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WIFE OF PI

2/8

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INTEGRATED MATH: AN INTRODUCTION

Lincoln School
December 10, 2015

WELCOME ACTIVITY

Which is the shorter path?



Jane is trying to cross the city in the diagram to the left.

The total distance across the city is 3.12 miles.

She has two potential paths.







WHY INTEGRATED MATHEMATICS AT LINCOLN?

- Many of our students arrive at Lincoln from Integrated Math programs elsewhere in the world.
- Math at Lincoln is already taught through an integrated approach in the elementary school, the first two years of middle school, and in IBDP Mathematics.
- Integrated Math aligns with IBDP Mathematics.
- Increases access to IBDP Mathematics courses.

INTEGRATED MATH CONTEXT

- Mathematics is a formal body of knowledge defined by axioms and derived theorems.
- School mathematics should reflect that structure and the ways in which mathematical topics intertwine.
- A mathematics curriculum should identify a progression of topics that build on the structure of mathematics, with topics in one year depending on topics covered in a previous year.
- Nearly every country in the world except the United States uses an integrated math structure in its secondary school mathematics programs.”

Schmidt, 2004

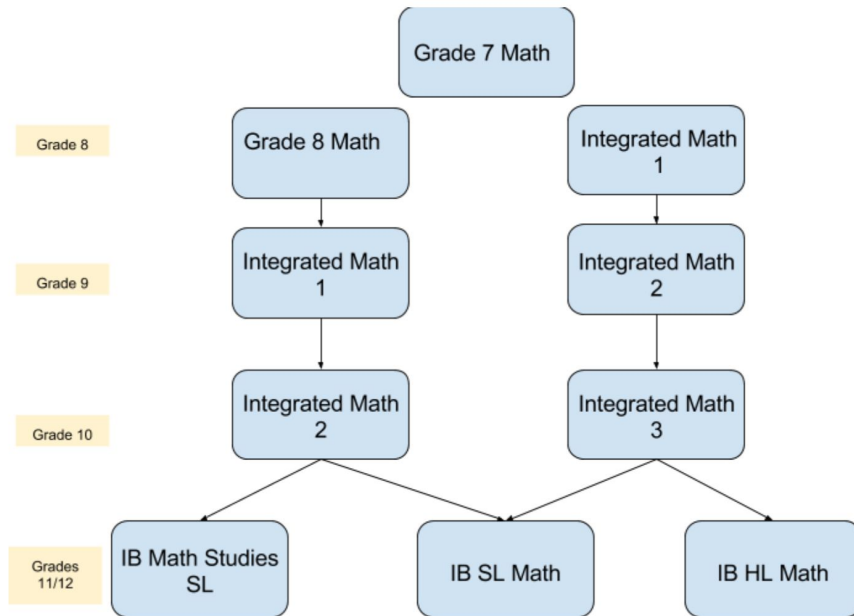
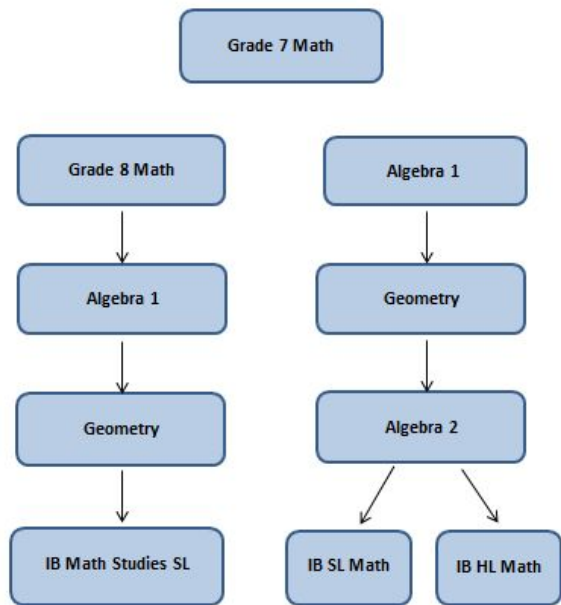


ADDITIONAL BENEFITS TO INTEGRATED APPROACH

- Affords flexibility with the amount of time spent on a particular math topic.
- Students can see connections and build deeper understanding and develop realistic problem solving skills.
- Varying math topics throughout the year makes the class more interesting for students (and teachers!)
- An integrated curriculum increases exposure to core concepts resulting in less time reteaching concepts and increased retainment over the long term.
- Better appreciation of the links between different branches of Mathematics.

TRANSITIONING INTO IM

Where your children will go...and how...



A COMPARISON OF STANDARDS

3. Quadratic Functions *Pearson IM2 Chapter 12*

- ❖ Students will graph quadratic functions on the coordinate plane. F.IF.4,5,7
- ❖ Students will use the discriminant of a quadratic equation to analyze the number of times a function crosses the x-axis. F.IF.4
- ❖ Students will solve quadratic equations by graphing, factoring, completing the square, and using the quadratic formula. A.APR.1, F.IF.4
- ❖ Students will use quadratic functions that represent real-world situations and will decide if linear, quadratic, or exponential functions appropriately model a set of data. F.BF.1a

4. Transformations of Functions *College Prep Math Chapter 11.1*

- ❖ Students will transform functions F.BF3

5. Right Triangles and Trigonometry *College Prep Math Chapter GEOMETRY VOL1 4.1 and Chapter 5*

- ❖ Students will use the Pythagorean Theorem. G.SRT.4,8
- ❖ Students will use concepts of special right triangles. G.SRT.8
- ❖ Students will use trigonometric ratios to form proportions. G.SRT.6
- ❖ Students will examine the sine, cosine, and tangent ratios. G.SRT.6,8
- ❖ Students will apply the laws of Sines and Cosines. G.SRT.9,10,11

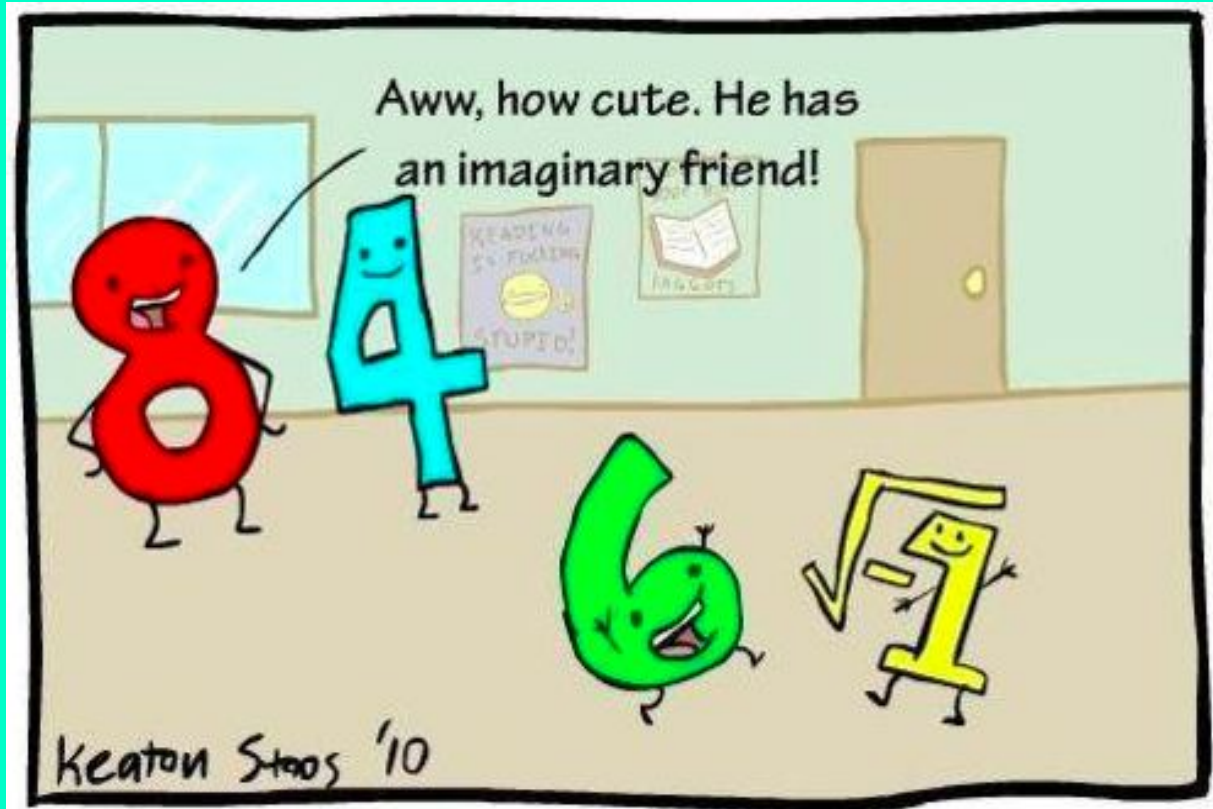
WHAT ARE OTHER INTERNATIONAL SCHOOLS DOING?

- Anglo-American School of Moscow
- Shanghai American School
- International School of Kuala Lumpur
- Canadian Academy, Kobe
- Graded-American School of Sao Paulo
- American International School - Egypt
- American International School of Budapest
- American International School of Johannesburg
- International School of Kenya
- International School Beijing
- Western Academy Beijing
- UNIS New York
- International School of Dusseldorf
- Anglo-American School of Sofia
- American School of Yaounde, Cameroon
- International School of Zagreb
- Copenhagen International School
- International School of Helsinki
- Frankfurt International School
- Yokohama International School
- International School of Luxembourg
- International School of the Hague
- International School of Manilla
- Tokyo International School
- United World College Singapore
- Jakarta International School
- American Embassy School, New Delhi

FAQS?

- What about students who leave Lincoln and transfer to non-integrated program?
- How will teachers be prepared to teach integrated math next year?

FURTHER QUESTIONS?



SAVE THE DATES

MS: Math Coffee Morning March 9

HS: G8 Course Selection Night Tues March 8

G9 Course Selection Night Tues Feb 23

You are also invited to make an appointment with your son or daughter's counsellor.

RESOURCES

- Middle School and High School Streaming and Syllabi
- What's Math Got To Do With It?: How Parents and Teachers Can Help Children Learn to Love their Least Favorite Subject Jo Boaler
- Mindset: The New Psychology of Success Carol Dweck
- “A Vision for Mathematics” - William H Schmidt ASCD. 2010.
- How to Learn Math: For Students Stanford Online EDUC115-S
- Mr Meyer's Math Blog