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A mathematical program for teaching early high school students about Black holes.

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Modern science understanding depends on fundamental mathematical areas that go beyond primary school arithmetic. One of Einstein-First's goals is to create seamless learning progressions that begin in early primary school, designed to ensure that everyone develops an intuitive understanding of mathematical concepts and ideas that allow us to comprehend everything from the reality around us to the amazing things we can see with the internet. Understanding of things like the scales of the universe, the electromagnetic spectrum and the quantum world of light and atoms enable children to visualise and imagine things that otherwise might as well be magic. The maths concepts we are introducing from an early age also have social importance for understanding money, weather, risks and gambling. Starting at the youngest ages, using fun activities, we open children's minds to ideas that maths is more than numbers.

Astronomy is often in the news. Our place in the universe is a topic of universal human interest. Primary and secondary school scientific curriculums, however, still rely on outdated scientific paradigms and students have to use the Internet to find the answers. In my talk I will present the mathematical part of a modern program called "Discovering Black holes" for year 7 and Year 8 students to support their learning.

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