

Everyday Mathematics—Book Review of *Life by the Numbers*, by Keith Devlin

Reviewed by Katelyn Valkenburg

Throughout our universe, there is an unseen world of mathematics, an idea that Keith Devlin calls “the invisible universe,” the main concept of Keith Devlin’s *Life by the Numbers* (Devlin 1998, 1). Devlin shows us the invisible universe of mathematics and how crucial it is to our everyday lives. The curiosity, imagination and creativity of people around the world, throughout the centuries, helped to get us to where we are today. As this book is based on the TV mini-series, *Life by the Numbers* (Plonka 1998), Devlin used the same categorization of mathematical themes for his chapters but was also able to add and expand on the concepts in the show. The first chapter, one of the easiest to follow, gives a good overview of the book, but is very concise with mathematical concepts. The other themes in this book consist of the connections between mathematics, art and special effects, patterns in nature, medicine, sports and training, discovering our world through creating maps, exploring our universe, probability in casino games, insurance, economic predictions and technology. These themes that affect our everyday lives are explained with mathematics: “[humans] use mathematics to investigate things that the eye cannot see” (p 2). Therefore, we could say that mathematics gives us the means to help us understand our world.

I found *Life by the Numbers* to be a very approachable and easy read. This book is straightforward and without mathematical jargon. The mathematical concepts were explained with enough detail that most readers could follow along. Mathematical equations were not used to try to explain concepts, which is what makes this book so approachable. Devlin (1998) explicitly states that throughout the book “you won’t find any formulas or problems” (p vii). As someone who enjoys mathematics, I found this book intriguing. However, since it does not have any symbolic mathematics, some of the concepts left me wanting mathematical proof. Based on the purpose of this book, I understand why Devlin did not include any mathematical equations or proofs. The fact that there are

no mathematical symbols or equations could be the biggest strength of *Life by the Numbers* because someone who isn’t mathematically inclined can still follow along without getting lost in the equations, which was Devlin’s intent. *Life by the Numbers* may inspire those who enjoy mathematics to further explore the concepts presented. Since this book does not go into great depth about the concepts, you may need to seek outside sources. Devlin has included a section in the back to get you started with further readings.

Similar to Devlin, Brough and Calder (2014) also believe that “mathematics is everywhere” (p 9). In *Making Mathematics Meaningful*, Brough and Calder (2014) discuss the importance of using real-life examples to teach mathematics. Real-life examples make learning mathematics less abstract and more tangible because readers can make connections to their own lives (p 9). As a teacher candidate, my eyes were opened to the importance of introducing real-world applications when teaching mathematics. The book explains that most things have either a mathematical explanation or use mathematics to make them work, so after reading it, I learned about a wide range of examples of where mathematics applies in our everyday lives, which I can bring with me into the classroom. Mathematics is at work behind the composition of a work of art, the creation of a movie that you enjoyed recently and that amazing curveball that causes a batter to strike out in a baseball game. Knowing the mathematics behind our everyday lives helps us see patterns. We can also use mathematics to discover new patterns. Some of the concepts that Devlin discusses are much more advanced than those taught in primary and lower secondary school. Therefore, using some of these concepts with young children may not be useful or appropriate.

After reading this book, I agree with Devlin’s opinion that mathematics is an invisible universe. Mathematics is in our everyday lives, but we don’t see it explicitly. Devlin shows his readers that

mathematics isn't just about the numbers, it is about the patterns that are all around us; numbers are just a means by which we can make sense of those patterns. I think anxiety about mathematics comes from the confusion of trying to decipher numbers and symbols used as representations for abstract concepts. Devlin (1998) makes a great comparison between mathematics and music in his first chapter. In the same way that mathematics uses symbols to represent abstract concepts, music has symbolic representation through musical notes. Our minds require some type of tangible way to represent things; that is why mathematics exists. If there wasn't some kind of standard way to communicate our thoughts or make our abstract ideas more tangible, it would be difficult to express ourselves (pp 16–19). Throughout this book, we see the vast number of patterns that now make sense to us through the symbolic representation of mathematics.

I agree with Devlin (1998) in that this book is for anyone who believes “that mathematics has little to do with life,” “that mathematics is just about numbers,” “that mathematics was all worked out centuries ago” or for anyone who is “curious about life” and is willing to get a taste of what is inside the invisible universe (p vii). I would like to also add that this book is for any educator or mathematician. It will aid in understanding the mathematics that is all around us, as well as possibly inspire further learning about certain topics.

References

- Brough, C, and N Calder. 2014. “Making Mathematics Meaningful.” *Australian Primary Mathematics Classroom* 19, no 1: 9–13.
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- Plonka, B A, producer. 1998. *Life by the Numbers*. Motion Picture. Arlington, Va: Public Broadcasting Service (PBS).