



筑波大学

University of Tsukuba



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**Values Education and Global Citizenship:**

**Towards the Achievement of Sustainable Development Goals and Humanity International Conference XII**

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# Human Character Building through Mathematics Teaching and Learning

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# Abstract

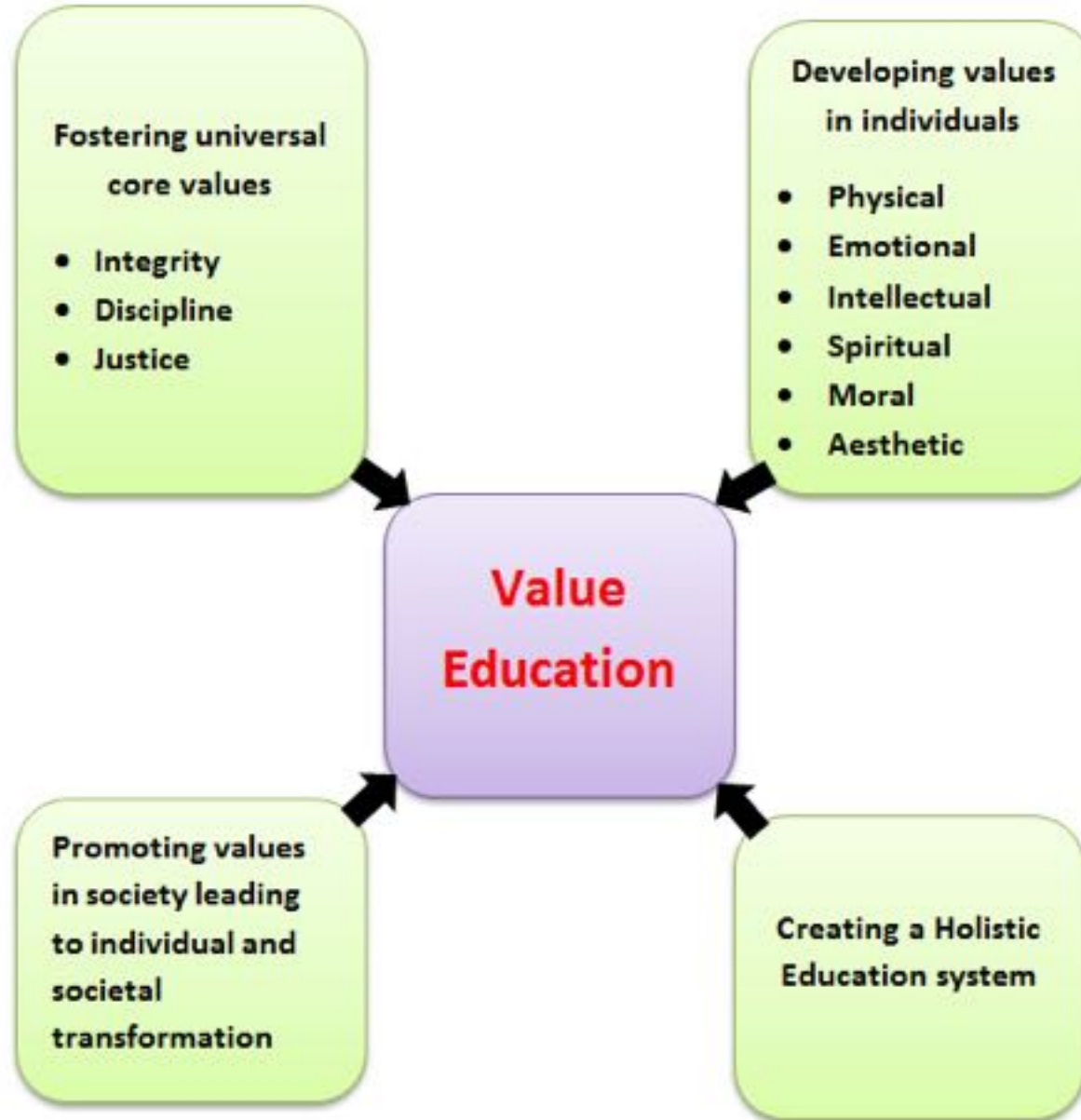
People often see mathematics as numbers, calculation and formulas. There are some factors influencing their perception of mathematics, one of which is the way teachers teach mathematics. Mathematics should be seen far more than those images. Mathematicians have defined that mathematics as human endeavour and along with this Freudenthal has argued that mathematics as human activity. As it is human activity, students can learn a lot from mathematics including character and or values. One of the aims of mathematics is to contribute to community they live in such as to foster social justice. For example, learning about division could integrate the fairness and unfairness. Becoming wise in distributing things could be part of this topic. From the mathematics itself, there are many good characteristics that students can develop. Learning mathematics through open ended problems would allow students to think 'would there be any other ways?'. In addition, they would have the opportunities to see differences and how they would react on those. Other topics such as logic and proofs have huge spaces to develop students' character. We believe that mathematics teaching and learning could promote good



Literary education is of no value, if it  
is not able to build up a sound  
character.

— *Mahatma Gandhi* —

AZ QUOTES



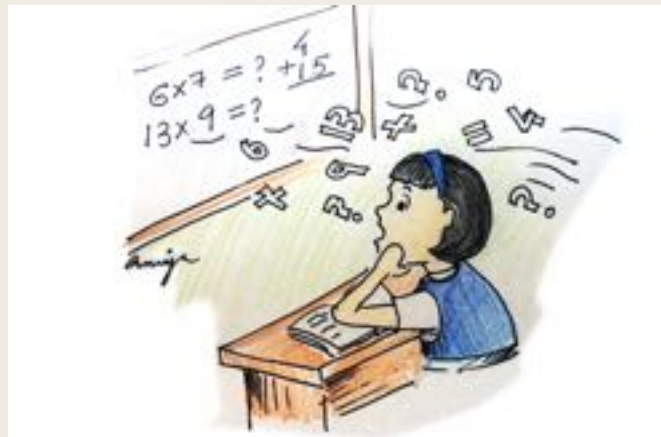
# SGDs to be addressed

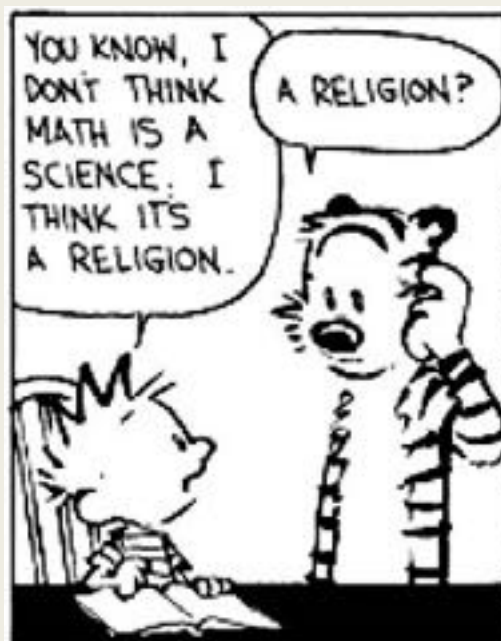




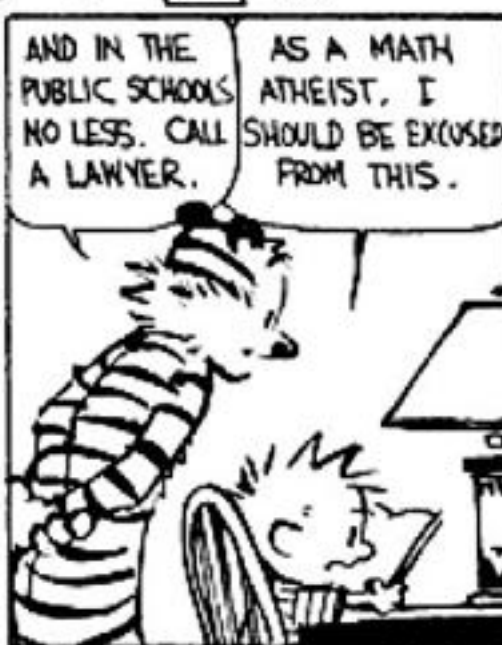
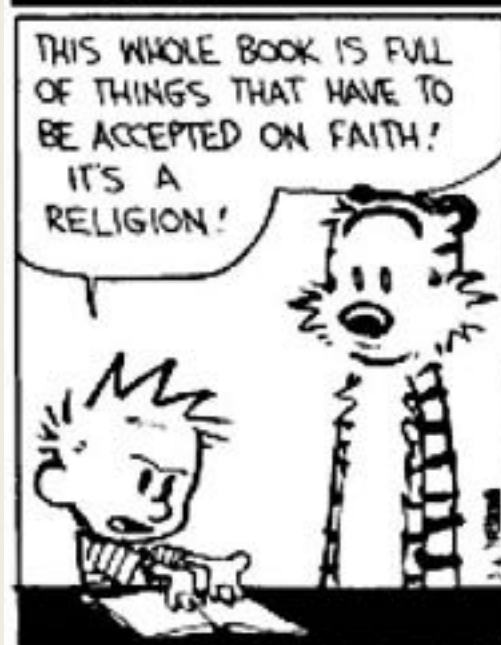
# What about Mathematics Education?

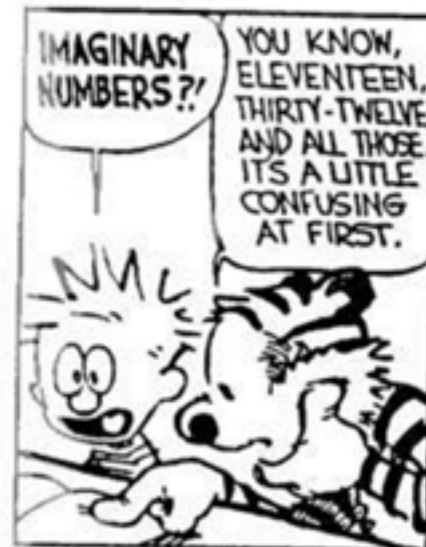
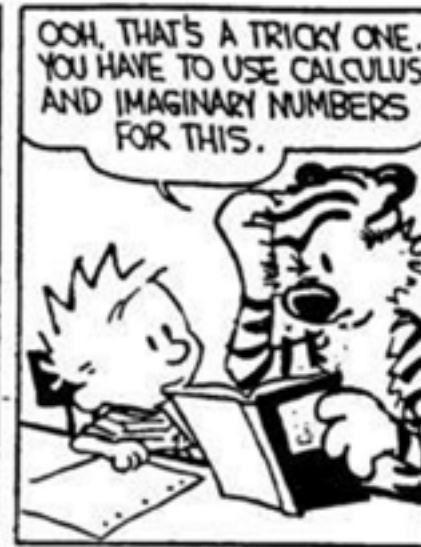
- What do people mostly thinking about mathematics?
- People often see mathematics as numbers, calculation and formulas





YEAH. ALL THESE EQUATIONS ARE LIKE MIRACLES. YOU TAKE TWO NUMBERS AND WHEN YOU ADD THEM, THEY MAGICALLY BECOME ONE *NEW* NUMBER! NO ONE CAN SAY HOW IT HAPPENS. YOU EITHER BELIEVE IT OR YOU DON'T.







# These are what people commonly think about mathematics...

## Common Misunderstandings

- Maths requires a good memory
- Maths is not creative
- Maths is always right or wrong
- There is a best way to do a maths problem
- Men are better than women

# My believe...

Mathematics should be seen far more than those images.....

- Mathematics is beautiful...
- Mathematics is interesting...
- Mathematics is of course challenging...
- Mathematics can shape students positive character and personality

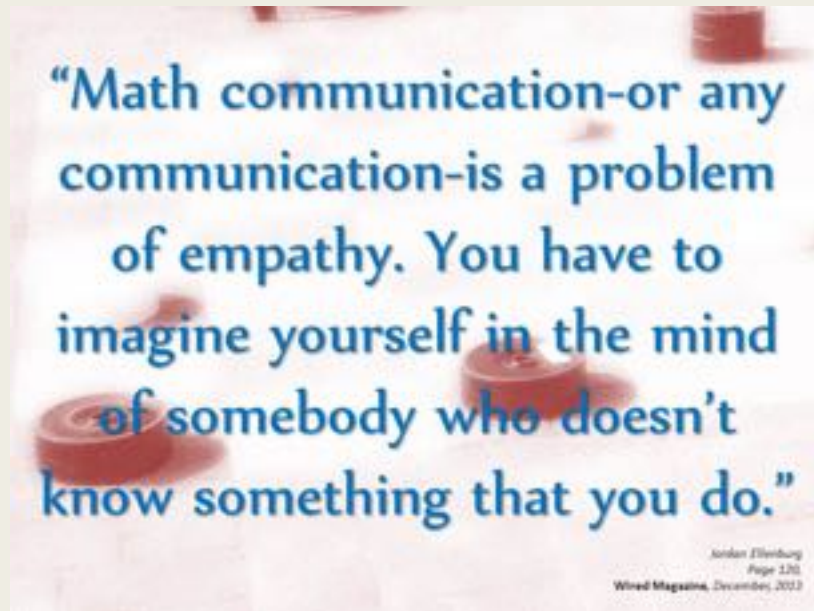
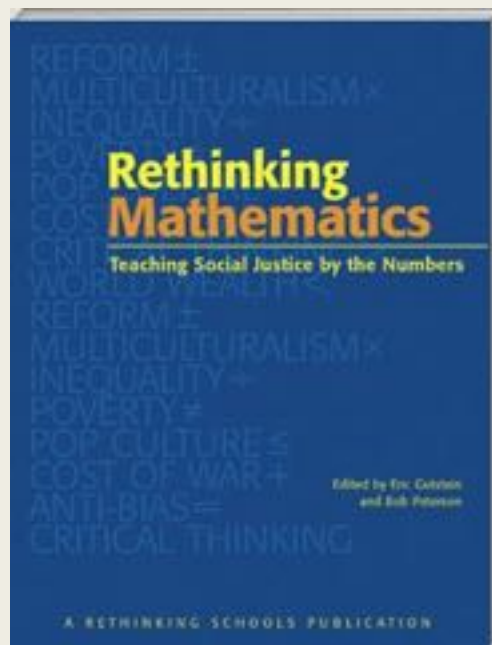
# Mathematics as human endeavour, Mathematics as human activity

- As it is human activity, students can learn a lot from mathematics including character and or values.
- One of the aims of mathematics is to contribute to community they live in such as to foster social justice.

# Some simple thoughts about math...

- Learning about division could integrate the fairness and unfairness. Becoming wise in distributing things could be part of this topic.
- Learning mathematics through open ended problems would allow students to think 'would there be any other ways?'. In addition, they would have the opportunities to see differences and how they would react on those.
- Math show you how the harmony, curiosity, and honesty works hand in hand...





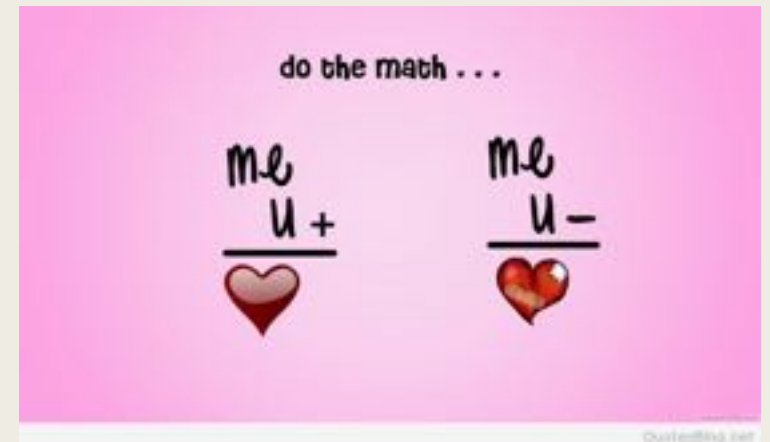
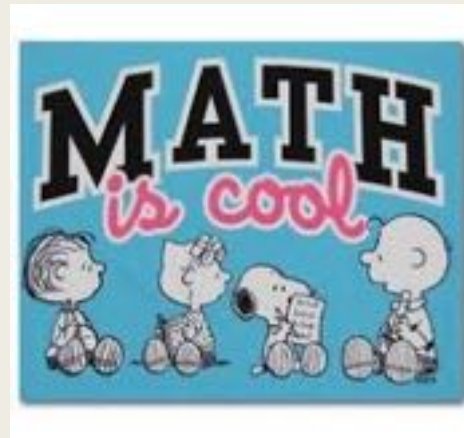
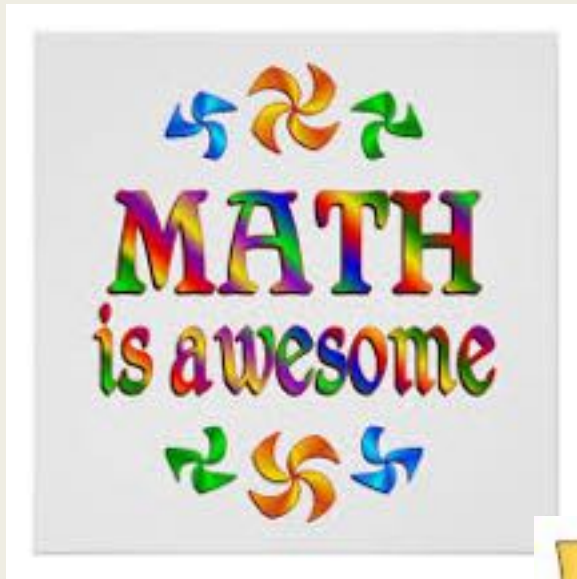
## What is Social Justice in Math

- Making math education relevant to and attainable for students by using current events, historical data or social issues that affect everyday life.
- Don't think you have to do things so differently! Rather, you are simply trying to incorporate relevant and real information. And since your goal is to teach math, start planning with your standards in mind.
- A great website is [www.radicalmath.org](http://www.radicalmath.org).

# Activity to spark our minds.... and may alter our perceptions toward mathematics

- Do not lie...
- Be surprise
- Be amaze
- Enjoy the journey
- [Activity for Math and value education.pptx](#)

Now, What do you think about Mathematics?



# Concluding Remarks...

- Education regardless the subject should and must be able to promote human values

THANK YOU