

Inclusive Mathematics for Sustainability in a Digital Economy (inMside)

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Inclusive Mathematics for **Sustainability** in a Digital Economy

Sustainable Development Goals (SDGs)

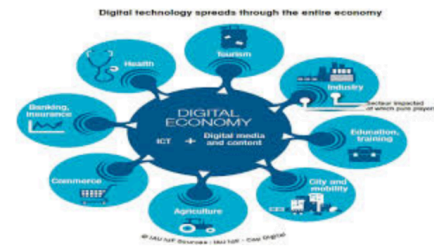


ESD: responsive to context (environmental and social)

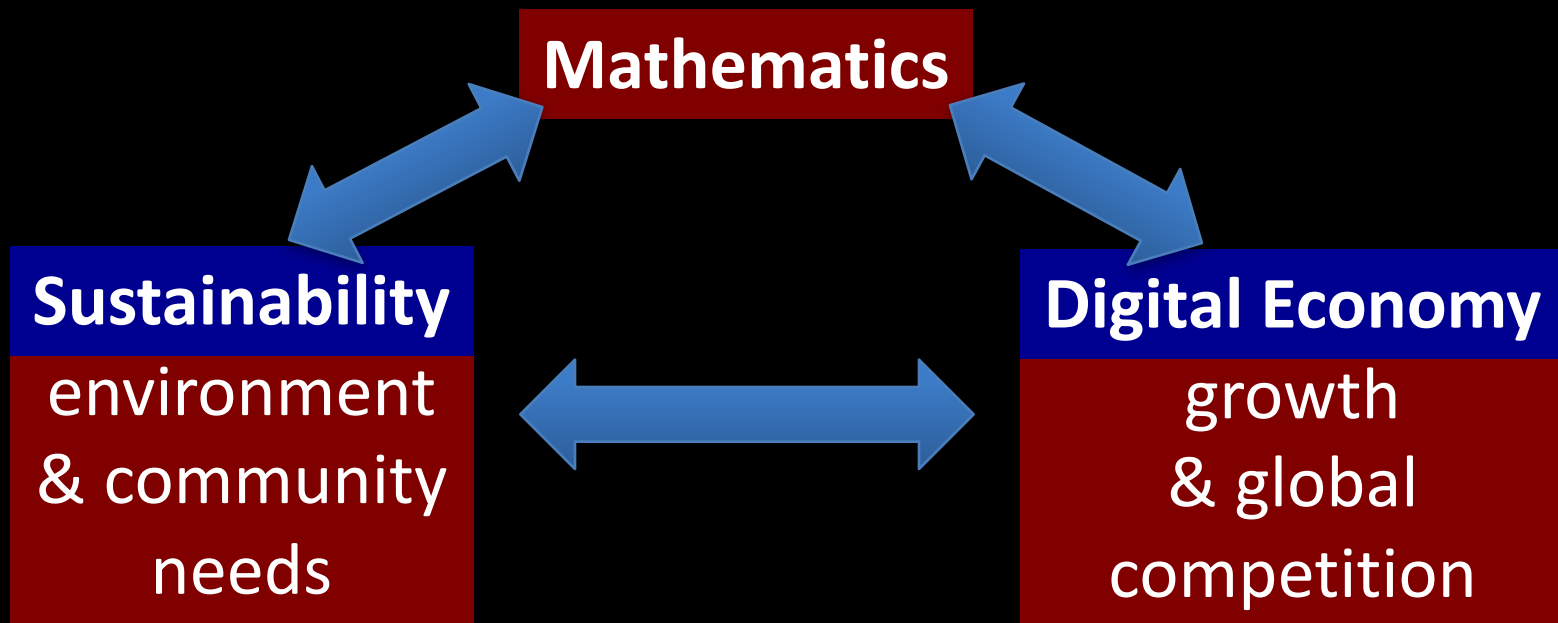
Inclusive Mathematics for Sustainability in a **Digital Economy**

The digital economy is not concerned with context.

google image search: digital economy

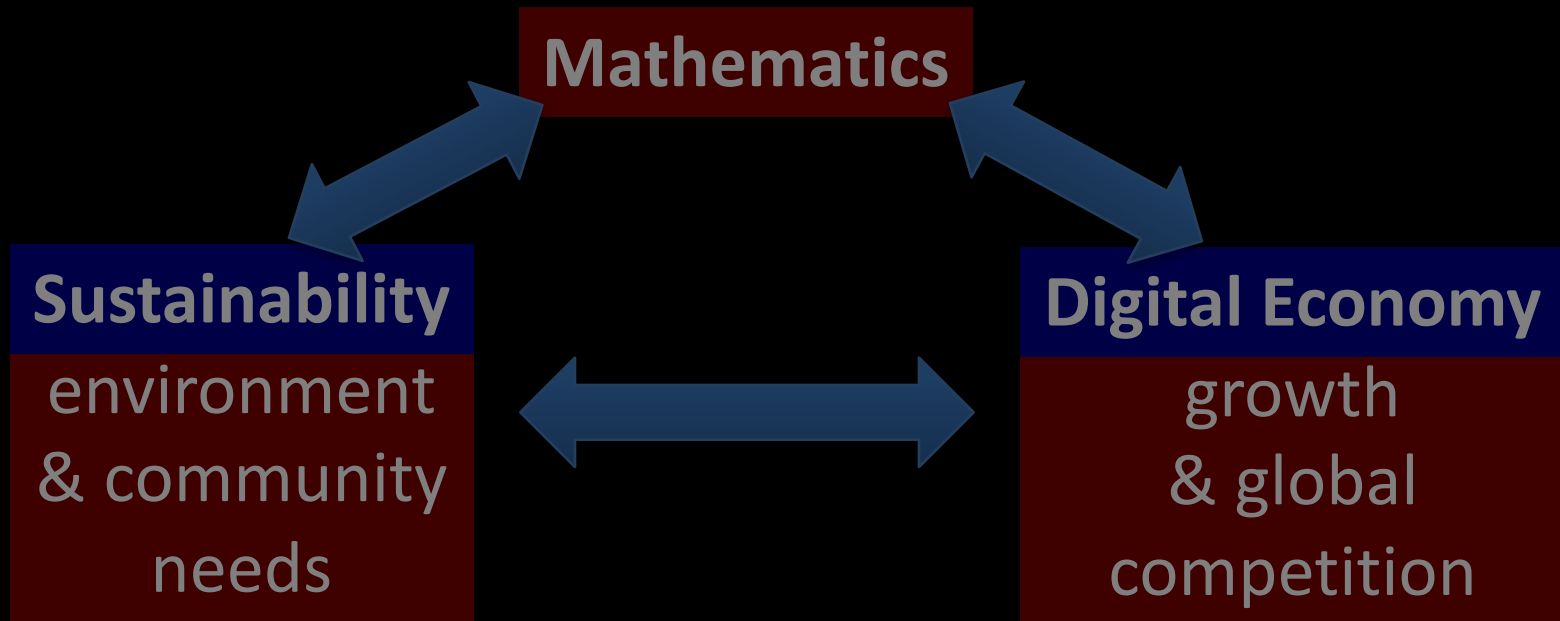


Inclusive Mathematics for Sustainability in a Digital Economy



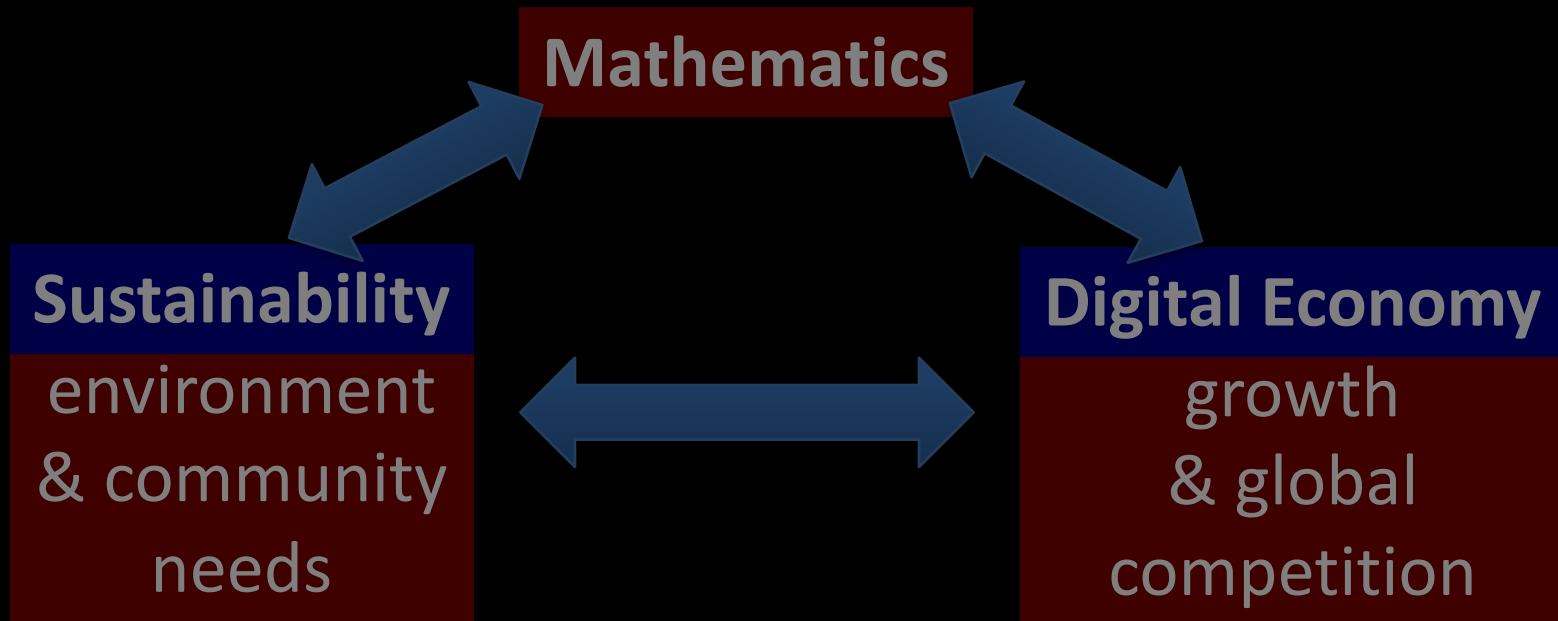
Questions:

1. Does mathematics favour sustainability or digitalization?
2. How can mathematics mediate the tension?
3. Can the digital economy support sustainability?
4. What are pedagogical implications?
5. What are curriculum implications?
6. What new resources will be required?



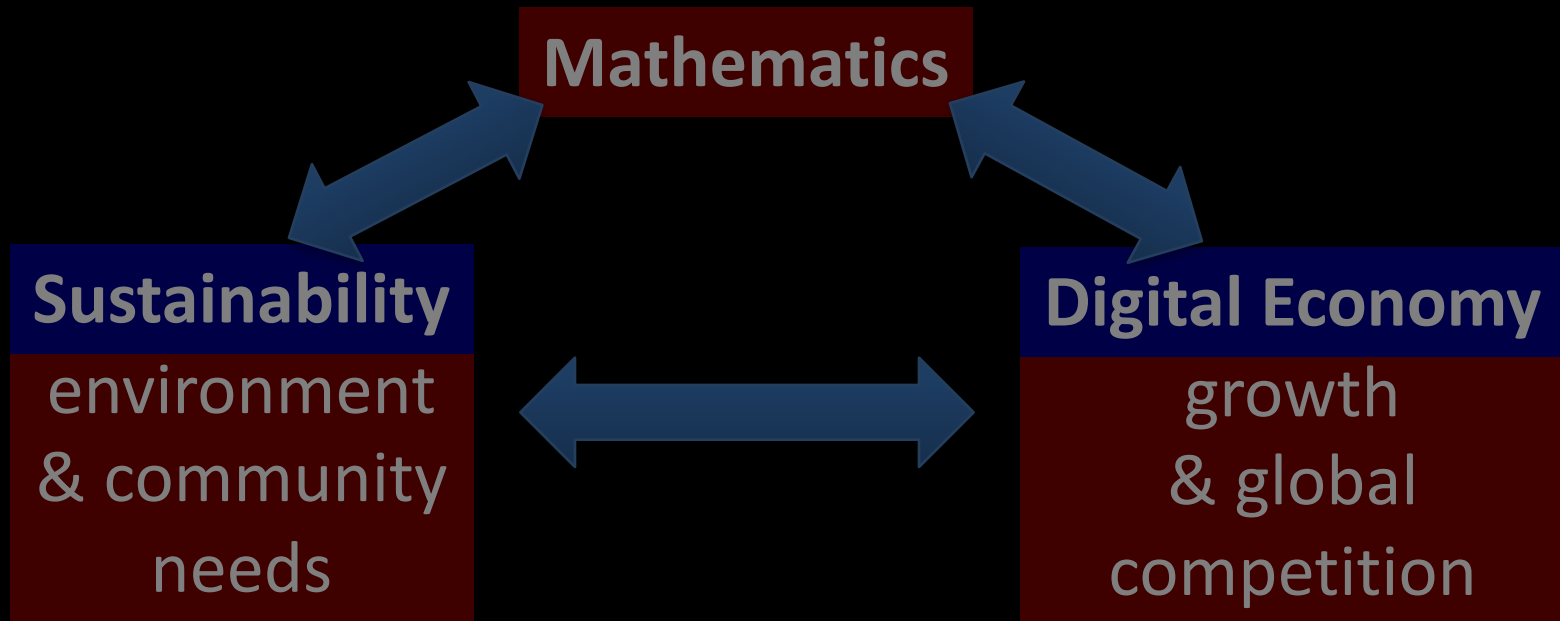
Design:

1. Pay attention to your community and its needs.
 - What mathematics is used to address these needs?
 - ... or to understand the community concerns?
 - What mathematics could be used ...?
 - ('your community': local, cultural, regional, global,...)
2. Think about curriculum outcomes.
 - This mathematics was developed to address concerns.
 - What parallel concerns exist in your community?



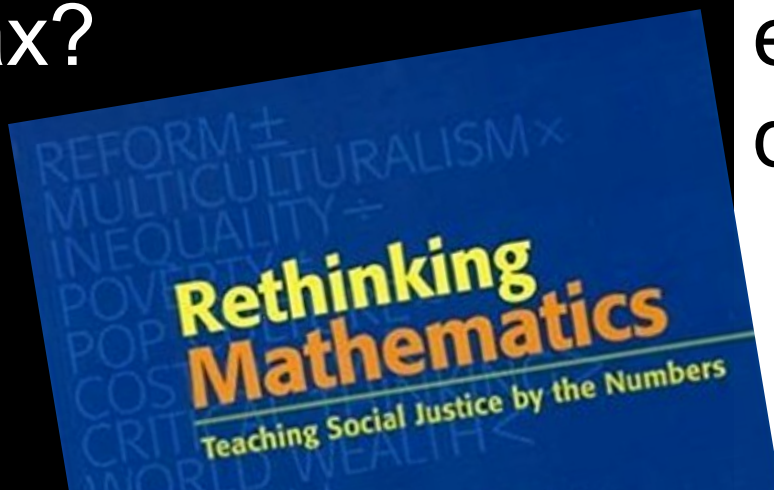
Danger:

Shallow/nominal references to mathematics or community.



A group of youth aged 14, 15, and 16 go to the store. Candy bars are on sale for 43¢ each. They buy a total of 12 candy bars. How much do they spend, not including tax?

A group of factory workers aged 14, 15, and 16 in Honduras make McKids children's clothing for Walmart. Each worker earns 43 cents an hour and works a [12-hour shift] each day. How much does each worker make in one day, excluding any fees deducted by employers?



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candy bars

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child labour

the tradition of mathematical word problems treats context as a throw-away (Gerofsky)

Which story is better to throw away?

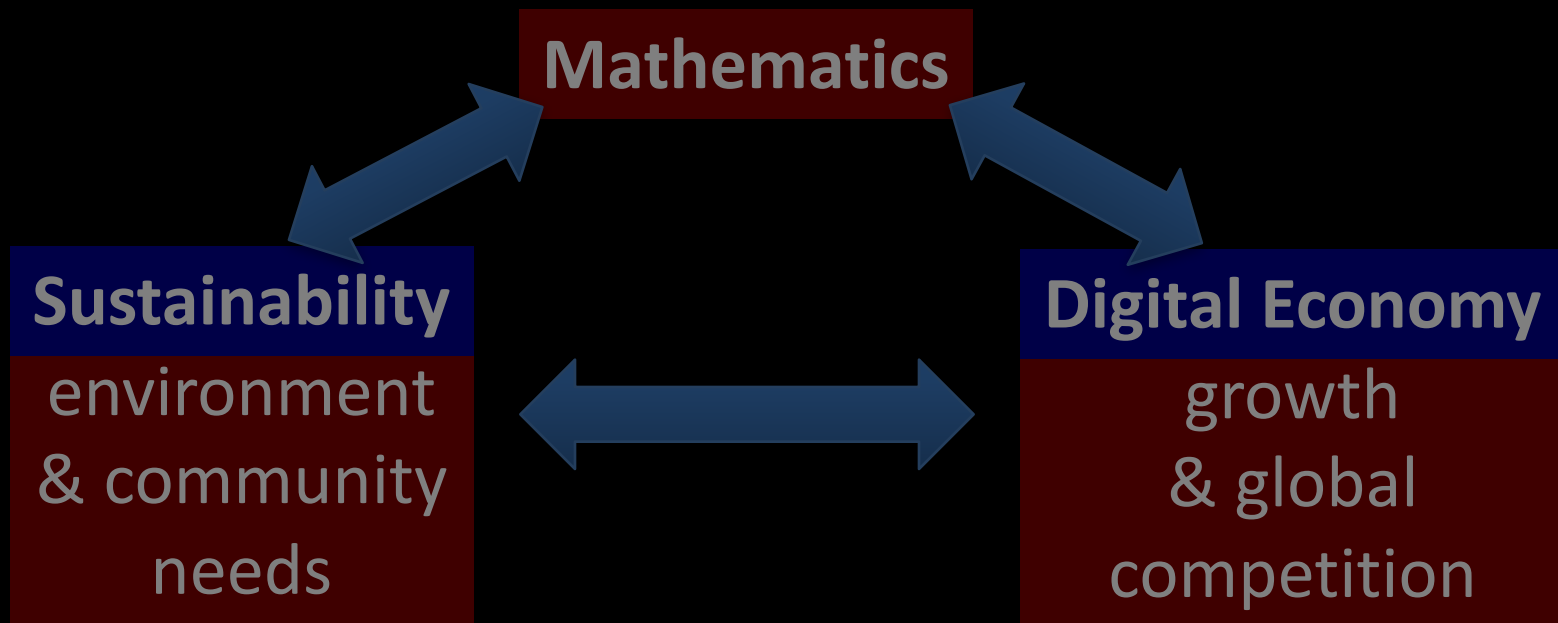
- candy bars
- child labour

Danger:

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The goal:

- identifying the heart of the mathematics
- identifying the heart of the community needs



Possibilities:

- Tracing the impact of the digital economy (by sector or as a whole)
 - environment (power/fuel consumption, pollution)
 - efficiency
 - wealth demographics
 - travel and commuting
 - decision-making / collaboration
- Designing systems & models for positive impact
- Capitalizing on connectivity to remote cultures/communities for sharing and collaboration (e.g., cross border lesson study)
- ... <what else?>