THE 5 Cs + 1: COMPUTATIONAL THINKING

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The 5Cs ... Where does Computational Thinking Fit in?

- Communication
- Collaboration
- Critical Thinking
- Creativity
- Citizenship

Image from: http://mnitem.org/2017-Fall-Conference
The 5Cs ... Where does Computational Thinking Fit in?

This image is from ISTE’s video called, Computational Thinking: A Digital Age Skill for Everyone, which can be found at: https://youtube/VFcUGSYyRPg
Barefoot Computing: C.T. Concepts & Approaches

*Vocab Cards for concepts and approaches

Get this poster here
Why teach C.T.?
IT'S A DIGITAL AGE SKILL FOR ALL!
“Computational thinking is reformulating a seemingly difficult problem into one we know how to solve, perhaps by reduction, embedding, transformation, or simulation.”
Computational Thinking By Jeannette M. Wing
What We’ve Experienced in our Classrooms:

- High Engagement
- Team Building
- Outstanding opportunity for reflection
- Can connect across content areas
Let's do some unplugged C.T.!!

We have 20 min and 4 hands-on unplugged activities for you to try. Please pick one:

- Cup & Craft Stick Challenge (K-1)
- Paper Chain Challenge (2-3)
- Chocolate Factory (4-5)
- Tiny House Challenge (4-5)
While working, think about C.T. Concepts & Approaches

**Concepts**
- Logic: predicting & analysing
- Algorithms: making steps & rules
- Decomposition: breaking down into parts
- Patterns: spotting & using similarities
- Abstraction: removing unnecessary detail
- Evaluation: making judgement

**Approaches**
- Tinkering: experimenting & playing
- Creating: designing & making
- Debugging: finding & fixing errors
- Persevering: keeping going
- Collaborating: working together

www.barefootcas.org.uk
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Barefoot would like to acknowledge the work of Julia Briggs and the eLIM team at Somerset County Council for their contribution to this poster.
Slides 12-15

Contain the challenge directions & supply list for each of today's unplugged C.T. activities.
Cup & Popsicle Stick Challenge

- Works well with grades K-1
- Challenge Directions for students
- Challenge info & supply list for teacher
Paper Chain Challenge

- Works well with grades 2-3
- Challenge Directions for students & information and supply list for teachers
Chocolate Factory Challenge

- Works well with grades 4-5
- Challenge Directions for students & Teacher
- Information and supply list
- One page directions
Tiny House Challenge

- Works well with grades 4-5
- Challenge Directions for students
- Challenge info & supply list for teacher

Image from: Digital: Divide and Conquer
Thanks for being a part of our session!

any questions?

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Helpful Computational Thinking Resources

And Works Cited:

**CS Unplugged**

http://csunplugged.org

This whole website is devoted to teaching computer science without a computer.

**Barefoot Computing**

- https://barefootcas.org.uk/
- CT Poster
- CT Vocab Cards

**ISTE**

- https://www.iste.org/explore/categorylist?code=Computational+thinking
- Great article with downloadable resources for getting started with C.T.

**Code.org**

- https://code.org/curriculum/unplugged
- Computational Thinking Lesson
- Comp. Thinking w/ Monsters Lesson
Good to Follow:
@codeorg
@barefootcomp
@iste
@shannonmiller
@mrskalthoff
@wilsandrea
#One91DLS

Hashtags to use when teaching & tweeting CT related activities/lessons:
#CSforAll
#MNcodes
#ComputerScience
#CS #unplugged
#computational thinking
Special thanks to all the people who made and released these awesome resources for free:

- Presentation template by [SlidesCarnival](https://slidescarnival.com)
- Photographs by [Unsplash](https://unsplash.com)
- Paper backgrounds by [SubtlePatterns](https://subtlepatterns.com)