<M2M> Makers2Mentors

A Year of Youth Programming

Claudia Haines
Objectives

- Define computational thinking (CT).
- Make connections between literacy and computational thinking skills.
- Learn how to integrate CT learning experiences into your library.
LITERACY IS...

• “the ability to identify, understand, interpret, create, communicate, compute and use printed and written materials associated with varying contexts.”
  -UNESCO

▪ “the ability to encode and decode symbols and to synthesize and analyze messages.”
  –National Association for Media Literacy Education
EARLY LITERACY IS...

● “what children know about communication, language (verbal and nonverbal), reading and writing before they can actually read and write.” - *Supercharged Storytimes*, 2016
(MEDIA) LITERACY IS...

● “Media literacy is the ability to ACCESS, ANALYZE, EVALUATE, CREATE, and ACT using all forms of communication.”

- National Association for Media Literacy Education
MEDIA IS...
Libraries [Ready to Code]
An Initiative of the American Library Association

librariesreadytocode.org
What is Computational Thinking?

A process that can be used to solve problems or complete a task.

Computational Thinking vs. Computer Science

**Computational Thinking:**
A process that can be used to solve problems or complete a task.

**Computer Science:**
Using the power of computers to solve problems.
Computational Thinking Skills

Image: https://www.bbc.com/education/guides/zxxbgk7/revision/1
CT: Pattern Recognition

**Skill:** Identifying and classifying similarities.

**Practice:** “Simon Says.”

Image: Buzzle.com
CT: Decomposition

Skill: Breaking larger actions into smaller, easily completed steps.

Twinkle, Twinkle, Little Star

Twinkle, twinkle, little star
How I wonder what you are
Up above the world so high
Like a diamond in the sky
Twinkle, twinkle, little star
How I wonder what you are
CT: Algorithm Design

Skill: Following a specific order of actions to complete a task.
Dance Break

- START
- ACTION 1 (x4)
- ACTION 2 (x4)
- ACTION 3 (x4)
- STOP

LOOP x 2
CT: Abstraction

Skill: Simplifying ideas to what is essential or important.
Maps

[Map of Homer Spit and surrounding area]

Homer Spit

Distance approx. 4.4 miles one way

Kachemak Bay

Coal Point Park

Seafarers' Memorial

Homer Spit Bridge

Homer Spit Road

Parking & walking path

Mariner Park

Distance approx. 4.4 miles one way

Homer Spit Road

Kachemak Bay

Coal Point Park

Seafarers' Memorial

Homer Spit Bridge

Parking & walking path

Mariner Park
“A computational thinker sees computation as more than something to consume; computation is something they can use for design and self expression. A computational thinker sees computation as a medium and thinks, ‘I can create and I can express my ideas through this new medium.’”

-Karen Brennan & Mitchel Resnick
Who participated?

2,010 participants

- 1,428 Youth program participants and mentors
- 331 Grown-up program participants
- 35 Grown-up program mentors
- 216 Summer@HPL CT Challenge participants
Young Children (ages 3-8)
Snow Storytime, part 1
Snow Storytime, part 2
Robot Family Storytime
Maps in Storytime

Rosie’s Walk
By PAT HUTCHINS

https://www.nationalgeographic.org/activity/mapping-storybooks/
<Let It Glow!>
for families (children ages 4+)

Light up the holidays and learn about electrical circuits at this LED card making workshop!

Saturday, 12/9
10:30-11:30 am
FREE!

Homer Public Library
235-3180 || cityofhomer-ak.gov/library
Family Game Night

Join us for an evening of game play!

Thursday, January 4th
6:30-8 pm
FREE!

Bring the whole family, and your favorite board game if you want to!
Snacks and some games provided.

Homer Public Library
235-3180 | cityofhomer-ak.gov/library
<HPLCode> Robots 4 Little Kids

2-3pm, August 1 and 8

Learn the basics of coding with Dash & Dot, the library’s newest robots!

for ages 6-8

Online Registration Required - max of 8 kids

Homer Public Library
235-3180 | cityofhomer-ak.gov/library
Kids (8-12)
Monthly LEGO Lab

Challenge: Build a town!

- Think/Design
- Draw
- Build
- Evaluate & Revise

Homer Public Library
Maker Lab: eSewing
July 17 & 18, 2-3pm for ages 9-12

This two-day Maker Lab program is all about electrical circuits. We’ll learn about, explore, design and sew felt projects that light up!

Homer Public Library
235-3180 ||cityofhomer-ak.gov/library
Homer Public Library presents

Friday, 11/2
11am-Noon

SLIME LAB

FREE ~ Ages 8 - 12
Materials Provided

Space is limited. Register at:
www.cityofhomer-ak.gov/library

235-3180
Music & Sound Coding Camp

Learn to code & make music!

for ages 9-11!

9am-12pm, June 11-15
Registration Required

Homer Public Library
235-3180 | cityofhomer-ak.gov/library
Ozobots in the Library & Beyond
School Visits

Homer Public Library
Near-Peer Mentorship
HPLCode
for ages 11-14

LEARN to code || DESIGN an app
CREATE a story || SHARE your voice
MAKE a robot move || BUILD a game
MEET app designers

Thursdays
11/2-12/21
4-5:30 pm
FREE!

Homer Public Library
235-3180 || cityofhomer-ak.gov/library
Intro to Game Design

4-5:30pm on Thursdays, May 31 - July 19 (except June 21)

Learn to code!
Design a game!

for ages 11-14!

Homer Public Library
235-3180 | cityofhomer-ak.gov/library
Passive Programming

Tube & Straw Building Challenge

Hints:
- How are the tubes connected? With straws?
- With the slits in the edges of the tubes?
- Both?
- How do you build a structure wider?
- How do you make a structure taller?

Grown-ups:
Help your child grow their computational thinking skills by asking open-ended, problem solving questions as they build.

Quiet Block Building Challenge

Can you build a tower like this?

Hints:
- How many layers does it have?
- How many blocks are in each layer?
- Do you see a pattern?
- Which shape of blocks are used in each layer?

Grown-ups:
Help your child grow their computational thinking skills by asking them problem solving questions as they try to build a similar tower.
Diverse Populations & Inclusion

- Reduce roadblocks to access.
- Engage mentors who reflect the experiences of the youth involved.
- Create club-like experiences and offer team-oriented projects to use less resources and grow collaborative skills.
- Provide opportunities for youth-centered design. Diverse youth produce interesting and varied digital projects.
- Inclusion requires creativity, flexibility and collaboration.
- Think outside the box.
Girls Code

intro to coding for girls ages 8-12
...and their moms, grandmothers, aunts or big sisters

rescheduled for:
Saturday, February 3rd 10:30 am - 12:30 pm
FREE!

Online Registration Required

Homer Public Library
235-3180 ||cityofhomer-ak.gov/library

Girls Get IT!
(IT = Innovative Technology)

10am - 1pm, July 9th-13th

Camp features hands-on activities for girls curious about engineering, computer science & robotics!

for girls ages 9-12

< Online Registration Required >
Girl Scout Sleepover

Homer Public Library
Girl Scout Afterschool Coding
CT and Family Engagement
How did we do this?

- CT Mindset
- Money
- Staff *plus* Volunteers
- Community Support

- Youth Interest
- Training and Planning
- New partnerships
- RtC Cohort Support
Success!

Homer Public Library
Lessons Learned
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NEVER SHUSHED
READ, PLAY, DISCOVER & CREATE!

Information on CT and early literacy was compiled in partnership with Paula Langsam at DC Public Library