

The background features a white space with several colorful circles and dashed lines. In the top left, there is a large teal circle with a white center, a smaller teal circle, and a dashed teal circle. In the top right, there is a large lime green circle, a smaller green circle, and a dashed green circle. In the bottom left, there is a large green circle with a white center, a smaller yellow circle, and a dashed yellow circle. In the bottom right, there is a large yellow circle, a smaller orange circle, and a dashed orange circle. A large dashed blue circle is also present, partially enclosing the text.

Makerspace Minefield:

avoiding the roadblocks to success

Text FIONACASIDA268 to 22333 to join Poll Everywhere

Tamra Dugan

*Media Services
Support
Specialist-
NEOnet*



ITC (Information Technology Center):

- ◎ Currently 18 ITCs in Ohio
- ◎ Provide training and support for school districts (fiscal, IT, student services, library, etc.)
- ◎ The NEOnet Makerspace provides professional development for member districts
- ◎ Member districts can also borrow equipment and reserve the space



Fiona Casida

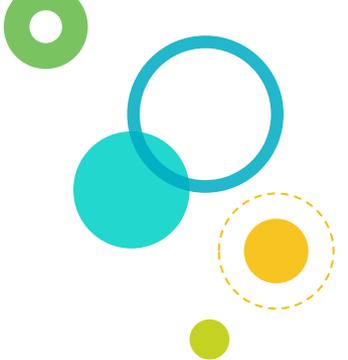
*Coordinator,
K-12 Library &
Media Services-
Copley-Fairlawn
City Schools*

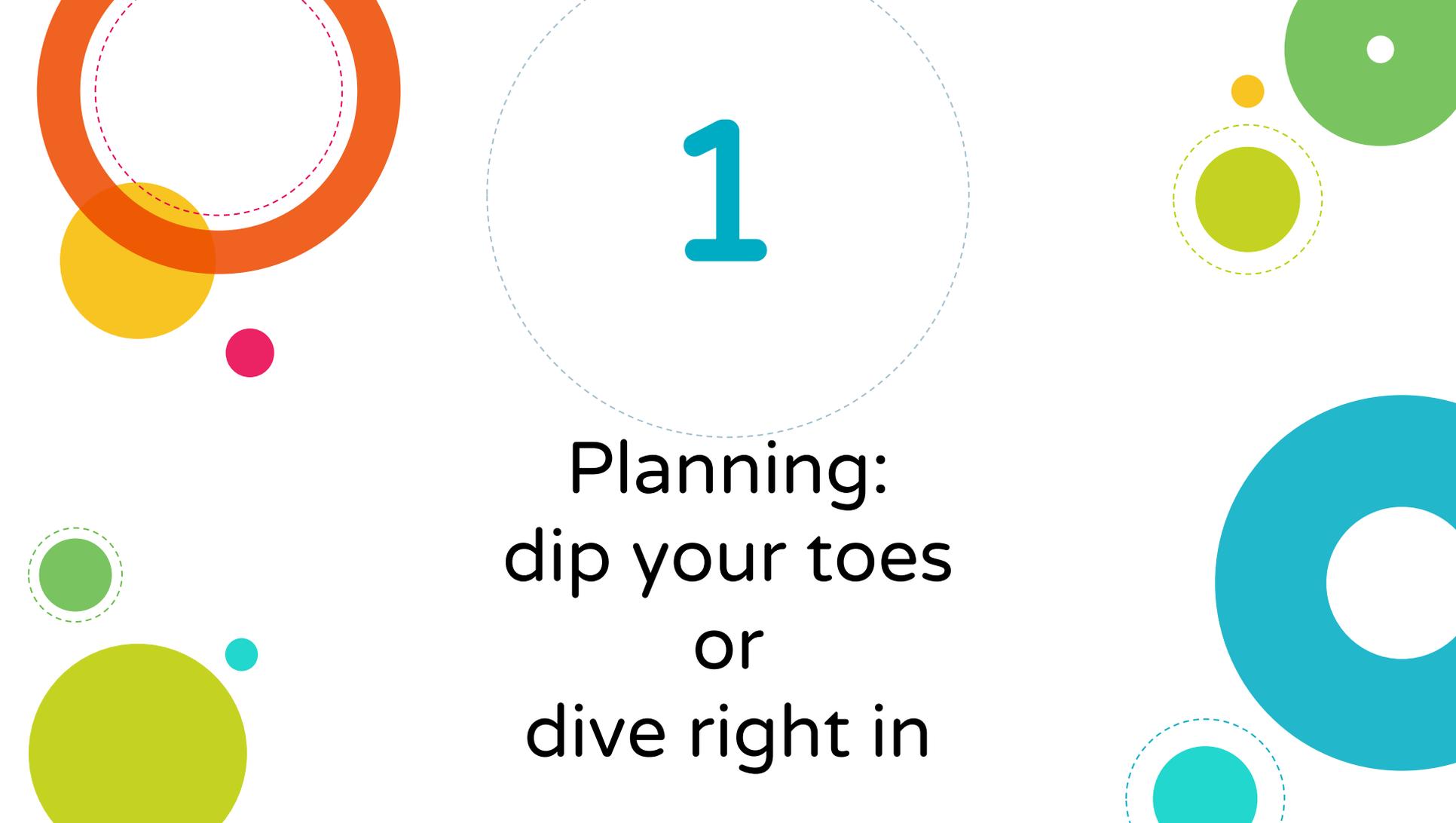
School District:

- © Five schools (1 HS, 1 MS, 3 PS)
- © Media Center, Technology, Principal, PTA Makerspace Initiative
- © Makerspace initiative connected to state standards and district-wide curriculum
- © Makerspace activities serve students individually as well as classroom use



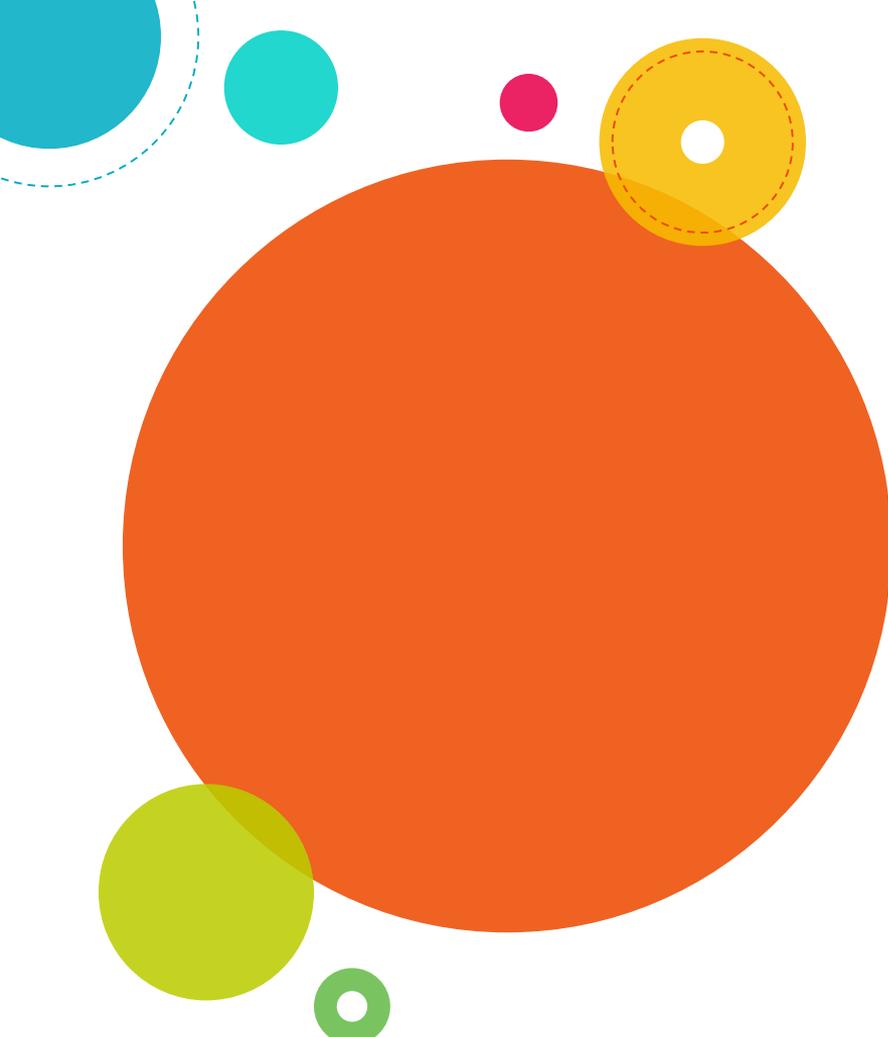
What we'll talk about:

- Planning a makerspace
 - Developing a budget and obtaining funding
 - Collaboration, collaboration, collaboration
 - Promoting your new space
 - Real world struggles and successes
- 

The background is white with various colorful circles and dashed lines. In the top left, there is a large orange ring with a dashed red inner circle, overlapping a yellow circle and a small pink circle. In the top right, there is a green circle with a white dot, a small orange circle, and a lime green circle with a dashed yellow border. In the bottom left, there is a green circle with a dashed white border, a large lime green circle, and a small cyan circle. In the bottom right, there is a large cyan ring and a cyan circle with a dashed white border.

1

Planning:
dip your toes
or
dive right in



ITC: plan it and they will come

- © Site visits
- © Informal customer input
- © Research- print & online
- © Workshops & conferences

Planning stages

Dreams

Initial wants included:

- ⦿ Mobile maker-space in a trailer
- ⦿ Laser cutter
- ⦿ Virtual reality equipment
- ⦿ Sound/video editing capabilities

Goals

Formed by:

- ⦿ Knowledge base
- ⦿ Customer requests
- ⦿ Educational trends

Feasibility

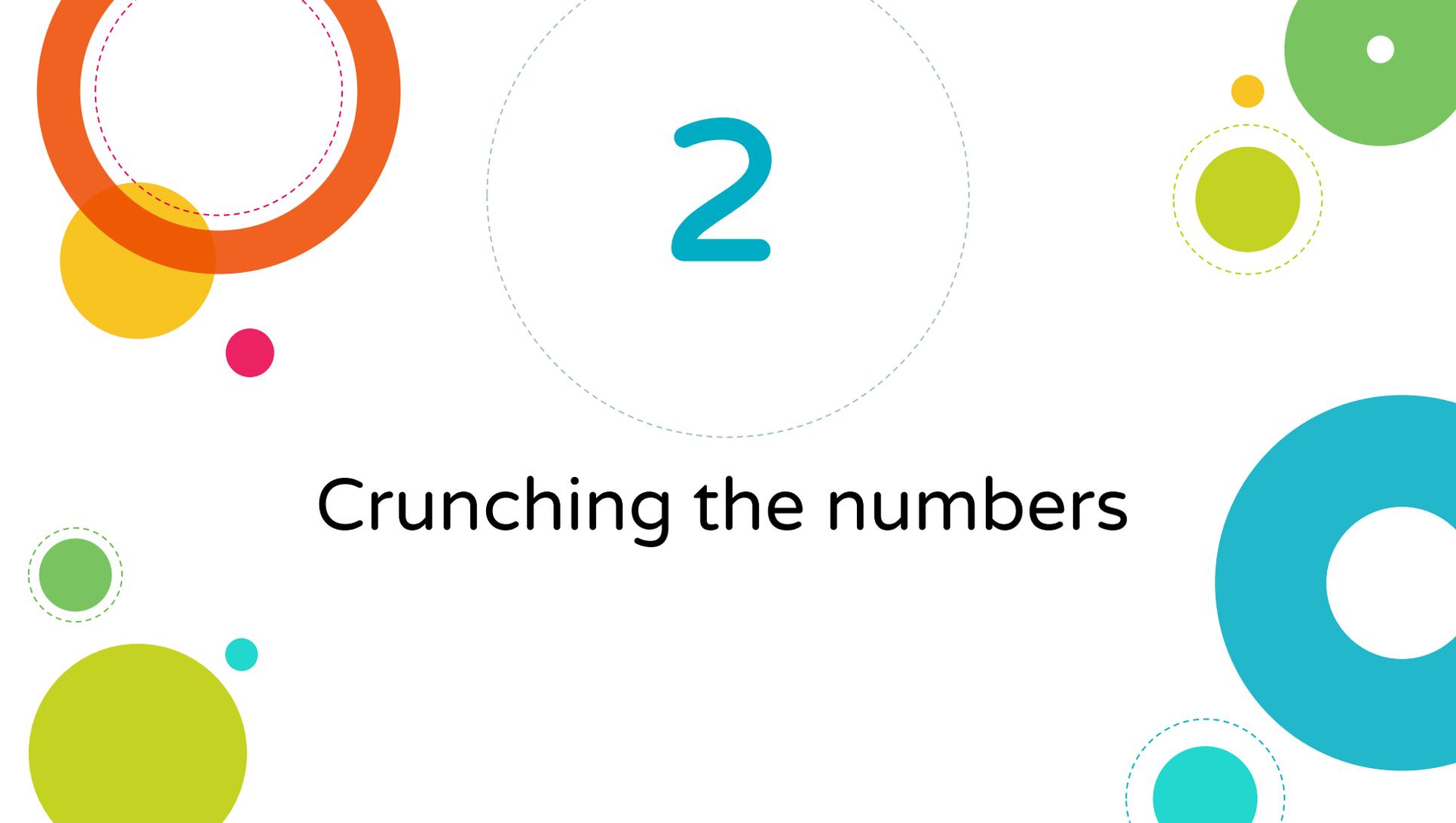
Impacted by:

- ⦿ Physical space
- ⦿ Logistics
- ⦿ Not awarded grant
- ⦿ Time/funds for staff training



School: Initial Planning & Growing a Maker Network

- © Makersgroups - Synhak, Western Reserve Public Media
- © Media & Technology Staff
- © Students
- © Workshops & Conferences
- © CDC & Teacher Conversations
- © ITC - NEOnet
- © Site Visits

The background features a collection of colorful circles and dashed lines. In the top left, there is a large orange circle with a dashed red outline, overlapping a yellow circle. Below it is a small pink circle. In the top center, a large light blue dashed circle contains the number '2'. To the right, there is a green circle with a white dot, a small orange circle, and a lime green circle with a dashed yellow outline. In the bottom left, there is a green circle with a dashed white outline, a large lime green circle, and a small cyan circle. In the bottom right, there is a large cyan circle with a white center, a small cyan circle with a dashed white outline, and a small cyan circle.

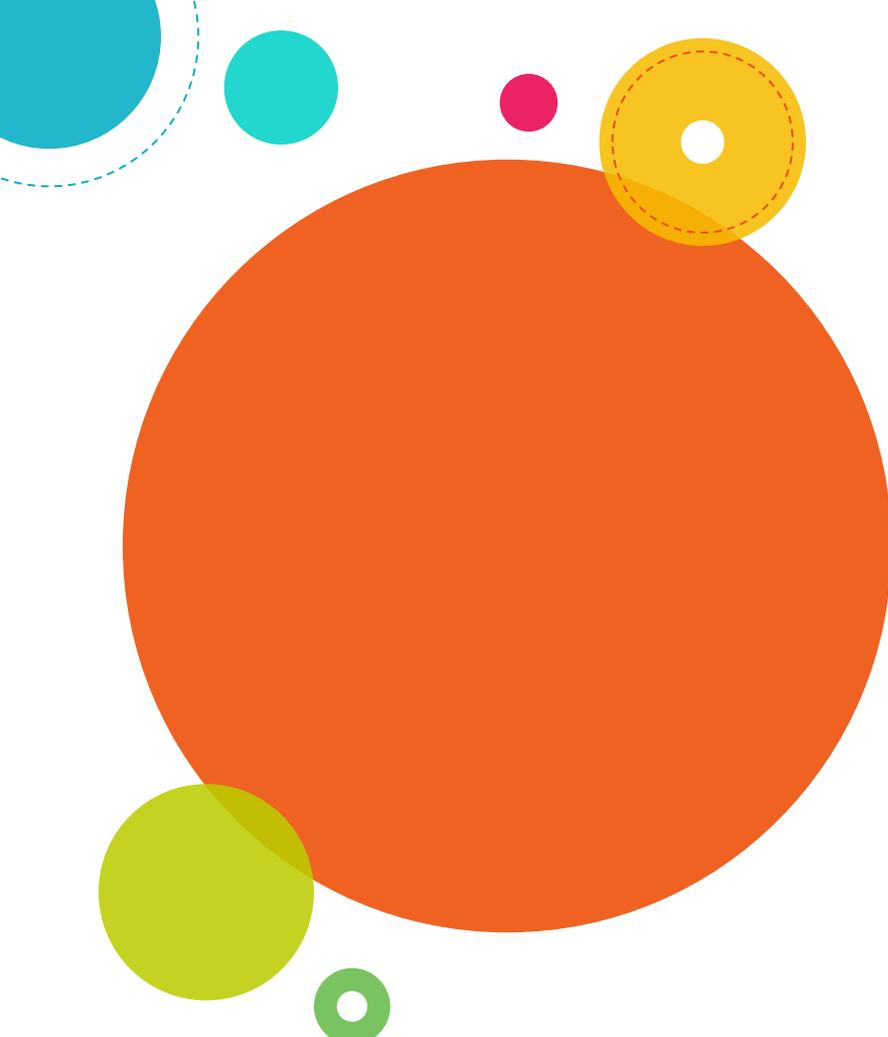
2

Crunching the numbers



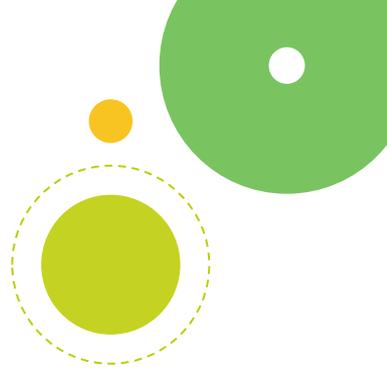
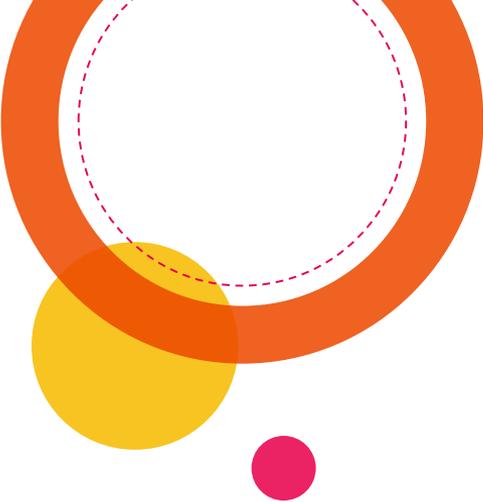
ITC Budget

- ◎ Initially intended to use grant funds
- ◎ Provided by our board, paid out of member district subscriptions
- ◎ Set up as an initial investment with plans for yearly maintenance and expansion



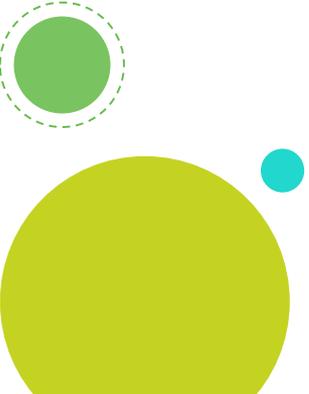
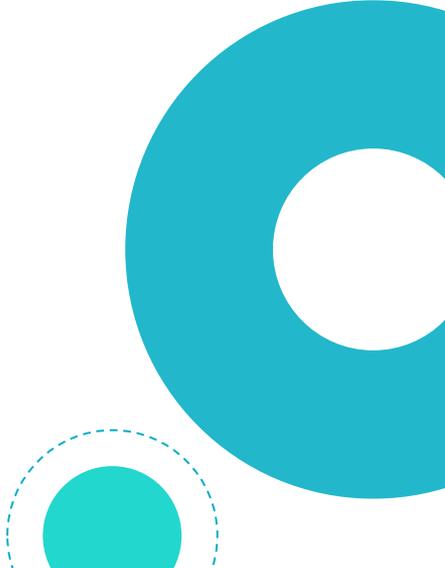
School: Funding Ideas

- © Library & Technology Budget
- © Administration/Board
- © PTA
- © School Foundations
- © Business Partnerships
- © Local Grants - GAR Foundation
- © “Makerspace Grants” Search
- © Gofundme - Chagrin Falls:
<https://www.gofundme.com/cfinnovation>



3

Collaborate, rinse,
and repeat





ITC Collaboration

Our Customers:

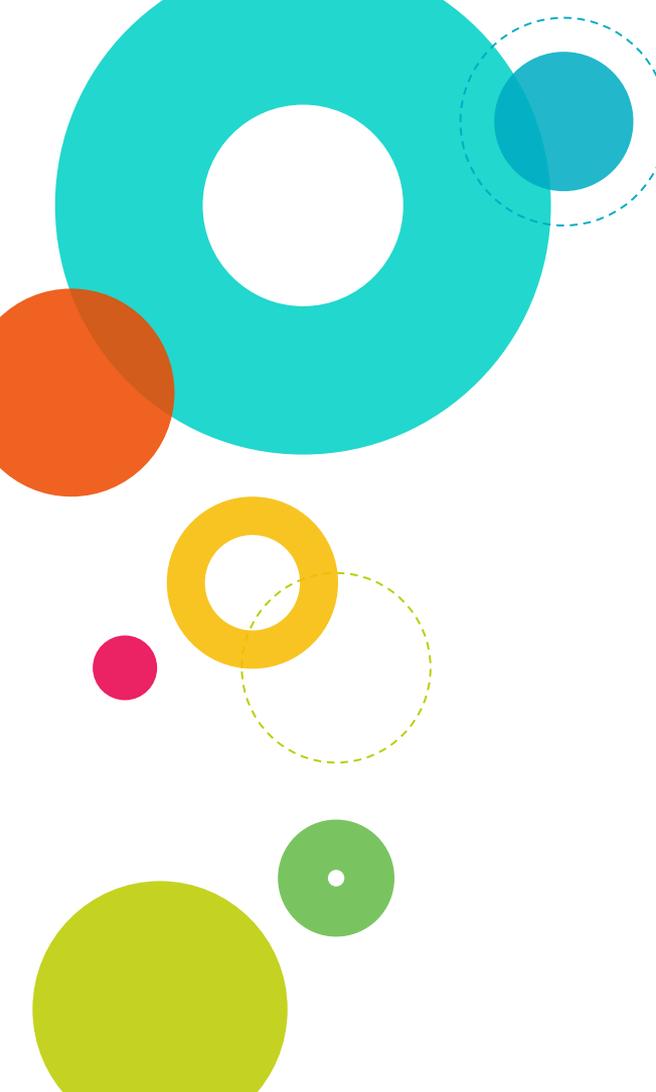
- ◎ Customized trainings
- ◎ Ability to borrow equipment/use the room
- ◎ Support their planning and implementation

Vendors:

- ◎ Provide group purchasing
- ◎ Partner with local companies

Other educational entities:

- ◎ ESCs- curriculum support

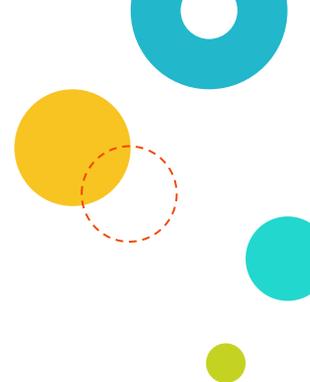


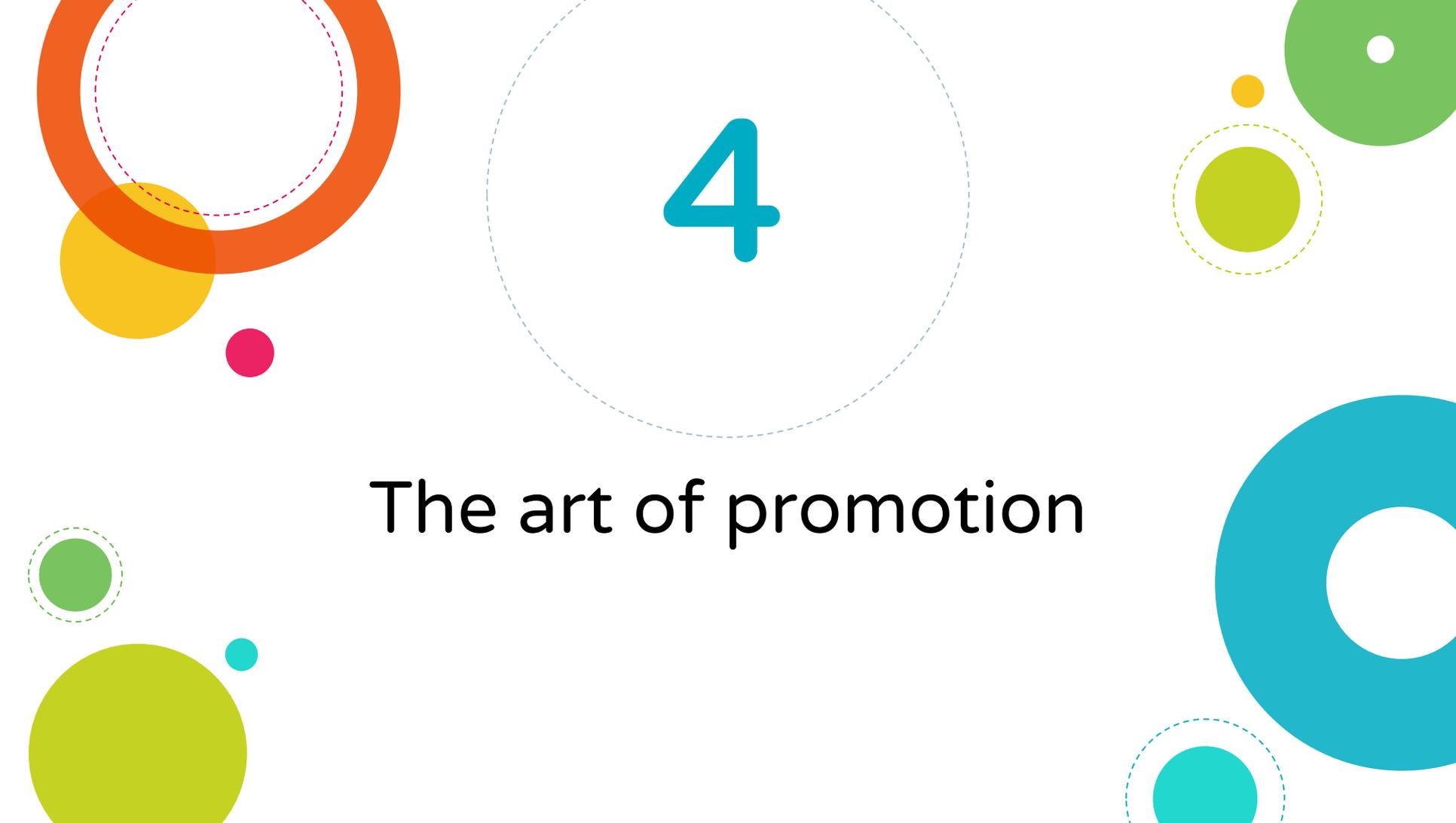
School Collaboration

In-School:

- ⊙ Partnerships
- ⊙ Intentional Meetings
- ⊙ Serendipity
- ⊙ Lesson Plans
- ⊙ Student “Interns”
- ⊙ Custodians/Secretaries

Outside School:

- ⊙ Colleagues
 - ⊙ ITCs - NEOnet
 - ⊙ Ed Tech Agencies
 - ⊙ Maker Groups
- 

The background features several decorative elements: a large orange ring with a dashed red inner circle in the top left; a large yellow circle overlapping the orange ring; a small pink circle below the yellow one; a large teal ring in the bottom right; a large green circle with a white dot in the top right; a smaller yellow circle with a dashed green border below it; a large teal circle with a dashed teal border in the bottom right; a large green circle with a dashed green border in the bottom left; a small cyan circle to the right of the large green circle; and a large cyan circle with a dashed cyan border in the bottom right.

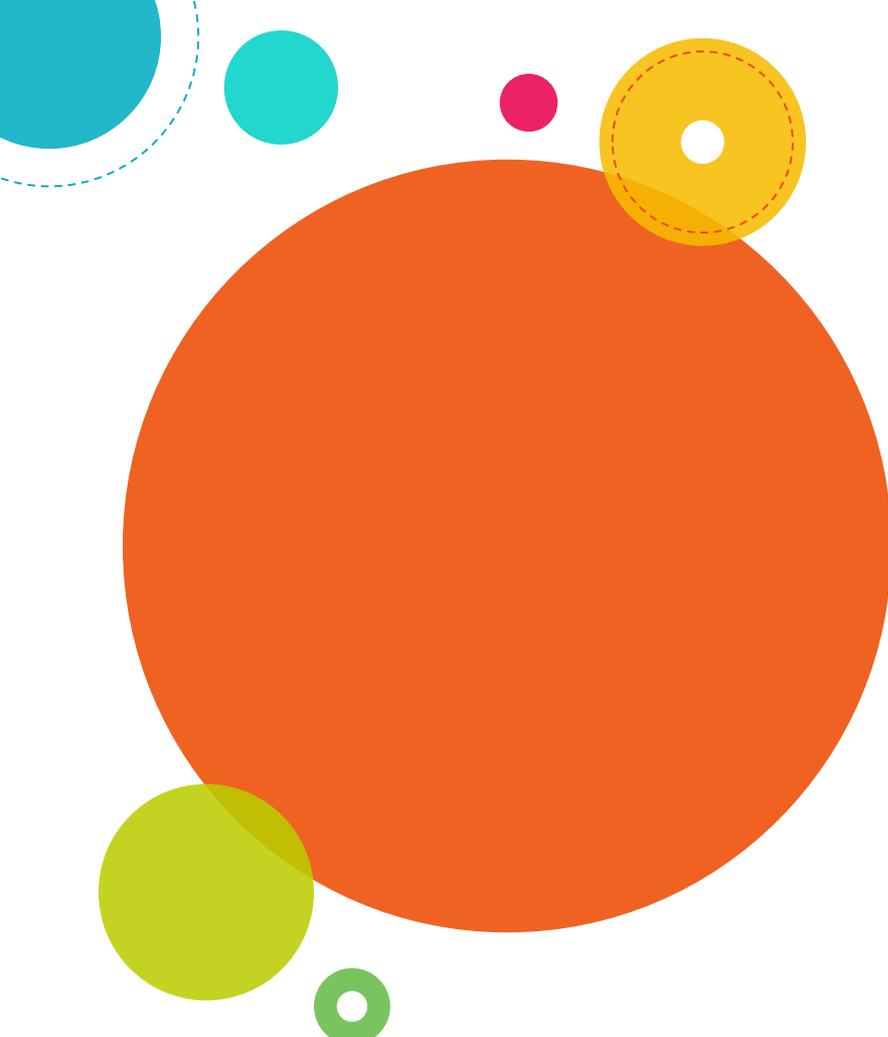
4

The art of promotion



ITC: Promotion

- ◎ Marketing materials sent out to customers and prospective customers
- ◎ [Website](#)
- ◎ [Course catalog](#) with available training events
- ◎ Feature short maker activities at other meetings
- ◎ Social media

A large orange circle is the central focus, surrounded by several smaller circles in various colors: a large cyan circle at the top left, a medium cyan circle, a small pink circle, a yellow circle with a dashed border and a white center at the top right, a large lime green circle at the bottom left, and a small green circle at the bottom center. A dashed white circle is also visible at the top left.

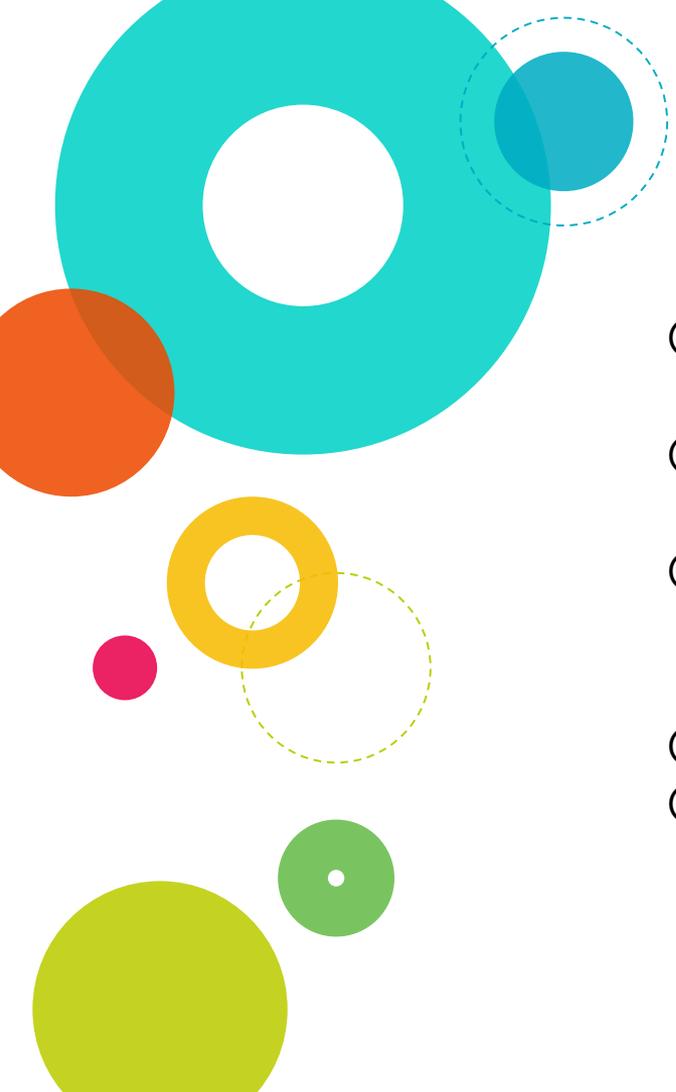
School: Promotion Ideas

- ◎ CDC & Teachers - lessons
- ◎ Fishbowl
- ◎ Social Media
- ◎ Old School Promotion
- ◎ Friends - PTA, Custodians, Secretaries
- ◎ Morning Announcements
- ◎ Electronic Bulletin Board
- ◎ Newspaper (School/Local)

The background features several decorative elements: a large orange ring with a dashed red inner circle in the top left; a large yellow circle overlapping the orange ring; a small pink circle below the yellow one; a large light blue dashed circle in the top center containing the number 5; a large green circle with a white dot in the top right; a smaller yellow dashed circle with a green solid center below it; a large teal ring in the bottom right; a large green circle with a dashed white border in the bottom left; a small cyan circle below the green dashed one; and a large cyan circle with a dashed white border in the bottom right.

5

Roadblocks and successes



ITC Roadblocks

- ◎ Planned space for small group, but need teaching space for larger numbers
- ◎ Realized need to have room/equipment borrowing guidelines after the fact
- ◎ "Build it and they will come" approach didn't leave funds available for additional purchases in year one
- ◎ Curriculum- who provides?
- ◎ Future expansion limited by space



ITC Makerspace

Classroom setup



Trainings

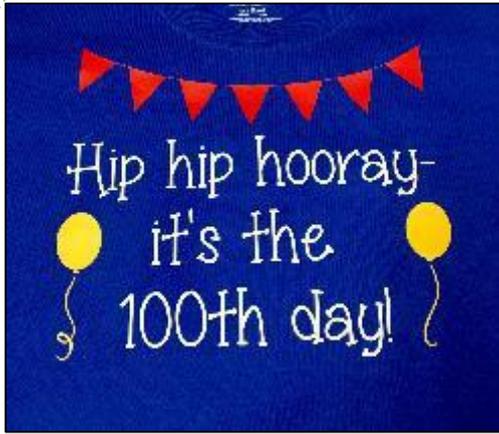
Hosting 30 trainings this school year

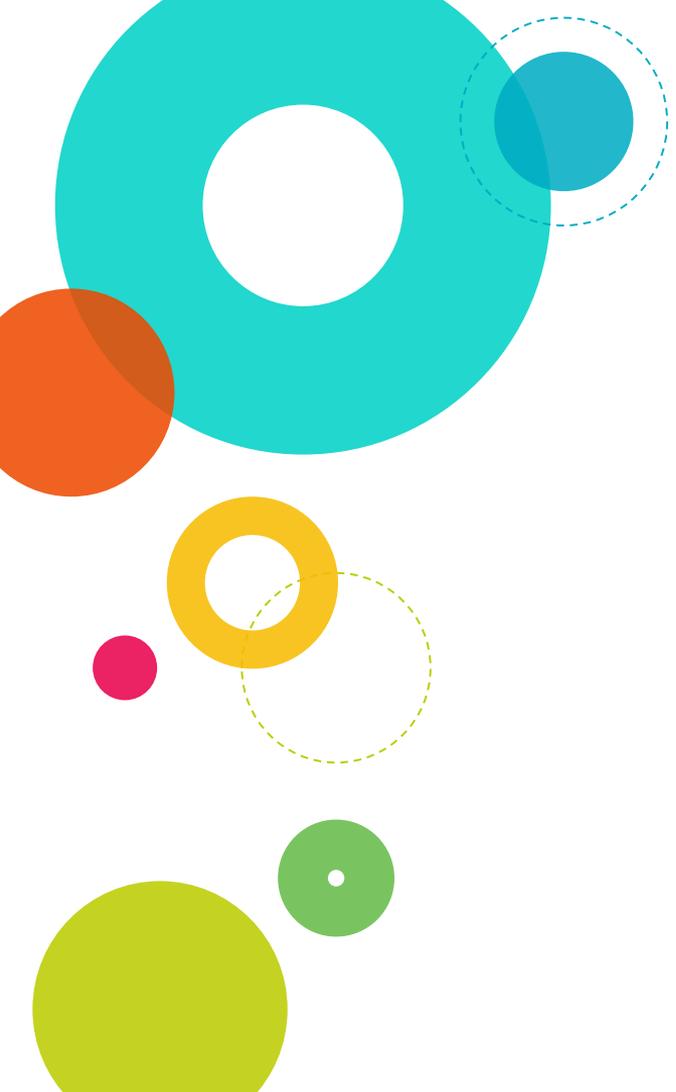


Open Labs

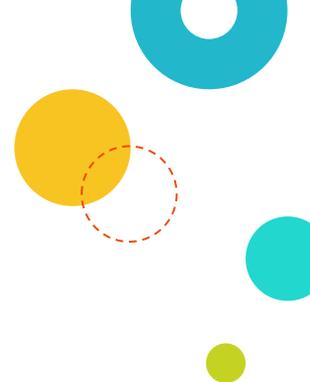


Finished Products





School Roadblocks

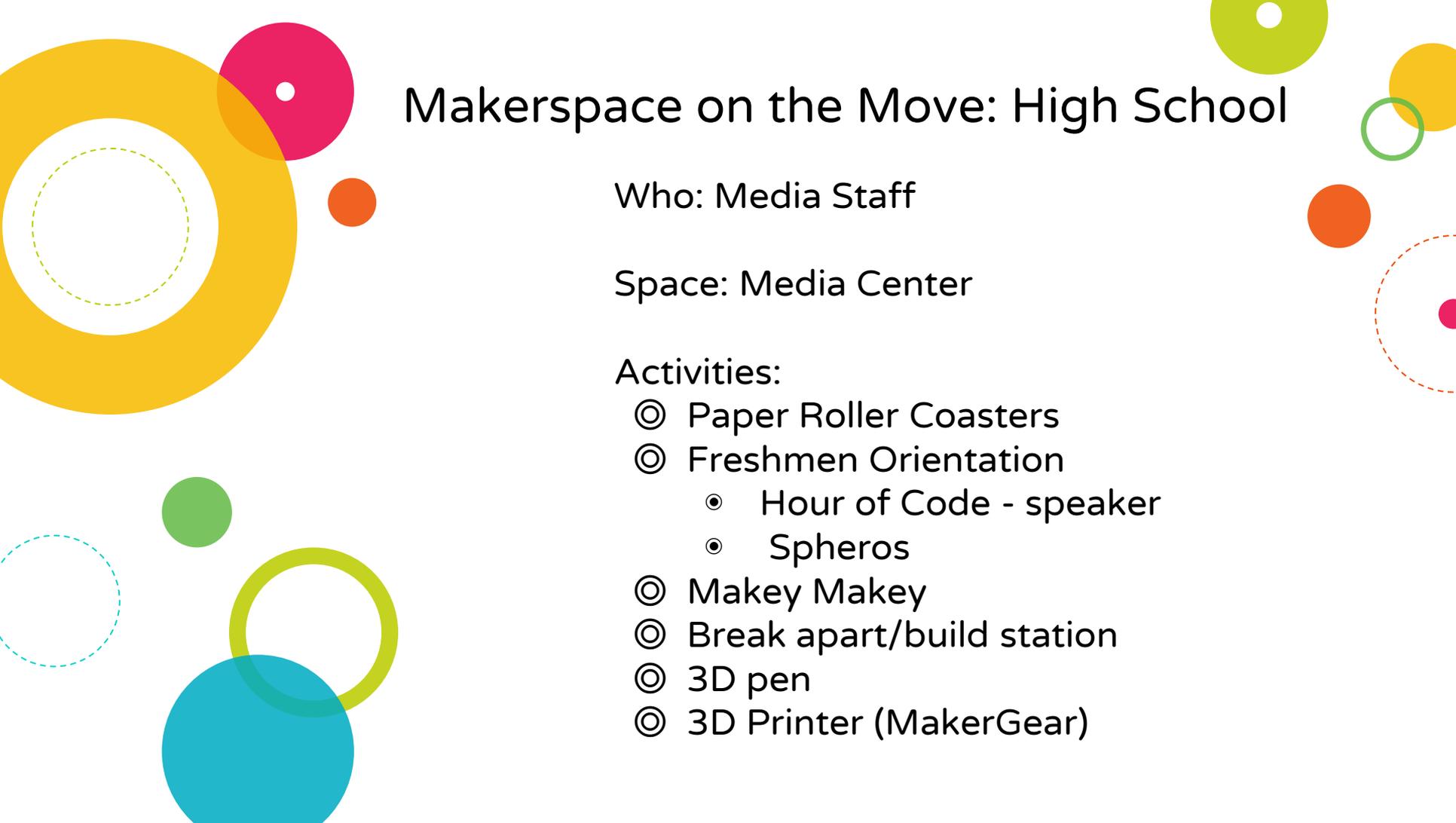
- ⊙ Expectations
 - ⊙ Curriculum Connection
 - ⊙ Collaboration
 - ⊙ Students
 - ⊙ Budget
 - ⊙ Promotion
 - ⊙ Physical Space
 - ⊙ Time
- 

High School

Time & Space



6000 Books



Makerspace on the Move: High School

Who: Media Staff

Space: Media Center

Activities:

- ◎ Paper Roller Coasters
- ◎ Freshmen Orientation
 - Hour of Code - speaker
 - Spheros
- ◎ Makey Makey
- ◎ Break apart/build station
- ◎ 3D pen
- ◎ 3D Printer (MakerGear)

High School

Classroom Connection



Paper Roller Coasters

High School

Freshmen Orientation



Ozobots



Break Apart & Build

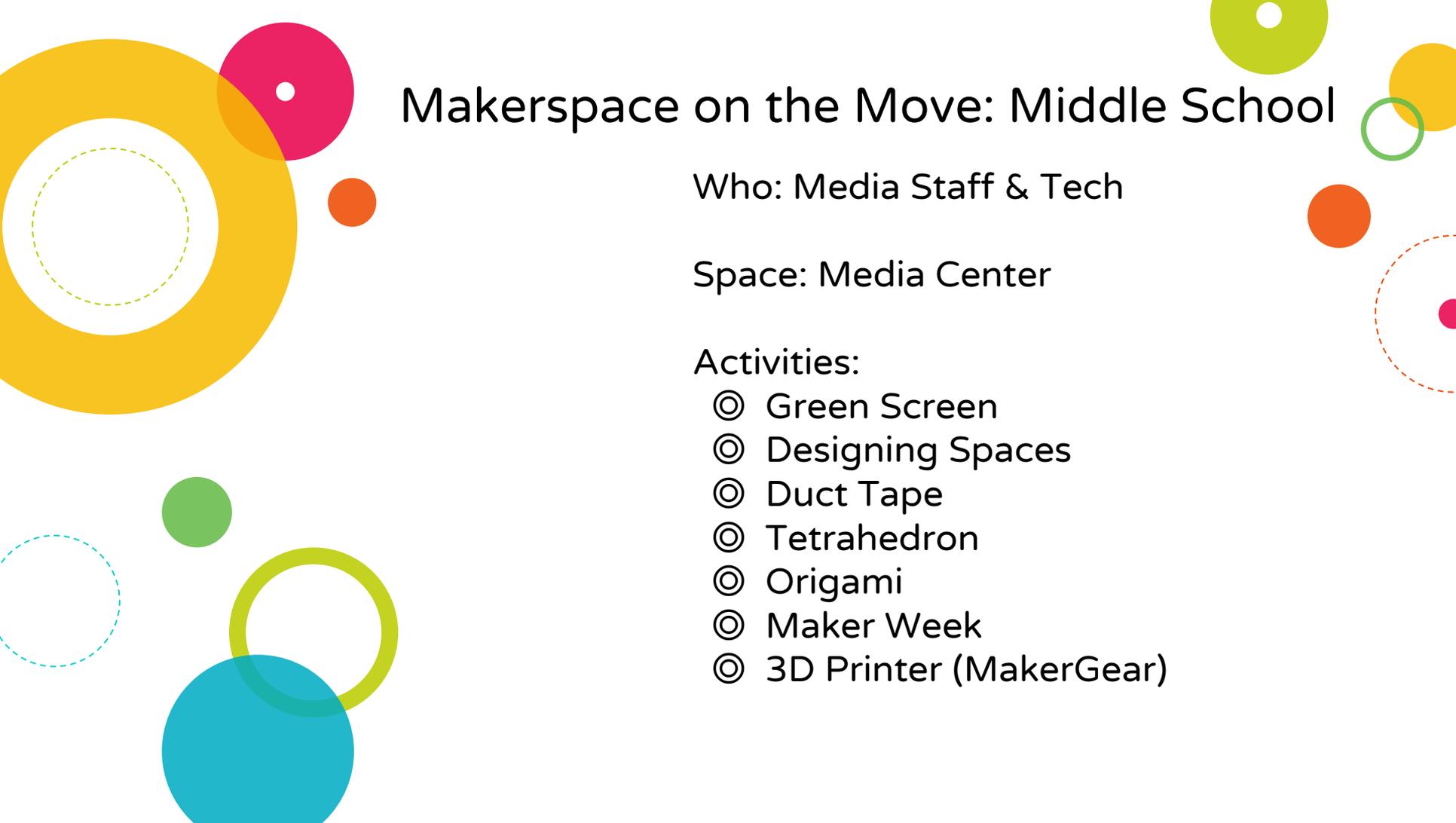


Makey Makey

High School



Collaborative Extensions:
Hour of Code & Spheros



Makerspace on the Move: Middle School

Who: Media Staff & Tech

Space: Media Center

Activities:

- © Green Screen
- © Designing Spaces
- © Duct Tape
- © Tetrahedron
- © Origami
- © Maker Week
- © 3D Printer (MakerGear)

Middle School

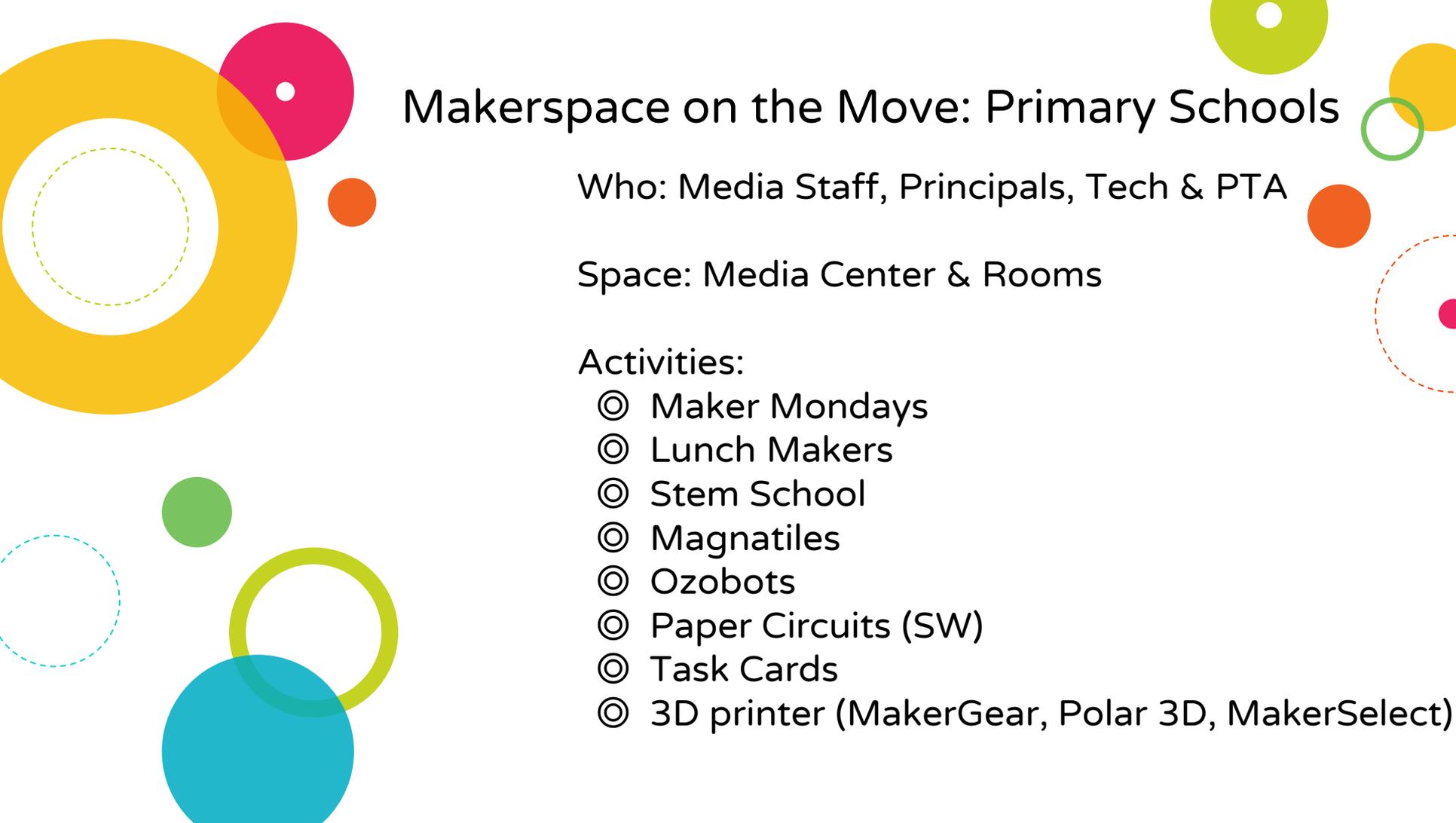
In the Beginning:
Maker Mindset



Middle School

Small Steps:
Big Results





Makerspace on the Move: Primary Schools

Who: Media Staff, Principals, Tech & PTA

Space: Media Center & Rooms

Activities:

- ◎ Maker Mondays
- ◎ Lunch Makers
- ◎ Stem School
- ◎ Magnatiles
- ◎ Ozobots
- ◎ Paper Circuits (SW)
- ◎ Task Cards
- ◎ 3D printer (MakerGear, Polar 3D, MakerSelect)

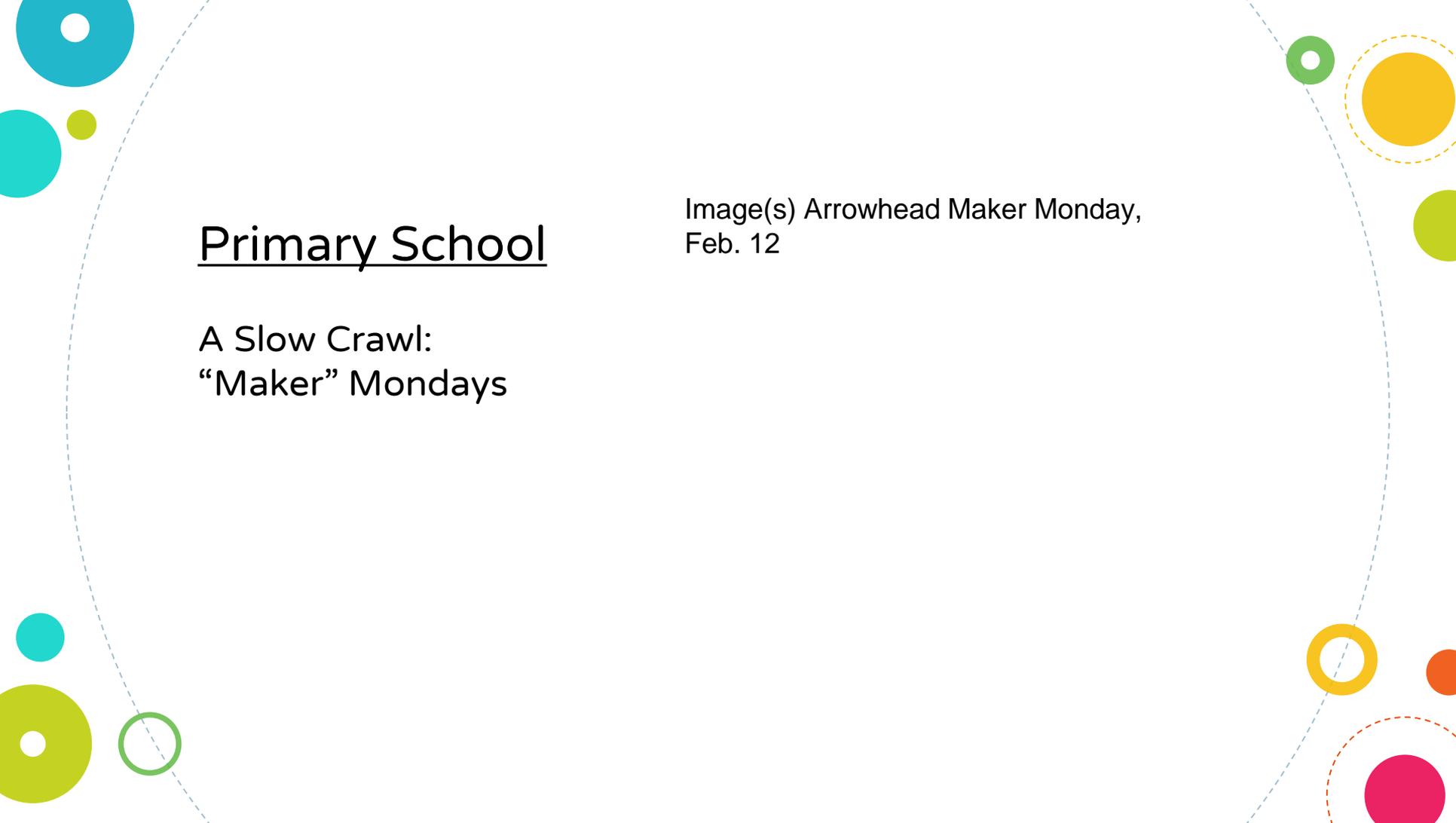
Primary School

First Steps:
Lunch & Recess



Collaboration:
Snap Circuits

Curriculum Connection:
Electricity & Circuits
4th gr. Science Standard

A decorative graphic consisting of a large, light blue dashed circle that frames the text. Various colored circles of different sizes are scattered around the perimeter of this dashed circle. The colors include teal, light blue, yellow-green, green, orange, and pink. Some circles are solid, while others are hollow or have a dashed outline.

Primary School

A Slow Crawl:
“Maker” Mondays

Image(s) Arrowhead Maker Monday,
Feb. 12

Primary School

Maker to STEM



Designing Marshmallow Towers

From Tinkercad to 3D Printing





Any questions?

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[NEOnet Makerspace Webpage](#)

Green - www.mrsgeeky.com

Laurie