

KidsTeam: A Librarian's Toolkit

Toolkit v.1.2

Note about Toolkit v.1.2

This toolkit is a working draft as result of my master's thesis research which explored the contents and structure of a draft of a KidsTeam Toolkit for public librarians. It expands upon the collaborative design research of Dr. Allison Druin and Dr. Greg Walsh, specifically that of *KidsTeam*. The intended audiences for this toolkit version are public librarians and academic researchers. The goals for each are:

- Public librarians will be able to use the toolkit to plan, implement and host KidsTeam design programs with their youth patrons in their library branches.
- Academic researchers are encouraged to use and iterate upon this toolkit through further research and assessment.

This version has been slightly adjusted from version 1 based on some of the research recommendations I make in my thesis.

I hope that you find this a useful resource!

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Welcome

Welcome to the KidsTeam Toolkit for public librarians! This resource toolkit draft is designed for you to use when leading KidsTeam design programs in your library with your youth library patrons. The contents are based on Zoe Skinner's master's thesis research, rooted in the previous works of Dr. Allison Druin and Dr. Greg Walsh, specifically Dr. Walsh's KidsTeam Project Repository (Walsh, 2018/2020). Additionally, none of this work would be possible without the children, adults and librarians who participated in KidsTeam work over the years. Thank you for your insatiable curiosity and inspiration.

Toolkit Purpose

KidsTeam is a human-centered design process. It positions children and adults as design partners in the creation of technology, products and services designed for children.

As a librarian, you yourself are already a human-centered designer! You often create programs based on the goals, wants and needs of your youth patrons.

The toolkit's overall purpose is:

Provide tools for you to use when creating, planning and leading KidsTeam programs

Below are some additional goals of this toolkit:

1. Provide a worksheet so you can adjust the KidsTeam program to your needs and goals
2. Visualize and explain the KidsTeam Process and 5 Phases
3. Link supplemental resources for further exploration

Worksheet Purpose

The KidsTeam program is going to look different depending on the needs, goals and wants of your library branch and patrons. The goal of the Create Your Own KidsTeam Program Worksheet is to assist you in your planning process by providing the following templates:

1. Plan Your Program Timeline
2. Define Your Design Challenge
3. Prepare Specific Design Activities
4. Outline the Specifics for Each Program Session

Worksheet: Create Your Own KidsTeam Program

Welcome to the KidsTeam Program Worksheet! We are excited that you are considering bringing KidsTeam to your community. We hope that it will offer an opportunity for adults and children in your community to collaboratively design technologies and experiences that reflect the goals and needs of children (KidsTeam, n.d.).

For best results, fill out this worksheet alongside the KidsTeam Toolkit. The full Toolkit offers specifics around the process and procedures of KidsTeam. The information is based on previous research working with KidsTeams in both the academic university and public library settings. Any references to the Toolkit will be under the headers and look like this: ***Additional Resources***.

Plan Your Program Timeline

When planning your program(s), you'll need to decide how many individual program sessions you will have and how much time there will be in between each program. Past KidsTeam work in libraries have done a **weekly format** with **4-5 individual program sessions total**.

Date and Time of KidsTeam Programs

	Date	Time	Location
Program Session	<i>Consider how much time will be in between programs</i>	<i>Select a time when there will be a consistent group</i>	<i>Note if you will have to use various locations in the library</i>
1			
2			
3			
4			

Program Planning Chart

Time Before 1st Program	My Timeline	Example Timeline
3-4 Months		<i>Determine Design Challenge; Talk with customers about their interests and timing for programs</i>
2-3 Months		<i>Seek approval and put in formal request for the program</i>
1 Month		<i>Research design activities that could be used in program sessions</i>
2 Weeks		<i>Ensure space and supplies are reserved</i>
Week Before		<i>Advertise the program and talk to children about participating; Gather snacks</i>

Prepare Specific Design Activities

Specifics of the KidsTeam Design Process

Activity Examples

Goals for My KidsTeam Program

To help with planning the overall Design Challenge and individual design program sessions, think about the goals you want to achieve through KidsTeam. List them below:

Goal 1:

Goal 2:

Goal 3:

Define Your Design Challenge

Specifics of the KidsTeam Design Process

? ? What is the design problem your group wants to solve together?
? ? Our Design Challenge is:

Select Your Activities and Questions of the Day

Next, it may be helpful to brainstorm potential Design Time Activities and Questions of the Day that you can use in your program. Each of the Design Time Activities should reflect the Design Stage they are associated with. The figure to the right shows the flow of the three Design Stages.

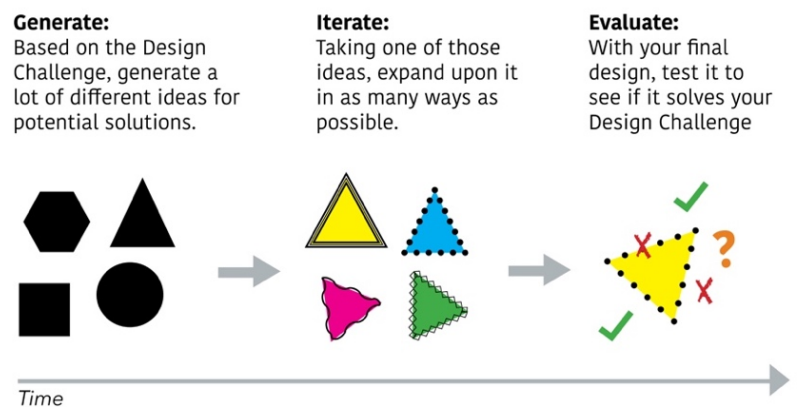





Figure 1: 3 Stages of the KidsTeam Design Process

Use the chart below to brainstorm some ideas for activities and a question you can ask your group during your program:

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Design Stage	Design Challenge Activity	Question of the Day
 Generate		
 Iterate		
 Evaluate		

Tip: It may help to think of past library program activities you’ve led that were engaging. Do any of them fit into the 3 Design Stages?

Outline the Specifics for Each Program Session

Specifics of the 5 Phases of an Individual Design Program Session

Supplies List

Activity Ideas for Phase 3: Design Time

Now that you’ve defined your Design Challenge and brainstormed some Activities and Questions of the Day, it’s time to outline the specifics of each individual program session and how they will flow together. Keep in mind as you create your outline, each individual program follows these 5 phases:



Figure 2: 5 Phases of each individual KidsTeam Program

KidsTeam Program Session Template

This template is meant to be used to plan each of the individual program sessions. Since one session builds off the other, it will be helpful to fill out this template *after* you complete a program session in preparation for the next one. *Please note: The below is directly from Walsh's original KidsTeam Project Repository (Walsh, 2018/2020).*

Topic

What is the overall design challenge you are trying to solve?

What is the focus of this design session?

Space & Time

How much time is available for KidsTeam?

Do you have a table for snacks?

Do you have a place for circle time?

Do you have a place for design time?

Do you have a place and equipment for Big Ideas?

Snack Time

Are there any known dietary restrictions? Yes No

Write the snacks you are planning to have at the KidsTeam session.

Circle Time

Think about the design session's focus. What will be your question of the day?

Design Time

Do you want this design session to be generative (new ideas), iterative (add to ideas), or evaluative (review prototyped ideas)?

What activity or technique will you use?

What supplies do you need?

Big Ideas

Where will you collect the Big Ideas (whiteboard, flip board, poster paper)?

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KidsTeam Goals & Background

Goals of KidsTeam

Every KidsTeam program has their own set of goals but, they all have a main goal of collaboratively designing technologies for and with children. Below are some of the general goals of conducting KidsTeam programs:

1. Explore where children fit into the design process, specifically as an opportunity for children and adults to be design partners (Druin, 1999)
2. “Co-design technologies that are more relevant to children’s interest and needs” (*KidsTeam*, n.d.)

And specifically for conducting KidsTeam in public libraries:

3. Include more diverse voices in the design process (Walsh, 2018)

KidsTeam Background: Children and adults designing together

KidsTeam is a design process created by Dr. Allison Druin over 20 years ago in which children ages 7-11 and adults collaboratively design new technologies for and with children. She created the *cooperative inquiry* design approach which explored the different roles children can have in the design process, specifically as “research partners” (Druin, 1999). Her work, in conjunction with the University of Maryland’s Human Computer Interaction Lab (HCIL), resulted in an intergenerational design team where children and adults are *design and research partners* (*KidsTeam*, n.d.). They’ve worked with a variety of partners from Nickelodeon to the National Parks Service (*KidsTeam*, n.d.). The **Additional Resources** section offers more background on their work and other KidsTeam initiatives in the USA.

KidsTeam in Public Libraries: Adapting the process for libraries

Recognizing an opportunity to conduct the KidsTeam design process in the community, Dr. Greg Walsh of University of Baltimore brought KidsTeam to public libraries in Baltimore City. However, he

adapted the process format. Specifically, he reduced the length of the design process from months to weeks in hopes of including more diverse voices in the design process (Walsh, 2018). This toolkit is an adaptation of his KidsTeam Project Repository he created for public librarians to use if they wanted to conduct KidsTeam design programs on their own.

KidsTeam Format: The design process

Overview of the KidsTeam Design Process

KidsTeam is a design process for children ages ~7-11 years old and adults to creatively solve problems together. It's been used for creating and developing technologies, services, etc. with and for children. The adapted process designed for libraries (Walsh, 2018) has the following features:

- Shortened multi-program format that builds from one program to the next (4-5 programs)
- 3 Design Stages: Generate, Iterate and Evaluate
- 5 Phases within each Design Stage

KidsTeam Process for Multi-Week Programs

Collaborative creative problem solving with children and adults

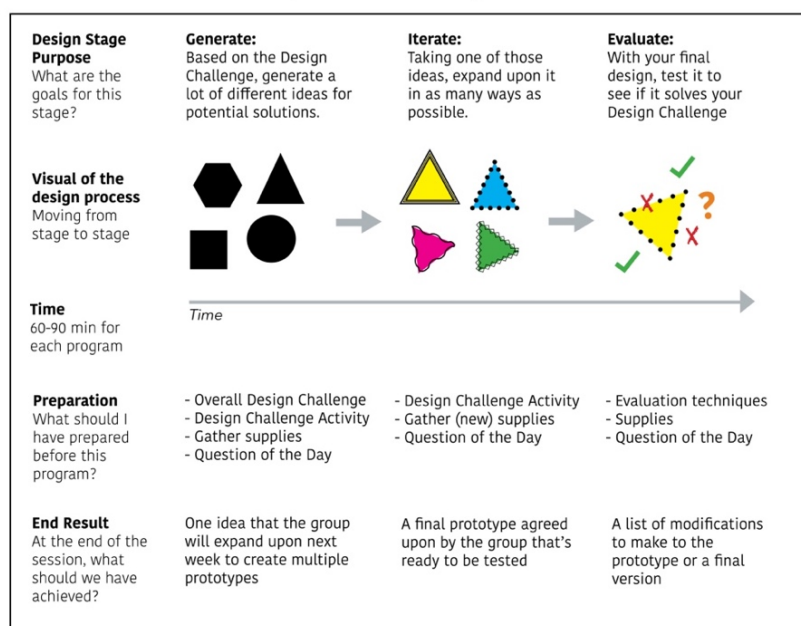


Figure 3: Overview of the multi-week KidsTeam process

The figure on the left is an overview of the KidsTeam process structured as a multi-week program.

Tip: Think of the stages as a framework for how you can create an engaging program for your youth patrons. They'll use their skills, experiences and unique talents to collaboratively create something with their peers and library staff. Parents are welcome too!

Specifics of the KidsTeam Design Process

As you see above, there are 3 Design Stages in KidsTeam that turn research into ideas and those ideas into solutions:

1. **Generate** – create ideas
2. **Iterate** – expand on those ideas
3. **Evaluate** – test and modify ideas

In order to prepare for these 3 stages, you'll first need to come up with a Design Challenge. This is the design problem your group wants to solve through these stages.

Preparation: Define your Design Challenge



Goal: Define what problem the group will solve

Preparation: Research; Think about the interests of your patrons, yourself and your library's programming themes

End Result: A clearly defined design problem the group wants to solve

Once the Design Challenge is decided, the next three program sessions will follow this general order:

Stage 1: Generate

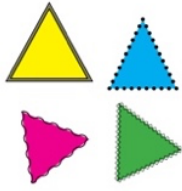


Goal: Create lots of different ideas

Preparation: Design Activity, Supplies & Question of the Day

End Result: One idea that the group can expand upon next session to create multiple low-tech prototypes

Stage 2: Iterate



Goal: Expand on one idea in multiple ways

Preparation: Design Activity, Supplies & Question of the Day

End Result: A final prototype agreed upon by the group that's ready to be tested

Stage 3: Evaluate



Goal: Test the idea to see if it is the right solution for the original design problem

Preparation: Design Activity, Supplies & Question of the Day

End Result: A final version of the prototype or list of modifications

Tip: You may find that you need to repeat some of these stages or go back and do more research as a group before moving onto the next stage. This is why you may have 4 or 5 program sessions.

Overview of the 5 Phases of an Individual Design Program Session

Within each of these 3 Design Stages, there are 5 Phases that each individual KidsTeam program session goes through. These phases build off each other to address one aspect of a design problem per program session (Walsh, 2018/2020). No matter how many program sessions you host, every session should follow these 5 phases in order.



Figure 4: 5 phases of an individual KidsTeam program session

Specifics of the 5 Phases of an Individual Design Program Session

As a reminder, these 5 phases work together to help answer a specific design problem that you and the group have identified. Below are the specifics of each phase including suggested phase length and key components.

Please note: The below descriptions of each phase are directly from Walsh's original KidsTeam Project Repository (Walsh, 2018/2020). Anything in bold or italics has been added by this author for emphasis. Please also use "design session" and "design program session" interchangeably.

0 Arrival

30 min – 1 hour before program session

Set Up; Advertising

"Depending on your program, arrival can be treated as an event by itself, or can just be taken for granted if the participants are already at the location. For example, your program may be a once a week program that draws children who are not normally at the library after school. If this is the case, you need to create clear instructions of where parents can drop children off for these programs. You may want to create a sign-in station for children and caregivers to register when they attend. You should need to give clear instructions on where to park, or how to arrive at your location via public transit." (Walsh, 2018/2020).

1 Snack Time

15 min

Snacks

"Snack time is the first phase of the KidsTeam design process. During this time, the entire design team **(children and adults) participate by eating the snacks**. When choosing snacks, it's important to understand the cultural dietary restrictions for your area as well as any special needs indicated by participants before the design sessions began. Popcorn is an excellent snack because it contains no dairy, is vegan, and has no sugar beyond those naturally occurring in the food. We've had good luck with applesauce, goldfish crackers, Saltines, and granola bars. The easiest drink to serve is water. We've found that children that participate in these design sessions are aware of the environmental damage that

plastic plays, so, we suggest you use paper cups and large containers of water or perhaps filtered water from a pitcher.

Before your design team arrives, it is important to set up for snack time. It has been shown that children and adults perform better when they are not hungry. This is one of two reasons we have snack time as part of KidsTeam. Besides feeding the design team, Snack time works as a way to level the power dynamic that both the children and adults are accustomed to especially if the design session is held after school.” (Walsh, 2018/2020).

2 Circle Time

15 min

Question of the Day; Introductions

“After about 15 minutes of snack time, it is time for circle time to begin. Much like snack time having two uses, circle time also performs two tasks: **continuing to break down power structures**, and **focusing the discussion on the design problem at hand**.

Ask all of the participants including the adults to sit in a circle on the floor. It's best to break up any groups of friends or siblings. Try to have adults spread out through the circle so that it doesn't seem like they're all sitting together.

Once everybody is seated, you can announce the question of the day. The **question of the day is an open-ended question** that is easily answerable by the participants but that has something to do with the focus of the day's design session. For example, if your design session is focused on a new children's space in your library, the question of the day might be "where is your favorite place to read?"

Now that everybody knows the question of the day you can begin doing **introductions**. The familiarity your KidsTeam has with the process and each other can determine how you want to handle the introductions. Traditionally, each participant says their name their age how many times or how long they've been a participant in KidsTeam and answers the question of the day. It is imperative that the **adults use their first names** and announced varied as well. Using first names and been open about age is one of the ways in which children come to see the design group as being mortal equal then in school where they use proper titles and the age of adults is rarely mentioned.” (Walsh, 2018/2020).

3

Design Time

30 min

Low-tech Prototyping; "Bags of Stuff"; Design Activities

"Design time is the phase which new ideas are created and prototypes are evaluated. There are an array of multiple techniques that can be utilized in this phase. The techniques used should be kid friendly and enable creative expression [but] are also accessible by adults. In most cases, the idea of building and prototyping isn't to create a high-fidelity version of something, instead the idea is to create something that can be explained and iterated upon by other members of the group. You can think of the design phase techniques as a range on a spectrum where one side is generative and on the other side is evaluative.

In our experience, one of the most popular forms of **low-tech prototyping** is called "**bags of stuff**." This technique relies on art supplies as well as household objects for intergenerational design groups to build prototypes with. This technique is powerful because it enables children to design new things with materials that they're familiar with from school and at home. In this technique, there's not much training required for the designers because of this familiarity.

Another form of low-tech prototyping popular with both adults and children is **drawing**. Some adults are self-conscious about drawing and instead will try and write words on paper. It's important to reassure the designers that the quality of the drawing isn't important but instead the story that they're trying to tell. Instead of drawing, groups could use old magazines or advertisements and cut out people and things to use in their designs. Drawing can also be made more engaging by using different types of materials such as large poster boards or rolls of butcher's paper.

As prototypes move along in the design process it is important to continue to iterate upon those prototypes and the best technique for this is one called "**likes, dislikes, and design ideas**." In this technique a prototype is presented to the group the larger design team splits into smaller teams, and using sticky notes, writes either a like, a dislike, or design idea onto a sticky note. Each sticky can only contain one thing and the adult members of the group should help the child members in writing. There are almost an infinite number of techniques that can be used during the design time phase." (Walsh, 2018/2020).

Refer to the **Activity Ideas** and **Additional Resources** sections for more information around specific activities and techniques.

4 Big Ideas

15 – 30 min

Presenting Ideas; Key Concepts; Common Themes; Analysis and Synthesis

"Once the design session is done, it is time to gather the ideas in the big ideas phase. The best way to do this is to have either a white board or a flip chart in one area of the design space. Invite the design teams over to the area by this board and ask for a volunteer to **talk about their prototype**. Have the group [describe] their prototype and, as they are describing it, a researcher or librarian writes key concepts on the board as they're being described. Each group presents their ideas and it is helpful if [...] each of the groups is represented in a different color.

After all of the groups present their ideas, as a group [...] discuss what are some of the **common ideas** between the groups and what are some of the very **unique ideas** generated by the groups. Sometimes it is helpful if you put symbols next to the ideas and [underline] or circle unique ideas.

Once the design session is over and all the child participants have left, it's time for the design group or design researchers to look at the ideas generated in the big ideas phase and collect what's been synthesized on the board. This **analysis and synthesis** becomes the most important artifact from this design session. In other words, this is the main output for the session." (Walsh, 2018/2020).

5 Clean Up

5 – 10 min

Cleaning and Organizing

"This is not an important phase when it comes to the design session, but it is very important when it comes to keeping the space clean. It is helpful to have all of the designers help clean up the space including the art supplies, sticky notes, large pieces of paper, crayons or markers. Space at this time is also extremely helpful to cleanup food or drinks snack time and make sure the space is clean for the next users of that room" (Walsh, 2018/2020).

Tips:

1. To see an example of how the whole process works, you can read Dr. Greg Walsh's article describing the anatomy of a KidsTeam design session:
<https://mdsoar.org/bitstream/handle/11603/7853/Anatomy%20of%20a%20Design.pdf?sequence=1&isAllowed=y>
2. After each program session, it may be helpful to spend time reflecting on both the concepts discussed and the process. Ask yourself:
 - a. What went well?
 - b. What needs adjusting?
 - c. Is there something the group really enjoyed?

Planning Your KidsTeam Program: Best Practices

Here are some additional things to consider when creating a KidsTeam Program for your library.

Scheduling a Time for Your Program Sessions

"An intergenerational design group should meet at a convenient time for both children and adults in the neighborhood. Depending on the focus of your inter-generational design group, you may want to have design sessions weekdays after school during the school year, or on weekends. Design sessions can also occur in the summertime as part of a larger, long-form camp experience at a library" (Walsh, 2018/2020).

Planning for Varied Participation

"[KidsTeam] allow[s] children to come and go during the activity much like the library programs we've observed over time" (Walsh, 2018/2020). It is not uncommon for new children to attend only one KidsTeam program session or participate in one of the later sessions. We recommend you give an overview of the whole process and the Design Challenge at the beginning of each individual program session.

Recommended Program Session Length

60 - 90 minutes. *This doesn't include preparation time or clean up.*

"Design sessions should be no longer [than] 90 minutes. We have found that anywhere from one hour to 1 1/2 hours is ideal because it allows for enough time to go through all the phases of the design process as well as let the participants really get into the activity. Anything shorter can seem rushed and anything longer runs the risk of all participants losing attention" (Walsh, 2018/2020).

Preparation for Each Individual Design Program Session

Define the Design Challenge: As mentioned earlier, there is one Design Challenge your group is trying to solve over the course of multiple program sessions. Either you can come up with the Design Challenge and present it to the group or you can use the first session to collectively brainstorm a Design Challenge. The challenge will guide the group activity for *Phase 3: Design Time*. See the **Activity Examples** at the end of this section for some examples.

Question of the Day: This should be a general question that relates to the Design Challenge with the purpose of getting the group to start thinking about the general topic of the challenge. This is meant to be discussed during *Phase 2: Circle Time*.

Gather Supplies: Since each program session builds off the next one, you may need to adjust your supplies each week. See the **Supplies List** at the end of this section for more details on the types of supplies used in previous KidsTeam programs.

Setting up Your Design Space

"The most important parts of determining the space to use is to make sure that it large enough to accommodate the participants in the design sessions. The space should contain a large table that

everyone can sit around. It should also contain a large enough floor space that the designers can work in groups on the floor in their activities.

The space should be safe. This means the space should be highly visible from the outside, it should have safety exits in case of emergencies, and access to restrooms. The space should be inviting to children and adults but it shouldn't look like a cliché version of what adults think children would like.

The space should not be a location the children are familiar with in which a power dynamic usually exists. This means that rooms that remind participants of school should be avoided” (Walsh, 2018/2020).

Supplies List

Below is a general list of the supplies you will need for your programs:

- A room or space that is visible and large enough to spread out but, won't infringe upon the regular happenings of the library
- Large Tables (1 – 2)
- Snacks and water – noting for allergies and dietary restrictions
- White board, large pieces of paper or another place to record the “Big Ideas” from your program session

During Design Time, KidsTeam often uses low-tech prototyping to help show and test design concepts. This means that the final product the group creates may not exhibit its full functionality but, provides the general structure and interactive elements. This allows for “designers to explore different design options for user interaction and application tasks” (Brown et al., 2010).

To support low-tech prototyping, KidsTeam uses supplies inspired by the “**Bags of Stuff**” technique mentioned earlier. These bags consist of “arts and craft supplies such as yarn, Styrofoam shapes, glue, paper, markers, scissors, and cardboard rolls” (Walsh et al., 2013).

Tip: Think about the supplies you might have in your library that may be left over from other programs or items that you've been looking to put to use.

Activity Ideas for Phase 3: Design Time

The supplies you choose may vary slightly depending on the design activity that you select for each program session. There are endless activities you can choose from and will likely depend on what your design challenge is and what stage of the design process you are in.

Below are just some examples KidsTeams and researchers designing with children have used in the past. They are examples taken from Co-designing a Digital Library (Druin et al., 2009) and the Octoract paper on intergenerational participatory design techniques (Walsh et al., 2013). They are organized by the Design Stage they can be applied to:

Generate

- Observe and conduct interviews
- ComicBoarding
- Big Paper
- Sketching/drawing
- Mixing Ideas (for younger groups, aged 5 - 6)

Iterate

- Stickies – Likes, Dislikes and Design Ideas
- Storyboarding

Evaluate

- Full group discussion session
- Conduct interviews

Refer to the **Additional Resources** section below for activity specifics, techniques and more examples.

Tip: No matter what activity you choose, it is important to remember a key tenet of children and adults designing together: **idea elaboration**. "This is when one team member (adult or child) shares an idea with the team and it is extended by others... What matters is that both adults and children share in the process together" (Druin et al., 2009).

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Additional Resources

Here is a shortlist of additional resources, broken down by category, to help supplement the information in this Toolkit.

Background on KidsTeam and Designing Technology with and for Children

- Cooperative Inquiry: Developing new technologies for children with children: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.78.7430&rep=rep1&type=pdf>
- KidsTeam: Co-Designing Children's Technologies with Children: <http://uxpamagazine.org/kidsteam/>
- Child-Computer Interaction Book: <http://homepage.cs.uiowa.edu/~hourcade/book/child-computer-interaction-first-edition.pdf>

KidsTeam Examples

Here are some examples of other Universities and KidsTeam initiatives around the USA:

- **Boise State University:** <http://cs.boisestate.edu/~jfails/kidsteam/index.shtml>
- **University of Maryland, HCIL:** <https://hcil.umd.edu/children-as-design-partners/>
 - Video Example of University of Maryland iSchool Partnership with Pratt Institute of Industrial Design: <https://ischool.umd.edu/partners/kidsteam-youth-tech-design>
- **University of Washington:** <https://www.kidsteam.ischool.uw.edu/kidsteam-projects>
 - University of Washington, Seattle Public Library and rural libraries partnership: <https://www.kidsteam.ischool.uw.edu/kidsteamuw-libraries>

Activity Ideas and Design Techniques

Below are some research articles on the formation, assessment and usage of some of the activity ideas and design techniques referenced in the toolkit.

- Clear Panels: A Technique to Design Mobile Application Interactivity: <https://mdsoar.org/bitstream/handle/11603/7265/clear%20panels.pdf?sequence=1>

- From Mongolia to New Zealand: Co-Designing and Deploying a Digital Library for the World's Children: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.645.6984&rep=rep1&type=pdf>
- Layered Elaboration: A new technique for co-design with children: <http://www.cs.umd.edu/hcil/trs/2009-29/2009-29.pdf>
- Octoract: An Eight-Dimensional Framework for Intergenerational Participatory Design Techniques (Also titled as: "FACIT PD"): <https://mdsoar.org/bitstream/handle/11603/5464/FACIT%20PD%20Tech%20report.pdf?sequence=1>
- Saga Walk: A big and active way to enable co-design: <https://medium.com/digital-whimsy-lab/saga-walk-a-new-way-to-enable-co-design-3d494b24b01e>

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