

# 1 – 2 – 3 – Done!

## Learning to Cope with Serious Medical Conditions, Hospitalization, and Treatments

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### Abstract

This design brief describes a possible “microworld” for the “Mending Hearts and Minds” collaboration between MERL and Children’s Hospital. In the software play kit, animals present strategies for coping with needles and other aspects of illness and treatment.



*These illustrations are derived from a coloring sheet provided in the CH play room, signed by “Wilcox.”*

### ***Mitigating troubling emotions through displacement***

During the past several months the MERL/CH team has considered suggestions for playful activities situated in “microworlds.” Activities like creating a story or playing with characters that represent some aspect of the self can be therapeutic. Our goal is to design activities and scenarios that address the particular stresses of serious medical conditions and hospitalization.

Well-designed microworlds are based in the computer but become imaginary places where children can go for constructive play. Through creating things they can see and hear, kids can expand and expound on psychological issues. As the children change colors, set things into motion, etc., they can also get the very real sense that they are in control. Returning this sense to seriously ill children can be therapeutic in itself. It is also a good design principle for interactive media.

Several of us would like to find a term other than “microworld”: people use it in a number of different contexts, so the term is becoming diffuse. It is also the name of a commercial software package, which we may or may not use. “Game” connotes too strongly a rule-based, scored interaction. “Activity” is closer to what we mean, but it can sound clinical. “Kit” might work: it suggests just what we want -- a specialized collection of things that you use in doing some activity or task. Images of science kits and doctor kits are appropriate for the spirit of “doing” that we wish to engender. However ours is a kit for play -- for acting out and working through troubling emotions while engaging, creating, and controlling symbolic objects and actions.

### ***Prouty Animals Play Kit***

Here is an idea for a Play Kit based on coping strategies. The design is developing through several lines of reasoning:

- The kit frames Hospital not as a jail-like place that you want to get out of, but as a place full of people who can help you get better, a place where you can make friends, and a place where one can find fun things to do in spite of discomforts.
- The kit includes reflections of the actual Children’s Hospital space. Someone already acted on this idea by producing a coloring sheet of animal sculptures that are in the CH Prouty Garden. The Play Kit uses the same set of animals.
- The kit would be useful in the hospital, but we can easily imagine versions that would be useful for continued play at home. The characterizations described here pertain to strategies for coping with needles. Other characterizations could deal with fear, isolation, boredom, anger, and other emotions relevant to chronic illness as well as hospitalization.
- The kit’s strategies for coping with needles are from notes taken during our interviews with medical professionals, particularly Leslie Campis and Beth Donegan. The idea for the kit is based on a suggestion Joe Gonzalez-Heydrich posed by e-mail last November:

Why not think of a list of 7 or so "coping strategies".

Then write a procedure for each such that when a child chooses to invoke the strategy by taking turtle out of a tool box, for example, and touching it to a character, that character acts out that strategy (good or bad).

On different pages or when acting on different characters the strategies can result in different actions. ...

The repetition of the strategies across pages and characters may help with learning them and how they work in different situations.



If the "tool" is a needle, here are some reactions the animal characters might have:

### What do YOU do when it's time for a needle?



*I set limits. I give the attendant three tries, no more. I tell them, "Three strikes and you're out!"*



*I hold my blanket or my favorite doll. Sometimes I sit on Mom's lap.*



*I do a Raggedy Andy. Sometimes when I'm in my room I practice relaxing, then putting up my guard, then relaxing again.*



*Sometimes I don't look. Sometimes I imagine I'm away on vacation, at the beach, surrounded by warm sun.*



*Sometimes I breathe in a special way, like "iiiiinn-out-out-out-out." Other times I blow bubbles!*



*I screeeeeeeeeeeam!*



*I close my eyes and count. Sometimes the nurse will play with me: "1-2-3-DONE!!"*

In addition to saying what the strategy is (preferably in a child's voice), the animal would be animated to perform some characteristic movement. Some of the characters shown here have more than one strategy associated with them. We would probably want to keep things straightforward so that each animal has just one strategy. We may find that we need more than seven animals. (Another strategy, not included above, is to ask questions.)

We probably want several "tools" or situations in addition to needles. The idea is to provide representations of a range of emotions that children may experience during or anticipating medical procedures, and in dealing long-term with illness. Among the emotions may be fear, isolation, frustration, boredom, anger, self-dislike for being short, self-dislike for being sick, fear that sickness is cosmic retribution for being bad, exaggeration of dilemmas, worry about returning to school, jealousy of healthy siblings, etc.

Joe has a suggestion for adding interest through additional functionality of the kit:

At a higher level of difficulty might be letting the kids put two or three turdles together to specify their own coping strategy.  
ie. they can put "hold mom's hand" "ask questions" "don't look" turdles together and there might be a procedure that invokes the actions of the selected turdles in sequence for a character on a page.

For example, the sequence might be:



The animals could play out their needle strategies or invoke a little story that has to do with their characterizations coming together. Or, this sort of composite sequence could be the way of defining the character of another creature that the child draws or otherwise creates.

In addition to LCSi's "Microworlds" software, the "Alice" system might provide good supports for developing the Play Kit. Alice's creators at University of Virginia claim that it is almost in its beta version. They've promised to let us know when that happens. Here are some descriptions from their web pages:

<http://www.cs.virginia.edu/~alice/index.html>

Alice is a 3D Interactive Graphics Programming Environment. The goal of Alice is to make it easy for novice programmers to develop interesting 3D environments and to explore the new medium of interactive 3D graphics.

*<http://www.cs.virginia.edu/~uigroup/>*

we have been developing the Alice rapid prototyping system since 1992. Alice is designed to be easy to learn in a short period of time, allowing the user to author desktop 3D graphics simulations, specifically concentrating on the real-time behavior of objects. Alice makes it possible to literally try hundreds of variations per day, and enables our collaborations with non-technologists, who need to be able to take a "what if" approach during the design process.

It's possible that we could have both 2D and 3D versions of the kit, with slightly different functionalities as the platforms allow.