# Amazing Animation™: Movie Making for Kids
# Design Briefing

*Shannon L. Halgren*          *Tony Fernandes*
*Deanna Thomas*

Interface Design Group
Claris Corporation
Santa Clara, CA 95052
(408) 987-3912, email: shannon_halgren@claris.com

## ABSTRACT

The development of the interface for Amazing Animation was a challenging, unique, and a rewarding experience for our Interface Design Group at Claris. Given the constraints of a very tight timeframe and working with a user population we were unfamiliar with, our group was able to make numerous improvements which had a tremendous impact on the product's usability. This having been our first time designing for and testing children, we learned volumes about this unique user population. Design assumptions and testing methodologies used in adult products must all be reworked for kids. This paper describes the progression of Amazing Animation interface and points out the lessons learned about testing and designing for kids along the way.

## KEYWORDS

Interface Design, Kids Software, Designing for Children, Testing Children

## PRODUCT DESCRIPTION

Kids ages 5-14 can use Amazing Animation to create movies, video games and interactive school projects. Kids stamp animated characters and sounds onto pre-drawn backgrounds to make stories about space, dinosaurs, underwater life, and many other topics. Amazing Animation automatically records characters movement across the screen to be replayed over and over. New characters and backgrounds can be drawn using the drawing tools or clip art can be imported and animated. Text and sounds are used to narrate the movies. Frame-by-frame editing is possible, as are special effect transitions between frames. A frame from a typical Amazing Animation movie is presented in Figure 1.

Figure 1. Frame from a sample Amazing Animation movie.
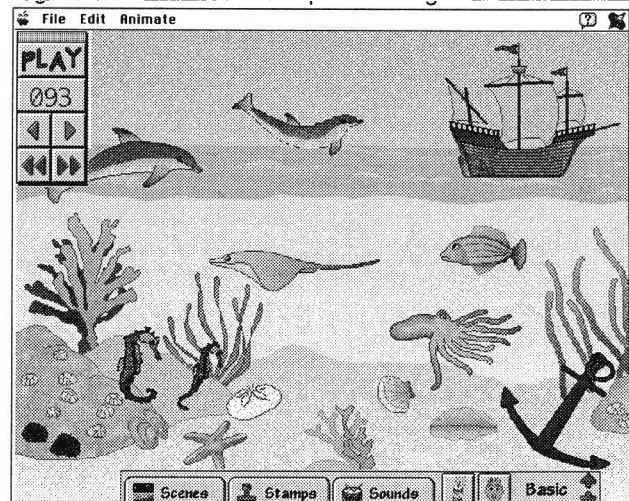


## THE ORIGINAL STATE OF AFFAIRS

The Claris Interface Design Group was initially approached by the Amazing Animation product marketing lead and asked to provide interface design support to the development team and possibly do some usability testing. The program was already in Alpha which meant time was of essence and interface changes involving significant recoding was going to take a lot of convincing. However, the development team was extremely open to design and usability input which allowed positive interface changes to occur.

The Design Group immediately dedicated an interface designer and a usability specialist to the project. These two individuals worked on both the testing and design phases of the project. After the first round of usability testing, a visual designer was added to the team to help with the design phases of the project.

## THE FIRST STEP: USABILITY TESTING

All parties involved agreed that usability testing would be the first step towards interface improvement of Amazing Animation. Being that this was the first kids'

product our team had tested, we had to quickly shift from an adult to a kid world. Our Usability Studio at Claris was not appropriate for testing children; the desk was too high, the chairs too big, and the modern office decor did not shout Sesame Street. Therefore, we decided the best option for us on a limited timeframe would be to perform a field test.

After some negotiation, we were allowed to perform our usability test at an interactive learning computer lab. This was a private business where children could come in after school or during the summer and work on basic reading and math skills using interactive software. We set up a computer and video camera in a corner of the busy computer lab. When the kids had a breaking point in their lessons, they were allowed to come over to our station and play with our product. The switch from math to movie making seemed to be a welcome change.

## USABILITY RESULTS & LESSONS LEARNED

### We're Not in Kansas Anymore: Testing Kids is Not Like Testing Adults

After the first few children had come and left our testing station, we were left with the unrefutable conclusion that observing kids interact with software is in no way similar to observing adults interact with software; we were in an entirely new world of computer usage. Our carefully prepared test scripts and questionnaires were left unused. Our empirical methods and procedures crashed to the floor when our questions and prompts to stay on track were repeatedly ignored. The kids were much more interested in such unpredictable tasks as hitting the mouse button repeatedly to create 10s of new screen characters by the second or dragging a character around the screen in an endless, frantic loop.

Eventually, we were taught by the kids that observation with some guidance was the preferred method of conducting a kids usability test. We suggested things we'd like to see the children do with our product (like make a movie), but had to remain flexible and follow the child's preferred path through our product. In the end, we probably learned a lot more about how kids will use our product from this observational method than from any test script we could have created.

Over the course of the study, our ability to interact with the kids also improved. Kids seemed to have two distinct modes of interaction with us. They either told us *everything* that was on there mind about our product and the world in general, or they told us *nothing* which left figuring out their thought process one big puzzle. One thing we began to learn was that an unanswered question

appeared to mean "I don't know" or "no". If the child knew the answer or the answer was positive, they usually proudly shared the answer.

### Follow the Yellow-Brick Road: Provide a Clear Path Through the Interface

Most kids' interaction with our prototype was not the streamlined movie-making session that was hoped for. Figure 2 displays Amazing Animation as it first appeared upon launching. Kids' typical first path through our prototype is listed on the screen.

Figure 2. Typical Sequence Using the Opening Screen of Our Prototype
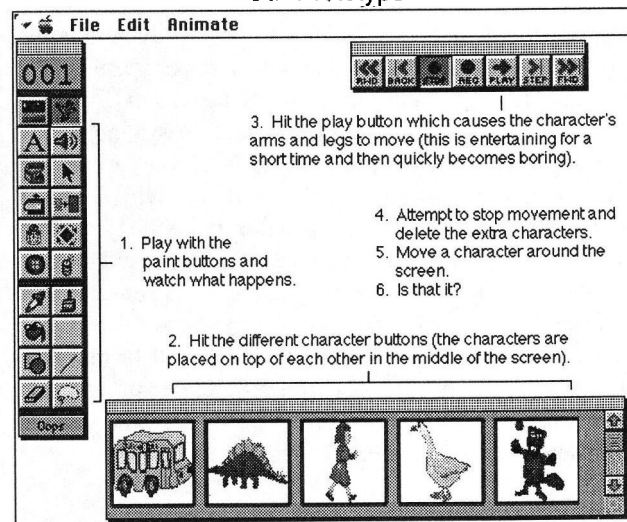


The complexity of the interface and the overwhelming number of controls made it difficult to keep on a movie-making track. Kids know how to push buttons and they do it with great glee and disregard for the consequences. Our kids quickly got themselves trapped in advanced paint and movie-making modes which surpassed their expertise. They also loved clicking on the character buttons at the bottom of the screen. Each click of a character button placed a new character on the center of the screen. Before the child knew what was happening, a mass of arms, legs, and bodies was assembled in center-screen and waiting for action.

The next hurdle for kids to jump was to figure out how to record a character's movement and then watch the animation. The intended path for this task was to hit the record button, move a character around the screen, hit Stop, hit Rewind, hit Play to view the animation, and finally, hit Stop to stop the animation which played in an endless loop. Our kids, however, preferred to hit only the Play button. To them, "Play" meant having fun, not starting a movie. When the Play button was hit before

any recording was performed, all the characters' arms and legs began to move (an automatic feature of characters), but their bodies remained glued to center-stage. This was wildly amusing at first, but became quickly boring. After futilely trying to stop the movement and/or delete any extra characters, kids eventually became tired with our prototype and came to the conclusion we had a boring product.

When redesigning the interface for this product, we paid close attention to making the process of moving through the interface much simpler. The first step towards this end was to remove many of the controls from the opening screen. Only the very basic movie controls were left. Advanced paint and movie controls were moved out of sight to pull-out drawers located at the bottom of the screen. We felt drawers offered a metaphor that kids could relate to, contrary to abstract tool palettes containing numerous icon controls found in adult products. Kids have most likely had experience storing objects such as toys or tools in drawers that can be opened and closed.

Selecting the up and down arrow controls to the right of the drawers displayed different sets of drawers containing different tools. We were hoping that by hiding the advanced tools, the novice users would not stumble onto them and get lost in their functionality. Rather, only the advanced users who might want the advanced tools would go looking for more options. This redesign allows the product to be engaging and usable for a wider range of ages and abilities. For reference, our redesigned screen is pictured in Figure 3.

The process of creating a movie was made more intuitive by displaying only tools directly related to movie making on the default opening screen. The most efficient process for creating a movie is to select a background, select desired characters and sounds, record the characters movement and finally playback the movie. The three drawers at the bottom of the screen are placed in the order that they should be used; scenes or backgrounds first, stamps or characters next, and finally, sounds.

Contrary to the old design, recording of movement in the new design is done automatically when the character is dragged around the screen. The old design required the pressing of the record button. We found kids did not recognize the button labeled "REC" as record and even so, didn't realize that recording was a key element in movie-making. To provide feedback when the product is recording, a melody is played and the frame counter located below the Play button increases as new frames are recorded. If no action is taken, after a few moments an

auditory prompt provides the next step towards making movie. While we found that the auditory prompt was a useful way of providing help to kids, it does provide problems when localizing and therefore, isn't the ideal solution. More thought will be given to this for version 2.

After the character has stopped moving across the screen, and thus recording has stopped, the letters on the play button move up and down. This draws attention to the button. When pressed, the movie will automatically rewind to frame one and play once through eliminating the rewind and stop steps necessary in the original design.



Figure 3. Opening Screen of the Redesigned Prototype.
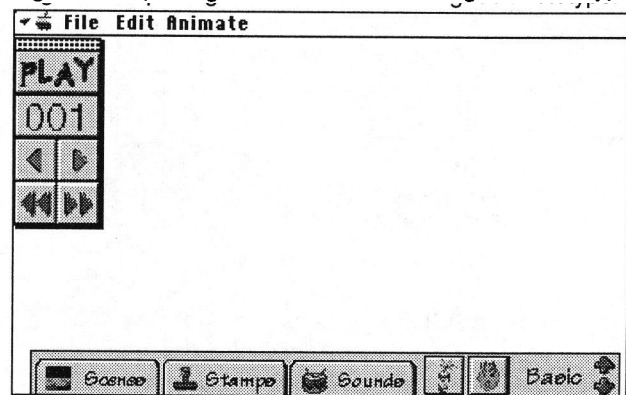
### Don't Push an Adult Interface on Kids

Observing kids use our prototype very clearly showed us where assumptions were made that kids use a computer like adults. Adult Graphical User Interface (GUI) controls such as scroll bars, window close boxes, menus, and paint tools were all problematic for most kids. Some of the older kids we tested were computer savvy and had worked with these controls, but all the younger ones were at a loss in situations like figuring out how to close an open window which only displayed the typical title line close box.

In general, our redesigned interface took out adult interface controls. Drawers of tools which automatically closed replaced typical toolbars and window close corners. The drawers were labeled not only with an icon, but also with text to increase recognition. Drawers were also given ample space so scrolling for more options was kept to a minimum. Standard paint tools were either cut because of their complexity (e.g., the eyedropper and lasso tools) or presented in a more kid-friendly manner. For example, the text tool previously placed on the tool palette using the standard "A" icon, was moved to a drawer with an ABC icon and label stating "Letters". The new drawer presents different font, style and size options in labeled
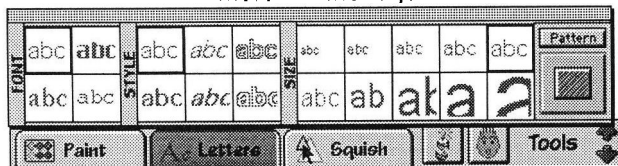
sections (see Figure 4).

Figure 4. The text tool location in the original and redesigned prototype.

Original Prototype - Standard text tool brings up a text palette
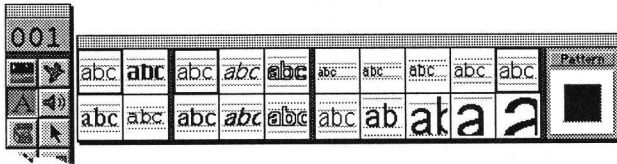


Redesign - Text drawer is accessible only by switching to the tools mode using the arrow buttons. Drawer label is more kid-friendly.



### Don't Push Adult Metaphors on Kids

The original prototype we tested used two strong metaphors that may have been appropriate for adults, but were usually lost on kids. The first metaphor, that of making a movie that contains individual, sequenced frames was too abstract for children. Kids understand animation only at a cursory level - animation is things moving. The features that allowed kids to edit individual frames were also too easy to stumble into and get confused about. Again, in the redesign, these advanced features were taken off the basic, default opening screen.

The VCR metaphor used for the movie controls in the original prototype was also missed by kids. For the most part the movie controls were not recognized as familiar and so were not used correctly. The rewind, fast forward, and step frame controls were rarely touched. Play and Stop, however, were selected a great deal, but often at inappropriate moments.

Our redesign tried to reduce the dependence on these adult metaphors. The movie metaphor was still present, but only visibly when using the advanced controls. Large colorful, animated Stop, Start, and Record buttons which were only displayed when it was appropriate to use them, replaced the standard VCR control panel (see Figure 5).

Figure 5. The text tool location in the original and redesigned prototype.

Original Prototype - Movie controls are presented using a standard VCR control metaphor.
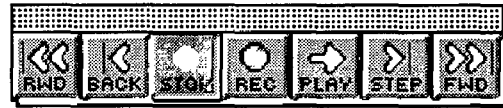


Redesign - Movie controls are simplified by enlarging and animating buttons which are only displayed when relevant.
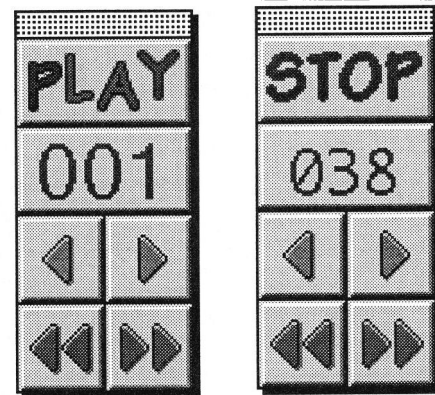


### Target Age is Critical: Do Your Home Work

The older kids who tested our prototype were quick to tell us that our characters and backgrounds were too babyish. In some situations it was clear that they were a little embarrassed to be using the product in the social atmosphere where we were testing. Ideas for new characters and backgrounds were quite different for the different age groups and between girls and boys. This finding forced us to step back and critically think through which ages we wanted to market this product towards and select content and features based on that decision. We also increased the number, content, and quality of backgrounds and stamps available.

### ROUND 2 OF TESTING & REDESIGN

After some negotiating with the development team and making a few modifications, our redesigned interface was quickly implemented and within a few weeks we were ready for another usability test. We went back to the same location for testing and were fortunate enough to have some of the same kids as well as different ones look at our new design. We were pleased to find that many of the usability issues we found in the original prototype had been solved with our redesign.

## Drawer Mode Redesign

Some problems still existed in the interface which were addressed in subsequent design changes. For example, the original buttons for switching between the modes of drawers at the bottom of the screen were too big and attention-grabbing. Little kids were still pushing them and then getting lost in the advanced features. We reduced the button size and toned down their appeal. Additionally, more sets of drawers containing advanced features were added. We moved from having to sets (beginning and advanced) to four; Basic, Movies, Effects & Tools. These four categories which were labeled were used to group the drawers into meaningful groups which allow users to more accurately guess drawer contents. The final buttons used are the ones shown in Figures 3 and 4.

## Move, Resize, & Rotate Tools Redesign

Another group of controls that required iterative design were the move, resize, and rotate controls. These tools could be used during recording to record the movement, growth or reduction of character size, or character rotation. On the other hand, they could also be used to get the character in the desired state and position before recording started. In the prototype tested in our first study, these more advanced editing controls were displayed in the tool palette (see Figure 6, Stage 1). The icons for these tools were not recognized by kids nor were the subtleties of using each in the two different record states understood.

In the first redesigned interface, the controls were moved to a "Squish" drawer located in one of the more advanced modes, Tools (see Figure 6, Stage 2). The icons were redesigned so that they all contained a consistent element, the triangle. Because in the new design, recording was made automatic when a character is dragged across the screen, additional controls had to be added that allowed moving, resizing, and rotating the character to be done while recording or while paused before recording. In this design the controls in the left column were static and represent manipulations that will not be recorded. The icons in the right column were animated to suggest that while using them actions will be recorded. The animations of the right column icons were also used to help enhance icon meaning. The top move icon pictured the triangle being dragged in a diagonal path across the icon. The middle resize icon displayed the triangle being expanded from very small to the size of the icon. Finally, the bottom rotate icon displayed the triangle being turned around and around. These animations continually play while the Squish drawer is open.

The Stage 2 redesign was an improvement over the original design, Stage 1, because young kids did not

stumble onto these tools and get lost in their functionality. Older kids who found the tools, however, had difficulty figuring out what they did. The final design of this drawer shown in Figure 6, Stage 3, regrouped the icons and added labels for enhanced meaning even further.

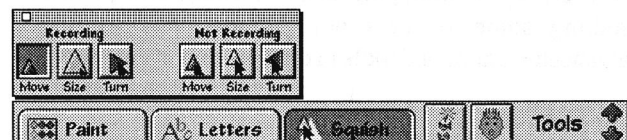Figure 6. Stages of Move, Resize and Rotate Tool Design.

Stage 1 - Abstract adult icons in large tool palette
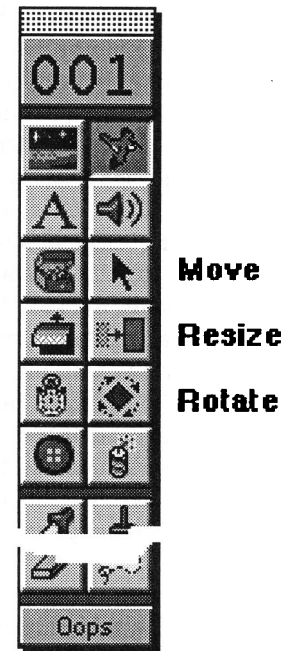


Stage 2 - Tools in drawer only accessible in Tools mode. Icons contain consistent elements and are animated to enhance icon meaning.
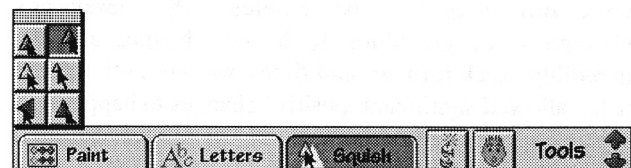


Stage 3 - Labels are added and icons are grouped to enhance meaning even further.

## ONE LAST MEETING WITH KIDS

Unfortunately, after our second round of usability testing and redesign the members of the interface design team needed to move on to different projects and thus their involvement with Amazing Animation lessened. Nonetheless, members from the development and marketing teams felt strongly about meeting with our target market one last time. This time a beta version of the product was dropped off at the computer lab of a local middle school. The lab instructor agreed to let some classes use the product during lab time. Students were given incentive to use the product by being allowed to participate in a Claris-sponsored contest to find the best kid-created movie. Contest-winning movies were later used for PR and marketing purposes. One week after drop off a team went back to see what kids had created with Amazing Animations. Each lab class which used the product was given a brief presentation by the product developer and were allowed to ask questions about the product or his job. Afterwards, the kids broke up into small groups to continue making their movies. Groups were observed and interviewed about the product. Unfortunately, no one from the Design Group was able to attend these classes, so no specific data was gathered about the success of our redesigns such as the text drawer or move, resize and rotate buttons. We can only hope the redesigns enhanced usability as we expected.

## CONCLUSION

The design process of creating the Amazing Animation interface was unique, challenging, and fun on a variety of levels. Initially, this seemed like an impossible mission. Our team was brought in post-alpha, initially told we could make few, if any changes which would require major recoding, and given roughly a month's time to work our magic. Nonetheless, the developer's willingness to go along with our changes and the incredibly quick turn around times we were all able to make, allowed significant, positive changes to happen.

The product interface was significantly reworked to adapt to the playful, experimental, exploratory method of use that children brought to the product. We focused on improving usability and engagability for a wide age range of users by simplifying many features and processes, making some features more visible, and by hiding advanced features and tools in drawers to prevent users who are just messing around from stumbling onto them.

This project was an all too rare example of the ideal user-centric development cycle. The product team collectively agreed to put the effort forth to gather user's input and then to really listen to that input. All redesign that was done was based on information gathered from real users; the kids. The developers and design team worked cooperatively to develop a usable product in a timely fashion. This project was truly a design success story!

Finally, the experience of designing for and testing children was a welcome challenge from the world of adult products which now feels a bit mundane. Our team learned a great deal from this project about working with kids and our enthusiasm for working on more kids products has greatly increased.

## PRESENTER'S BACKGROUND AND PROJECT INVOLVEMENT

### Shannon L. Halgren

Shannon is a Usability Engineer in the Interface Design Group at Claris Corporation. Her job is to manage usability testing at Claris. She earned her Masters and Ph.D. degrees in Human-Computer Interaction at Rice University. Shannon designed and helped conduct the usability tests associated with this project and participated in many of the interface design decisions.

### Tony Fernandes

Tony is manager of the Interface Design Group at Claris. The group is responsible for the UI design of Claris' Windows and Mac products. He participated in the field testing of this product as well as in the development of design solutions to the problems encountered.

### Deanna Thomas

Deanna is a Visual Designer in the Interface Design group at Claris Corporation. Her job is to create visual information be way of icons, navigation in dialogs and product identities for Claris. She received her Bachelor of Fine Arts in Studio at the San Francisco Art Institute and her Master of Fine Arts at University of North Texas. A six year veteran of the Apple community, her involvements with visual interface also include (of late) PowerTalk & AppleSearch. Deanna provided the visual interpretation of our design brainstorming sessions and gave Amazing Animation much of its look and feel.