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The Story of Mouse Math

For the past three years, one of my son's summertime activities has been to work in his office every weekday morning. His office consists of a desk, our home computer and a bookcase full of reference materials, art supplies and junk. During office hours he makes copies of famous drawings and comic book heroes; learns typing from Mario and Mavis Beacon; reads his current book; builds things out of Legos and takes apart old bits and pieces of computer hardware. Although he does not view his office hours as particularly fun, they are at least interesting and varied and have taught him a number of useful skills and worthwhile traits.

Part of the point of Pete's office is to maintain skills he learns during the school year, and math facts are one of the things we concentrate on. Over the years he has used many commercial basic math programs, some shareware and not a few programs which I have written for him myself. As he is now 11, much of this stuff is now too babyish for him, and so this summer we set out to write a new program that he would look forward to using each day. What we ended up with was Mouse Math.

Although Mouse Math will work in text mode, my primary design goal was to improve Pete's mental math abilities in the area of spoken math problems. In school, math problems tend to be written rather than spoken, and students are encouraged to use paper and pencil to solve them. That's fine, but in the real world, the person who can hear a problem and spit out an answer often has a distinct advantage. Mouse Math strengthens this ability.

The whimsical pictures that you select in the main Mouse Math menu and that appear in full as you do the drills seem to keep Pete interested in using the program. So much so that Mouse Math is the first thing he does each day, as he is always curious to see what Binky is up to. I hope that you have a similar interest in Binky's adventures.

As to who Binky is and how Binky comes to inhabit all of these different animal bodies of unlikely size and location, that we have not quite figured out yet. It could be that Binky is some sort of alien, or perhaps Binky is the Spirit of Whimsy set loose in the world in quest of who knows what. If you have any ideas about who Binky is and what he or she is up to, both Pete and I would like to hear from you.

Hank Hufnagel Clarion June 6, 1995

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Acknowledgments

My son Pete was the primary tester and critic of Mouse Math during development. Thanks Pete!

The Mouse Math program was written using Microsoft Visual Basic 3, Copyright Microsoft Corporation 1993-1995.

Many of the pictures included with Mouse Math started as images from the Corel Professional Photos CD-ROM Sampler, Copyright Corel Corporation 1994. The original photographs were edited, transformed and combined to create the 'Binky' pictures. The software tools used to do this were a LeadTechnologies Demo Program, Serif's PhotoPlus and most of all the wonderful Logitech Fototouch Color program which came with my little hand scanner.

The sounds produced by Mouse Math were created using Creative WaveStudio, Copyright Creative Technology Ltd 1992-94. This small program came bundled with my sound board.

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About the Drill Screen

- The drill consists of the program speaking or showing a math problem and then displaying four or five possible answers on the screen in yellow boxes. Your task is to click on the correct answer as quickly as possible. When you select a correct answer, part of a whimsical 'Binky' picture is revealed. The faster you click, the more parts of the picture will be revealed for each correct answer.
- When you have answered enough problems to uncover the entire picture, the caption for the picture is spoken or displayed at the bottom of the screen.

Click on Say to hear the current problem or picture caption spoken again.

Click on **Text** to show the problem or caption near the bottom of the screen. Click **Text** again to remove displayed text from the screen.

Click on **Help** to see this Help text.

Click on **Exit** to return to the main Mouse Math menu.

The numeric box at the left of the drill screen shows the number of problems you have answered correctly so far. The box at the right is the timer that shows how many seconds the program has been waiting for you to click an answer for the current problem.

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Using the Setup Menu

The Setup menu allows you to set various options of the Mouse Math program. Your settings will be remembered the next time you run the program.

The top portion of the menu allows to select the length of each drill by selecting Child, Teen or Adult. Other options in this portion of the menu allow you to turn the sound, text, and timer tictoc features of the Drill Screen on and off. Xs indicate the options which are turned on.

The **Problem Ranges** portion of the menu lets you control the range of problems that will be asked during the drill. When you click on a range, a keypad appears where you can click in the desired new range. You can for instance set Addition problems to the ranges 2 to 6 + 5 to 9. This means that the first number in the problem will range from 2 and 6, and the second will range from 5 to 9. Thus, this pair of ranges causes problems like 2+5, 4+7 and 6+9 to be asked when Addition problems are requested in the main Mouse Math menu. Some useful ranges are described below.

Shareware Ranges - the Shareware Version of Mouse Math is limited to problem ranges sufficient to learn the basic math facts. The Registered Version of Mouse Math allows much larger ranges that promote a general mastery of mental arithmetic.

Addition - ranges such as 1 to 5 + 1 to 5 are useful for learning basic addition facts. When its time to learn the addition of the number 6, just bump the ranges up to 1 to 6 + 1 to 6. If you want to drill on just the number 6, ranges such as 1 to 6 + 6 to 6 will insure that the number 6 is always part of each problem.

Once you have mastered the basics and have obtained the Registered Version of Mouse Math, try ranges like these to practice mental arithemetic:

```
1 to 10 + 20 to 30
1 to 20 + 11 to 80
11 to 99 + 11 to 99
```

Subtraction - to make a subtraction problem, Mouse Math first makes an addition problem using the specified addition ranges, and then converts this into a subtraction problem by switching terms around. This insures that subtraction is always matched to the addition problems you are currently working with.

Your Change - One special case type of subtraction is allowed for in the Registered Version of Mouse Math. If you set the addition ranges to 1 to 99 + 100 to 100 and do a subtraction drill, the program will ask problems like 100-34, 100-67 and 100-12. Mastery of this type of problem allows you to calculate your change from a dollar without having to rely on a calculator.

Multiplication - ranges such as 1 to 5 \mathbf{x} 1 to 5 are useful for learning basic multiplication facts. When its time to learn to multiply by the number 6, just bump the ranges up to 1 to 6 \mathbf{x} 1 to 6. If you want to drill on just the number 6, ranges such as 1 to 6 \mathbf{x} 6 to 6 will insure that the number 6 is always part of each problem.

Division - to make a division problem, Mouse Math first makes a multiplication problem using the specified ranges, and then converts this into a division problem by switching terms around. This insures that division is always matched to the multiplication problems you are working on.

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Help with Problems

Mouse Math is very simple and you should not have many problems in using it, but...

If you hear no sound it is because you do not have a sound system/driver installed correctly on your system. If you have this problem, refer to the documentation that came with your sound card. Once you hear the TADA sound when Windows starts, Mouse Math should start talking.

If the Binky pictures displayed after a drill are of poor quality, you probably have a black-and-white monitor, or are in a 16 color video mode. Refer to the documentation for your video card and see if you can't select a higher color resolution. The size of the pictures on the screen is affected by the resolution of your monitor. Any resolution is fine, but for maximum size you should use a 640x480 mode. Again, refer to your video card documentation for information on changing the video mode.

If you are using Windows 95, the images may not be centered in the first Mouse Math screen, and the text may appear grainy. These cosmetic problem do not affect the operation of the program. If you want things to look a little nicer, switch from Large Fonts to Small Fonts. To do this click on My Computer, Control Panel and Display. Now click the Settings tab and select the desired font size.

If you have another problem with a **registered** copy of Mouse Math, get in touch with us:

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How to Use Mouse Math

Mouse Math is a program which takes a slightly different approach to teaching addition, subtraction, multiplication and division. After selecting the type of drill you want, click on one of the pictures surrounding the menu and the drill will begin. As you click on correct answers on the Drill Screen, parts of a whimsical 'Binky' picture will appear. When the whole picture has been cleared, you will hear a sentence, or see a caption that will bring a smile to your face.

To use the main Math Mouse menu:

- Click on the type of problems you want. Selected operations are marked with an X in the ball before the name, and unselected operations have no X.
- Click on one of the pictures which surround the Mouse Math menu. This will cause the Drill screen to appear and the drill to begin.

Read about the Setup Menu to find out how to set the range of problems that Mouse Math will ask during a drill.

Recommended System: To get the most out of Mouse Math, you should have a video card running in at least 256 color mode and a Windows sound driver which supports .WAV files. **Minimum System**: At a minimum you need a color monitor and Windows to run Mouse Math.

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Click on Contents above to see a complete list of help topics.

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