USERS' GUIDE

NOTHIN'
BUT THE
FRACTIONS I

**A tutorial, practice, and drill program
for users of all ages**

(for Windows)

**INTERACTIVE EDUCATIONAL PRODUCTIONS Math
(IEPMath)**

Table of Contents

Introduction

Purpose And Use

Welcome! *Nothin' But The Fractions (NBTFractions)* is designed to provide the tutoring, practice, and drill necessary to become competent working with fractions. Its purpose is to support and enhance concept-based instruction. As in any field of endeavor, you must learn the concepts, develop the necessary skills, and become proficient in the use of those skills before you reach competency.

Our product should be used in conjunction with instruction that emphasizes applications of fraction skills. Using *NBTFractions* a few times per week will accomplish lasting proficiency and future mathematical confidence

Objectives

After receiving *Certificates Of Mastery* in all subjects of *NBTFractions I*, you will be able to:

1. define key fraction terms and concepts,
2. recite problem-solving steps and solve fraction problems involving identifying fractions, mixed numbers & improper fractions, reducing fractions, and finding the lowest common denominator,
3. work fraction problems in a timely and competent manner,
4. gain confidence and maturity that will enable you to learn more advanced mathematical concepts with ease.

Method

NBTFractions provides concise and complete tutorials that review key points, steps, and an animated example for each skill. It then provides quality practice and drill by having the user work through problems in a step-by-step manner, offering assistance along the way, and providing immediate feedback after every step. *NBTFractions* directs the computer to randomly generate problems "on the fly." For every problem, the program is recording the user's work in a report that can be viewed or printed at any time.

Program Format

The basic format of *NBTFractions* is simplicity, ample opportunity for competency, and encouragement of mastery. After signing in, from the *Main Menu,* click on:

1. *Options to* set sound and *Drill*-mastery options.
2. *Introduction* to hear Cecil and the rest of our cast give a brief review of each of the activities and features of our program.
3. *Tutorial* for introductions by Ms. Honeyberry and her students, and comprehensive discussions of concepts, definitions, problem-solving steps, and an animated example for each of the 16 problem types.
4. *Practice* for unlimited step-by-step "hands-on" practice on randomly-generated problems. A simple click gets you tutoring and help one step at a time.
5. *Drill* for timed problem sets to test for mastery. We challenge you to achieve at least one *Certificate Of Mastery* for each of the 16 problem types!

1. Getting Started

Installing The Program

[Step 1] **Windows 3.1:** In the Program Manager, go to the **File** menu and select **Run**.
          Windows 95 and 98: From the START menu, select **Run**.

[Step 2] In the Command Line box, type the letter for your computer's CD ROM drive, followed
          by , **:\SETUP.EXE** (for example D:\SETUP.EXE)

[Step 3] Follow the Setup program instructions.

Starting The Program
>   1.From *Desktop,* click *Start* and then *Programs.*
>   2.From the *Programs* menu, find and click the *IEPMath* directory and then the
>   *NBTFractions I* name.
>   3.From the opening screen of *Nothin' But The Fractions I,* click *Click anywhere
>   on the screen to start.*

Signing In: The *Sign-In* Screen
>   This is where you identify yourself to *NBTFractions.* Click *New User* and enter
>   your name; you may use up to nineteen letters (including a space between your
>   first and last name -- first eight letters must be unique). The program will now
>   address you by name, and it will track and report your progress. After pressing
>   <Enter> and verifying the spelling of your name, click *Start* to begin working the
>   program.
>
>   While in the program, if you wish to change to another user, you must click *Exit*
>   located in the lower-right corner of the *Main Menu.* You then have the option of
>   returning to the *Sign-In* screen to select another user. The *Retail* version of the
>   program will accommodate ten users at a time. The *Academic* version will keep
>   records of 50 classes of up to 50 students per class.
>
>   Upon re-entering the program, click your name, and then click *Start.* If you wish
>   to delete a name, click the name and then click *Delete. NBTFractions* keeps
>   records of every activity that you perform within the program. By deleting a
>   name, you are also deleting the records of that user.

2.   Main Menu

The Home Base

The *Main Menu* is the "home base" of *NBTFractions.* You can access the *Main Menu* from any place in the program by clicking *Main* located in the lower-right corner of the screen.

Getting To The Activities

It is highly recommended that you do the activities in order until competency is attained. They are represented by the four main buttons on the *Main Menu--Introduction, Tutorial, Practice,* and *Drill.* Complete explanations of each of the activities exist in subsequent chapters of this *Users' Guide.*

Using The Features

At the bottom of the *Main Menu,* are the feature buttons. By clicking:
1. *Help* to have access to the *Users' Guide* with *search* assistance and *hyperlinking.*
2. *About* to view the copyright and credits, or access the *IEPMath* website--www.iepmath.com.
2. *Options* to make individual settings for hearing or disabling voice, sound effects and music, customizing *Worksheets* and *Certificates Of Mastery*, and setting accuracy level and time limits for problem sets of the *Drill* activity.
3. *Reports* to gain access to records of the user's performance since he/she first signed in.
4. *Worksheets* to choose "hard-copy" problem sets with answer key for additional practice away from the computer.
5. *Exit* to quit the program or change to another user.

3.   Getting Help

Where's *Help*?

Help is available from all screens of *NBTFractions.* The *Help* button appears at the bottom of most screens, and its key <F1> is available at any point in the program. You may use it as often as you wish. To exit *Help,* click the "x" in the upper-right corner of the *Help* screen. You will return to the exact location in the program from which you selected *Help.*

How Does *Help* Work?

Help gives you direct access to the *NBTFractions Users' Guide.* From its *Table Of Contents*, click on the name of the topic for which you wish information. By clicking on any word written in green and underlined, you will view more detailed information. Within *Help*, to return to a previous screen, click *Back.*

If you become lost in *NBTFractions*, determine the name of the activity or screen that appears before you (activity and screen titles are written at the top or sides of each screen). Access *Help,* and then click on the name of the activity or screen title from the *Table Of Contents.*

4. Choosing Options

Getting to *Options*
After signing in*,* you will advance to the *Main Menu.* First take a few minutes to select your preferences by clicking on *Options* from the bottom of the *Main Menu*. You will see two tabs--*General* and *Drill Times*. To access either one, click on its tab.

General Tab--*Drill* Activity Scoring
1. *Problems:* Adjust the level of mastery in the *Drill* activity by indicating the number of problems per set. For younger users, you may wish smaller sets. The *default* has been set at 10 problems. Type in any number between 1 and 50.

2. *Passing:* Adjust the level of mastery in the *Drill* activity by indicating the number of problems that must be answered correctly. This must be equal to or less than the number of problems selected per set (1 above). The *default* has been set at 10 problems correct.

General Tab--*Sound*
1. *Effects: NBTFractions* provides an interesting assortment of sound effects. Hear various congratulatory sounds when you answer problems correctly! Why not spice up your studying by turning on the *Effects* option? Click the box adjacent to *Effects* to turn on (checked) or disable (unchecked) this option.

2. *Voice:* Do you wish to hear the voices of our cast as they "dialogue" in introducing you to our program in *Introduction* and to the instruction in *Tutorial*? Click the box adjacent to *Voice* to turn on (checked) or disable (unchecked) this option.

3. *Music:* Modern *techno* music is available throughout the program. Click the box adjacent to *Music* to turn on (checked) or disable (unchecked) this option.

General Tab--*Certificate Border*
1. A popular feature of the *NBTF* series is the *Certificates Of Mastery* which can be printed after having achieved mastery in any problem type of the *Drill* activity. Each user can determine the colors of his/her certificates by clicking the *Color 1* box, then the *Color 2* box, and for each, clicking the selected color from the drop-down color palette.
2. Click *Test* to preview what a *Certificate Of Mastery* will look like once it has been achieved in the *Drill* activity*.*

General Tab--*Worksheets*
NBTFractions will print randomly-generated worksheets in color. You can determine the color of your worksheets by clicking the *Color* box, and then clicking the selected color from the drop-down color palette.

Drill Times **Tab**

Like *Drill Activity Scoring* on the *General* tab, *Drill Times* is another adjustment for the problem sets within the *Drill* activity. Here is where you may increase or decrease the time limit from its default setting to meet the individual needs of each user for each level. The 16 levels are equivalent to the 16 problem types of the *Subject Menu*. The default settings were made for a user of an approximate sixth grade math level. Click the box adjacent to *Show Timer* to turn on (checked) or disable (unchecked) the display of a timer within the problem sets of *Drill*.

Saving Your Settings

If you made any changes, before exiting *Options*, click on *Save* to save the new settings. Please note that the settings within *Options* have been set at default settings. When changes have been made, the changes only apply to the current user. To make changes for another user, that user must be signed in, and then selections made within *Options.*

5. The Introduction

Get It From The Experts

Take about 10 minutes to go through the *Introduction* before starting the three main activities--*Tutorial, Practice,* and *Drill.* If you wish to hear the experts--Ms. Honeyberry, Abe, Larry, and crew as you read their dialogue, make sure *Voice* is activated in *Options* (located at the bottom of the *Main Menu*). The cast's new user, Cecil, has some trepidation about his mathematics skills, but after getting advice on all aspects of *NBTFractions,* he feels like the *King Kong of Fractions.*

How Does *Introduction* Work?

From the *Main Menu*, click *Introduction.* From the *Introduction* screen, click the name of any topic (at the bottom of the screen) for which you wish information. The best method of introducing yourself to *NBTFractions* is to start with the first button on the left--*About.* Then try the remaining buttons--*Subjects, Tutorial, Practice, Drill, Reports, Worksheets, Options, Help, and What's Next.* Each takes about 1 - 3 entertaining minutes! As always when you finish an activity, click *Main* to return to the *Main Menu.*

6. The Subject Menu

What Are The Subjects And Problem types?

NBTFractions I contains the following subjects and problem types.

1. *Identifying Fractions*:
A. *Shading diagrams to match fractions*
B. *Writing fractions to match diagrams*
C. *Classifying fraction types*
D. *Writing fractions using numerals and words*

2. *Mixed Numbers and Improper Fractions*:
A. *Writing improper fractions to match diagrams*
B. *Writing mixed numbers to match diagrams*
C. *Converting mixed numbers to improper fractions*
D. *Converting improper fractions to mixed numbers*

3. *Reducing Fractions*
A. *Identifying equivalent fractions from diagrams*
B. *Selecting reduced forms of fractions*
C. *Reducing fractions to lowest terms*
D. *Writing and reducing fractions from word problems*

4. *Lowest Common Denominator (LCD)*
A. *Building fractions to higher equivalents*
B. *Determining LCD's from higher equivalents*
C. *Finding the prime factors of denominators*
D. *Determining LCD's from prime factors*

Getting To The *Subject Menu*

From the *Main Menu,* click on the name of any of the three main activities--*Tutorial, Practice,* or *Drill,* to go directly to the *Subject Menu* for that activity. The *Subject Menu* lists the subjects and four problem types of each subject. To select a problem type, click its name.

At any time within *Tutorial, Practice,* or *Drill*, you may change to another subject, by clicking *Subject,* and then from the *Subject Menu,* choose another problem type.

Mastering The Problem Types

The problem types listed under the *Subject Menu* are arranged in a sequence for learning fractions. It is suggested that you master each of the 16 problem types in order and one at a time. For each, first do the *Tutorial* activity, then the *Practice* activity, and then the *Drill* activity. When you have achieved mastery, go back to *Tutorial* and from its *Subject Menu,* select the next problem type and repeat the process.

7. The Tutorial Activity

Getting to the *Tutorial* Activity
> From the *Main Menu*, click *Tutorial.* From its *Subject Menu,* click the name of the problem type for which you wish instruction.

How Does *Tutorial* Work?
> After clicking the name of a problem type from the *Subject Menu,* you are presented a *Table Of Contents* for that problem type's *Tutorial.* You may click the name of any of the topics, or you may click *Introduction* and do the topics in order. From any page, at the bottom of the screen, click "Þ" to progress to the next page or "Ü" to review the previous page.

Tutorial Introduction
> By clicking *Introduction,* you may read as well as listen to Ms. Honeyberry and students give a brief opening discussion of the specific problem type.

Concepts, Definitions, and Topics
> After the *Tutorial Introduction,* the concepts, definitions, and topics are presented in a concise but comprehensive manner. Review page by page by using the "Þ" or "Ü" buttons at the bottom of each screen.

Practice Preview
> Each tutorial will provide you a *screen shot* and directions of the type of problem you will be doing in the *Practice* and *Drill* activities.

Steps To Problem Solving
> Each tutorial provides step-by-step directions for solving a specific problem type. These are covered in detail in the *Tutorial* activity, and are available by clicking *Steps* at the bottom of the screen in the *Practice* activity.

Animated Example
> After providing steps, each tutorial then demonstrates the use of those steps with an animated example; this replicates what you will be asked to do in the *Practice* and *Drill* activities.

Buttons At Bottom Of Screen
> At the bottom of the *Tutorial* screen there are four buttons. Click on:
> 1. *Help* (or press <F1>) to search for *Help* within the *Users' Guide.*
> 2. *Subject* to return to the *Subject Menu* and to review the *Tutorial* for another problem type.
> 3. *Practice* to work or view a practice problem of the problem type being reviewed in this *Tutorial.*
> 4. *Main* to return to the *Main Menu.*

8.   The Practice Activity

Getting To The *Practice* Activity

From the *Main Menu*, click *Practice.* From its *Subject Menu,* click the name of the problem type for which you wish to practice.

What Is the *Practice* Activity?

Whether you'd like to play a musical instrument, participate in a sport, or take on any new challenge, it takes practice to become competent. For each problem type within *Practice,* you are provided step-by-step problems for the building and sharpening of your skills*.* The problems are presented one at a time. After completing a problem, click *More* at the bottom of the screen for continued practice.

How Does *Practice* Work?

From the *Subject Menu* of the *Practice* activity*,* select a problem type for which you have reviewed in *Tutorial.*
1. Carefully read the directions at the top of the screen.
2. Work the problem using the process as demonstrated in the *Animated Example* of *Tutorial.*
3. Pencil and paper should not be necessary since you are guided through all detail and computations on-screen.
4. Some problem types involve using the mouse exclusively, others the keyboard, and some a combination of the two.
5. Use the <Tab> key to change "fields" from one box to another.
6. Click on *Check Answer,* or press <Enter> to determine if you answered each step correctly.

Need Hints Or Clues?

If you are a little unsure of yourself when attempting a problem, click *Steps* at the bottom of the screen. These are the same steps as covered in *Tutorial* for this problem type.

If you need additional help, click *Tutorial* at the bottom of the screen, and you can access any topic of the *Tutorial* for that problem type. From *Tutorial,* click *Practice* to return to where you left off.

If you answer any step incorrectly, the program will let you know the correct answer, and allow you to move on. Don't be afraid to make mistakes. When you do make an error, see if you can determine what you did wrong. Take your time. Examine both the correct answer and your answer and try again! One purpose of *Practice* is to allow you to make mistakes so that you may learn from them!

How Do I Get Another Problem?

One of the main attributes of *NBTFractions* is its ability to randomly generate problems quickly, and then to guide and assist you through those problems.
1. When you have finished working a problem, click *More* at the bottom of the screen to try another.
2. Work the new problem and when done, click *More* again.
3. Keep clicking *More* for addition problems.

How Many Problems Should I Do?

Doing a few problems correctly does not mean you are an expert. Since "practice makes perfect", there is no real end to practicing. Once you are consistently answering all steps of the problems correctly, do at least 10 more.

There is a difference between competency and expertise. Competency means you have reached the minimum in mastery while expertise means that on a consistent basis you have reached the maximum in mastery. To obtain expertise, practice a little as often as possible--every day is the best! Even once you obtain mastery in any problem type, it is advisable to keep practicing to prevent losing your skills. The Los Angeles Lakers' Kareem Abdul-Jabbar had the best *sky hook* in basketball, yet he still practiced every day! Fraction mastery is available to you; do what the great achievers do--practice! Use *NBTFractions* every day!

What's Next?

Once you are consistently carrying out all steps correctly, try to master this problem type in the *Drill* activity. To get to the *Drill* activity, return to the *Main Menu* and select *Drill*.

Buttons at Bottom of Screen

At the bottom of the *Tutorial* screen there are six buttons. Click on:
1. *Help* (or press <F1>) to search for *Help* within the *Users' Guide.*
2. *Subject* to return to the *Subject Menu* and to practice another problem type.
3. *Steps* to view the same *Steps* as provided in the *Tutorial* for that problem type.
4. *Tutorial* to review any of the topics or the *Animated Example* of that problem type's *Tutorial.*
5. *More* to work another problem; keep practicing, so keep clicking *More*!
6. *Main* to return to the *Main Menu.*

9. The Drill Activity

Getting To The *Drill* Activity

From the *Main Menu*, click *Drill.* From its *Subject Menu,* click the name of the problem type for which you wish to achieve mastery.

What Is the *Drill* Activity?

In the *Drill* activity, you are striving for mastery by working problem sets of each problem type. To reach mastery, you must answer a certain number of problems correctly within a time limit. The number of problems, the accuracy level, and the time limit per problem set can be set in *Options* (from the *Main Menu*). Upon reaching mastery, you may print a *Certificate Of Mastery* that includes your name, date, and your accomplishments. For many educational programs, these certificates serve as verification of completion of assignments.

How Does *Drill* Work?

From the *Subject Menu* of *Drill,* select a problem type for which you have already practiced successfully in *Practice.*
1. The first screen specifies the number of problems of the set, the number to be answered correctly, and the time limit. To begin, click *Continue* at the bottom of the screen.
2. For each problem, quickly read the directions and work the steps. The directions and steps are the same as those in *Tutorial* and *Practice.* Use <Tab> to move from one box to another. As per the given directions, type in answers from the keyboard, or use the mouse to click, drag, and drop. When you are certain of your response, click on either *Next Step* or *Submit,* or press <Enter>.
3. Unlike *Practice,* you will be given no feedback until the end of the set.
4. Work the problems as quickly as possible. If enabled, a timer is displayed in the upper-right corner that indicates the amount of time remaining. The timer can be set to be displayed or hidden from the *Drill Times* Tab of *Options* (from the *Main Menu*). If you run out of time, the *Drill* will end immediately.
5. At the end of the problem set, your work is scored, and you are given directions on what to do next.

What If I Do Not Pass?

If you did not reach mastery, click *Review* at the bottom of the *Results* Screen. Take a few moments to review both your answer and the correct solution to each problem you answered incorrectly.
If you ran out of time, try to work the problems more quickly!
In either case, keep trying! To begin another set, click on *Try Again.*

It is not expected that you reach mastery within your first few attempts. Keep retrying and take comfort if you improve upon previous attempts. It will probably take a few sessions before you can expect mastery. Take some time to go back and review in *Tutorial* and practice in *Practice.* Then return to *Drill* and try again.

Need Hints Or Clues?

There is no access to hints or clues within *Drill* except at the conclusion of each set. For hints and clues for any problem type, you must go back to either the *Tutorial* or *Practice* activities.

Besides serving as a means of verifying mastery, one purpose of *Drill* is to provide you experience in math testing situations. The more you achieve success with the *drills*, the more comfortable you will become with other testing situations.

Certificates Of Mastery

After you have mastered a problem set of any problem type, the *Results* screen will give you the option of viewing or printing a *Certificate Of Mastery.* Click on either *View Certificate* or *Print Certificate* from the bottom of the screen.

Even if you choose not to print a *Certificate Of Mastery,* the record of your achievement will always be available in *Reports* (from the *Main Menu*).

What's Next?

If you tried a number of times and did not reach mastery, don't worry! Go back to the *Main Menu,* select *Tutorial*, and work more of the same problem types in *Practice*.

If you did reach mastery, congratulations! Now go back to the *Main Menu* and do the *Tutorial* and *Practice* for another problem type.

10. Reports
Reporting User Progress

As each user works within the program, *NBTFractions* is recording the activity in its data base. The data base is equipped to handle ten users at a time (*Retail* version) and 50 classes of 50 students (*Academic* version). For each user, the data is kept for an unlimited period of time. Please note that when a user's name is deleted from the *Sign-In* screen, all data for that user is erased.

Viewing Or Printing *Daily Reports*

To view any day's *Daily Report* for a user, from the *Sign-In* screen*,* click the user's name. From the *Main Menu,* click on *Report.* On the *Reports* screen*,* you have the following options:

- For today's results, click on *Today.*
- For the results of any day this month, click on a day highlighted in red on the calendar; the red indicates a day in which the user worked the program.
- For the results of a day from a previous month, first locate the month, click on the "back" arrow at the top of the calendar, then click on any day highlighted in red.

For any day clicked, it will turn from red to maroon; then click *View/Print.* From the *Report Set-up* box, click *Preview* to view or *Print* to print. For printing, under *Options,* indicate the number of copies you wish to have printed.

Data of the *Daily Reports*

The report for each day is listed by activity--*Tutorial, Practice* and *Drill.* The report for each problem type shows the number of problems answered correctly, the number attempted, the time spent on each (in minutes and seconds), and for *Drill,* whether a *Certificate Of Mastery* was achieved.

At the top of the *Daily Reports* screen, buttons appear for zooming in on any part of the report, printing the report, scrolling left and right, and closing the screen (the door icon).

Using The Reports

Depending upon the learning situation, the reports can be used in a variety of ways. By examining a user's previous report, directions or assignments for today's session can be given. For example, the user should begin by spending time reviewing skills in which s/he proved previously proficient to reinforce competency. This can be done by doing a little practice in the *Practice* activity. Then, s/he should attempt to achieve another *Certificate Of Mastery* in the *Drill* activity but in a shorter time than done on a previous day.
Next, the user should concentrate on skills not yet mastered. For each of these skills, s/he should slowly and carefully work through the *Tutorial* activity. Then sufficient time should be spent developing the skills in the *Practice* activity*.* Attempts at mastery in the *Drill* activity should not be attempted until the user is consistently answering problems correctly in the *Practice* activity*.*

Use the results from *Reports* to challenge users to "try to beat their best" both in accuracy and time from a previous day. Print the report from the previous day and have the user refer to it to increase his/her motivation.

11. Worksheets

Problem Sets Contained In *NBTFractions*

NBTFractions provides for the printing of worksheets of one problem type from each of the subjects. This feature enables you to take your work with you when a computer is unavailable. In situations where there are more users than computers, after one user works with the program for a certain period of time, problem sets can be printed. The user can then be working with the printed problems while the next user takes his/her turn at the computer. These sets are randomly generated so that it is unlikely that any two sets would be the same. You may print as many copies as you wish. With each printing, you may choose to also print an *Answer Key*.

The problem types for which worksheets can be printed are: *Fractions to match diagrams, Mixed from diagrams, Reduced forms of fractions,* and *LCD's from higher equivalents.*

Printing *Worksheets*

From the *Main Menu,* click *Worksheets.* Then click the name of a subject for which you wish worksheets. A *Worksheet* box will appear where you may indicate the number of copies to be printed and if you wish to print an *Answer Key.* Make your selections and click *Print.*

To set the color scheme for your worksheets, from the *Main Menu,* click *Options,* then the *General* tab, and then *Color.*

12. Finishing Up

Finding Out How Well You Performed

To view your *Daily Report* for today, from the *Main Menu,* click on *Report.* Print the report if you need to verify your progress for the day.

Exiting The Program

From the *Main Menu*, click *Exit* (lower-right corner), or at any place within the program, press <Esc>. A box will appear where you will be asked if you wish to return to the *Sign-In* screen, or if you wish to exit the program. By exiting, you will return to the *Desktop.*

13. Who We Are

IEPMath

IEPMath is an educational software company of teachers and educators whose goal is to create high quality instructional materials with an interactive, learn-and-mastery orientation. Our purpose is to provide instructional curriculum that meets the needs of users of all ages, teachers, parents, and schools in a manner which is comprehensive, effective, and easy to use.

For further assistance: Call (909) 880-0820 or E-Mail: iepmath@iepmath.com, or write:
IEPMath
PO BOX 54
Lytle Creek, CA 92358-0054

Getting To Know You

We are interested in knowing about you. Please fill out the enclosed *Registration Card*. We will:
- Send you information about our other educational software products.
- Send you information regarding new versions of *NBTFractions* as soon as they are available.
- Provide you with discounts on all of our products.

Product Support

Product support is available to registered users on the Internet: www.iepmath.com

You may also call 1-800-216-8555. We guarantee your question(s) will be answered within 24 hours.

The *Nothin' But The Facts Series*

NBTFractions (Parts I & II) will assist the user in learning, practicing, and mastering the concepts and skills of fractions. Its is a part of the *Nothin' But The Facts Series*. The development of the series is on-going; this program augments *Nothin' But The Facts--Arithmetic Review* and *Nothin' But The Facts--Pre-Algebra Skills*

Nothin' But The Fractions I covers the topics of identifying and writing fractions, writing improper and mixed fractions, reducing fractions, and determining lowest common denominators.

Nothin' But The Fractions II covers the topics of adding fractions, subtracting fractions, multiplying & dividing fractions, simplifying complex fractions, and ratios.

All programs of the *Nothin' But The Facts Series* make use of the method of mastering mathematics through learning, practicing, and drilling. The programs

provide the ability to quickly access skills, provide unlimited opportunity for practice and drill, give immediate feedback, keep track of progress, and verify and reinforce mastery. The programs randomly generate individual problems, problem sets, and worksheets. They stimulate learning through challenge, humorous characters, dialogue, and sound effects. They also provide the user, teacher, or parent the flexibility to adjust parameters and requirements of mastery to best meet user needs.

Philosophy

It is the philosophy of *IEPMath* that understanding concepts, memorizing facts and steps, practicing of skills, and testing for competency are vital in gaining proficiency in mathematics. In an effort to create methods which are fun and stimulating, many products today fall short by failing to include an emphasis on competency in learning the concepts, problem solving techniques, and then providing for ample practicing and drilling. *IEPMath* attempts to combine the stimulating and responsive benefits of the computer with the "time-proven" instructional methods of the past. The focus of many programs is for children's use only; *IEPMath* strives to meet the educational needs of users of all ages!

Appendix
Interface Commands

Mouse Command	Keyboard Command	Meaning & Function
Click *Help*	F1	**Help:** To receive assistance and directions from the *Users' Guide.*
Click *Report*	F2	**Reports screen:** To view or print a *Daily Report.*
Click *Main*	F3	**Main Menu:** To proceed to the "home base" screen.
Click on *Subject*	F4	**Subject Menu:** To proceed to the screen where you may choose a problem type.
Click *Worksheets*	F5	**Print *Worksheets*:** To proceed to a box where you can print w*orksheets.*
Click *Steps*	F6	**Problem-Solving *Steps*:** To proceed to a box delineating problem-solving *Steps.*
Click *More*	F7	**Work Another Problem:** To replace the problem on the screen with another randomly-generated problem*.*
Click *Options*	F8	**Options:** To proceed to a box for: 1. turning *on* or *off voice*, *music*, or *sound effects* 2. setting *Drill* problem set length, accuracy, and time limits 3. selecting color scheme for *Worksheets* and *Certificates.*
Click *About*	F9	**Copyright, credits, & website access:** To view copyright & credit information of this version, and access the *IEPMath* website*.*
Click *Introduction*	I	**Introduction:** To proceed to the *Introduction* for descriptions of the activities and features of the program.
Click *Tutorial*	T	**Tutorial:** To proceed to the *Tutorial* activity for instruction, steps, and an animated example.
Click *Practice*	P	**Practice:** To proceed to the *Practice* activity for "on-screen" practice.
Click *Drill*	D	**Drill:** To proceed to the *Drill* activity for problem sets in your quest of mastery.

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