# The Abacus Project

# TEACHER RESOURCE GUIDE

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# Contents

# What is The Abacus Project?

The Abacus Project is an interactive mathematics program designed to develop the logic and problem-solving skills of children ages 7 – 9. However, people of all ages will find it engaging and challenging.

The program is made up of three game-play modules and a powerful administration utility.

## 1. Puzzle Play

In this module, students solve a series of mathematics puzzles. The puzzles challenge and build students' skills in addition, subtraction, multiplication and division.

The puzzles also test and build students' knowledge of:
- place value
- fluid measurements
- sequencing
- ratios
- fractions
- shape, transformations and space
- patterns and relations
- data analysis and probability

When students solve puzzles correctly, they are congratulated by Abacus, their PDA-like guide. If students have trouble solving puzzles, Abacus offers helpful hints.

Teachers can adjust the puzzle Difficulty Level for a whole class or for individual students.

Along the way, students receive Participation, Speed and Expert awards for solving puzzles.

## 2. Arcade Play

In this module, students engage in an environmental arcade game interspersed with the mathematics puzzles from Puzzle Play.

Students take on the role of a child named Kim. On the way home from school, Kim falls into a mysterious underground laboratory. With help from the sometimes-forgetful Abacus, Kim must find a way out of the lab.

Along the way, Kim must pass through a series of locked security doors. To open a door, students must solve a math puzzle.

Strange forces are on the loose in the lab. Kim must navigate safely past hostile blobs, flying critters, blasts of steam and many other obstacles.

## 3. Flash Cards

The Flash Cards module aims to help children increase their speed and accuracy in basic math problems.

Students race against time to solve a series of addition, subtraction, multiplication or division problems.

Students can choose from 4 time limits and 2 Difficulty Levels.

## 4. Administration

For assessment, a powerful record-keeping module allows teachers to track class and student results in the puzzles and in Flash Cards.

Because school computer-lab time is limited, School Editions of The Abacus Project provide teachers with options to restrict Arcade Play and to create customized Assignments.

In summary, the Abacus Project's goal is for children to have more time to spend on higher-level thinking and problem solving than on basic computation.

For more-detailed information on each module, please refer to the on-screen Help. Click the question-mark icon in the upper-right corner of the screen.

You can also find a printable version of Help on your Abacus Project CD-ROM.

The Help file is saved in PDF format. To open it, you'll need the free Adobe Reader software from www.adobe.com.

# Who Should Use The Abacus Project?

The Abacus Project is suitable for both school and home use. Although the learning outcomes match the grades 2 – 4 curriculum, this program is an excellent resource for enrichment, remediation and students at risk. In the puzzles, Difficulty Levels 1 – 3 are suitable for younger children, while Difficulty Levels 5 – 6 can challenge an experienced math teacher.

The Abacus Project is an excellent educational program for home use. The Arcade Play module of the program provides children with arcade game enjoyment. But in order for them to progress through the levels, they must challenge themselves by completing math puzzles. The Arcade Play module also includes an option (Health Stations) in which children can boost their health by solving more puzzles.

The ultimate goals of the Abacus Project are to assist in improving children's problem-solving skills and to foster the love of learning.

Because school computer-lab time is limited, School Editions of The Abacus Project provide teachers with options to restrict Arcade Play and to create customized Assignments. For assessment, a powerful record-keeping module allows teachers to track class and student results in the puzzles and in Flash Cards.

School Editions provide a utility (the Administration Menu) that allows teachers to:

- set up Classes and Students
- assign students or classes specific puzzles at specific Difficulty Levels
- restrict Arcade Play
- access any level of Arcade Play at any time
- access the record-keeping section for assessment

# Teaching Strategies

Students can use The Abacus Project independently or in a group. The Puzzle Play module includes a timer so that students can compete against their own previous time, in a group or in teams. "The Maze" and the "Beakers" puzzles lend themselves to group collaboration and sharing of ideas and rules.

Each puzzle is randomly generated from a database of questions of similar difficulty. The number of attributes (or variables) determines the Difficulty Level of each puzzle that the children are presented with.

# Puzzles

The puzzles are "mathematical" in that they require problem solving and critical thinking. In many cases, the puzzles use real-life objects or activities (such as gears, circuits and mixing paint) so that students can relate to the puzzles.

Problem solving is a skill that students will use in all areas of their lives. Children who can effectively add, subtract, multiply and divide yet not know when to apply these skills are not well prepared.

The Abacus Project's puzzles engage students by presenting problem-solving activities that become progressively more difficult. Children are encouraged to explore and learn through discovery rather than simply follow instructions.

The puzzles are adaptive, meaning that the level of difficulty is automatically adjusted based on the student's previous time results. This feature ensures success, yet motivates children to improve their mathematical ability. Each of the 8 puzzles has 6 Difficulty Levels.

The puzzles include a hint feature that provides the player with hints to solve each puzzle. At specific time intervals, Abacus blinks to indicate that a hint is available.

The puzzles have been correlated with the standards of the National Council of Teachers of Mathematics (NCTM).

# 1. MAGNETS

## Object of the Puzzle:

Players increase or decrease magnetic forces using addition and subtraction. When the forces are equal, a bar floats in the middle of the screen and completes a circuit. A complete circuit allows power to flow.

## Learning Outcomes:

### Numbers and Operations
*Number Operations*
- Use a variety of strategies to apply basic operations (+,-) to whole numbers and use these operations in solving problems.

*Manipulate Addition and Subtraction*
- to 10,000

*Implied Skills*
- Visual display of cause and effect when decreasing or increasing magnetic force
- Critical thinking and problem solving

## Difficulty Levels:

Difficulty Level 1: Here, players learn the rules of the game: Add two single-digit whole numbers from 0 to 5 to get a result between 1 and 10.
Difficulty Level 2: Add two whole numbers between 0 and 10 to get a result between 0 and 20.
Difficulty Level 3: Add two whole numbers between 0 and 50 to get a result between 0 and 100 with no carrying.
Difficulty Level 4: Add two whole numbers between 0 and 50 to get a result between 0 and 100 with carrying.
Difficulty Level 5: Add two whole numbers between 0 and 500 to get a result between 0 and 1000.
Difficulty Level 6: Add two whole numbers between 0 and 5000 to get a result between 0 and 10,000.


# 2. BEAKERS

## Object of the Puzzle:

Players see two or more beakers. Pipes connect the beakers. Players can fill the beakers with liquid and transfer the liquid between beakers. Players must fill one beaker with exactly the correct amount to fill the yellow beaker on the left. When the liquid in the yellow beaker pushes the float to the top, the circuit is complete and the power turns on.

## Learning Outcomes:

### Numbers and Operations
*Number Operations*
- Use a variety of strategies to apply basic operations (+,-) to whole numbers and use these operations in solving problems.

*Manipulate Addition and Subtraction*
- To 18

**Patterns, Functions and Algebra**
*Patterns and Relationships*
- Identify and create patterns
- Recognize patterns, scope and sequence
- Investigate and establish rules for numerical patterns
- Use relationships to summarize and extend patterns
- Recognize that patterning results from repeating an operation
- Relate growing and shrinking patterns to addition and subtraction

**Measurement**
*Measurement*
- Estimate, measure and compare measures using whole numbers

## Difficulty Levels:

The Difficulty Levels are based on the number of sequential steps necessary to arrive at the correct amount of fluid.

Difficulty Level 1: Here, players learn the rules of the game. This level requires 1 "move" to get to the target amount of fluid indicated in the yellow beaker.
Difficulty Level 2: Minimum 2 moves
Difficulty Level 3: Minimum 3 moves
Difficulty Level 4: Minimum 4 moves
Difficulty Level 5: Minimum 5 moves
Difficulty Level 6: Minimum 6 moves

# 3. TRANSFORMERS

## Object of the Puzzle:

Players arrange the transformers in order of increasing size from left to right. Bigger transformers can "jump" over smaller transformers. Once the transformers are in the correct order, the circuit is complete and electricity can reach the power button.

## Learning Outcomes:

**Patterns, Functions and Algebra**
*Patterns and Relationships*
- Identify and create patterns
- Recognize patterns and rules
- Sequencing
- Investigate, establish and communicate rules for non-numerical patterns
- Use relationships to summarize and extend patterns

**Data Analysis and Probability**
*Data Analysis*
- Organize, arrange and sort data (objects)
- Sort objects to one attribute

**Measurement**
*Ordering*
- Classify, describe and arrange objects by size using comparative language
- Compare and order objects by height

## Difficulty Levels:

The Difficulty Levels are based on the number of transformers to be arranged in sequence.

Difficulty Level 1: Here, the player learns the rules of the game. There are 2 transformers. Move the largest to the right.
Difficulty Level 2:   3 transformers
Difficulty Level 3:   4 transformers
Difficulty Level 4:   5 transformers
Difficulty Level 5:   6 transformers
Difficulty Level 6:   7 transformers


# 4. GEARING UP

## Object of the Puzzle:

Players must balance the left and right magnetic forces. The purple bars are magnets, and the spinning gears supply power to the magnets. If the player adds power to a magnet, it becomes stronger. If the player takes away power from a magnet, it becomes weaker. When the forces are equal, the metal bar floats in the middle and completes the circuit.

This puzzle puts players' **multiplication** skills to work.

**What are "RPM" and "Ratio"?**
RPM means "revolutions per minute". The higher the RPM, the faster the gear spins.

A ratio is a way of comparing two numbers. For example, in this puzzle, if the Gear Ratio is 1:5, one gear is five times the size of the other gear.

The Input RPM **multiplied** by the Gear Ratio equals the Output RPM.

Players must adjust the Gear Ratio until the Output RPM is equal to the RPM of the gear that powers the left magnet.

## Learning Outcomes:

**Numbers and Operations**
*Number Concepts*
- Numbers to 1215

*Number Operations*
- Use a variety of strategies to apply a basic operation (X) to whole numbers and use this operation to solve problems

*Manipulate*
- Manipulation multiplication to 15 X 9 X 9

## Difficulty Levels:

Generating random whole numbers within a specified range sets the Difficulty Levels.

RPM (target number) = (Input RPM) X (Gear 1 (Ratio: always set at 1)) X (Gear 2 (Ratio: always set at 1)) = (Output RPM)

| Difficulty Level 1: | | | | |
|---|---|---|---|---|
| RPM (1-9) | Input RPM (1-9) | | Gear 1 (1-9) | Output RPM (1-9) |
| | | | | |
| Difficulty Level 2: | | | | |
| RPM (10-25) | Input RPM (2-12) | | Gear 1 (1-9) | Output RPM (10-25) |
| | | | | |
| Difficulty Level 3: | | | | |
| RPM (27-49) | Input RPM (3-12) | | Gear 1 (3-9) | Output RPM (27-49) |
| | | | | |
| Difficulty Level 4: | | | | |
| RPM (50-81) | Input RPM (5-12) | Gear 1 (0-3) | Gear 2 (3-9) | Output RPM (50-81) |
| | | | | |
| Difficulty Level 5: | | | | |
| RPM (84-144) | Input RPM (2-12) | Gear 1 (0-7) | Gear 2 (3-9) | Output RPM (84-144) |
| | | | | |
| Difficulty Level 6: | | | | |
| RPM (147-1215) | Input RPM (2-15) | Gear 1 (2-9) | Gear 2 (4-9) | Output RPM (147-1215) |

# 5. GEARING DOWN

## Object of the Puzzle:

Players must balance the left and right magnetic forces. The purple bars are magnets, and the spinning gears supply power to the magnets. If players add power to a magnet, it becomes stronger. If players take away power from a magnet, it becomes weaker. When the forces are equal, the metal bar floats in the middle and completes the circuit.

This puzzle puts players' **division** skills to work.

**What are "RPM" and "Ratio"?**
RPM means "revolutions per minute". The higher the RPM, the faster the gear spins.

A ratio is a way of comparing two numbers. For example, in this puzzle, if the Gear Ratio is 1:5, one gear is five times the size of the other gear.

The Input RPM **divided** by the Gear Ratio equals the Output RPM.

Players must adjust the Gear Ratio until the Output RPM is equal to the RPM of the gear that powers the left magnet.

## Learning Outcomes:

**Numbers and Operations**
*Number Concepts*
- Numbers to 1215

*Number Operations*
- Use a variety of strategies to apply a basic operation (division) to numbers and use this operation to solving problems

*Manipulate*
- Manipulation – division to 1215 / 9 / 9

## Difficulty Levels:

Generating random whole numbers within a specified range sets the Difficulty Levels.

RPM (target number) = (Input RPM) / (Gear 1 (Ratio: always set at 1)) / Gear 2 (Ratio: always set at 1))  = (Output RPM)

Difficulty Level 1:
| RPM (1-9) | Input RPM (1-9) | Gear 1 (1-9) | | Output RPM (1-9) |

Difficulty Level 2:
| RPM (2-12) | Input RPM (10-25) | Gear 1 (1-9) | | Output RPM (2-12) |

Difficulty Level 3:
| RPM (3-12) | Input RPM (27-49) | Gear 1 (3-9) | | Output RPM (3-12) |

Difficulty Level 4:
| RPM (5-12) | Input RPM (50-81) | Gear 1 (0-3) | Gear 2 (3-9) | Output RPM (5-12) |

Difficulty Level 5:
| RPM (2-12) | Input RPM (84-144) | Gear 1 (0-7) | Gear 2 (3-9) | Output RPM (2-12) |

Difficulty Level 6:
| RPM (2-15) | Input RPM (147-1215) | Gear 1 (2-9) | Gear 2 (4-9) | Output RPM (2-12) |

# 6. MIXING PAINT

## Object of the Puzzle:

Match the color of the paint in the sample flask by mixing different proportions of the three primary colors: red, blue and yellow.

Mix the paints in the mixing beaker in the middle of the screen. When you think the color is correct, move the paint into the top beaker.

If the two colors match, the laser beam can pass through the top beaker and the circuit will be complete. If the two colors don't match, go back to the mixing beaker and try again.

You can return any paint to the beaker it came from. Your incorrect combinations will stay on the screen for analysis.

## Learning Outcomes:

**Number Operations**
*Number Concepts*
- Fractions

*Number Operations*
- Use a variety of strategies to apply basic operations (+, X) to fractions, and use these operations to solve problems

*Manipulate*
- Manipulation to halves, quarters, eighths

**Patterns, Functions and Algebra**
*Patterns and Relationships*
- Identify and compare patterns
- Establish rules for numerical and non-numerical patterns that arise, and use these rules to make predictions

**Data Analysis and Probability**
*Data Analysis*
- Analyze data based on first-hand information
- Collect data based on first-hand information, display results and make predictions
- Analyze sets of data to make comparisons and test predictions

## Difficulty Levels

The Difficulty Levels are based on:
a) the sizes of the fractions (halves, quarters or eighths), and
b) the number of colors making up the color to be matched.

Difficulty Level 1: Here, players learn the rules of the game: Match the sample color with one of the three primary colors (yellow, red and blue).
Difficulty Level 2: Mix equal proportions of 2 primary colors to match secondary colors (orange, purple and green).
Difficulty Level 3: Mix quarter measures of 2 primary colors to match sample colors.
Difficulty Level 4: Mix eighth measures of 2 primary colors to match sample colors.
Difficulty Level 5: Mix eighth measures of 3 primary colors to match sample colors.
Difficulty Level 6: Same as Difficulty Level 5.

# 7. CIRCUITS

## Object of the Puzzle:

Players see one or more circuit boards. Each circuit board has six sides. Copper wires run through each board and exit through the sides. Players must complete the circuit by lining up the wires inside the board with the wires outside the board. When the circuit is complete, electricity flows through all the boards and turns all the gears.

## Learning Outcomes:

**Geometry and Spatial Sense**
*Shape and Transformations*
- Use positional language, numbers and directional works to describe the relative positions of objects in one dimension and to communicate motion in real-world contexts
- Describe motion in terms of a turn
- Create patterns and designs that incorporate symmetry and turns

*Shapes*
- Identify and fit pieces of a puzzle that go together (part to whole relationship)
- Identify regular polygons that can tessellate a plane
- Create, analyze and describe designs using translations, reflections and turns

## Difficulty Levels

Difficulty Level 1: Here, players learn the rules of the game: Turn the single hexagonal panel until the circuit lines up.
Difficulty Level 2:   2 hexagonal panels
Difficulty Level 3:   3 hexagonal panels
Difficulty Level 4:   4 hexagonal panels
Difficulty Level 5:   5 hexagonal panels
Difficulty Level 6:   7 hexagonal panels

# 8. THE MAZE

## Object of the Puzzle:

The puzzle has a grid of either 36 or 81 objects, each of which has a shape and color. The shapes are variations on the circle, square and triangle. The colors include the primary and secondary colors.

Players must choose the combination of shape and color that will create a path through the grid. The path may turn up, down, left or right, but not diagonally. The correct combination of shape, color and row will open a path to the other side. Then the circuit will be complete.

## Learning Outcomes:

### Patterns, Functions and Algebra
*Patterns and Relationships*
- Identify, create and compare patterns
- Recognize patterns
- Investigate, establish and communicate rules for non-numerical patterns that arise, and use these rules to make predictions
- Use relationships to summarize, generalize and extend patterns
- Combine up to three attributes in creating a pattern (e.g. color and shapes)

### Geometry and Spatial Sense
*Shape and Space*
- Identify and describe specific two-dimensional shapes (circles, squares, and triangles)
- Identify movement through a grid (up, down, left and right)

### Data Analysis and Probability
*Data Analysis*
- Sort objects to one or more attributes
- Identify attributes and rules in pre-sorted sets
- Identify attributes and rules to justify the choice of an appropriate population sample to use to answer a particular question

### Difficulty Levels:

The levels of difficulty are based on:
a) how many attributes (variables) the student has to choose from, and
b) the size of the grid that makes up the maze.

Difficulty Level 1: Here, students learn the rules of the game: Choose which of 3 colors and 2 shapes
                                 form a continuous path through the maze of 36 squares
Difficulty Level 2:   3 colors and 3 shapes, and a grid of 36 squares
Difficulty Level 3:   6 colors and 3 shapes, and a grid of 36 squares
Difficulty Level 4:   3 colors and 6 shapes, and a grid of 81 squares
Difficulty Level 5:   6 colors and 6 shapes, and a grid of 81 squares
Difficulty Level 6:   6 colors and 9 shapes, and a grid of 81 squares

## Awards

Students can earn three kinds of awards for solving math puzzles in The Abacus Project.

For taking part and solving a puzzle at a given Difficulty Level, students earn a **Participation Award**. It doesn't matter how long it takes students to solve the puzzle.

Students earn a **Speed Award** if they solve a math puzzle at a given Difficulty Level within a set amount of time (the **Speed Award Time**). The more difficult the puzzle, the longer the Speed Award Time. You can view the Speed Award Time for any puzzle through the Puzzle Play screen.

Students earn an **Expert Award** if they solve a puzzle twice at the Speed Award Time or faster.

The Puzzle Play screen (Main Menu > Puzzle Play) shows the awards a student has earned. The awards appear as yellow-and-red ribbons.

**Final Hint Time**
Each puzzle type and Difficulty Level has a set time at which the last hint is given. At the Final Hint Time, all hints will have been provided. The final hint is the solution to the puzzle. The player has the option to look at the hints or not.

**Maximum Time Recorded**
Each puzzle type has been assigned a maximum time. If a student does not solve the puzzle before the Maximum Time Recorded point, that time is entered in the student's report. This feature helps to avoid inadvertent skewing of students' results (e.g. in case students leave their computers for any reason during game play).

## Puzzle Information Charts

For each puzzle, the following charts show the Speed Award Time and the Final Hint Time for each Difficulty Level. The puzzle-wide Maximum Time Recorded is also included.

**MAGNETS**                                              Maximum Time Recorded: 1:40

| Difficulty Level | Speed Award Time (min:sec) | Final Hint Time (min:sec) |
|---|---|---|
| 1 | 00:05 | 00:15 |
| 2 | 00:05 | 00:15 |
| 3 | 00:10 | 00:30 |
| 4 | 00:10 | 00:30 |
| 5 | 00:15 | 00:45 |
| 6 | 00:25 | 01:15 |

**BEAKERS**                                                    Maximum Time Recorded:  5:00

| Difficulty Level | Speed Award Time (min:sec) | Final Hint Time (min:sec) |
|---|---|---|
| 1 | 00:03 | 00:09 |
| 2 | 00:10 | 00:30 |
| 3 | 00:20 | 01:00 |
| 4 | 01:40 | 05:00 |
| 5 | 01:40 | 05:00 |
| 6 | 01:40 | 05:00 |


**TRANSFORMERS**                                               Maximum Time Recorded:  3:20

| Difficulty Level | Speed Award Time (min:sec) | Final Hint Time (min:sec) |
|---|---|---|
| 1 | 00:10 | 00:30 |
| 2 | 00:10 | 00:30 |
| 3 | 00:10 | 00:30 |
| 4 | 00:25 | 01:15 |
| 5 | 00:25 | 01:15 |
| 6 | 00:50 | 02:30 |


**GEARING UP**                                                 Maximum Time Recorded: 1:40

| Difficulty Level | Speed Award Time (min:sec) | Final Hint Time (min:sec) |
|---|---|---|
| 1 | 00:05 | 00:15 |
| 2 | 00:05 | 00:15 |
| 3 | 00:15 | 00:45 |
| 4 | 00:15 | 00:45 |
| 5 | 00:15 | 00:45 |
| 6 | 00:20 | 01:00 |


**GEARING DOWN**                                               Maximum Time Recorded: 1:40

| Difficulty Level | Speed Award Time (min:sec) | Final Hint Time (min:sec) |
|---|---|---|
| 1 | 00:05 | 00:15 |
| 2 | 00:05 | 00:15 |
| 3 | 00:15 | 00:45 |
| 4 | 00:15 | 00:45 |
| 5 | 00:15 | 00:45 |
| 6 | 00:20 | 01:00 |


**MIXING PAINT**                                               Maximum Time Recorded: 1:40

| Difficulty Level | Speed Award Time (min:sec) | Final Hint Time (min:sec) |
|---|---|---|
| 1 | 00:05 | 00:15 |
| 2 | 00:05 | 00:15 |
| 3 | 00:10 | 00:30 |
| 4 | 00:10 | 00:30 |
| 5 | 00:30 | 01:30 |
| 6 | 00:30 | 01:30 |

**CIRCUITS**                                                    Maximum Time Recorded:  3:20

| Difficulty Level | Speed Award Time (min:sec) | Final Hint Time (min:sec) |
|---|---|---|
| 1 | 00:05 | 00:15 |
| 2 | 00:10 | 00:30 |
| 3 | 00:40 | 02:00 |
| 4 | 00:40 | 02:00 |
| 5 | 00:55 | 02:45 |
| 6 | 00:55 | 02:45 |


**THE MAZE**                                                    Maximum Time Recorded:  10:00

| Difficulty Level | Speed Award Time (min:sec) | Final Hint Time (min:sec) |
|---|---|---|
| 1 | 00:10 | 00:30 |
| 2 | 00:10 | 00:30 |
| 3 | 00:40 | 02:00 |
| 4 | 02:30 | 07:30 |
| 5 | 02:30 | 07:30 |
| 6 | 02:30 | 07:30 |


# Troubleshooting


## Lost Teacher Password

If you have lost or cannot remember your Teacher Password, and the Password Reminder feature does not jog your memory, choose ONE of the following two options:
A. Create a New Teacher Password
OR
B. Retrieve Your Existing Teacher Password.

In networked versions of The Abacus Project, Option A requires temporarily stopping the Abacus Database Server. In option B, the Abacus Database Server stays running.

Instructions for both options follow.

## A.   Create a New Teacher Password

In this procedure, you'll delete your existing Teacher Password and create a new one.

The exact instructions vary depending on your operating system (e.g. Windows, Mac Classic, Mac OS X) and which edition of The Abacus Project you are running (i.e. networked or stand-alone).

**NETWORKED EDITION PROCEDURE**
This procedure assumes that the Abacus Database Server is already running. If it's not, start it first.

Then follow the set of instructions below that match the operating system of the computer that runs the Abacus Database Server.

**Abacus Database Server running on Windows 95/98/2000/XP/NT4/2003 Server or Mac OS X**
Follow these steps:
1.    Sit at the computer that runs the Abacus Database Server.

2.    In the Abacus Database Server console, click "Stop" or "Stop Server".
3.    Click "Uninstall Service". *(\*Note: This step does not apply to Win 95/98 & Mac OS X. Please skip to step 4 if the computer runs one of these operating systems.)*
4.    Click "Quit".
5.    Open the "Abacus Database" folder. If you installed The Abacus Project using the default settings, you can find this folder in your programs folder.
6.    Open the folder named after your school.
7.    Locate the SETTING.DAT file.
8.    Delete the SETTING.DAT file. (Drag it to the Recycling Bin or Trash. Then empty the Recycling Bin/Trash).
9.    Launch the Abacus Database Server and click "Start" or "Start Server".
10.   Sit at the Teacher's computer.
11.   Start The Abacus Project.
12.   When the "Select Class" screen appears, click the name of your class, and then click "Teacher". The "Teacher Password" screen appears.
13.   In the "New Password" field, type your NEW Teacher Password.
14.   In the "Retype New Password" field, type your new Teacher Password again to confirm.
15.   In the "Password Reminder" field, type a question that will remind you of your password.
      *For example, if your password is your mother's maiden name, type "What is your mother's maiden name?"*
      If you forget your password in future, this Password Reminder question will appear and prompt you.
16.   Click "Next".
17.   Read the Teacher Message and click "OK". The Main Menu screen appears. You are now signed in as Teacher with your new password.

**Abacus Database Server running on Mac Classic (OS 8.6 through 9.x)**
Follow these steps:
1.    Sit at the computer that runs the Abacus Database Server.
2.    With the Abacus Database Server console active, press Command (Apple key) + period (.) to quit the Database Server.
3.    Open the "Abacus Database" folder. If you installed The Abacus Project using the default settings, you can find this folder in your programs folder.
4.    Open the folder named after your school.
5.    Locate the SETTING.DAT file.
6.    Delete the SETTING.DAT file. (Drag it to the Recycling Bin or Trash. Then empty the Recycling Bin/Trash).
7.    Start the Abacus Database Server.
8.    Sit at the Teacher's computer.
9.    Start The Abacus Project.
10.   When the "Select Class" screen appears, click the name of your class, and then click "Teacher". The "Teacher Password" screen appears.
11.   In the "New Password" field, type your NEW Teacher Password.
12.   In the "Retype New Password" field, type your new Teacher Password again to confirm.
13.   In the "Password Reminder" field, type a question that will remind you of your password.
      *For example, if your password is your mother's maiden name, type "What is your mother's maiden name?"*
      If you forget your password in future, this Password Reminder question will appear and prompt you.
14.   Click "Next".
15.   Read the Teacher Message and click "OK". The Main Menu screen appears. You are now signed in as Teacher with your new password.

**STAND-ALONE EDITION PROCEDURE**

Follow these steps:

1.   Open the "Abacus Project" folder. If you installed The Abacus Project using the default settings, you can find this folder in your programs folder.
2.   In the "Abacus Project" folder, locate and open the "Abacus" folder.
3.   In the "Abacus" folder, locate and open the "Local Database" folder.
4.   In the "Local Database" folder, locate and open the "Standalone" folder.
5.   In the "Standalone" folder, locate the SETTING.CSV file.
6.   Delete the SETTING.CSV file. (Drag it to the Recycling Bin or Trash. Then empty the Recycling Bin/Trash).
7.   Start The Abacus Project.
8.   When the "Select Class" screen appears, click the name of your class, and then click "Teacher". The "Teacher Password" screen appears.
9.   In the "New Password" field, type your NEW Teacher Password.
10.  In the "Retype New Password" field, type your new Teacher Password again to confirm.
11.  In the "Password Reminder" field, type a question that will remind you of your password.
     *For example, if your password is your mother's maiden name, type "What is your mother's maiden name?"*
     If you forget your password in future, this Password Reminder question will appear and prompt you.
12.  Click "Next".
13.  Read the Teacher Message and click "OK". The Main Menu screen appears. You are now signed in as Teacher with your new password.


# B.   Retrieve Your Existing Teacher Password

Ingenuity Works Technical Support can walk you through the process of retrieving your existing Teacher Password.

To protect the integrity of your Abacus Project security system, we ask you to contact Technical Support:
- by phone at 1-800-665-0667
OR
- by e-mail at support@ingenuityworks.com