

# TRAVEL IN TIME WITH MATHEMATICS

## 6th Level **PIPO EN LA EDAD MEDIA**

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[www.pipoclub.com](http://www.pipoclub.com)

#### **CD ROM**

*Access all the information in the collection in this format: product details, technical service, learning guides, shop, etc.*

#### **ONLINE**

*Now you can play with Pipo from any computer with this online access.*

#### **DIGITAL**

*You can buy any Pipo product and download it directly to your computer. Play without delay and without needing a CD.*

#### **SCHOOLS**

*Pipo offers group licenses for schools. Learn and play with your classmates in the Online section.*

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## GENERAL INTRODUCTION

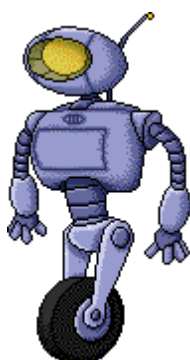
Pipo is a collection of educational games on CD-ROM that immediately catch children's interest via the creative presentation and development of the themes engaging them on each CD. The games and activities are presented in developmentally appropriate programming best suited to the individual student's learning style and capability. Experts in the field of Child Psychology with the assistance of professional educators have worked to provide activities which will support the development of an independent child, playing by himself, using and stimulating their intuition, reasoning, and creative ability.

Programmed activities encompass a wide range of ages from 15 months, 3 years, 8, their own pace according to their ages and individual capacity to learn. In addition some programs provide the ability to increase the level of difficulty for each individual. These characteristics and program options have also been found to be of great benefit to children with learning disabilities or in Special Education. The educational content of the Pipo programs is aligned to key basic understandings outlined in national and state mandated curriculum for elementary classrooms.

## PIPO IN THE MIDDLE AGES



Pipo is accompanied by a new friend, **Neuron**, a robot who will accompany him in his journey through time.



*Pipo in the Middle Ages* is part of a new collection “Traveling Through Time with Mathematics”. The collection is framed within current educational mathematics objectives focusing on primary level content. Mathematics content is presented in different eras in history in an informative and interesting manner. The mathematics covered in this CD address in 5th or 6th grade content.

Other titles in this collection address content from first to sixth grade and addresses elementary mathematics from 6 to 12 years of age.

<i>Level</i>	<i>Title</i>	<i>Age</i>
1º	Pipo en el Egipto Faraónico	6-7 años
2º	Pipo en la Grecia Clásica	7-8 años
3º	Pipo en la China Imperial	8-9 años
4º	Pipo en el Imperio Maya	9-10 años
5º	Pipo y los Vikingos	10-11 años
6º	Pipo en la Edad Media	11-12 años

This collection is dedicated exclusively to mathematics content. The games and activities complement each other and it is possible that some games in consecutive CDs will present similar content. The main difference in these situations will be the amount of time allotted for students to arrive at a solution. More time will be allocated for the lower level activity (see page 3).

Game length will vary in accordance to the child’s individual ability and pacing.

However, each activity does have a basic time limit to win the maximum number of points to be scored by each participant upon reaching a correct solution.

Each game is arranged into six sections with a total of 29 activities each programmed with clearly defined content objectives. Logical reasoning and mathematics content is all too often presented in complex formats that children find uninviting and overwhelming. This software was purposefully created in a form children could clearly understand and enjoy using while learning important mathematics content. Children are not just playing a game, they are enjoying an activity that is strengthening key mathematical content knowledge. With this in mind the intention is to activate and maximize the young child’s incredible capacity for learning...a capacity far superior to that of an adults’.

## PARENTS AND EDUCATORS

Games encompass mathematics content taught in classrooms over extended periods of time. For this reason constant moderate use of this product is recommended. In other words, it is much better that children play for short periods of time every day or several days a week, simultaneously playing different games.

If the children get too intense in pursuit of their math explorer diploma, they could "perish" in their intent by becoming disheartened if the goal of the diploma is not quickly reached. Instead they could be encouraged to use the progress sheet to mark partial objectives. We can say, "Let see if you can complete level 3 of the fractions. When you have finished you can print the outcome." We need to remember that this is elementary school academic content which will take time to master if children are to truly learn from the activities. We can motivate the child to pursue the winning of "precious stones" which in essence means that the levels of difficulty will be increasing as content knowledge is being acquired.

This product is based on the following "small theory." It is important to understand that the games and activities are most useful mainly as a supplement supporting certain areas of the core grade level mathematics curriculum. It is not our intention to supplant the use of textbooks and other curricular resources. One manner of addressing concepts not easily addressed through the games is the test format which is also included as part of the program sequence. The test is divided into four sections and permits a review of all the theoretical content that is presented in all the games and activities.

It is important that children explore, investigate, and discover the options found in the games, making possible the development of natural interest and motivation, thus maximizing learning opportunities for each child.

**Time control and scoring** on the games: mastery of each one of the levels of a game, is achieved by obtaining 10,000 points. The points accumulate according to the number of completed exercises and how quickly they are solved. Children who play quickly and accurately can increase their level of difficulty faster, while those who need to do so will solve more exercises. The scoring system should not be utilized to compare the children one to another. The program has been designed in such a way that each child gets 10,000 points when he/she has solved a required number of exercises within a determined speed.


It is necessary to be aware that the points such as they are, are not important. The games' goal is not that the students reach maximum scores. The goal is to reach 10000 points at a comfortable rate, that maximizes the internalization of each sections' content knowledge and/or skills.

The speed of execution simply gives us an idea about how the game, and the program supports, or not, each student engaged in the activity. Student achievement is most important for if he/she persists with the game, success will eventually occur. All of the activities have several levels of difficulty that allow students to adapt to the game and while they acquire and internalize the content and/or skills. The levels not yet reached are shown in gray and cannot be downloaded until students are ready for that level.


It is very important that the individual child works through the activities without much help. Do not rush in to offer aid even if the child is about to make a mistake. Allow them to err and learn from their mistakes. Built into each activity is the opportunity to click on the **F1 key** for help. A brief summary of the game as well as "**General Help**" which includes information about:

1. The trip through time with Mathematics
2. Program function
3. Games
4. Generalities
5. Pedagogy for Parents and Educators

**Theory**




*In the games you will find this icon. Clicking upon it will link you to the page containing content support.*



**Time Control and Scoring**

**HELP**



*Clicking on the F1 key will give you contextual help. Clicking on the heading will give you specific information on the topic.*

**AYUDA GENERAL**

1. [Cómo funciona el programa.](#)
2. [Generalidades.](#)
3. [Los Juegos.](#)
4. [Conceptos didácticos para padres y educadores.](#)
5. [Características generales del desarrollo infantil.](#)
6. [Etapas del desarrollo.](#)

## TO BEGIN

To begin the game, two options are given: To play without changing the resolution or to play enlarging the screen. We recommend the second because it provides a better visualization of the images and facilitates its use to the participants

## Your MISSION



According to the legend a fierce dragon attacked the castle. The magician Nikodemus, used his power to save the castle. but he made a mistake with his spell and his spirit was trapped in the deepest darkest dungeon in the castle.

To free Nikodemus players must find all the parchment pieces that will break the spell.

The parchment pieces can be found only by mastering the activities in the program and entering the labyrinth.



Find the 24 parchment pieces in the labyrinth.

## LEVELS



Mastered levels are marked with a green checkmark other levels appear in grey.

F9

## Precious Stones



We have to make a great effort because the cells in the labyrinth can only be opened with precious stones! We will get a stone for each level mastered.

Play on normal screen.



Play with wide screen.

Pipo starts his time machine and travels to the Medieval Castle of Gales.

Our mission is to find all the pieces of the parchment so we can rescue Nikodemus.

Upon landing players can click on the play button to begin the games, or go to the options screen where brief summaries of all activities can be found..

If your name is already on the list click on it and begin playing.

Options F5

Exit



Type name in twice if you are a first time player.

Credits

Play

**F1** Accesses general help, a short summary of the contents, functioning of the program, relation of the different activities in the game and some advice for parents and educators.

**F5** Options, Visualization and brief explanation of the games.

**F8** Accesses the configuration screen.

**F9** Accesses the progress sheet or punctuation (of each child in each game).

Castle

Robot operations manual

Exit



Your location on the world globe.

Theory, test and Problems

Mental Math

Each activity has a determined number of levels that need to be mastered to complete the mission. The game comes configured by default, in a progressive method, one level cannot be passed to another level before the previous one is mastered. In any case, there does exist the possibility of playing at any level, if the teacher or parent considers it to be appropriate. The adult can give this control by accessing the configuration screen and selecting that option (F8).

The final goal of the levels system is that children obtain a cumulative understanding and advance their learning by delving deeply into skills and content. The majority of the games are configured in this way. Although there are other games in which increasing the level

provides access to innovative activities in the same content, they are not more difficult, but the dynamic of the game changes at the conceptual level. After completing each one of the levels, through the points system (by reaching 10000 pts), The subject earns a precious stone that will be used to get a parchment piece. This will guide us directly to the final reward (consult page 19).

## OPTIONS

**F5**

Use the arrows to see all the activities.

F9 Progress

Exit



Brief explanations for each game.

## CONFIGURATION

**F8**

The F8 key allows certain changes to the game.

The program allows possible changes to:

### LEVELS:

The game comes configured as a progressive method, in a way that if the measure of a level is enhanced, it passes to the next one (always at the user's convenience, depending if Pipo asks for such a change). The game can also be configured to access any desired level (without a progressive method). This change only affects the selected player.

### DECIMAL POINT:

The ability to activate the expression utilized in the specific educational system: Then the period or comma is configured automatically for all the players.

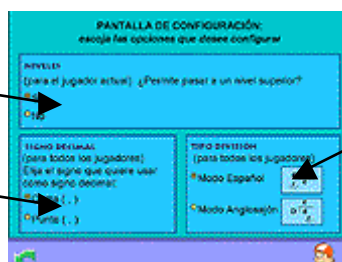
### DIVISION MODEL:

The option to operate using the division model used in the specific educational system (Anglo-Saxon or Spaniard). This change is then configured automatically for all the players.

### MONETARY UNIT:

This refers to the ability to select the monetary unit employed in daily life by the players (Euro or dollars). This change is then configured automatically for all the players.

Decimal symbol:  
period or  
comma.

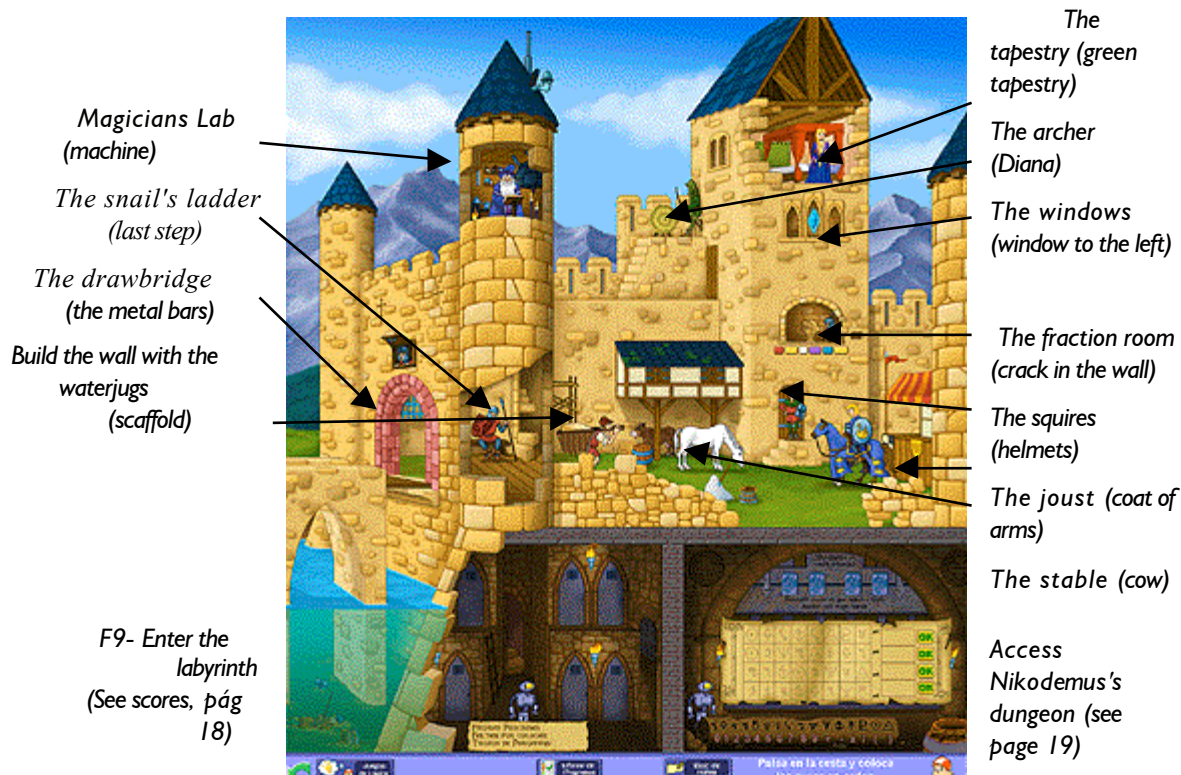


Division style: Spanish or Anglo-Saxon



## CASTLE OF GALES

Talk to the villagers and servants of the castle for the information you will need. They will explain how to access the games. To move through the castle use the yellow arrow found at edges of the screen.



These activities support the learning of content related with organizing information, measurement, geometric figures and the number system.

Use of the “Help” button or F1 key is recommended, for clarification of gamew objectives. You also can use the “Theory” button to help you with content.

## MAGICIAN'S LAB

### SKILLS

Logical mathematical reasoning

Agility and mental math

Composition and decomposition

Abstraction

Estimation

### Academic Objective:

Work with capacity and volume.

### How to Play?

In this game the player must match the quantity in the magician's container using the smaller jars on the shelf. The following units of measure will be used: kl, hl, dal, l, dl,



### 3 Levels of difficulty:

**Level 1:** Equivalencies (I). Table with measurement units is visible.

**Level 2:** (Equivalencies (II). Measurement table is optional, to use as needed.

However points are lost when used. Click on the arrow at corner of screen.

**Level 3:** Equivalencies (III).

## SNAIL'S LADDER

### SKILLS

Logical mathematical reasoning

Comprehension and interpretation

Deductive Thinking

Recognition

Discrimination

Interpretation

Academic Objectives :

Know units of measure and their

Make equivalencies, estimations and exchanges within metric system .

**How to play?**

Organize the units of measurement on the steps from least to greatest. The greatest going on the top step.

*Start at the top with the greatest and arrange in order down to the least.*

Theory button

Levels Icon



*Click on the bar to have the sentence repeated.*

**6 Levels** of difficulty:

**Level 1:** Measuring length (I). With units table.

**Level 2:** Measuring length (II).

**Level 3:** Measuring weight (I). With units table. **Level 4:**

Measuring weight (II).

**Level 5:** Measuring capacity (I). With units table.

**Level**

**6:** Measuring capacity (II).

## THE DRAWBRIDGE

### SKILLS

Visual Memory

Categorization

Abstraction

Concentration

Short and long term memory

Discrimination

**Academic Objectives :**

Foster data interpretation skills: mode, medium, frequencies, etc. Practice using coordinate grids.

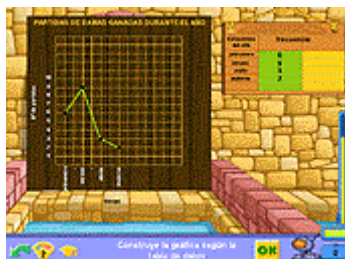
**How to play?**

**4 game modes:**

- 1. Interpret** the graph and answer specific questions.
- 2. Construct** a graph using data from the table. For this:
  - On the bar graph: drag the bar to the needed height. Click to drag and click to release.
  - On the line graph: drag the dot to the indicated coordinate.
  - On circular graph: select the color from the wooden table and click on the zone you wish to color
- 3. Complete** the frequencies table, according to the data represented on the graph. Click on the "OK" button when completed.
- 4. Place** the letters on the grid according to coordinates or **write** the coordinates of the letters from the grid onto the table.



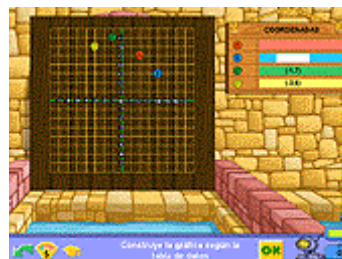
1. Respond to the question



2. Draw the graph.



3. Complete the frequency table.



4. Find coordinates on the grid or write coordinates on the table.

**5 Levels** of difficulty

**Level 1:** Bar graph.

**Level 2:** Line graph.

**Level 3:** Circle graphs.  
**Level 4:** Double graphs.  
**Level 5:** Coordinate grids.

## THE SHIELDS

### SKILLS

*Abstract thinking*

*Logical reasoning*

*Deductive thinking*

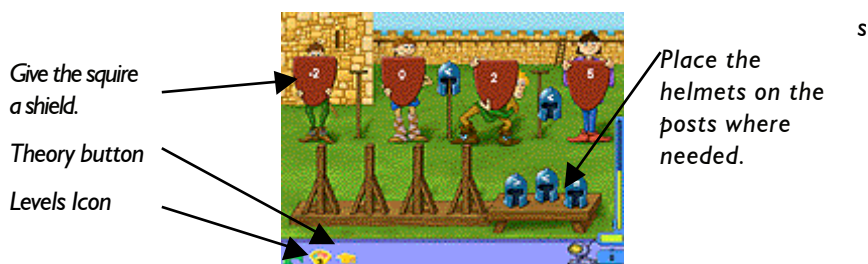
*Mental math*

### Academic Objectives :

Foster logical reasoning and work with sequencing. Number relationships and mathematical symbols ( $>$ ,  $<$ ,  $=$ ).

### How to play?

Order the shields and helmets, the shields have digits and the helmets comparison symbols: greater than ( $>$ ), less than ( $<$ ), equal to ( $=$ ). You will have to arrange, natural numbers, decimals, fractions and number sentences. The order will be determined by the shields and helmets already in place.



**4 Levels** of difficulty:

**Level 1:** Natural numbers and decimals.

**Level 2:** Fractions.

**Level 3:** Whole number.

**Level 4:** Number sentences.

## BUILDING THE WALL

### SKILLS

Agility and mental math

Logical mathematical thinking

Discrimination

Estimation

Abstract and/or deductive thinking

### Academic Objective:

Foster recognition of all units of measure.

### How to play?

Find the block of stone with the equivalent measurement printed on the stone carriers box. Drop the stone in the equivalent box.



**7 Levels** of difficulty:

**Level 1:** Measuring length (I). With units table.

**Level 2:** Measuring length (II).

**Level 3:** Measuring weight (I). With units table.

**Level 4:** Measuring weight (II).

**Level 5:** Measuring capacity (I). With units table.

**Level 6:** Measuring capacity (II).

**Level 7:** Surface Measure. With units table.

## THE STABLE

### Academic Objectives:

Foster critical analysis of information to calculate probability and percentage for success.



## SKILLS

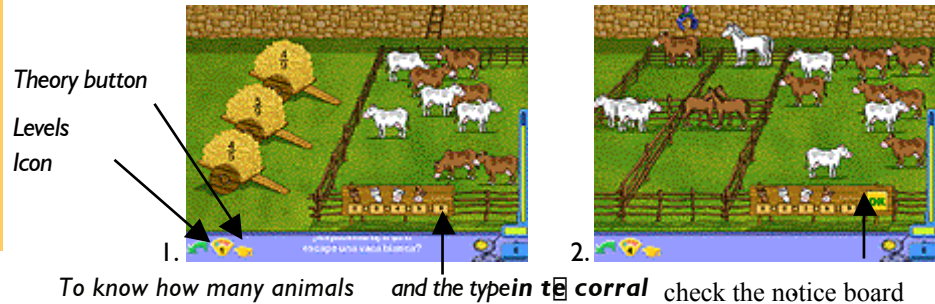
Visual memory  
Discrimination  
Mathematical Reasoning  
Comprehension  
Categorization  
Estimation  
Composition and decomposition

## How to play?

Two ways to play:

**1. Determine probability.** Note the animals in the corral and select the hay waggon with the probability reflected by the animals.

**2. Create the probability** Organize the animals in the large corral in order to reflect the probability indicated. Click on the "OK" button when you are finished.



**5 Levels** of difficulty:

**Level 1:** Identify the probability (I).

**Level 2:** Create the probability (I).

**Level 3:** Identify the probability (II).

**Level 4:** Create the probability (II).

**Level 5:** Find the percentage.

## THE JOUST

## SKILLS

Number recognition  
Series  
Mental math  
Sequencing  
Discrimination  
Concentration  
Comprehension

## Academic Objective:

Stimulate recognition and computation of fractions.

## How to play?

The joustier must charge into the wooden announcement plank indicating the correct answer to the equation displayed on the shield.

Click on the sign with correct answer

Theory button

Levels icon



Time control

**6 Levels** of difficulty:

**Level 1:** Compare fractions.

**Level 2:** Fraction equivalents.

**Level 3:** Irreducible fractions.

**Level 4:** Multiplication of fractions.

**Level 5:** Division of fractions.

**Level 6:** Addition and subtraction fractions with like denominators.

## THE FRACTION ROOM

## Academic Objective:

Recognize fraction and solve equations involving fractions .

## How to play?

The screen is divided into **3 parts**:

## SKILLS

*Agility and mental math*

*Logical mathematical reasoning*

*Abstract thinking*

*Estimation*

*Composition and decomposition*

**Upper part, (3 lines)** the pieces you might use are stored here. Select a piece to place in the fraction machine. Once you have selected the pieces you will use, the unused pieces can be stored here.

**The fraction machine,** is the zone below the brown buttons Use the buttons to cut, paste, mix and multiply the piece until you accomplish the desired result.

**The lower part,** the hole in the walls are where you will place the missing pieces.



**4 Levels of difficulty.** At the higher level the difficulty in finding the correct piece increases.

## THE PORTAL

### SKILLS

Visual memory

Shape discrimination and recognition

Concentration and attention

Comprehension

Categorization

Abstraction

Short and long term memory

### Academic Objective:

Foster the recognition and understanding of geometric figures.

### How to play?

Tell Neuron to shatter the correct shape with the hammer.

Shatter the correct shape with the hammer.

Get help here. Click on the theory button.



**5 Levels of difficulty:**

**Level 1:** Polyhedron: prisms, pyramids and regular polyhedron.

**Level 2:** Round figures.

**Level 3:** Geometric figures and attributes.

**Level 4:** 3 dimensional figures (I).

**Level 5:** 3 dimensional figures (II).

## TAPESTRY

### Academic Objectives:

Calculating area and perimeter.

Operating angles.

### How to play?

A geometric figure appears on the tapestry, a question about the figure must be answered.

The **calculator** can be used. Every time a calculation is completed on the calculator it is saved on the **Notes Block**. You create a portfolio of information. When you have the correct answer click **OK**.

## SKILLS

Comprehension,  
attention and  
concentration

Composition –  
decomposition

Agility mental  
math

Abstraction

Logical  
mathematical

*You do not always need all  
the information you are  
given to solve.*

*Click on OK when  
you have the correct  
answer.*



*Here on the Notes  
Block is kept a  
record of all  
operations.*

*Use the calculator  
as needed to find the  
answer.*

**7 Levels** of difficulty:

**Level 1:** Squares, rectangles, trapezoids.

**Level 2:** Rhombus y rhomboid.

**Level 3:** Triangles.

**Level 4:** Regular Polygons.

**Level 5:** Irregular Polygons

**Level 6:** Circumference.

**Level 7:** Sum of the angles.

## THE ARCHER

**Academic Objectives:**

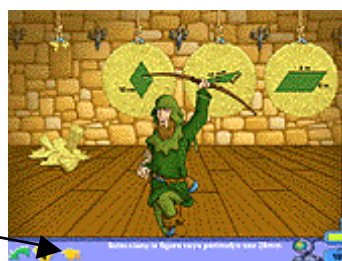
Foster recognition of polygons and their attributes, working with geometric shapes.

**How to play?**

Shoot at the bullseye with the figure described in the sentence. Move the archer the archer with the keyboard arrow keys. Shoot with the space bar.

*This game is played  
entirely with keyboard  
keys. Shoot the  
bullseye with the  
correct answer.*

*Theory button.*



*Enter the labyrinths  
here. You can also  
enter by clicking  
on the F9 key.*

**6 Levels** of difficulty:

**Level 1:** Polygons and attributes

**Level 2:** Classification of triangles.

**Level 3:** Classification of quadrilaterals **Level 4:**

Classification of polygons.

**Level 5:** Circumference and circles.

**Level 6:** Perimeter of a polygon.

## ROBOT'S OPERATIONS MANUAL

### SKILLS

Concentration  
and attention

Agility and mental  
math

Logical deductive  
process

Reasoning  
Abstraction

This section provides practice with four basic mathematical operations (addition, subtraction multiplication and division). You are also provided the ability to personalize paper and pencil exercises printable for each student. Fractions and calculations into the seventies are included.

*Solve with addition*

*Solve with  
multiplication*

*Solve the addition*



*Solve fraction problems*

*Solve with division*

*Solve with 70's*

## SOLVE ADDITION

### Academic Objective:

Practice addition.

### How to play?

Click on the numbers in the yellow boxes to begin adding. Remember the decimal point. If you are incorrect the equation automatically clears and returns to original form.



**2 Levels** of difficulty:

**Level 1:** Addition with decimals (I).

**Level 2:** Addition with decimals (II).

## SOLVE SUBTRACTION

### Click on N°

At times it is faster to use the numbers to the right of the keyboard. Activate with BLOQ NUM keys.

### Objective:

Practice subtraction.

### How to play?

Click on the numbers in the yellow boxes to begin subtracting. Remember the decimal point. If you are incorrect the equation automatically clears and returns to original form..



**2 Levels** of difficulty:

**Level 1:** Subtraction with decimals (I).

**Level 2:** Subtraction with decimals (II).

## SOLVE MULTIPLICATION

### Use the Tables

If you are not sure you may refer the multiplication tables found under Theory icon.

### Click on N°

At times it is faster to use the numbers to the right of the keyboard. Activate with BLOQ NUM keys.

### Academic Objective:

Practice multiplication.

### How to play?

solve the multiplication problems.

Go to the theory icon if you need help with multiplication.

Levels icon





**3 Levels** of difficulty:

**Level 1:** Multiplication with natural numbers

**Level 2:** Multiplication of a decimal by a natural number.

**Level 3:** Multiplication: of decimals.

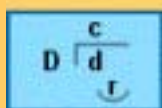
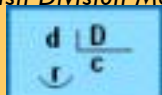
The last two levels require the player to correctly place the decimal in the answer.

## SOLVE DIVISION

**F 8**

Pipo allows two configuration in two types of division:

Spanish Division Method



English Division Method



**Academic Objective:**

Practice division.

**How to play?**

Solve the division problems. .

Help from Theory section.

Levels



Time control and Scoring  
Reach 10,000 points: to earn a precious stone and move to next level.

**4 Levels** of difficulty:

**Level 1:** Division with natural numbers.

**Level 2:** Division with two decimal places.

**Level 3:** Division with decimal in the dividend.

**Level 4:** Division with decimals. Before carrying out the operation eliminate the decimal in the divisor by multiplying or dividing by **10** then click "Begin Division".

## SOLVING PROBLEMS WITH FRACTIONS

**Academic Objective**

Learn to carryout subtraction and addition of fractions with different denominator.

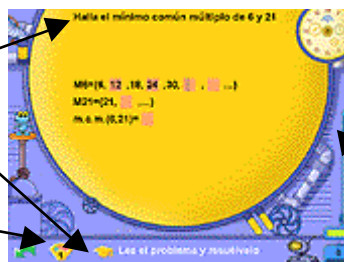
**How to play?**

These problems have already been programmed with correct solution, players need to fill in the colored boxes with correct numbers and symbols. If attempted numbers are incorrect they will appear in red.

This is the problem.

Go to the Theory section if help is needed.

Levels



Time control and Scoring  
Reach 10,000 points: to earn a precious stone and move to next level.

**4 Levels** of difficulty:

**Level 1:** Least common multiple.

**Level 2:** Divisors and maximum Common Divisor.

**Level 3:** Equivalent fractions and prime factors.

**Level 4:** Fractions with different denominator.

## SOLVING WITH A SEXAGESIMAL SYSTEM

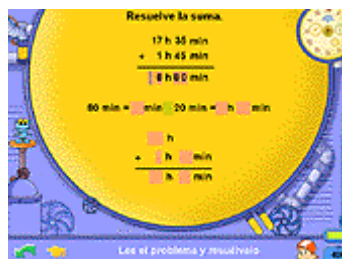
### Academic Objective

Learning to work with a base 6 system working with time.

### How to play?

These problems have already been programmed with correct solution, players need to fill in the colored boxes with correct numbers and symbols. If attempted numbers are incorrect they will appear in red. .

*Fill in red boxes with numbers and the green boxes with symbols.*



*Time control and scoring  
Reach 10,000 points:  
to earn a precious  
stone and move to  
next level.*

**I Level** of difficulty:

**Level I:** Calculate time by hours, minutes, and seconds.

## MENTAL MATH

Main objective is using the composition and decomposition of number to carryout rapid mental calculations within five different games.

*Adding and subtracting*

*Operations inside  
Parenthesis*

*Multiplication  
and Division*



*Divisibility*

*Potentiality and  
square root*

## ADDING AND SUBTRACTING

### Academic Objective:

Practice adding and subtracting using mental math.

### How to play?

Answer correctly as quickly as possible. Do not allow the soldiers to reach the top or points will be lost.

*Look at the equation  
and solve it.*

*After the third correct  
answer all the  
soldiers will fall.*

*Levels icon*



*If after winning a  
precious stone you want to  
see your scores and enter  
the labyrinth click on the  
time bar or the F9 key.*

*Go to theory section if  
help is needed..*

**5 Levels** of difficulty:

**Level 1.** Add or subtract numbers with 0.

**Level 2.** Add or subtract 99 to a number.

**Level 3.** Add or subtract 1995 to a number.

**Level 4.** Estimation (I). Round the numbers and add.

**Level 5.** Estimation (II). Round the numbers and add.

## MULTIPLICATION AND DIVISION

### Academic Objective:

Practice multiplication and division using mental math.

### How to play?

Find the soldier with the correct answer as quickly as possible..

Answer correctly  
before the soldiers  
reach the top of the  
ladder.

F9  
Levels Icon



Select the soldier  
carrying the correct  
answer.

**6 Levels** of difficulty:

**Level 1:** Division and Multiplication (I).

**Level 2:** Division and Multiplication (II).

**Level 3:** Multiply by 11.

**Level 4:** Rounding and dividing or multiplying numbers with or without decimals.

**Level 5:** Variety of Operations with different elements.

**Level 6:** Calculating percentage.

## DIVISIBILITY CRITERIA

### Academic Objectives

Divisibility criteria for 2, 3, 5 y 10.

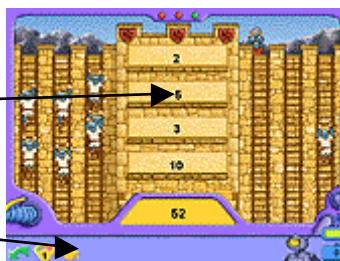
Recognizing prime numbers.

### How to play?

Select the correct response as quickly as possible. Do not allow the soldiers to reach the top of the ladder or you will loose points.

Select the correct answer  
from the tower.

After the third correct an-  
swer selected the all the  
soldiers will fall.



Time control.  
From here you can  
enter the labyrinth.

**4 Levels** of difficulty:

**Level 1:** Divisibility criteria (I). Divisibility for 1 2,3,5 and 10.

**Level 2.** Divisibility criteria (II).

**Level 3.** Prime numbers.

**Level 4.** Divisibility criteria (III).

## POWERS AND SQUARE ROOTS

### Academic Objective:

Practice powers, square roots and mental math.

### How to play?

Select the correct response as quickly as possible. Do not allow the soldiers to reach the top of the ladder or you will loose points.

Find the response matching the indicated amount in the yellow section.  
After the third correct answer selected the all the soldiers will fall.



Time Control  
From here you can enter the labyrinth.

**4 Levels** of difficulty:

**Level 1:** Powers and multiplication.

**Level 2:** Finding the square root of a natural number

**Level 3:** Powers in base 10.

**Level 4:** Finding the square root.

## OPERATIONS WITH PARENTHESIS

**Academic Objectives :**

Learn to work with order of operations.

Learn to work with parenthesis within order of operations .

**How to play?**

Select the soldier carrying the correct response as quickly as possible.

Go to the Theory section if you forget the order of operations.



Time control .

**3 Levels** of difficulty:

**Level 1:** Addition and subtraction.

**Level 2:** Addition, subtraction and multiplication.

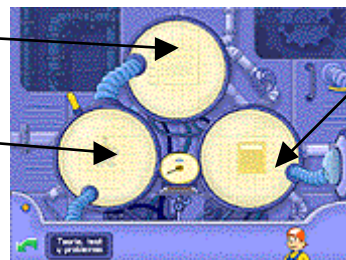
**Level 3:** Addition, subtraction, multiplication and division.

## THEORY, PROBLEMS, and TESTS

Access the Tests on the time machine, the Problems and the Theory.

Theory

Test



Problems

## THEORY

**Academic Objective:**

Foster capacity and stamina for problem solving.

**How to play?**

The activity is presented with a **brief content guide**, which summarizes pertinent content.

Content reviewed in this manner is noted on their progress grid with a green check mark. To be awarded the diploma and to earn the 5 precious stones



## SKILLS

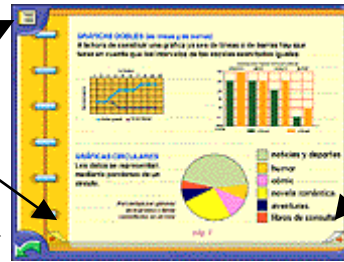
Short and long term memory  
Comprehension  
Concentration and attention  
Reproduction

found in the theory section students must read the review. The green check mark will appear after a reasonable amount of time has passed for the reading to have occurred.

General Contents page

Previous Page

Exit



When pipo thinks you have read the content/theory page he will give you a green check mark.

Go to next page

It is not recommended that the student read the theory summary all at once, it is best read at the beginning of a new activity, or when in doubt if taking a test.

## TEST

### SKILLS

Concentration and attention  
Estimation  
Abstraction  
Comprehension  
Deductive thinking

#### Academic Objective:

Internalize big content ideas.

#### How to play?

Choose one of the six options Pipo gives you. There are no levels on the tests, but you can see how many more you need to master the section.

Fractions

Geometric Figures

Multiples and Divisors

Number correct out of total needed.



Units of measure

Whole Numbers

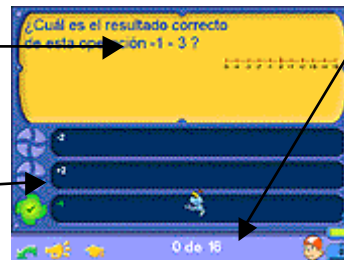
Organization of information

After choosing the desired section, the program will return to a screen where you will find a problem and three possible responses. It is not necessary to complete the test all at once, the program will recall the last question you completed correctly.

Click here

for Pipo to repeat the problem.

Choose one of the three options.



Tally of number correct out of total to be worked

## PROBLEMS

#### Academic Objectives :

Solving simple problems, applying basic operations. Fostering development of personal strategies

#### How to play?

Choose one of the five options Pipo gives you:

## SKILLS

Comprehension

Interpretation

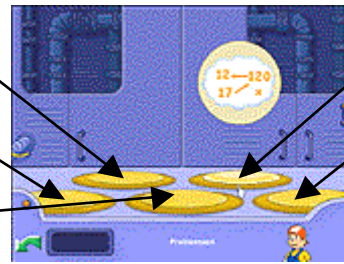
Logical mathematical Reasoning

Attention and deductive thinking

Composition and decomposition

**Whole Number Problems**  
**Problems with Angles**

**Problems with parenthesis**



**Problems using Rule of Three**  
**Problems using Fractions**

Having picked an option, read the problem carefully and use what you have learned. There are **2 types of problems**:

### A) Whole Numbers Problems and Problems using Angles:



Calculations are done with a calculator and recorded on the ship's log. The final answer is recorded on the **results zone**. Click on the green arrow if you think you have found the correct answer. If correct, Pipo will give you access to the **Units option**.

### B) Problems using Parenthesis, Rule of three and Fractions:

In the problem solving process we have tried to differentiate between computation and appropriate application to a problem situation. Many activities have already engaged students in basic computation practice. For this reason in the problem solving section the focus is on appropriate application. The process is emphasized and the student must complete the colored boxes correctly.:



**Green colored boxes** indicate symbols and operations signs.

**Red colored boxes** indicate numbers.

## SCORING

### SCORING



F9 KEY

LOGIC GAMES  
See page 20

This program differentiates all students and provides progress reports and scores for each student. This helps students maintain the motivation to continue improving skills in order to move forward.

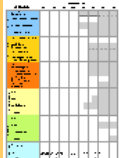
### ENTRY TO THE LABYRINTH

The **F9** key takes us directly to the **ENTRY TO THE LABYRINTH**. To enter click on the dungeon doors. Once there you will recognize the games and activities.

Your mission is to correctly carryout the parchment spell to release Nicodemus. He is locked up in the Dungeon held by four magical locks that only you can open by deciphering the parchment codes.

*Each section of the labyrinth, represents a block of games and activities. There you will find the pieces of the magic parchment.*

**PROGRESS PAGE**



Parents and educators have access to an organized graph complete with each student scores and progress towards mastery of each objective.



Logic Games

Progress Page

Nicodemus's dungeon :

*With the pieces of the parchment you will break the spell of the magic locks.*



## The LABYRINTH

The pieces of parchment are hidden in the labyrinth. To free Nicodemus's soul you must find the parchment pieces, Only the parchment codes can open the dungeon and destroy the evil spell. Cell doors that can only be opened with the precious stones earned upon mastery of a game level stand between you and the parchment.

In addition the parchment is protected behind the **Portones de Ingenio**, the dungeon doors can not open unless you have the magic key. Your first task once inside the labyrinth is to find the key to the **Portones de Ingenio** protecting the parchment.

To open the cell doors use the precious stones won in the games.



*You will find the parchment pieces by getting past the **Portones de In-genio** using all your ingenuity.*

The precious stones are merely a representation of the students accomplishments and progress. However, for students the stones are very motivating and engaging. Parents and educators have access to current scoring/progress reports they can print. Each has the student's name, the date, and the most current scores, including levels mastered marked with a green check mark. Parents can access this section through the lower right hand corner of the screen.

## LOGIC GAMES

Once you have opened one of the **Portones de Ingenio** they can be accessed without performing the initial entry tasks again. However you can return to engage in the logic activity behind that door at any time thereafter.

The great door of Symmetry

The great door of the wooden bars.



The great door of the Enigmas

The great door of the beetle/

### The Great Door of Symmetry

Note the line of symmetry and complete the drawing. Use the machine to select the shapes you need to complete the drawing. You can change the color, reflect the piece, and rotate it to make it fit. Click on the grid when you are finished. You will have to successfully complete two drawings in order to open the door.

Take needed shapes from the machine to complete the drawing.

To erase and start again click on the shape to be erased..



Play two times to gain entry, once for each lock.

### The Great Door of the Wooden Bars

Move around the wooden bars to find the key that will open the cell behind this door. The bars move in only one direction. Players must complete two activities.

Click on the bars to move them and click again to release.

To hear the question again click on the sentence at the bottom of the screen.



Each bar can be moved only in the direction marked: vertically or horizontally..

### The Great Door of the ENIGMAS

To open this door players must respond to the question. Write the answer or click on one of the three possible answers.

If you do not know the answer click here.



As soon as you respond to the enigma, the correct answer will appear.

### The Great Door of the Scarab

Move the keys with the help of the scarab and try them in the locks.

Restart the game here.

Here is noted the activity you are currently engaging.



Click here to return to previous move.

Players may use the arrows on the bar or on the keyboard.

### NICODEMUS'S DUNGEON

Here is where the soul of the magician Nicodemus is trapped. When you have found all the pieces of the parchment put them together to get the codes. You have to open 4 locks. When you open the door, use the remaining pieces to free Nicodemus...



You may use paper and pencil to figure out the codes on the parchment.



With mastery of the program Pipo will present students with a Explorador Matemático de 6º curso diploma..

### DIPLOMA

*When you rescue Nicodemus you will receive a "Diploma de Explorador Matemático de 6º Curso" with your name and the date you completed the program.*



*You can print the diploma in color or in black and white to color yourself.*



# TABLA DIDÁCTICA

## HABILIDADES

JUEGOS		RECONOCIMIENTO NUMÉRICO Y SERIACIÓN	MEMORIA CP O LP (CORTO/LARGO PLAZO)	MEMORIZACIÓN VISUAL Y FOTOGRÁFICA	DISCRIMINACIÓN (FORMAS, FIGURAS, NÚMEROS...)	CONCENTRACIÓN Y ATENCIÓN	COMPOSICIÓN Y DESCOMPOSICIÓN	AGILIDAD Y CÁLCULO MENTAL	RAZONAMIENTO LÓGICO MATEMÁTICO	PENSAMIENTO ABSTRACTO O DEDUCTIVO	ESTIMACIÓN RESULTADOS	INTERPRETACIÓN O CATEGORIZACIÓN	ABSTRACCIÓN	SECUENCIACIÓN O COMPREENSIÓN
	EL LABORATORIO DEL MAGO													
	LA ESCALERA DE CARACOL													
	EL PUENTE LEVADIZO													
	CONSTRUYE LA MURALLA													
	LA JUSTA													
	LOS ESCUDEROS													
	EL SALÓN DEL FRACCIONADOR													
	EL ESTABLO													
	EL VENTANAL													
	EL TAPIZ													
	EL ARQUERO													
CUADERNO ROBOT	RESUELVE LAS SUMAS													
	RESUELVE LAS RESTAS													
	RESUELVE LAS MULTIPLICACIONES													
	RESUELVE LAS DIVISIONES													
	RESUELVE EJERCICIOS DE FRACCIONES													
	CÁLCULO SEXAGESIMAL													
CÁLCULO MENTAL	SUMAS Y RESTAS													
	MULTIPLICACIONES Y DIVISIONES													
	DIVISIBILIDAD													
	POTENCIA Y RAÍZ CUADRADA													
	USO DEL PARÉNTESIS													
	TEORÍA													
	TEST													
	PROBLEMAS													

## CREDITS

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