THE XO LAPTOP IN THE CLASSROOM

SDENKA ZOBEIDA SALAS PILCO

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© THE XO LAPTOP IN THE CLASSROOM

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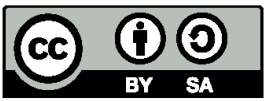

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Dedicated with respect and gratitude
to the memory of my dear Sensei
Mr. Yahiko Kambayashi
of Kyoto University – Japan;
who, with his example and dedication,
inspired me to love doing research.

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ACKNOWLEDGMENTS

This book would not have been possible without the help and collaboration of many people, colleagues, and institutions.

First, I would like to thank students, teachers and Elementary School Principal of Cusini 70107.

A special thankfulness to the ICT Specialist at Regional Direction of Education in Puno (DRE Puno), Prof. Jose Antonio Calderon Ramos, who with his endorsement encouraged me to develop this work.

Also, I would like to thank Mr. Alan Kay and Mr. Seymour Papert who inspired me to develop creative learning environments that are so needed in our present reality.

Thanks also to Small-Land group, friends from Argentine, Spain, Japan and the United States, who in spite of coming from other professional fields, feel responsibility for educational development in their respective communities.

In particular I am thankful to Kathleen Harness of the University of Illinois Urbana-Champaign for reviewing the English translation; her thoughtful suggestions made this work better.

And finally, I would like to thank my parents, brothers, and sister, who have always been by my side, giving me encouragement in all the projects that I have undertaken.

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FOREWORD TO THE ENGLISH TRANSLATION

The lesson ideas in this book show many ways the XO and Sugar interface can be put to work in classrooms. While it is a leap forward fraught with difficulties, it is crucial that we embrace the use of technology where it will make our lives better, where it will make our thinking clearer, and where it will make our understanding deeper. Applying these lessons will insure that your students fully participate in a rapidly evolving world of technology.

Kathleen Harness
The Office for Mathematics, Science, and Technology Education
University of Illinois Urbana-Champaign
www.EtoysIllinois.org

FOREWORD

I feel the responsibility of having this, soon to be released, book in my hands and I am thankful to the author for her invitation to write this foreword. This book's material contextualized for our Andean region fills a need not addressed in previous materials. I note that it is a well developed book and lessons ready to be applied in the classroom. This book reflects the author's dedication and commitment in the use of information and communication technologies (ICT). This book is a pedagogical tool for teachers in the classroom.

This publication should motivate others to develop similar texts that will benefit students and teachers in the use of information and communication technologies.

The use of free software is just beginning in our Andean region (Altiplano) and because of that the matter will seem new for many of us. In fact, it is an essential tool that should be put into our students' hands. The Sugar interface and the activities on the XO offer an infinity of possibilities that develop many capabilities.

We might say this book could be known as a "plug and play" and by that I mean, we can read this book and apply it in the classroom immediately. It has complete, proposed and developed, learning sessions that we can use in the classroom.

This book will become of essential reference for those who make use of Sugar interface whether on XOs or other computers. Thanks to the One Laptop Per Child Project, these (OLPC) laptops are being distributed among rural students who have limited economic resources and who live in quite remote regions. Even if you don't have an XO laptop, you can try its great software on your own computer by using a LiveCD or a bootable LiveUSB (Sugar on a Stick-SoaS).

Jose Antonio Calderón Ramos
ICT Specialist at Regional Direction of Education- Puno

PREFACE

The OLPC Project - "One Laptop per Child" began in 2005. It is directed by Nicholas Negroponte, and originated at MIT laboratories. This organization has the purpose of putting in children's hands that machine - the computer - designed in its beginnings to be used only by engineers. This organization was inspired by the ideas of the great visionary Seymour Papert, who developed the LOGO language in 1967, to put children in contact with the programming of computers.

Later, we find other researchers and scientists, among them Alan Kay who developed SQUEAK for him *the computer become an idea generator for children.*

In 2007, the XO laptop arrived at Peru and was a pilot research at the elementary school Santiago Apostle of Arahuay in the mountain region of Lima province. In 2008, 40,000 XO laptops were distributed among approximately 500 rural elementary schools in Peru. With this project, the Peruvian Ministry of Education made a jump to modernize the education, including the poorest communities, which is a worthy fact, because few countries in Latin America have had this initiative.

In 2008, approximately 3000 elementary school teachers were trained in the basic use and the maintenance of the XO laptop. Now, the challenge is including it in daily pedagogical activities and integrating this new technology in the rural school classroom.

In that sense, I would like to support the teacher's work by offering several ways to use XO laptop activities when working with our students. These activities are adapted to our educational reality and our location in the world.

Sdenka Z. Salas Pilco
Puno - PERU
April 2009

Dear colleague:

These proposed activities don't belong to a specific grade. You are free to add, modify or adapt them in accordance with the school and community context. Enrich these activities with your ideas and make them meaningful for your small students according to their interests and daily experiences.

Children should have a notebook named the FIELD NOTEBOOK, where they will write down all the advances, discoveries, and achievements they got using their XO laptops. In that way, they are encouraged to keep organised notes of their experiences thus initiating them into the work of scientific thinking.

I wish to receive your opinions and suggestions about this work, because I recognize that teacher practice is invaluable.

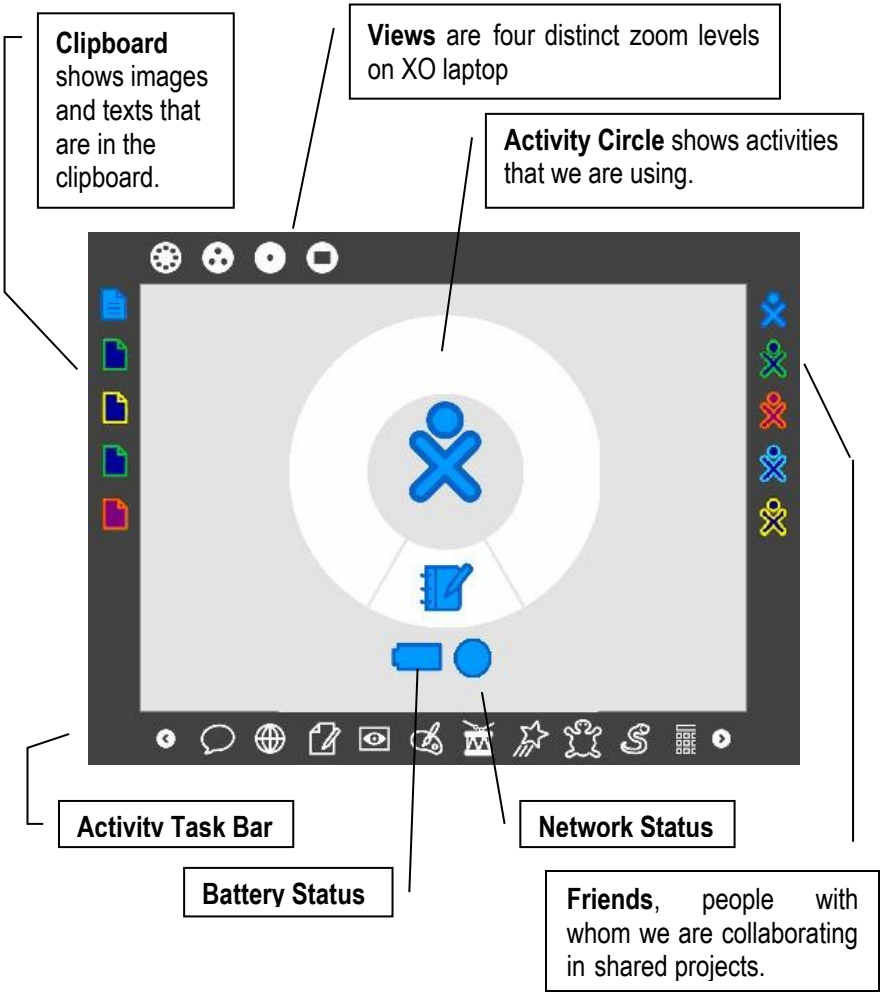
Write to: http://olpcpuno.blogspot.com
or send an email to: olpcpuno@gmail.com

BRIEF BEGINNING GUIDE

GRAPHICAL SUGAR INTERFACE

This simple interface is oriented for small children. It includes a group of applications that allow collaboration.

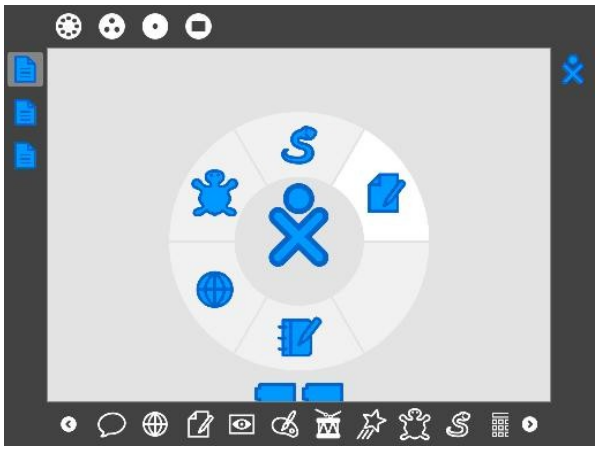
Sugar is oriented towards collaborative learning among children. It is not for training office workers. For that reason, Sugar is different from the conventional systems.



Sugar was developed with the programming language Python and deliberately developed to contain a small amount of text, because some children just are learning to read.

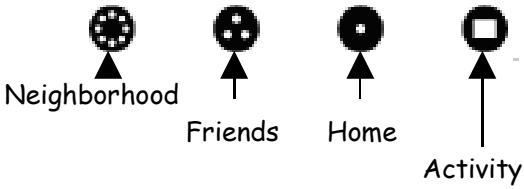
FRAME

The screen has a gray dark edge called Frame that is hidden, but it appears moving the cursor towards any corner of the screen.



VIEWS

We can accede to different types of view.



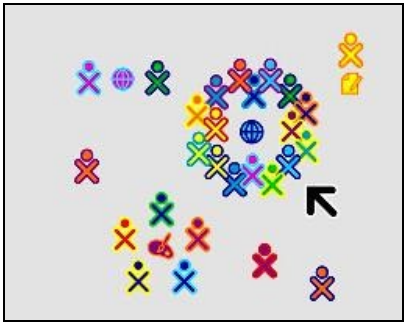
Home View

It is the default view and welcomes us to Sugar interface. We, clearly, see the streamlined figure of a boy, surrounded by a circle.

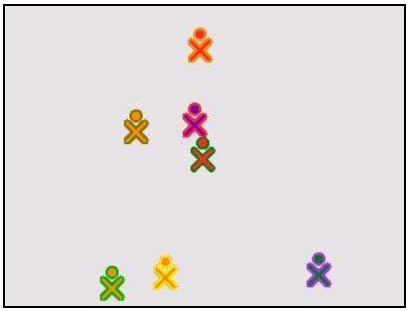
(=XO).

Activity Circle
It shows the icons of all activities we are using. The Journal icon always appears in the inferior part of the circle. We can load new activities until filling the circle. But, if you wish to load more activities and the circle is full, you should close some activities.

Neighborhood View
Also called Mesh view, it allows you to see who is in your network, what activities and objects we are sharing and what networks are available.



Friends View
It allows you to see what friends are in the network.

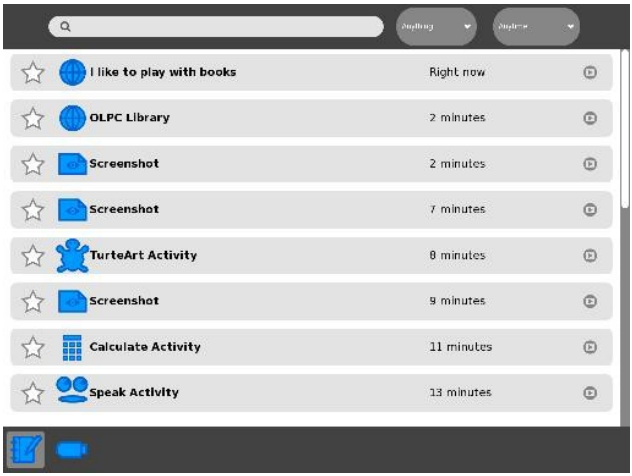


Activity View
It shows the current activity.

ACTIVITIES
They are the XO native applications.

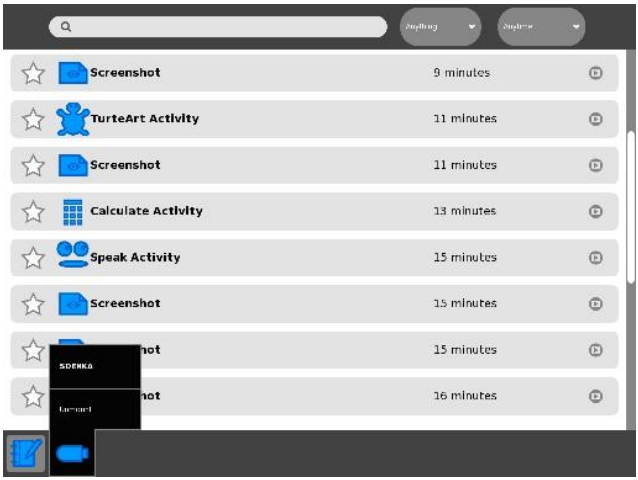
JOURNAL

It registers all realized activities and creations (photos, writing, drawing, etc.). It allows us to organize our work, erase files, accede to external device storage (USB), revisit past projects and see the student progress.



USB STORAGE DEVICE

Each file in the Journal activity can be dragged towards an USB and could be saved in the device. Click on the file then drag it and drop it over the USB icon.



INTEGRATING THE XO LAPTOP

INTO LEARNING SESSIONS

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ACTIVITY 01: Creating geometric shapes of several sides

PROCEDURE:

- Introduce the activity with a brief discussion referred to geometric shapes in our everyday life.

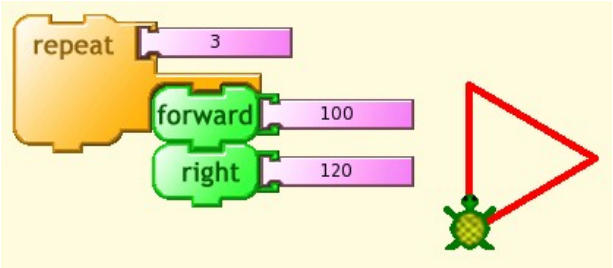
- Students recognize geometric shapes, while the teacher raises the following questions:
    - What do you call a three sided shape?
    - What do you call a four sided shape?
    - What do you call a five sided shape?

- Playfully, they obtain shapes using the TURTLE-ART activity, the process is executed several times through trial and error.

- They share their achievements with their classmates. The most advanced students become small mentors or tutors of the others.

- Students write down, in their field notebooks, the codes used to obtain a triangle, a square and a pentagon, and describe how they reached that solution.

MEANS AND MATERIALS:
Blackboard, chalk, XO laptop



RECOMMENDATIONS:

The codes are not always equal, children with their innate creative ability might obtain the solution in different ways, and we should motivate that creative diversity.

In the same way, children have quickly reached the solution, they are more indicated to help their classmates. In doing so, we stimulate collaboration among them.

We recommend that after each activity, all children could see the others' work, so not only the teacher will enjoy the children's creations, but every student could value his or her classmate's achievement.

Also, we recommend not hurrying children, some of them will reach the solution quickly. But others will delay, not because they don't understand, but because they have different capabilities. Sometimes mathematics needs to be explained in corporal form, in that case we can make children take the turtle's place and execute corporally turtle's instructions in the classroom or in the playground. We mean; if we want to obtain some geometric shape, should we move forwards or backwards?, how many steps?, how many degrees should we turn?, do we turn to the right or to the left?, and so on.

Learning by doing takes a little more time than learning by listening.

We notice that TURTLE-ART, ETOYS and SCRATCH activities include ART. Because children's creativity is expressed by art, draws and painting in a playful environment, then children will learn in a natural way.

You should allow children to discover solutions by themselves, teachers should avoid providing or indicating the solution. Teachers should act as facilitators, supporting children when they ask. Creative activities take time and need a continuous process of trial and error. Let children make mistakes, in that way, they will discover at least one way that does not reach the solution, coming to discard it and taking new ways of solution. That is how scientists work at laboratories: DISCOVERING, contributing with new solutions and an exhaustive work of TRIAL & ERROR.

ACTIVITY 02: Studying epidemics spreading with simulations

PROCEDURE:

- The teacher reads a newspaper headline: "two people died of influenza today".

- Students comment the text in reference.

- Some questions are:
  - *What is the influenza?*
  - *How do you prevent it?*
  - *Why is it so contagious?*
  - *How could we avoid infecting people or avoid to be infected?*
  - *In what season of the year does this disease appear?*
  - *How can we cure o prevent influenza?*

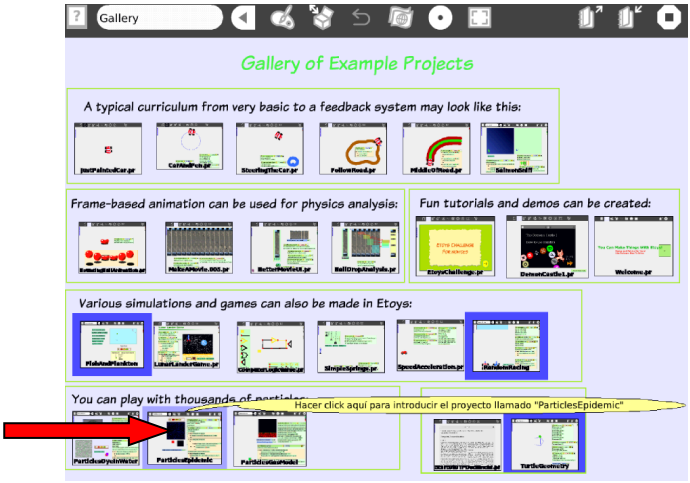
- Using the ETOYS activity, students enter to GALLERY OF PROJECTS and they click on PARTICLES EPIDEMIC.

- They will write down their impressions on contagious diseases, in their field notebook

MEANS AND MATERIALS:
Blackboard, chalk, field notebook, XO laptop

STEPS INTO THE ETOYS ACTIVITY:

1) Click on GALLERY OF PROJECTS, and then click on PARTICLES EPIDEMIC.



2) You can see a "World" with blue elements that represent 1000 inhabitants, click on GO [go] then it will begin the virus diffusion in RED colour, it takes approximately 8 seconds for the virus to infect all population.

3) You see a counter in the inferior part. It begins with 1 INFECTED, but finishes with 1000 INFECTED.

4) To stop the simulation, click on STOP [stop], if you like you can observe the infection process step by step, doing click on STEP [step].

SUGGESTION:

Execute the process step by step using STEP [step], in that way, you can see in detail, how the infection is spread among 1000 inhabitants. Also, you could observe in the counter how the virus contagion increases.

ACTIVITY 03: Finding symmetry in nature

PROCEDURE:

- Show images of things and beings that have symmetry, and then ask children: *What is common among them?*

- Explain the meaning of the word: symmetry.

- Then, ask children to give other examples of symmetry in nature.

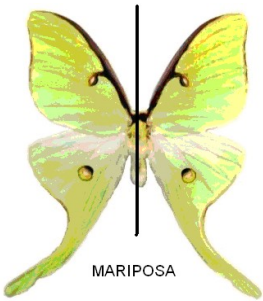
- Using their XO laptops, students look for things and beings in nature, that have this characteristic. Students use the BROWSE activity and Google Images.

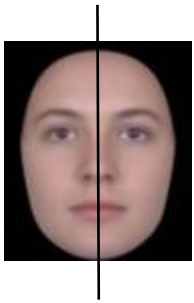
- After that, children use the TURTLE-ART activity to draw anything with symmetrical characteristic; they apply the trial and error procedure.

- They also draw symmetrical objects in their field notebook, and document their achievements with a notebook entry.

- Students share their discoveries with their classmates.

MEANS AND MATERIALS:
Blackboard, chalk, XO laptop





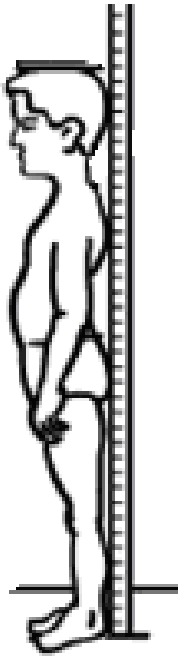
ACTIVITY 04: Measuring our heights. How tall are we?

PROCEDURE:

- Begin the class asking students if they know their heights.

- Make a comment on the relationship between height and normal child development. Then, explain about other factors like: genes or inheritance that takes part to define a person's height, as well.

- Utilizing the RULER activity on their XO laptops, they measure and mark in the wall, each student's height, using a masking tape and writing the student's name on it.



- In their field notebook, they elaborate a list including the name, height and age of every student; student should be able to record the measurement data accurately, then they will determine who is the tallest and the smallest student in the classroom.

- Explain the notion of the AVERAGE term and calculate, on the blackboard, the AVERAGE STATURE of the classroom.

- Students use the CALCULATE activity to obtain the average stature.

HOMEWORK TASK:
Students will obtain the heights of all their family members and calculate the average height.

MEANS AND MATERIALS:
Blackboard, chalk, masking tape, field notebook, XO laptop

ACTIVITY 05: Solving everyday situations with our calculator

PROCEDURE:

- Explain that mathematics is also a language, but it has special characteristics that turn it into a very useful tool for daily life.

For example: Two and two is…
The obvious answer is four.

But if we have the following sentences:

a. The Quispe family is planning to visit some relatives in Lima. Lima is located at the distance of 809 miles from Puno. But they should first travel to Arequipa, located at 182 miles from Puno, and then they should take another bus from Arequipa to Lima, whose distance is about 627 miles.

182 + 627 = 809 miles

b. You borrowed 2 Nuevos Soles from Marcos to pay your lunch in Ilave city, and today you gave him back 50 cents, consequently you owe him only 1 Nuevo Sol and 50 cents.

2,00 – 0,50 = 1,50 Nuevos Soles

c. Lucila is thinking to sew curtains for three windows of her room. Each window requires 1,50 yards of fabric. For that reason, she bought 4,50 yards of fabric in total.

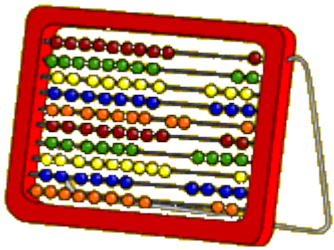
1,50 x 3 = 4.50 yards

d. Miguel is considering visiting Ilo's beaches, so he found out that buses run at 50 miles/hour speed. The distance from Ilave to Ilo is 413 miles. Therefore, his trip lasts 8 hours approximately.

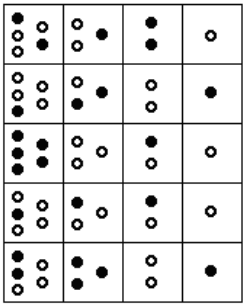
413 miles = 8.26 hours

- Students solve problems using arithmetic: addition (+), subtraction (-), multiplication (x) and division (/).

- Explain that human beings always have needed instruments to perform arithmetic calculations. Therefore, in the ancient China, it was used the ABACUS and the Collas (a Pre-Inca culture in the Peruvian Andes) used the YUPANA. Those were mechanical tools, and at present we use digital devices such as Calculators to handle arithmetic operations.



Abacus



Yupana

You may propose the next additional problems, and students could solve them using the CALCULATOR activity.

1. Saul and Pilar would like to participate in a running race at school. The race consists of running three times around the school playground. The playground perimeter is 220 yards. What is the total distance they should run?

2. Amanda and Benigno want to celebrate Marcos' birthday. Therefore, they invited 15 friends. Each friend will receive a piece of cake, even Amanda and Benigno, too. Altogether how many pieces of cake should be distributed?

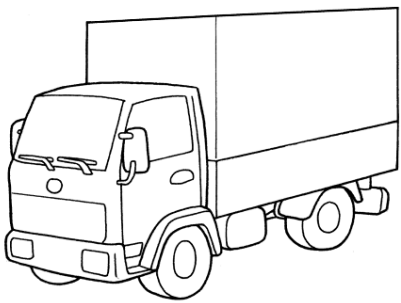
3. Luis is the third grade teacher and is organizing a spelling contest. There are 12 participants and he will prepare 20 words for each one. How many words will he have to prepare in total?

4. The teacher is giving a Maths quiz. There are 10 questions in the quiz and 25 students in the classroom. How many questions will the teacher have to check?

5. Jorge's place is 1,5 miles away from the school. His father takes him by bicycle 5 days a week. After class, Jorge walks back home. How many miles does Jorge walk every week?

6. Juan works packing products in Juliaca city. His job consists in putting 12 blue jeans in a plastic bag. Then he packs 5 plastic bags in a box. How many blue jeans does each box contain?

7. Ramon's father is a truck driver. He carries and takes merchandise from Puno to Lima in trips of 809 miles. It lasts 30 hours to travel from Puno to Lima. What is the speed of the truck?



ACTIVITY 06: Learning to read the time on an analog clock

PROCEDURE:

- Introduce the activity asking students the following question:
  - *What time is it?*

- Then, ask students who answered the first question:
  - *How do you know it?*

- Explain the difference between an analog clock that has an hour hand and a minute hand, and a digital clock that displays a numeric representation of time.

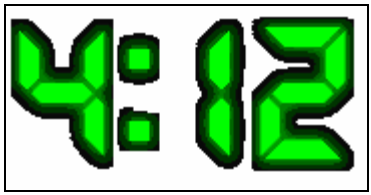
- Give details about how the hour-hand, the minute-hand and the second-hand work.

- Using the CLOCK activity, children learn to tell the time on an analog clock.

- Students write down, in their field notebooks, different exercises related to reading the time on an analogue clock

MEANS AND MATERIALS:
Blackboard, chalk, field notebook, XO laptop, a watch

Analog Clock



Digital Clock

ACTIVITY 07: Spreading the customs of our community

PROCEDURE:

- Begin the class asking students: *What customs are there in our community?*

- Using brainstorming, children make a list of these customs.

- Students write down, in their field notebook, a list of their community's tourist attractions, and then they will transcribe it into their XO laptops, using the WRITE activity.

- They work in groups and distribute tasks to take photos and document the customs of their locality.

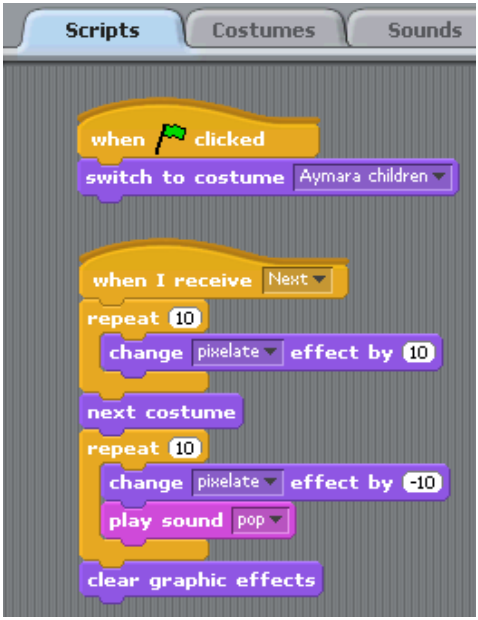
- In the classroom, everybody shares the photos, which should be gathered together and commented using Active Essays of the ETOYS Activity.

- After that, students will utilize the SCRATCH Activity to create a Slideshow to promote the visit to their community (see page 77).

MEANS AND MATERIALS:
Blackboard, chalk, field notebook, XO laptop

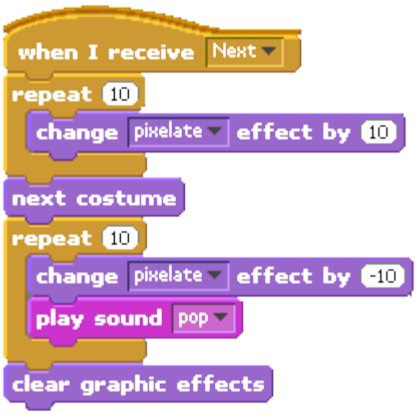
HOW TO CREATE A SLIDESHOW USING SCRATCH ACTIVITY

1. Enter to the SCRATCH Activity and drag the following codes into the Scripts area. (You can be guided by the colours).



2. Click the COSTUMES tab, import all the photos that you took and then click the SOUNDS tab and import the sound "pop".

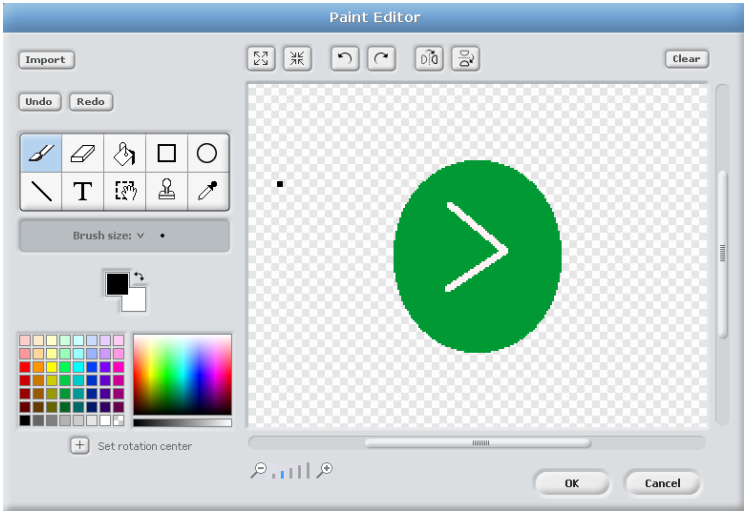
3. The first block indicates that **when pressed the Green Flag** , the Script starts **switching to costume Aymara children** (which is the first photo).



4. The second block indicates that **when it receives** the **Next** object, it should **repeat 10** times and **change pixelate effect by 10** (maximizing it by 10, bigger block size).
5. Then it should go on to the **next costume** (which is your second photo).
6. **Repeat** again **10** times and **change pixelate effect by -10** (minimizing it by 10), and doing the **"pop"** sound simultaneously
7. Finally, it **clears graphic effects**.

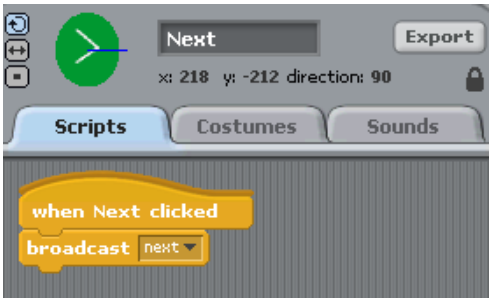
8. In order to add a new object click on

9. It will appear a Paint Editor and you will proceed to create your new object. Then click on OK.



10. Change the name SPRITE1 by NEXT.

11. And write the following code:



12. Finally click on the button and put it a name file.

ACTIVITY 08: Measuring our classroom and the school building perimeter

PROCEDURE:

- Comment on the importance of measurement in science and maths, being a fundamental engineering task.
    - *Why do we measure?*
    - *What things can be measured?*
    - *We measure objects, people, time, weights, etc.*

- Consider the activity of measuring the school building and making the school building map.

- Organized in groups, children are in charge of measuring their classroom, the playground and the school building. They will use the DISTANCE activity.

- In their field notebook, they write down the length and width of the school building and classroom

- After finishing the activity, students will gather together in the classroom, where each group informs about the obtained measurements. Consolidate the information and give indications to make a drawing of the school building map including the corresponding measures.

- Students do the detailed map of their school using the PAINT activity included on their XO laptops.

MEANS AND MATERIALS:
Blackboard, chalk, field notebook, XO laptop

ACTIVITY 09: Describing main economic activities of our community

PROCEDURE:

- At the beginning of the session, ask children if they know what an economic activity is, and what the main economic activities are in the community.

- Comment on the importance of economic activities for society

- Children complement the information, thinking on their parents and other relatives' jobs and professions, and their relationship with economic activities that are in the community.

- They will make a summary in the form of a conceptual map using Active Essays of ETOYS activity and illustrate the topic using the PAINT activity.

MEANS AND MATERIALS:
Blackboard, chalk, field notebook, XO laptop

ACTIVITY 10: Collecting sounds and photos of the birds that live in our community

PROCEDURE:

- Propose the topic starting with the next questions:
  - *What kind of bird do we often see in our community?*
  - *Which is its habitat?*
  - *Do you know that some Andean birds are in danger of extinction?*
  - *What are we doing to prevent their extinction?*

- Children write down a list of the birds that exist in the locality or region.

- Divide the class into small groups, each group distributes among students some responsibilities to collect information on the habitat and life-cycle of the birds that live in the region.

- Each student is in charge of recording sounds and songs of birds and taking pictures of them if it is possible. They use the RECORD activity included on their XO laptops.

- In the classroom, the groups share and make a presentation of their videos and recordings, explaining about the habitat and habits of each bird.

- In their field notebook, students write down a summary of the realized activity indicating the difficulties they had to carry out the task.

MEANS AND MATERIALS:
Blackboard, chalk, field notebook, XO laptop

ACTIVITY 11: Creating animations of insects and little animals

PROCEDURE:

- Comment on **insects that are beneficial and harmful to humans**.

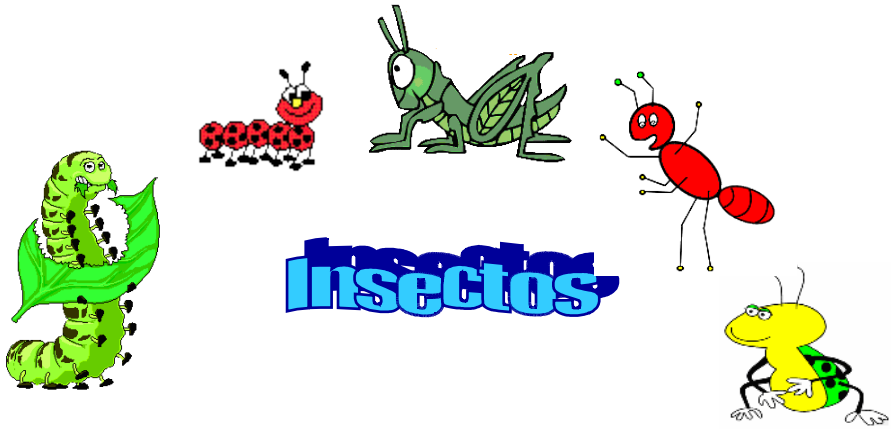
- Then ask students:
  - *What insects do you know?*
  - *Do you like insects?*
  - *Are you afraid of them?*

- Request students to choose a favorite insect and draw it using their laptops. Finally they animate it.

- Using the ETOYS activity, they create a new PROJECT (see reference about ETOYS, page 70) and utilizing the Paint option they draw their favorite insect, and then they will animate it.

- In their field notebook, children write down their impressions about the animation process and detail their difficulties and achievements.

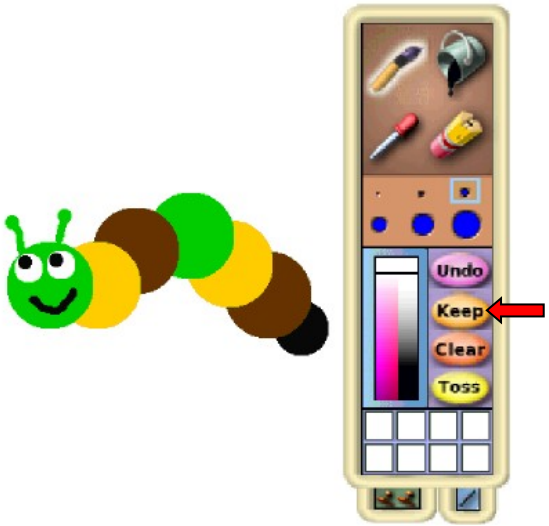
MEANS AND MATERIALS:
Blackboard, chalk, field notebook, XO laptop



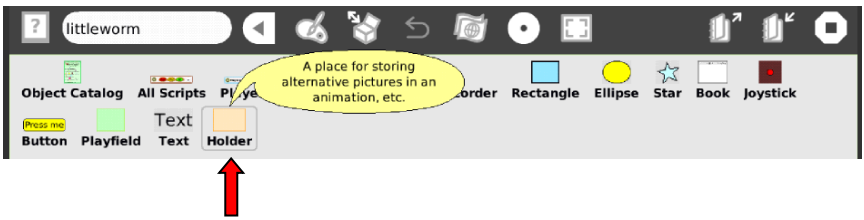
HOW TO CREATE AN ANIMATION

We create an animation by the following way:

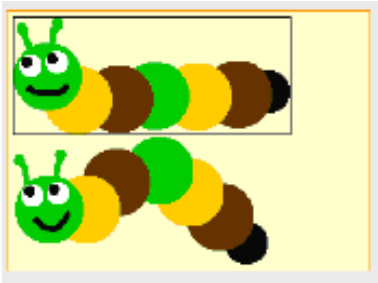
1) First, click on the purple cloud MAKE A PROJECT (see page 70), the screen will display a blank window with the same Navigator bar as the opening window.
2) Select in the Navigator bar the Paint palette [ ] and create the first drawing for the animation. After finishing it, press the button KEEP [Keep] that is within the Paint palette. Create a second drawing in the same way then press KEEP.



3) In the Navigator bar, click on Supplies [ ] and drag the Holder icon [ ] towards the ETOYS World.



4) Then, place inside the Holder object, the drawings that you will use for the animation.

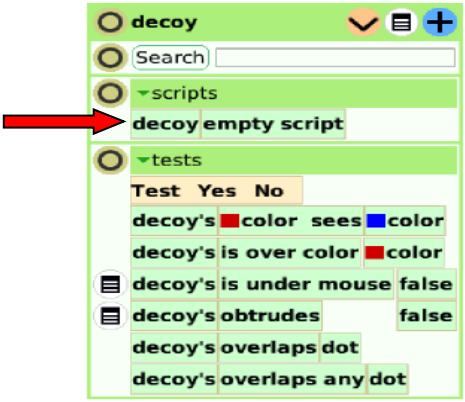


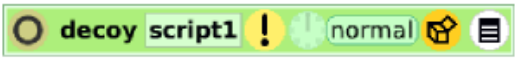
5) After dragging to the Holder the drawings that will be the base of the animation, draw a big circle (using the Paint palette ( ) that will serve us as a decoy. Then change its name to **decoy** (as a decoy might serve either a circle or a square).

SCRIPT FOR THE ANIMATION

6) Right click on the **decoy** object to show the halos, and then press the cyan halo [ ] to obtain the Viewer of script tiles.

7) From the **scripts category,** drag the **decoy empty script** Action and drop it to ETOYS' World.

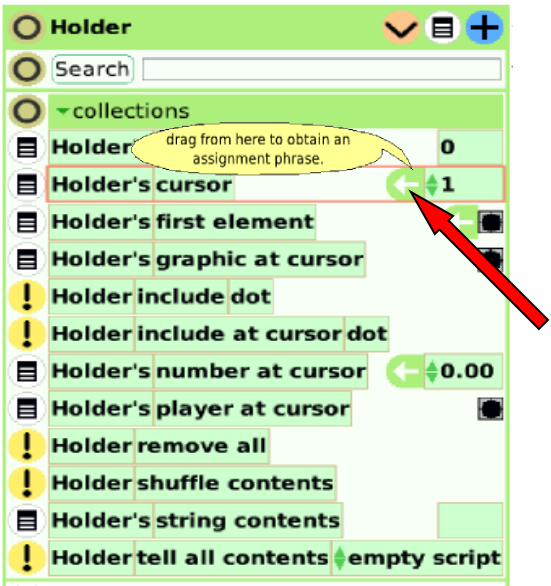




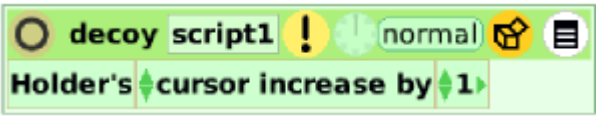
As this Script is empty, nothing is executed.

8) Right click on the Holder object, the halos will appear and click on the cyan halo [ ] to obtain the Viewer.

9) From the **collections category** drag the arrow [] of the **Holder's cursor** Attribute and add it to the Script.



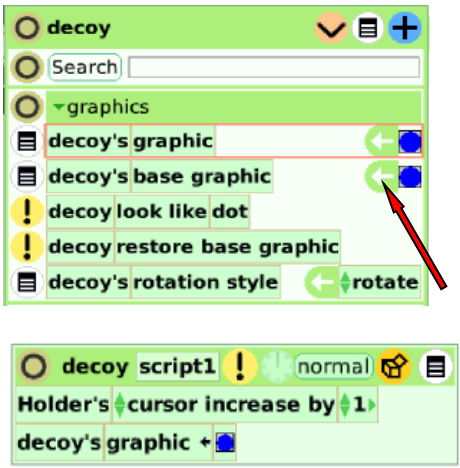
10) Clicking in the small green arrows [ ] change it to **cursor increase by**



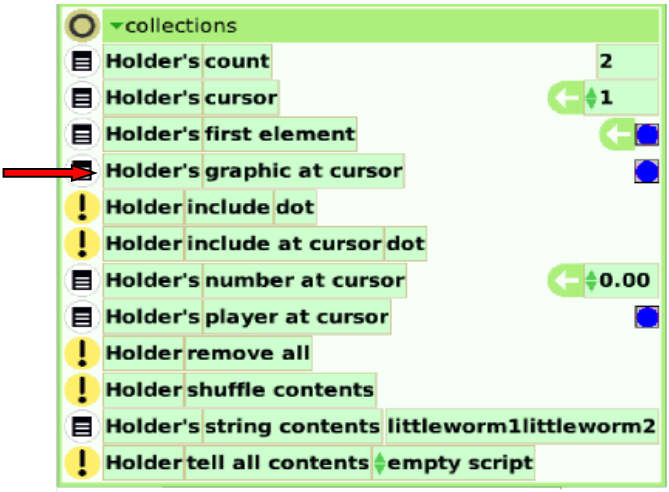
Note: In this case, the cursor is represented by the black edge that surrounds the drawing inside the Holder; the cursor will advance each drawing one by one, recursively.

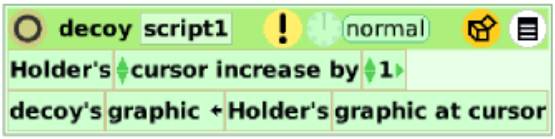
11) Then, from the **graphics category** of the **decoy** object, drag the arrow [ ] of the **decoy's graphic** Attribute and add it to the script.

*Note: Be careful, you should drag it from the **decoy** object's Viewer and NOT from the Holder object's Viewer.*



12) Then, from the **collections category** of the Holder object, drag the **Holder's graphic at cursor** Attribute and replace the graphic [ ] on the Script.





In the first Script line, it is indicated that the cursor is advancing one by one the graphics, the second line indicates that the Decoy is showing the graphics that are in the Holder, and repeating these steps you obtain an "animation".

Note: Be careful, again. You should drag from the Holder object's Viewer and NOT from the Decoy object's Viewer.

13) After finishing the Script, execute it! by clicking on the small clock [ ].

HOMEWORK TASK: As a challenge for the children, could they change the animation speed?!!!

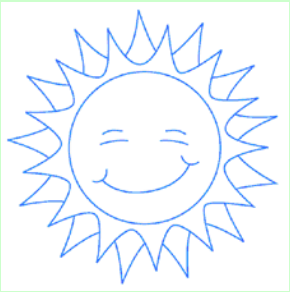
ACTIVITY 12: Creating Active Essays with ETOYS

PROCEDURE:

- Start the session reading the Andean story: "The Lawsuit between the Pucupucu and the Rooster".

THE LAWSUIT BETWEEN THE PUCUPUCU[1] AND THE ROOSTER

Author: Julian Palacios Rios, teacher from Puno-PERU,
narrator and scholar of aymara language.



"Pucus, pucus, pucus…
Pucupucu sang every dawn.
He had the mission to welcome the new day.
It was his duty to pay respects our universal father, the Sun, every sunrise.
For centuries, his ancestors had done the same.
His simple and sober life passed in the countryside.
He looked for his food in the prairie grains.
Nobody had disturbed his country peace and independence.

One day, he was surprised to hear a strident voice.
Cook-a Doodle Doo! Cook-a Doodle Doo! Cook-a Doodle Doo!
It was the foreigner, a Wiracocha[2] that disputed his right to announce the arrival of the new day.
Next morning, Qoqoruchi[3] repeated his song.
This situation was intolerable.
Pucupucu had the moral obligation to make respect the tradition of his ancestors.
He could not remain indifferent any longer.
He decided to go to look for the usurper of his rights.

He was, immediately, in search of the rooster.
He found him and exposed the object of his visit:
- My mission is to announce the dawn, every day.
Nobody have to do what is my duty.
That has been the custom of my ancestors.
You, Mr. Qoqoruchi, do not have to sing in the mornings.

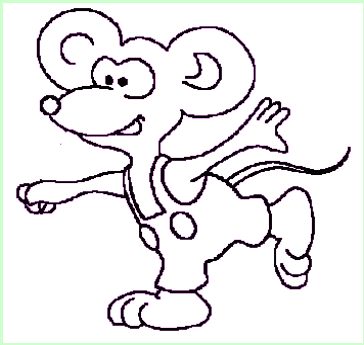
[1] Pucupucu is an Andean bird that sings at early dawn.

[2] Wiracocha denotes a White man, now often used pejoratively or for usurper and invader.

[3] Qoqoruchi is a quechua onomatopoeia that denotes the rooster noise, such as cook-a-doodle-doo.

The rooster, as unique answer, shook his wings, extended the neck and sent an energetic song: Cook-a Doodle Doo!…
It became a heated dispute.
Nobody wanted to yield up the right to sing
At last, they decided to bring their complaint before the authorities, in the close town.

Pucupucu intoned, the next morning, his customary song.
Pucus, pucus, pucus…
It was the announcement that he was making a trip to the city.
He was going to present his complaint before the Judge. He was sure to obtain justice.
The rooster, on the other hand, also made the trip, but he did it on foot, walking.
He had enough provisions for several days.
He trusted to win the lawsuit with his arrogance and gentleman's tone of. voice.



Beside the road, a mouse went to his encounter

- Wiracocha, - he interrupted him –let me ask you a favour.
- What do you want? - said the rooster.
- Have the kindness to give me a little food for my children, who are starving.
- I am sorry. I cannot accede to your demand. I am going to the town to file a lawsuit and I do not know if my provisions will last me.
The mouse insisted begging him.
- If you are involved in some litigation - he said. I can help you effectively. I have special experience and studies on the matter.
With his insistence and flattery, he convinced the rooster and obtained a little food, but he had to join his new friend.

An obstacle appeared on the way. There was a river very difficult to cross. The rooster was worried about this situation.
But the mouse taught him how to cross the river. He took straws and blades of grass, and he made a bale, pushed it into the water and grabbed on it he was able to reach the other shore, although the current was strong.
The rooster did the same and crossed the river.
With this action, the mouse won the rooster's confidence.

The rooster and the mouse arrived at the town when pucupucu was already resting and spent the time with a friend.

Half an hour later, pucupucu, and the rooster accompanied by the mouse, were before the Judge.

- Sir, - exposed pucupucu - I have the right to announce the arrival of the new day with my song. My ancestors did the same since time immemorial. Now this gentleman rooster, a foreigner, who just arrived, tries to usurp my rights.

- Well, present your written demand - said the Judge.

The rooster, on the other hand, exposed:

- Sir, I have got the right to sing in the dawn of the new day, by personal efforts of my parents during the conquest of this country.

- Present your written plea – said again the Judge.

Both of them agreed and went to look for solicitors who could write their respective claims.

One hour later, the complainants returned to the Court with their written pleas.
Pucupucu gave his paper to the Judge.

- It is OK, said the Judge.

The rooster gave his plea, as well.

- Well – said the Judge – Tomorrow, on working hours, your demand will be seen and solved. But, it is necessary that you do not bother neighborhood with parties and scandals. Since you, who come from the countryside, are used to doing so. I will observe if indeed you are precise in announcing the dawn of the day. I hope that time signals will be accurate.

Saying this, the Judge shows them his clock.

When leaving the room, the mouse said to the rooster.

- The Judge has a clock. It is necessary to get a clock, so that you will sing at the exact time, as the authority said. If we do not do that, we are in danger to lose the lawsuit.

Immediately, they looked for a clock and got it after some difficulties.
In their lodging, at night, the mouse took again the initiative, saying:

- Rooster, what do you think if I go to remove the Indian plea and I make it disappear?

- Great! – said the rooster.

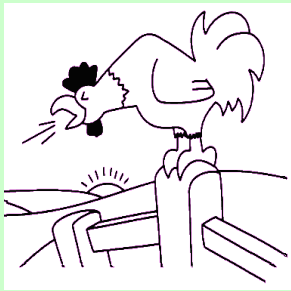
The Pettifogger went to the Court, entered by a hole in the wall, climbed up on the desk, dragged the document behind some drawers and chew it into pieces. Then he went back and gave an account of what he did.

Then he proposed again:

- What do you think if now I go and steal the copy that pucupucu must have in his luggage?

- Splendid! – said the gentleman.

And the mouse went to the pucupucu's lodging. Found him sleeping calmly. Then he looked for his q'epe[4], got the copy and took it to destroy it in front of the rooster.



Pucus! Pucus! Pucus! …
The countryside bird sang whenever he woke up and thought it was opportune.
Meanwhile the rooster and the mouse were checking the clock. At four o'clock, the Spanish began to sing. Cook-a Doodle Doo! Cook-a Doodle Doo! Cook-a Doodle Doo!..
At five o'clock, at six o'clock. He did the same.

At normal working hours, as the Judge had ordered, the litigants appeared before the Judge to litigate about their right to announce the new day.

The Judge was sitting at his old desk, full of papers, with an inkpot and crucifix on it. With a solemn voice, the authority required:

- Who is the plaintiff?

- Me, Sir - pucupucu said.

- Where is your written plea? - he asked.

- I gave it to you, yesterday. It was on the desk.

The Judge looked for it and couldn't find it.

- It is not here - said to him - Do not you have a copy?

- Yes, I have it - said with some hope, pucupucu.

He looked inside his q'epe and couldn't find the copy…
The poor indian was hopeless, the document wasn't there.

Then, the Judge turned to the rooster and said to him:

- Where is your written plea?

- It must be on your desk, Sir..

The Judge found it immediately and began to read it.

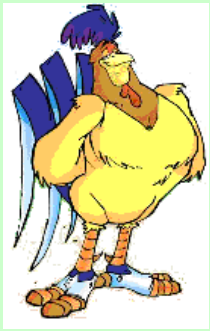
- Very well! - he said and went on - you have given the time accurately and your documents are in order.

[4] Q'epe is a larger rectangular carrying cloth worn over the back and knotted in front.

And talking to pucupucu, he said to him:

- You have bothered with your songs at any time, in spite of my warning. That is how Indians are, when they come from the countryside. They drink a lot and are very annoying. Also, they do not have their documents in order.

Then, in the name of the Law, he declared that the gentleman rooster has the right to give the time, with his sonorous song, every morning.



That is how pucupucu lost his legal right to greet the arrival of the new day.
Since then, the rooster is very vain in the house of gentlemen: he eats good grains of rice, maize, wheat, etc. While the poor pucupucu, lives in the countryside, outdoors, with no coat, no shelter, no secure food…

Pucus! Pucus! Pucus! …
Continue singing many pucupucus in the countryside.
They wait for the dawn of a new glad day.
They hope to see the sun of Justice shining for all.
That day has to arrive!
Pucupucus of the world don't have a doubt.

Ask the following questions.

- *What characters are there in this Andean story?*
- *Why was there a lawsuit between the Pucupucu and the rooster?*
- *Whom do these characters represent?*
- *Who gained the lawsuit and why?*
- *Have you ever seen a Pucupucu?*
- *What is it like? Could you describe it? How is its song?*

– In their notebook, students write down a summary of the story and draw a scene from their favourite part of the story.

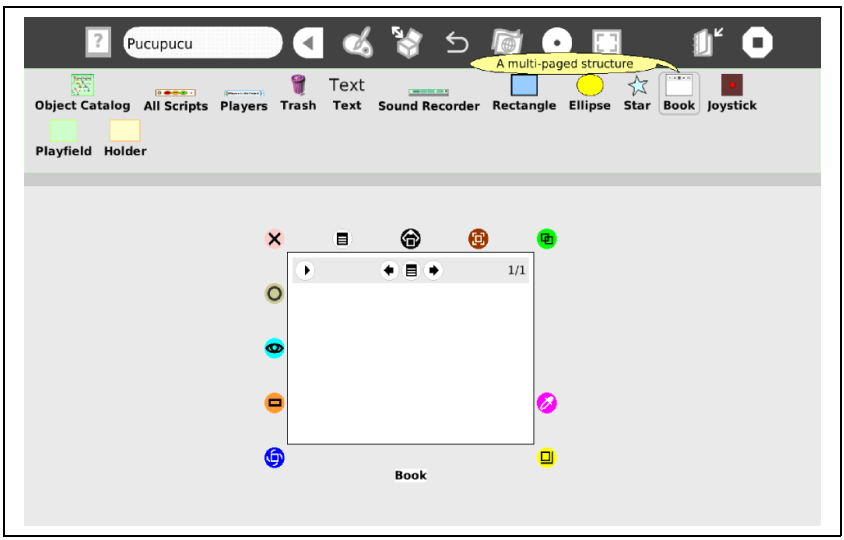
– Using the ETOYS activity children create an Active Essay.

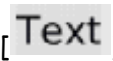
– Then they share digitally their Active Essays with their class-mates, using their XO laptop's wireless network mesh.

CREATING AN ACTIVE ESSAY:

1) First, click on the purple cloud MAKE A PROJECT (see page 70), then the screen will display a blank window.

2) Select in the Navigator bar the option Supplies [ ] and drag the Book icon [ ] towards the ETOYS World. Enlarge it, using the yellow Halo [ ].



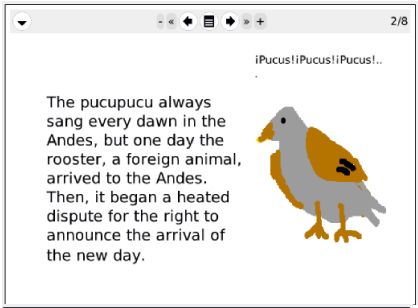
3) Click again on Supplies [ ] and drag the Text icon [

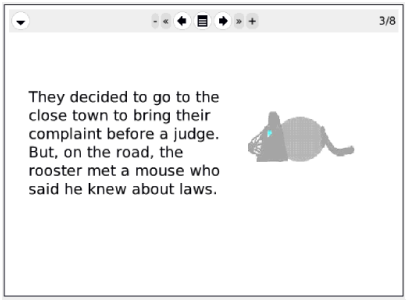
] and put it inside the Book object.

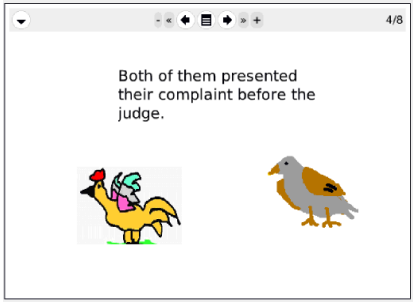
4) Using the Paint palette [ ], draw the three characters separately, and then drag them into the Book object.

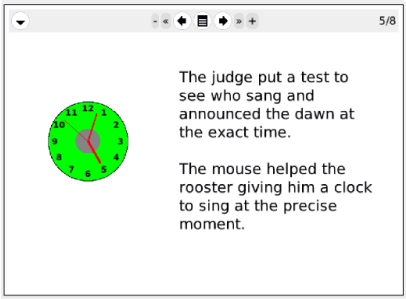
5) Click on top left Arrow [] to show more controls.

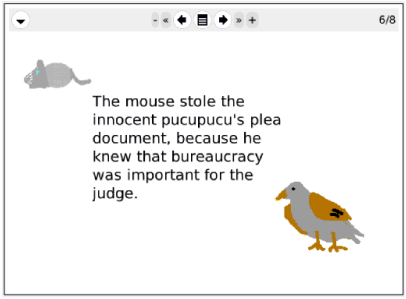
6) Click on the icon (+) to add a second page to the Book. Write down a summary of the story in three or more pages and add graphics or images related to the story.

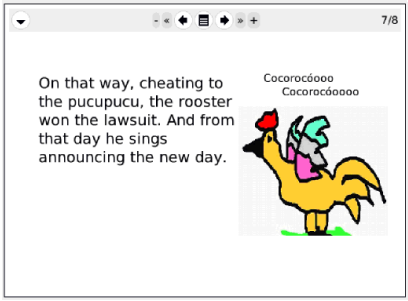


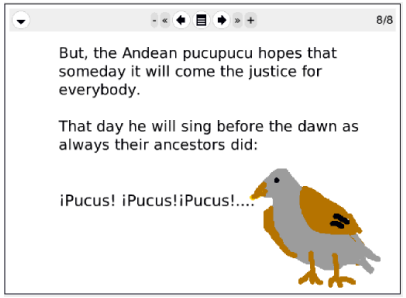












ACTIVITY 13: Finding out about our family's ancestors

PROCEDURE:

- Begin the session asking students about their family members.
  - *How many people are there in your family?*
  - *Do you have brothers, uncles, cousins?*
  - *Are your grandpa and grandma alive?*
  - *Did you ever meet your great grandmother or your great grandfather?*

- Emphasize the importance of family in society

- Request some volunteers to share any family anecdote.

- Students draw their family tree or genealogical tree.

HOMEWORK TASK: Children will take instant photos of their family members and elaborate an Active Essay (see page 50), using the ETOYS activity. Then, they will write a brief description of the persons who appear in the photo.

- In the next session, they will show their Active Essays and narrate a short family anecdote.

MEANS AND MATERIALS:
Blackboard, chalk, field notebook, XO laptop

ACTIVITY 14: Promoting tourist beauty spots of our community

PROCEDURE:

- Ask students: *What tourist attractions are available in our community?*
- Through brainstorming, students mention all tourist attractions
- They will write down in their field notebook, a list of places of interest and tourist attractions in their community and then transcribe it into their XO laptops, using the WRITE activity.
- Distribute the tasks to students, who are organized in groups, to take photos of the most beautiful sites of their locality.
- Gathered together in the classroom, every student shares his/her photos with the other children in the class.
- They will use the SCRATCH activity to create a Slideshow to promote visits to their community.

MEANS AND MATERIALS:
Blackboard, chalk, field notebook, XO laptop

Monoliths of Taraco (Huancane-Puno)

ACTIVITY 15: Measuring running speed

PROCEDURE:

- Explain about sports and the necessity of keeping our body in good physical condition.

- Start by doing stretching and warming up exercises

- Divide students into two groups: The first group will run around the backyard and the other group will measure the speed of children running. Then, they will exchange places.

- Using the CHRONOMETER activity included on the XO laptop, they measure the speed of each classmate and create a ranking.

- Students will make a ranking including all children's name, age and their time running around the backyard. Then they will determine who the fastest student is in the classroom.

- After that, explain the notion of the term AVERAGE and write on the blackboard the calculation of children's average speed.

- Finally, students will use the CALCULATE activity, to obtain the classroom's average speed of running.

MEANS AND MATERIALS:
Blackboard, chalk, field notebook, XO laptop

ACTIVITY 16: Practicing correct word pronunciation

PROCEDURE:

- At the beginning of the session, students practice the pronunciation of words they already know. For example:
  House, ball, sun, Internet, mother, father, school, lake.

- Provide picture prompts to help the students. Then, comment on the importance of correct pronunciation that helps us to communicate with others

- Ask the students brainstorm a list of English words that they want to improve their pronunciation.

- Using the SPEAK activity, children practice the correct pronunciation.

MEANS AND MATERIALS:
Blackboard, chalk, laminae with words in English, XO laptop

ACTIVITY 17: Recognizing musical instruments

PROCEDURE:

- Comment **on** the region's native music that students had occasion to hear during the main local festivity.

- Ask the following questions:
  - *What is music?*
  - *What kinds of instruments are played in native music?*
  - *Do they play a musical instrument?*
  - *What native melodies they can play?*
  - *When do they play those melodies?*

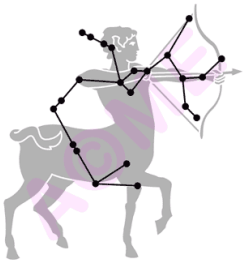
- Using the TamtamMini activity, children will recognize different musical instruments, and they will distinguish among wind instruments, string instruments and percussion instruments.

- If some students can play an instrument, they are invited to play it and the other students will record the musical presentation on their XO laptops (RECORD activity) and write down a brief description of the musical instrument (WRITE activity).

- In their notebooks, they will write down a brief review about their favorite musical instrument.

MEANS AND MATERIALS:
Blackboard, chalk, notebook, XO laptop, musical instruments

ACTIVITY 18: Observing and identifying stars and constellations



PROCEDURE:

- Begin asking students the following questions:
  - *Have you ever seen the night sky full of stars?*
  - *Do you know the name of the stars?*
  - *Does anybody know what is a constellation or a galaxy?*

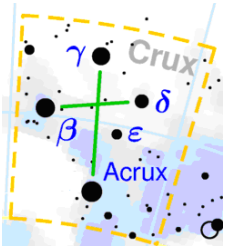
- Students comment in groups, about constellations or bright stars they know and/or have seen in the night sky.

- Divide the class into groups and distribute tasks to each group to gather more information about stars and constellations. Students should identify brightest and commonest stars and locate them in the STARCHART activity on their XO laptops.

- Each student makes a list of stars and constellations, and then they will write down the stars' names using the WRITE activity and make a drawing of the constellations using the PAINT activity.

- Gathered together in class, each group shares its findings about stars.

- In their field notebooks they will make a summary of the activity, indicating the difficulties they had carrying out the task.



MEANS AND MATERIALS:
Blackboard, chalk, field notebook, XO laptop

ACTIVITY 19: Documenting our community's main celebration

PROCEDURE:

- Welcome children to class. Then, make a comment on the main religious festivity in honor for the local saint.

- Ask children questions about the topic:
  - *Who is the Patron Saint of our community?*
  - *Who is the alferado*[5]*?*
  - *What are the alferado's responsibilities?*

Saint Michael, the Archangel

- Students discuss in group and expose their ideas.

- Then, children are divided into groups to be in charge of documenting the main festivity, doing recordings, and videos shootings. A group will be in charge of recording rehearsals and performance preparation, another group will record the procession of the Patron Saint, others will document the contest of native dances in honor of the Patron Saint and finally another group will be in charge of the Cacharpari or goodbye party.

- In the classroom, each group presents its task and the teacher helps them to gather all the videos they made and prepares a single documentary using the ETOYS activity or the SCRATCH activity to create a Slideshow to promote the visit to their community (see page 32).

MEANS AND MATERIALS:
Blackboard, chalk, field notebook, XO laptop

[5] *Alferado* is the religious festivity organizer and invites typical dishes and beverages to the participants

ACTIVITY 20: Observing a lunar eclipse

PROCEDURE:

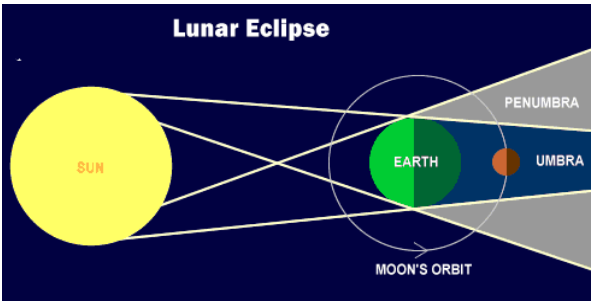
- Begin with a slight dialogue about the moon shapes during the lunar cycle, then you will ask the following questions:
  - *What is the moon?*
  - *How does the moon influence in our agricultural activities?*
  - *How many different shapes does the moon have?*
  - *How long is the moon's cycle?*
  - *What is a lunar eclipse?*

- They use the MOON activity included on their XO laptops and review the pertinent information. For example: On July 7th, 2009 there will be a penumbral lunar eclipse at 5:05 a.m. and on August 6th, 2009, there will be another penumbral lunar eclipse at 8:09 p.m.

- It would be convenient to have an outdoor activity, and observe the moon phases. If it is possible, the activity will be coordinated during a lunar eclipse.

- They will draw the moon, using the PAINT activity and indicate in what phase the moon is. In their field notebooks they will write down a summary of the activity.

MEANS AND MATERIALS:
Blackboard, chalk, XO laptop



ACTIVITY 21: Recognizing the countries' location

PROCEDURE

- Begin asking students about the geographic location of some countries.
  - *How many continents are there in the world?*
  - *In what continent is Peru located?*
  - *What countries are there in South America?*

- Emphasize the importance of geographical location, because it determines the formation of economic blocks.
  - *Do you know a group of countries that forms a single economic or political block?*
  - *Do you know what the Andean Community of Nations – CAN is?*
  - *Do you know what the European Union - the EU is?*
  - *What does APEC stand for?*

- Explain what APEC is and the importance of being an APEC member

- Using the GEOGRAPHY activity, ask some volunteers to point out on a map, countries that are ACN members and APEC members.

- In their field notebooks, students will write down a list of Country Members of APEC and ACN

MEANS AND MATERIALS:
Blackboard, chalk, a world map, field notebook, XO laptop

XO LAPTOP ACTIVITES

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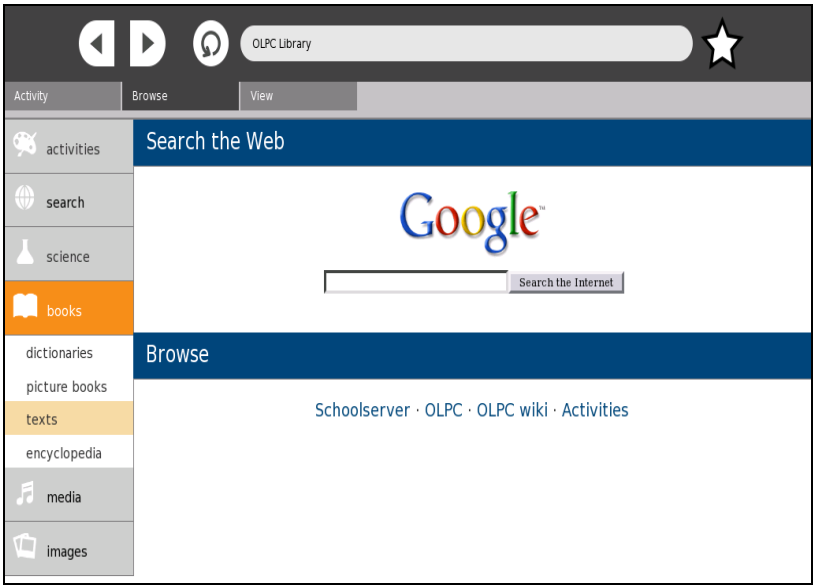
BROWSE

It is an Internet navigator, intuitive and simple to use. It let us search for information and collaborate with others.

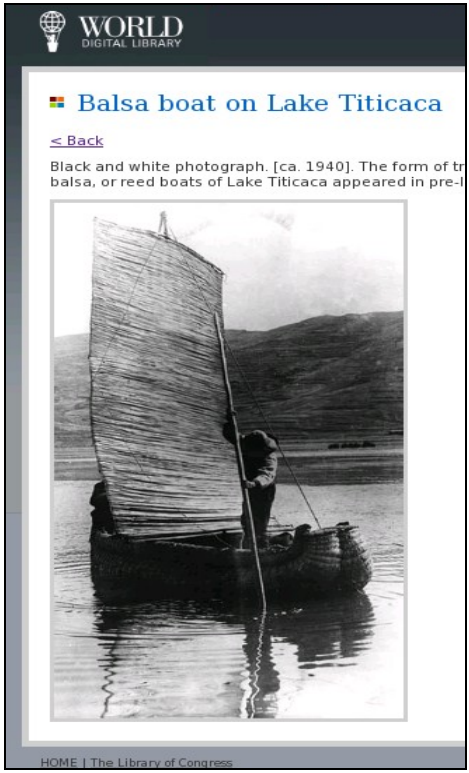


On the left side we find:
- Activities: find activities, explore your XO
- Search: search the Web
- Science: biology
- Books: dictionaries, picture books, texts, encyclopedia
- Media: music
- Images: world culture, world maps, nature images

Clicking on:

Images/ world culture/
photographs/ World/
Balsa boat on Lake Titicaca

We find information about the balsa or reed boats of Lake Titicaca.



CALCULATE

The XO laptop has a generic calculator, with simple functions that are easy to use. It also includes more complex mathematical functions, function plotting and it supports variables.

OPTIONS

1. **Edit**: Allows us to Copy, Paste and Cut

2. **Algebra**: Includes functions like square that multiplies the result by itself (square, ^2), square root (sqrt ()), exponential function (exp ()) natural logarithm (ln) and factorial function (fac)

Examples:

7square = 7^ 2 = 49
sqrt (16) = 4
exp (2) = and ² = 2.71828182 ² =7,38905609
ln (345) = 5,843544441
5fact = 5! = 1 x 2 x 3 x 4 x 5 = 120

3. **Trigonometry**: Shows the functions:
   -sine (sin), cosine (cos), tangent (tan)
   -arc sine (asin), arc cosine (acos), arc tangent (atan)
   -hyperbolic sine (sinh), hyperbolic cosine(cosh), hyperbolic tangent (tanh)

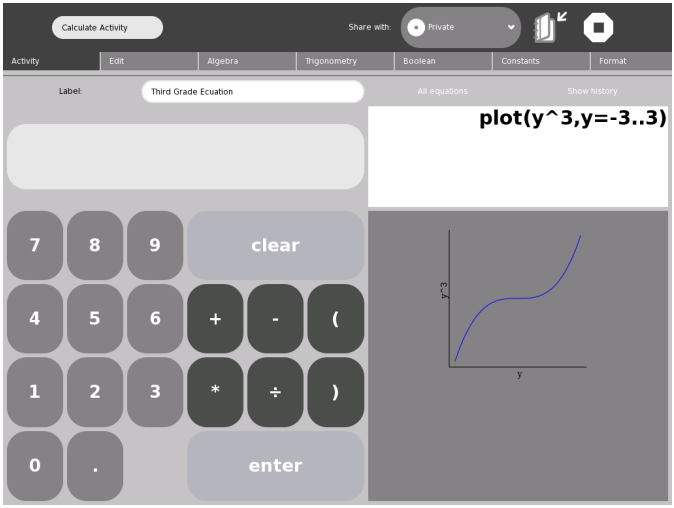
4. **Boolean**: and, or, or exclusive (xor) equality (eq), negation (neg)

5. **Constants**: pi=3.14159265 and e=2.71828182 (epsilon)

6. **Format**: degrees (deg)

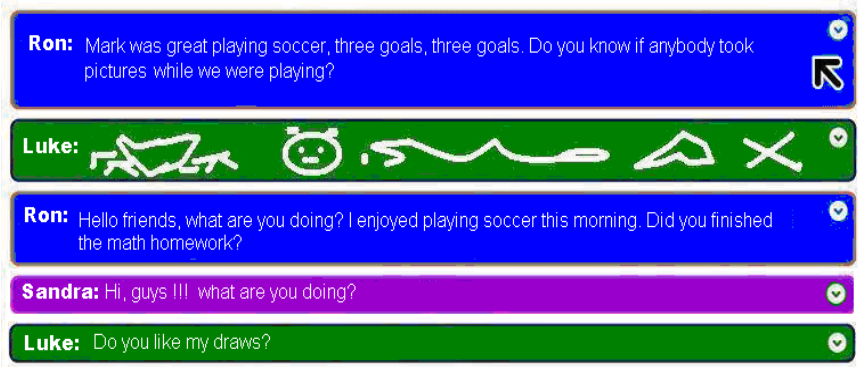
The function **plot**, allows us to mark points on a graph and draw a line or curve connecting them.

Example: plot (x^3, x=-3..3)



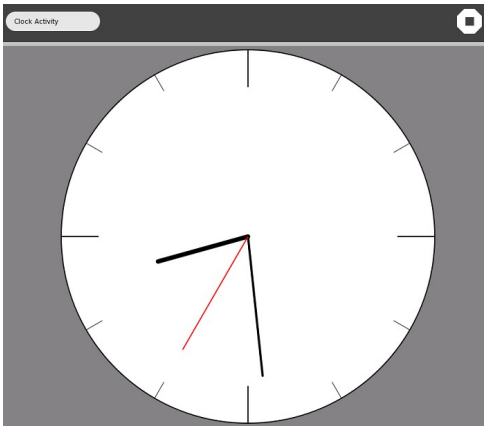
CHAT

The CHAT activity offers an interface for collaborative discussion using text. Chat can keep a record of the conversations in the JOURNAL. It lets us search for comments as well.



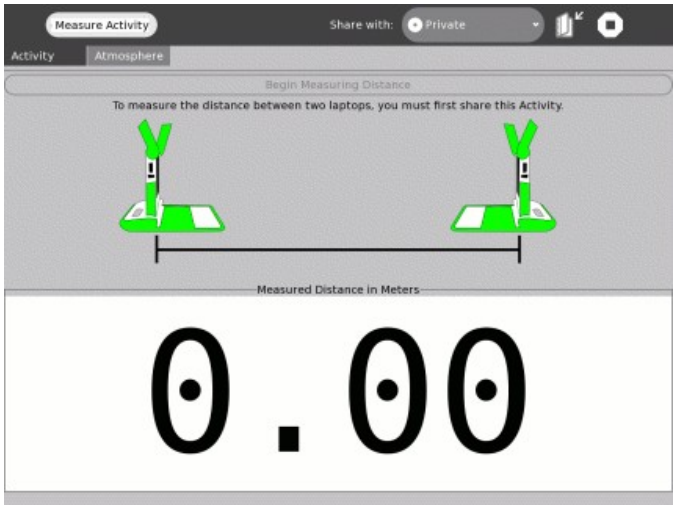
CLOCK

This activity shows us an analog clock and it is possible to learn to read the time.



DISTANCE

It allows us to measure the distance using audio pulses. It is necessary to have two XO laptops.



Click on the DISTANCE activity in laptop 1, then send an invitation to laptop 2, click on the Invitation icon to launch the DISTANCE activity.

In both laptops click on the button BEGIN MEASURING DISTANCE

Laptop1 will send an audio pulse and laptop2 will respond, as well. Then both laptops will calculate and display the distance between them in meters.

It will repeat until you click on STOP MEASURING DISTANCE.

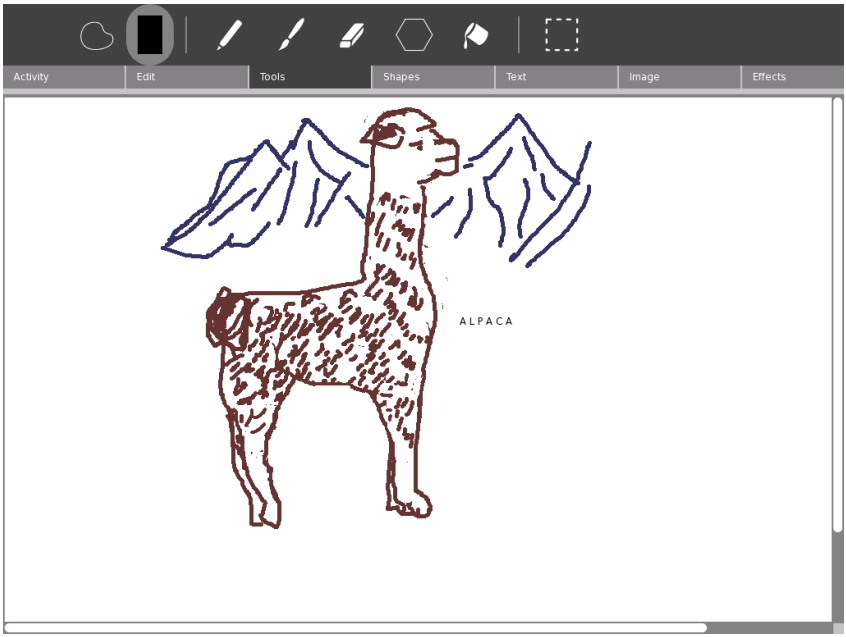
Suggestions:
Don't move the laptops while they are taking the measurement.
Atmospheric conditions can modify the accuracy of the measurement.

DRAW

This activity let children realize drawings, paint creatively and to express themselves.

OPTIONS:

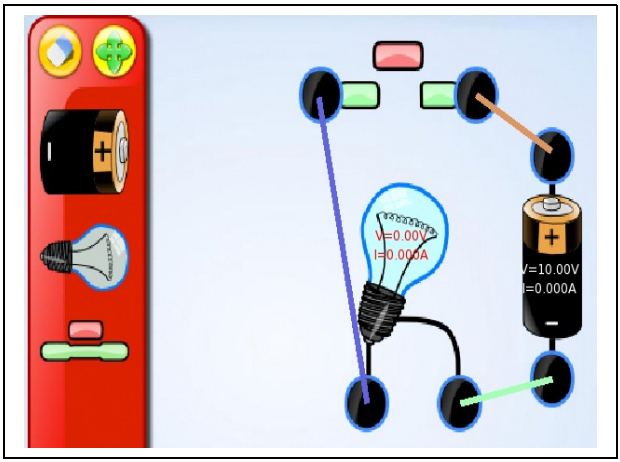
1. Edit: undo, do, copy, paste, clear
2. Tools: color palette, pencil with several sizes, brush with several sizes, shapes (square, circle), eraser with several sizes, polygons with several sizes, filling color bucket, and rectangular maker
3. Shapes: fill color, stroke color, ellipse, rectangle, line, polygon and their size, sides, heart, parallelogram, arrow, star, trapezium and triangle
4. Text: type, color
5. Image: insert image, height, width
6. Effects: grayscale and rainbow



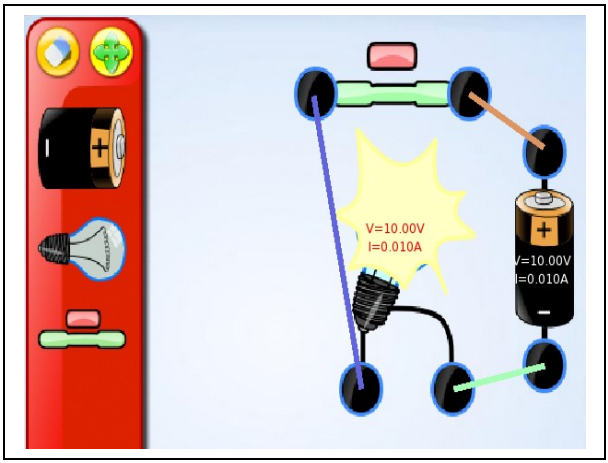
ELECTRIC

It creates and simulates an electrical scheme, requires a basic knowledge of electricity.

Open-circuit

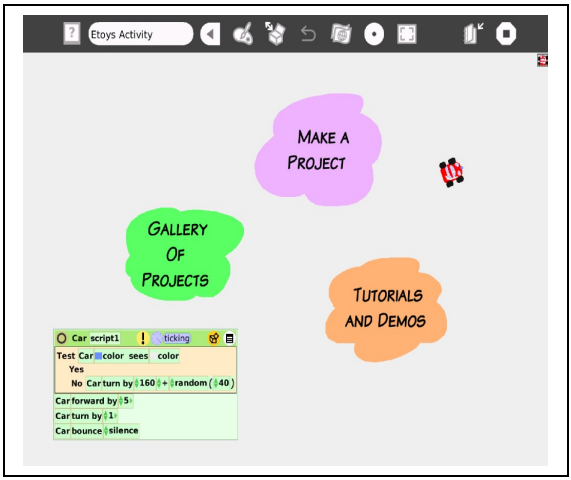


Closed-circuit



ETOYS

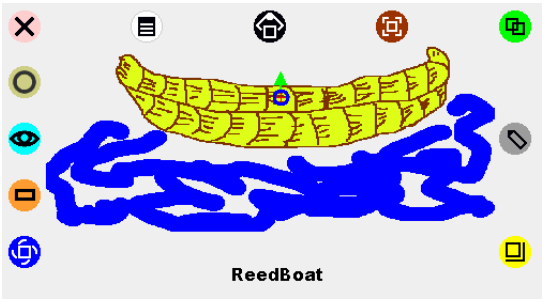
Squeak Etoys is a multimedia environment that allows us to model objects of different types like text, graphics, video, sound, etc.



FIVE STEPS TO CREATE OUR FIRST PROJECT

1) Click on the purple cloud MAKE A PROJECT

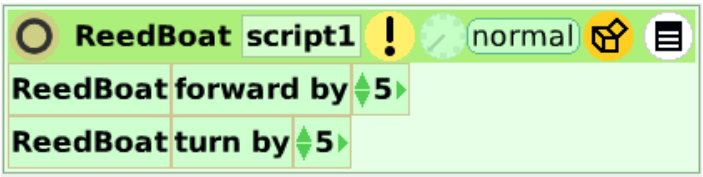
2) Click on the Paint palette icon [ ] to create a drawing, after finishing it, click on KEEP [ ].



3) Right click on the drawing to show the HALO HANDLES (a set of controls that let us make changes to Etoys objects).

- Rotate: Rotates the object
- Tile: Shows a tile with the name of the object and lets you assign the object's properties or behaviours to another one
- Viewer: Opens the object's viewer
- Collapse: Reduces an object to a small button
- Delete: Throws the object away to the Trash Can
- Menu: Shows the menu options for control and convenience
- Pick Up: Removes an object from another that contains it
- Move: Moves the object by dragging the mouse
- Duplicate: Creates identical copies of the object
- Repaint: Lets you paint again the object
- Resize: Changes the object's size

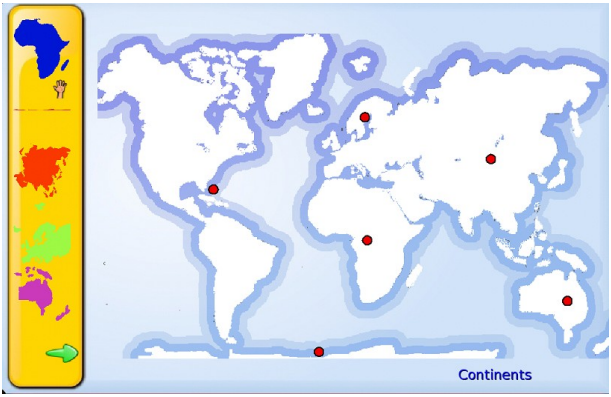
4) Click on the Viewer and drag the **forward by** tile from the **basic** category onto the Etoys' World where it will become a Script. Next drag the **turn by** tile and put it into the Script below the **forward by** tile.



5) Click on the clock [ ] that is next to the NORMAL button, to make our drawing move. Click again on the clock to STOP it.

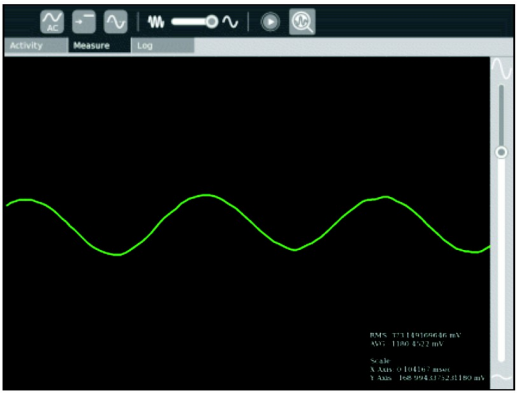
GEOGRAPHY

This activity let us drag and drop the countries to their respective place and location. It shows continents and countries.



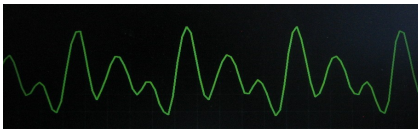
MEASURE

The MEASURE activity let us connect with physical phenomena through statistical and visual representations. Thus, we can connect light, temperature and magnetic field sensors. Also, we can use it as an oscilloscope by directly applying the input voltage or signal to be measured.



The projects realized with MEASURING include transducers. A transducer is a mechanism that converts a physical phenomenon into an electrical signal.

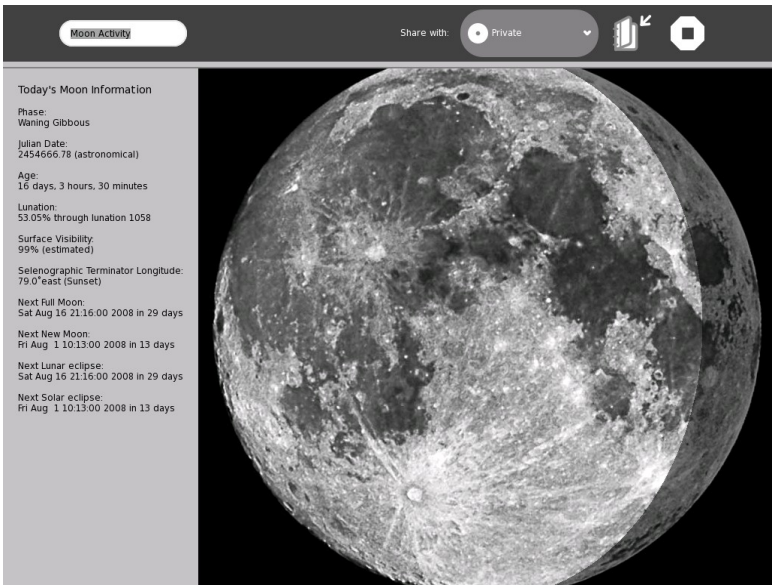
Sound graphic of the vowel "O".



MOON

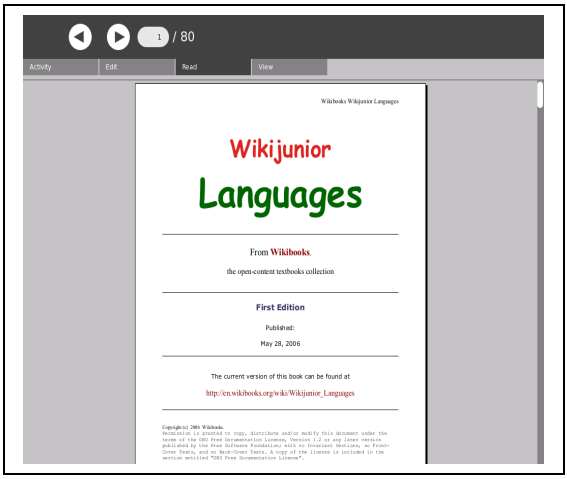
This activity includes information about lunar phases, eclipses and their effects.

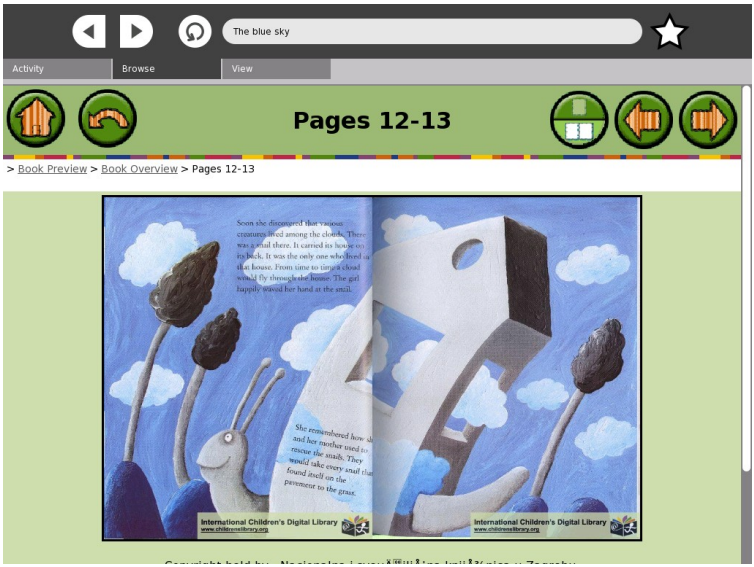
July 7th, 2009 at 5:05 a.m. - partial eclipse
August 6th, 2009, at 8:09 p.m. - partial eclipse



READER

It is useful to read electronic books (ebooks) and pdf files. This activity is not located together with the others, but you can access it when opening a pdf file.





RECORD

The Record activity allows us to use multimedia resources such as: photos, audio, and video.

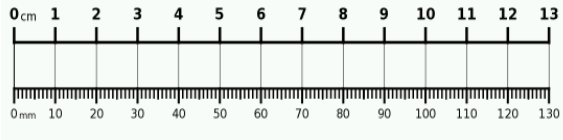
Also, this activity is useful for:

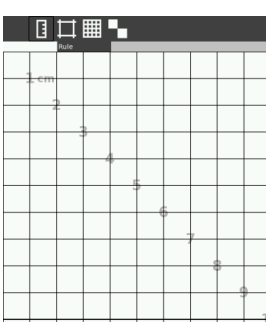
- Taking photographs
- Recording video (by default up to 15 seconds but also 30 or 45 seconds)
- Recording audio
- Creating 360 panoramas and
- Adding short descriptions

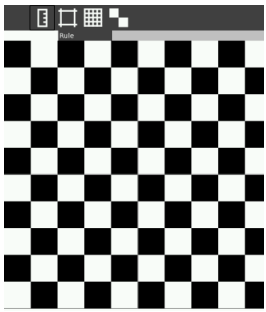
Images and audio are recorded in the Journal and it is possible to use them in other activities, we can share them, too.

RULER

It shows a graphical ruler and a mesh in cm. and mm. and can be used to measure an object's length and angle.





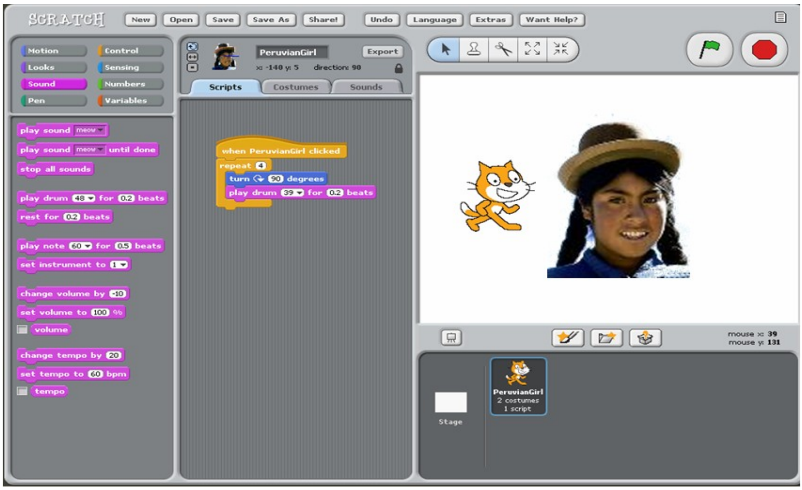


SCALESBOARD

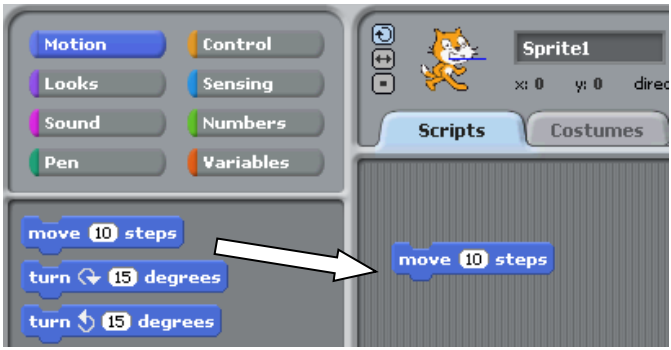
It is an activity where you can drag and drop masses on the scale to balance the weights.

SCRATCH

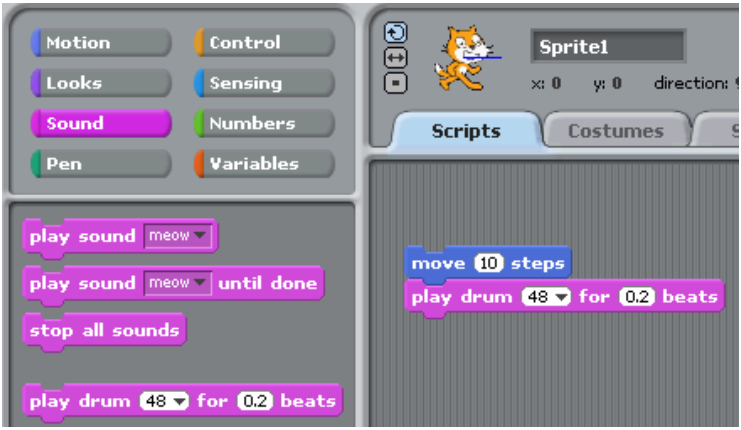
Scratch is a language that allows us to create interactive activities, animations, games and art. It uses "blocks of codes" which can be dragged & dropped on the interface to create actions, movements, and sounds.



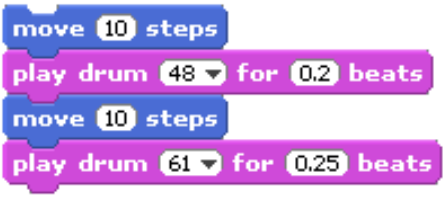
In order to move an object, drag the MOVE block into the Scripts area, double-click on the block and the kitty will move.



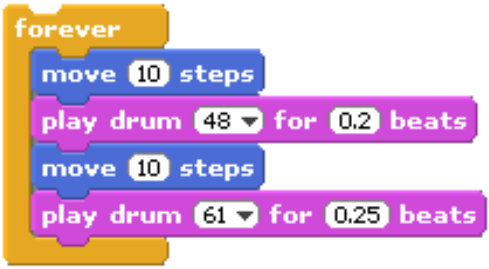
Drag the PLAY DRUM block and snap it onto the previous block, double click on it and listen.



To make it dance, add the next code:



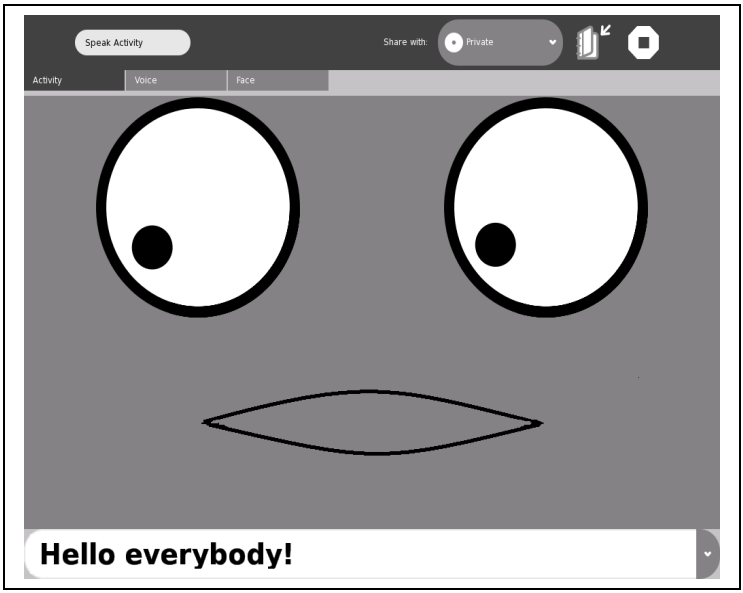
To repeat it continuously, drag the FOREVER block and double-click on it.



To stop, click on the button

SPEAK

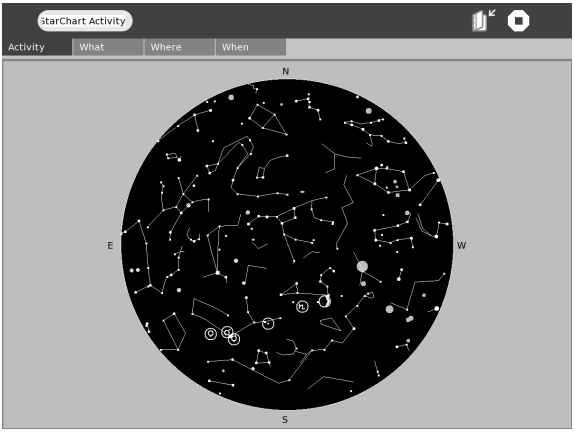
SPEAK is a face that speaks any text that you write, words will be pronounced by a voice synthesizer. Languages can be selected and it is possible change the shape of the eyes and the mouth (squared or rounded).



STARCHART

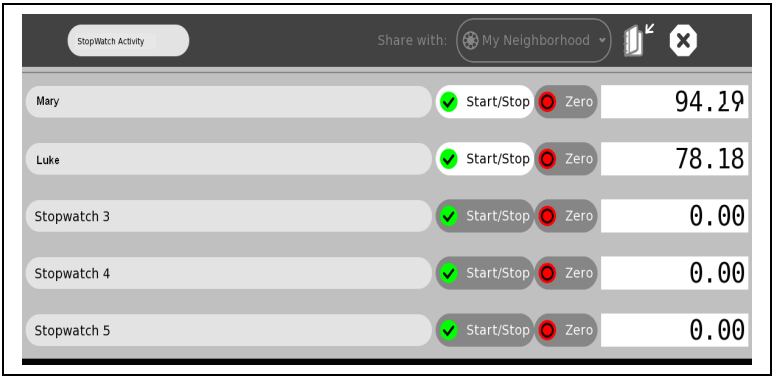
This activity shows us a map of the sky, including the sun, the moon, visible stars, planets and constellations. The location can be specified (longitude and latitude), as well as the time in GMT.

The latitude and longitude of Puno, Peru
Latitude: 15°50' South Longitude: 70° 2' West
GMT: -5 hours



STOPWATCH

This activity offers several stopwatches to measure the time it takes to execute any activity.

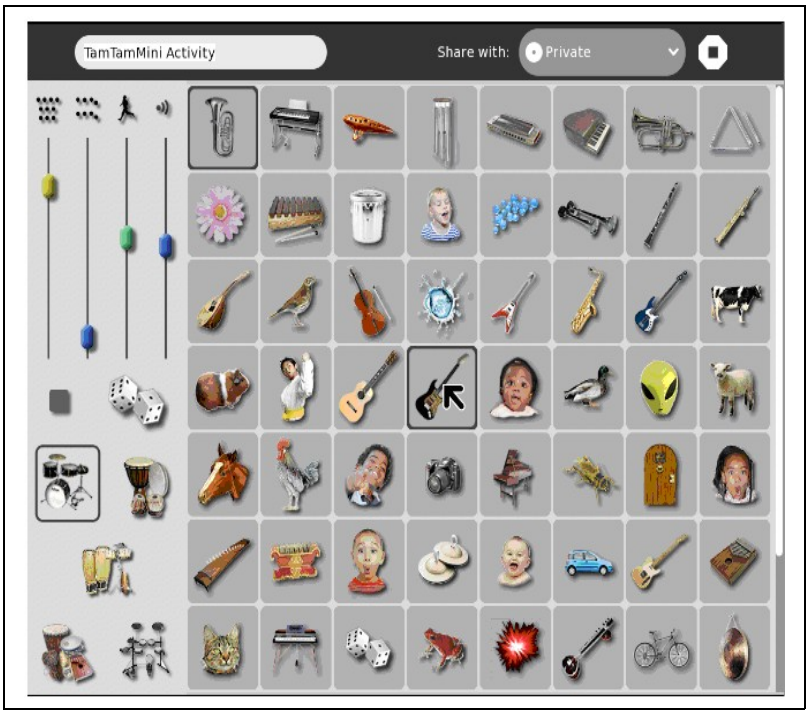


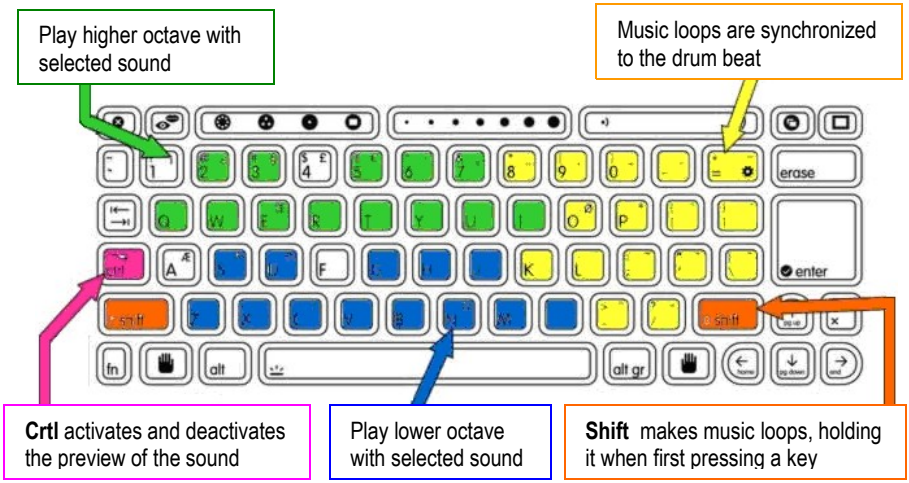
TAMTAM

It is a suite of four activities that lets us explore music and sound.

TAMTAM MINI

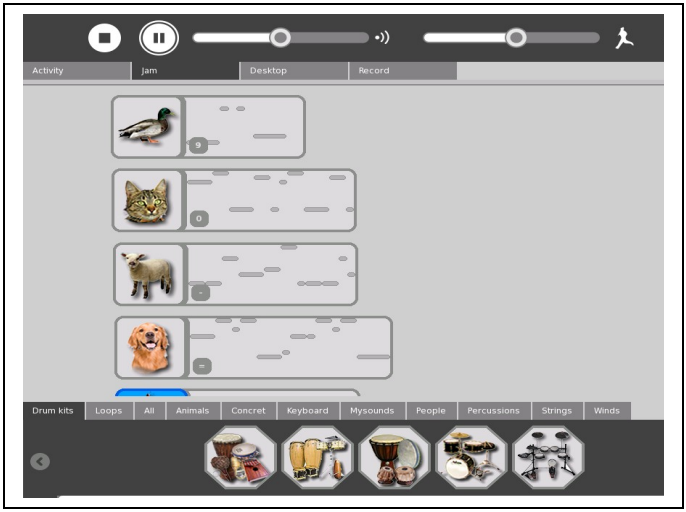
This activity is recommended for small children. Click on an instrument; you could use the keyboard to play notes. Sound can be put in the background. E.g.: drums.





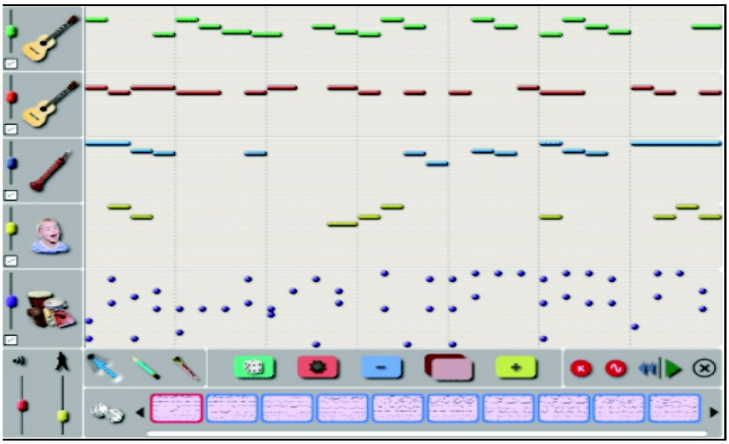
TAMTAM JAM

Sounds are executed when pressing the keyboard; it is possible to play polyphonically and chose rhythms. It allows us to create music in collaboration, each student with a different instrument.



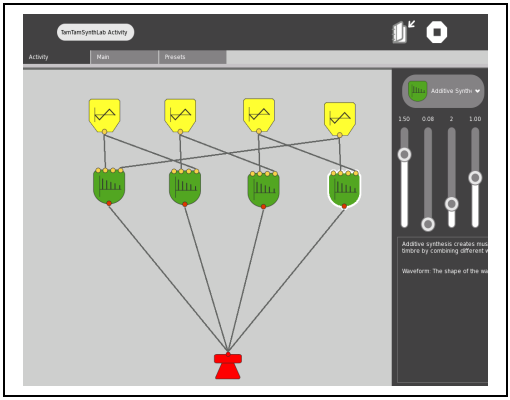
TAMTAM EDIT

It is a colorful and intuitive musical generator to modify and organize notes on five tracks. You can choose among hundreds of sounds and variations in all musical styles.



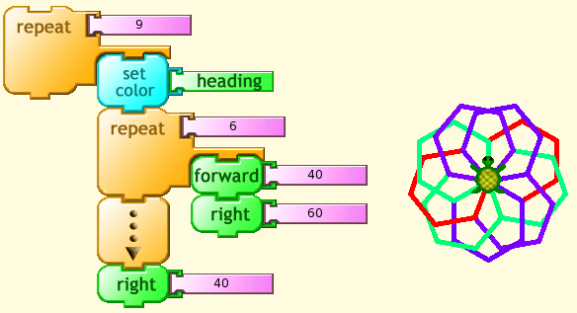
TAMTAM SYNTHLAB

The most sophisticated tool of TamTam is a mini acoustic laboratory that allows us to synthesize, modulate music and other sounds.



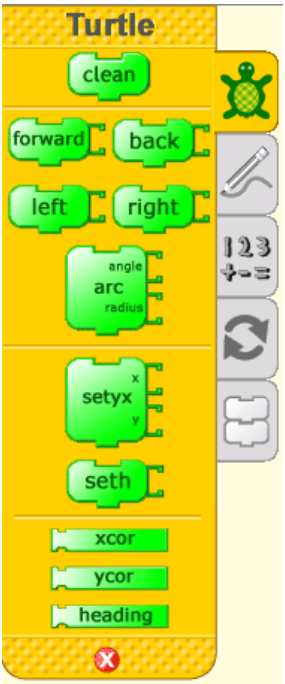
TURTLE-ART

Activity inspired by the LOGO turtle which uses visual tiles that can be dragged & dropped to create programs, although in a limited way. It is not so sophisticated as LOGO.

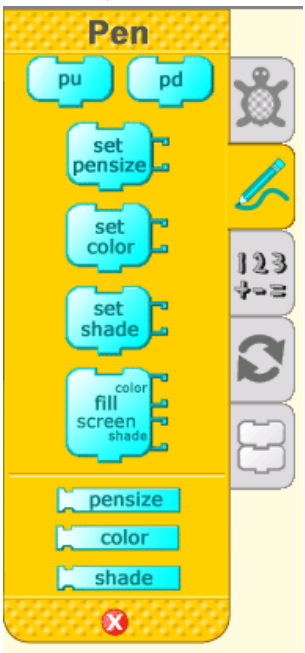


The elements of the program, visual blocks, are distributed in 5 flaps:

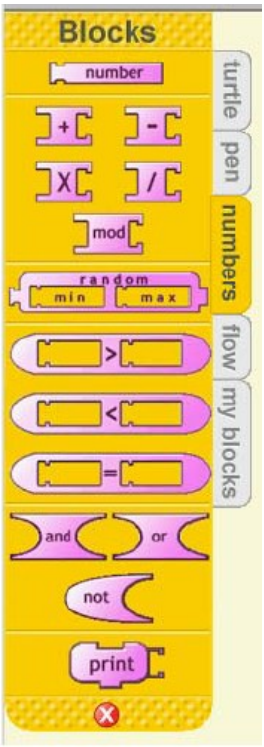
TURTLE (green)



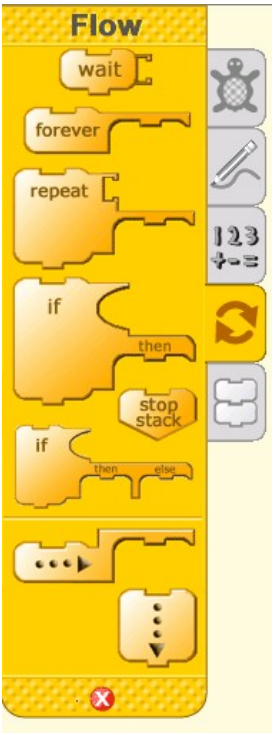
PEN (cyan)



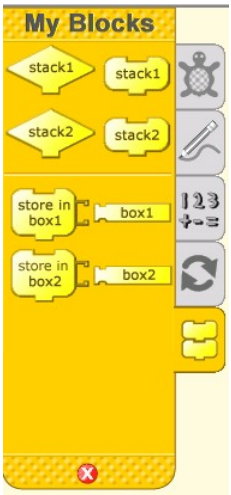
BLOCKS (violet)



FLOW (orange)

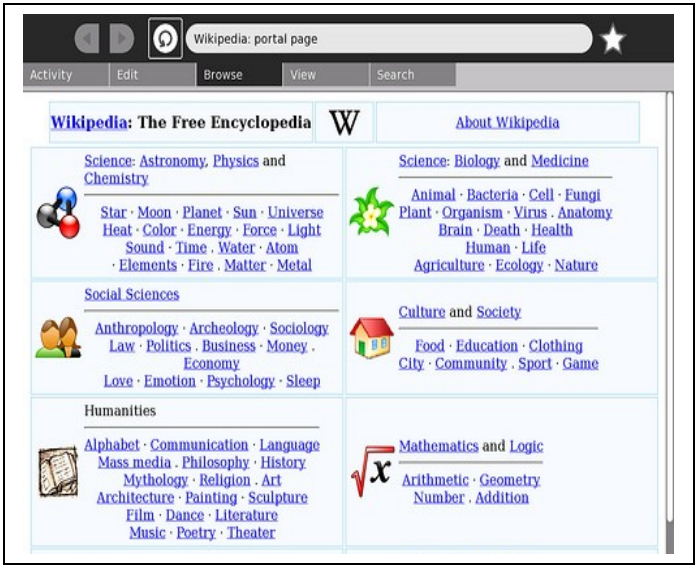


MY BLOCKS (yellow)



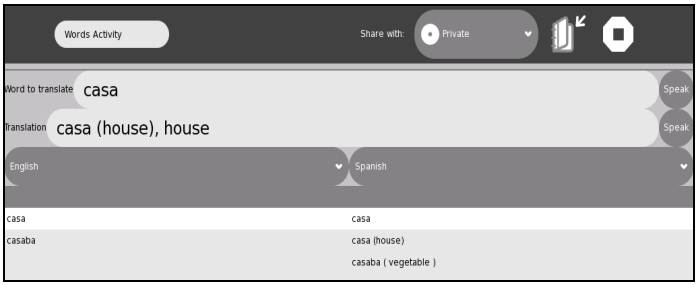
WIKIPEDIA

It is the well-known free encyclopedia.



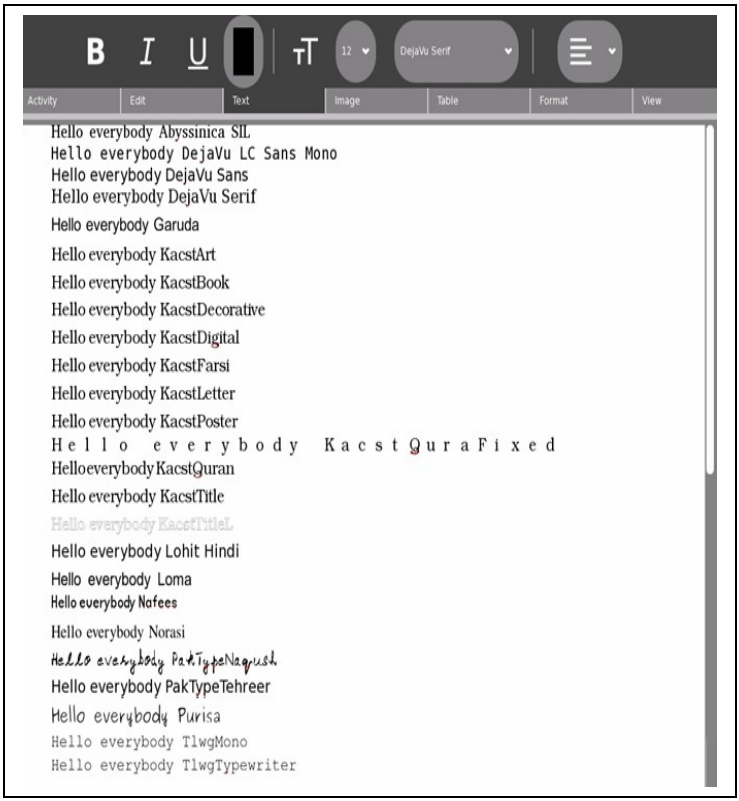
WORDS

It is a translating dictionary with speech synthesis.



WRITE

This activity allows us to realize a basic text edition. Also, we can insert images, create tables and layout operations. It offers students an introduction to text processors.



SAVING OUR WORK:
We can save it in three formats:

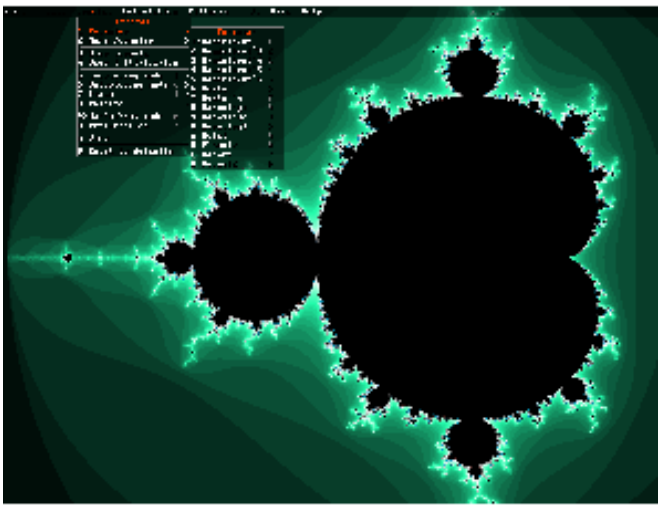
- TXT (plain text); that is to say, contains only words with no formatting or images

- RTF (enriched text format); it includes formats, fonts, colors, images, etc

- HTML the same as RTF, but allows us to visualize it like a web page, and includes images, colors and format, too

XAOS

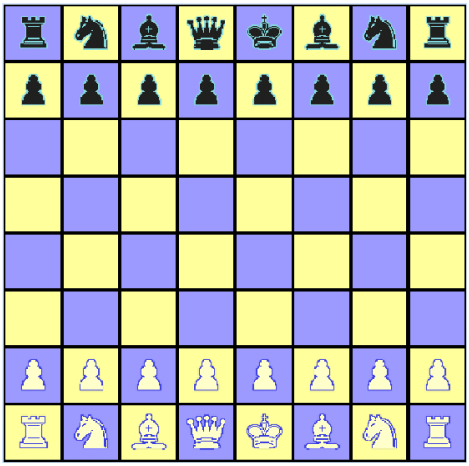
It is an interactive fractal zoomer. It allows us to explore different types of fractals in a fluid, continuous motion and includes tutorials, as well.



GAMES

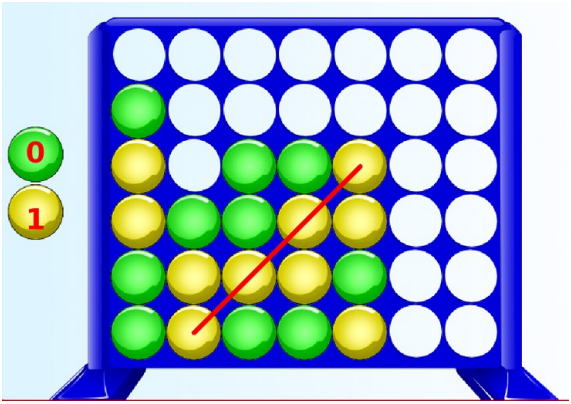
CHESS

It lets us play chess against the PC, in a learning way.



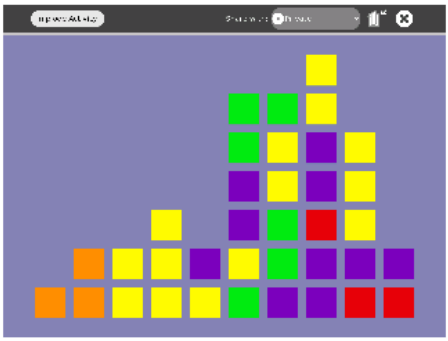
CONNECT

This game lets us play between two players; it is the game four in line.



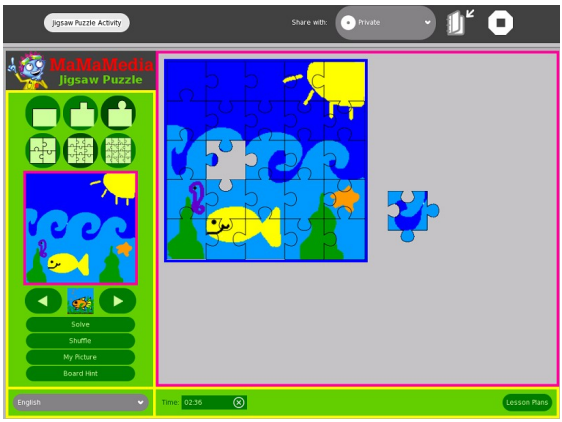
IMPLODE

It is a game based on the "falling block" model of Tetris, the player removes adjacent blocks of the same color and when blocks are removed, higher blocks fall to fill their space or blocks on either side close to fill the gap. The goal is to remove all the blocks.



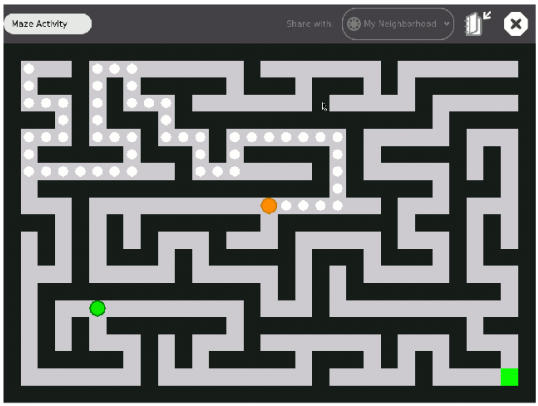
JIGSAW PUZZLE

It is the classic picture-constructing game. It has the option to add our own images.



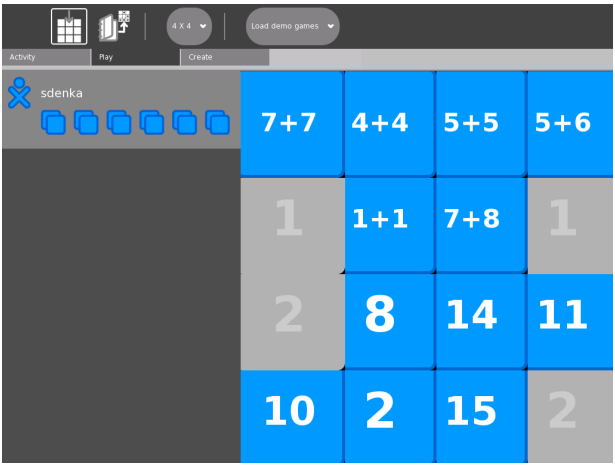
MAZE

It is the classic game of the labyrinth. It is possible to be played in collaborative way, with two, or even, three players.



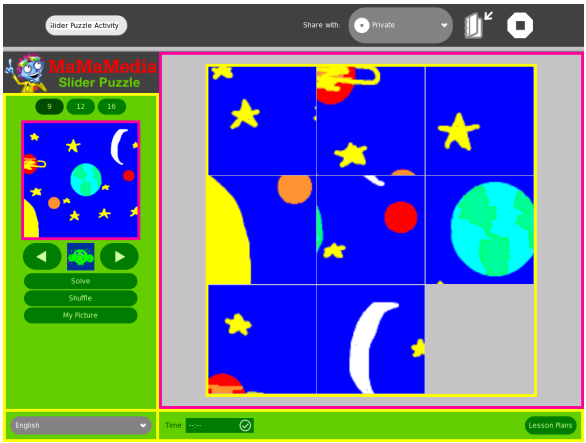
MEMORIZE

This game is about finding matching pairs. A pair could be a multimedia object like text, images, sound, and movies. It allows us to create new games ourselves.



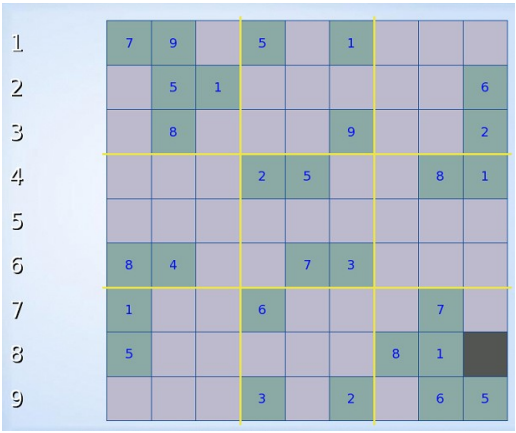
SLIDER PUZZLE

It is the classic game that challenges us to use logic to move cards to form an image. The number of pieces can be chosen: 9, 12 or 16. We, also, can add our own images.



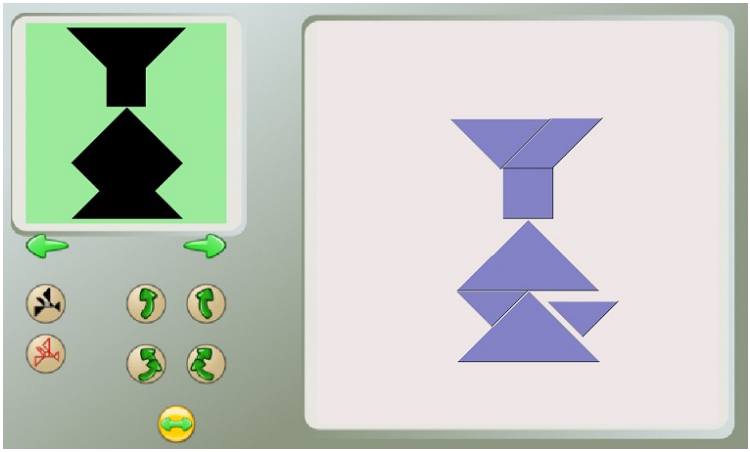
SUDOKU

It is the famous Sudoku game. It can be played in 3 levels.



TANGRAM

The aim of this game is to obtain a given figure, using a set of pieces.

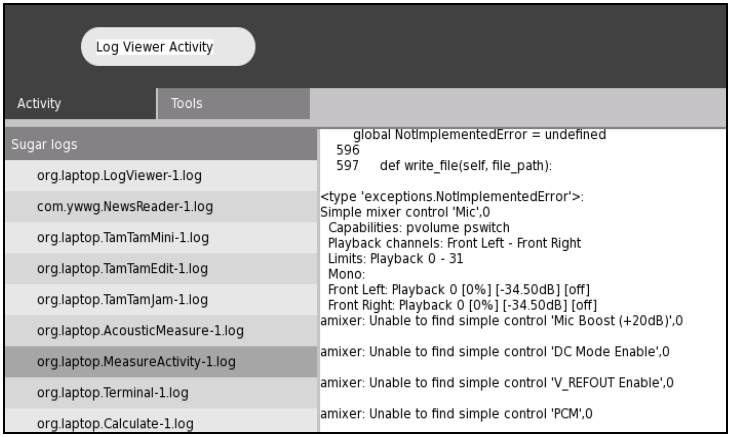


Varayocs of Cusco (PERU)

FOR DEVELOPERS/PROGRAMMERS

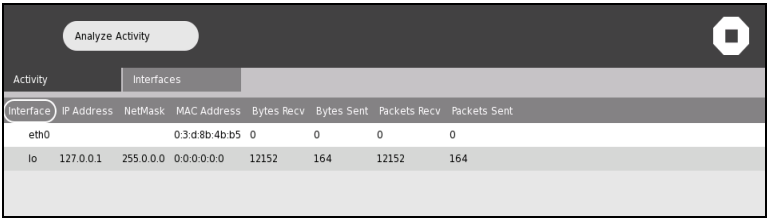
ANALIZE

It is an activity that analyzes the signs of accesses to memory. It was written completely in C language.



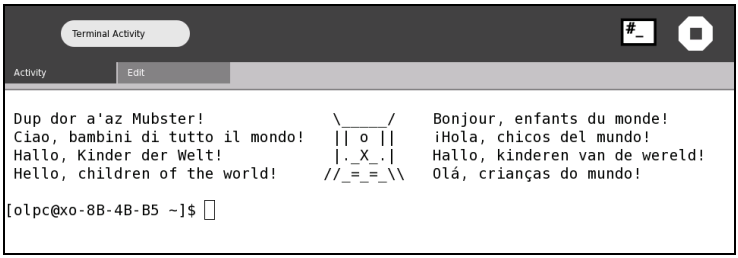
LOG VIEWER

This activity allows us to examine the log files generated by the system software. It is especially useful for developers and to assist with XO laptop's troubleshooting.



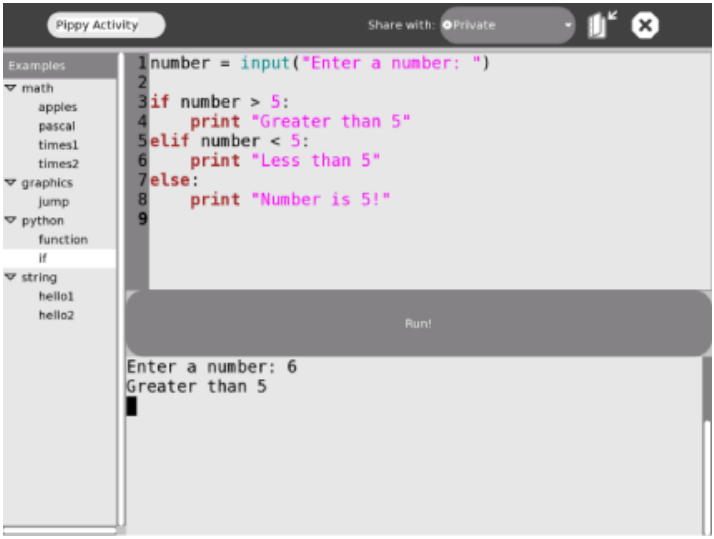
TERMINAL

It is the XO laptop's shell prompt.



PIPPY

It is the programming language Python. It allows us to explore programming concepts.



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- Wiki SugarLabs (2009) http://wiki.sugarlabs.org

APPENDIX

The XO-LiveCD has been created by volunteer developers and contains an official development snapshot (update.1, build number 695). It weights 377Mb and is available from:
http://pilgrim.laptop.org/~pilgrim/olpc/streams/update.1/

You should consider that:
- You need an Intel-compatible CPU (> 800 MHZ CPU) and > 512MB Ram, recommended 1GB (to use all extra activities)
- Monitor 1024x768, recommended 1280x1024 because some activities do not scale for a screen resolution less than 1200x900, we recommend to use video hardware with a higher resolution.
- The RECORD activity does not work with an external USB web-cam yet.

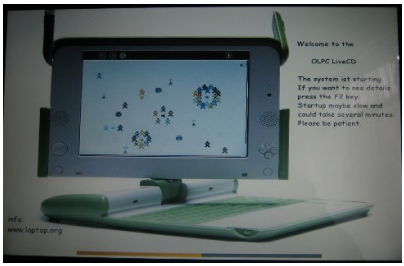
HOW TO BOOT WITH the LiveCD

This system boots from the CD, no hard-disk access is required. But also, you can use a virtual PC like VMware or Qemu.

1. Insert the LiveCD and reinitiate the PC.
   Tested on a Lenovo Core 2 Duo, it delays 3 minutes loading.
   Tested on a PC-compatible Pentium 4, it delays 5 minutes.

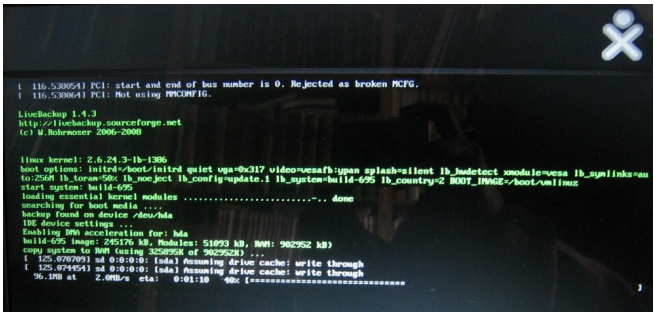
2. When the boot screen appears select your language and press <enter>:
   US English Keyboard=pc104/us

3. It appears the next screen.



Press F2 if you want to see the details of the initiation.

4. It begins to load the essential modules of kernel.

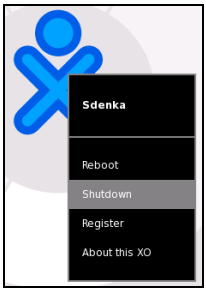


5. Then write your name:

6. You can change its colors, doing click on the icon repeated times:

7. Lastly, click on Done.

TO QUIT:
At the Home View, hover the mouse over the icon, several options will appear, select SHUTDOWN.



DOWNLOAD

A new version of the Live-CD
ftp://rohrmoser-engineering.de/pub/XO-LiveCD/

A bootable LiveUSB: Sugar on a Stick- Strawberry
http://wiki.sugarlabs.org/go/Sugar_on_a_Stick/Strawberry

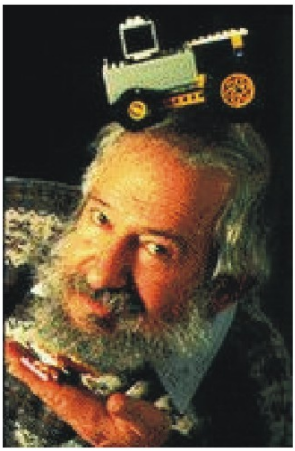
ABOUT THE AUTHOR

SDENKA ZOBEIDA SALAS PILCO is a teacher and engineer currently doing research on ICT in Education.

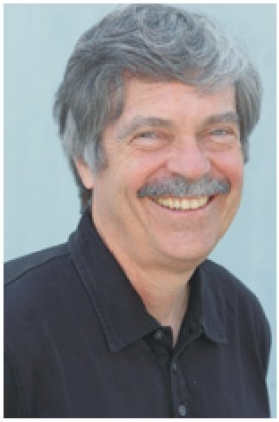
She was a research student at Kyoto University in the Graduate School of Informatics at the Yahiko Kambayashi's Laboratory where she met Alan Kay and did research integrating Squeak-Etoys into the schools and deepened her knowledge about Seymour Papert's Constructionism.

She has also been continued specializing on ICT in the United States, India and South Korea. Since 2007, she has been working on OLPC Project in the Peruvian Andes with children from Aymara and Quechua communities.

"Should the computer program the kid or should the kid program the computer?"
Seymour Papert



"I am convinced that the best learning takes place when the learner takes charge"
Seymour Papert



"The best way to predict the future is to invent it"
Alan Kay

"Use computers to amplify your classroom's thought and creative spirit"
Alan Kay

"An advanced learning network allow us to Create, Connect and Collaborate through Computing"
Yahiko Kambayashi