



SCRATCH • CONNECTING • WORLDS

Scratch Conference

25-27 July 2013

# IGNITE TALKS



SCRATCH • CONNECTING • WORLDS

Scratch Conference

25-27 July 2013

**Alberto Barbero**

European Scratch Conference 2013



A. Barbero e E. Pantò

DSCHOLA – CSP – Torino - Italy



**Dschola** is a cultural non-profit organization founded in 2004. The founding members are some schools of Piedmont and Valle d'Aosta.



The purpose of the Association is to promote the enhancement of the schools' information technology culture, educational innovation and the sharing of knowledge through ICT. In addition, Dschola provides initiatives to support schools in the use of ICT in teaching.



**CSP** – Innovation in the ICT – is a consortium of non-profit companies consisting of public administrations, universities and delegates from the entrepreneurial world. CSP is a research organization committed to activities for the experimental development and industrial research. CSP participates in various projects for the adoption of new information and communication technologies in schools and for scientific dissemination.



# : programming as a game

- The 2010 reform of the upper secondary schools in Italy

## Basic skills in:

- ❖ Problem solving
- ❖ Concept of algorithm and its representation step by step
- ❖ Programming foundations



# : programming as a game

- The debate about the curriculum

Starting from the first year of secondary school:

- ❖ Basic programming concepts
- ❖ Lab activities with the use of a programming language

# SCRATCH

# : programming as a game

The proposals of Dschola:

✓ Scratch

✓ Arduino (S4A)

✓ App Inventor (Android)

SCRATCH





**Scratch Day** is an initiative launched by the creators of Scratch in order to bring together from all over the world Scratch enthusiasts with initiatives, meetings and round tables. In 2013, 186 events were organized in 46 countries around the world.

# Scratch Day worldwide

2013



# Vallauri SCRATCH Day

The Vallauri Institute, one of the founding schools of the Association Dschola, organized during "Scratch Day 2011" the first "Vallauri Scratch Day" contest held within the school for students in the introductory classes of the technology sector....

# Vallauri SCRATCH Day

.....with the aim of promoting the study of computer programming by rewarding the best projects developed using Scratch.

# Vallauri **SCRATCH** Day

The first “[Vallauri Scratch Day](#)” contest

May 21, 2011



# Italian Scratch Festival

## 2012 First Edition

24 high schools from all over Italy



# Italian Scratch Festival

[2013 Edition](#)

33 high schools from all over Italy



# Italian Scratch Festival

2013 Edition → [33 high schools](#) from all over Italy

## Riepilogo iscrizioni:

Nome Cognome Referente	Scuola	Località	Codice Meccanografico	email scuola
<b>Conteggio = 33</b>				
Stefano MERCURIO	ITIS Pininfarina	Moncalieri	TOTF04000D	pininfarina@itispininfarina.it
Duilio Peroni	IIS Belluzzi-Fioravanti	Bologna	BOIS02300G	belluzzi@scuole.bo.it
Marco Marchisotti	IS Sobrero	Casale Monferrato	ALIS01400L	alis01400l@istruzione.it
Teodoro Scicchitano	IIS "Tito Sarrocchi"	Siena	SITF020002	sarrocchi@sarrocchi.it
Alberto BARBERO	I.I.S. Vallauri	Fossano (CN)	CNIS01700C	info@vallauri.edu
Mauro Bettin	IIS "E. Ferrari"	Susa	TOIS017001	www.ferrarisusa.it
Marco Dolfi	I.I.S. "Ferraris-Brunelleschi"	Empoli (FI)	FIIS012007	info@iisferraris.it
Turtoro Mariateresa	Itis G. Ferraris	Napoli	NATF17000Q	natf17000q@istruzione.it – natf17000q@pec.istruzione.it
Marika Desogus	Liceo Scientifico G. Bruno	Mestre	VEPS023013	info@liceobruno.it
Stefano Longagnani	ITIS "Alessandro Volta"	Sassuolo (Modena)	MOTF04000P	motf04000p@pec.istruzione.it
Liberato Centonze	Istituto Tecnico Industriale Ettore Majorana di Grugliasco	Grugliasco (TO)	TOTF10000X	vicepreside@itismajo.it
Andrea Maganza	I.T.I.S. "M.Delpozzo" Cuneo	Cuneo	CNTF010005	segreteria@pec.itiscuneo.eu
Mercurio Maria	Istituto Margherita	Bari	BA1E00900E	segreteria@istitutomargherita.it
Raffaella Ponzio	IISS "SANDRO PERTINI"	GENZANO DI ROMA	RMIS05300L	RMIS05300L@istruzione.it
Michela Piergiovanni	I.T.I.S. Mattei	Urbino (PU)	PSTF01000N	itis.mattei@provincia.ps.it
Mirella Rainotti	Liceo Scientifico "A. Einstein"	Torino	TOPS018017	tois01800r@liceoeinsteintorino.it
luca petris	ITSOS Albe Steiner	Milano	MITF19000B	itsos@itsosmilano.it
Giovanna Busconi	Respighi	Piacenza	PSPC0T2000	segreteria@liceorespighi.it
BARBARA BETTINI	I.T.A. "D. ANZILOTTI"	PESCIA	PTTA010004	ptta010004@istruzione.it
Francesca Savia Incorvaia	Istituto Statale di Istruzione Superiore "J. M. Keynes"	Gazzada Schianno	vais01800p	vais01800p@istruzione.it
Marco Balladine	IIS Majorana Moncalieri	Moncalieri	TOTF02301D	TOTF02301D@istruzione.it

# Italian Scratch Festival

Evaluation criteria:

1. technical quality: the application uses sophisticated technical tricks or ingenious solutions?
2. usability: the application is friendly and uses an intuitive interface? Is it fun to play with?
3. originality: the application is innovative? It proposes a classic in a new look?
4. aesthetic quality: the style and design are well prepared? The proposal is attractive and pleasant to see and use?

# ITALIAN SCRATCH FESTIVAL



# SCRATCH DAY

meet • share • learn

18 Maggio 2013

## The winning projects

	Titolo	Studente	Scuola	Premio
1	The Game	Alberto Sivera	ITI Majorana – Moncalieri (TO)	Asus VivoTab RT 3G+Dock
2	Jovon	Jovon Paolo	Liceo Scientifico G. Bruno – Mestre	Asus Nexus 7C
3	Scampia Knight	Michele Clemente	Itis G. Ferraris – Napoli	Asus PhonePad
4	Air Hockey	Jonathan Bravin	IIS Sobrero – Casale Monferrato (AL)	Samsung Galaxy S Advance
5	Jumper	Mirco Carnevali	IIS Pertini – Genzano (Roma)	Samsung Galaxy Next Turbo

ITALIAN SCRATCH FESTIVAL



SCRATCH DAY

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Italian Scratch Festival – [Part 1](#)

Italian Scratch Festival – [Part II](#)

# ITALIAN SCRATCH FESTIVAL



# SCRATCH DAY

meet • share • learn

18 Maggio 2013



Aurora

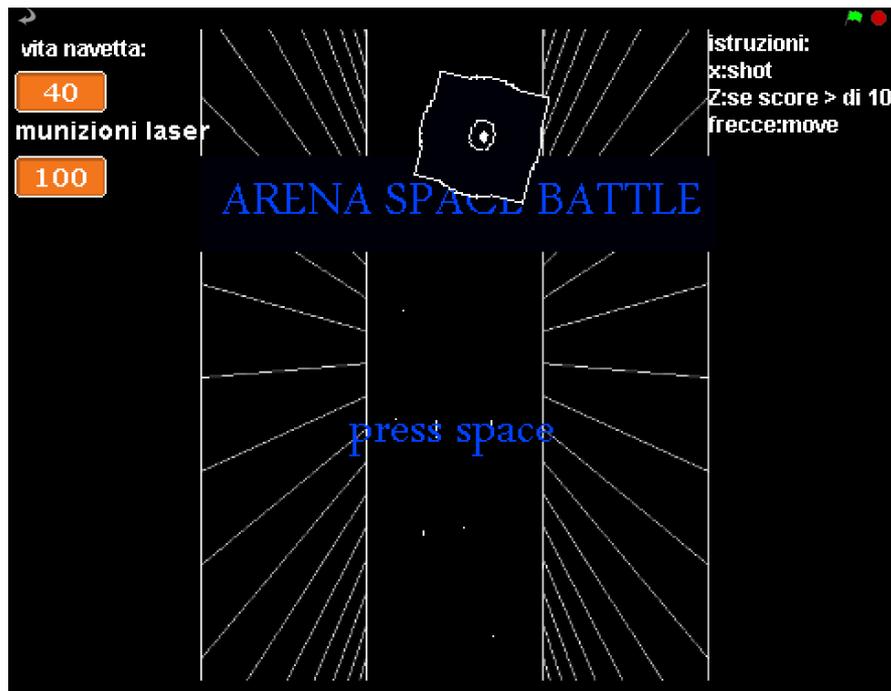
# ITALIAN SCRATCH FESTIVAL



# SCRATCH DAY

meet • share • learn

18 Maggio 2013



Arena  
Space  
Battle



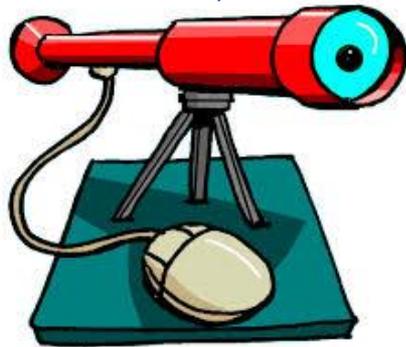
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Scratch Conference

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**Jon Bustillo**

Looking for materials about ICT ...  
I found three key documents



Mikhael Resnick  
MIT Media Laboratory

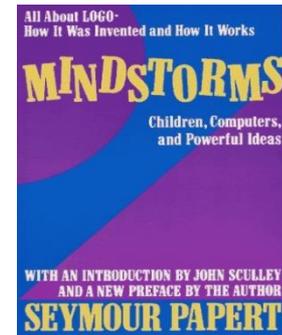
## Edutainment? No Thanks. I Prefer Playful Learning



### Introduction

Let me start with a contrarian point-of-view: I don't like edutainment.

What do I mean by that? Am I a stodgy professor who wants to keep play and fun out of the learning process? Certainly not. In fact, my research at the MIT Media Lab focuses on ways to integrate play and learning. I have found that many of people's best learning experiences come when they are engaged in activities that they enjoy and care about. Based on these ideas, I have helped develop new toys that provide children with opportunities to learn as they play (and play as they learn).



## Learning by Designing

When people think about learning and education, they often think about one person transmitting information to another, like this:



Increasingly, educators are recognizing that this "transmission approach" doesn't work very well. Research has shown that people learn best not when they are passively receiving information, but when

### Why Design?

Design projects engage kids as active participants, giving them a greater sense of control and responsibility for the learning process.

Design projects encourage creative problem-solving.

Design projects are often interdisciplinary, bringing together ideas from art, technology, math, and sciences.

Design projects help kids learn to put themselves in the minds of others, since they need to consider how others will use the things they create.

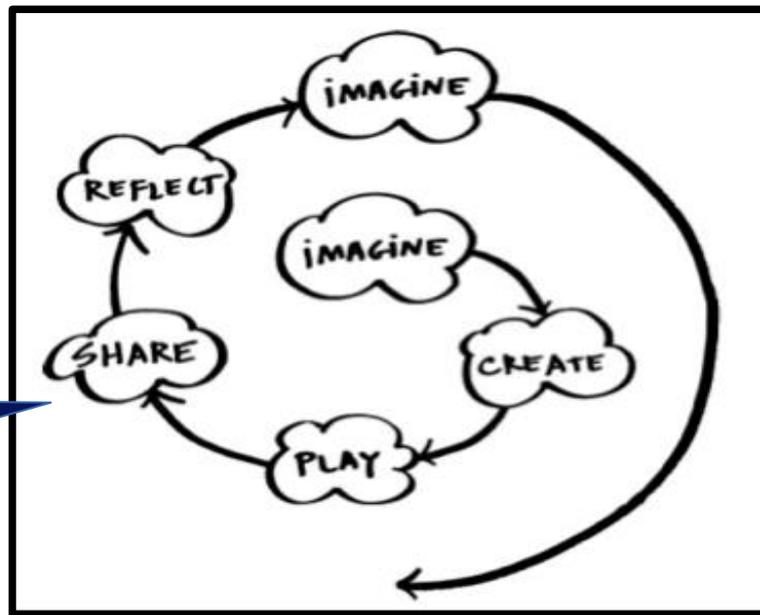
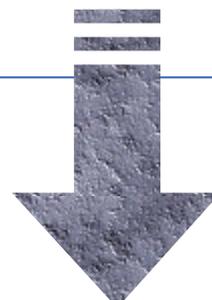
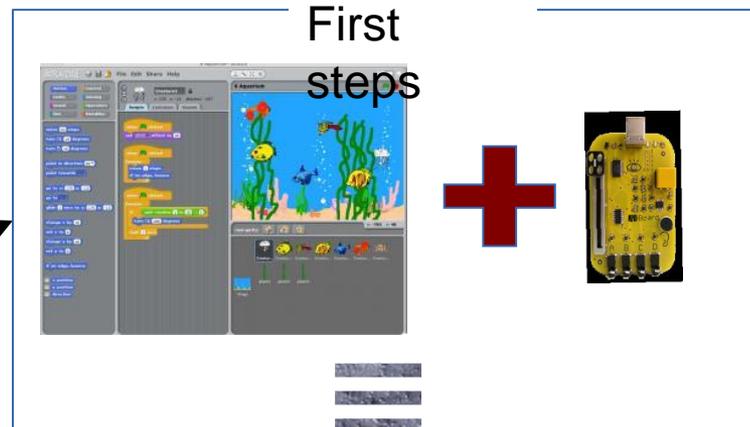
Design projects provide opportunities for reflection and collaboration.

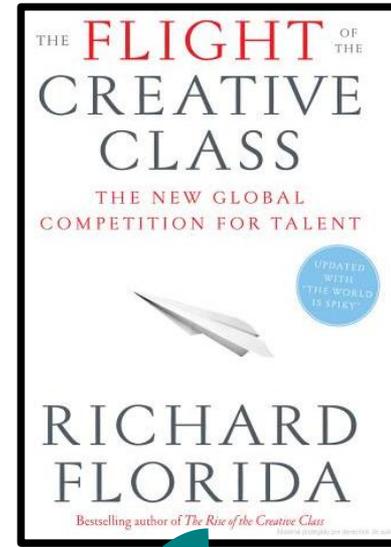
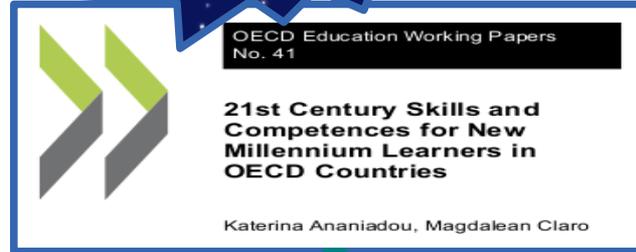
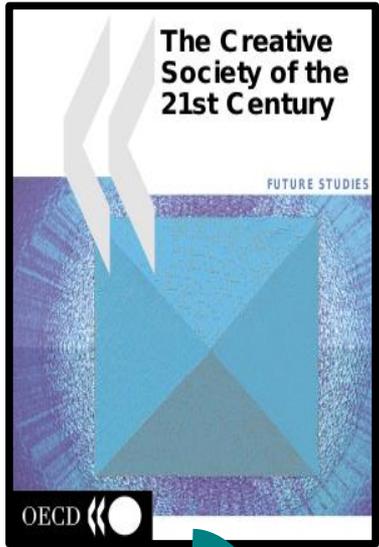


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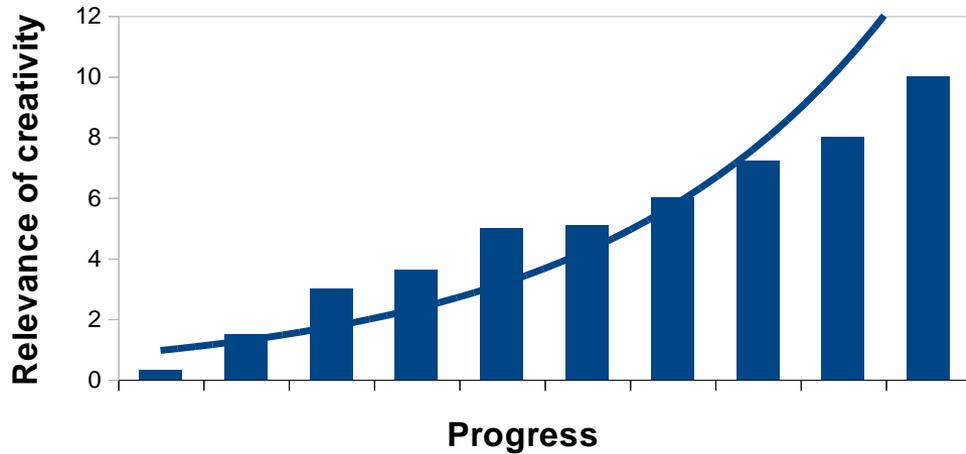
# First meeting with Scratch

Scratch Workshop  
by @txipi (2009)



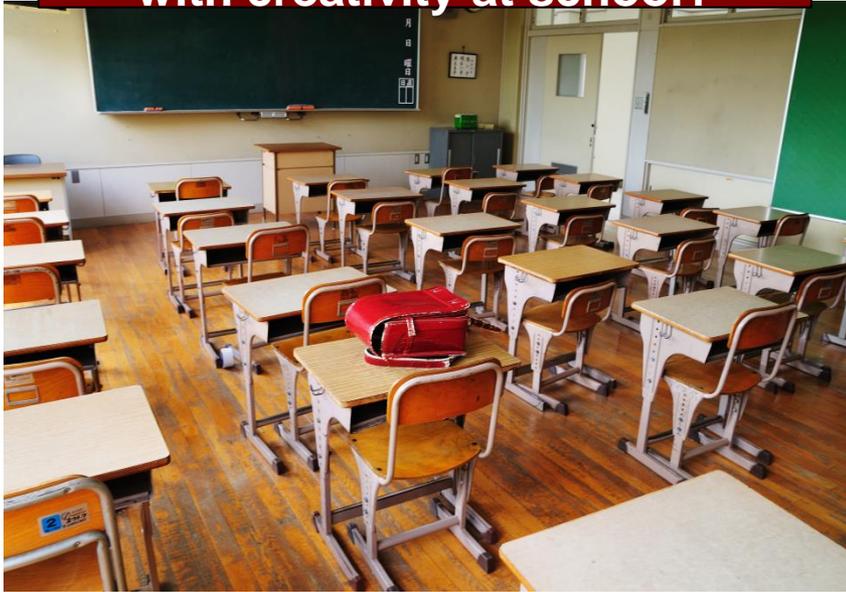


Value of creativity

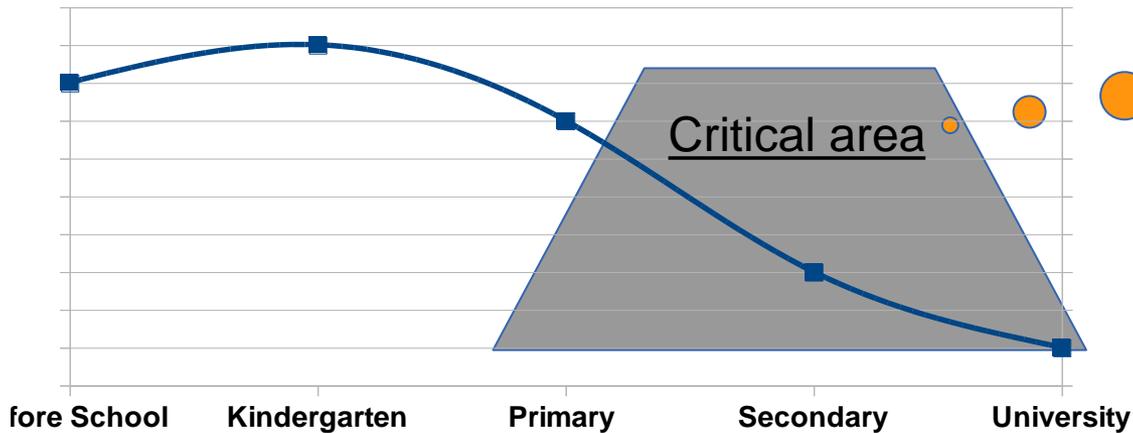


# What happens with creativity at school?

Ken Robinson says schools kill creativity



Trend of creativity through educational levels



Can Scratch be helpful?





After several workshops over 2 years.... I did not feel that working with Scratch would improve creativity

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A boy who had some difficulties at school worked with Scratch and after two days showed some interesting creative thinking.



# Can Scratch really help to improve creativity?

Looking for information, articles, books,

researches

LIFELONG KINDERGARTEN  
Sowing the Seeds for a More Creative Society

papers

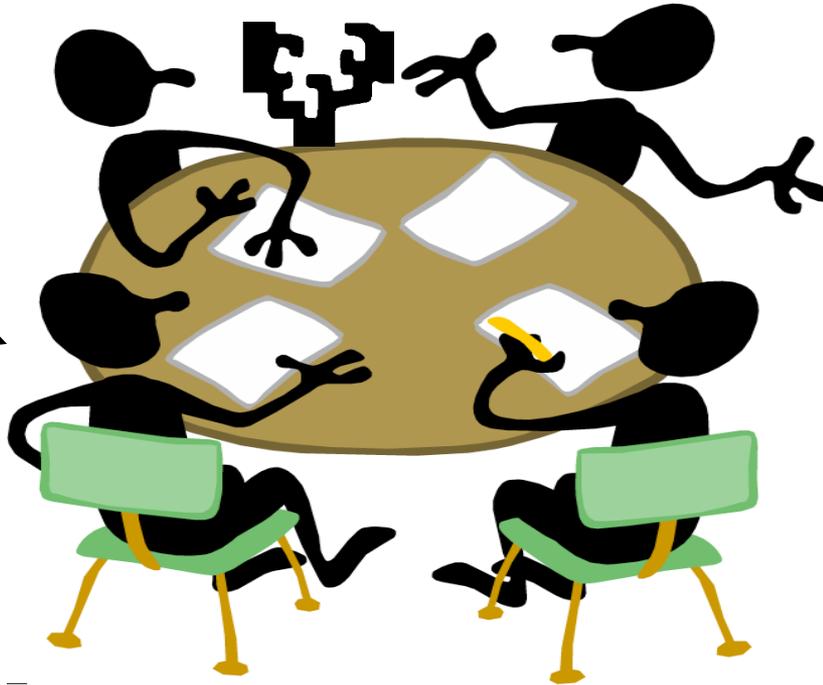
date	author	title
2012	Andres Monroy-Hernandez	Designing for Remixing: Supporting an Online Community of Amateur Creators PhD dissertation
2012	Gala Carlini	Finding a Needle in a Haystack: New Ways to Search and Browse on Scratch Masters thesis
2012	Karen Brennan	Best of Both Worlds: Issues of Structure and Agency in Computational Creation, In and Out of School PhD dissertation
2012	Karen Brennan, Mitchel Resnick	New Frameworks for Studying and Assessing the Development of Computational Thinking American Educational Research Association (AERA) conference
2012	Mitchel Resnick	Mother's Day, Warrior Cats, and Digital Fluency: Stories from the Scratch Online Community Proceedings of Constructionism 2012 conference



Communicating with Scratch

Team

Can Scratch help to improve creativity?



## Research planning

Environment

Type of research

Participants

Data collection  
instruments

Design of the intervention

Data analysis

Results

# Environment

## Looking for a place



Highly controlled environment



No free access to multimedia



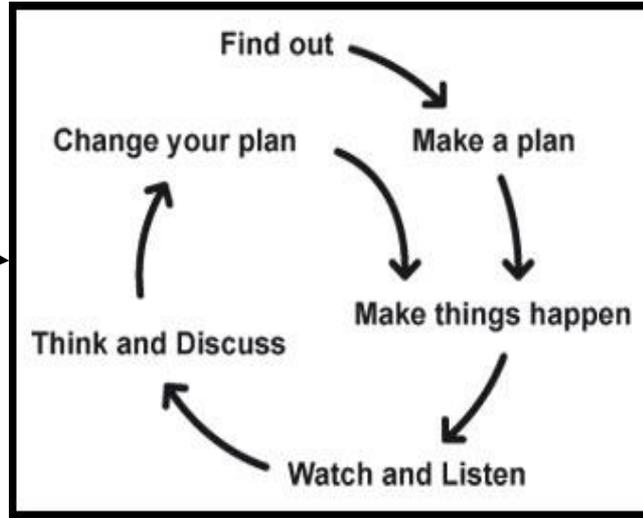
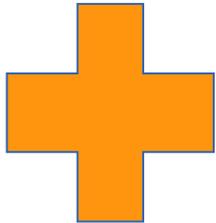
Few opportunities to be creative

**PRISON**



# Type of research

**Qualitative**



Educational ethnography

y

Participant researcher (Scratch monitor)

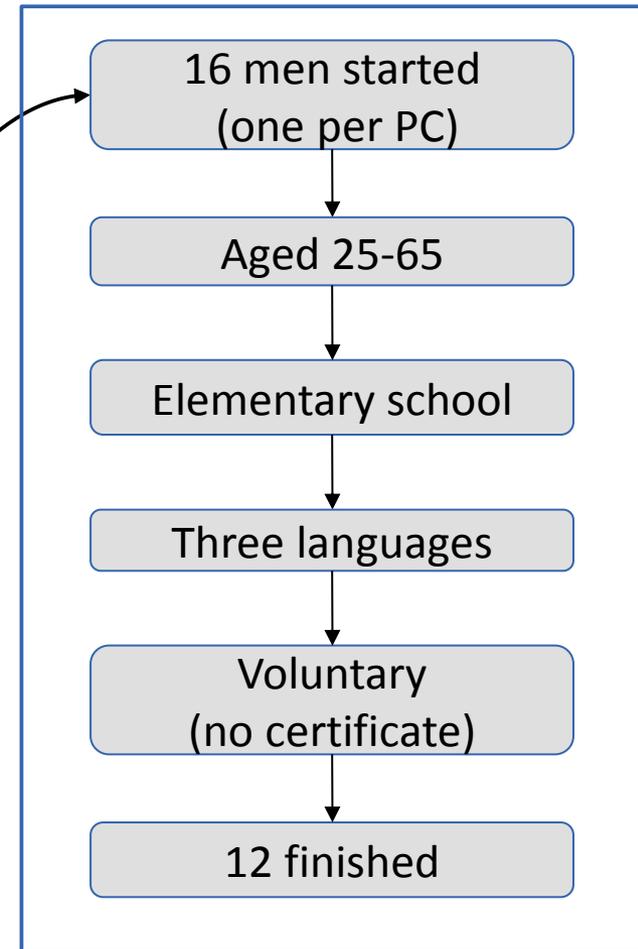
**Quantitative**



Initial and Final measurement

Standardized test

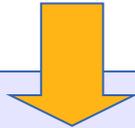
# Participants



**At first only 20% believed himself capable  
of creating a video game with Scratch**

# Data collection instruments

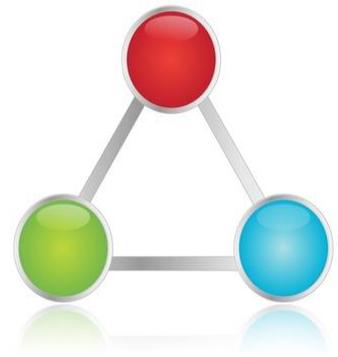
## Qualitative



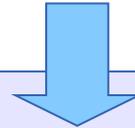
Fieldnotes

Diary of the researcher

Interviews with prison professionals



## Quantitative

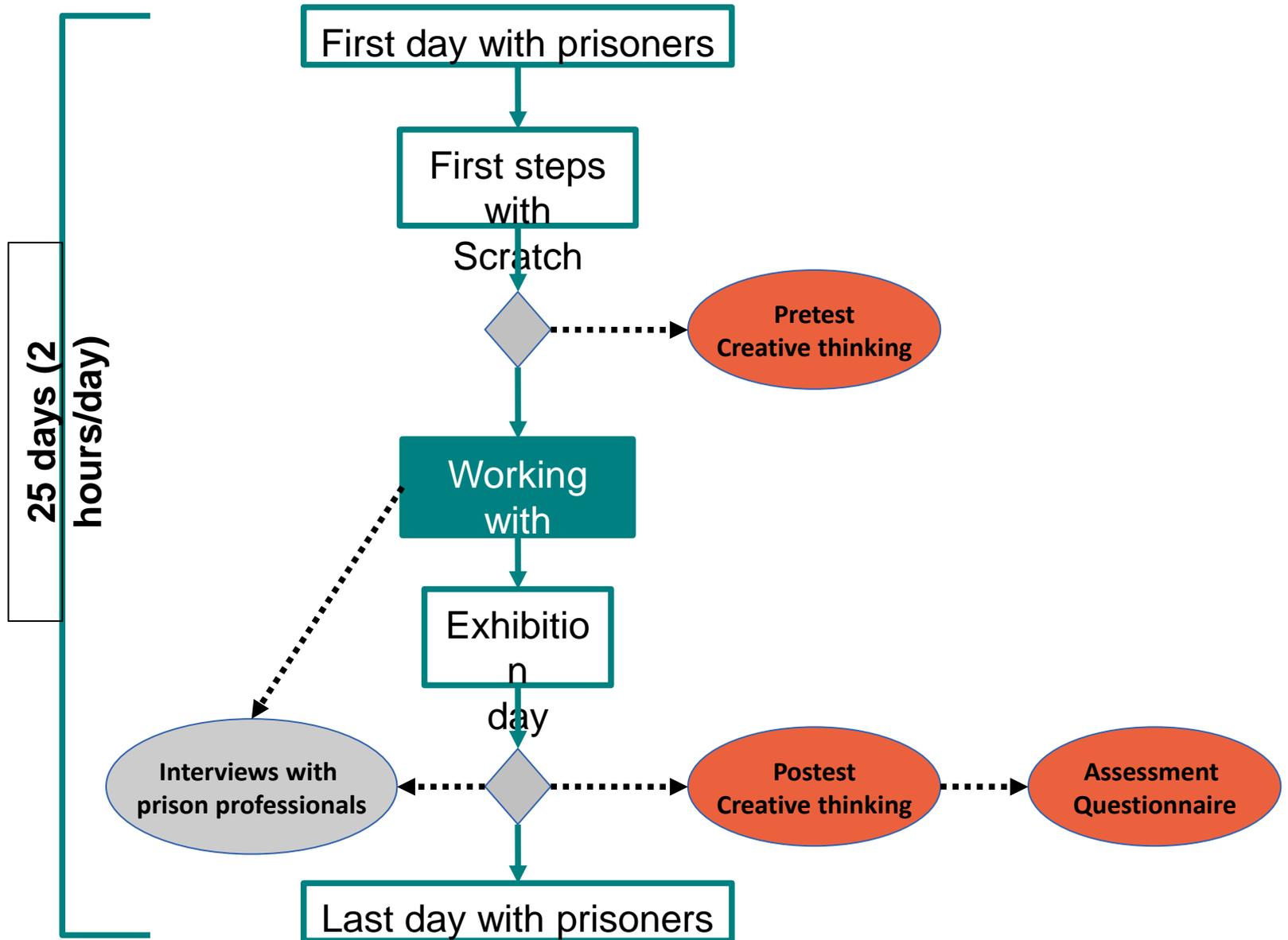


Test (CREA)

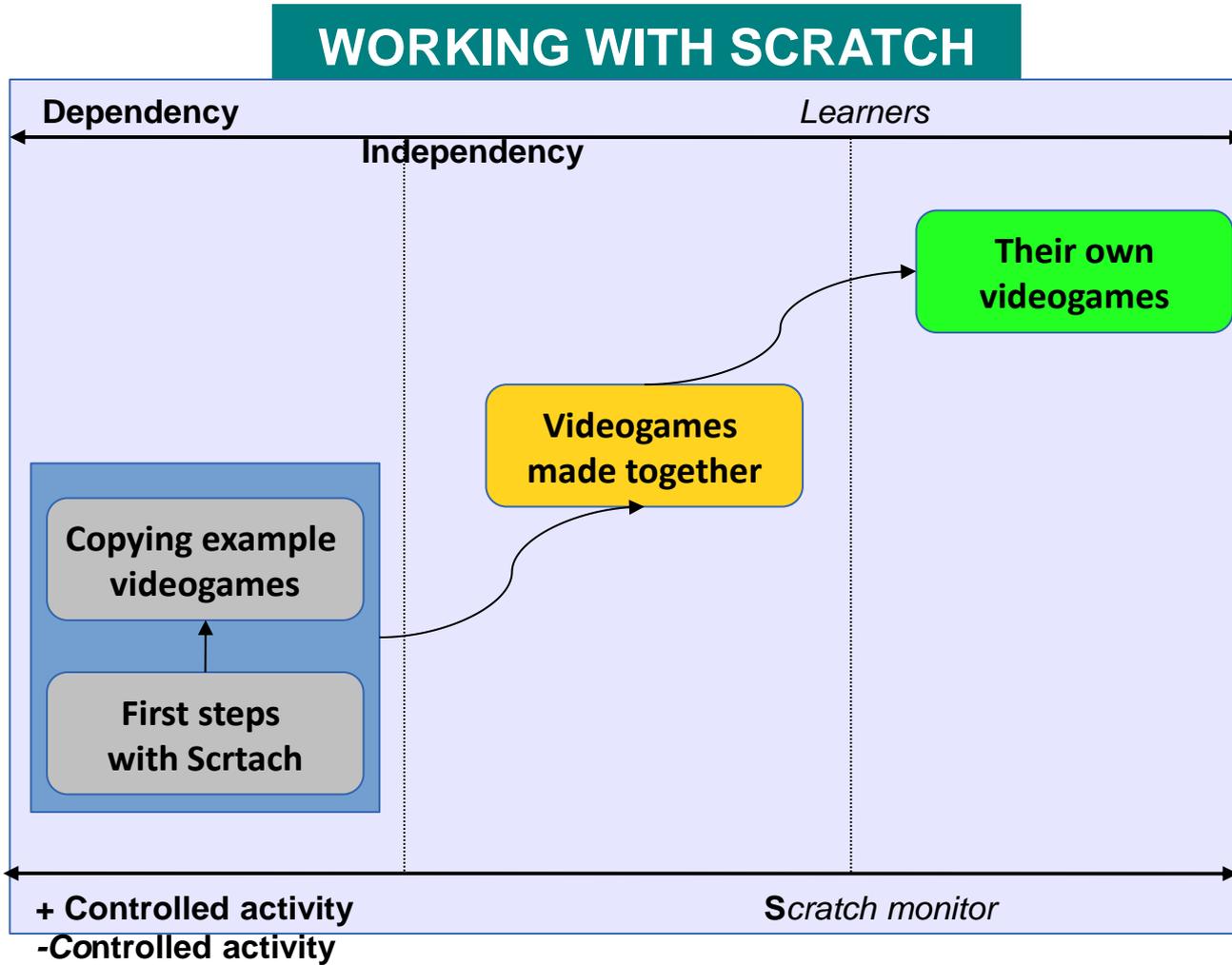
Satisfaction survey (made by prisoners)

Scratch productions

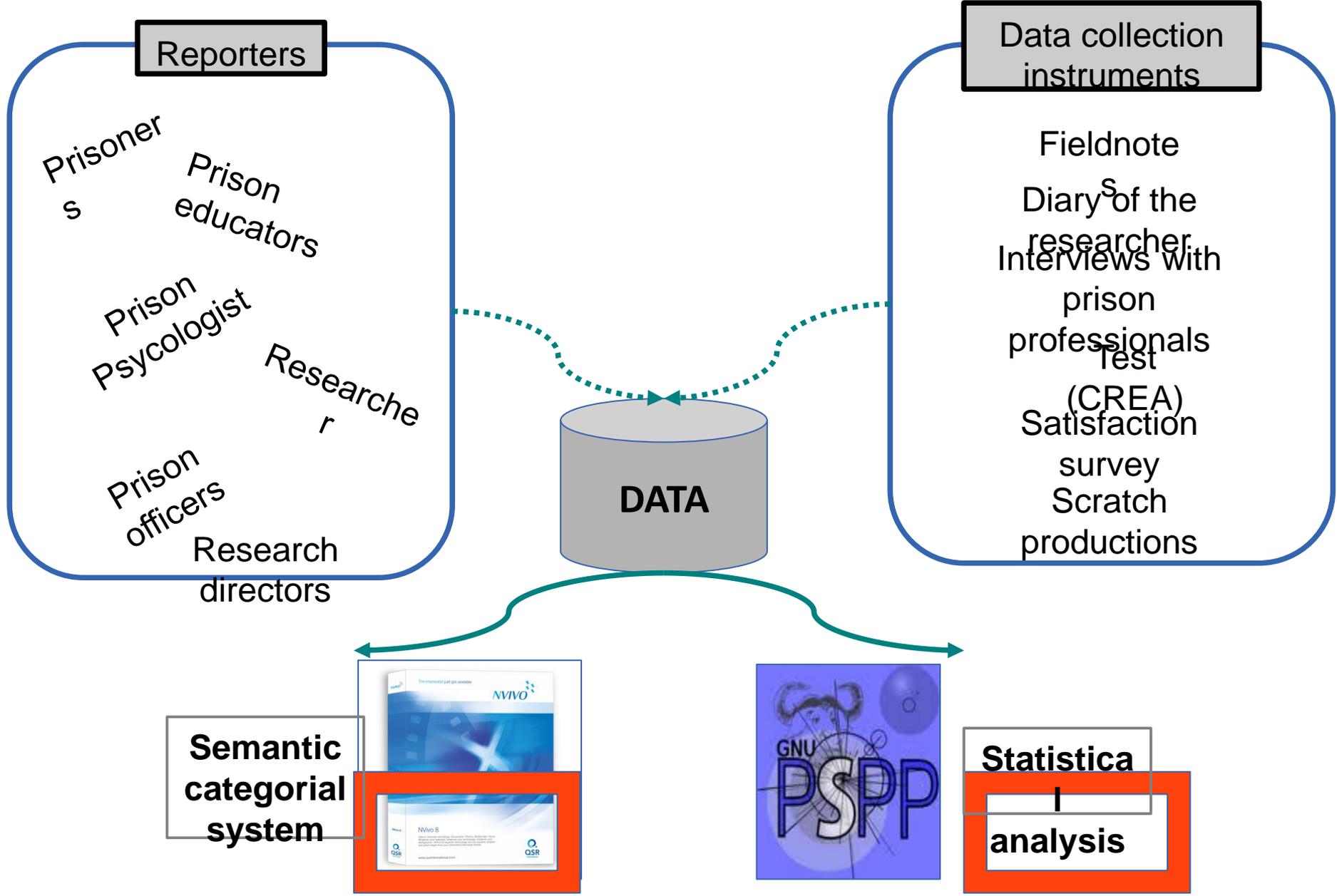
# Design of the intervention I



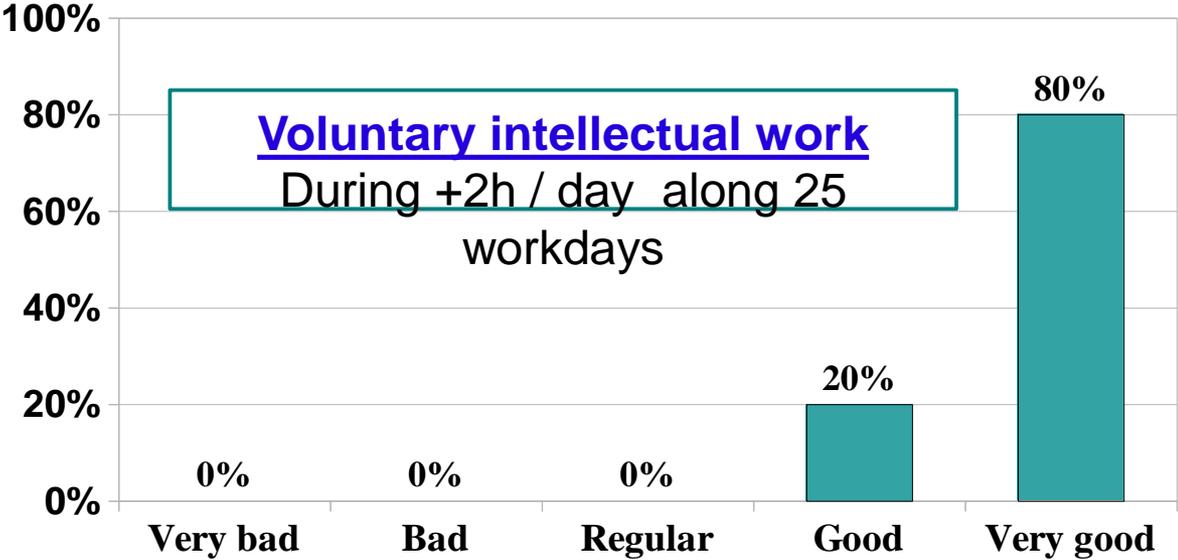
# Design of the intervention II



# Data analysis



## How do you rate the experience of working with Scratch?

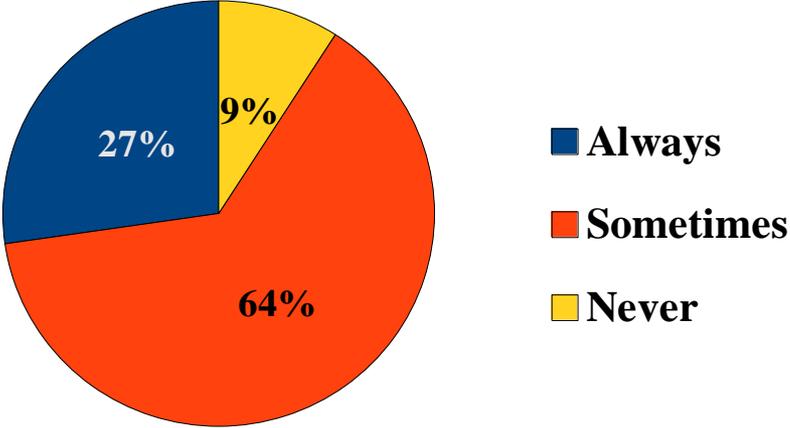


**“I have never thought so much, my brain hurts after the class is done”.**

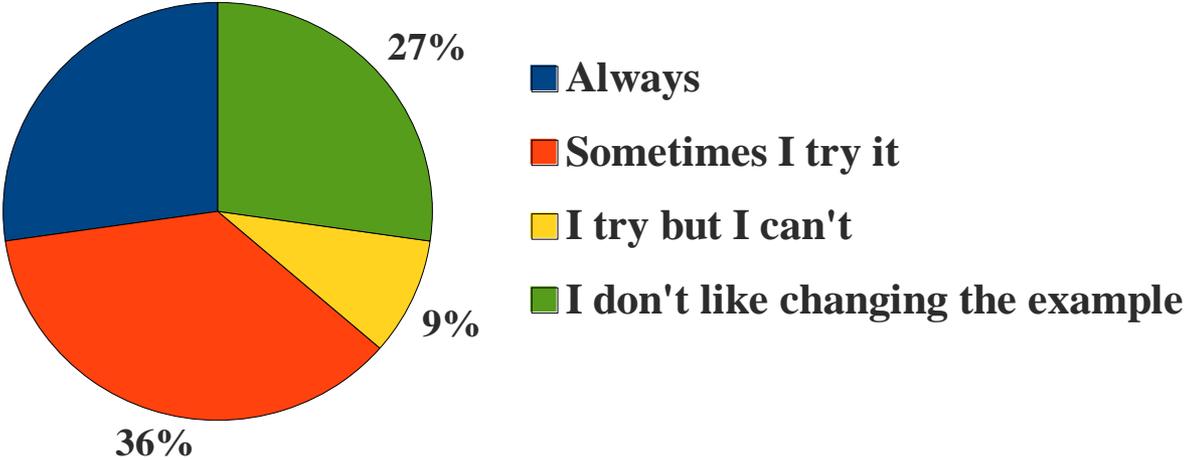
Prisoners comment

## Empowerment: Focusing on improving and customizing the Scratch programs

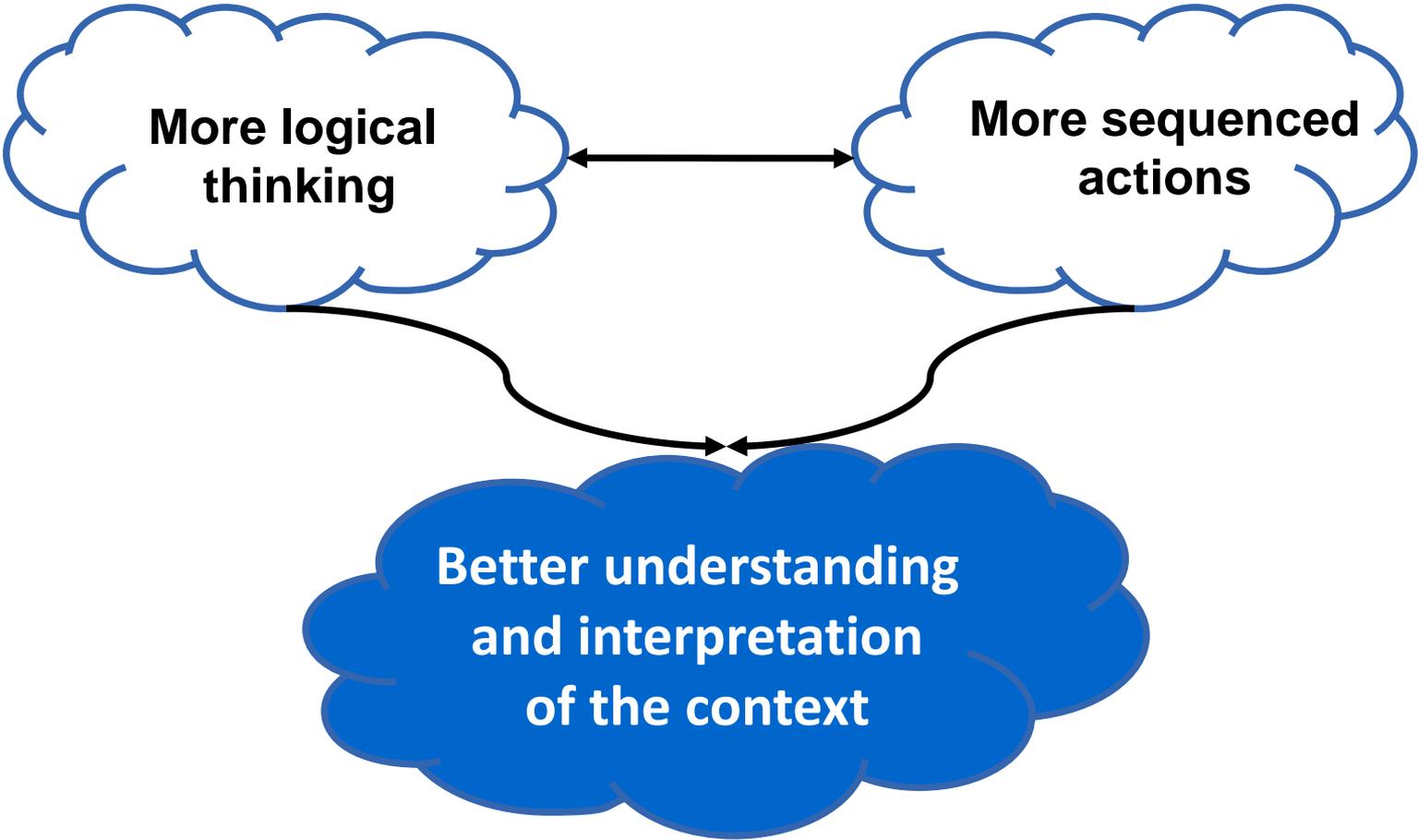
**Do you keep on thinking about improving the videogames after the class is done?**



**Do you customize the sample videogames ?**

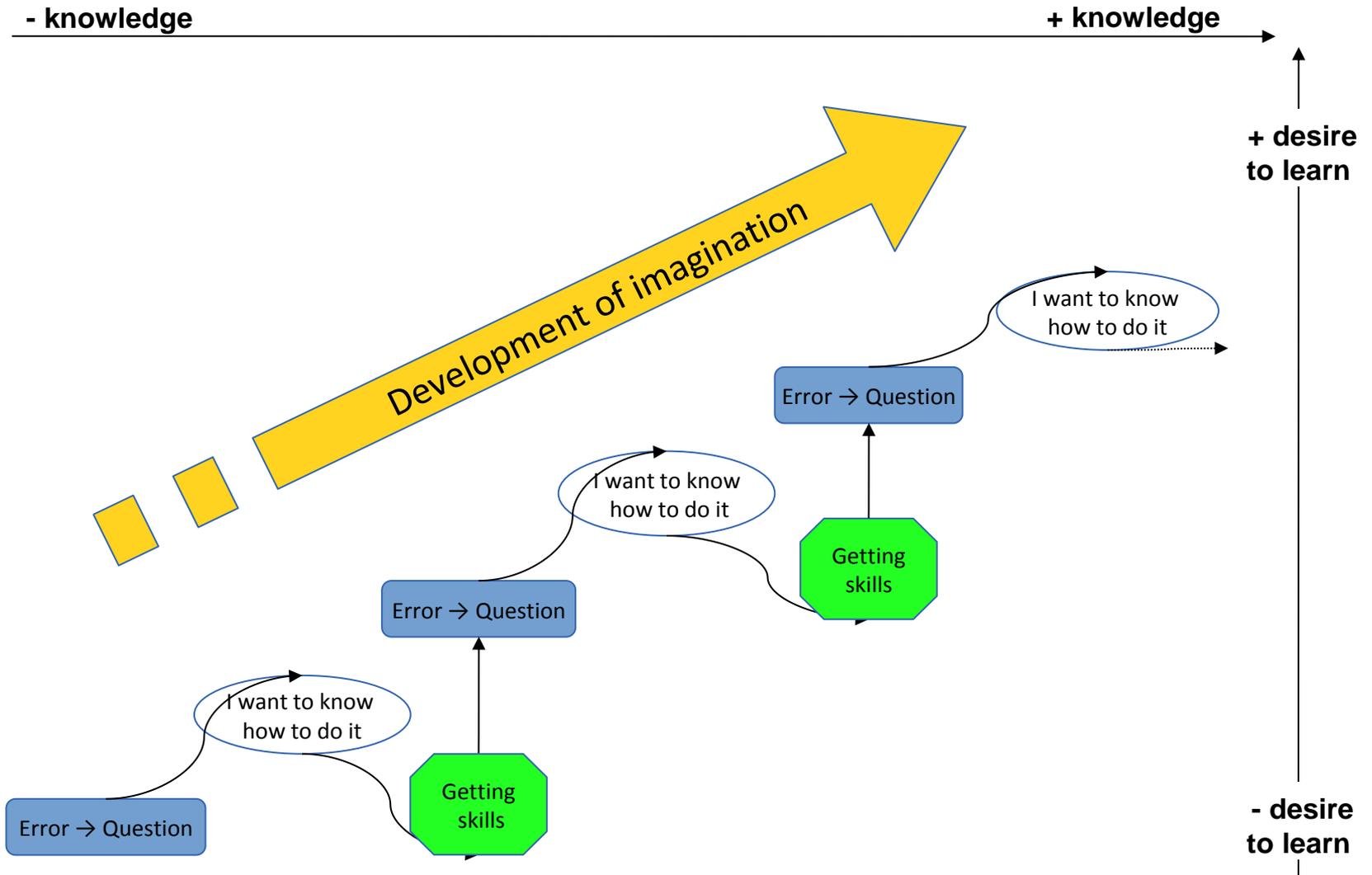


## New thinkings patterns



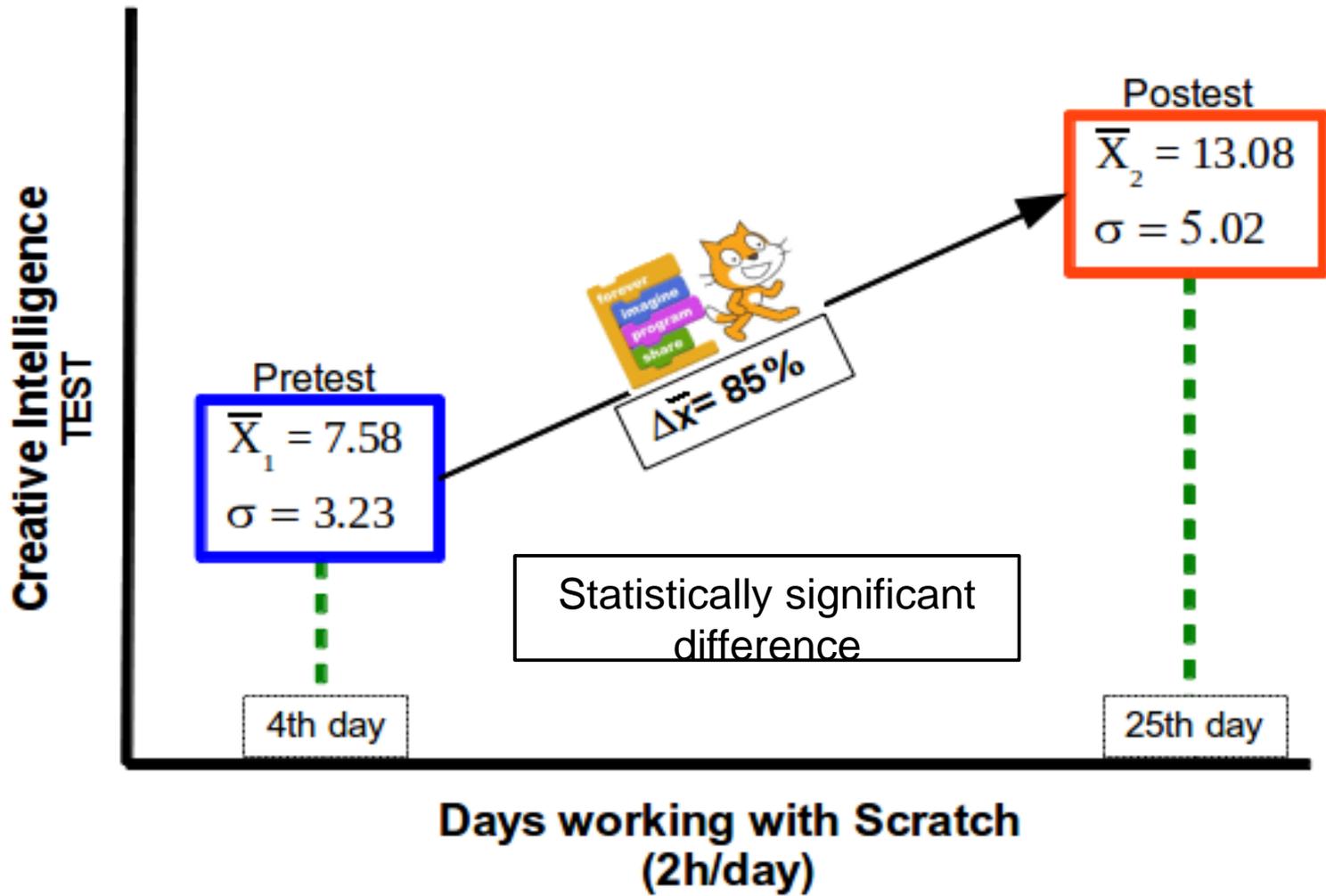
# Results

## Using “mistakes” as a learning opportunity and imagination developer



# Results

Significant increase in the creative intelligence test

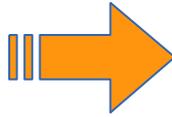


# CONCLUSIONS



- **Positive influence over creativity and thinking patterns**
- **Mistakes are an opportunity to improve**
- **It's stimulating for different kinds of people**

## NEXT RESEARCHS



Repeat the experience  
in another prison

Repeat the experience  
with other adult groups

**In process**

### Contact:

Jon Bustillo (@jonsarean)

jon.bustillo@ehu.es

Euskal Herriko Unibertsitatea

Universidad del País Vasco





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Scratch Conference

25-27 July 2013

**Genevieve Smith-Nunes**

kids **can** code

Genevieve Smith-Nunes  
readysaltedcode.org

2011-2012

why?

code

Teachers wanted to be able to deliver  
more advanced coding

# projects

- Yr 2 students (aged 6)
  - **Stanford** Infants, Animation
  - **Hertford** Infants, Maths and Robotics
  - **West Hove** Infants, multi player games and quizzes.

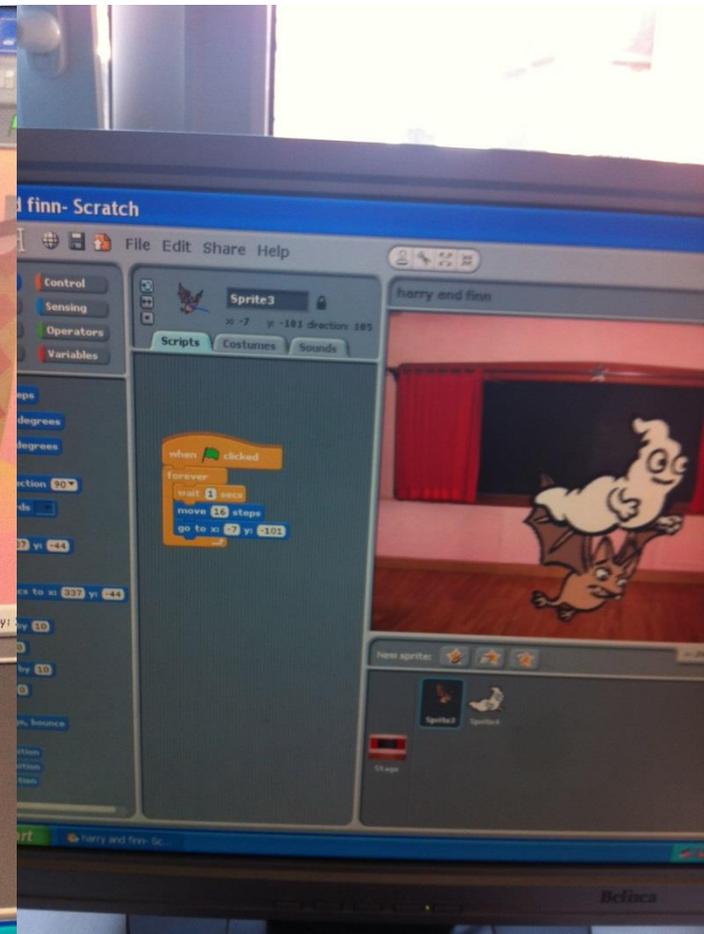
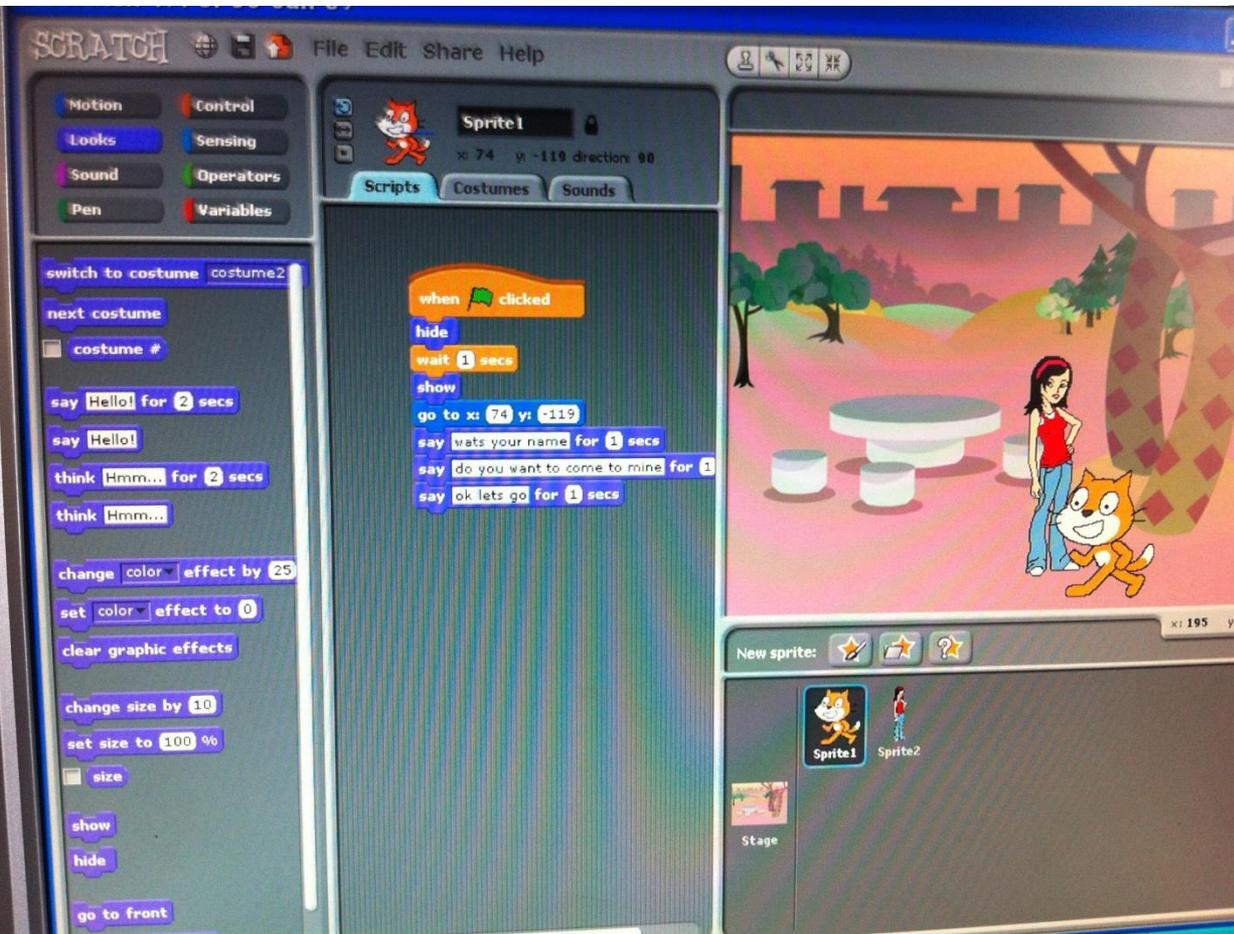
# Stanford Infants

Animation:

Using **storyboards** &  
understanding **algorithm**



# Independent



# Hertford Infants

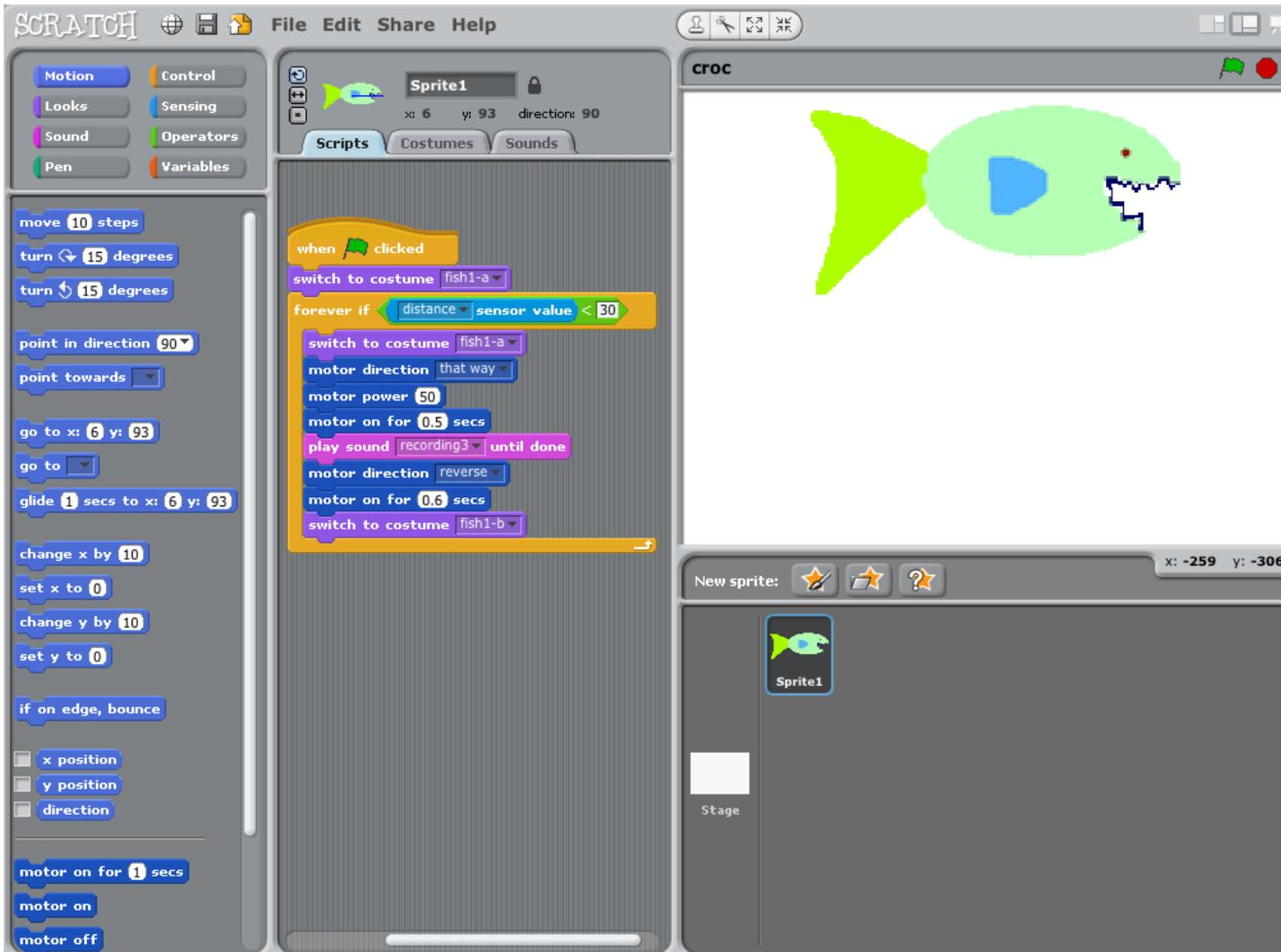
Lego Wedo:

Using **motors** &  
understanding **logic**

# West Hove Infants



# wedo



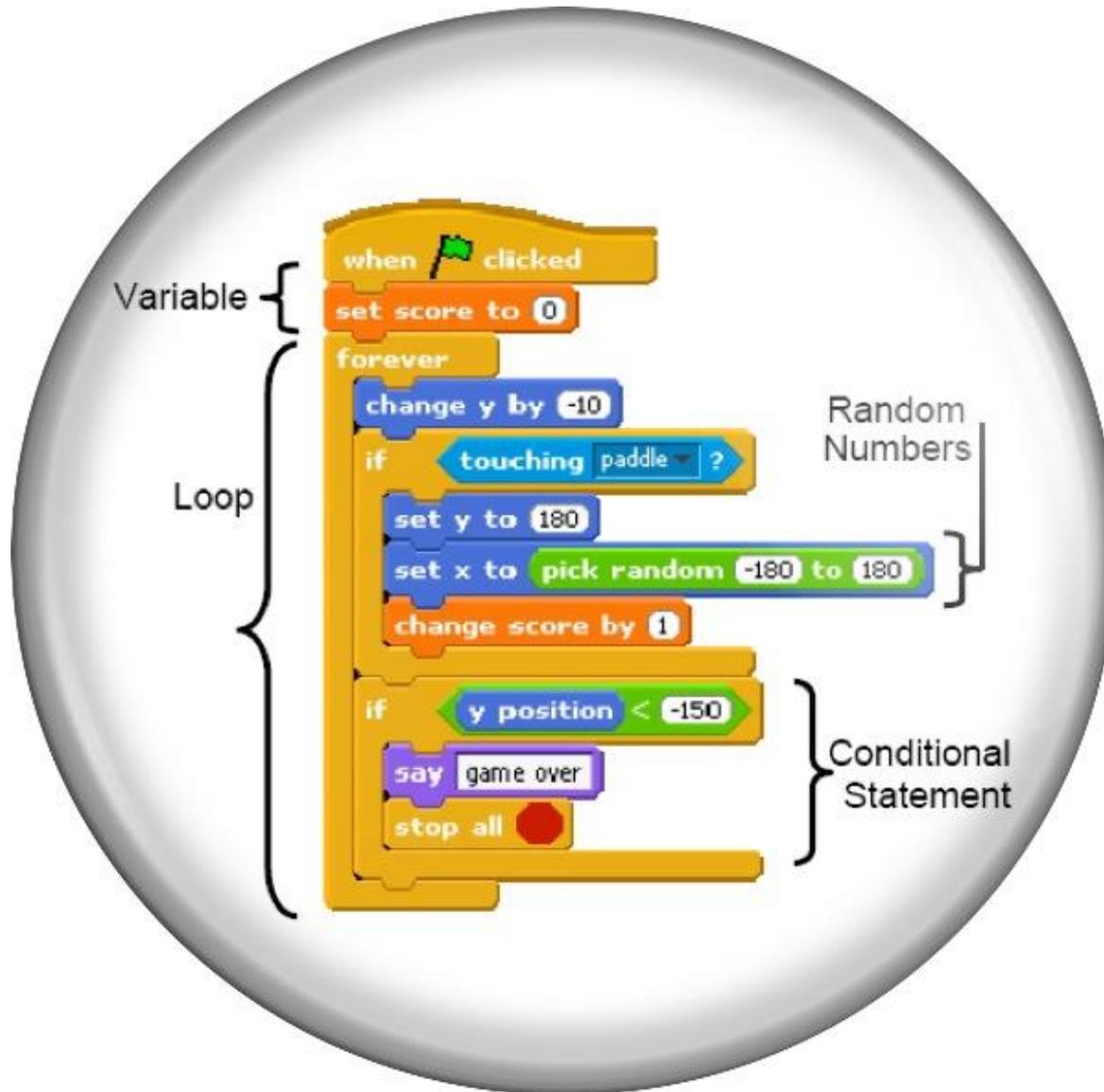
60  
Students  
2 WeDo

**FUN!**

# West Hove Infants

Gaming:

Using **algorithms** &  
understanding **if**  
statements

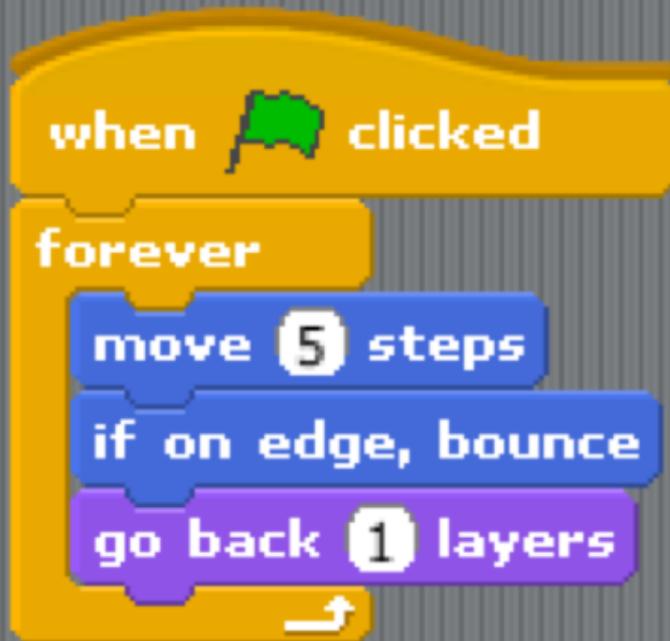


# Teacher's Workbook

Created resources for Teachers and Students  
6 Week Course

# Instructions

readysaltedcode



Using layers to move  
sprites in front or  
behind another sprite

# Lesson 1: My characters

readysaltedcode

## Lesson 1. Introduction to scratch

Students will eventually be working in pairs. This can be organised prior to the event.

### STARTER

Show the students the scratch environment. Explain to the students that they are going to be creating "an animation" (game/movie) using Scratch.

Play a cartoon from CBBC site. Let the children choose. Get them to describe the characters. What are they like, what do they move like. What do they look like.

During the cartoon pause the film and asked the students to suggest what might happen.

### Who, where, when, problem, the end

### MAIN:

Students to draw their character(s) in their workbooks. Describe in sentences their character. Repeat for students who are good illustrators and have written detailed sentences.

### PLENARY:

As a class in front of the board. Ask different students about their characters and environments. Create a short animation using the students ideas. Go through SCRATCH slowly when carrying it this task. Explain the required blocks and what to click. They won't remember but it allows them to unrated the WHY behind the animation.

**Add 1 sprite, background,  using a  or repeat block, . Try get the student to guess the correct block. Lots of hints :)**

Keywords:

**Script:** a collection of **code blocks** that controls (programming logic) and influences the **sprite**.

**Stage:** the background area in the Scratch environment (**IDE**). The section showing the animation.

**Sprite:** a 2d image on a transparent background that can be controlled and or moved around the **stage**.

1,472 words

# Teacher's workbook

# Lessons 5-6: let's get coding

readysaltedcode

## Lesson 5 carry on

Starter:

Again using your class animation from the previous lessons. Show the students how to change scenes by changing the background costume. This can be done by using wait or broadcast. Select the wait X secs block if you feel that they won't understand the broadcast and receive method.

MAIN: Pairs continue to work on their animation using their workbooks to help them work independently.

Computer work: same as last time. **in pairs**. They open scratch and add **new scenes by using background changes**. They are working on their project piece. They will work on their animations for this and the next lesson. Use the  or  blocks for scene changes

PLENARY:

Again **check** that they have saved their work or do it for them if they are very young. I found that this was the best option when dealing with their final projects. Lesson 6: Open one or more of their projects and demo them to the class. A celebration of their hard work

**Save and Publish. Create a teacher or school gallery on the scratch website. Click on create then add a name, description and specify who can add (upload) projects. galleries be totally private, public or "my friends".**

**Handout certificates. Print and sign prior to the last lesson.**

Keywords:

**Debug:** debugger is a program or utility that can be used to execute an application within a special environment. This environment allows you to slow down and or monitor the **scripts** as it is running. Checking for errors.

**Broadcast:** broadcast message is an electronic message sent between sprites as a means of coordinating the application activities.

**Publish** uploading projects to the Scratch website. Add tags to put them into a category. Once upload they can be played from the scratch site.

# Teacher's workbook

# Class Teachers

Stanford Infants:      Bridget Slater      @trulymidget

Hertford Infants:      Tracy Bowers      @traceyab1

West Hove Infants:      Jane Waite      @janewaite

# Class Teachers

Stanford Infants:      Bridget Slater      @trulymidget

Hertford Infants:      Tracy Bowers      @traceyab1

West Hove Infants:      Jane Waite      @janewaite

thank you for listening

we can code

Genevieve Smith-Nunes

@readysaltedcode

[www.readysaltedcode.org](http://www.readysaltedcode.org)

we can code

Genevieve Smith-Nunes

@readysaltedcode

[www.readysaltedcode.org](http://www.readysaltedcode.org)



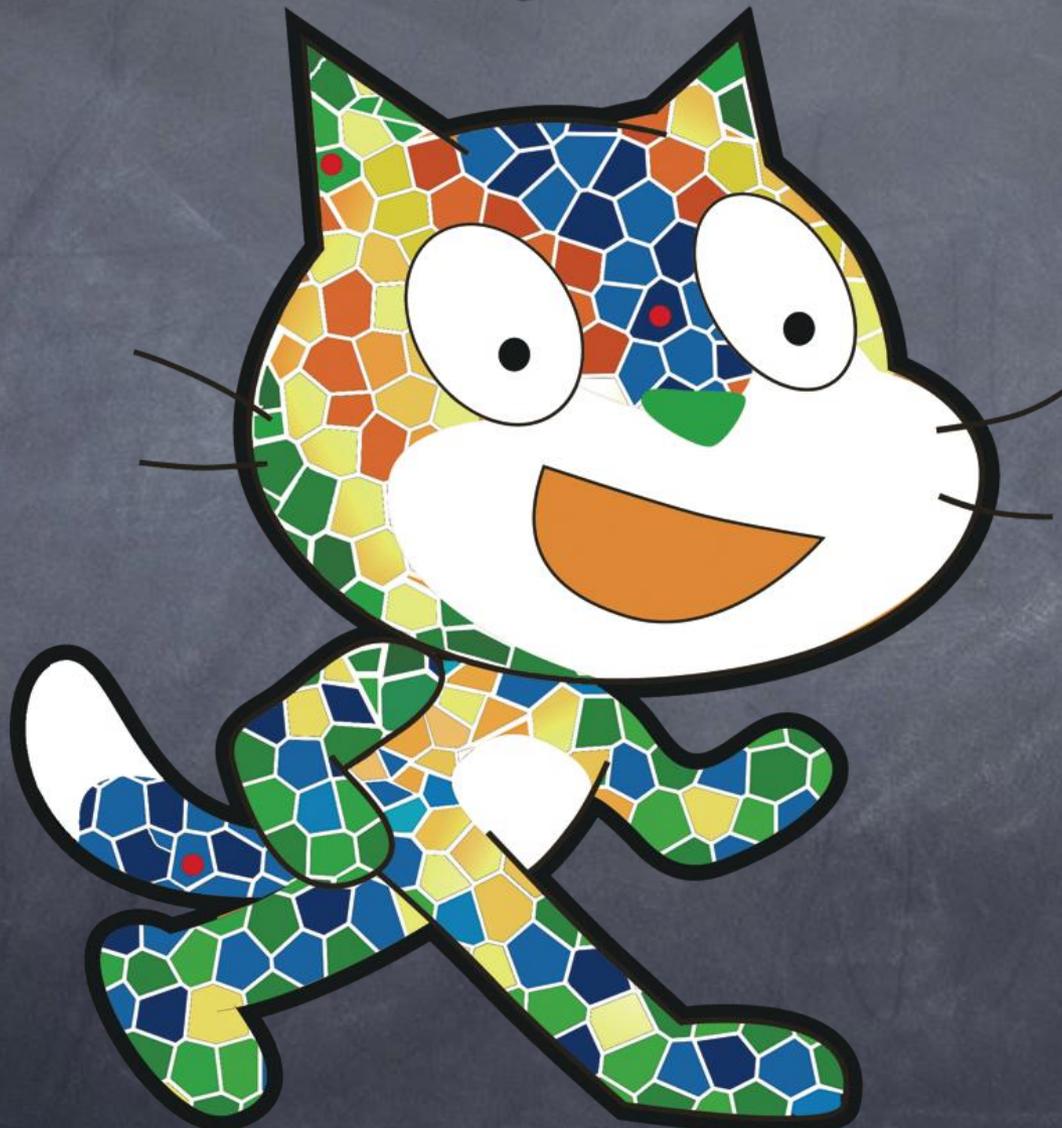
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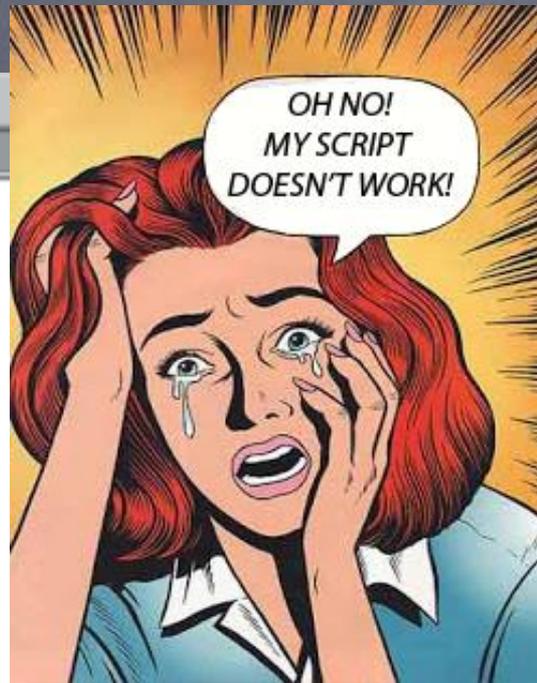
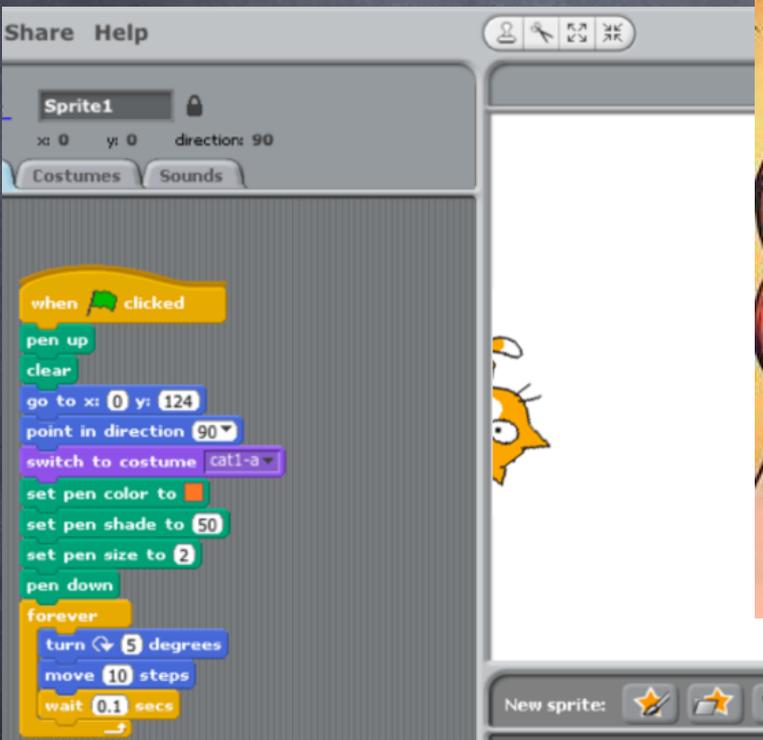
25-27 July 2013

**Eugeni Catalán**

# SCRATCH *Català*



Does this situation sound familiar to you?



• Do you think the little bits will solve the situation?



Have you asked for help from all your friends?



### ANATOMÍA DEL PROGRAMADOR GEEK

*Informaticus programatorum*

**GAFAS ESTILO "TWILIGHT ZONE".** NECESARIAS DEBIDO AL EXCESO DE HORAS PASADAS FRENTE AL MONITOR.

**MELENA Y BARBA AL ESTILO INDIGENTE.** NO HAY TIEMPO PARA CORTES DE PELO INNECESARIOS..

**DIENTES AMARILLOS.** TIENE TAN ASUMIDO QUE NUNCA BESARÁ UNA MUJER QUE JAMÁS SE PREOCUPA DE SU HIGIENE BUCAL.

**CAMISA DE LA SUERTE PARA EL TORNEO DE QUAKE, COUNTER STRIKE O SIMILAR.** UN BUEN PROGRAMADOR PARTICIPA AL MENOS DE MEDIA EN 15 TORNEOS ONLINE AL AÑO.

**CUERPO CON GRAN CONCENTRACION DE LIPIDOS.** UN BUEN PROGRAMADOR CONSUME AL DIA 3 VECES SU PROPIO PESO EN COMIDA BASURA.

**EL PROGRAMADOR ES UN ANIMAL PACIFICO Y APACIBLE.** SIN EMBARGO, SUS NIVELES DE AGRESIVIDAD SE INCREMENTAN NOTABLEMENTE AL OIR HABLAR DE WINDOWS Y SOFTWARE PRIVATIVO LLEGANDO EN OCASIONES A PRODUCIRSE ATAQUES VIOLENTOS A SERES HUMANOS.

**PELO CASI INEXISTENTE EN LA SUPERFICIE DE SU CUERPO A EXCEPCION DEL VELLO FACIAL.** NO OBSTANTE SE HA CONSEGUIDO DEMOSTRAR QUE SON MAMIFEROS..

**PIERNAS RAQUITICAS.** EL PROGRAMADOR CASI NUNCA SE DESPLAZA Y EN LOS CASOS EXTREMOS EN QUE SE VE OBLIGADO A HACERLO SU MEDIO DE LOCOMOCION FAVORITO SON LAS SILLAS DE ESCRITORIO CON RUEDAS.

**MASCOTA MOUSE.** EL PROGRAMADOR NO CONOCE OTRAS ESPECIES ANIMALES, POR ESO ADOPTA SUS OBJETOS MAS QUERIDOS COMO MASCOTAS.

*Realtek 10/5/02*

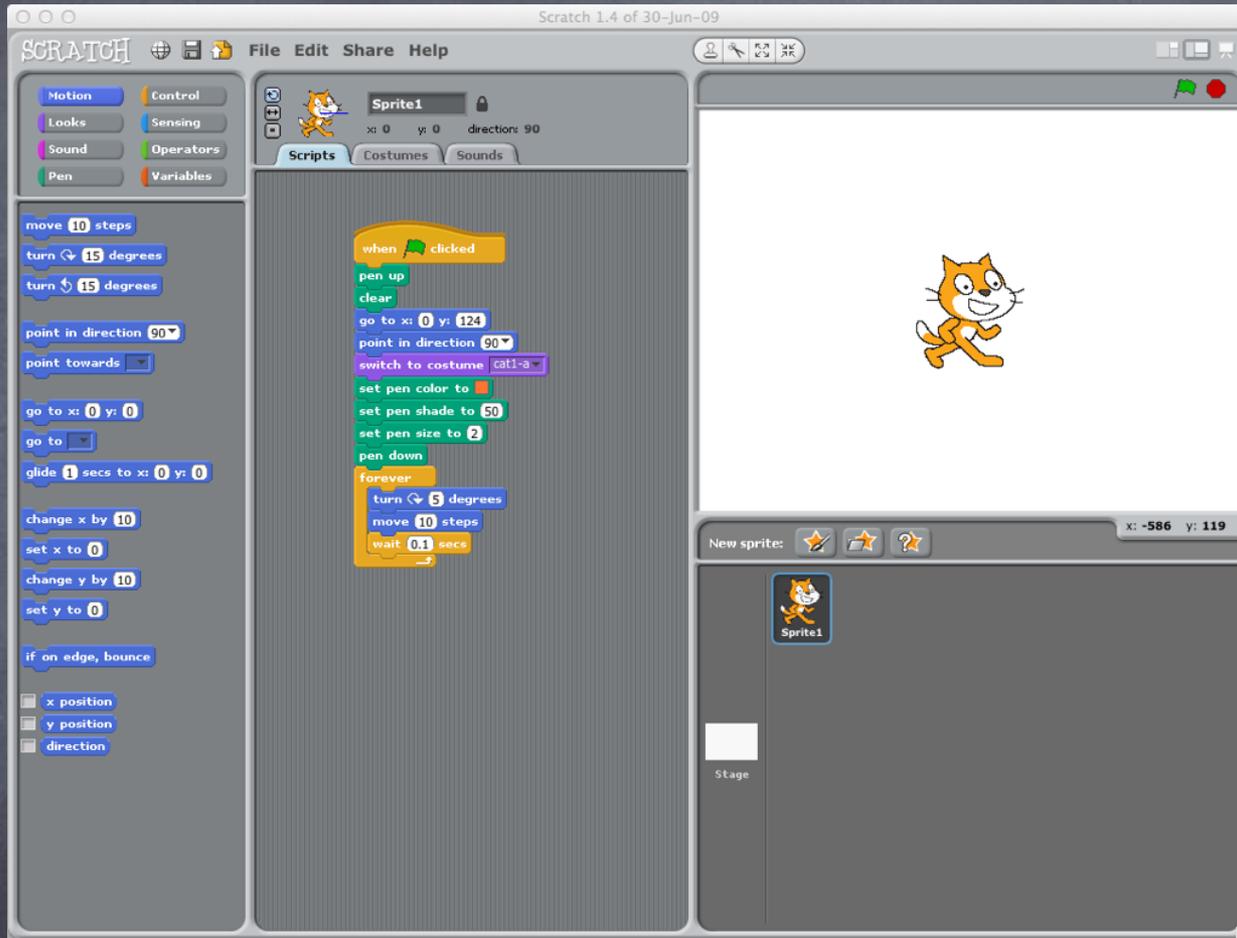
• Are you so desperate that ...?





# ScratchRef

Scratch 1.4  
Reference Guide  
for iPhone



From your computer to...

... your

iPhone

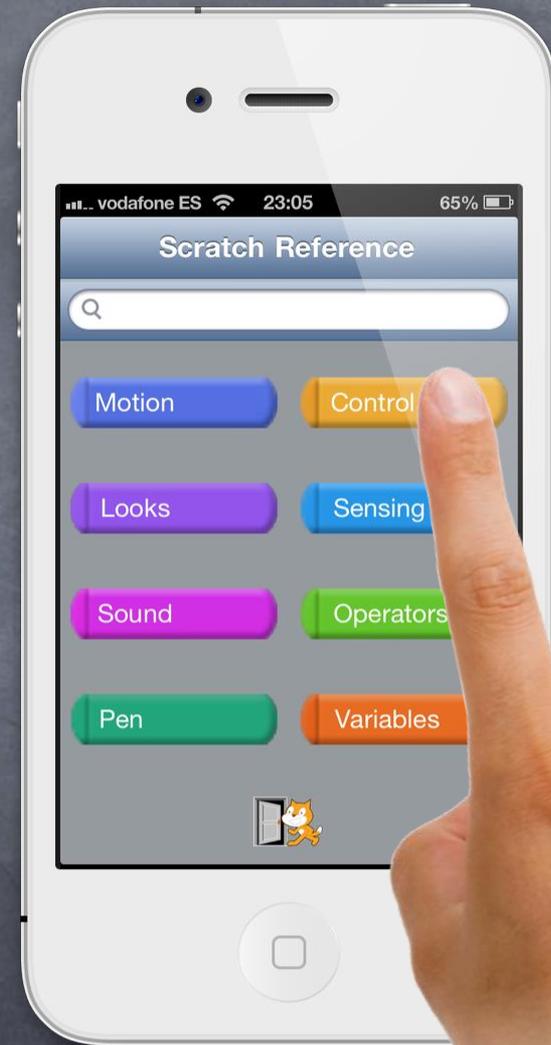


using the same UI



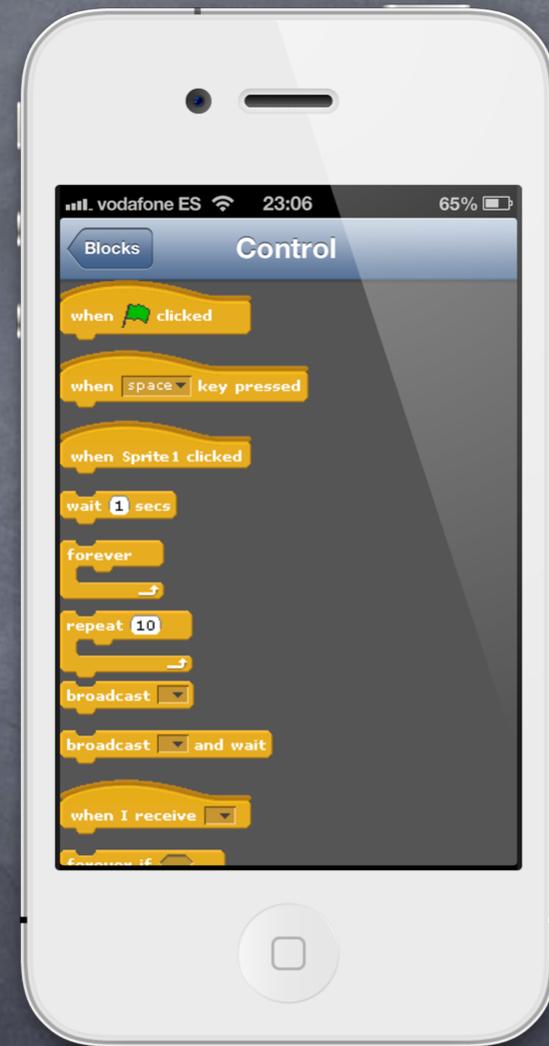
Tap inside red info circles

Look for detailed info  
selecting the category of  
the block you want.



A list with all the category's selected blocks.

An easy way to find the requested block.



Search blocks using  
keywords.

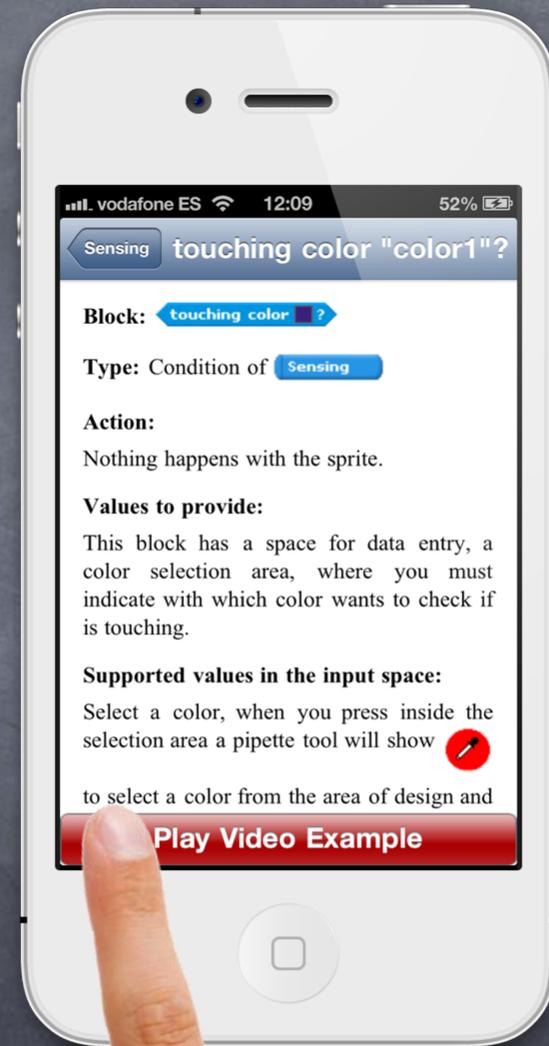


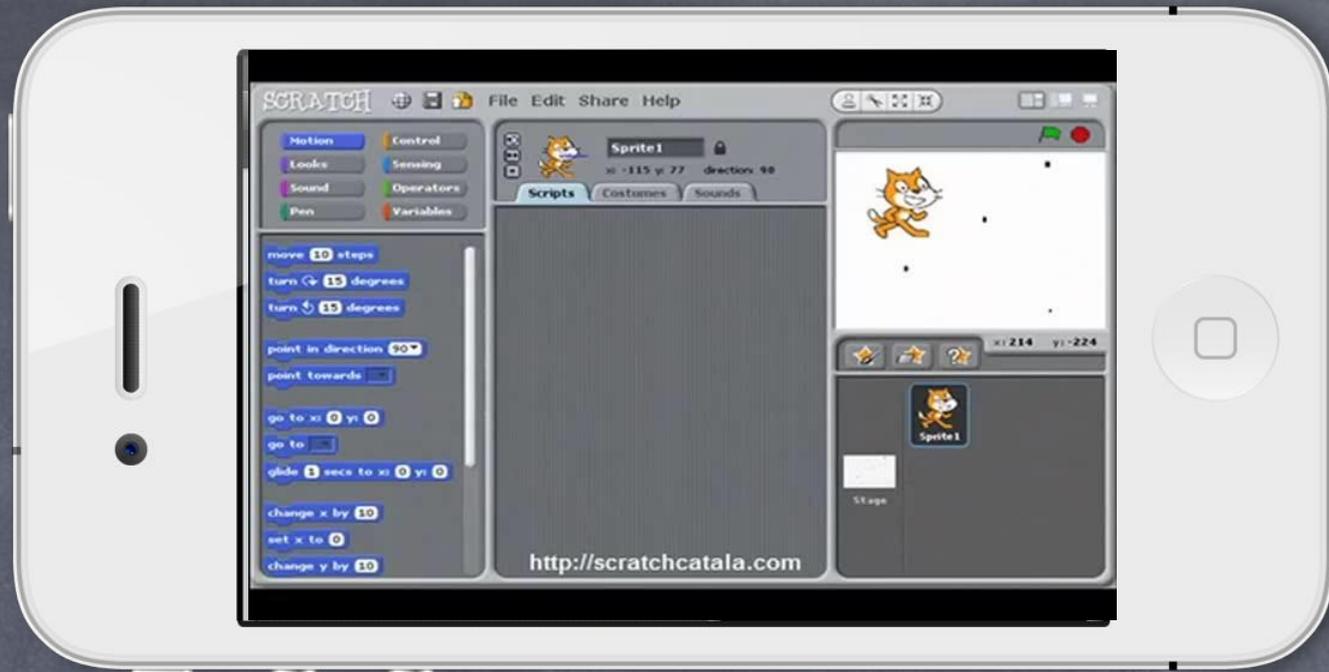
A list with all the blocks matching your keyword.

A quick way to find the requested block.



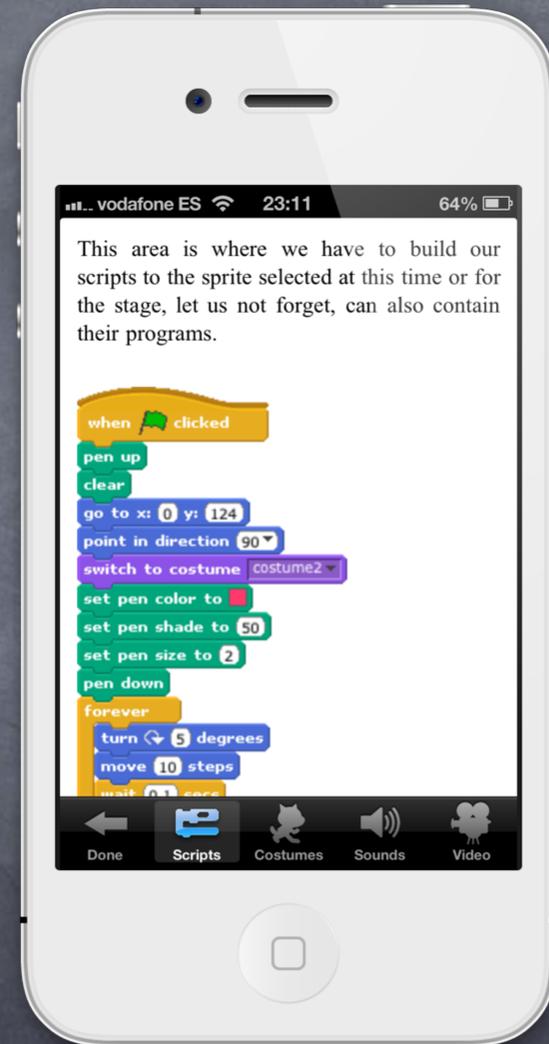
A detailed explanation  
about the functionality of  
the selected block.



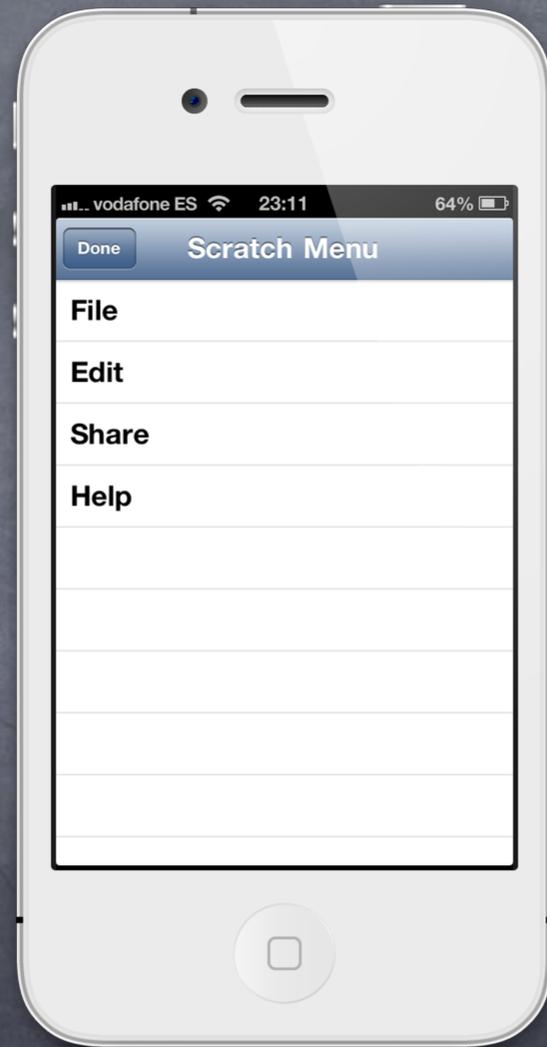


More than 150 video tutorial explaining in deep how to use every block and how to work with the UI.

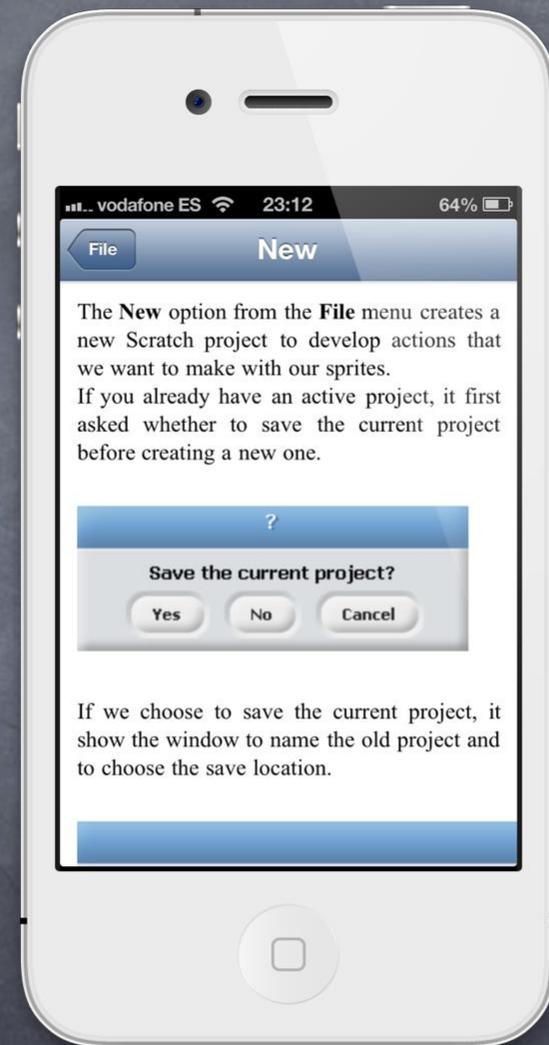
An explanation about all the UI areas.



An explanation about all the UI, including all the menus and submenus.



All the menu options  
explained.



**Free**



Remember!!  
it's free  
during the  
conference



# Thanks!!

Scratch On!! = Força Scratch!!



Eugeni Catalán

 @scratchcatala

 scratchcatala.cat@gmail.com



<http://scratchcatala.com>



SCRATCH • CONNECTING • WORLDS

Scratch Conference

25-27 July 2013

**Mags Amond**



SCRATCH • CONNECTING • WORLDS  
Scratch Conference  
25-27 July 2013

# Scratching at the Crossroads...



CoderDojoCavan



@magsamond



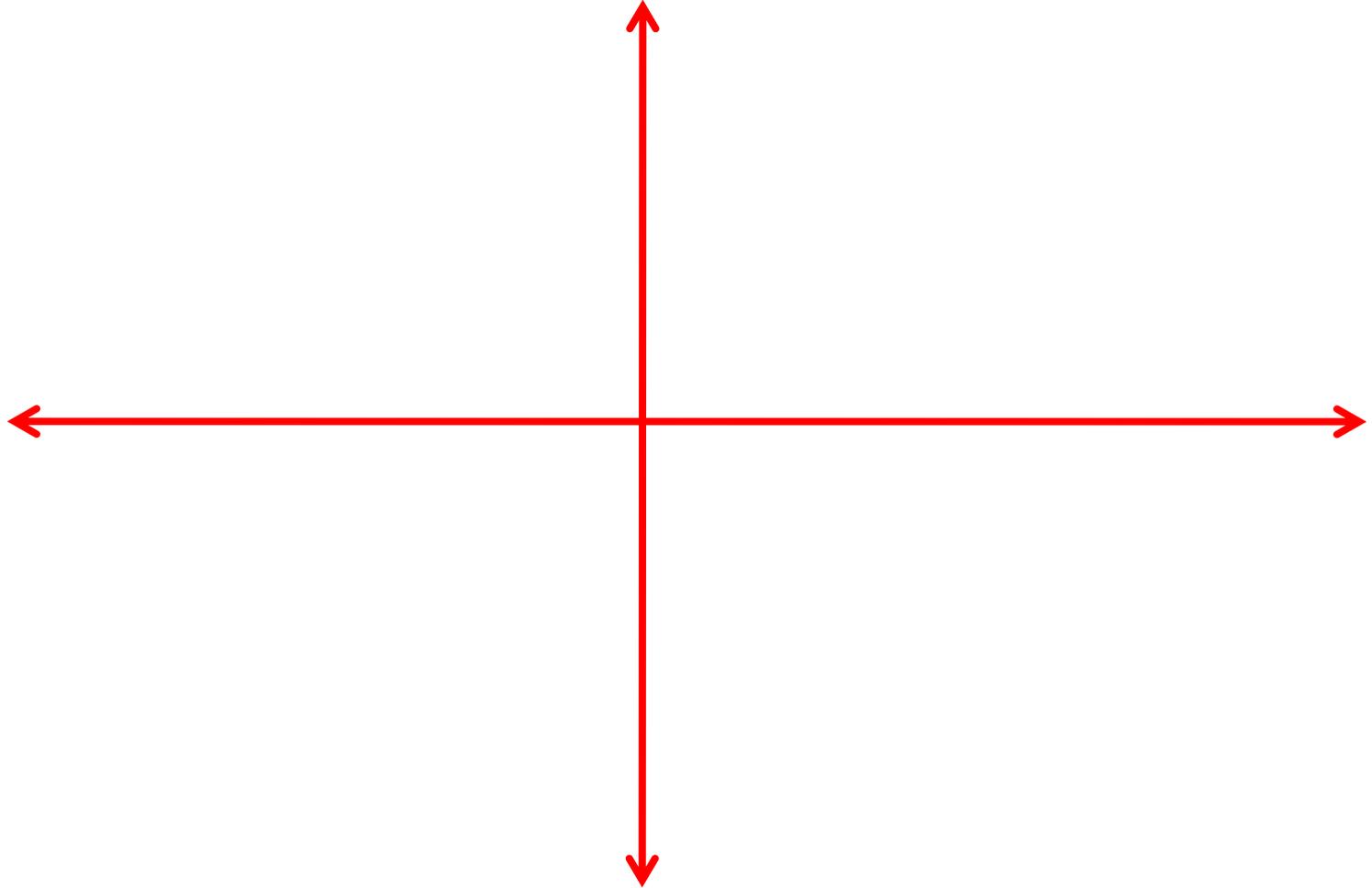
Computers in Education Society of Ireland  
Cumann Ríomh-Oideachais na hÉireann





# Classroom Climate

**RESPONSIBILITY**

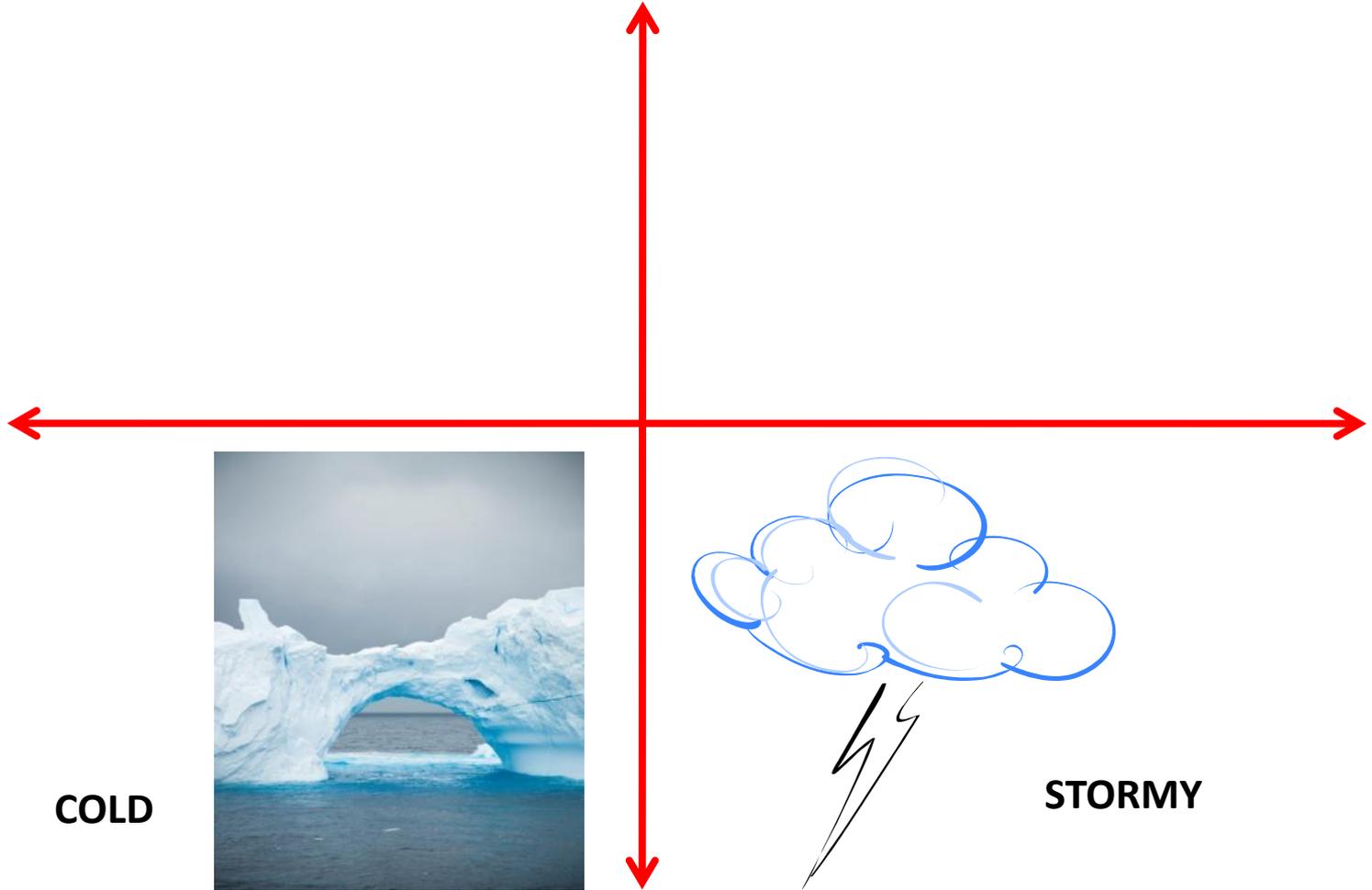


**RELATIONSHIP**

Adapted from Ian Smith (R.I.P.), [Learning Unlimited](#)

# Classroom Climate

**RESPONSIBILITY**



**COLD**

**STORMY**

**RELATIONSHIP**

# Classroom Climate

**RESPONSIBILITY**

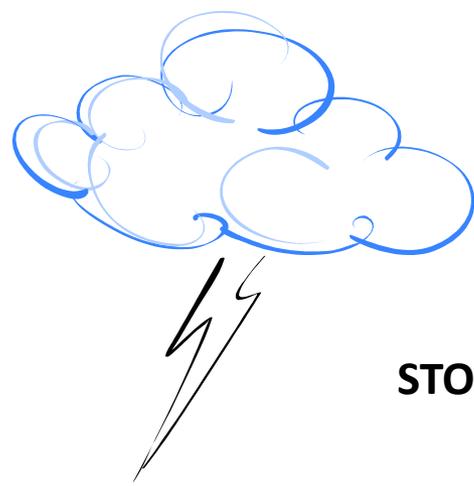
**HUMID**



**COLD**



**STORMY**



**RELATIONSHIP**

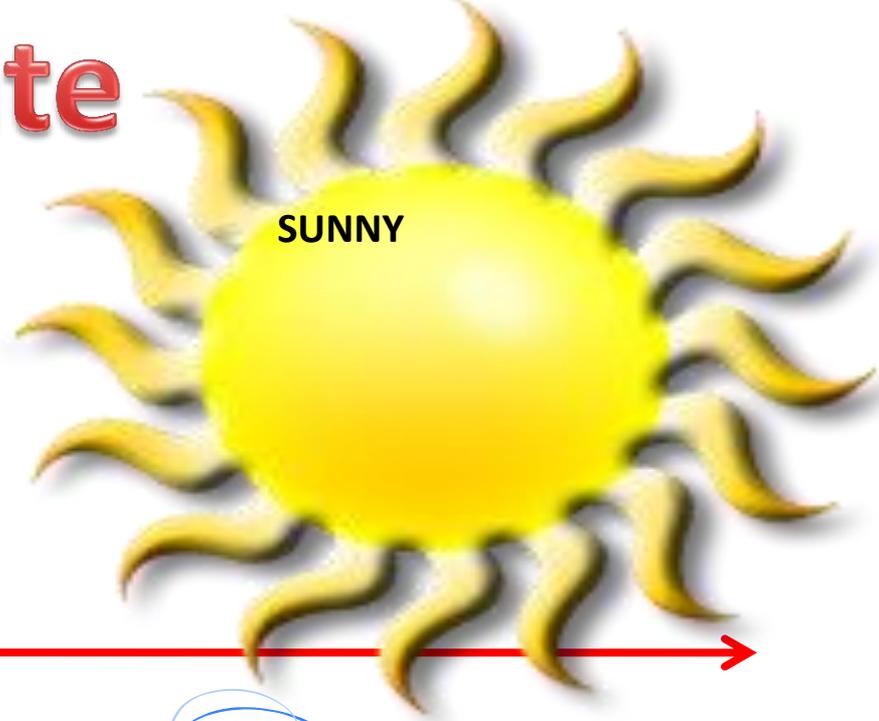
# Classroom Climate

**RESPONSIBILITY**

**HUMID**



**SUNNY**



**COLD**



**STORMY**



**RELATIONSHIP**

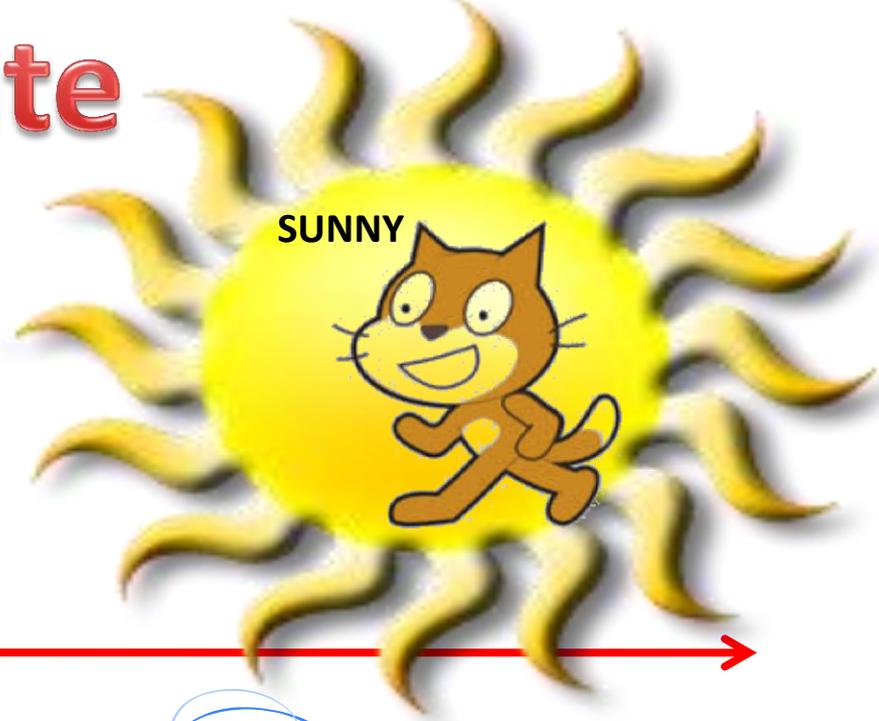
# Classroom Climate

**RESPONSIBILITY**

**HUMID**



**SUNNY**



**COLD**



**STORMY**



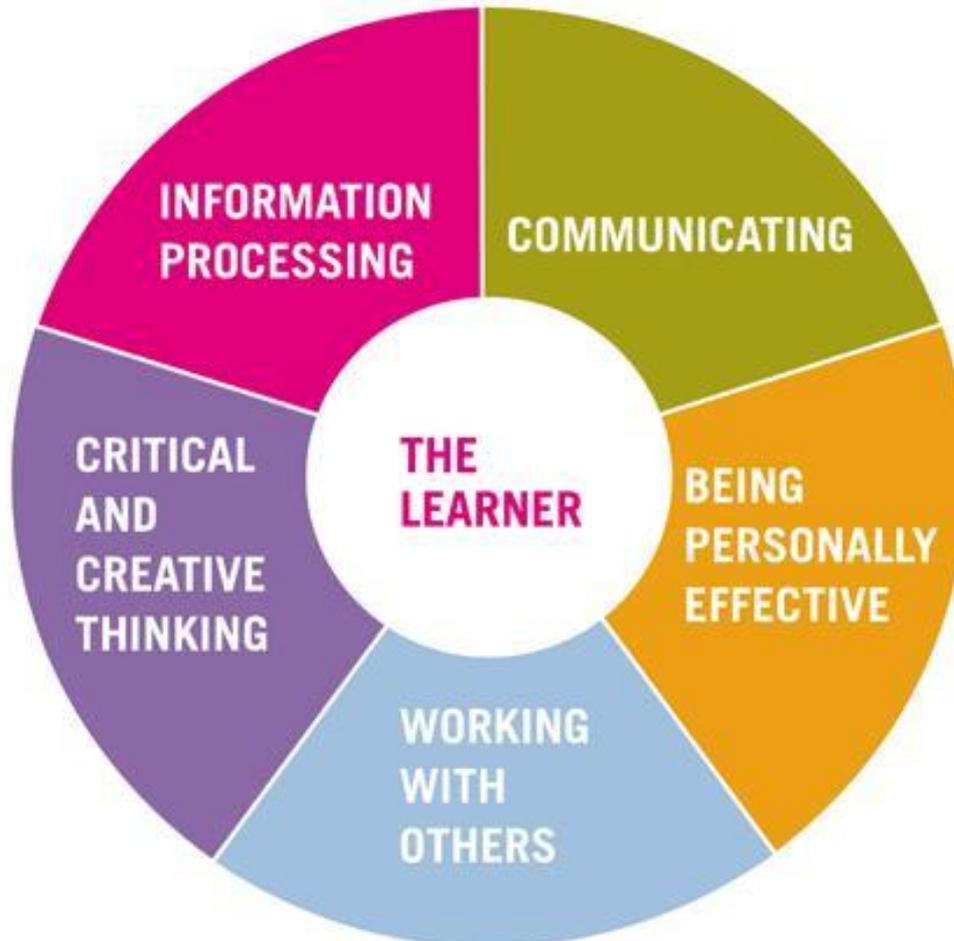
**RELATIONSHIP**

# Classroom Climate

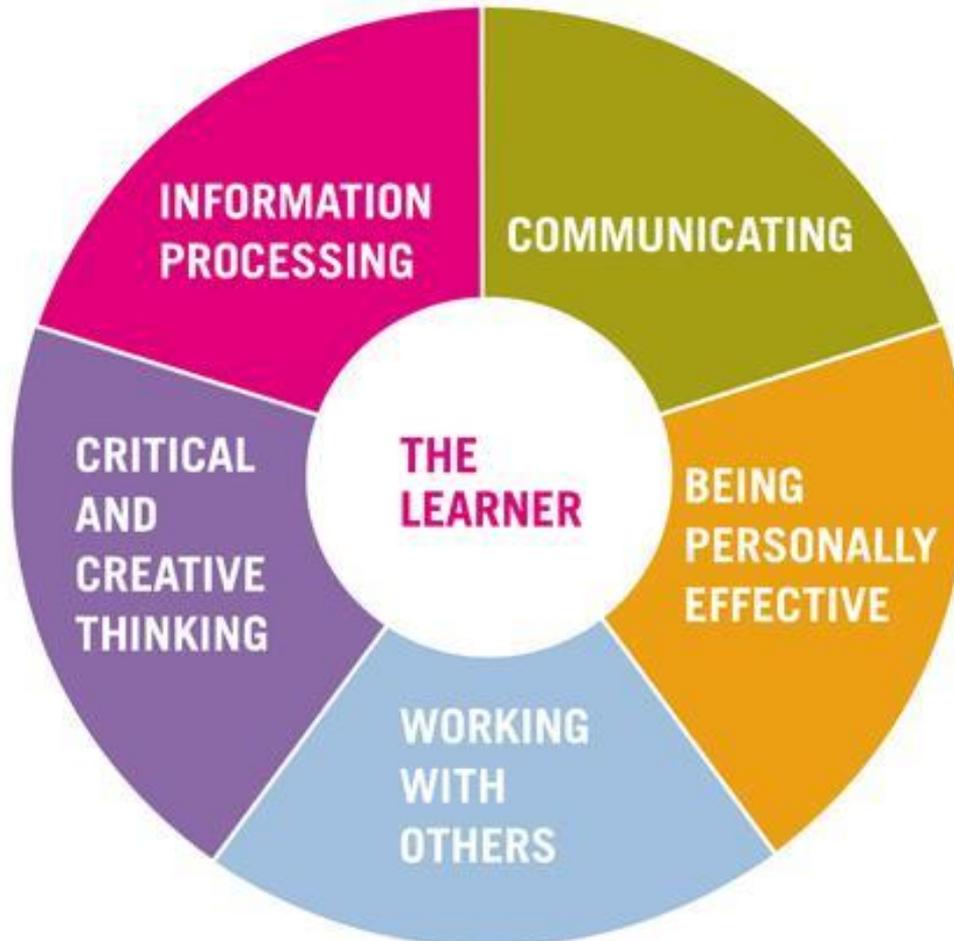


Adapted from Ian Smith (R.I.P.), [Learning Unlimited](#)

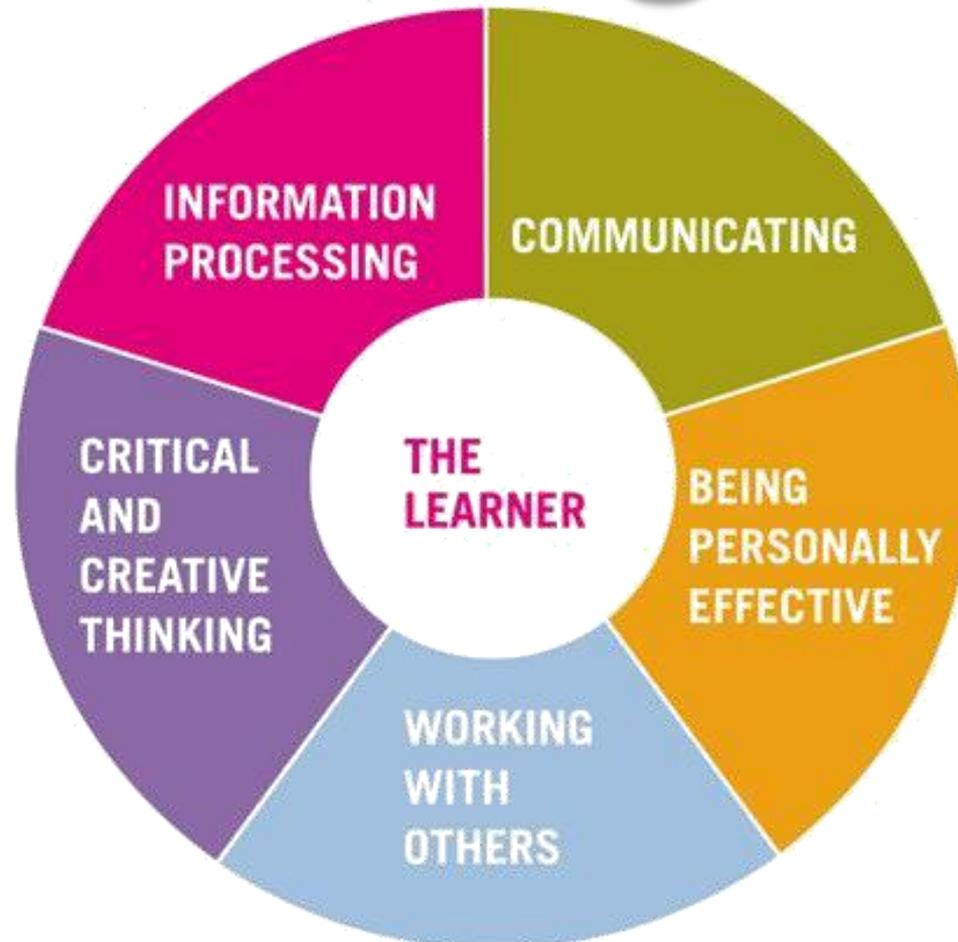
# key skills



# knowledgeable



# knowledgeable



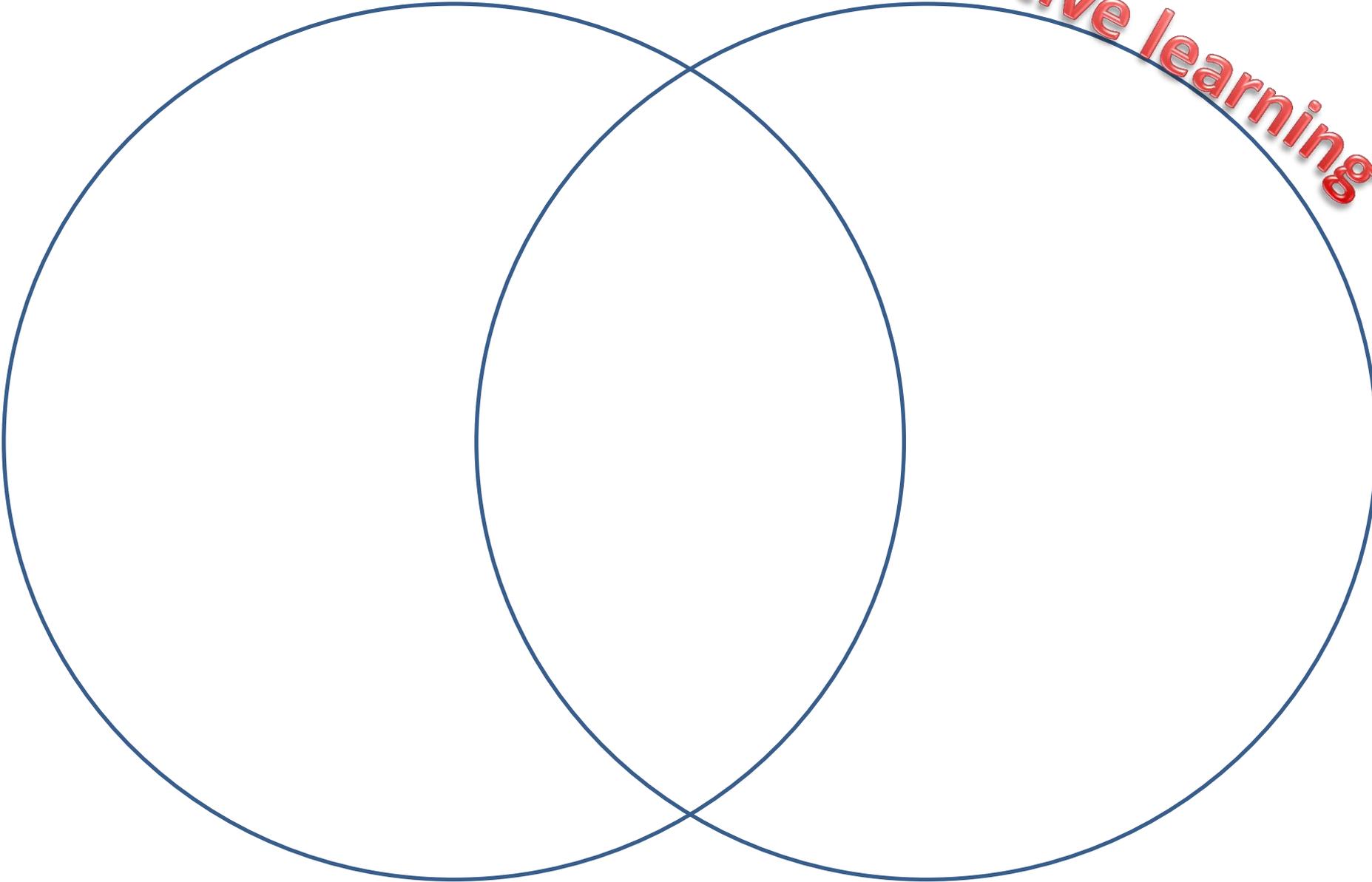
**TRY AGAIN.  
FAIL AGAIN.  
FAIL BETTER.**

modernizmus haladóknak

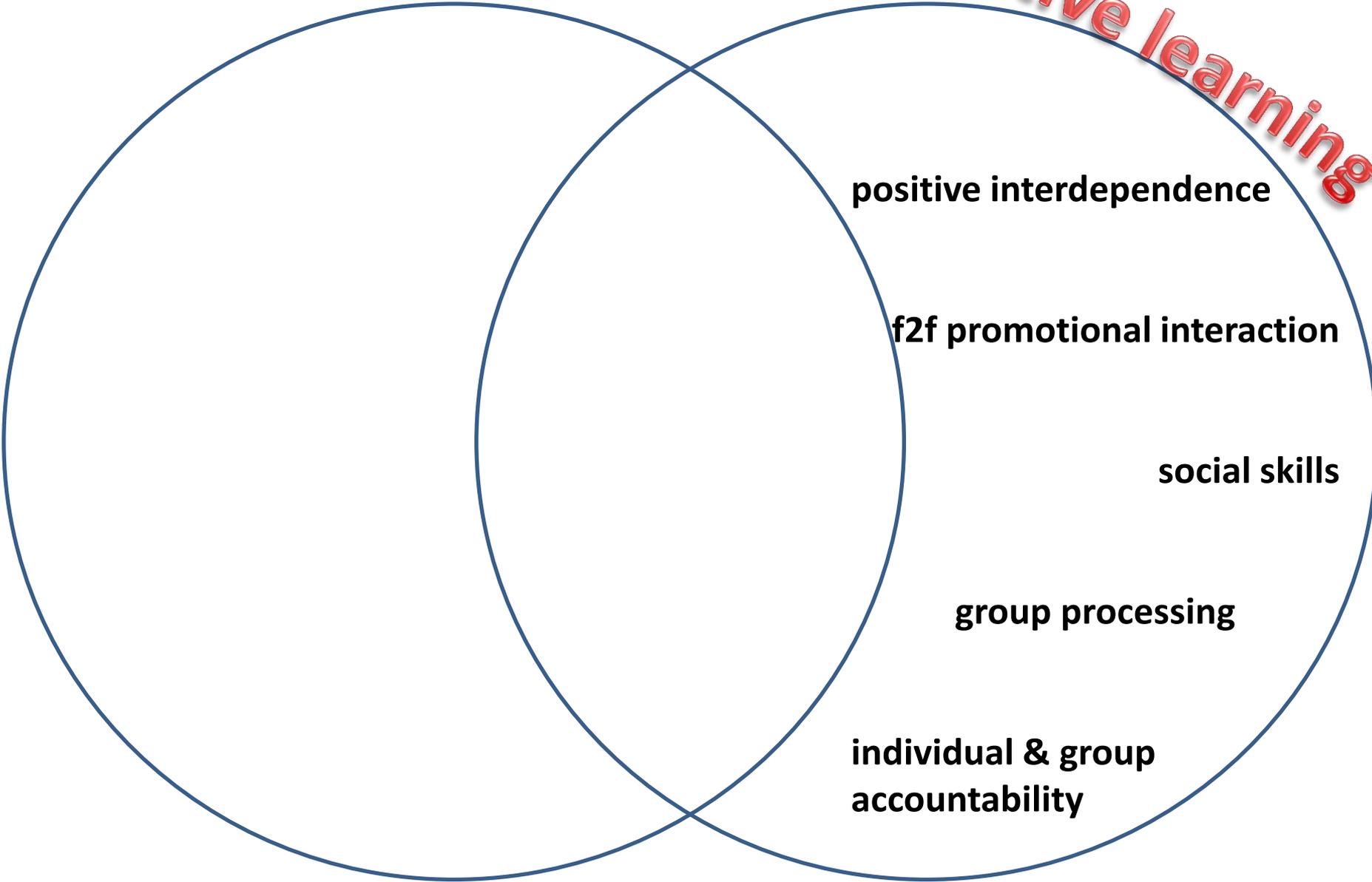
FRANCIS ALYS | ZBYNĚK BALADRÁN | TERENCE GOWER | JOACHIM KOESTER

... MAL MOVIÓ | ANIA MOISY

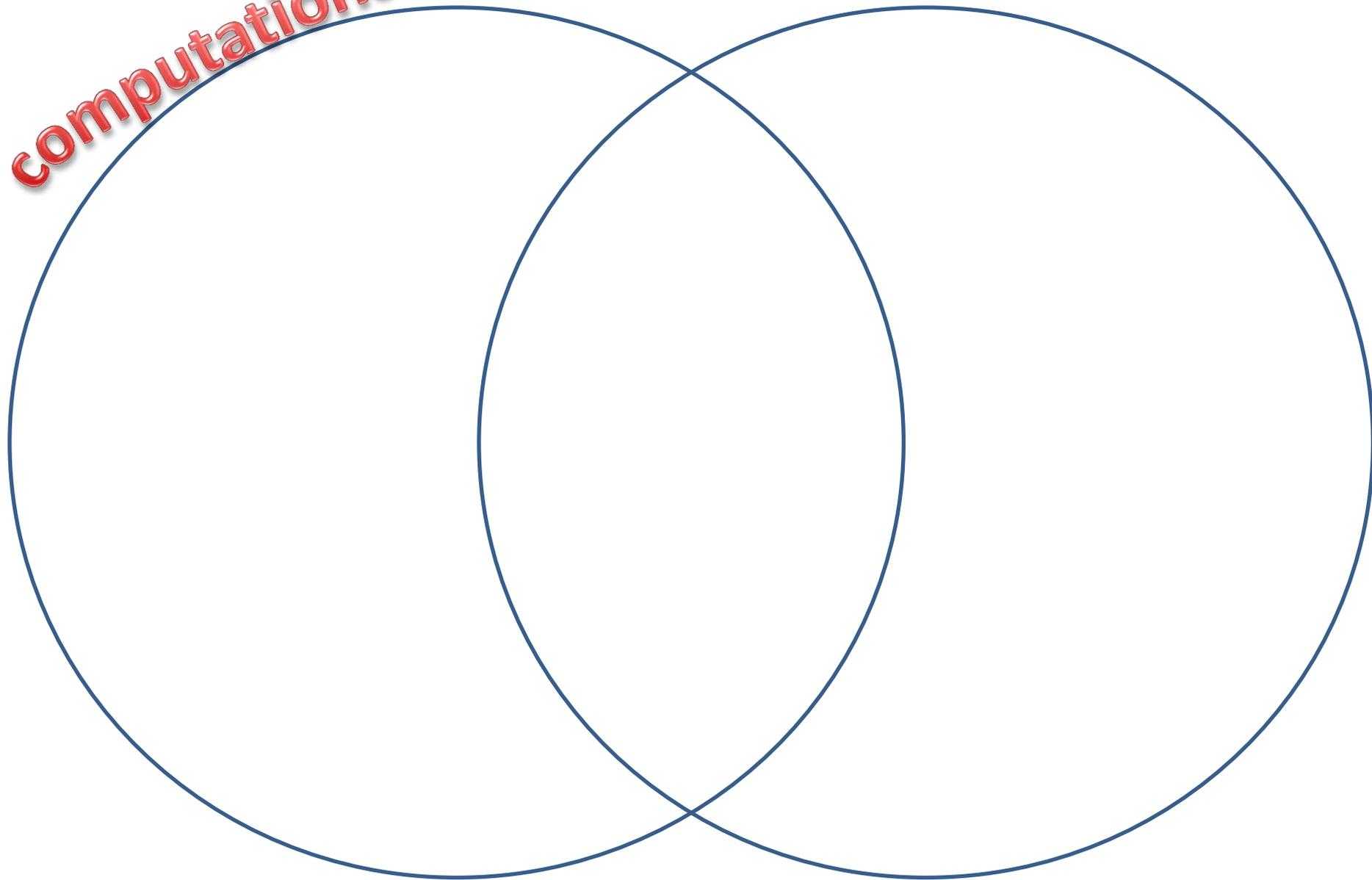
**cooperative learning**



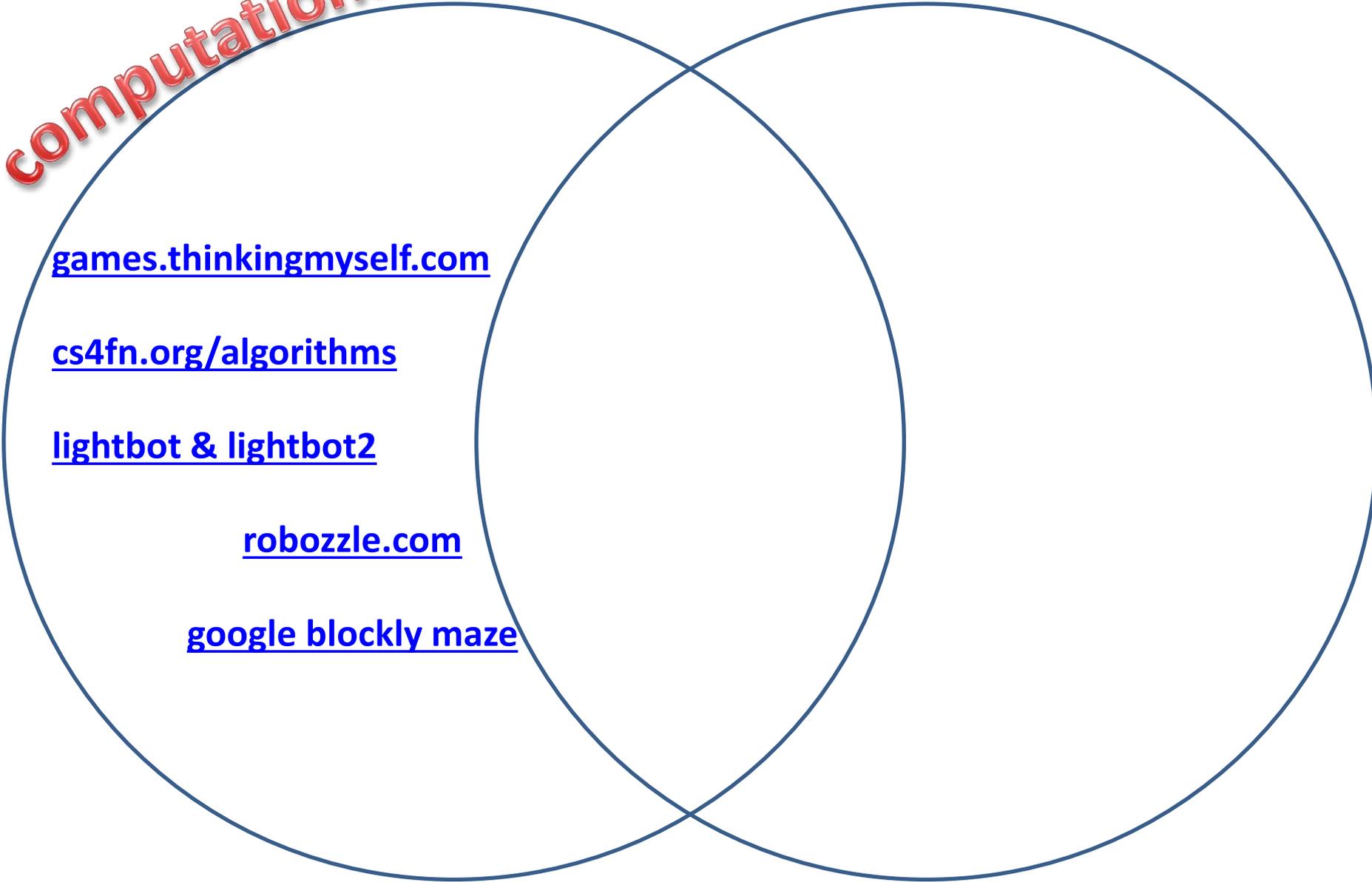
# *cooperative learning*



**computational thinking**



# computational thinking



[games.thinkingmyself.com](http://games.thinkingmyself.com)

[cs4fn.org/algorithms](http://cs4fn.org/algorithms)

[lightbot & lightbot2](#)

[robozzle.com](http://robozzle.com)

[google blockly maze](#)

# computational thinking

# cooperative learning

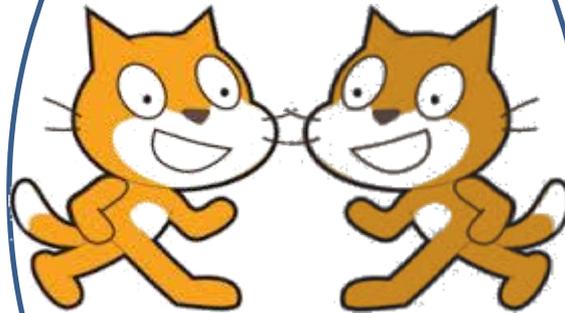
[games.thinkingmyself.com](http://games.thinkingmyself.com)

[cs4fn.org/algorithms](http://cs4fn.org/algorithms)

[lightbot & lightbot2](#)

[robozzle.com](http://robozzle.com)

[google blockly maze](#)



positive interdependence

f2f promotional interaction

social skills

group processing

individual & group  
accountability



## Helping out at Coderdojo

February 2, 2013 | Tagged community, Loreto, Multimedia, TY, volunteer, workshop | [Leave a Comment](#)



As part of a Module in 'Computational Thinking', our Transition Year students are introduced to basic computer programming. Now they are transferring those skills learned to children in the community. Niamh Boyle, Aiveen Connolly and Amy Hough ( TY Apollo) have recently volunteered as Assistant Mentors at Cavan Coderdojo. Coderdojo is a movement which aims to introduce as

many people as possible to computer programming skills. One of the principles is that what you learn, you must then teach others. Our students are pictured [here](#), and [here](#) passing on their knowledge to younger learners.



- buíochas libh – thank you – gracias – gràcies -



CoderDojoCavan



@magsamond



Computers in Education Society of Ireland  
Cumann Ríomh-Oideachais na hÉireann



**SCRATCH • CONNECTING • WORLDS**

**Scratch Conference**

**25-27 July 2013**

**Andrew Sula**

**Sam Edwards**

**Thomas Preece**

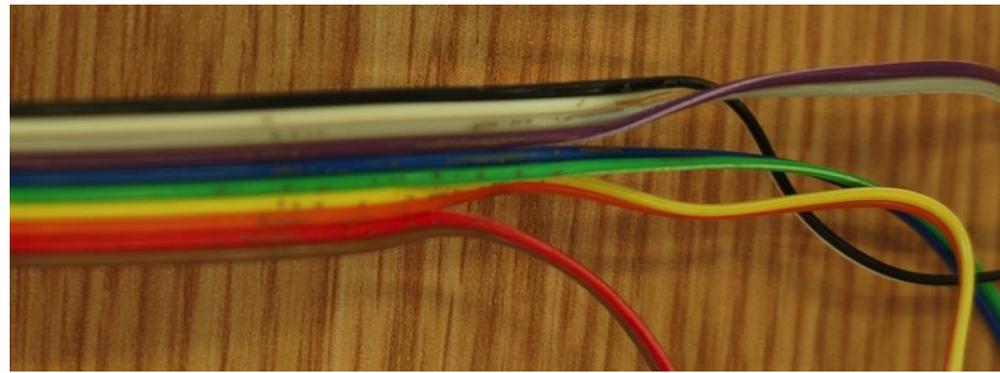
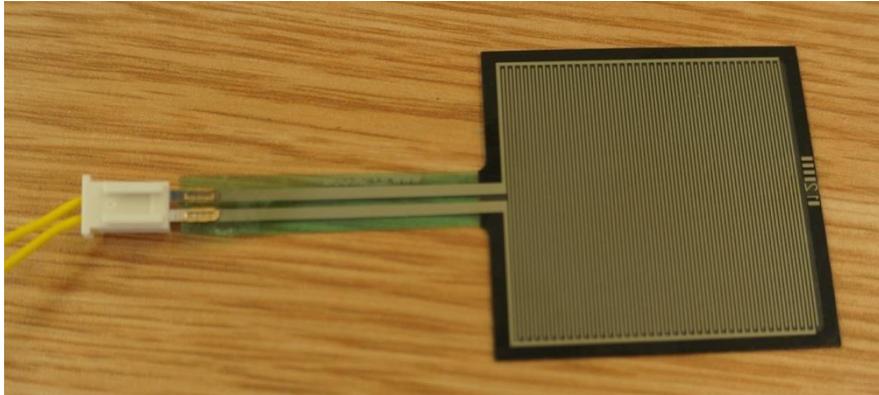
technology VOLUNTEERS

# Homemade Scratch Sensors Ignite Style

Andrew Sula, Sam Edwards and Thomas Preece  
Technology Volunteers, University of Warwick, UK

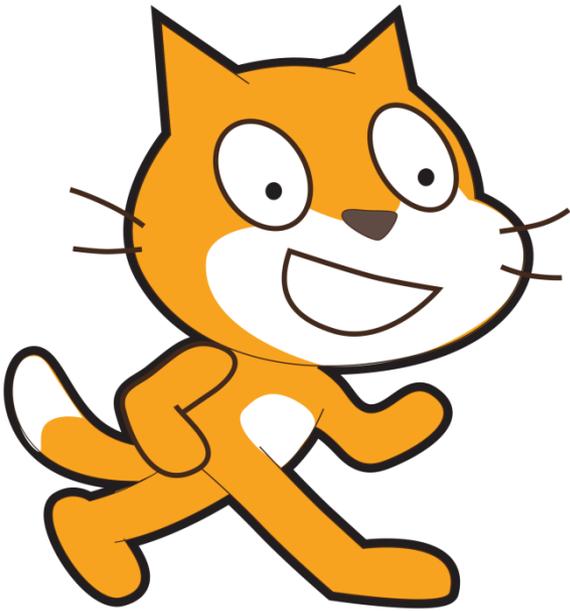
4 Minutes and 45 Seconds Remaining

# Starting With The Sensor



4 Minutes and 30 Seconds Remaining

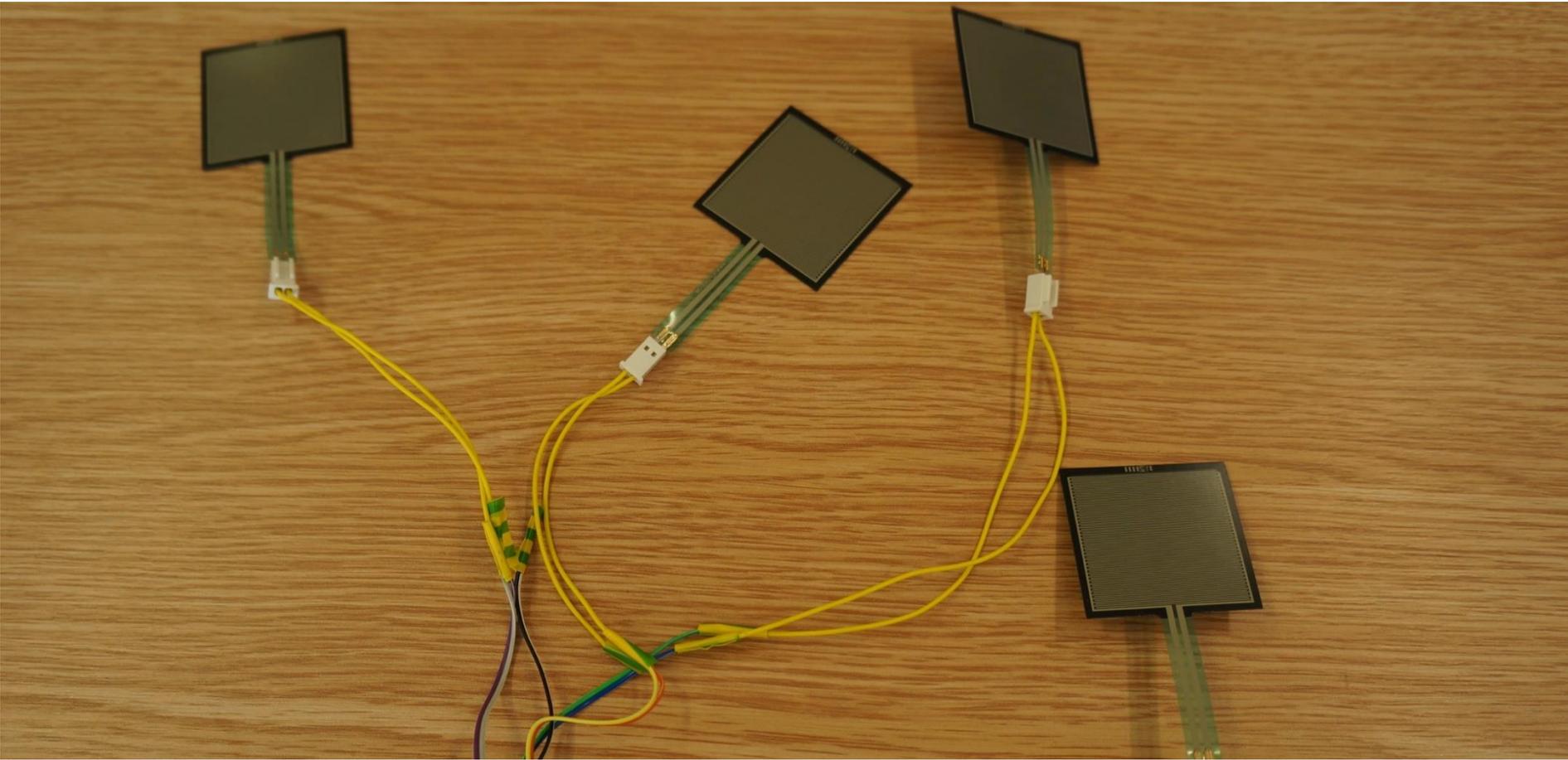
# Starting With The Script



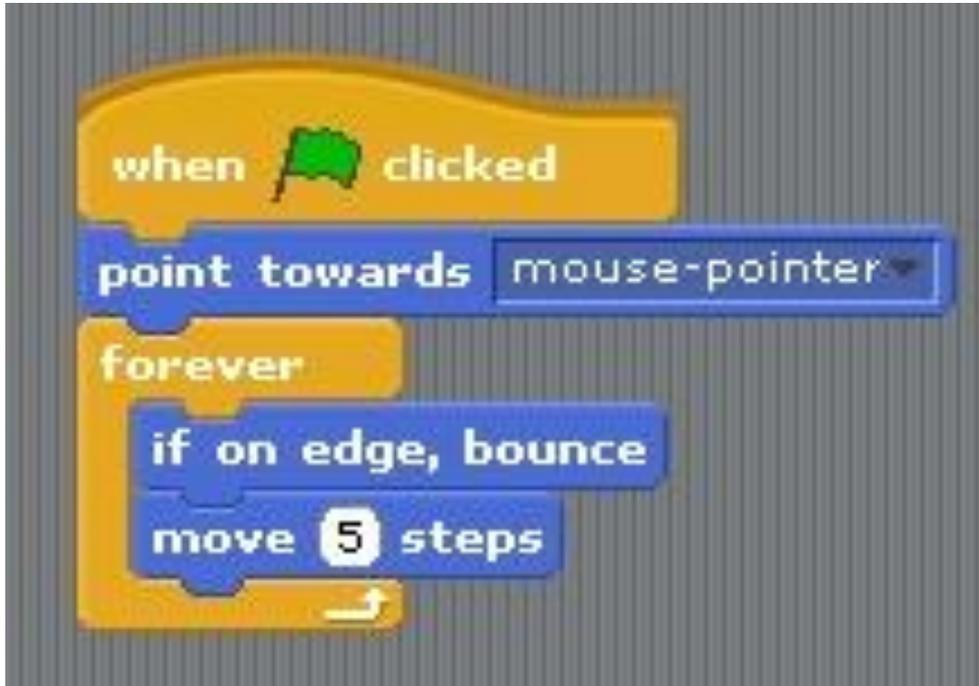
## Getting The Cat Moving

4 Minutes and 15 Seconds Remaining

# How's The Sensor Going?



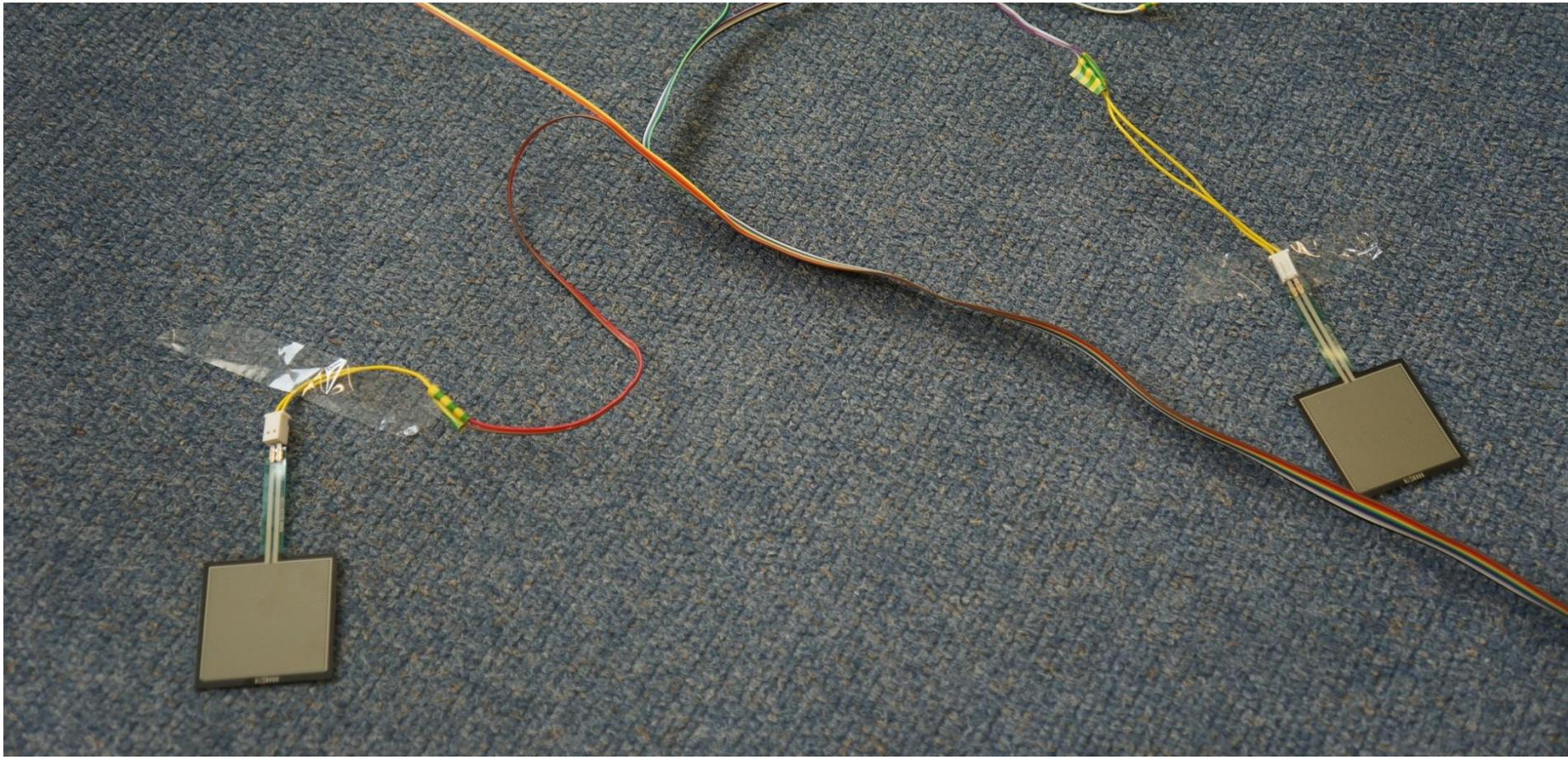
# What About The Script?



## Now The Mouse

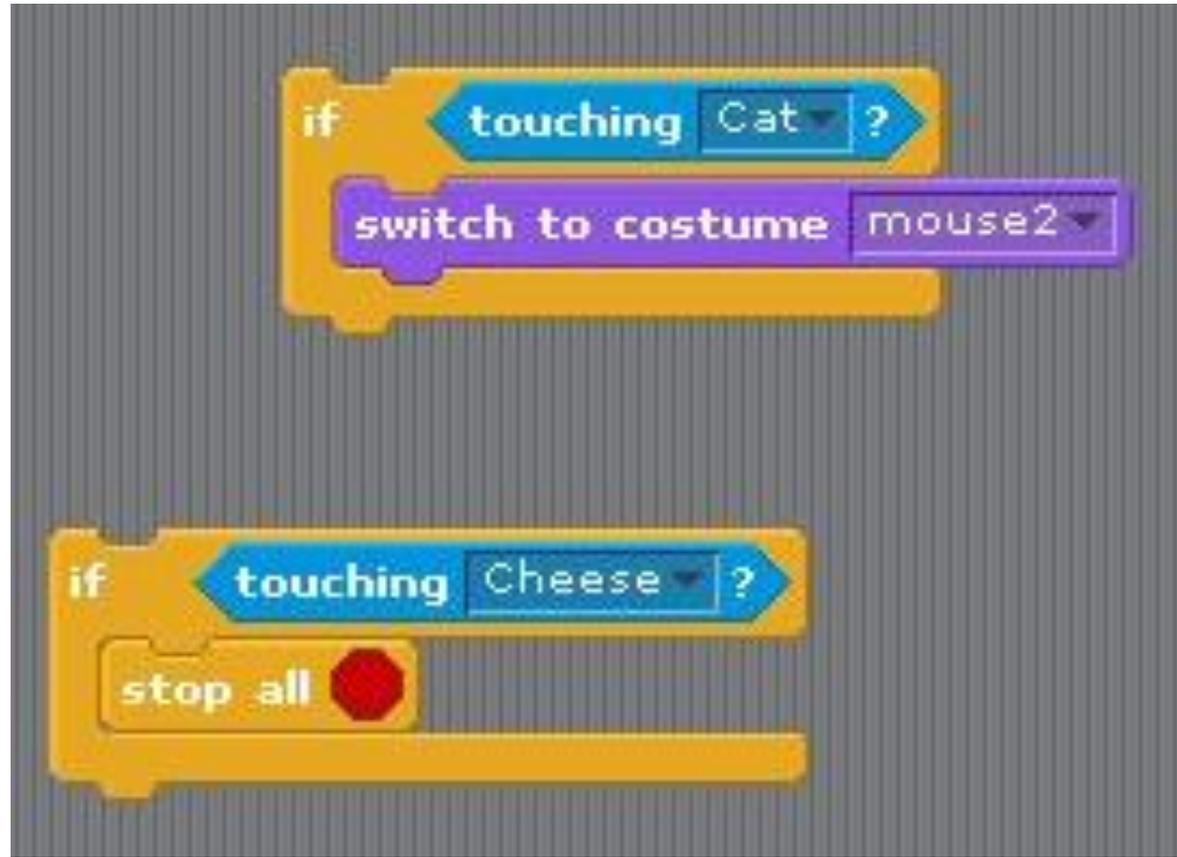
3 Minutes and 45 Seconds Remaining

# Taping It Down



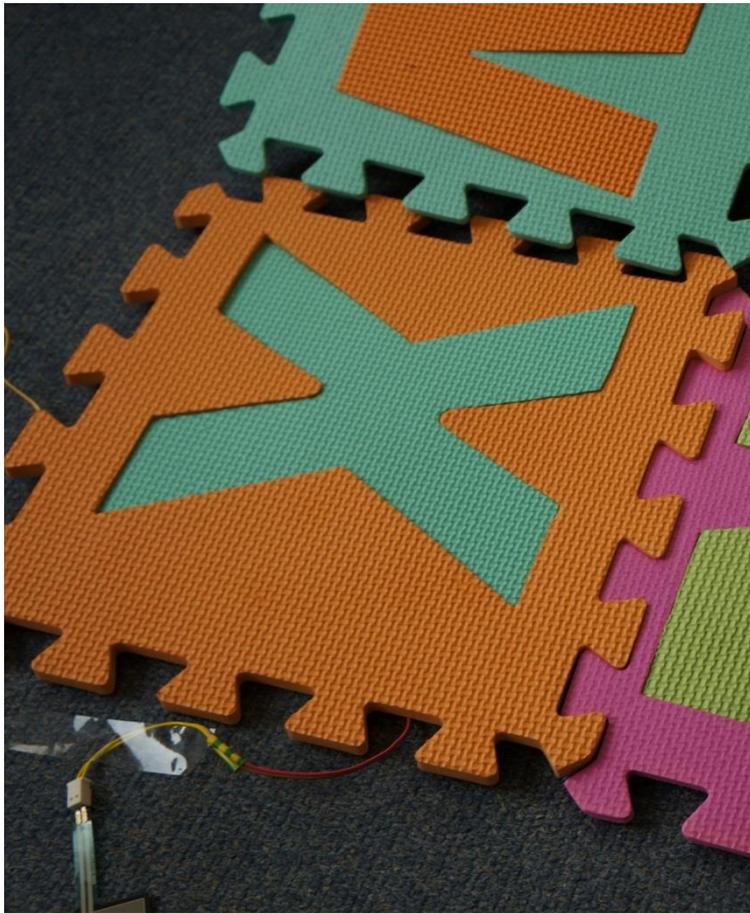
3 Minutes and 30 Seconds Remaining

# Perhaps A Hint?

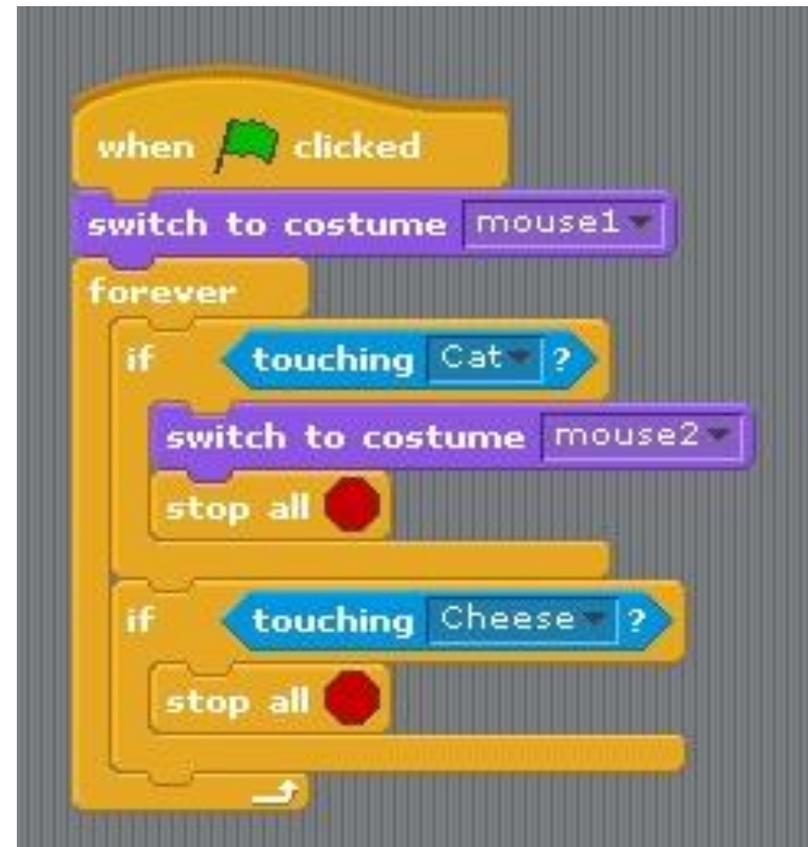


3 Minutes and 15 Seconds Remaining

# It's All Coming Together (Hopefully!)



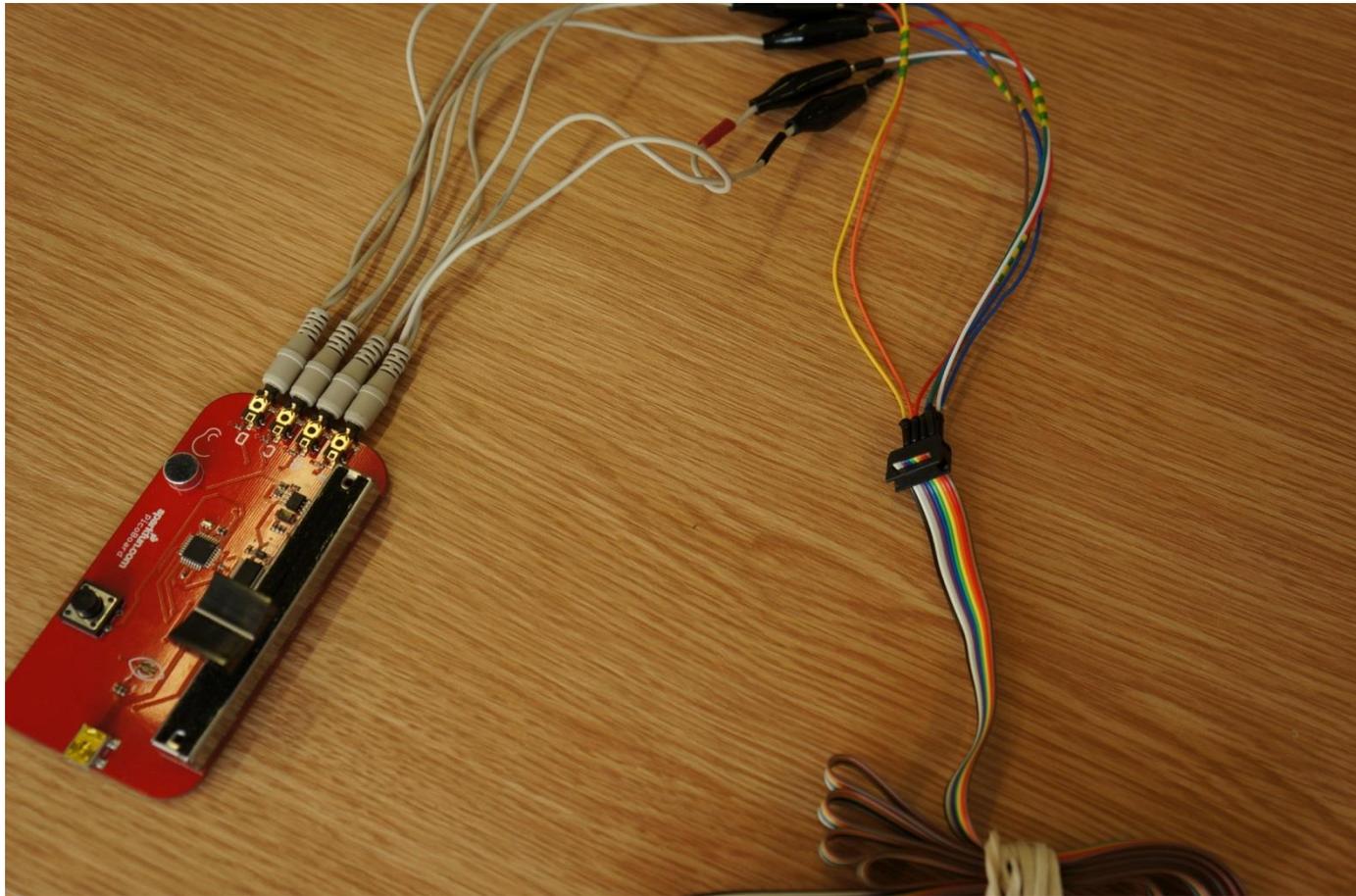
# Ready To Move On?



# Now To Connect The Dance Mat

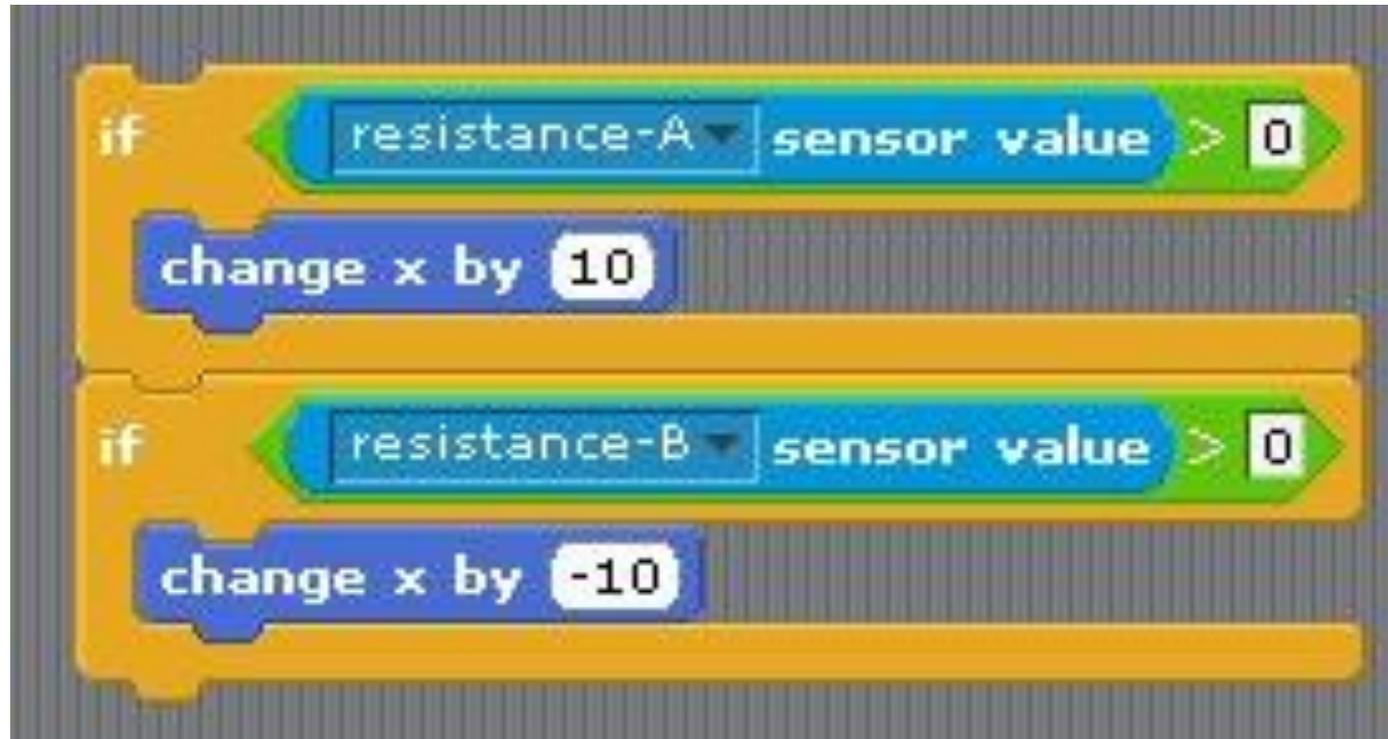
2 Minutes and 45 Seconds Remaining

# Connecting Everything Together



2 Minutes and 30 Seconds Remaining

# But Is The Script Ready? Here's A Hint

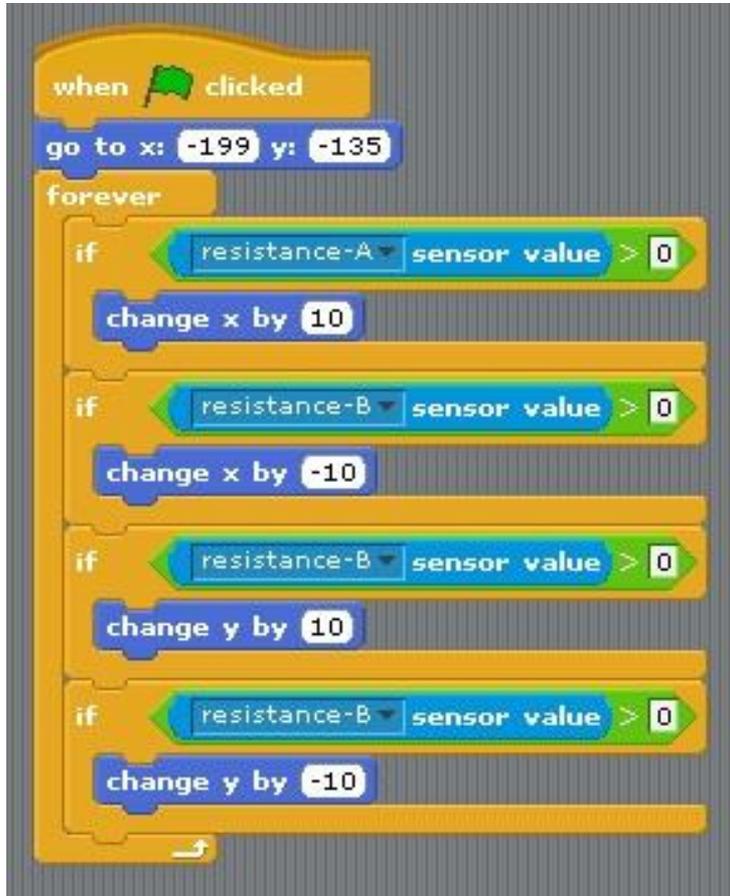


2 Minutes and 15 Seconds Remaining

# The Completed Dance Mat



# Now Everything's Complete (We Hope!)

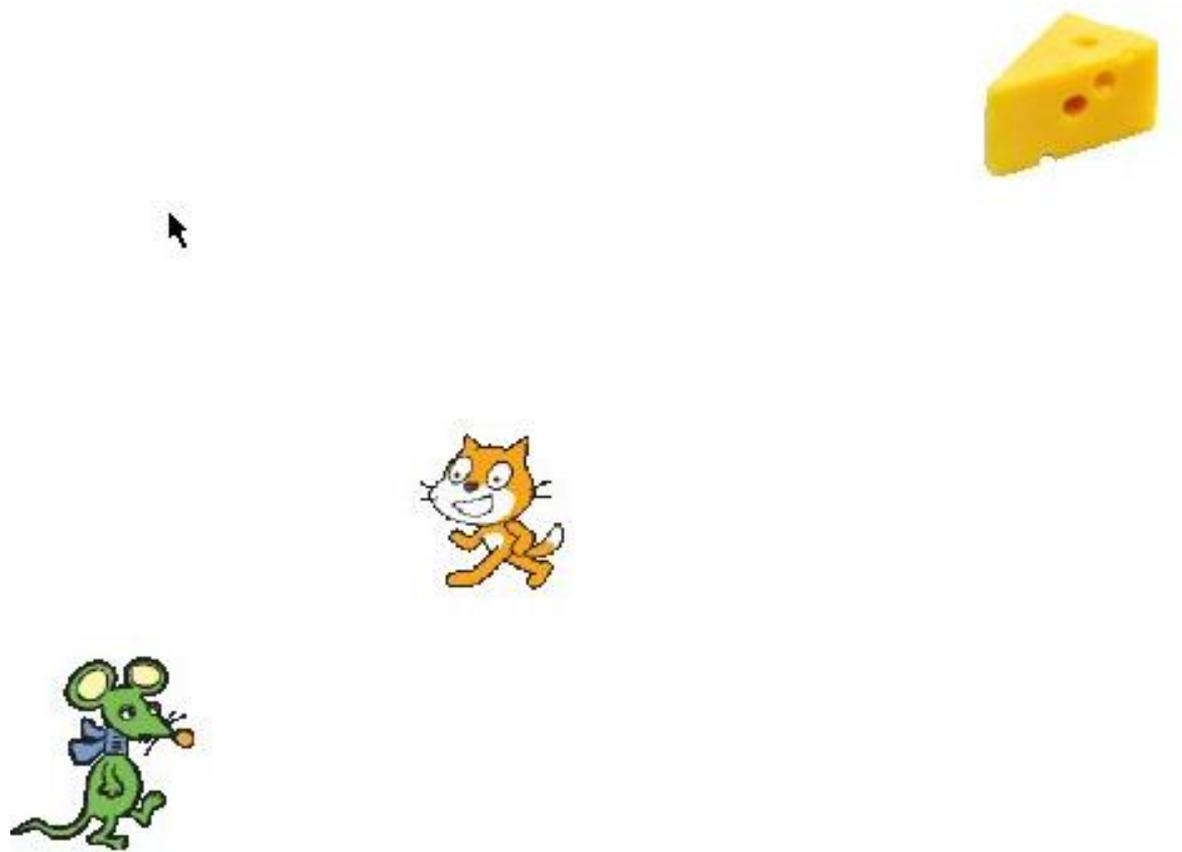


# Let's Welcome Our Volunteers!

# 1 Minute and 45 Seconds Remaining



# 1 Minute and 30 Seconds Remaining



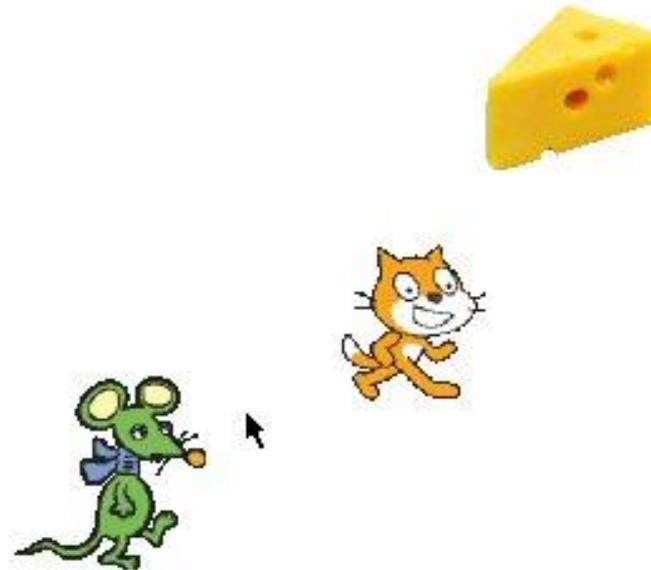
# 1 Minute and 15 Seconds Remaining



1 Minute Remaining



45 Seconds Remaining



30 Seconds Remaining



# technology VOLUNTEERS

**A big thank you to all our  
volunteers on stage!**

Follow @TechVolunteers on Twitter!



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Scratch Conference

25-27 July 2013

# IGNITE TALKS