



Europe Code Week 2019

5-20 Ottobre

**Istituto
Omnicomprendivo
"Dante Alighieri"
Nocera Umbra**

CodeWeek. 

Computational thinking is for everyone in the same way as school. (Professor A. Bogliolo)



Computational thinking

- Computational thinking is a skill that should be developed at school because it helps to think better, in an original way without repetition. It is a mental aptitude, a mental process that lets people solve different problems using specific methods and tools. It is a logical creative process that permits us to take the different part of a complicated problem in order to find a solution to each part until we can solve the general problem.
- Thinking in a computational way means to divide the decisional process into single steps, thinking step by step about the best way to achieve the goal.
- It is a way of behaving that, in reality, almost without realising it, we put into practice every day. For example, when we take the shortest way to reach a destination, when we play videogames and create a plan to pass a level, or simply when we follow a sequence of steps to make a recipe.

What is inside?

Smart objects contain a microprocessor that can interpret and execute instructions

- Very easy
- Very clear
- One at a time
- Very quickly (more than 1000000000 per second)

SMART OBJECTS

- «Many objects that surround us contain microprocessor waiting to be programmed. Knowing how to programme gives the opportunity to create our own ideas by writing new code lines for tens of billions of smart objects that surround us. Programming also has an intrinsic educational value because the exercise of describing a constructive process in a very meticulous way, delegating the execution to an automatic executor, leads you to a profound comprehension of the procedure itself and the computational aspects of the problem that it solves».

(A. Bogliolo)

THE LANGUAGE

The language of things is binary: it is called machine language. It consists of a stream of zeros and ones and it is difficult to use.

The programming language uses instructions written in English and then automatically translates them into machine language.

It is the language used by programmers.

The visual language allows for putting together the instructions.

It is the right starting point.

The language is functionally complete.

It allows the user to do everything.

PROGRAMMING

It consists of a set of instructions to follow in order to make something useful or enjoyable.

Everything within a microprocessor can be, or indeed, must be programmed.

Programming is the language of things.

SMARTPHONE

CODING

- Today there are many tools and methods that allow an intuitive, playful, educational approach to programming from pre-school age. The term *coding* became commonly used to describe the spontaneous application of these tools.
- The new generation will be able to access their pool of skills and acquire others; skills that are necessary for everyday life. Coding stimulates computational thinking, problem solving, critical thinking, creative thinking and enhances group work.



EUROPE CODE WEEK

- Europe Code Week is an awareness and alphabetization campaign launched in 2012 to support the spread of computational thinking via coding. Since 2015 Professor Alessandro Bogliolo of the University of Urbino has coordinated the initiative at the European level. He declares that «the voluntary participation on the part of thousands of Italian teachers was decisive for its success and development. The last session was attended by more than two million seven hundred thousand people in over fifty countries in the world, with a contribution from Italian school of 50% of the total.
- In January 2018 computational thinking was recognised as basic transversal competence in the national indicators for the initial years of schooling and the Digital Education Action Plan of the European Commission targeted the implantation of coding in every European school by 2020, identifying at Europe Code Week the key action to achieve this goal».

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L'Istituto Omnicomprensivo di Nocera Umbra alla Europe Code Week 2018

L'Istituto comprensivo di Nocera Umbra ha recentemente partecipato alla Europe Code Week, la campagna di alfabetizzazione promossa dalla Commissione Europea per l'introduzione del coding (programmazione informatica, ndr) e del pensiero computazionale. Il coding aiuta i ragazzi a pensare meglio e in modo creativo, stimola la loro curiosità attraverso quello che apparentemente può sembrare solo un gioco. Il coding consente di imparare le basi della programmazione informatica, insegna a "dialogare" con il computer, a imparare

alla macchina comandi in modo semplice e intuitivo. Il segreto sta tutto nel metodo: poca teoria e tanta pratica. L'obiettivo non è formare una generazione di futuri programmatori, ma stimolare la fantasia e l'intuito degli studenti. «È un'attività alternativa molto più divertente delle lezioni frontali, ma allo stesso tempo utile ed istruttiva. Abbiamo usato anche il programma scratch per creare dei videogiochi, strada che mi piacerebbe intraprendere anche in un lavoro futuro», ha commentato una studentessa.



Banca Popolare di Spoleto

Gruppo Banca Unica

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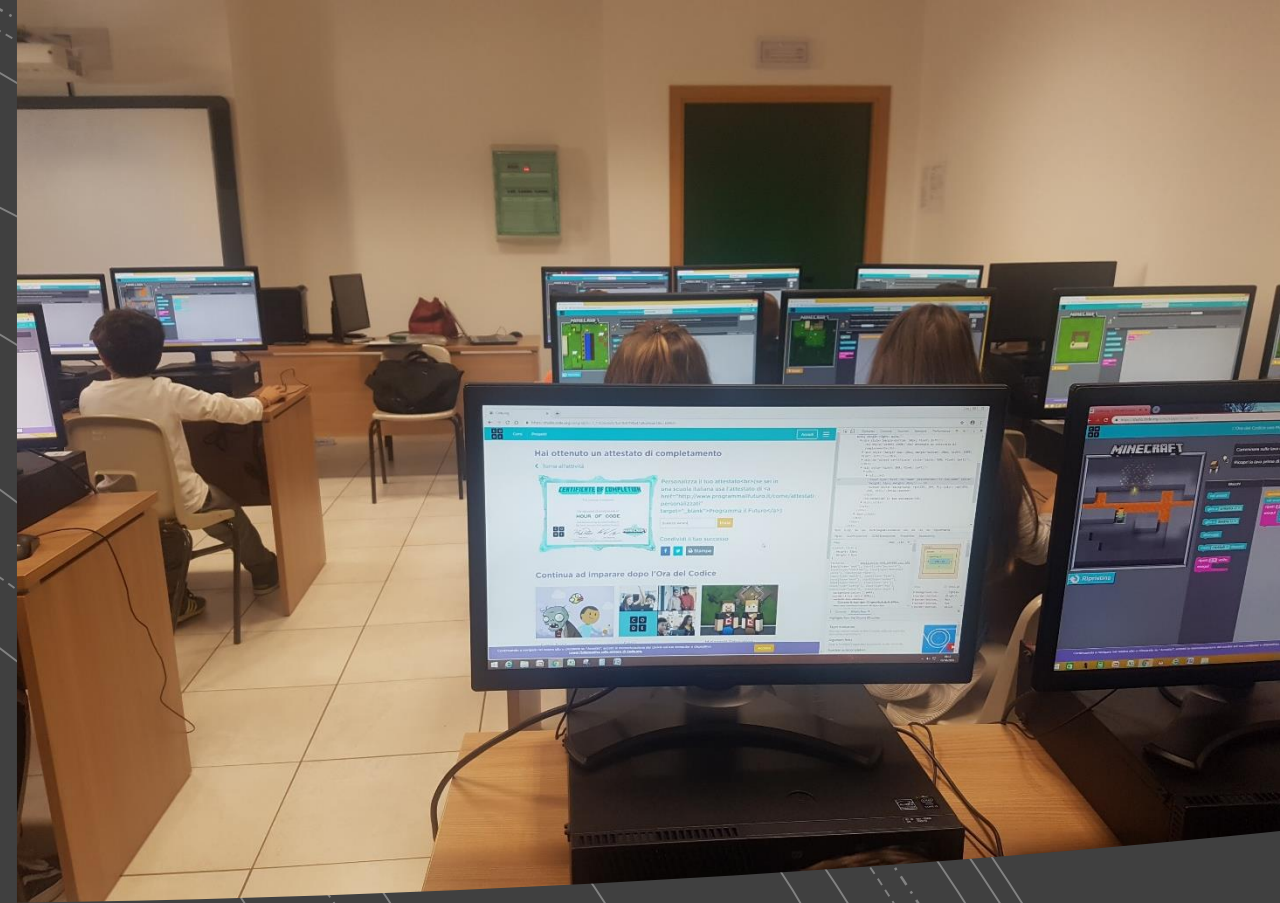
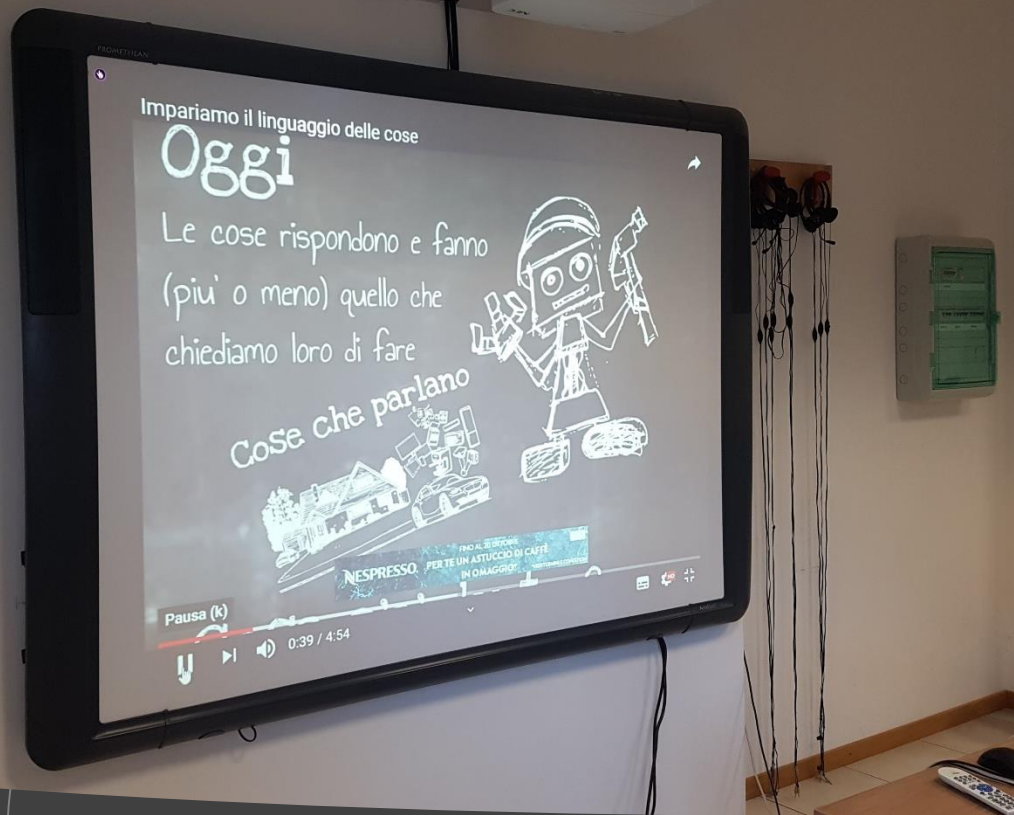


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Il 10 ottobre, Banca Popolare di Spoleto ha lanciato un servizio di consulenza gratuita per i clienti della Banca Unica. Il servizio è riservato ai clienti della Banca Unica e si svolge presso i punti di contatto della Banca Unica.

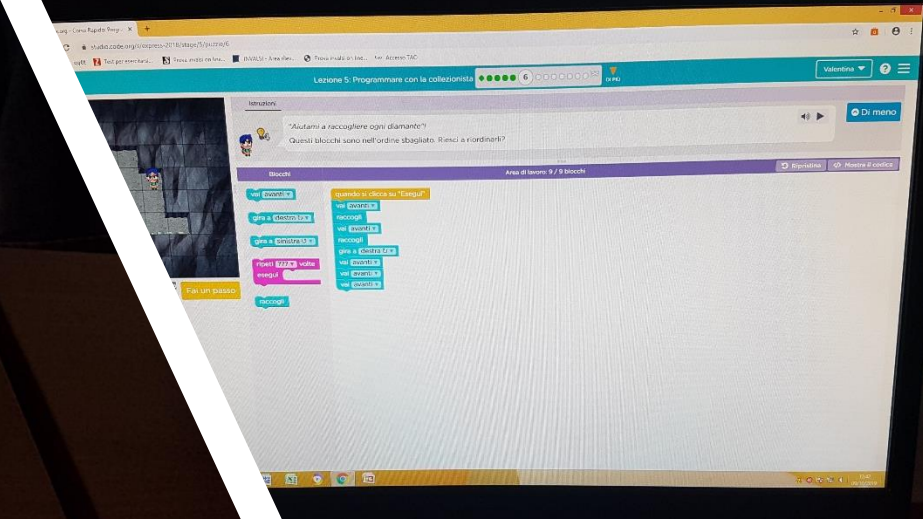
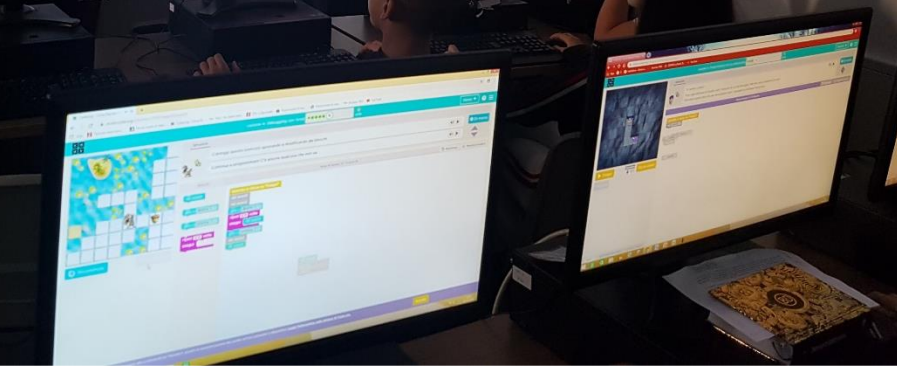
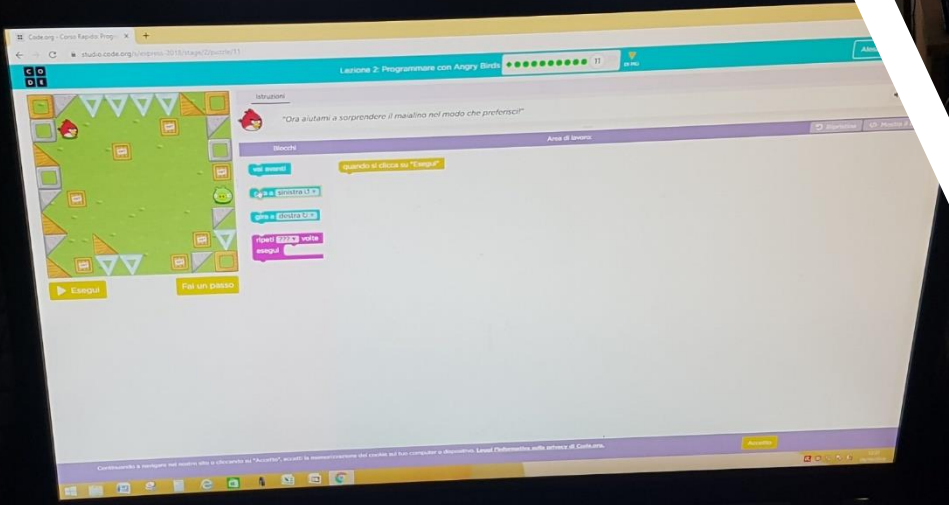
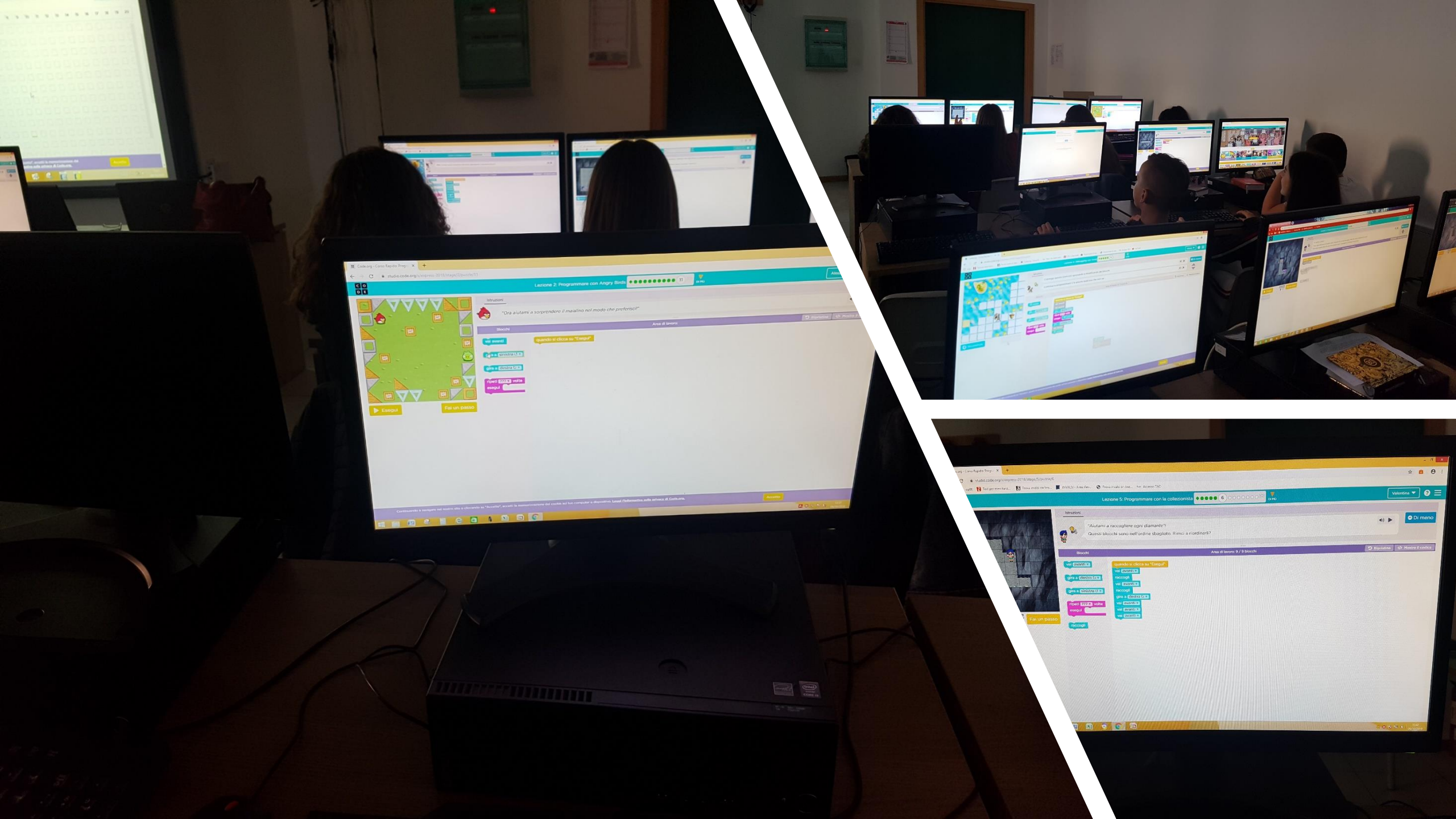
OUR SCHOOL

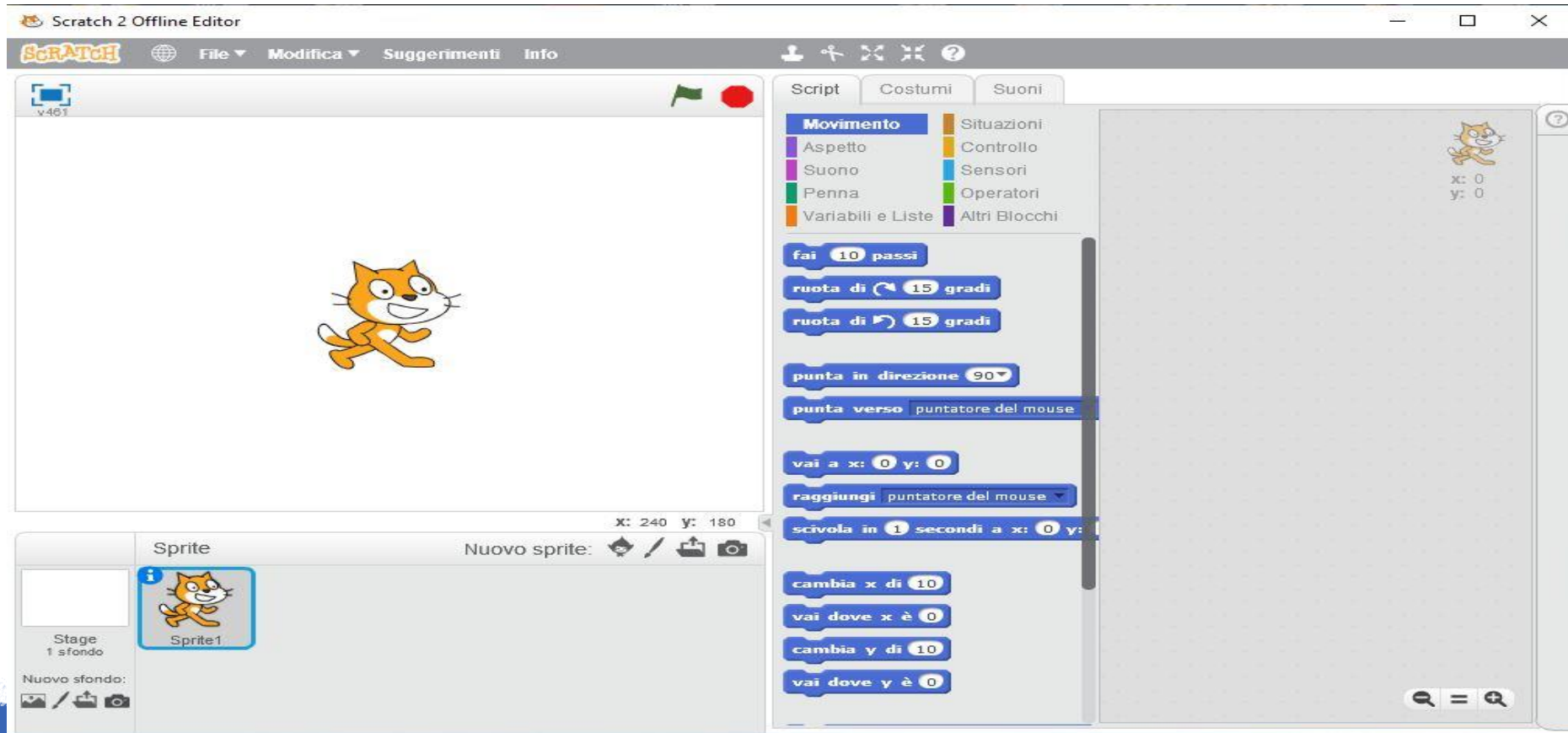
- Our school has taken part in the European Code Week since 2015. The teacher Ludovica Marchetti, digital animator of the school and IT teacher at the Middle Schools of Nocera Umbra and Valtopina, takes students of all classes through the exercises of coding unplugged and on specialised sites during the Europe Code Week in October and during the entire school year.



FIRST YEAR CLASSES

- We learn the language of things and the basics of programming by playing the game of Robot at school and playing on Code.org in order to achieve the certificate of completion of the different courses.





SECOND YEAR CLASSES

- We use the Scratch programme to create simple videogames: we conceive the game, create the background and characters, teach the characters how to move and we try our games to check if the written code lines are correct.

Scratch 2 Offline Editor

labirinto gatto 2

Script

- Movimento
- Aspetto
- Suono
- Penna
- Variabili e Liste
- Situazioni
- Controllo
- Sensori
- Operatori
- Altri Blocchi

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quando si preme il tasto freccia su
  punta in direzione 0
  fai 10 passi
quando si preme il tasto freccia giù
  punta in direzione 180
  fai 10 passi
quando si preme il tasto freccia destra
  punta in direzione 90
  fai 10 passi
quando si preme il tasto freccia sinistra
  punta in direzione -90
  fai 10 passi
quando si clicca su
  per sempre
    se sta toccando il colore allora
      fai -10 passi
    se sta toccando Sprite1 allora
      dire Ce l'ho fatta per 2 secondi
    se sta toccando Ghost1 allora
      raggiungi Sprite3
    vai in primo piano
    se sta toccando Sprite2 allora
      raggiungi Sprite3
  
```

fai 10 passi

ruota di 15 gradi

ruota di 15 gradi

punta in direzione 90

punta verso puntatore del mouse

vai a x: 86 y: 79

raggiungi puntatore del mouse

scivola in 1 secondi a x: 86 y: 79

cambia x di 10

vai dove x è 0

cambia y di 10

vai dove y è 0

Sprite

Nuovo sprite:

Stage 8 sfondi

Nuovo sfondo:

Sprite1

Sprite2

Sprite3

Sprite4

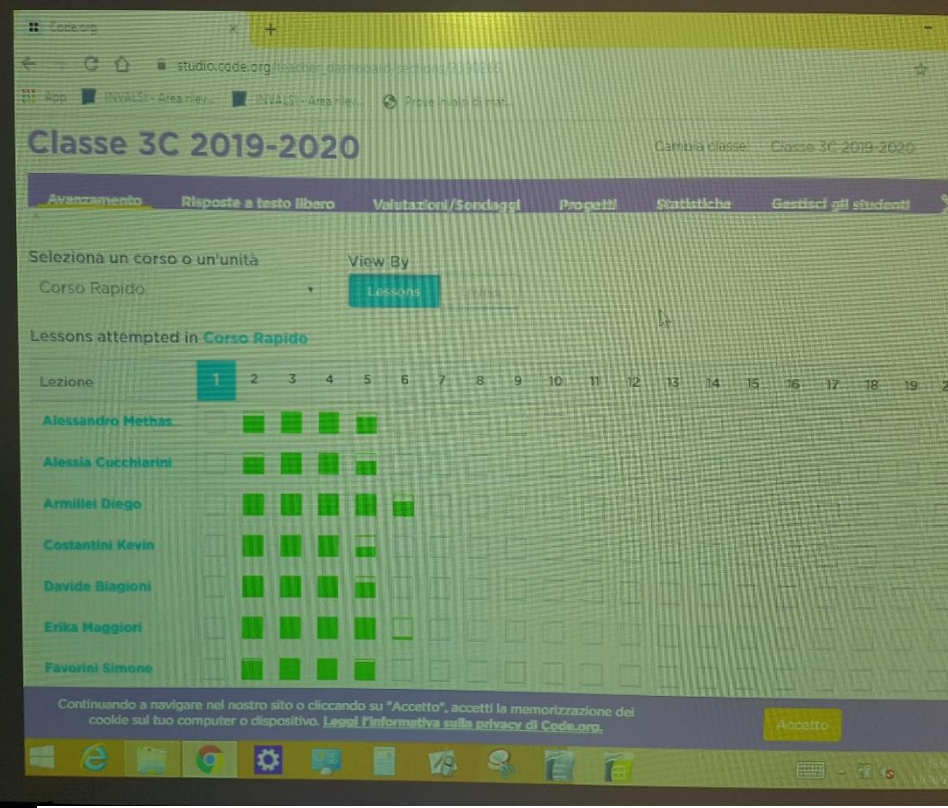
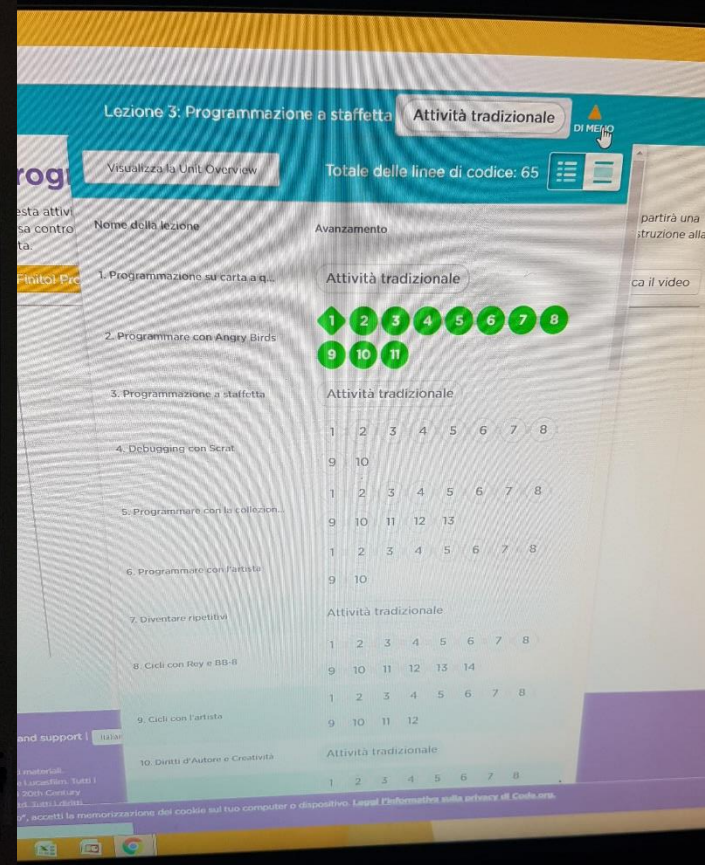
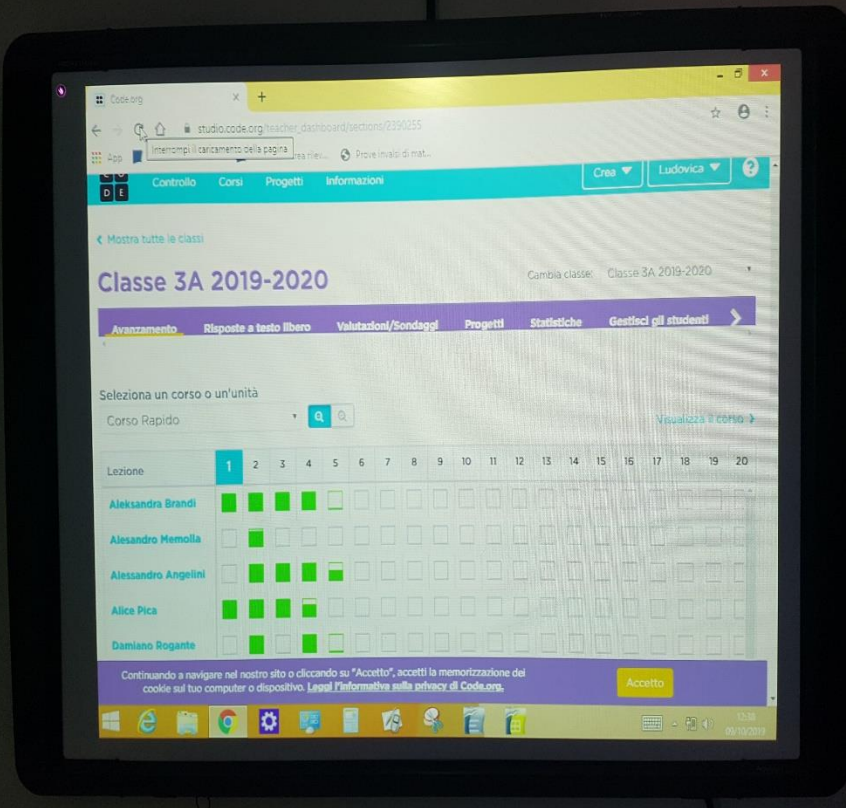
Cat2

EXIT

Ghost1

```

quando si clicca su
  per sempre
    se sta toccando il colore allora
      fai -10 passi
    se sta toccando Sprite1 allora
      dire Ce l'ho fatta per 2 secondi
    se sta toccando Ghost1 allora
      raggiungi Sprite3
    vai in primo piano
    se sta toccando Sprite2 allora
      raggiungi Sprite3
  
```

THIRD YEAR CLASSES

- We enrol in virtual classrooms on Code.org in order to continue the work at home under the teacher's supervision. We complete a crash course to achieve the Coding Certification.

