

“Math's games in English language”



OBIETTIVI DEL PROGETTO

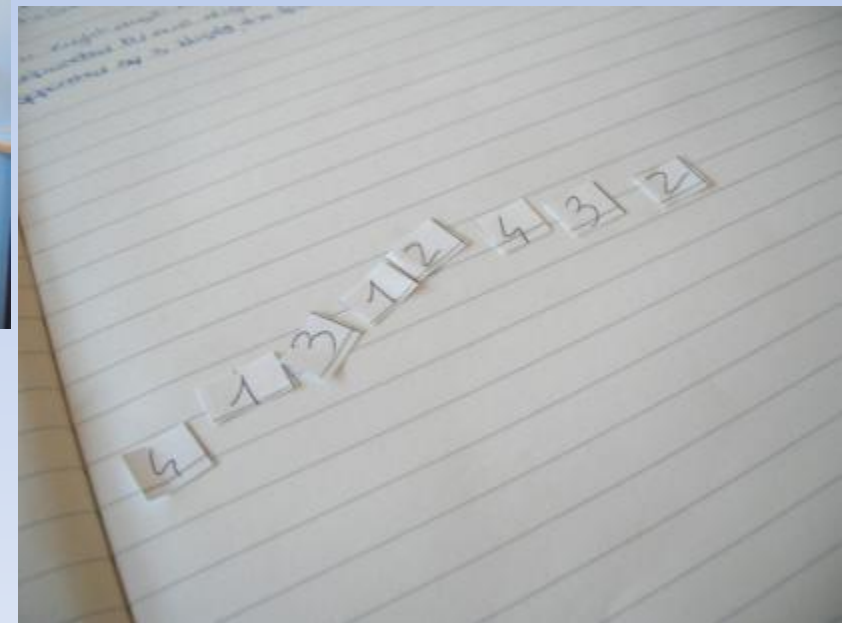
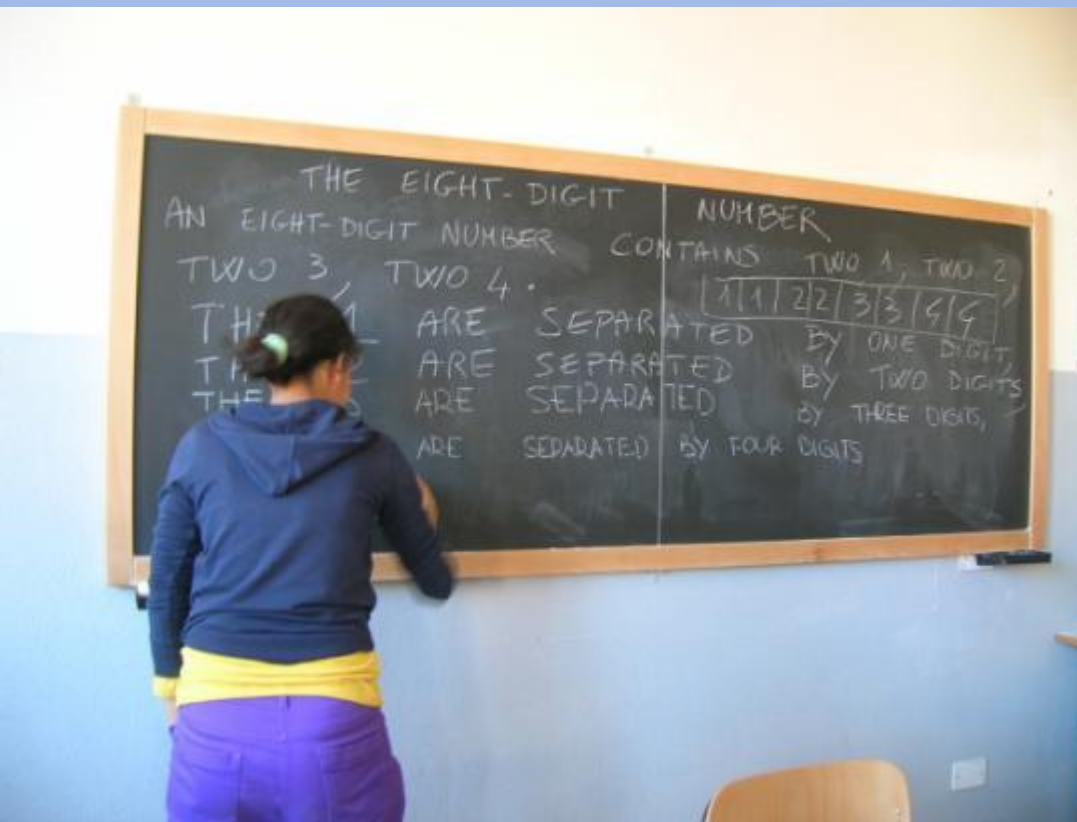
- avvicinare gli allievi alla Matematica attraverso attività dilettevoli
- favorire l'apprendimento della Lingua Inglese in contesti nuovi

BREVE DESCRIZIONE

Due docenti di Matematica in due Paesi diversi (**Italia e Spagna**), in collaborazione con i rispettivi colleghi di Lingua Inglese, hanno quest'anno coinvolto gli allievi di due classi (una per Istituto) in un Laboratorio di semplici idee e giochi in ambito logico-matematico svolti in Lingua Inglese, che ha avuto la sua naturale fase esplosiva e conclusiva con la partecipazione al concorso per festeggiare insieme il quinto compleanno di eTwinning.

Semplici contenuti della Matematica sono stati presentati in L2 alternando la lezione frontale con attività pratiche che hanno coinvolto anche altre discipline in cui le allieve hanno svolto attività laboratoriali (Disegno, Musica, Tic). La motivazione degli studenti è man mano sempre più aumentata perché hanno appreso in un contesto ludico.

Classe 1A Biennio Servizi Sociali Viadana (MN) - ITALY



Con cadenza settimanale ogni classe ha pubblicato una sua proposta sul Twinspace. Ciò ci ha consentito di cercare la soluzione ai quesiti suggeriti dagli amici spagnoli oltre a quelli predisposti dai nostri docenti.

Progetto eTwinning 2009-10
IIS "S.G. Bosco" Viadana (MN) - **ITALIA**
IES "L. De Camoens" Ceuta - **SPAGNA**

Per trovare la risposta a questo quesito abbiamo ritagliato strisce di carta con sopra le otto cifre richieste e precisamente due volte il numero 1, due volte il numero 2, e così per le altre cifre. Abbiamo così potuto fare diversi tentativi rispettando la richiesta del quesito trovando alla fine due soluzioni simmetriche fra loro.

Come	si	può	vedere	dalla	foto	l'ordine	delle	cifre	è
4	1	3	1	2	4	3	2		
oppure			l'ordine		simmetrico		a		questo
2	3	4	2	1	3	1	4		

- 4 1 3 1 2 4 3 2** fra le due cifre “1” c’è soltanto un’altra delle rimanenti cifre
- 4 1 3 1 2 4 3 2** fra le due cifre “2” ci sono soltanto due delle rimanenti cifre
- 4 1 3 1 2 4 3 2** fra le due cifre “3” ci sono tre delle rimanenti cifre.
- 4 1 3 1 2 4 3 2** fra le due cifre “4” ci sono quattro delle rimanenti cifre.

Alcune proposte sono state tratte da Banche dati di prove di allenamento di Competizioni a livello europeo come “Matematica senza Frontiere” o “Kangarou”.



Grandpa has **three** daughters : Anne, Béatrice and Chloé.
He has **six** grandchildren : **four** boys (Emile, François, Gilles, Hector) and **two** girls (Irène, Jeanne).

Grandpa cannot now remember the names of Béatrice's children but, on the other hand, he remembers clearly that

- of his three daughters, Béatrice has the most children.
- Anne does not have a daughter
- Jeanne has two brothers and no sister
- Irène has no sister and no brother
- Gilles has a brother but no sister
- Emile has a sister. Hector has a sister.

Help Grandpa to remember the names of Béatrice's children.

Matematica senza frontiere - Gara di allenamento 2010

EGGS (by Spanish school)

A farmer carries six hampers with eggs to the marketplace. Some of them contain hen eggs and the others have duck eggs.

The hampers contain 6, 12, 14, 15, 23 and 29 eggs, respectively.

The farmer sells one hamper so that hen eggs are twice as much as duck ones.

How many eggs were in the sold hamper?



EGGS (by Italian school)

A farmer goes to the market with a hamper of eggs and sells to the first buyer half the eggs of her hamper plus half an egg; then she sells half the eggs left plus half an egg.

She does the same operation for the third time and she has 3 eggs left.

How many eggs did she have in her hamper at first? Take note of the fact that it was not necessary for the farmer to divide any eggs into two parts.



Sheep and wolves

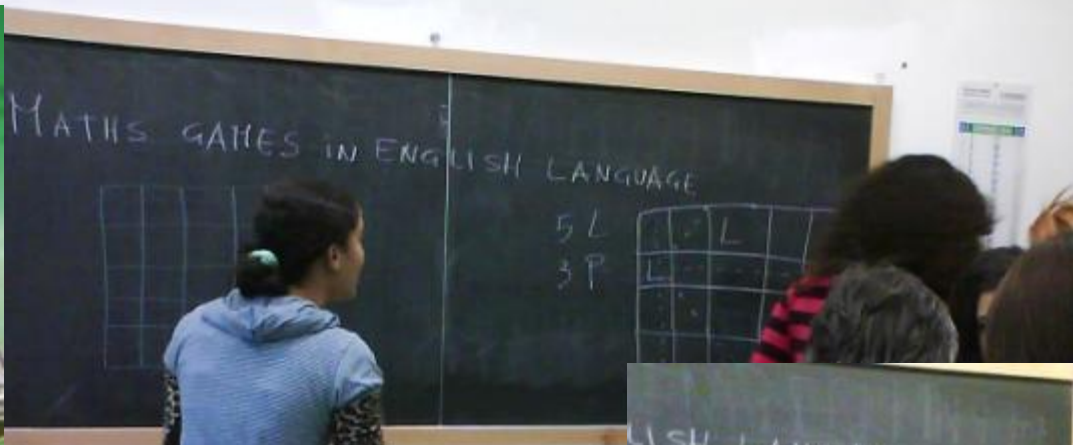
A chess game

Spain
proposal



On a 5x5 chessboard, place 5 wolves (who can move like chess queens) and 3 sheep so that all the sheep are safe from being eaten by the wolves.

Our chess



Mary has four number cards:

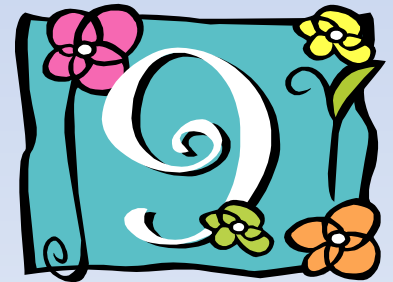
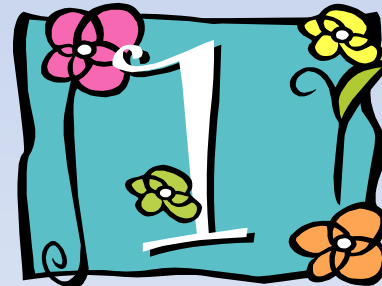
(7), (2), (1), (9).

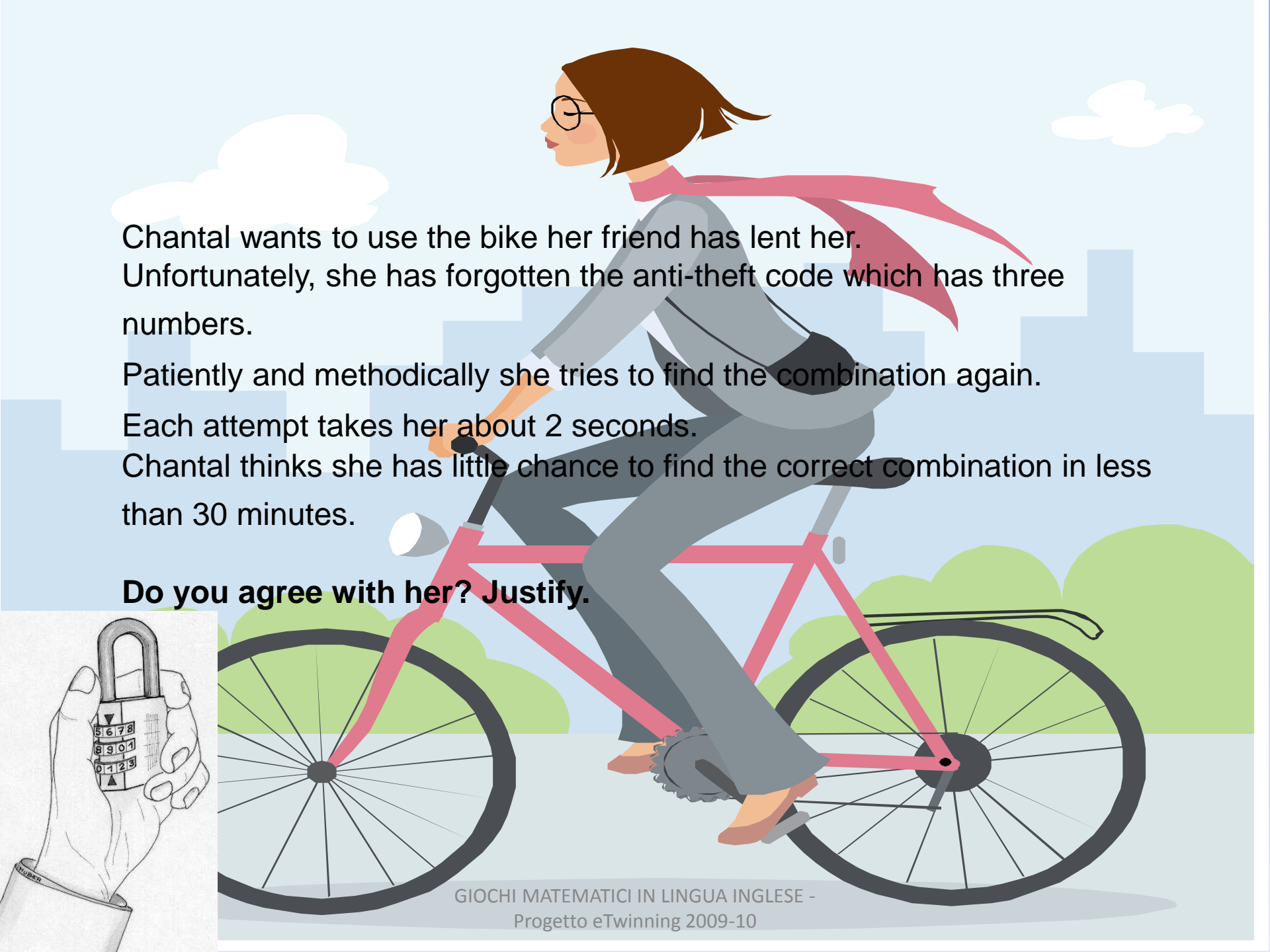
She is asked to arrange them in order to make different, four-digit numbers.

How many are they?

Which is the smallest number Mary can make?

Which is the largest number?





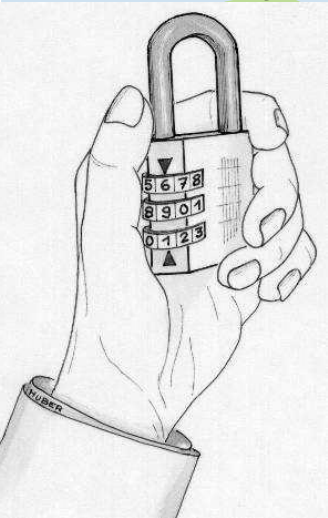
Chantal wants to use the bike her friend has lent her. Unfortunately, she has forgotten the anti-theft code which has three numbers.

Patiently and methodically she tries to find the combination again.

Each attempt takes her about 2 seconds.

Chantal thinks she has little chance to find the correct combination in less than 30 minutes.

Do you agree with her? Justify.



PARTY

30 people went to a party and it happened that:



16 people had
a cup of coffee



14 people had
muffins



13 people had
some apples



6 people had a cup
of coffee and muffins



6 people had a cup of
coffee and an apple

PARTY



5 people had a muffin
and an apple



Only 3 people had a cup of coffee,
a muffin and an apple

How many people didn't have a cup of
coffee, a muffin or an apple?

HINT: Do you know the Venn Diagrams?

**A pair of
games with
toothpicks**

THE SPOON

Moving only two of the four toothpicks, you have to take the euro out of the spoon (the new spoon has to have the same form that at first).

Pick and try!

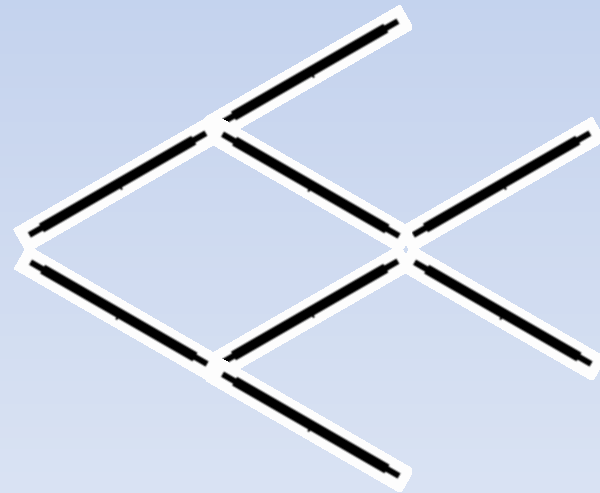


THE FISH

Here you have a fish using eight toothpicks.

How do you manage to make that the fish swims in the other direction, moving only three of the toothpicks?

Pick and try!



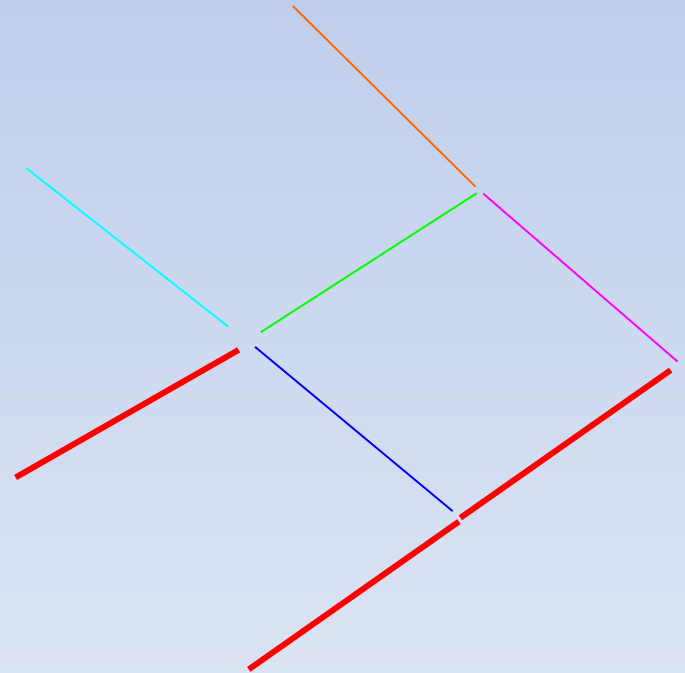
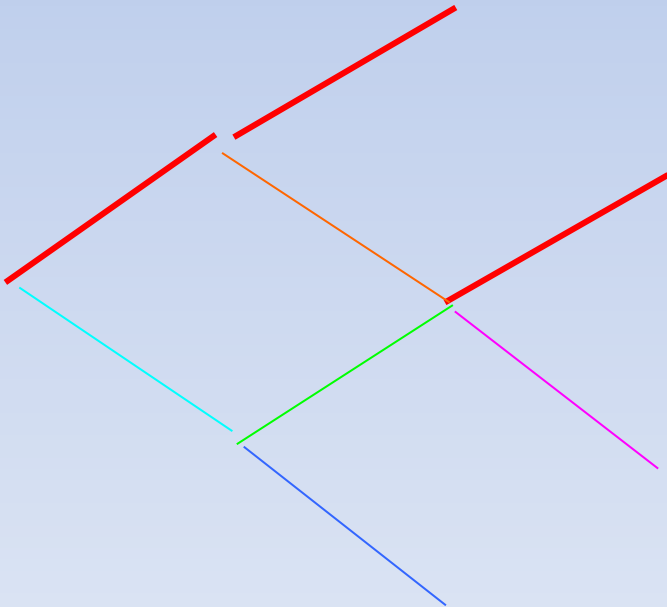
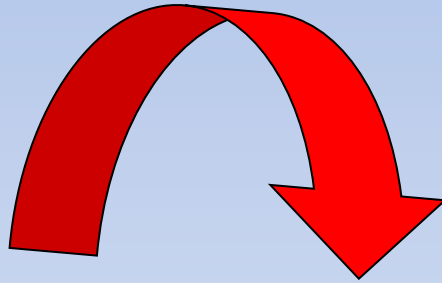


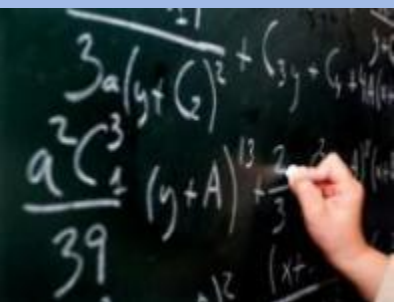
Il lavoro in classe, durante l'ora di Matematica ma con la compresenza della docente di Inglese, per comprendere il quesito e iniziare una prima riflessione al fine di individuare la/le soluzioni, è spesso continuato nel Laboratorio di Informatica dove abbiamo cercato sempre di illustrare la risposta attraverso l'utilizzo del foglio di calcolo o di diapositive. In questo modo è stato facile comunicare e condividere il nostro lavoro con la classe spagnola, in quanto i file prodotti venivano poi pubblicati nello spazio comune dedicato al progetto.

Brevi comunicazioni dei docenti sul Blog (Diario del progetto) sono infine servite per dare tempestività allo scambio di idee e materiali.

"THE FISH"

Solution...





Addition

1. Which two numbers do you add up to make 100?

38 and 52

53 and 47

22 and 77

2. What is the sum of 200, 300, 150 and 250?

900

850

1000

3. What is the missing number? $87 + ? = 130$

35

50

43

4. What do you get if you increase 316 by 500?

616

800

816



Reading and holidays

Peter has to read a book during his holidays. He calculates that he must read 30 pages a day to succeed.

The first day of holidays, he doesn't keep to this speed: he reads 15 pages a day.

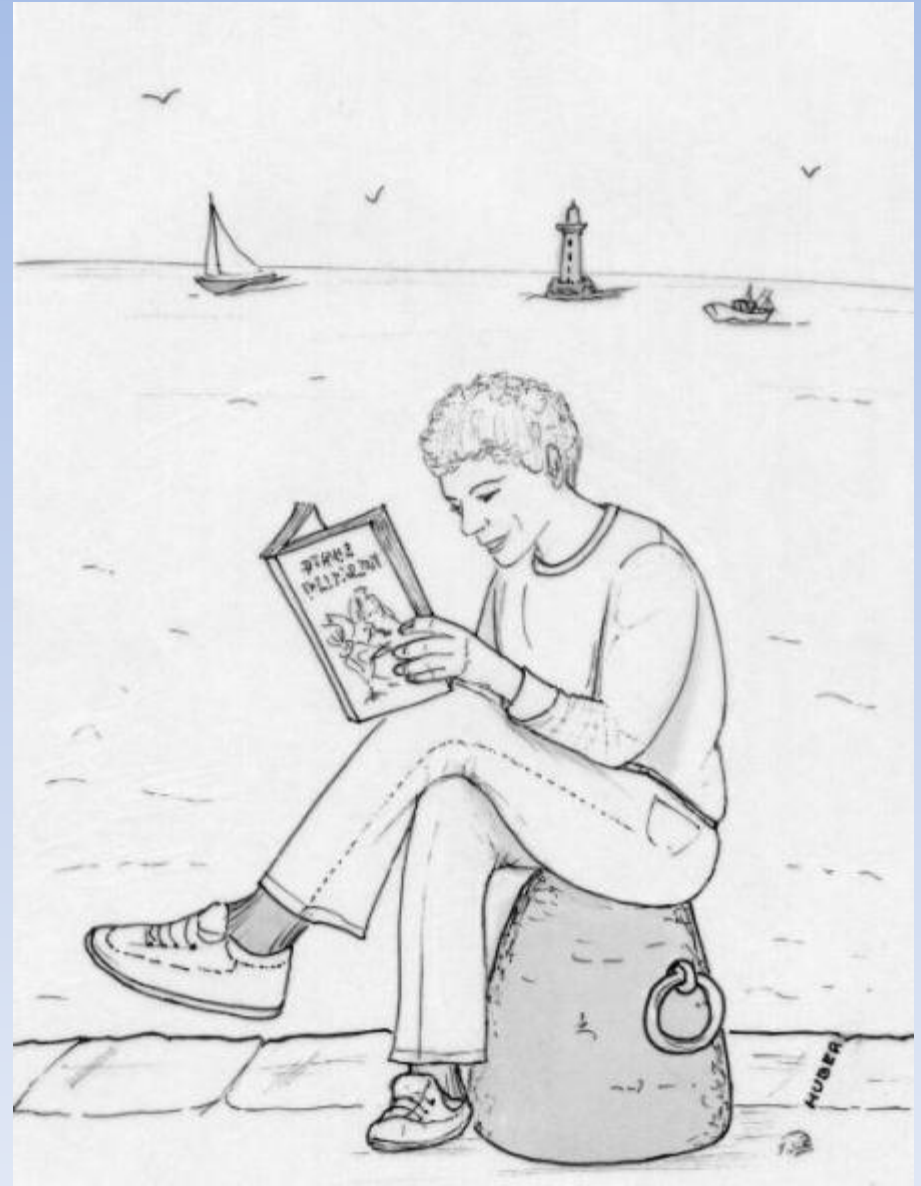
Anyway Peter thinks that he can keep this speed until halfway through the book, if he reads the second half at 45 pages every day.

What do you think of the way he reasons?

Explain

From:

Matematica senza frontiere 2009



The supermarket

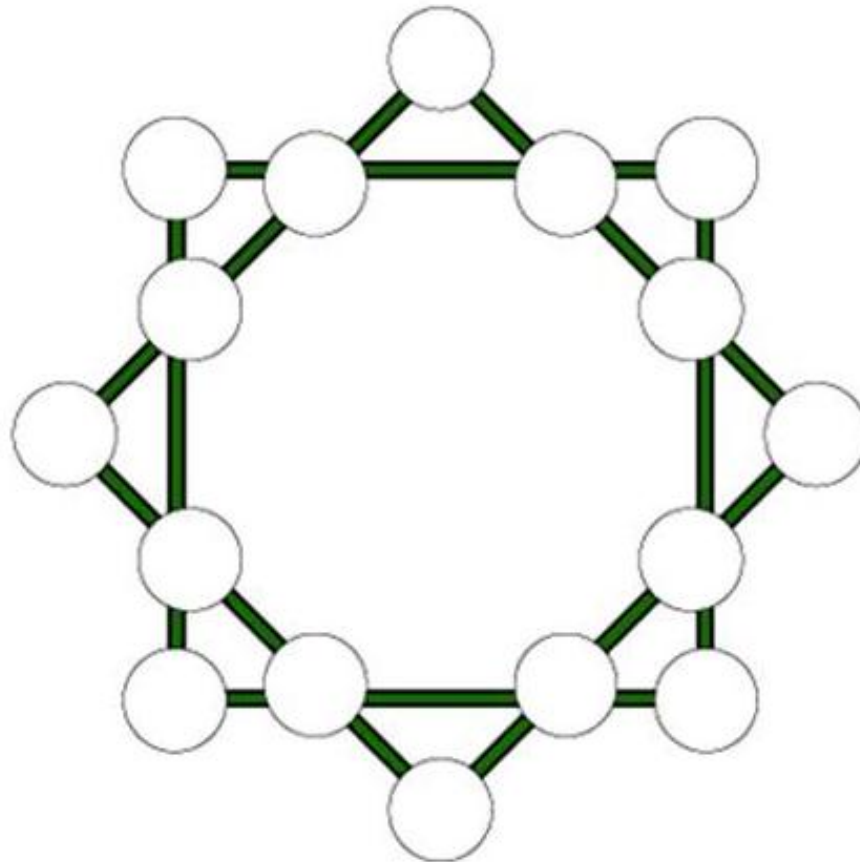
Tratto da Kangarou 2010



In a supermarket there are two rows of identical trolleys made up as usual, that is by slipping one trolley on the one in front of it. One row is made up of 10 trolleys and is 2,9 metres long; the second one is made up of 20 trolleys and is 4,9 metres long.

How long is one trolley?

Try to arrange numbers from 1 to 16 at the nodes of the octagram below so that the constant sum of the numbers in every line is 34.



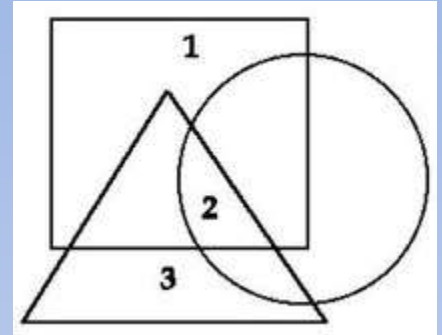
TEST 1

Draw a square, a circle and a triangle.

They must have a part in common.

Write down the number 2 in the part they have in common.

Write the number 1 only in the square and the number 3 only in the triangle.



Place the remaining numbers from 4 to 10 in the seven divisions of the above figure so that the outer divisions total 30 and each geometric figure totals 30.

Help (HINT)

1. Find the sum of the numbers from 1 to 10
 2. Into the square and the triangle, thirty must be the sum of six numbers (between 1 and 10). The number 1 is still into the square and the numbers 2 and 3 are still into the triangle.
- Into the circle, thirty must be the sum of five numbers (between 1 and 10). The number 2 is one of these ...

TEST 2

Think of a number, double it, then add 3. Multiply your answer by 4 and take away 5.

Now take away the number your first thought of.

No matter with the first number was, your answer will be a multiply of:

A

2

B

3

C

5

D

7

E

11

MULTIPLYING NEGATIVE AND POSITIVE NUMBERS

Peter puts six cards down on the table.

All of them have an identical back and on the other side they respectively show +1, +2, +3, -1, -2, -3.

Then Peter suggests his friend Paul the following game: they both simultaneously turn up one card.

If the product of the two numbers is positive Paul will win.

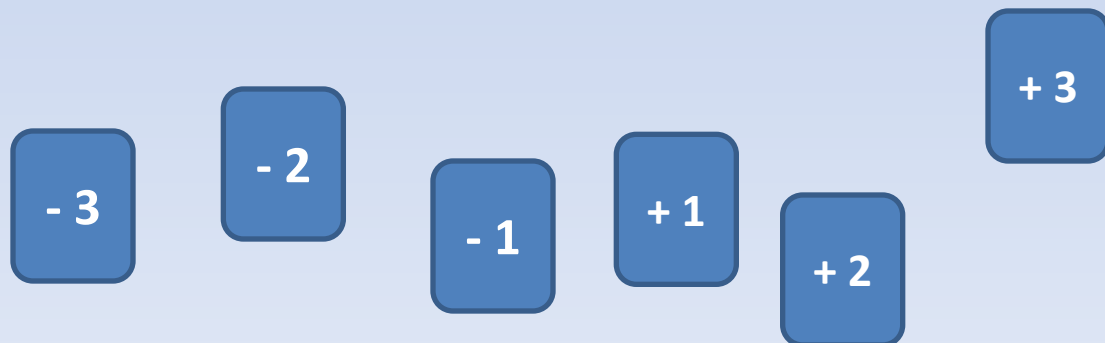
If the product is negative Peter will be the winner.

After a few games, Paul notices that Peter more often wins.

So, in order to increase his chances of success, he proposes Peter to take off one card with a negative number and to start the game again with the five cards left.

Is Paul right?

Justify your answer.



http://www.bbc.co.uk/apps/ift/schools/ks3bitesize/maths/quizengine?quiz=whole_numbers&templateStyle=maths

<http://www.matematicasenzafrontiere.it/documenti2/esercizi.htm>

<http://www.kangourou.it/indexm.html>

<http://matematica.unibocconi.it/sites/default/files/giochi/testifinale2008.pdf>

