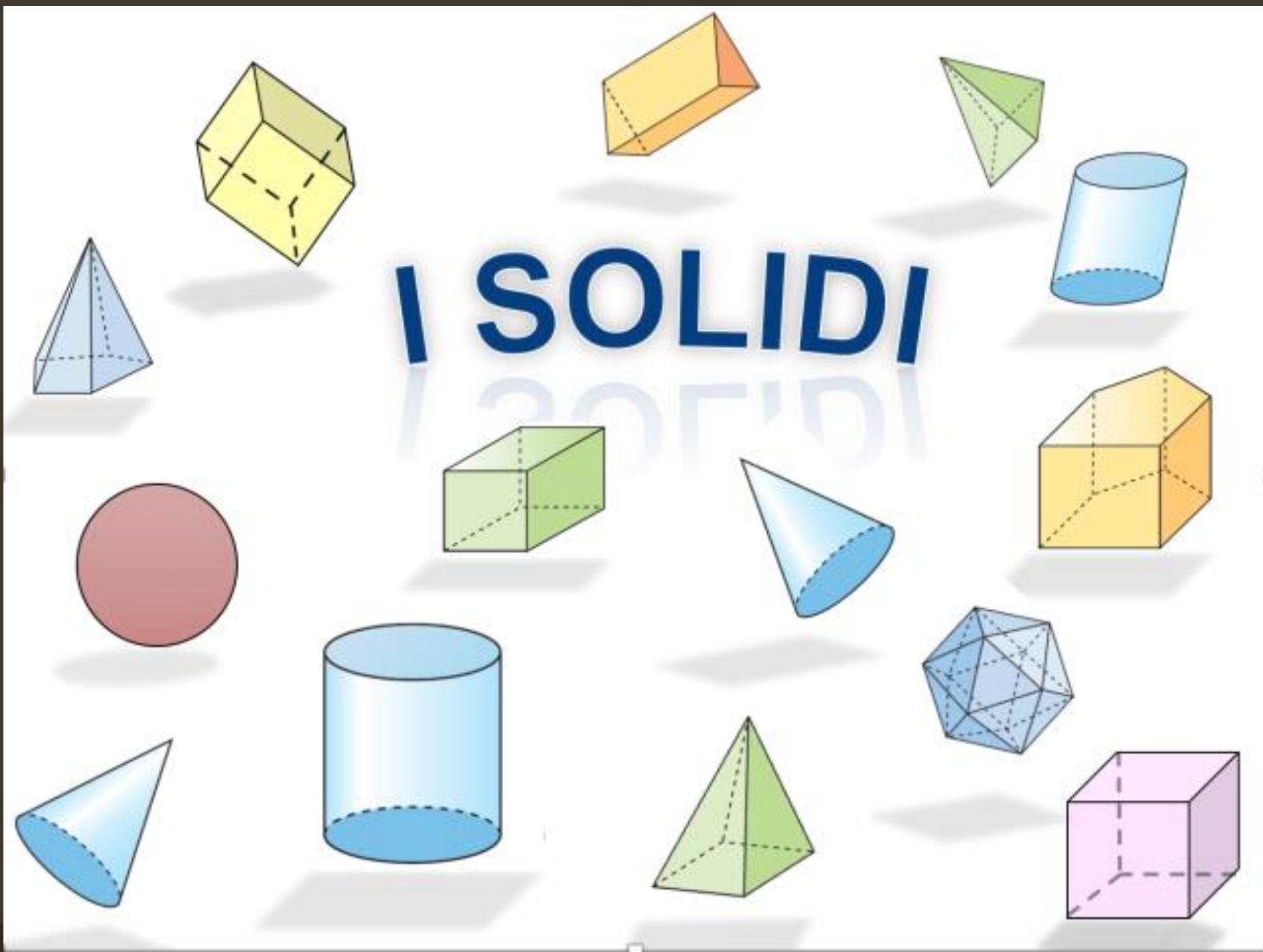


Dai solidi geometrici alle figure piane

Classe Seconda e Terza Primaria di Poscante – Zogno -

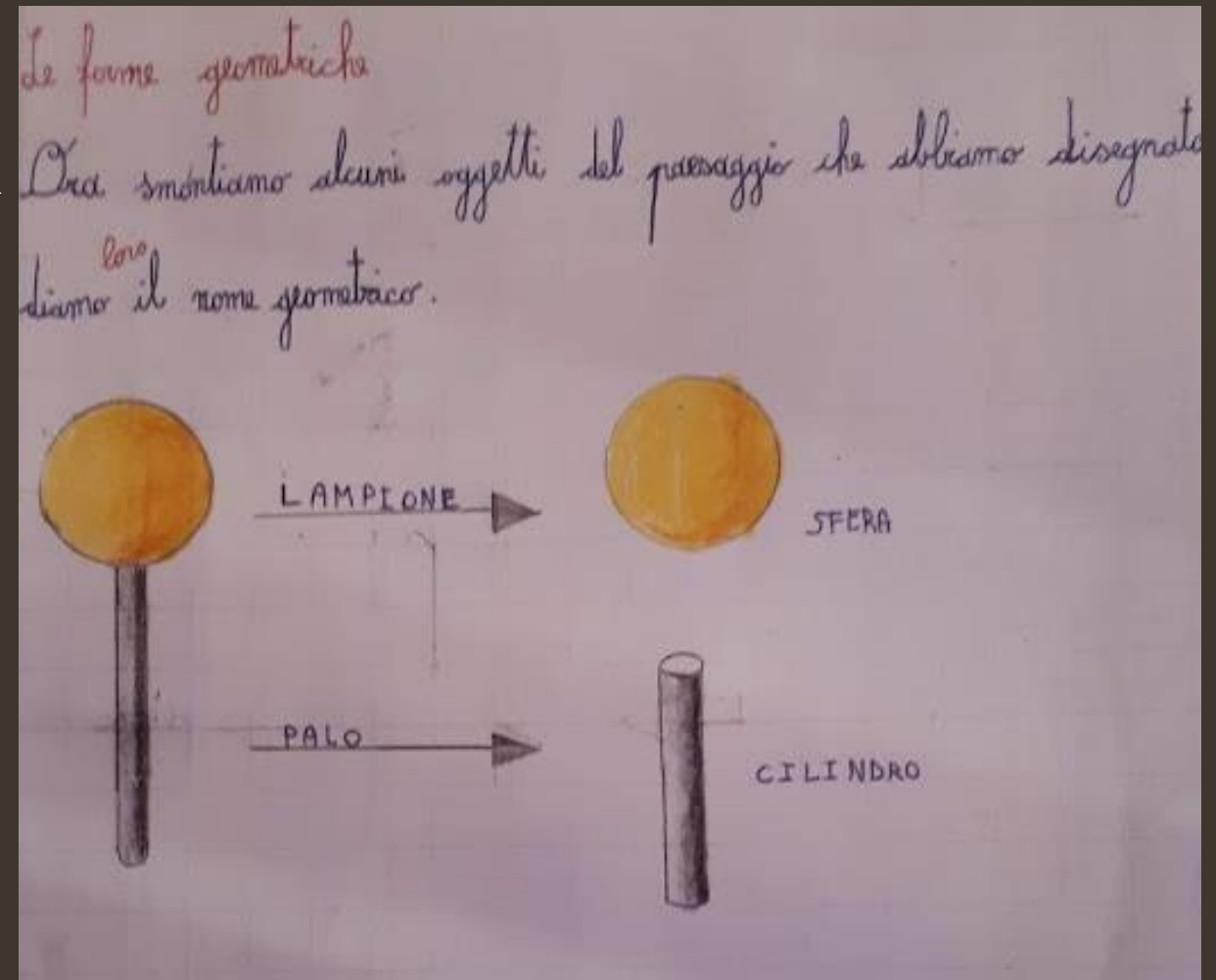
I SOLIDI

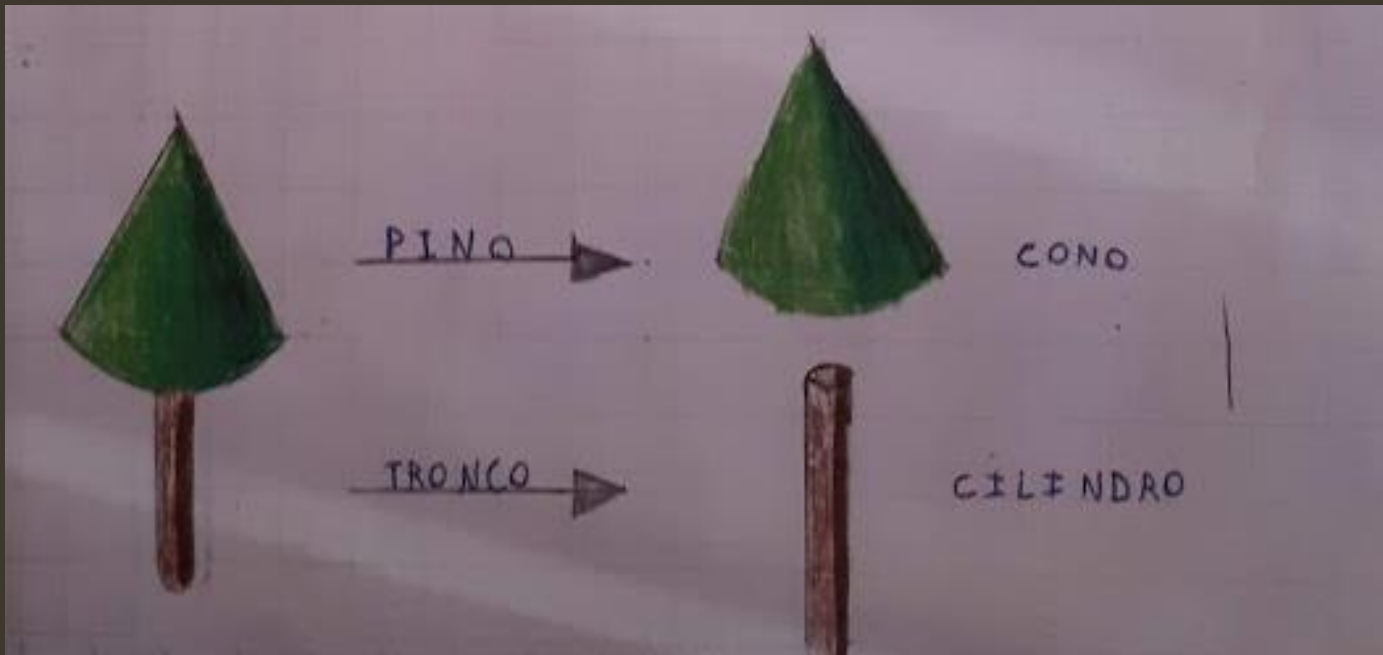


Partiamo dall'osservazione della realtà che ci circonda (il cortile e l'aula) per arrivare all'introduzione consapevole della geometria solida.



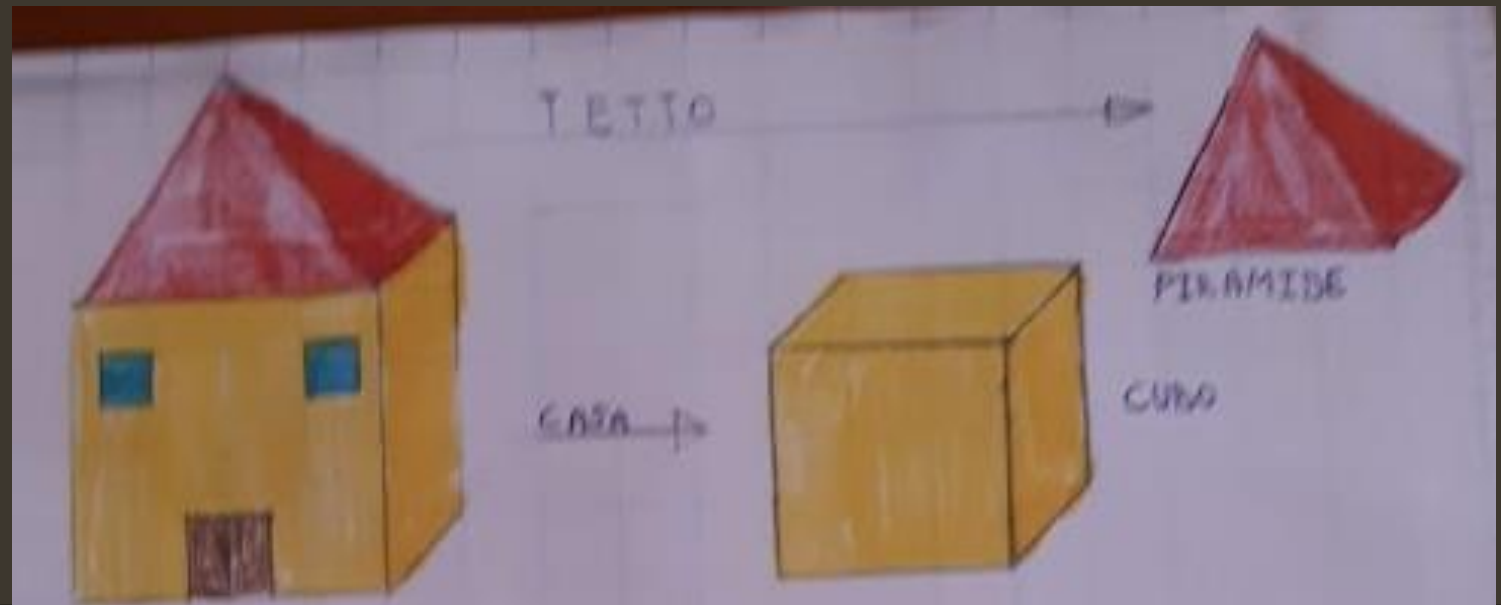
Osserviamo attentamente il cortile della scuola e la forma di alcuni oggetti. Impariamo il nome «geometrico» di queste forme solide.

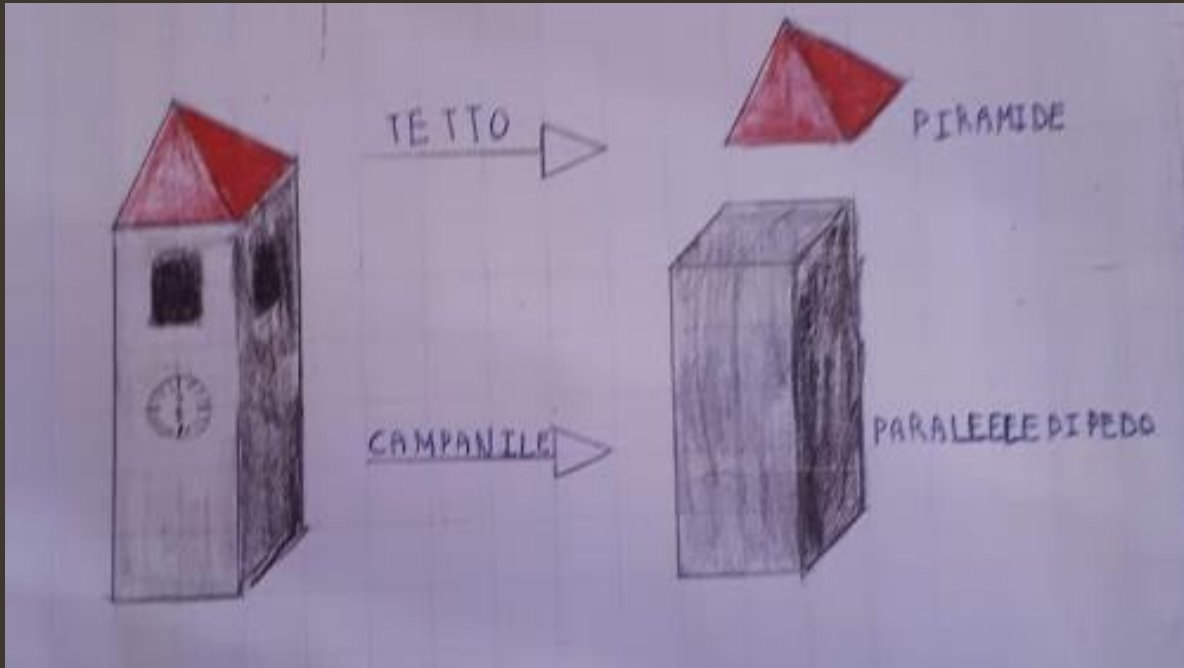




DALLA REALTÀ

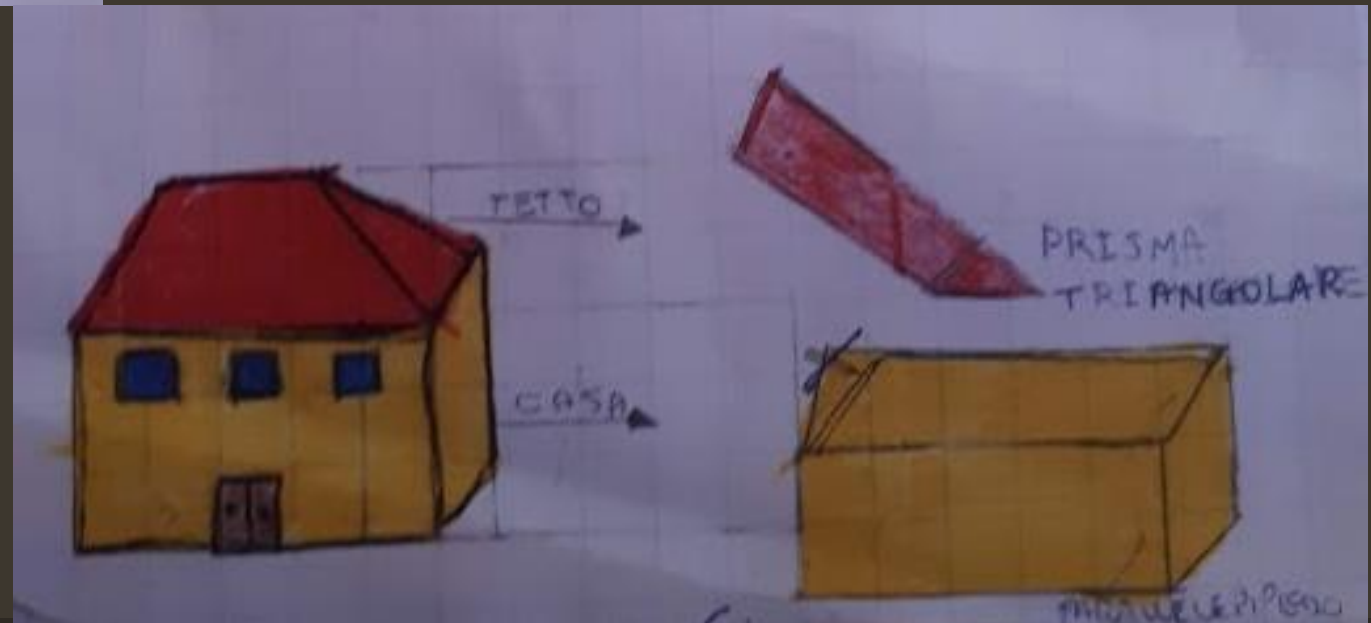
ALLE FORME SOLIDE





DALLA REALTÀ

ALLE FORME SOLIDE



CHE FORMA HA?

Conosciamo i solidi principali

(cilindro, sfera, cono, cubo, piramide e parallelepipedo)

per ognuno di essi troviamo oggetti dalla forma simile



CILINDRO



SFERA



CONO



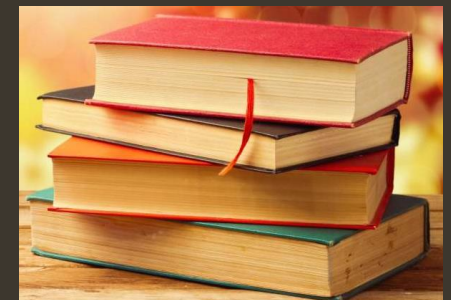
CUBO



PIRAMIDE

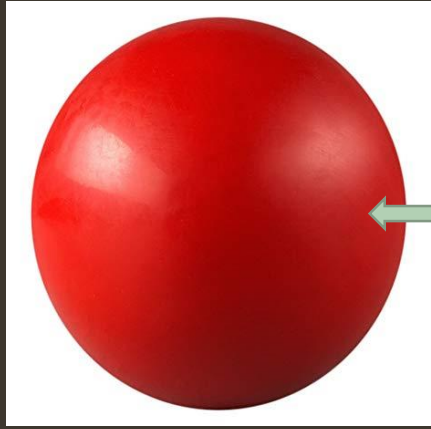


PARALLELEPIPEDO

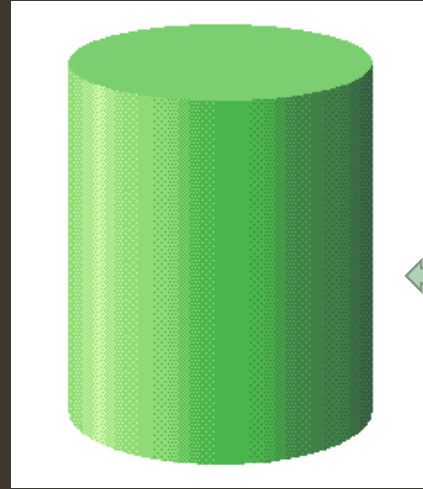


COME SI CHIAMA?

Impariamo il nome di alcuni solidi



S
F
E
R
A



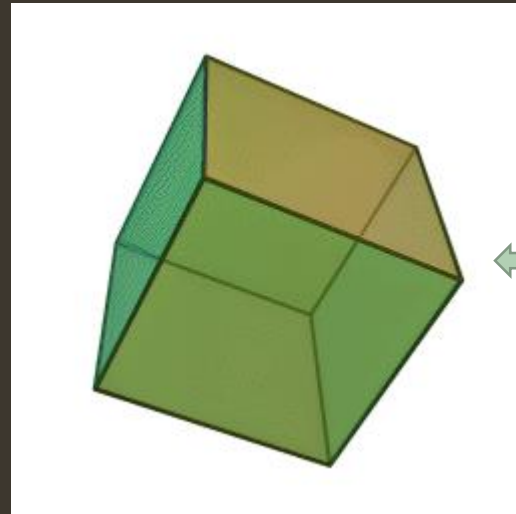
C
I
L
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O



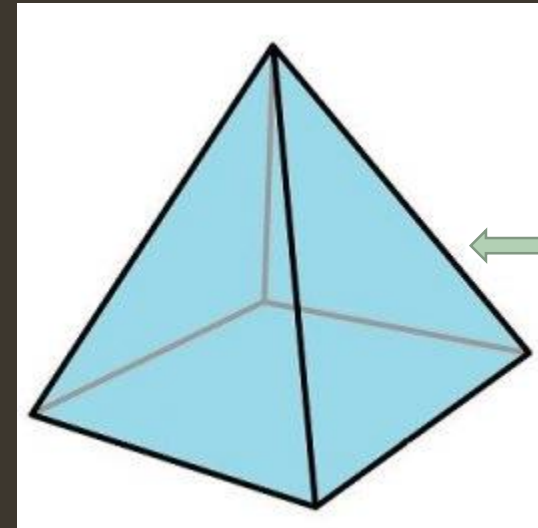
P
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E
L
E
P
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P
E
D
O



C
O
N
O

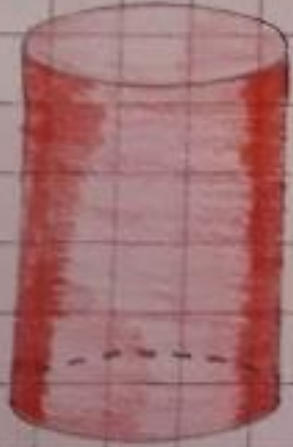


C
U
B
O

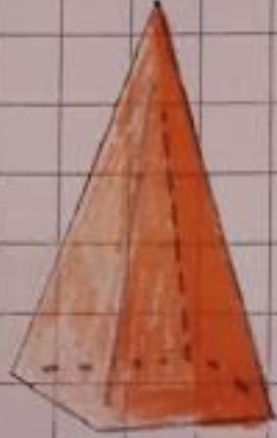


P
I
R
A
M
I
D
E

199
SOLIDI



CILINDRO



PIRAMIDE



SFERA



PARALLELEPEDO



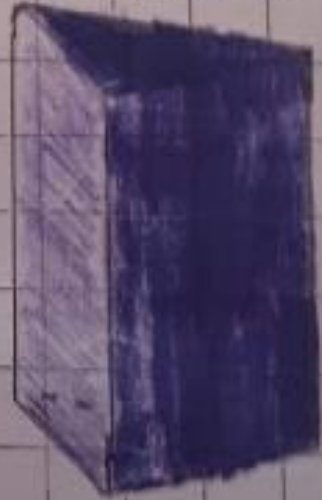
CONO



CUBO



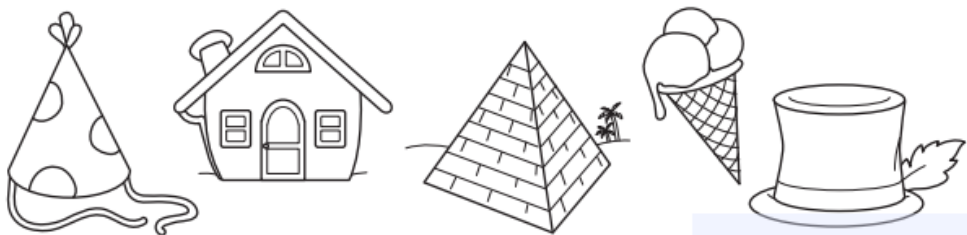
PRISMA
ESAGONALE



PRISMA
TRIANGOLARE

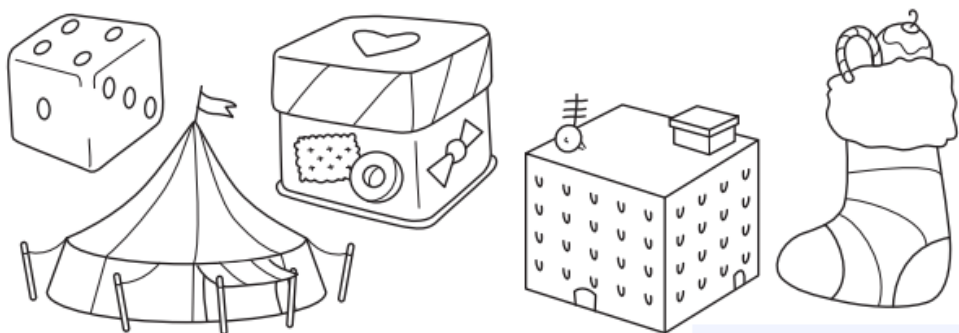
IL NOME
DEI SOLIDI

● Rispondi.



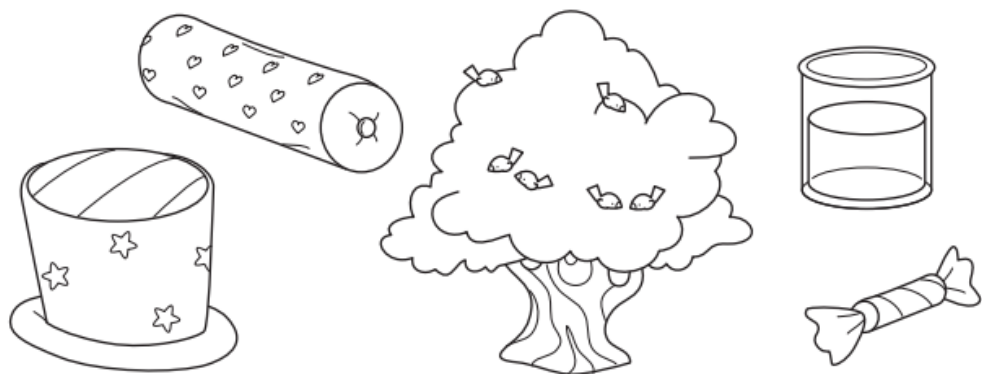
Quanti sono gli oggetti a forma di **cono**?

Colorali



Quanti sono gli oggetti a forma di **cubo**?

Colorali

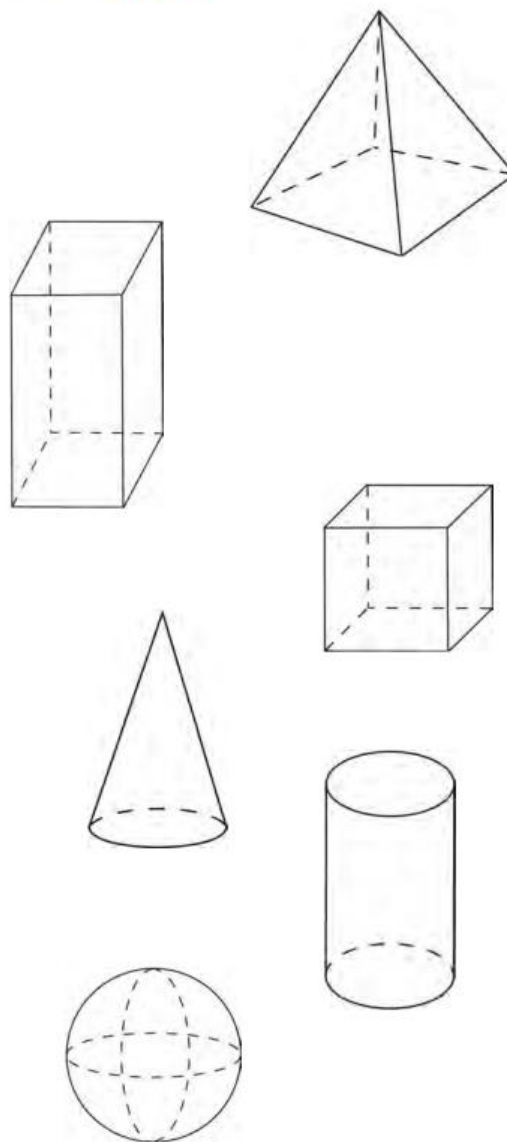


Quanti sono gli oggetti a forma di **cilindro**? **Colorali**

E
S
E
R
C
I
Z
I

I SOLIDI

● Con una freccia **metti** in corrispondenza ogni cartellino con il **solido**.



parallelepipedo

cilindro

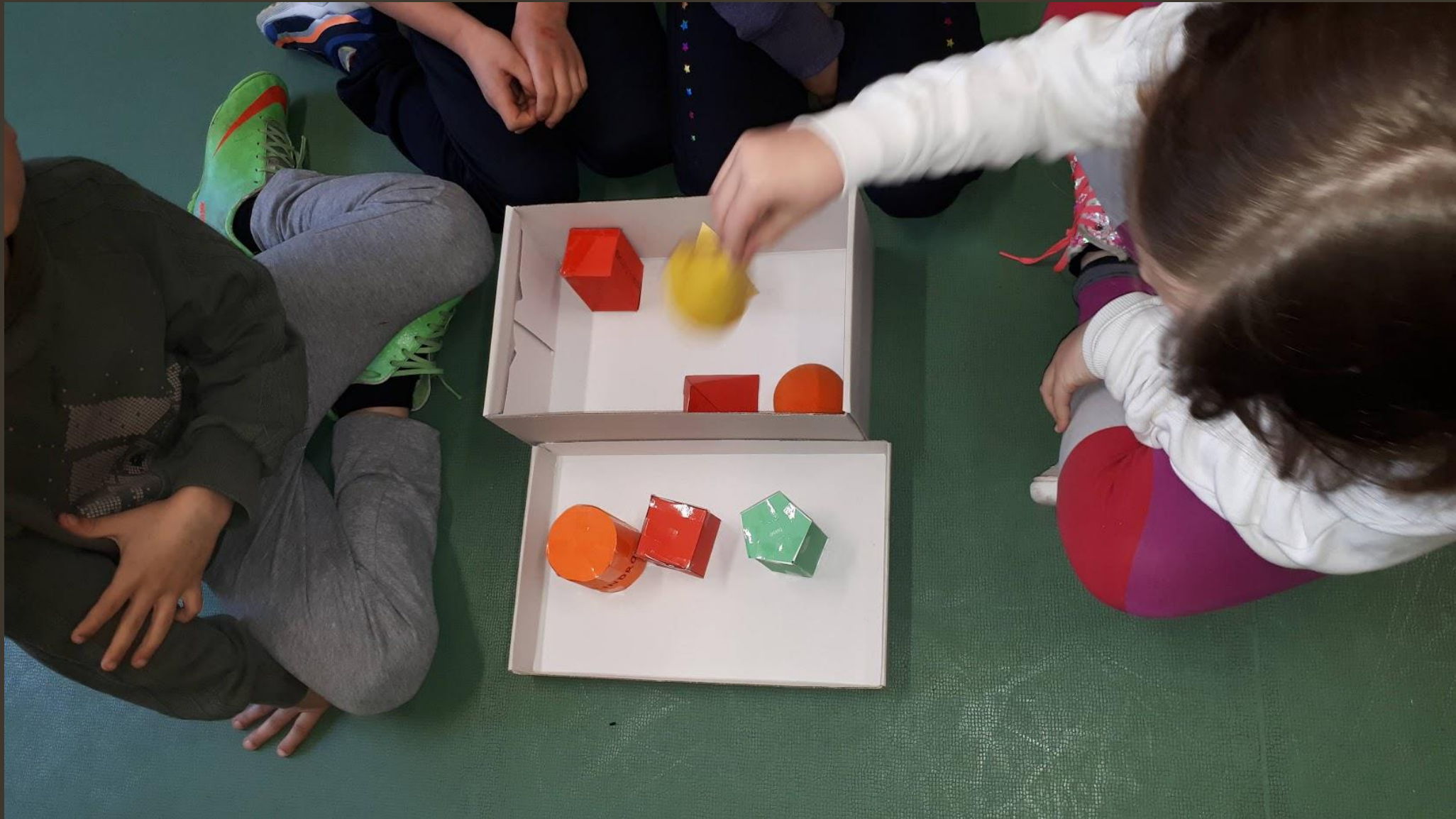
piramide

cubo

cono

sfera

COSTRUIAMO I SOLIDI



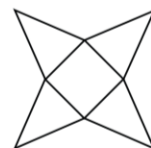
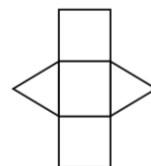
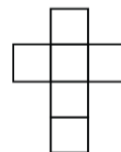
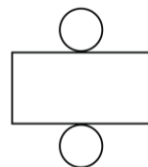
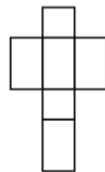
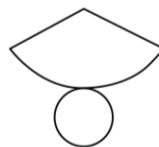
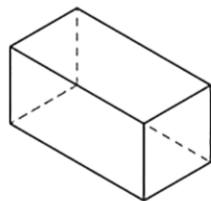
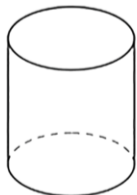
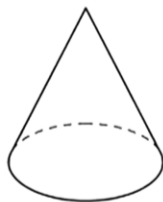
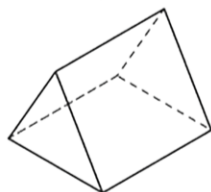
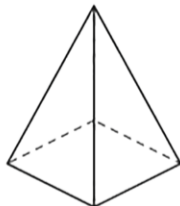
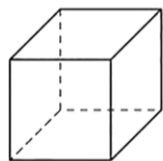
Abbiamo
costruito
alcuni solidi
partendo dal
loro sviluppo





I solidi geometrici

- Collega ogni solido con il suo sviluppo piano.



ROTOLANO O NON ROTOLANO ?

Classifichiamo i solidi



Vediamo se i solidi rotolano o scivolano lungo un piano inclinato

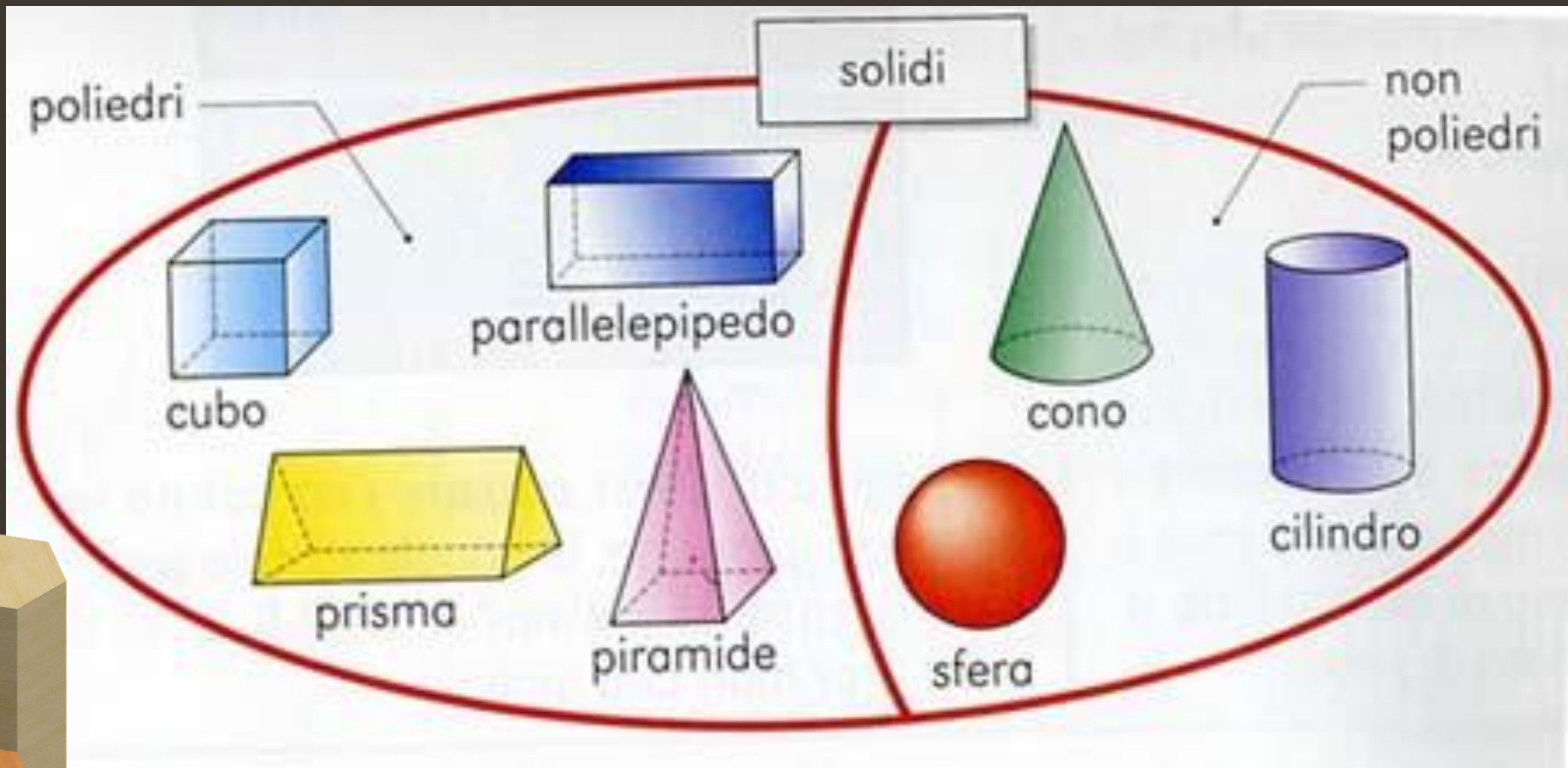
Classifichiamo i solidi





Non rotolano: sono i POLIEDRI

Rotolano: sono i solidi di rotazione



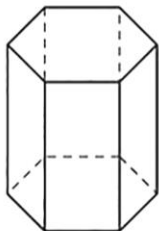
Scivolano

Rotolano

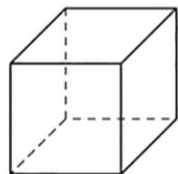


I solidi geometrici

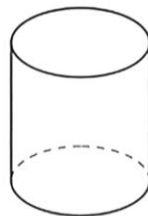
- Colora di **rosso** i poliedri e di **blu** i solidi di rotazione.



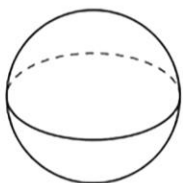
PRISMA
ESAGONALE



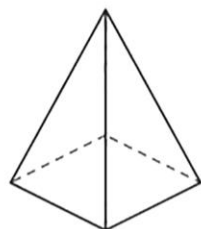
CUBO



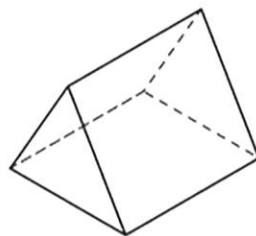
CILINDRO



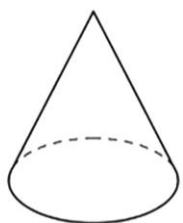
SFERA



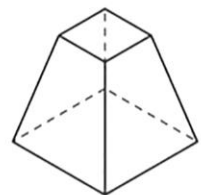
PIRAMIDE
QUADRANGOLARE



PRISMA
TRIANGOLARE



CONO

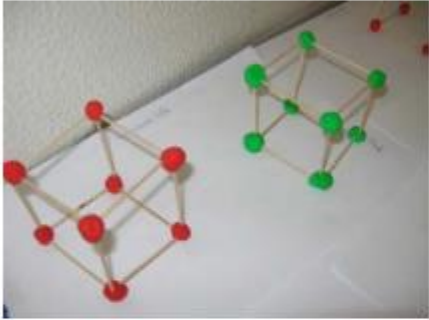


TRONCO
DI PIRAMIDE



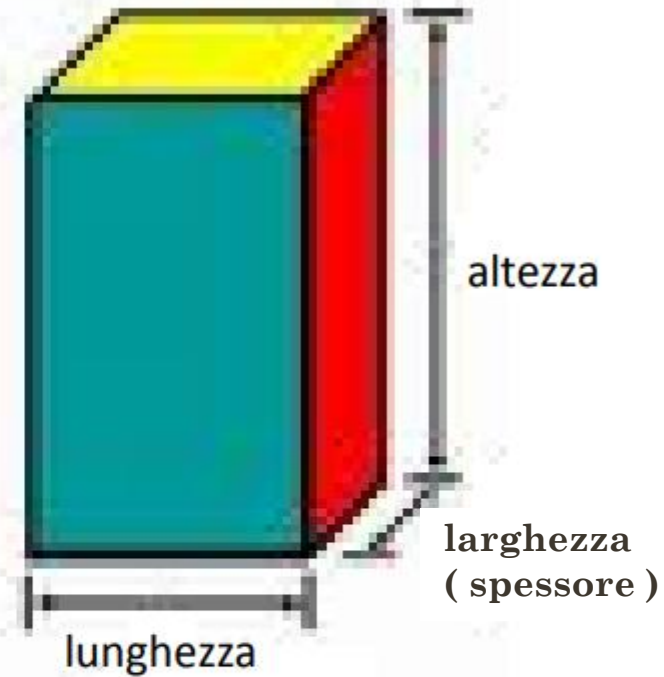
TRONCO
DI CONO

SOLIDI GEOMETRICI



Sono corpi **TRIDIMENSIONALI**,
aventi cioè tre dimensioni:

1. Lunghezza
2. Larghezza (spessore)
3. Altezza



Si possono ottenere:

- dalla **COMBINAZIONE** di FIGURE PIANE e sono detti **POLIEDRI** e hanno tutte le **SUPERFICI PIANE**;
- dalla **ROTAZIONE** di FIGURE PIANE e sono detti **NON POLIEDRI** o **SOLIDI di ROTAZIONE** e hanno **SUPERFICI LATERALI CURVE**.



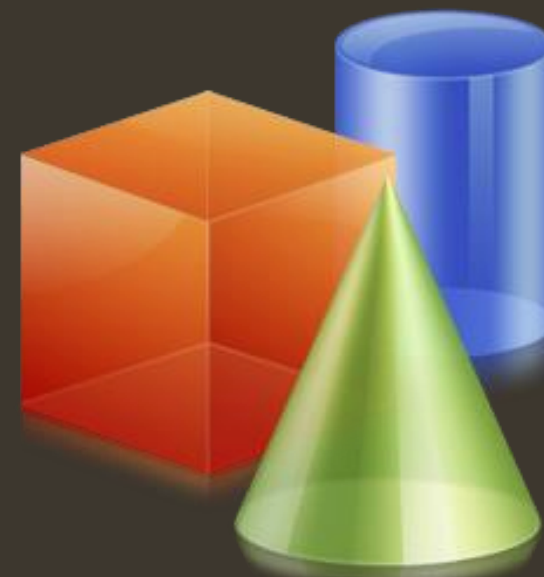
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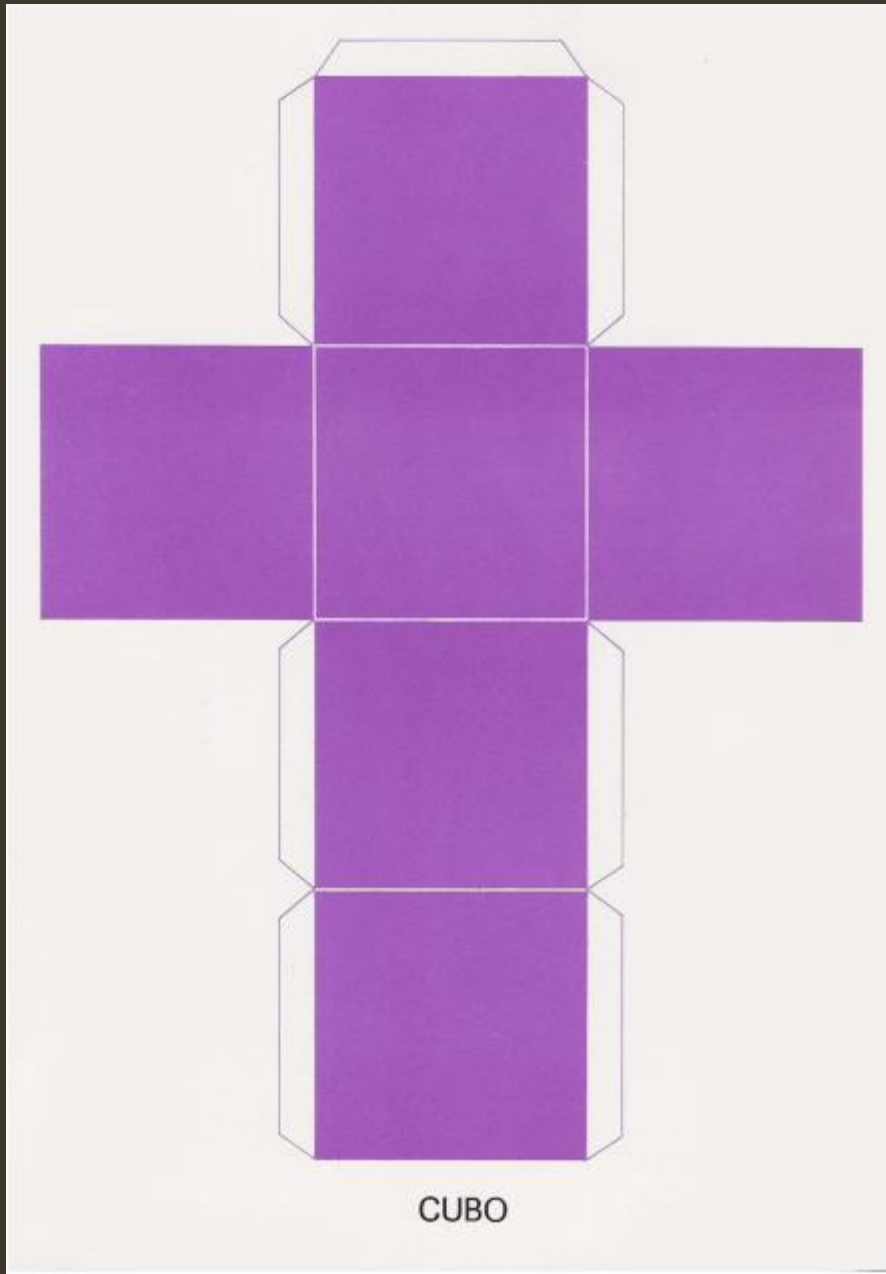


QUANTE FACCE ?

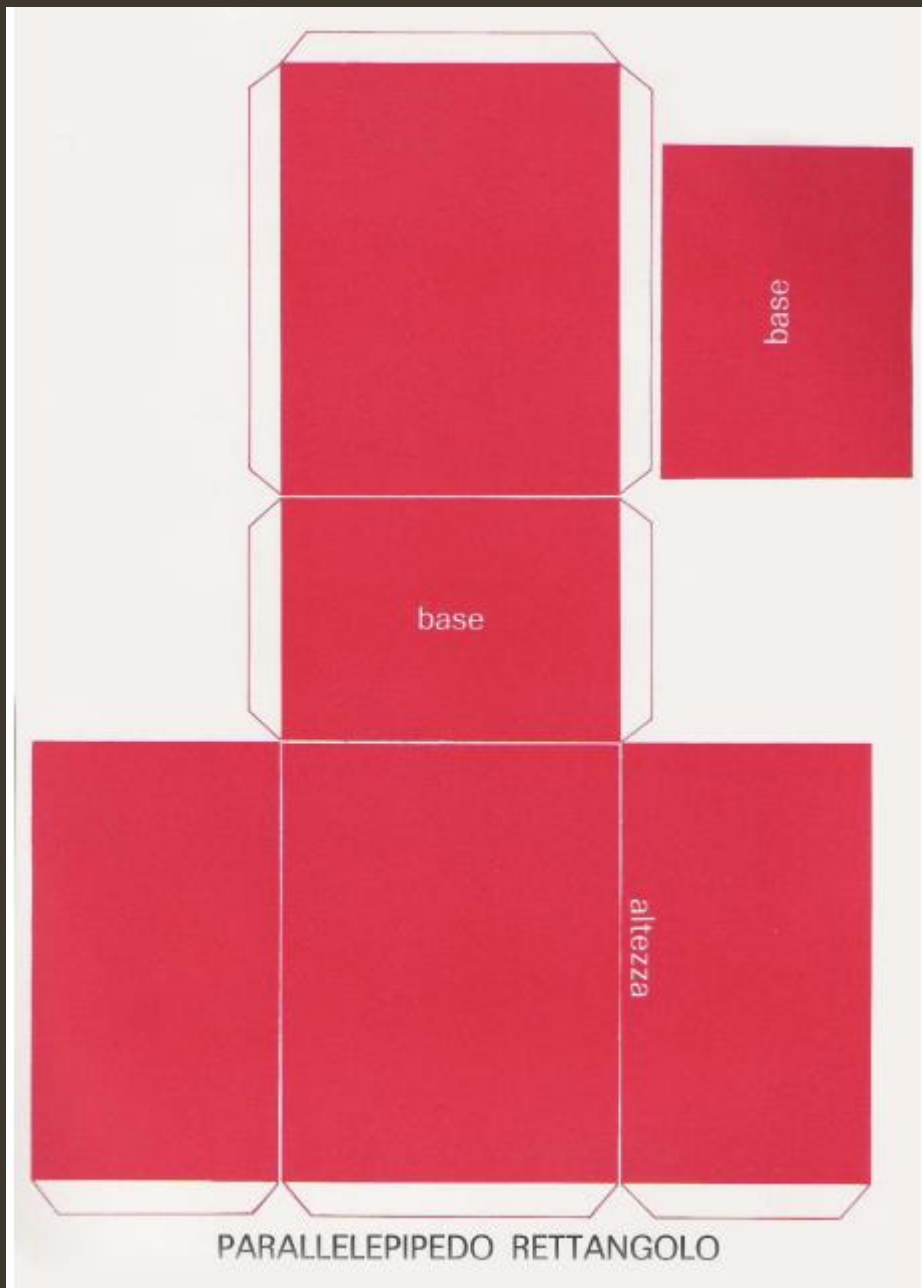


Contiamo insieme le facce dei solidi (poliedri) di cartone che abbiamo costruito, (pensiamo bene a come abbiamo fatto a costruirli)



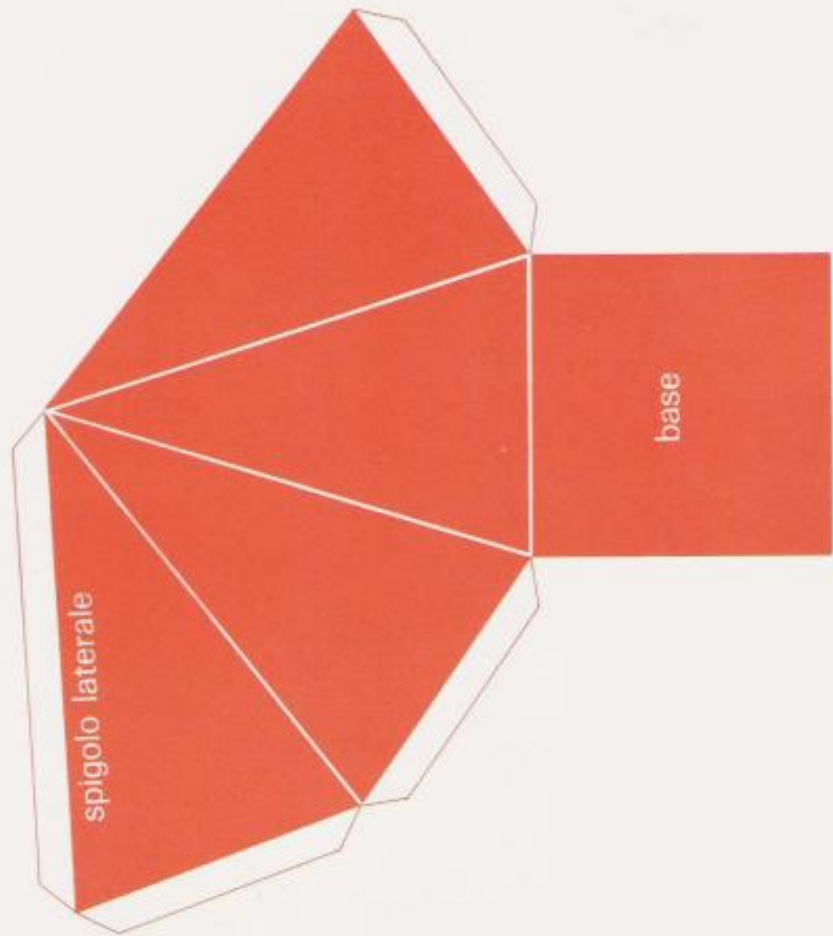


IL CUBO HA SEI FACCE



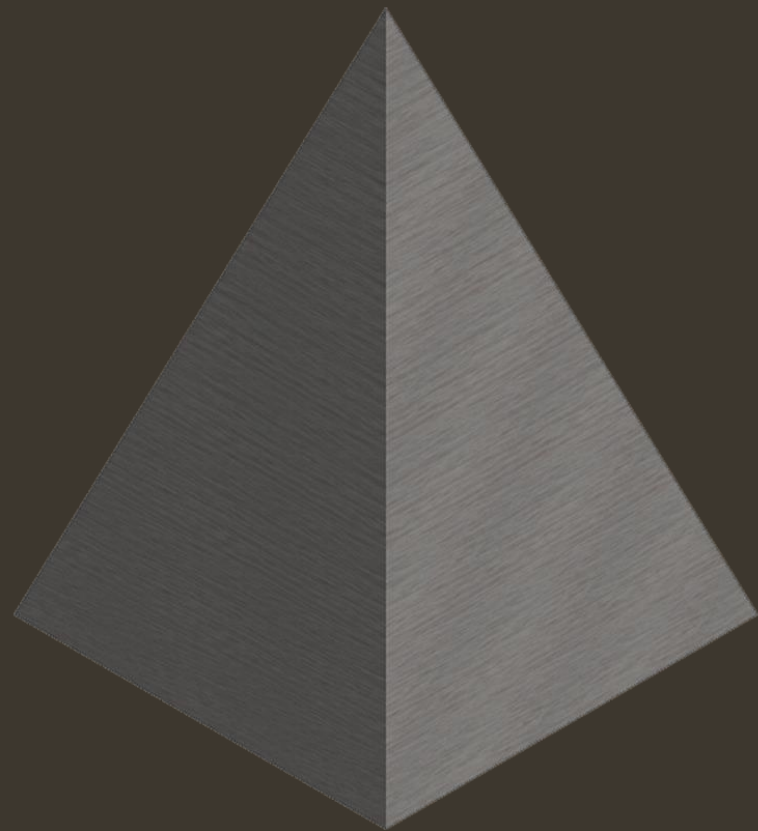
IL PARALLELEPIPEDO HA SEI FACCE

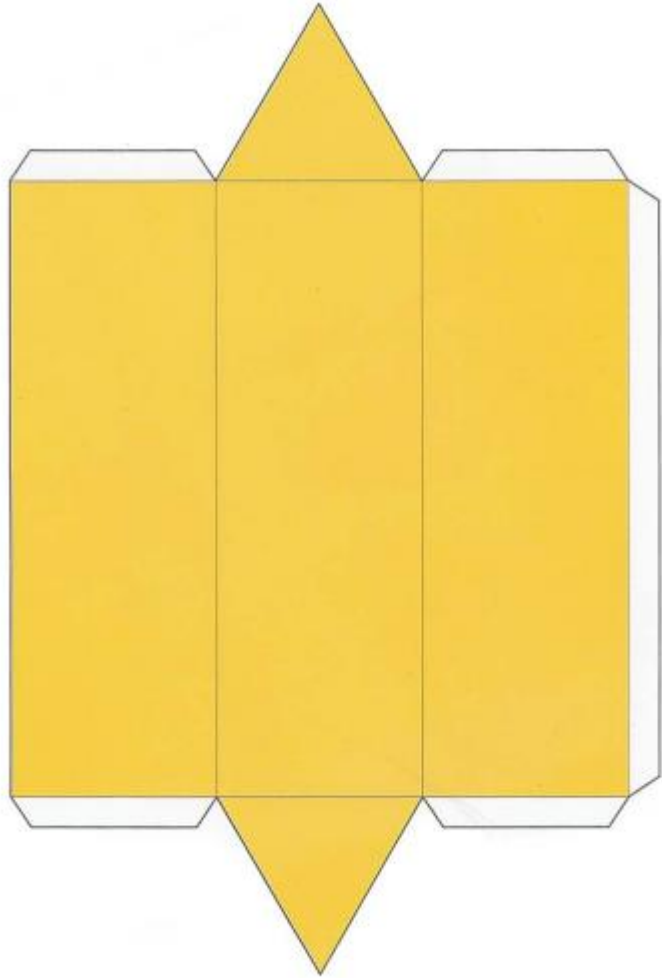




PIRAMIDE QUADRANGOLARE REGOLARE

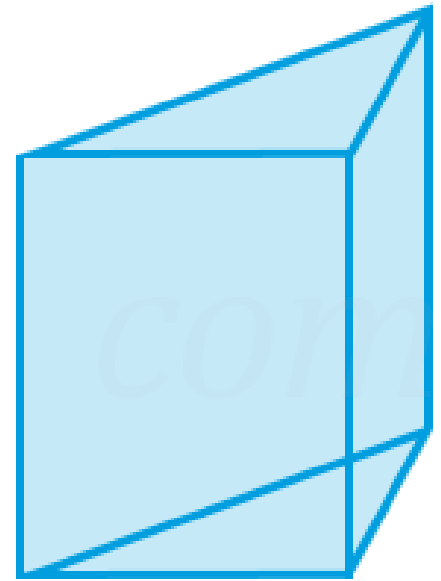
LA PIRAMIDE QUADRANGOLARE HA
CINQUE FACCE



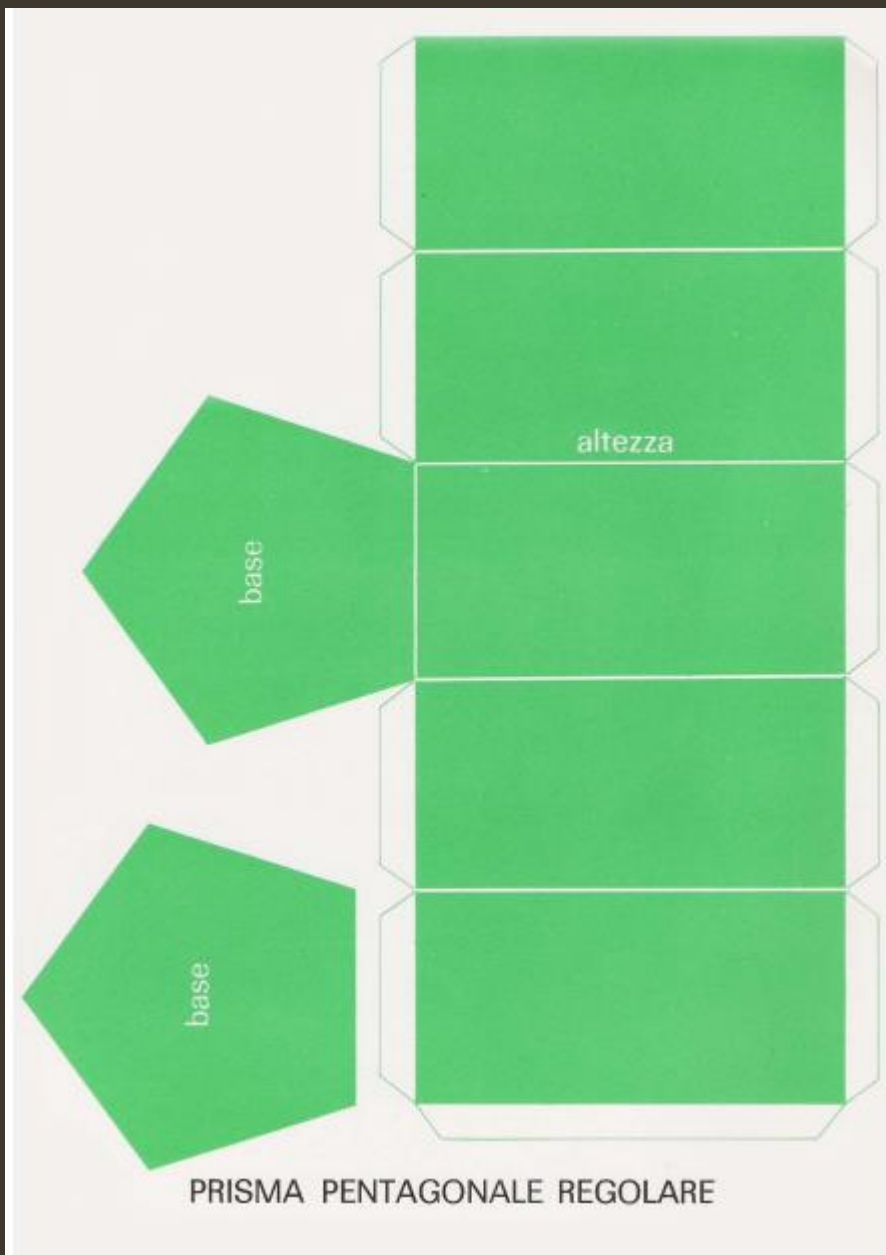


PRISMA A BASE TRIANGOLARE

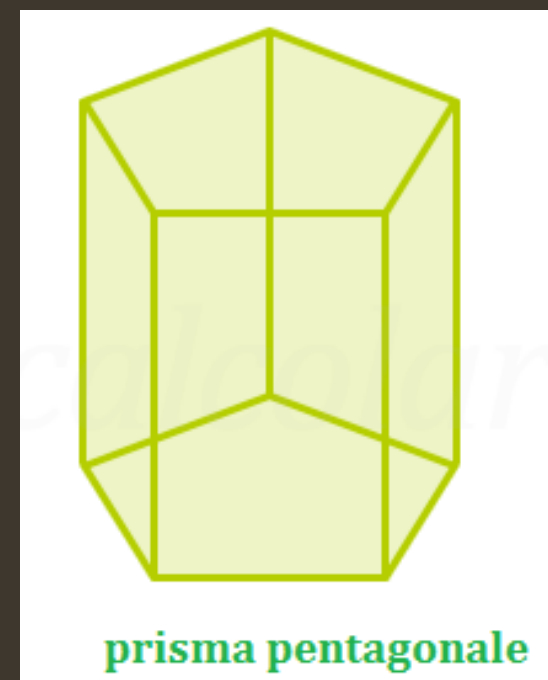
IL PRISMA A BASE TRIANGOLARE
HA CINQUE FACCE

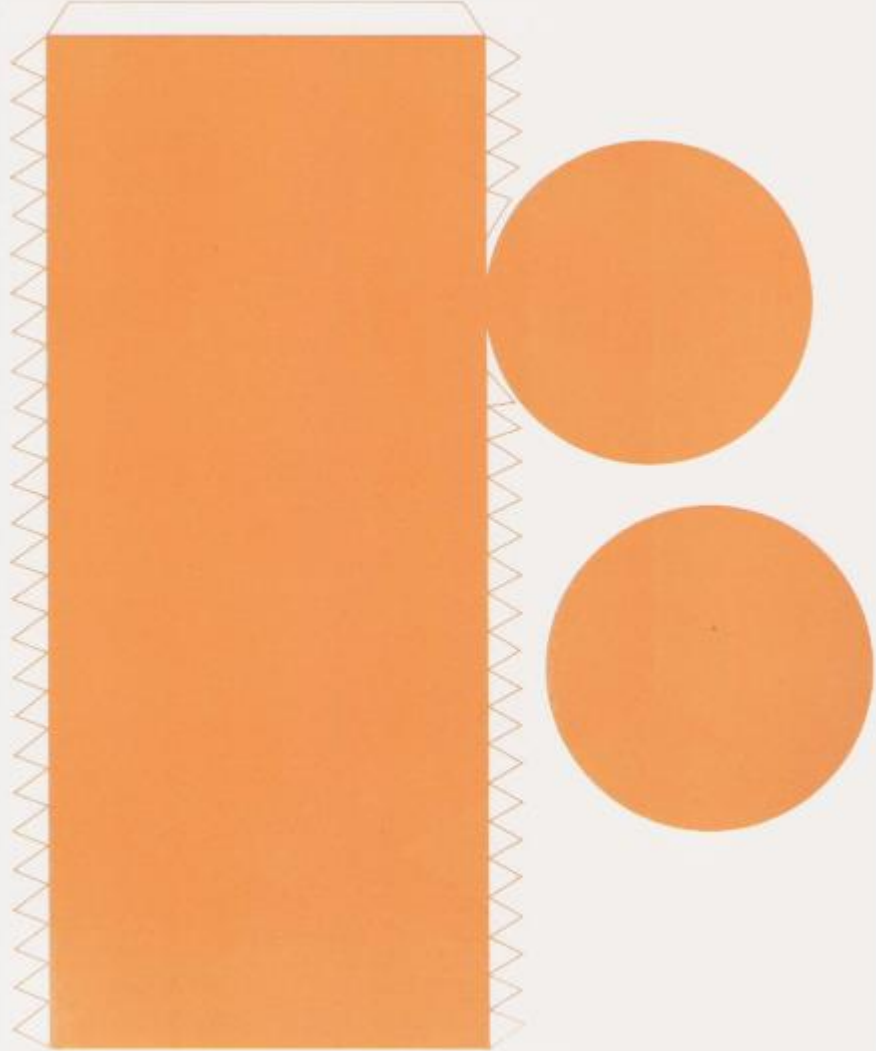


prisma triangolare



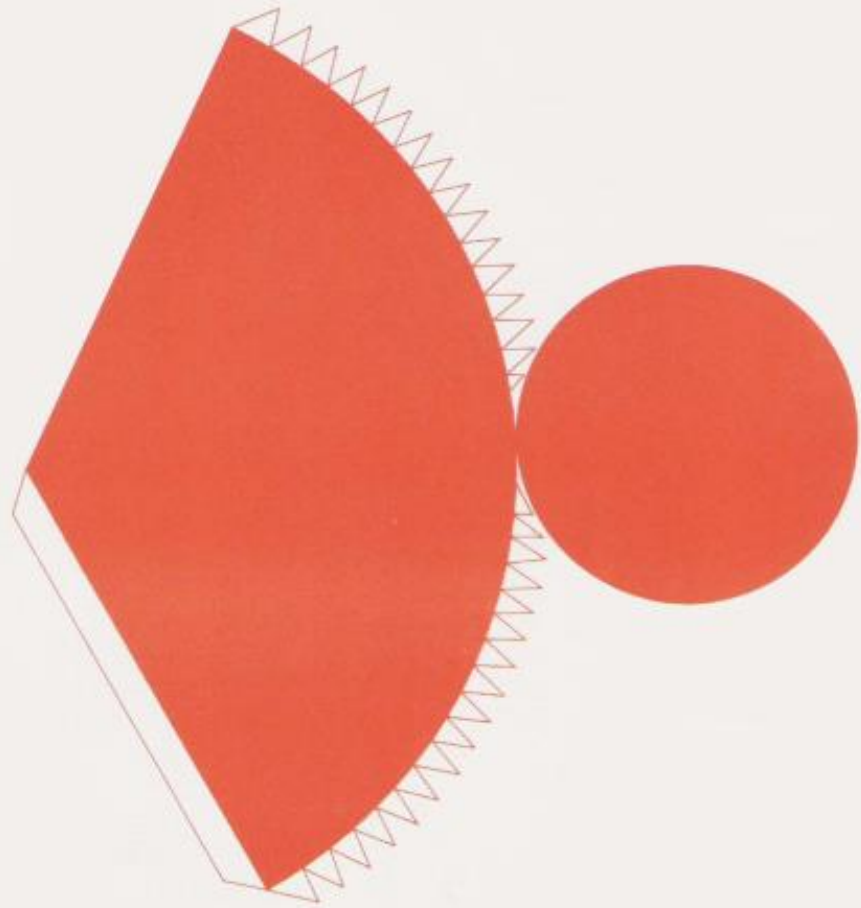
IL PRISMA A BASE PENTAGONALE
HA SETTE FACCE





CILINDRO





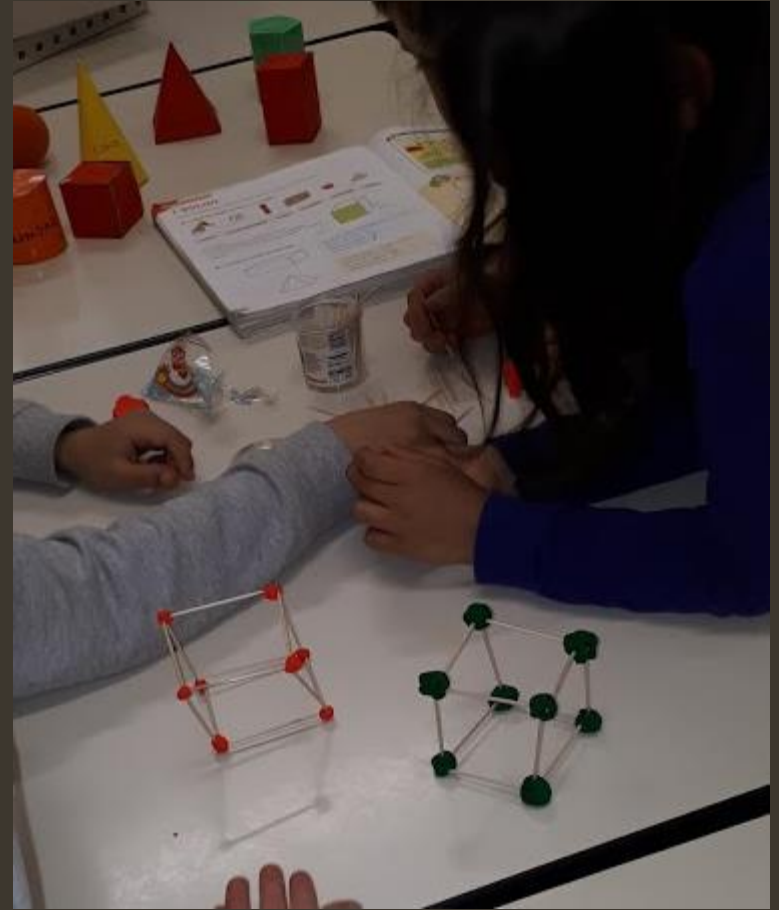
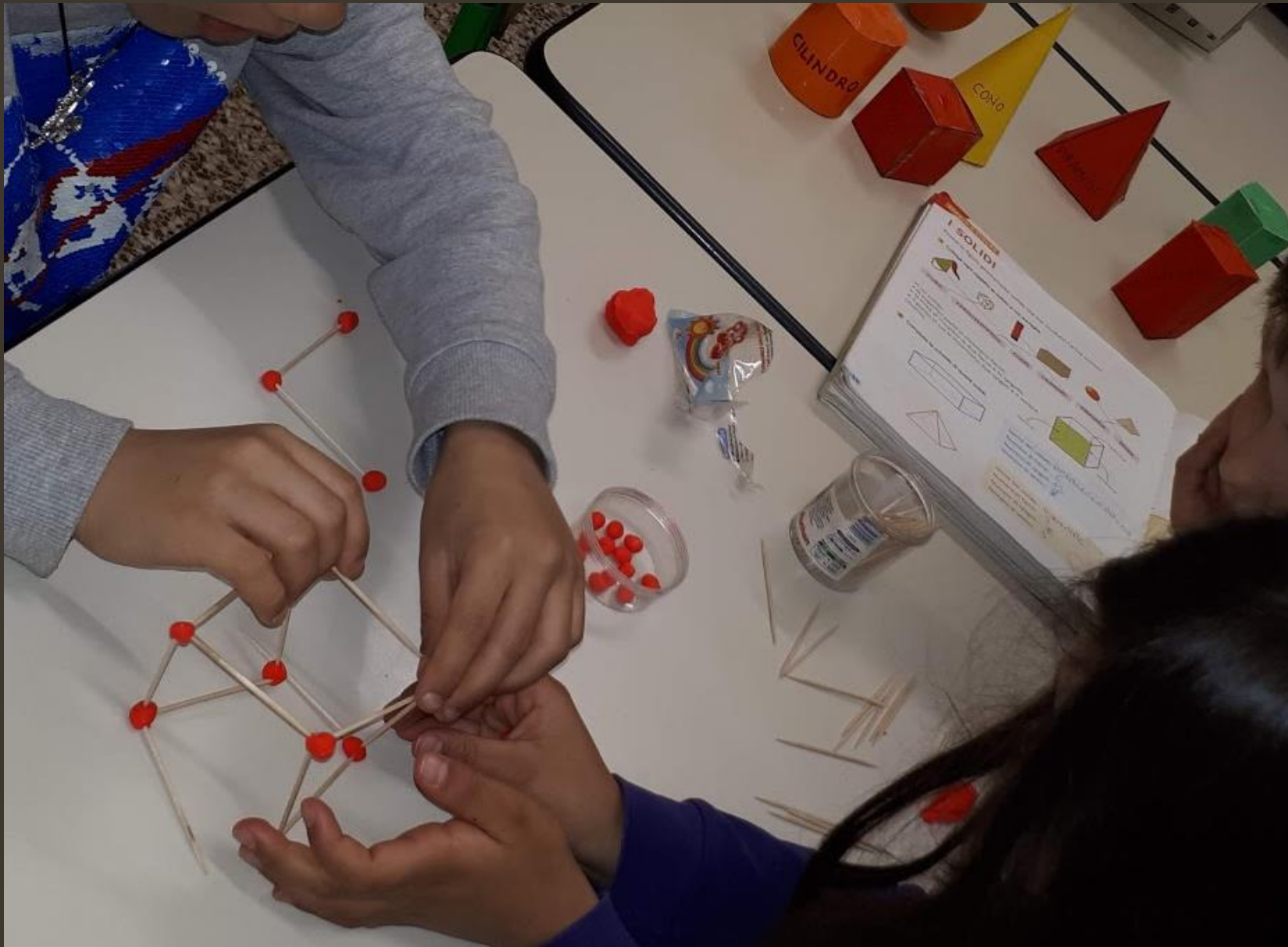
CONO

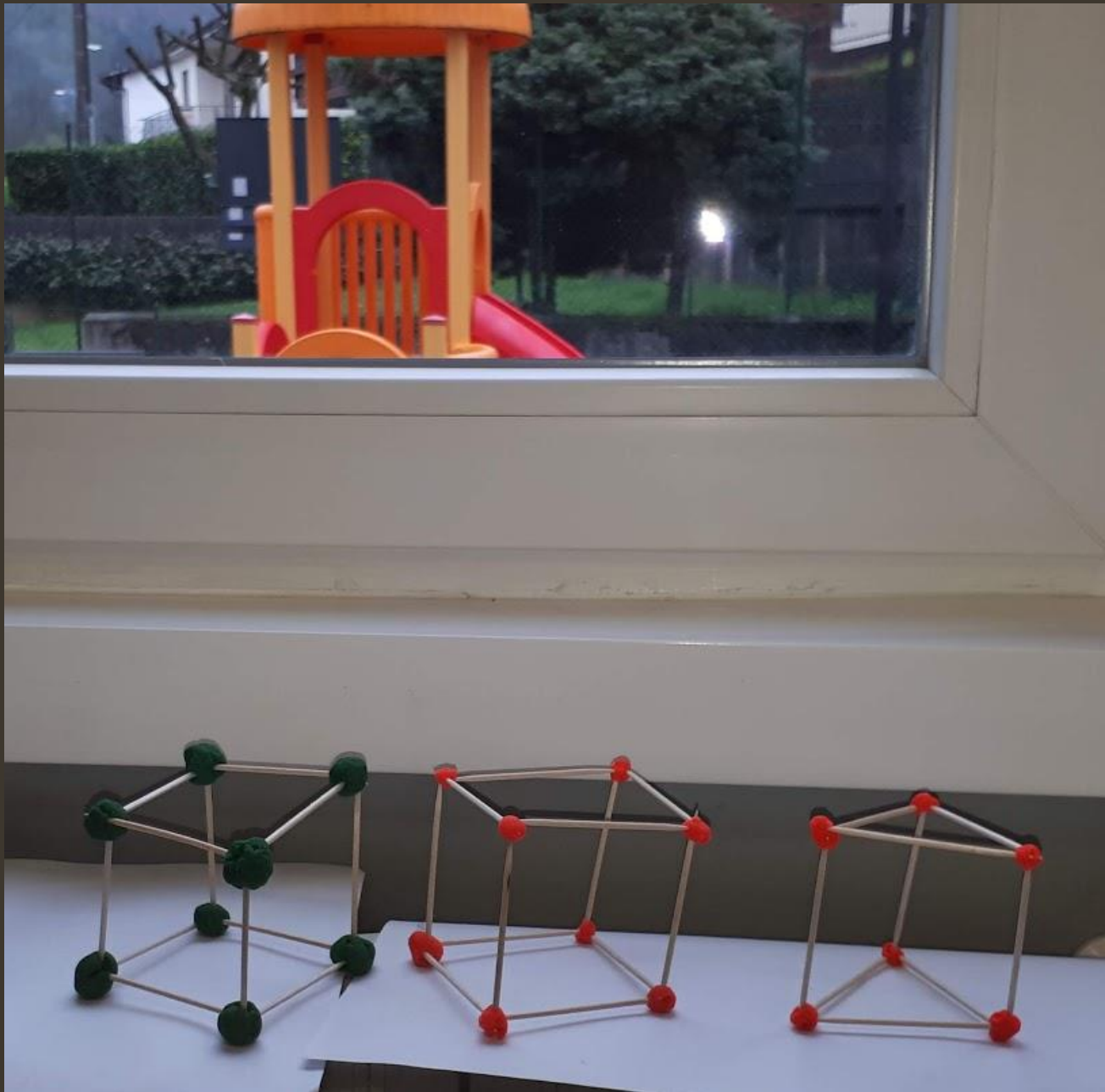


LO SCHELETRO DEI SOLIDI : VERTICI E SPIGOLI

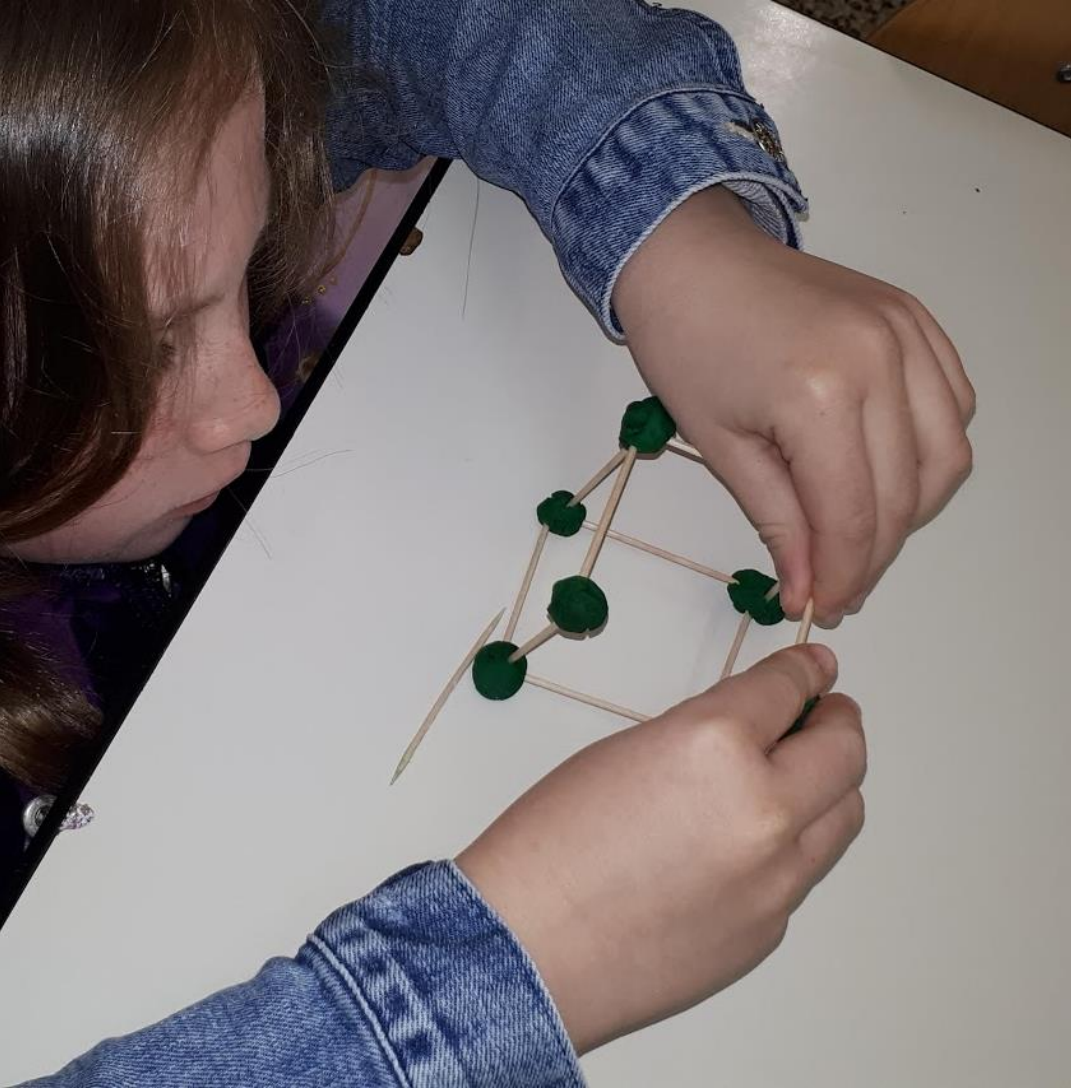


Costruiamo lo scheletro dei **poliedri** usando pongo e stuzzicadenti, per scoprire insieme **VERTICI** e **SPIGOLI**

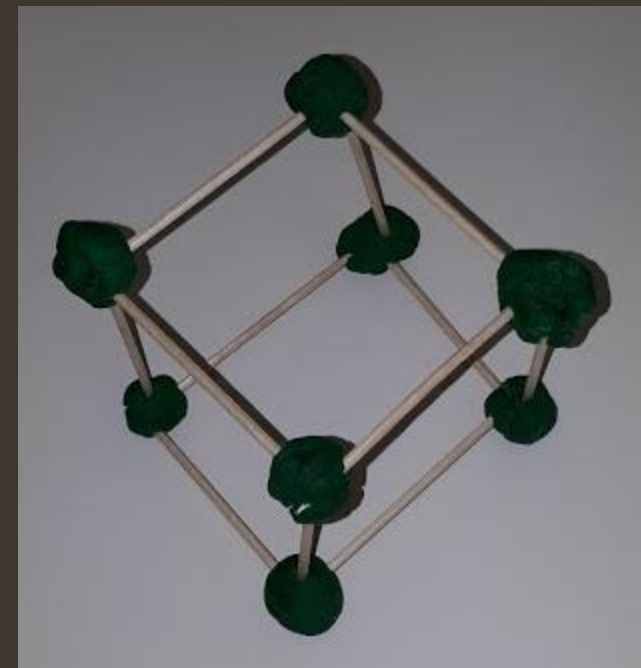


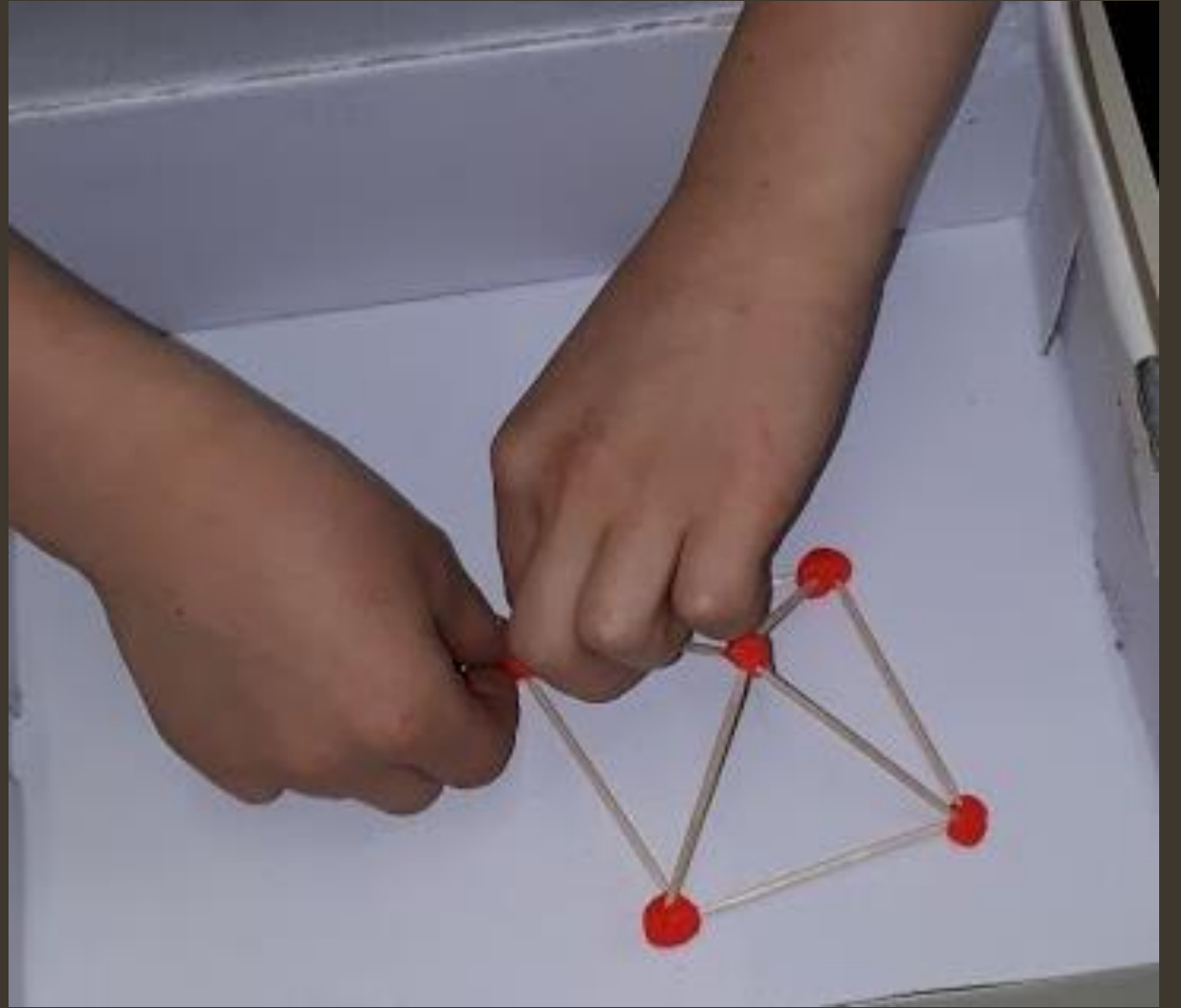
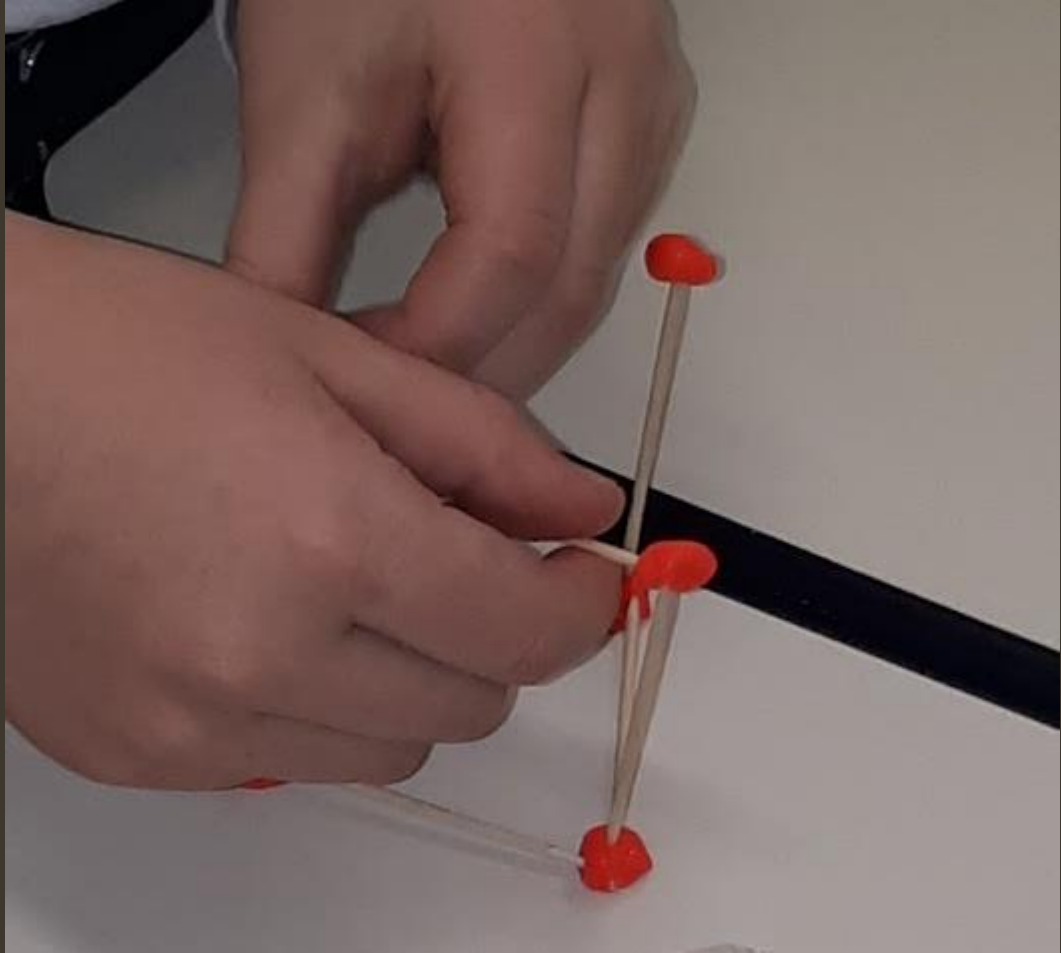


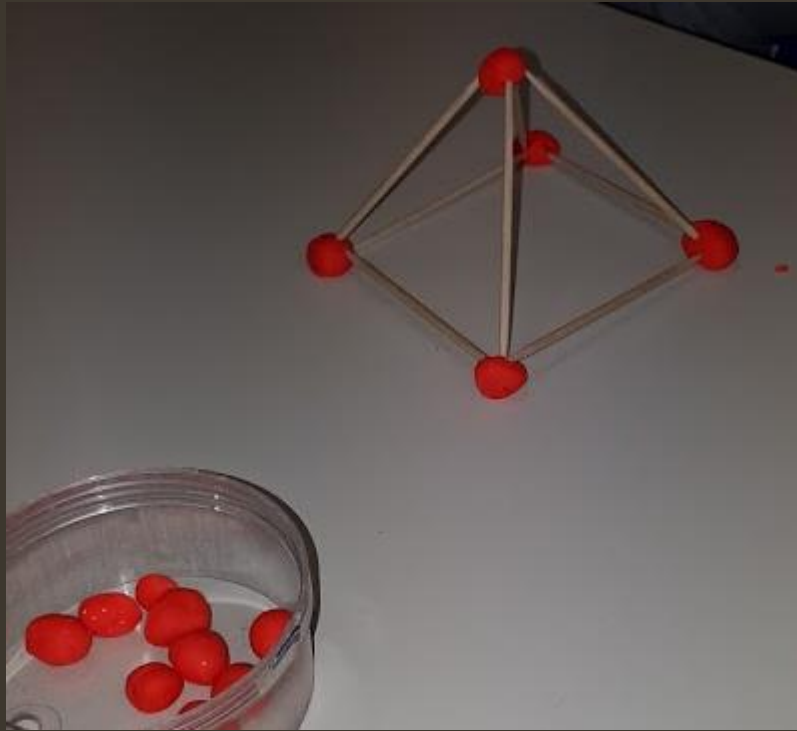
Gli stuzzicadenti formano
gli SPIGOLI,
le palline di pongo formano i
VERTICI dei poliedri
Contiamo insieme
i vertici e gli spigoli
dei solidi che abbiamo costruito.



Il CUBO ha 8 vertici e 12 spigoli

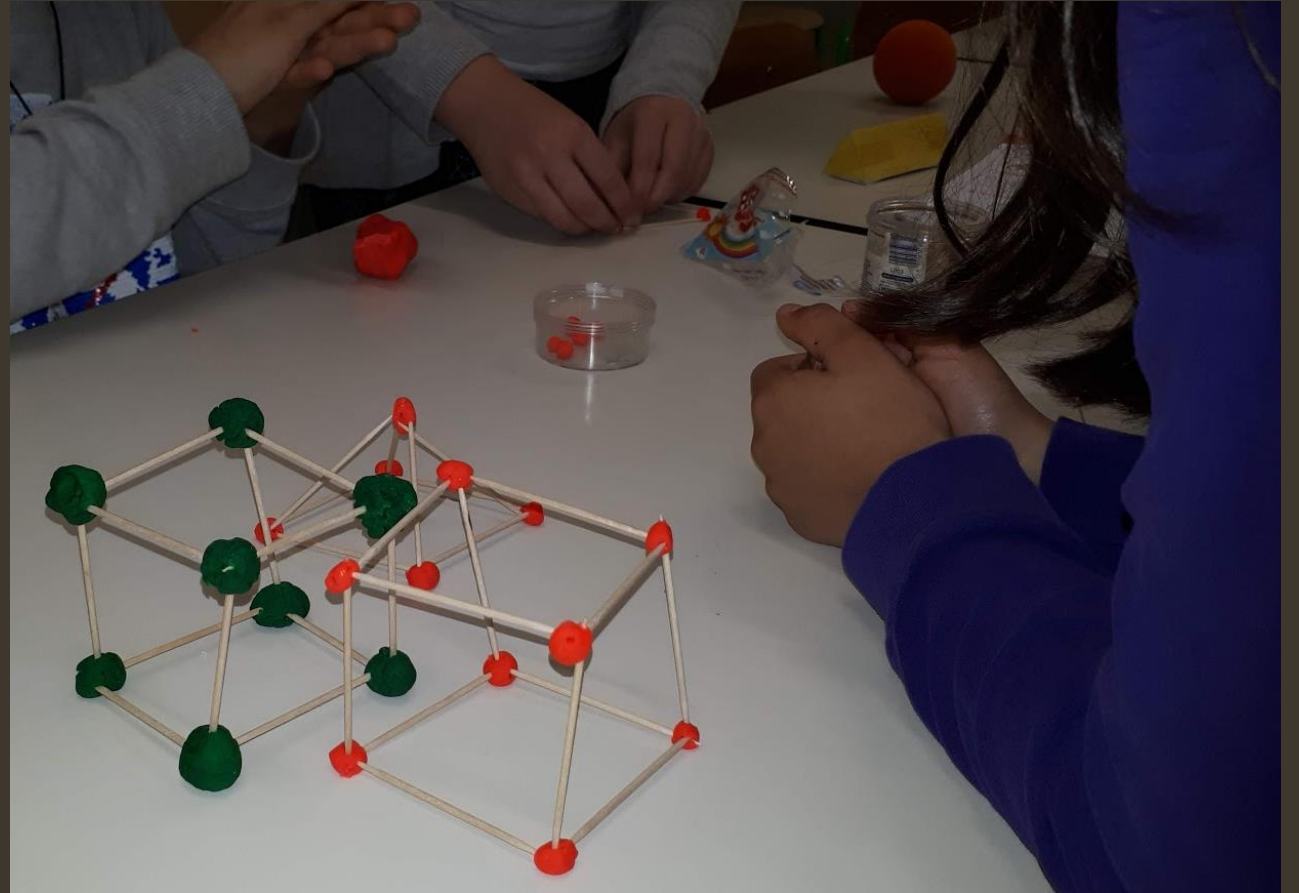
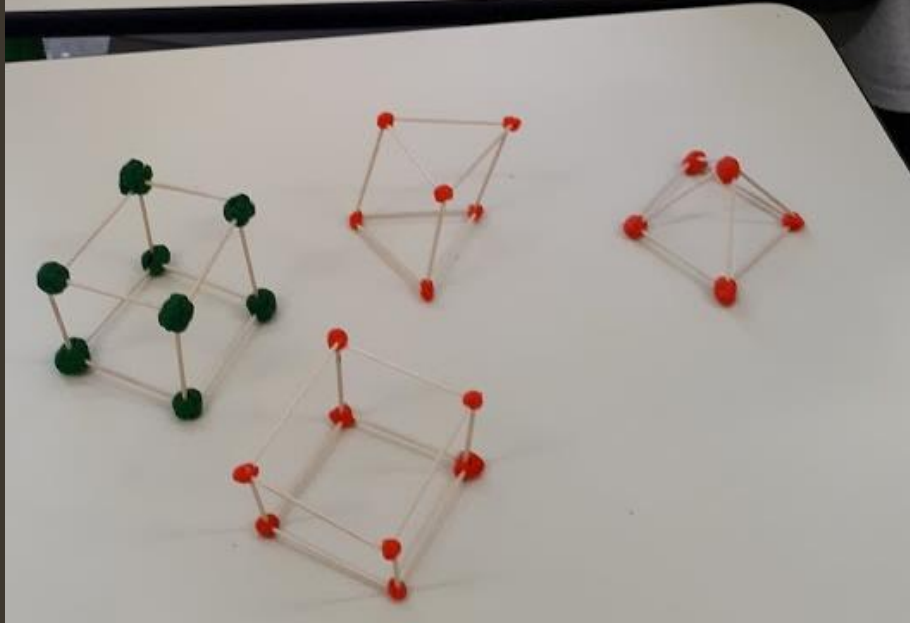
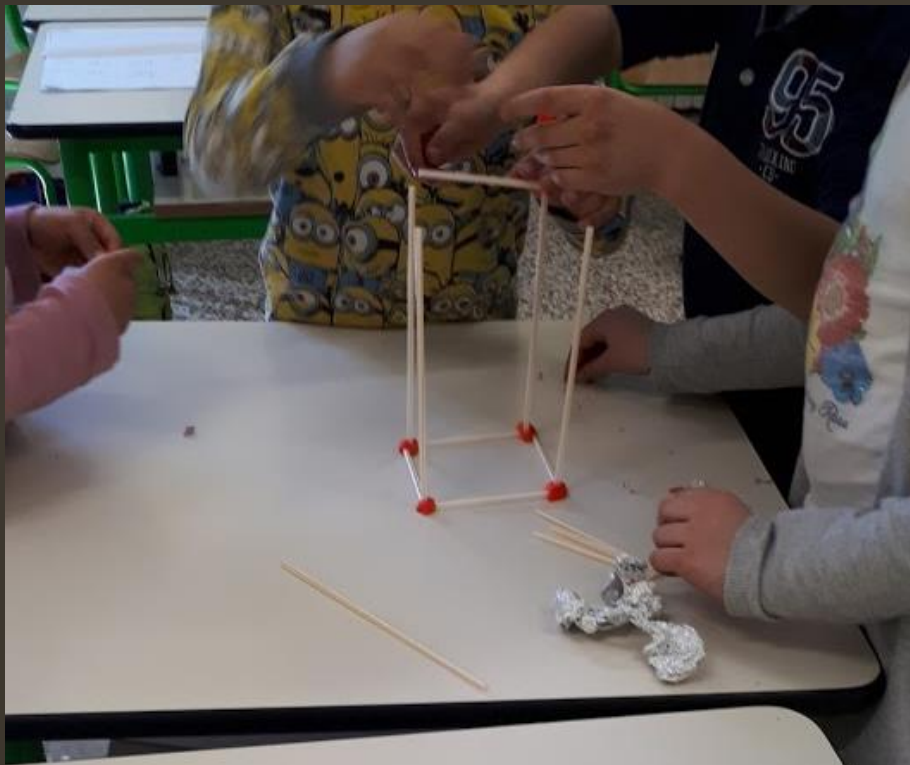






La PIRAMIDE quadrangolare ha
5 vertici e 8 spigoli





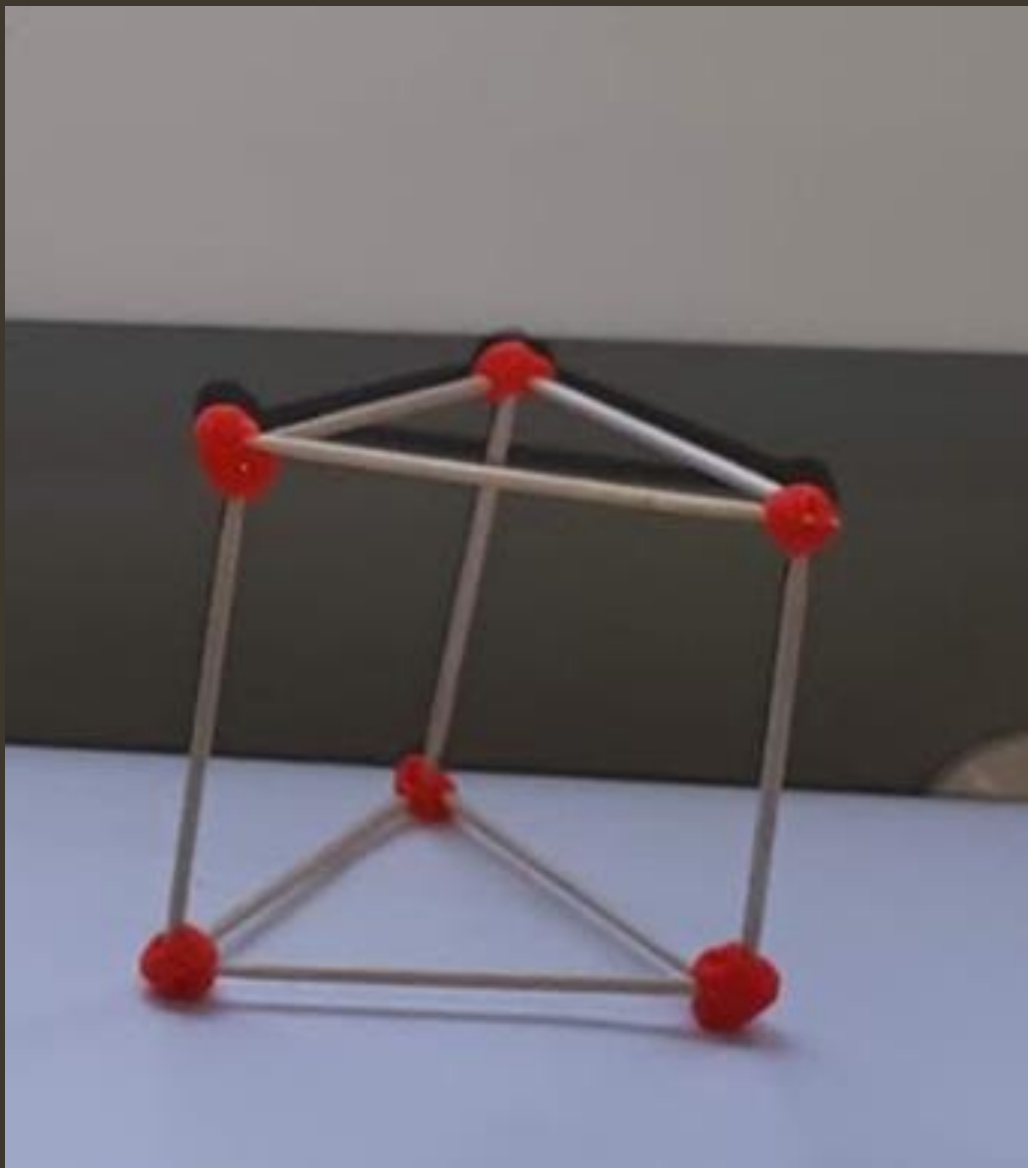
II

PARALLELEPIPEDO

ha 8 vertici e

12 spigoli





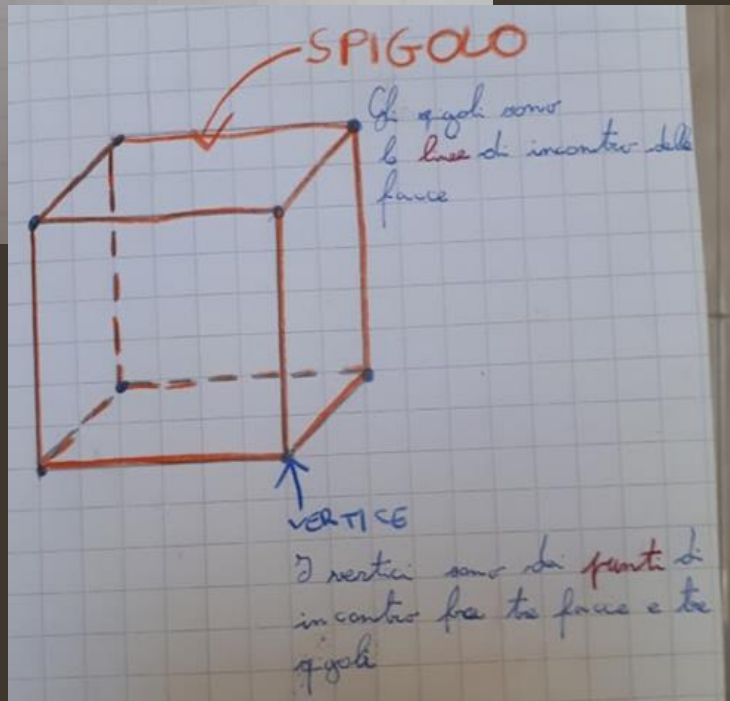
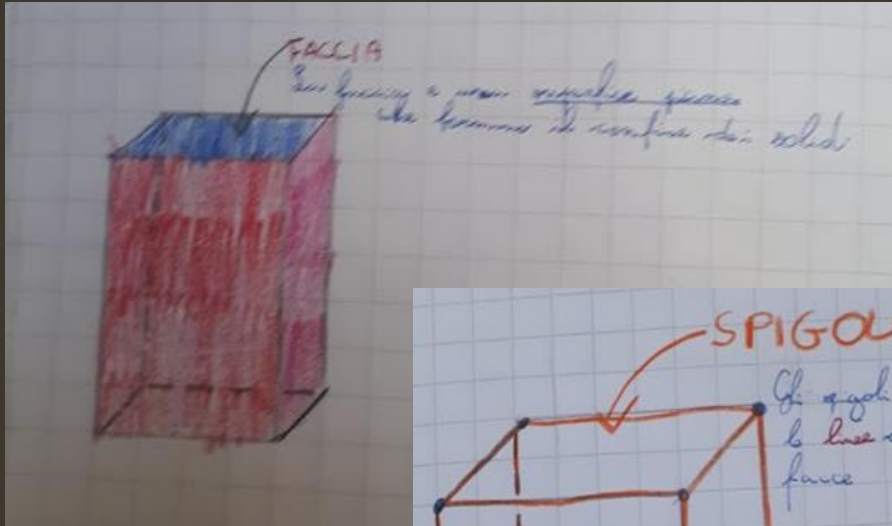
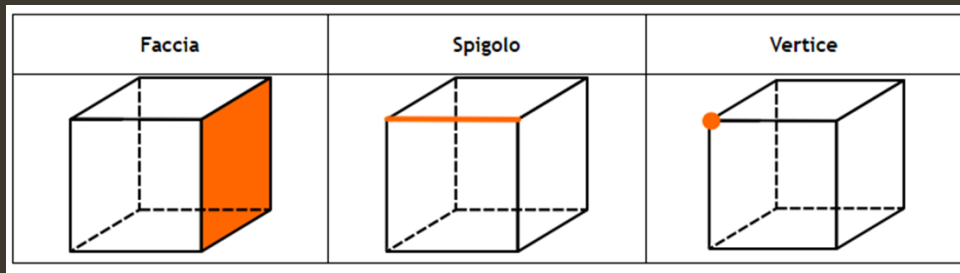
II

PRISMA a base
triangolare

ha 6 vertici e

9 spigoli

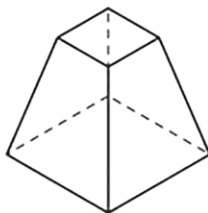
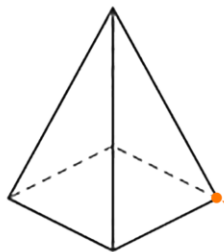




I solidi geometrici

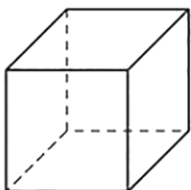
- Evidenzia e collega con una freccia almeno un vertice, uno spigolo ed una faccia di ogni poliedro.

Colora come indicato



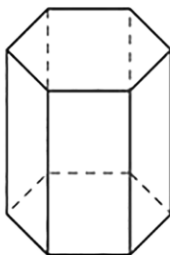
VERTICE

Rosso



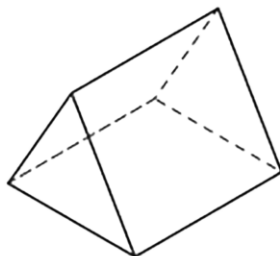
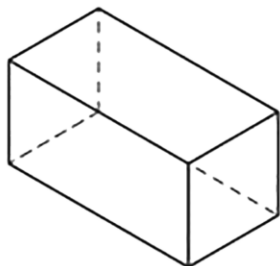
SPIGOLO

Verde



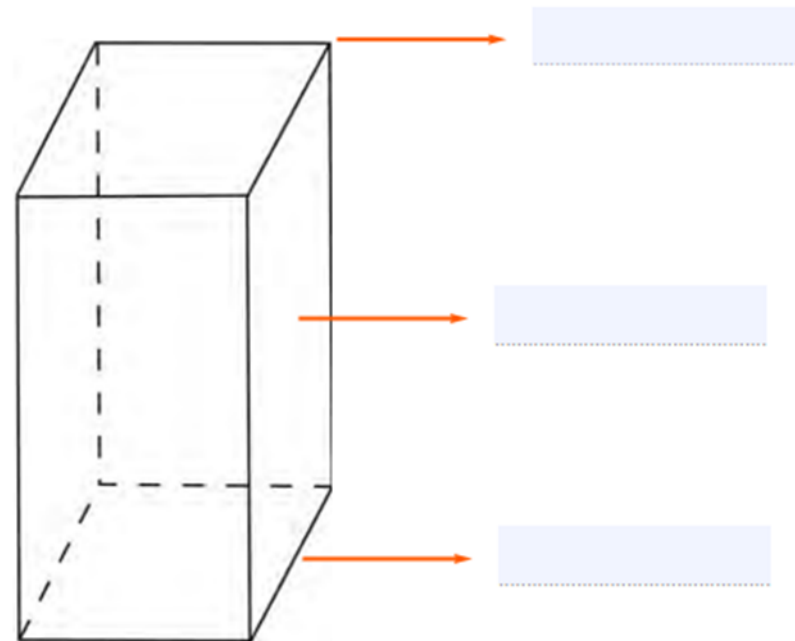
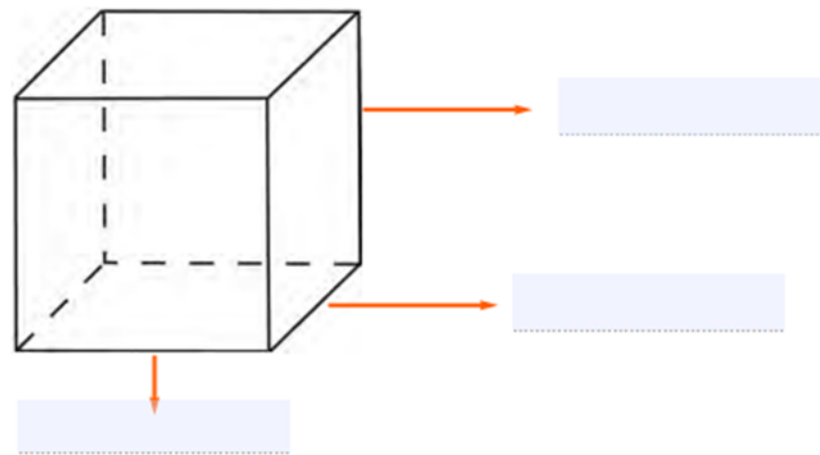
FACCIA

Giallo



LE CARATTERISTICHE DEI SOLIDI

- Completa sistemando le paroline al posto giusto: vertice, spigolo, larghezza, faccia, lunghezza, altezza.



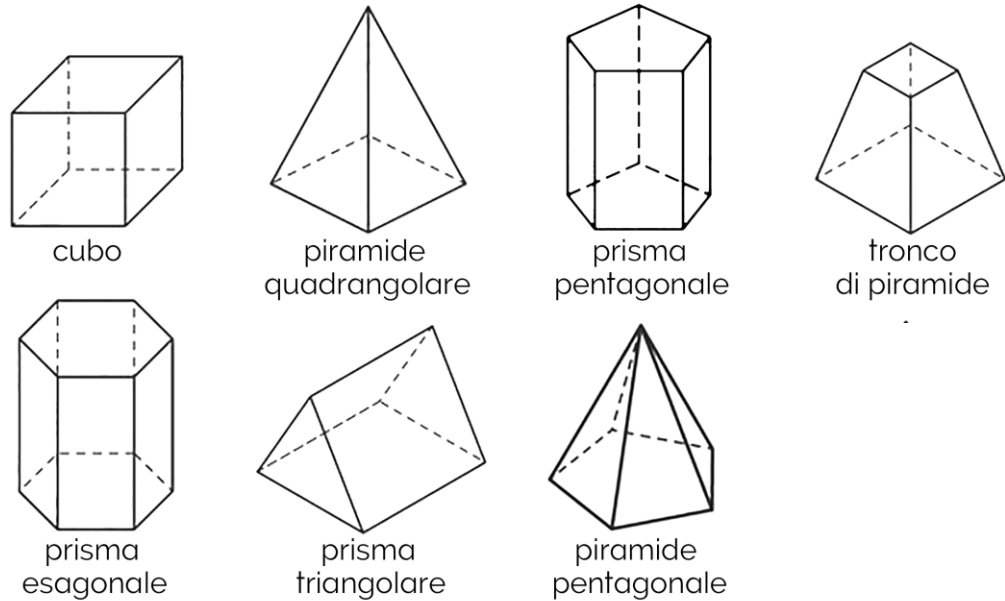
Completare la tabella osservando forme - SOL

SOLIDO	NR VERTICI	NR SPIGOLI	NR FACCE
CUBO	8 VERTICI	12 SPIGOLI	6 FACCE
PARALLELEPIPEDO	8 VERTICI	12 SPIGOLI	6 FACCE
PIRAMIDE (QUADRANGOLA)	5 VERTICI	8 SPIGOLI	5 FACCE



I solidi geometrici

• Osserva le figure e completa la tabella.

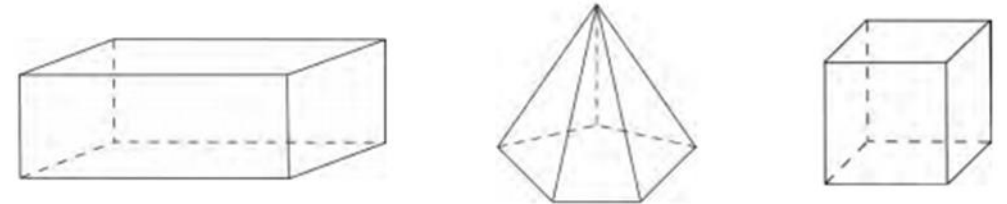


Poliedro	N. spigoli	N. vertici	N. facce
cubo			
piramide quadrangolare			
prisma pentagonale			
tronco di piramide			
prisma esagonale			
prisma triangolare			
piramide pentagonale			

LE CARATTERISTICHE DEI SOLIDI

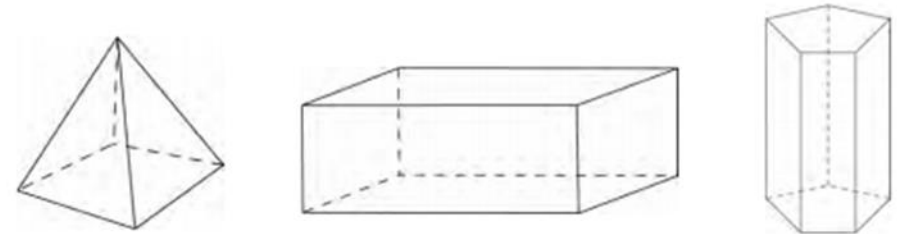
• Metti una X al posto giusto.

1) Quale tra queste figure solide ha 6 facce?



solo il cubo tutt'e tre solo il parallelepipedo

2) Quale tra queste figure solide ha 5 vertici?



la piramide il parallelepipedo il prisma

3) Quale tra queste figure solide ha 12 spigoli?



il cubo il cilindro il prisma

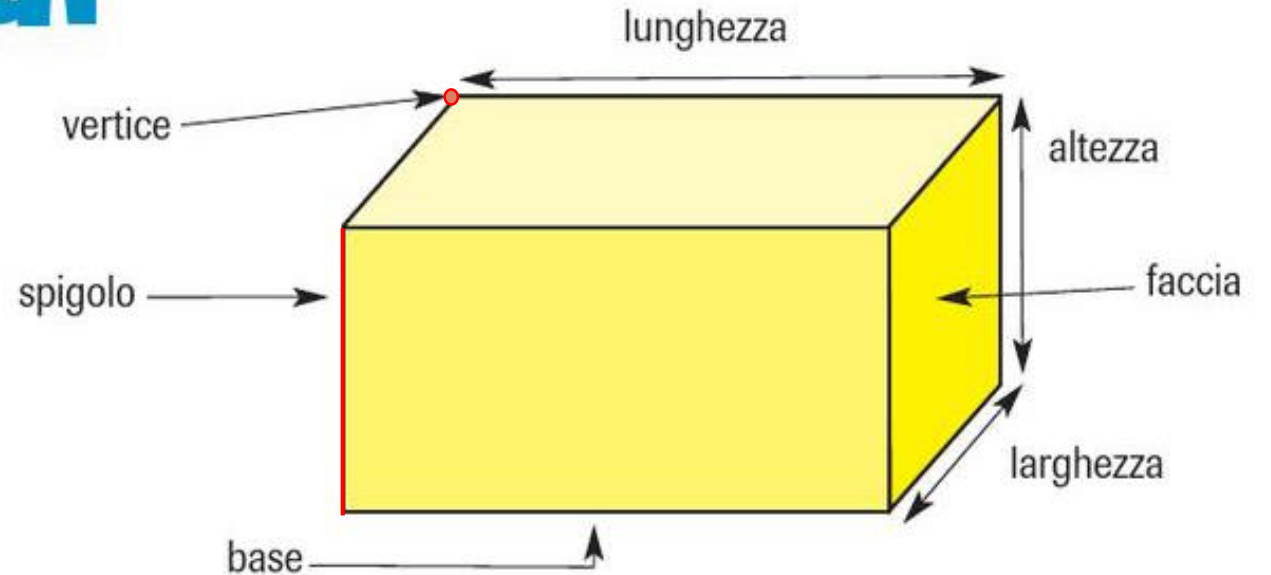
CONCLUSIONI

I solidi

I solidi sono forme geometriche a tre dimensioni: **lunghezza**, **larghezza** (o profondità), **altezza**.

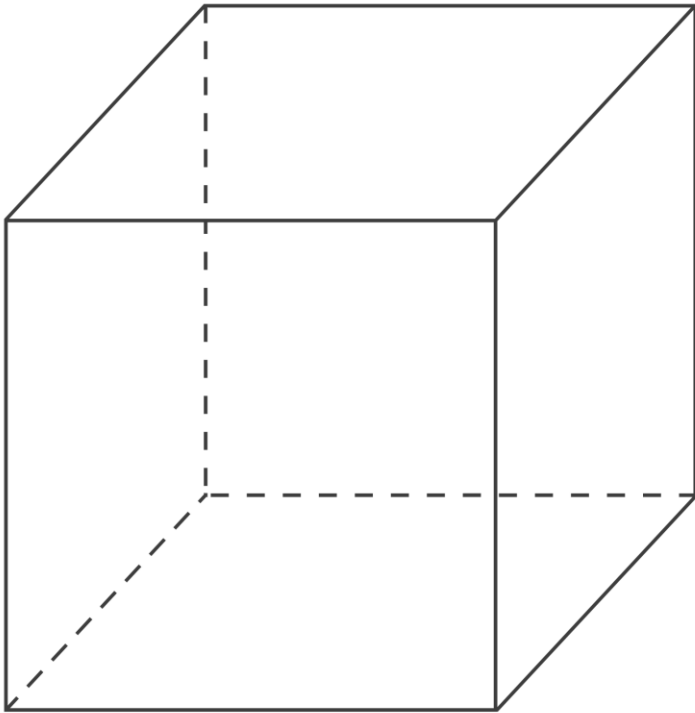
Gli elementi che costituiscono un solido sono le **facce**, gli **spigoli**, i **vertici**.

La faccia sulla quale il solido si appoggia è detta **base**.



Osservando le facce, i solidi vengono classificati in **poliedri** e **non poliedri**: le facce dei poliedri sono poligoni. I poliedri, a loro volta, si suddividono in prismi e piramidi.

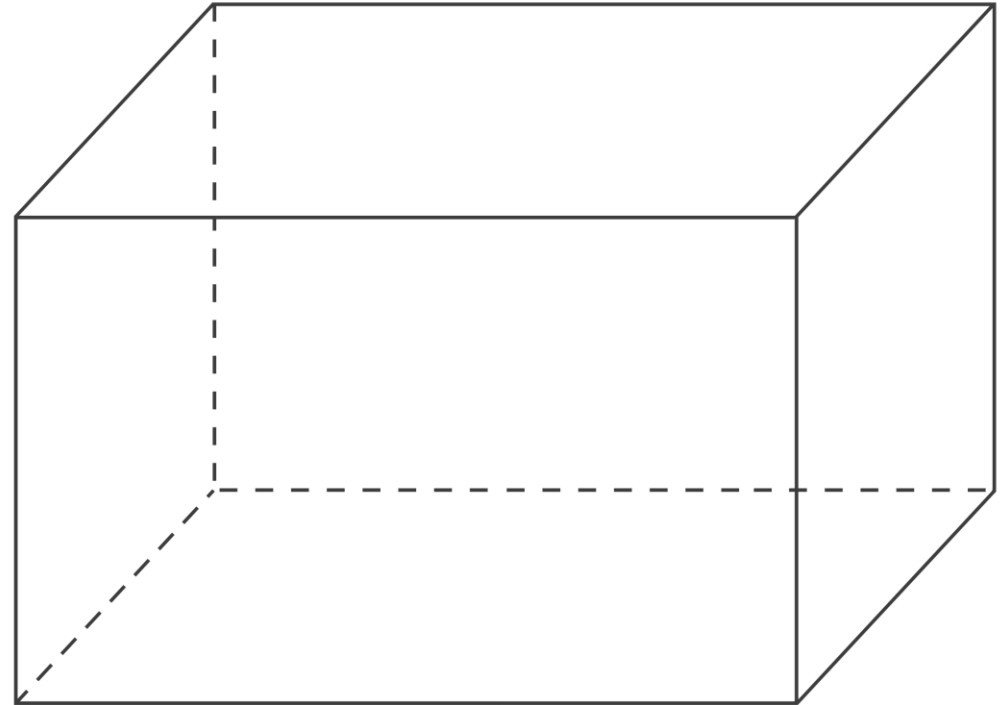
CUBO



Il cubo ha:

- 6 facce uguali e quadrate;
- 12 spigoli e 8 vertici;

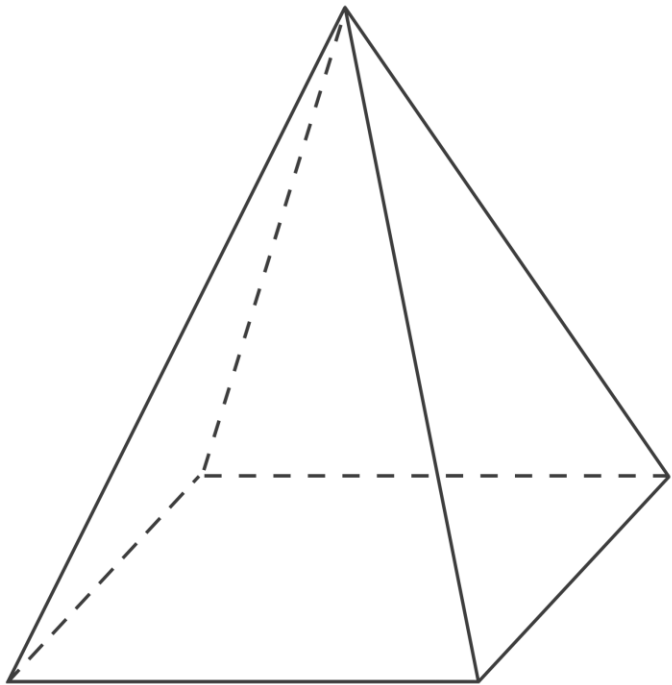
PARALLELEPIPEDO RETTANGOLO



Il parallelepipedo rettangolo ha:

- 6 facce rettangolari
- 12 spigoli e 8 vertici;

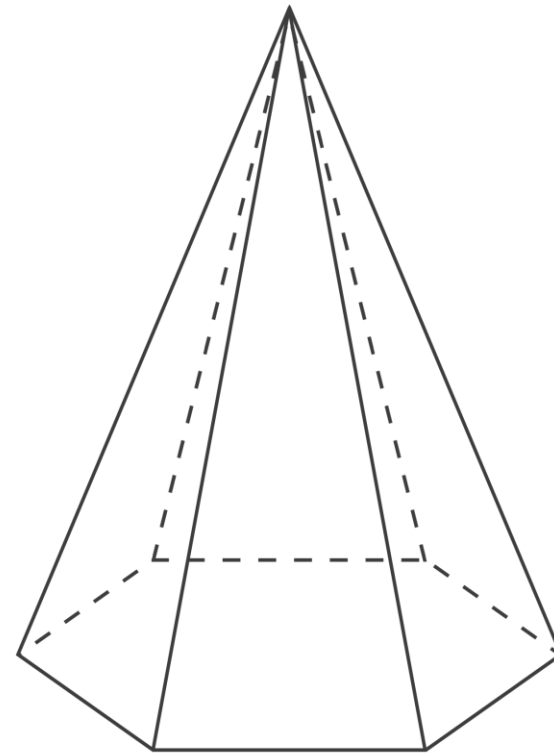
PIRAMIDE



La piramide ha:

- 1 poligono per base ;
- 3 o più facce triangolari;
- il suo nome dipende dalla forma della sua base.

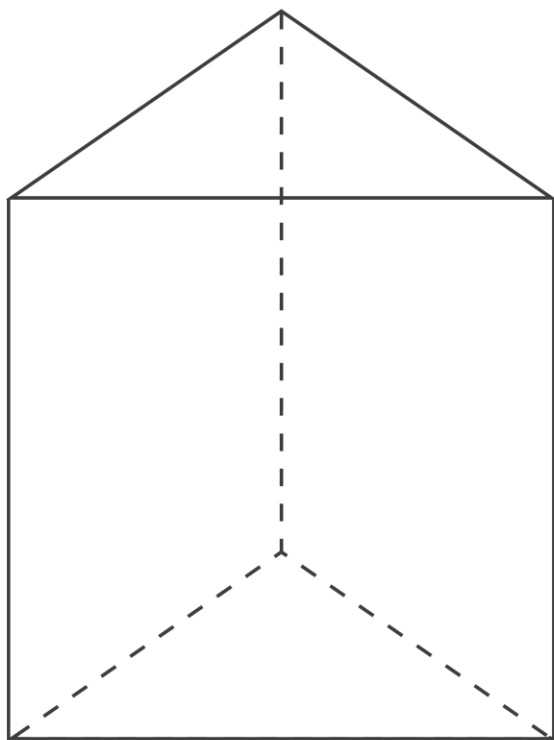
PIRAMIDE ESAGONALE



La piramide esagonale ha:

- 7 facce;
- 12 spigoli e 7 vertici.

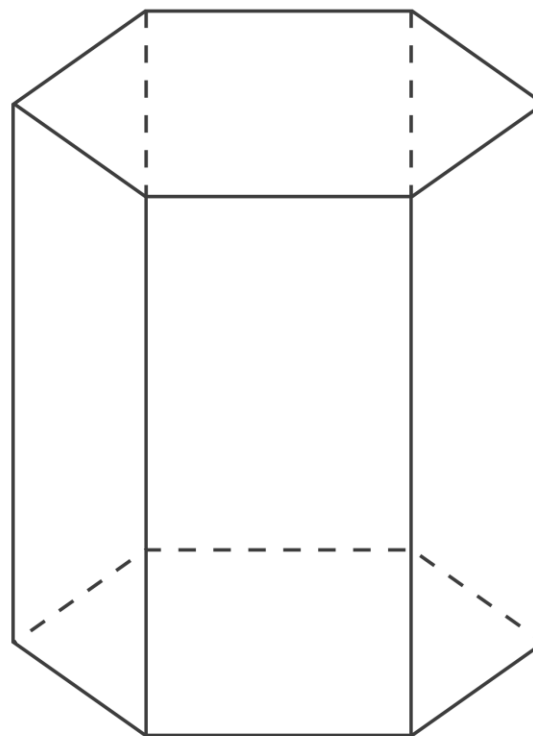
PRISMA TRIANGOLARE



Il prisma triangolare ha:

- 5 facce;
- 9 spigoli e 6 vertici.

PRISMA ESAGONALE



Il prisma esagonale ha:

- 8 facce;
- 18 spigoli e 12 vertici.

DALLO SPAZIO AL PIANO

Verifichiamo l'impronta che viene lasciata dai solidi sul piano.







Le facce dei solidi sono figure piane

QUADRATO

RETTANGOLO

TRIANGOLO

CERCHIO

PENTAGONO

ESAGONO

DALLE FIGURE PIANE ALLE
FIGURE SOLIDE



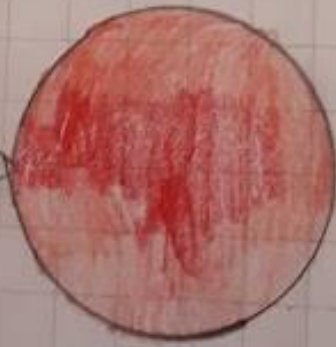
PRISMA ESAGONALE



ESAGONO



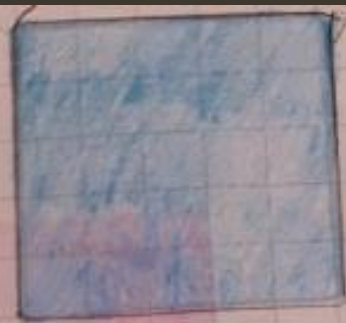
CONO



CERCHIO



CUBO



QUADRATO



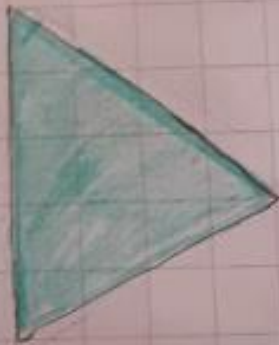
PARALLELEPIPEDO



RETTOANGOLO



PRISMA TRIANGOLARE



TRIANGOLO



PIRAMIDE



QUADRATO



CILINDRO



CERCHIO

PRISMA PENTAGONALE



PENTAGONO

Prisma a base triangolare



triangolo

Cubo



quadrato

Parallelepipedo



rettangolo

Prisma a base pentagonale



pentagono

Prisma a base esagonale



esagono

Cilindro



cerchio

Le facce dei solidi sono figure piane come:

QUADRATO

RETTANGOLO

TRIANGOLO

CERCHIO

PENTAGONO

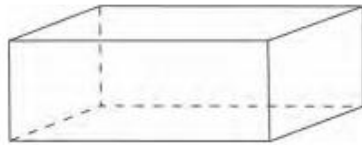
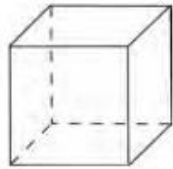
ESAGONO...

LE CARATTERISTICHE DEI SOLIDI

● Rispondi.

Quale oggetto ha lasciato questa impronta?

Collega con una freccia.



Quale oggetto ha lasciato questa impronta?

Collega con una freccia.

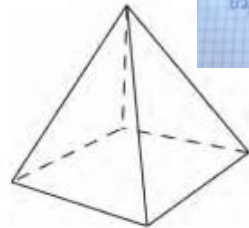
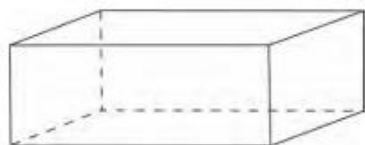
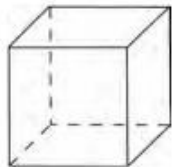
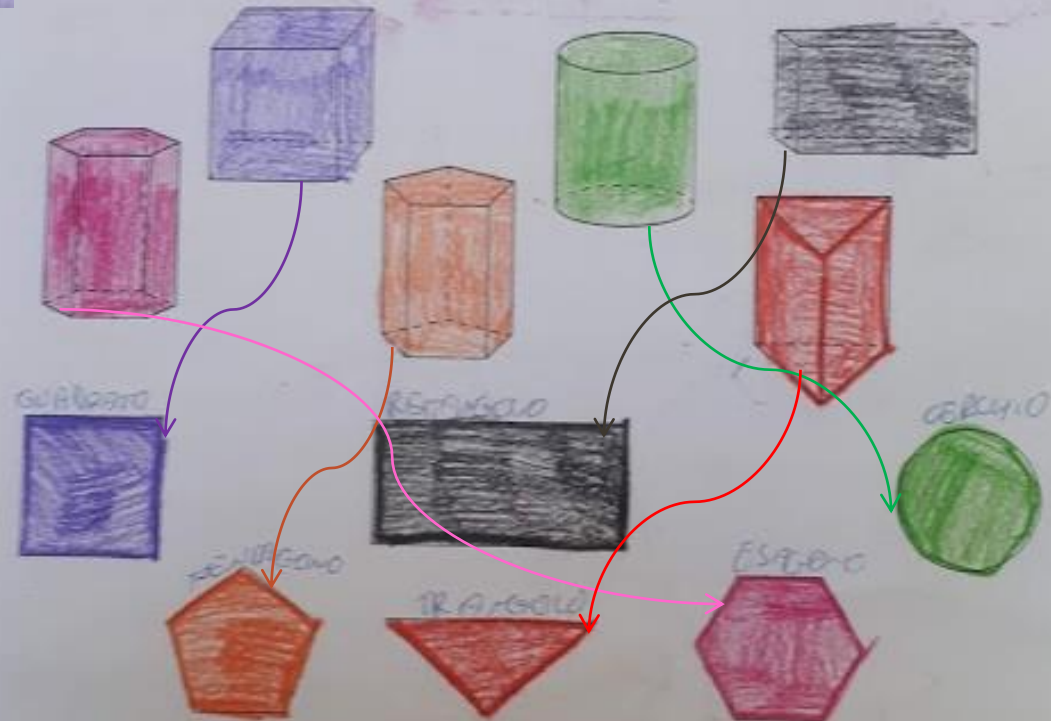
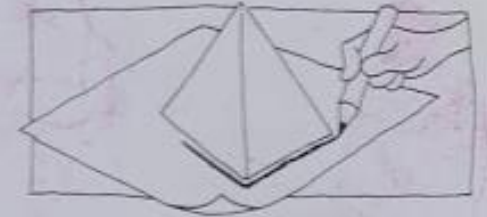
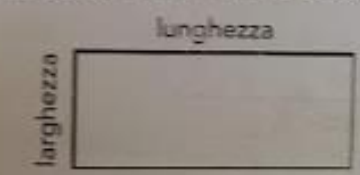


FIGURE A DUE DIMENSIONI

Immagina di seguire con la matita il contorno di una faccia di un solido a contatto con un foglio: così facendo disegni l'impronta di una faccia. Colora con lo stesso colore ogni solido e l'impronta di una sua faccia.



Le facce di un solido sono figure geometriche piane.
Le figure piane hanno solo due dimensioni: lunghezza e larghezza.



DAI SOLIDI ALLE FIGURE PIANE

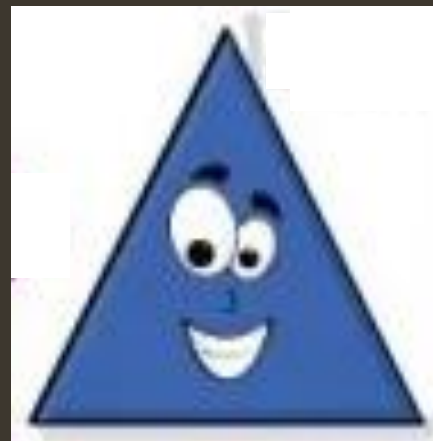


Figure geometriche

Son quadrato e son perfetto,
assomiglio a un fazzoletto,
se mi allungo un pochettino
faccio un bel rettangolino.



Triangolo mi han chiamato,
da tre punte son formato,
sono un poco spigoloso,
ma non son pericoloso.



Sono un cerchio e son rotondo,
giro spesso nel bel mondo,
giro in tondo in bicicletta
con l'auto o la motocicletta.



