

PIEGHE

FORME

COLORI



ORIGAMI

franco pavarin

www.aereiemaschereorigami.altervista.org

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PIEGHE
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Scatole origami e contenitori con origami modulati

PREFAZIONE

Quando ho cominciato a interessarmi di Origami, oltre 20 anni fa, una delle difficoltà maggiori era il procurarsi dei buoni libri sull'argomento. IL CASTELLO è stata una delle prime case editrici a inserire in catalogo questo genere di pubblicazioni ed è certamente, in Italia, quella che vanta la più vasta bibliografia sull'origami. Con circa trenta titoli ha contribuito non poco alla diffusione di quest'arte.

Bisogna anche riconoscere che tutto ciò è stato possibile grazie alla schiera di ottimi autori italiani che, con la loro creatività, hanno permesso di giungere a un tale risultato. Tra questi Franco Pavarin merita un posto di spicco, avendo, con questo libro, raggiunto quota sette.

In questa sua ultima fatica, Franco ci ripropone un tema da lui già trattato: le scatole. A questo punto si potrebbe obiettare che una scatola è sempre una scatola: un fondo, un coperchio e il gioco è fatto! Dal punto di vista "origamistico", tuttavia, si va oltre la visione superficiale del modello finito: dalle due dimensioni del foglio di partenza, infatti, attraverso procedimenti di piegatura più o meno semplici, si deve arrivare alle tre dimensioni dell'oggetto finito. Si devono superare problemi di incastri e bloccaggi dei vari moduli senza, però, perdere di vista la semplicità di esecuzione, fattore quest'ultimo che rende "popolare" il modello. Aggiungendo a tutto ciò il problema di rappresentare graficamente i passaggi che permettono di realizzare i vari soggetti, si può avere un'idea delle difficoltà che Franco ha dovuto e saputo superare per offrirci questa nuova serie di scatole evitando di proporci qualcosa di già visto, cosa non facile data la vasta bibliografia esistente su questo classico tema dell'origami.

Mentre scrivo queste righe, sto sfogliando le bozze originali di Franco, piego qualche scatola e mi soffermo su qualche passaggio interessante, rendendomi ancor più conto di avere tra le mani un libro adatto sia all'esperto, che saprà apprezzare gli accorgimenti tecnici, sia al principiante che troverà, nella chiarezza delle istruzioni, un valido aiuto per addentrarsi nel nostro mondo di carta.

Raffaele Leonardi
(Presidente del Centro Diffusione Origami)

INTRODUZIONE

Fu nel maggio dell'87, a Padova, dove si svolse il convegno del C.D.O., che scoprii l'origami modulare.

Infatti agli incontri era presente Tomoko Fuse, bravissima origamista giapponese, famosa per i numerosi testi pubblicati sull'origami modulare, alcuni dei quali tradotti in italiano dal Castello. L'esperienza fu per me entusiasmante. Quello che credevo essere solo un mondo di volumi, era diventato anche un mondo di colori. Dalla scultura si poteva spaziare fino al disegno industriale. L'origamista poteva essere non solo un creatore di forme ma anche un colorista. Mi resi conto così che l'ultima mia convinzione, cioè che fosse poco ortodosso l'uso di più fogli per la costruzione di un modello, era sbagliata ed estremamente limitativa perché con un solo foglio bicolore il modello può risultare al massimo di 2 colori. Invece, una scatola, ad esempio, realizzata con 4 fogli bicolori diversi risulterà una meravigliosa creazione ad 8 colori. La fantasia suggerisce le scelte cromatiche migliori, ma per stabilire gli accostamenti più idonei sono necessarie molte prove. Anche la scelta del tipo di carta entra in gioco ad ampliare le possibilità creative.

In questo libro presento e propongo agli origamisti più abili (ma anche i meno esperti possono dimenticarsi dato che le difficoltà non sono superabili!) modelli di scatole quadrate create da me aventi le stesse proporzioni di quelle di Tomoko Fuse, ma con sistemi costruttivi e bloccaggi completamente differenti, che ritengo più funzionali.

Ho cercato anche di studiare le forme dei fondi in modo che fossero sempre adattabili ai coperchi. Ho sviluppato poi disegni asimmetrici sui coperchi, usando moduli uguali a 2 a 2. Inoltre mi sono proposto di realizzare scatole-moduli aggregabili sia linearmente che sul piano e spero di essere riuscito a rappresentarle nei disegni in modo sufficientemente comprensibile.

Se si desidera utilizzare una scatola come contenitore è opportuno irrigidirla inserendo nei fianchi, durante la costruzione, e prima del bloccaggio finale, 4 idonee strisciette di carta pesante sagomate ad "L".

In un secondo volume (da me già realizzato ma che l'editore pubblicherà successivamente) ho presentato modelli ancora più originali, differenti dalla tradizione giapponese per sistemi costruttivi, proporzioni e numero di fogli impiegati.

Ringrazio gli amici del C.D.O. per aver dato modo a me e a tanti appassionati di origami di conoscere e partecipare a questo entusiasmante mondo pieghe, di forme e di colori.

Franco Pavarin, Rovigo, luglio '93

TIPI DI CARTA DA USARE

La scelta del tipo di carta assume importanza primaria nella realizzazione di scatole e contenitori ottenuti con più moduli, così come è importante la scelta appropriata degli accostamenti di colore (che può essere guidata solo dal buon gusto!).

Normalmente è necessaria carta bicolore, cioè colorata o decorata su ambedue le facce, ma difficile da reperire in fogli di grandi dimensioni.

La carta bicolore per origami in commercio è normalmente quella leggera, confezionata in fogli quadrati, colorata su un lato e bianca sull'altro. Anche la carta per pacchi regalo, disponibile in fogli o in rullo, è leggera e colorata solo su un lato. Se non si dispone di carta bicolore, è possibile realizzarla incollando tra loro ai bordi (con colla bianca tipo coccoina) le facciate bianche di due fogli di tinte differenti. A colla essiccata bisognerà rifilare con un taglierino i fogli ottenuti, per riavere il quadrato esatto non potendosi ottenere nell'incollaggio una sovrapposizione perfetta.

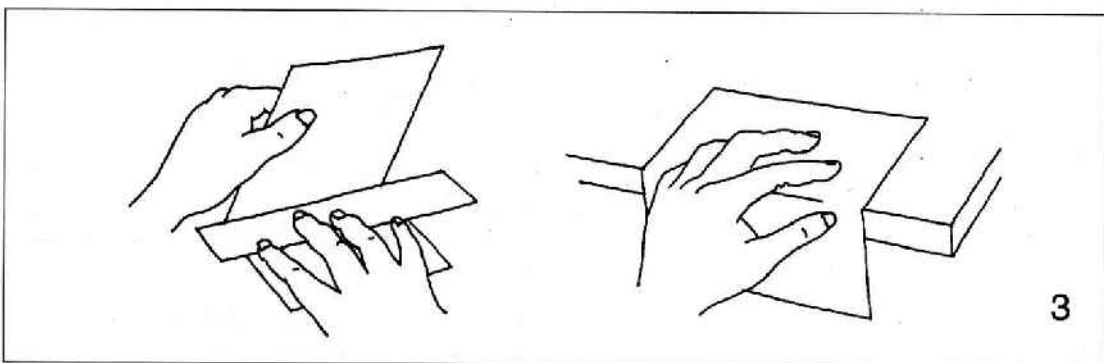
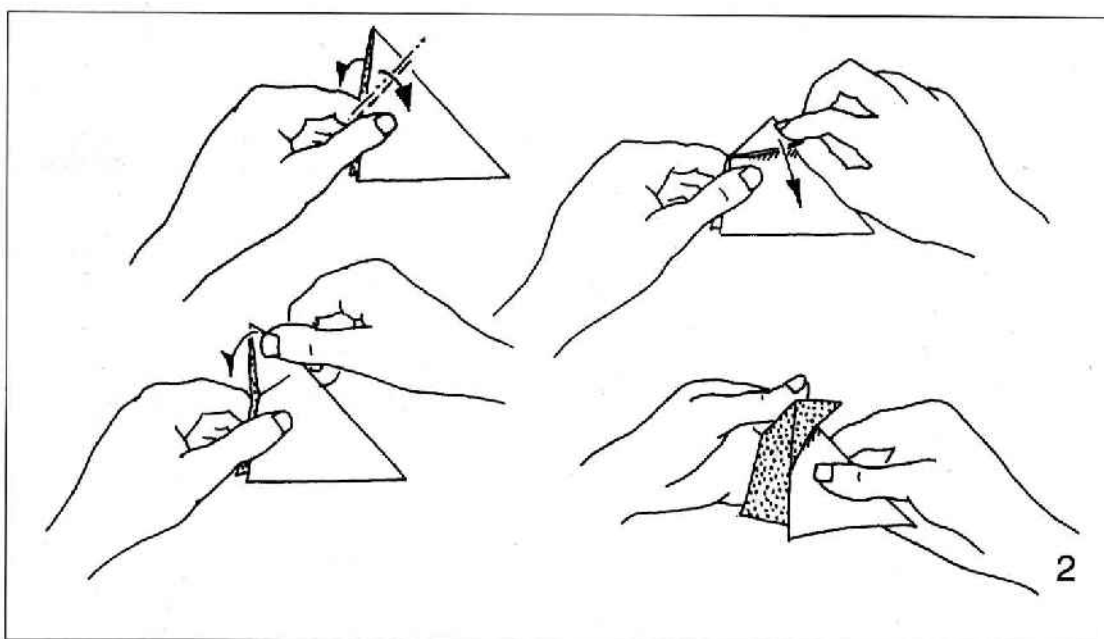
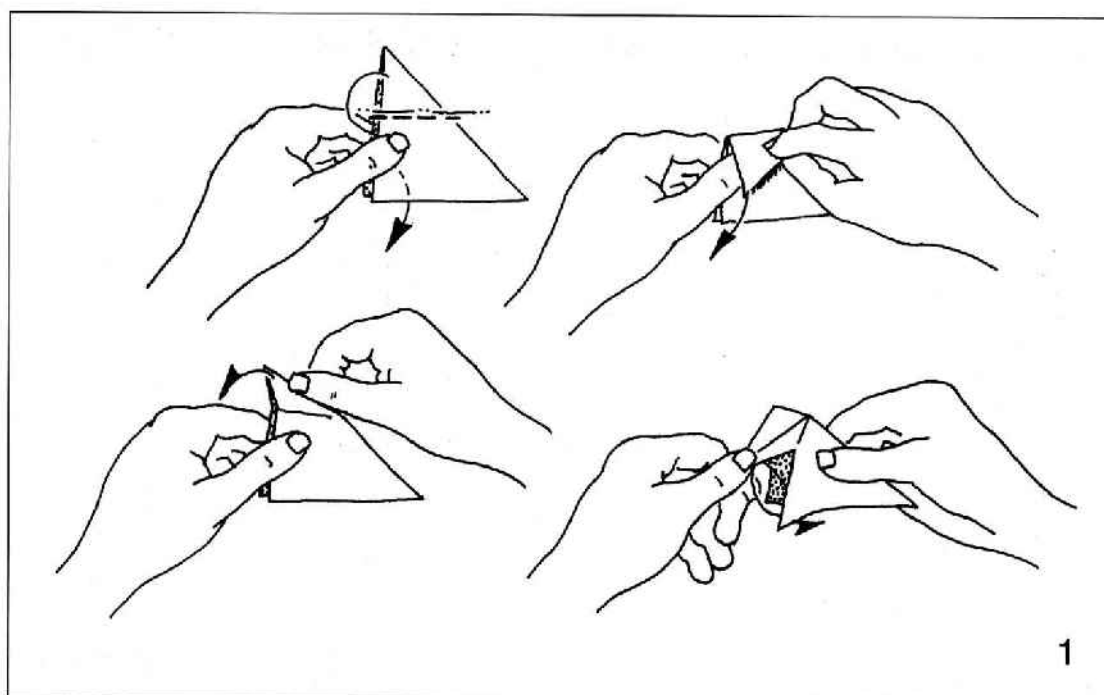
Molto bella e resistente anche se costosa, è la carta metallizzata su una faccia e colorata sull'altra, in vendita nei negozi specializzati nei formati 15x15 e 24x24 cm.

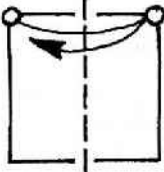
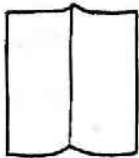
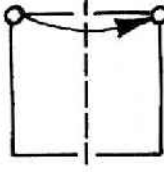
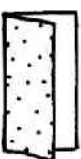
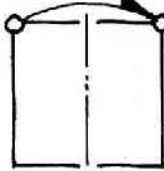
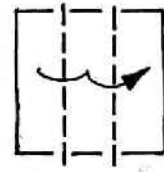
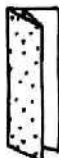
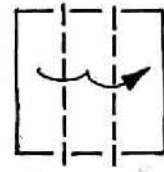
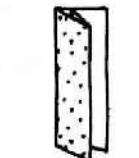
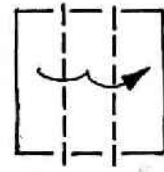
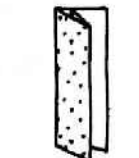
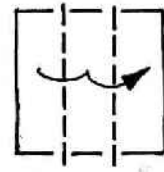
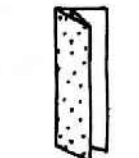
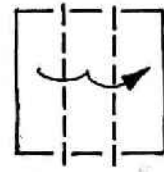
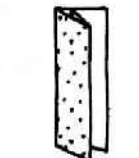
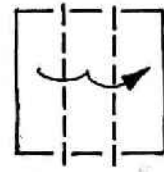
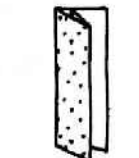
È possibile infine colorare il lato bianco, o entrambi se il foglio è tutto bianco, con colori acquarello o acrilici, (ad impasto piuttosto liquido) e anche con ecoline; così si ottengono le tinte e gli accoppiamenti desiderati. A colori asciutti bisogna spianare bene il foglio mettendolo tra due libri pesanti e/o passandolo con un ferro da stiro tiepido.

Le misure del foglio date, sono indicative. Usando fogli notevolmente più grandi, la carta deve avere un peso proporzionalmente maggiore. Se necessario, è possibile irrigidire le scatole inserendo all'interno, tra le pieghe dei bordi, striscioline di cartoncino leggero (dipende dalle dimensioni del modello).

CONSIGLI PER LA REALIZZAZIONE

- Per eseguire una *piega rovesciata interna*, piegate nei due sensi (sia a monte che a valle) e poi rovesciate all'interno della stessa; il dorso della parte ribaltata, inizialmente piegato a monte, risulterà piegato a valle (pag. 6 fig. 1).
- Per eseguire una *piega rovesciata esterna*, piegate nei due sensi e poi aprite e nel contempo rovesciate all'esterno; a piega richiusa, il dorso della parte ribaltata, inizialmente piegato a monte, risulterà piegato a valle (fig. 2).
- Per realizzare pieghe particolarmente difficili, aiutatevi con un righello. In mancanza, ci si può accontentare dello spigolo di un tavolo (fig. 3).
- Le pieghe devono essere schiacciate con il dorso delle unghie e devono risultare sempre perfettamente rettilinee. È indispensabile la più assoluta precisione.
- Nel corso della realizzazione disponete sempre il modello nella stessa posizione dello schema d'istruzione. Non fate pieghe inutili e non sciupate il foglio.
- Prima di eseguire le pieghe indicate nelle istruzioni, ad ogni passaggio analizzate con attenzione il disegno successivo che rappresenta il risultato da ottenersi.

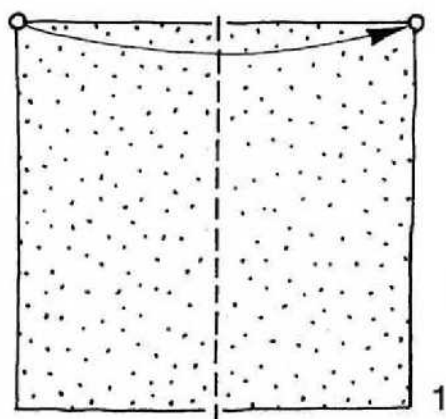


SIGNIFICATO DEL SIMBOLO	ISTRUZIONE	RISULTATO
 = bordi e spigoli		
 = pieghe eseguite in precedenza		
 = pieghe a valle		
 = pieghe a monte		
 = piegare verso di sé		
 = completare una serie di pieghe verso di sé partendo dal bordo del foglio		
 = piegare allontanando da sé		
 = ribaltare il modello		
 = estrarre		
 = piegare creando 2 angoli uguali (bisettrice)		
 = ruotare in modo da far assumere al modello consistenza tridimensionale		

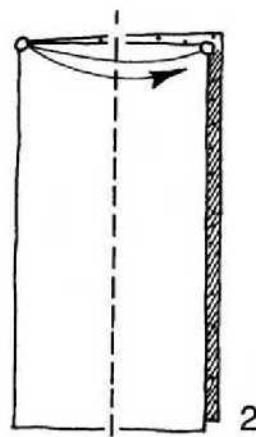
PORTAOGGETTI COMPONIBILE

È realizzabile con moduli di facile costruzione e semplice aggregazione. Sono necessari 12 moduli: 8 tipo "1", 2 tipo "1 modificato", 2 tipo "2", usare fogli quadrati bicolore.

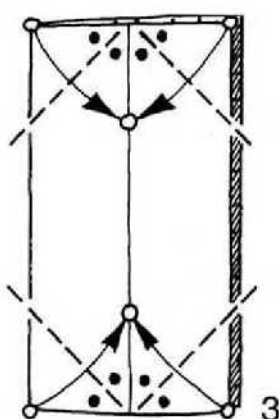
Costruzione del modulo "1"



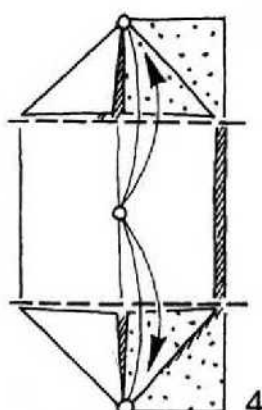
1 piega a valle e ruotate



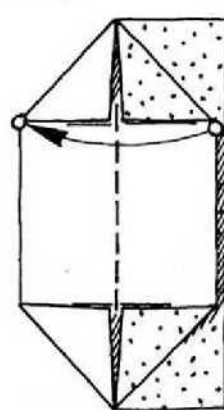
1 piega a valle solo sulla superficie in vista



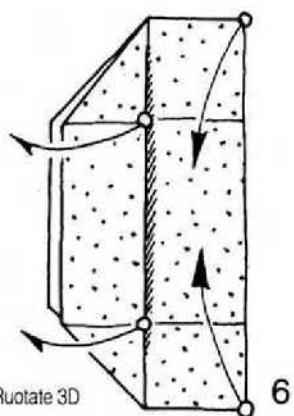
4 pieghe bisettrici a valle e ruotate



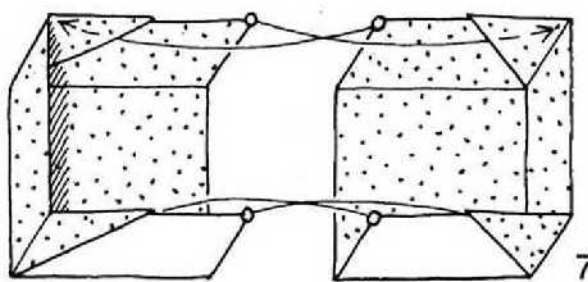
2 pieghe a valle



Utilizzando una piega a valle preesistente, ruotate

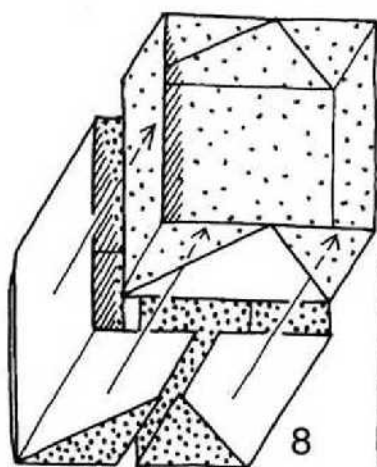


Ruotate 3D

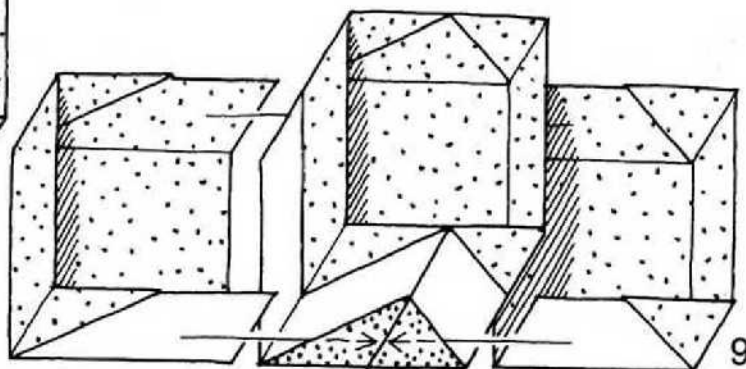


Modulo "1" ultimato

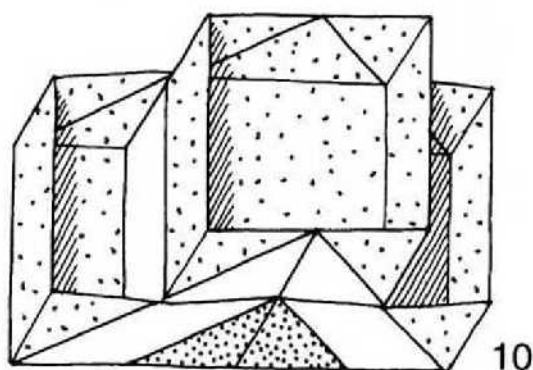
Costruite un secondo modulo "1" e inserite i vertici indicati di uno nell'altro e viceversa.



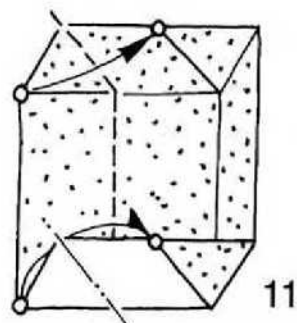
Costruite e montate in verticale
altri 2 moduli tipo "1"



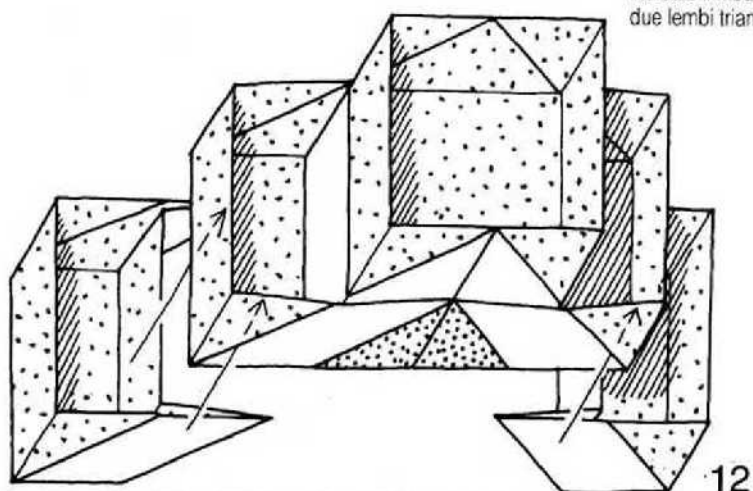
Costruite altri 2 moduli "1" e montateli ai lati



Montaggio completo di 6 moduli "1"



Modificate con le pieghe
indicate il modulo "1" creando i
due lembi triangolari d'aggancio

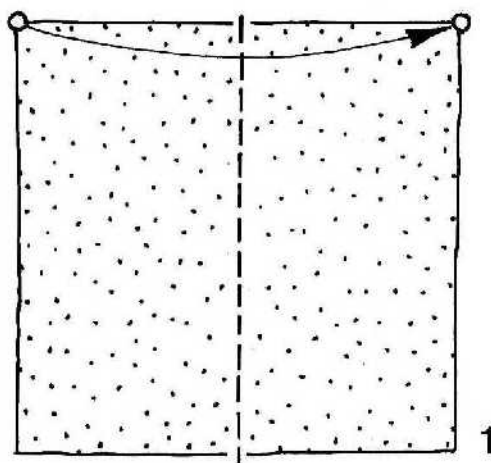


Montaggio di 2 moduli "1" modificato" ai lati della figura ottenuta in 10

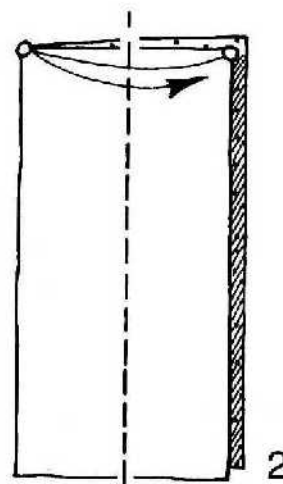
PORTAOGGETTI COMPONIBILE

È realizzabile con moduli di facile costruzione e semplice aggregazione. Sono necessari 12 moduli: 8 tipo "1", 2 tipo "1 modificato", 2 tipo "2", usare fogli quadrati bicolore.

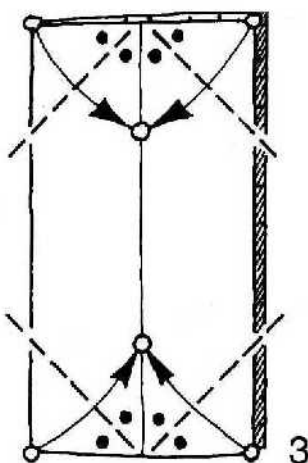
Costruzione del modulo "1"



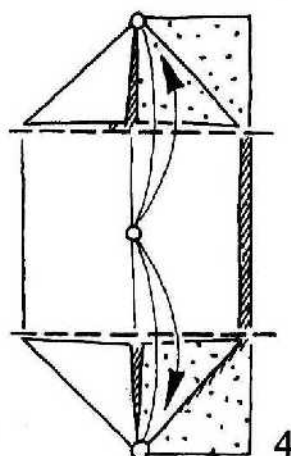
1 piega a valle e ruotate



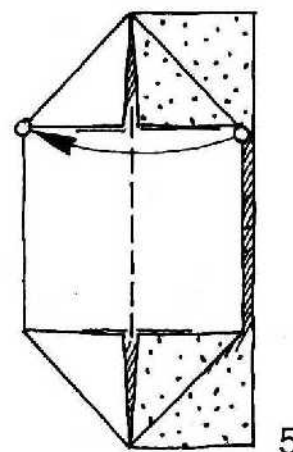
1 piega a valle solo sulla superficie in vista



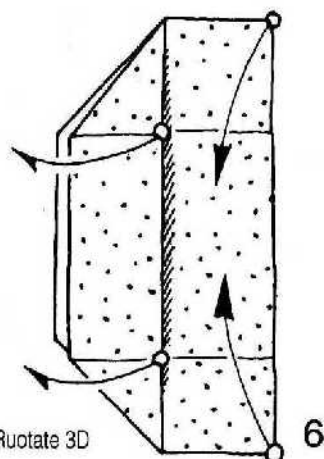
4 pieghe bisettrici a valle e ruotate



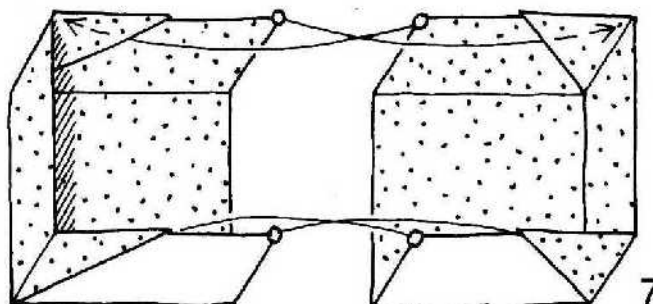
2 pieghe a valle



Utilizzando una piega a valle preesistente, ruotate

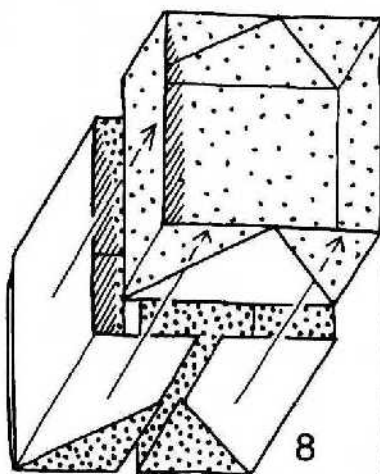


Ruotate 3D

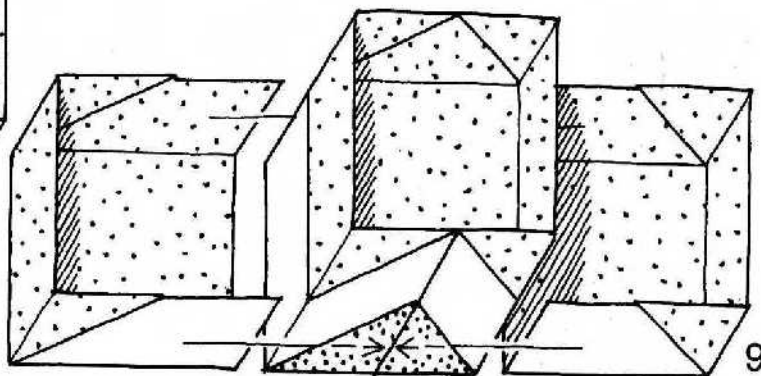


Modulo "1" ultimato

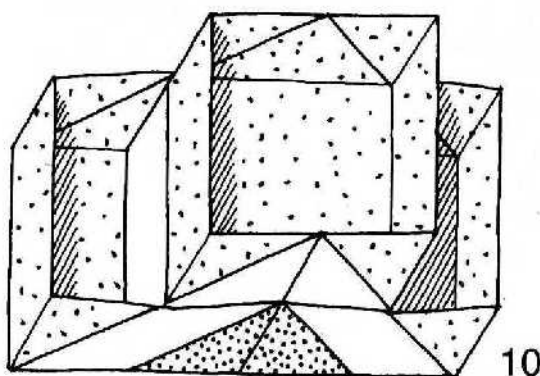
Costruite un secondo modulo "1" e inserite i vertici indicati di uno nell'altro e viceversa.



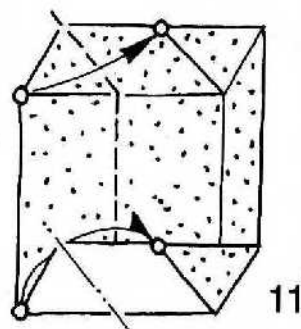
Costruite e montate in verticale
altri 2 moduli tipo "1"



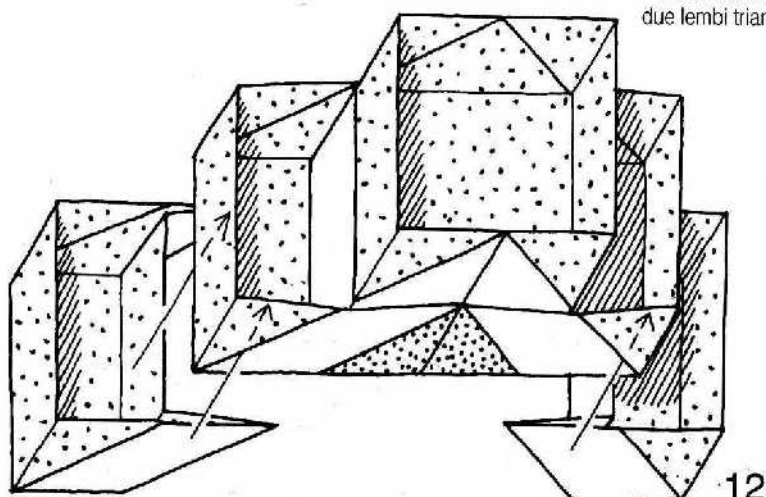
Costruite altri 2 moduli "1" e montateli ai lati



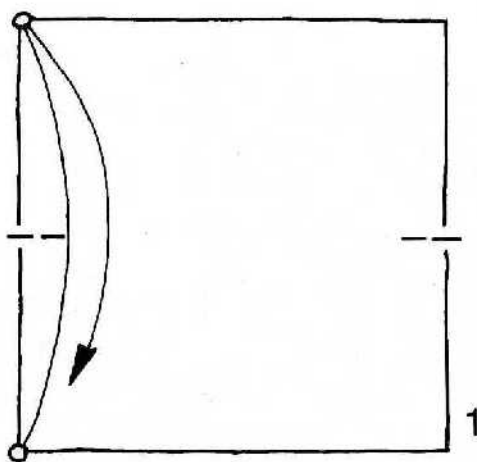
Montaggio completo di 6 moduli "1"



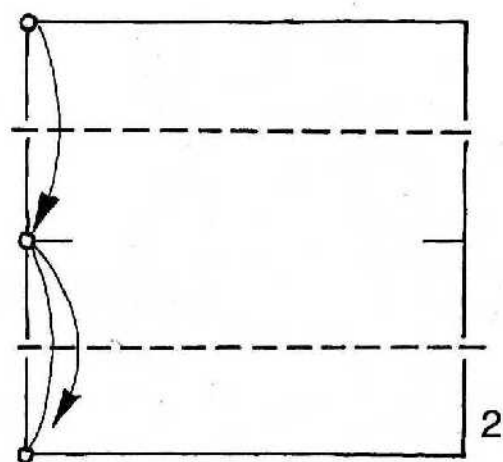
Modificate con le pieghe
indicate il modulo "1" creando i
due lembi triangolari d'aggancio



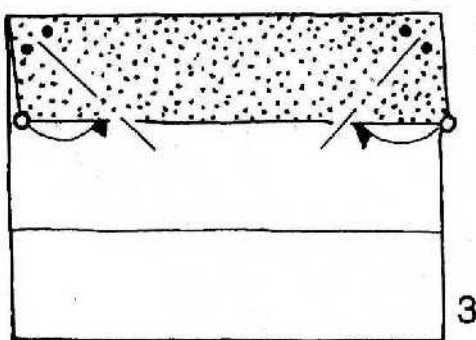
Montaggio di 2 moduli "1 modificato" ai lati della figura ottenuta in 10



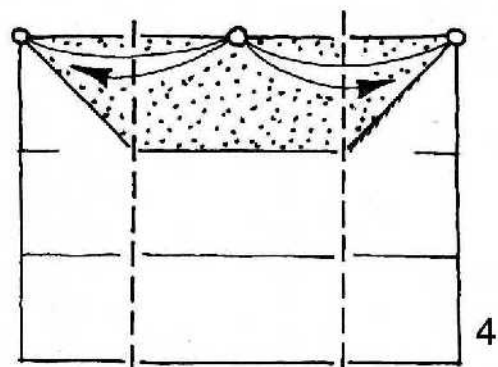
2 piccole pieghe a valle di riferimento



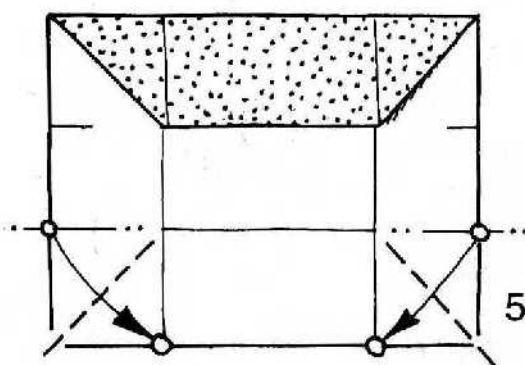
2 pieghe a valle e ruotate il bordo superiore



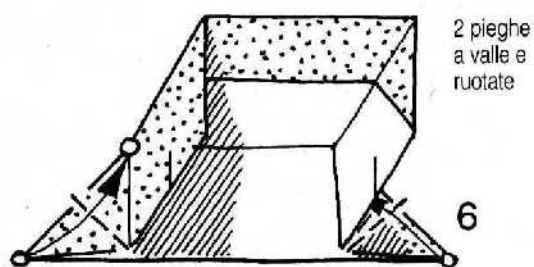
2 pieghe bisettrici a monte e ruotate



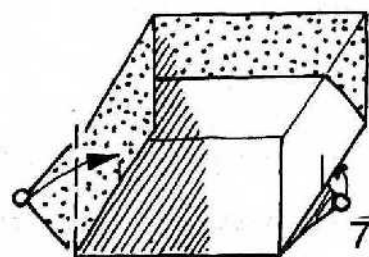
2 pieghe a valle



2 pieghe a valle, 2 pieghe a monte
e ruotate 3D mettendo il modello in verticale

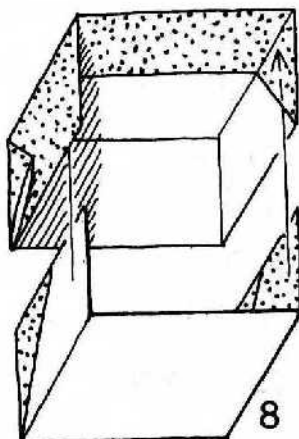


2 pieghe
a valle e
ruotate

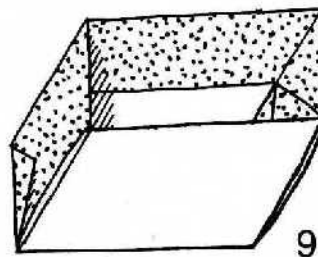


2 pieghe
a valle
e ruotate

Modulo "2" ultimato

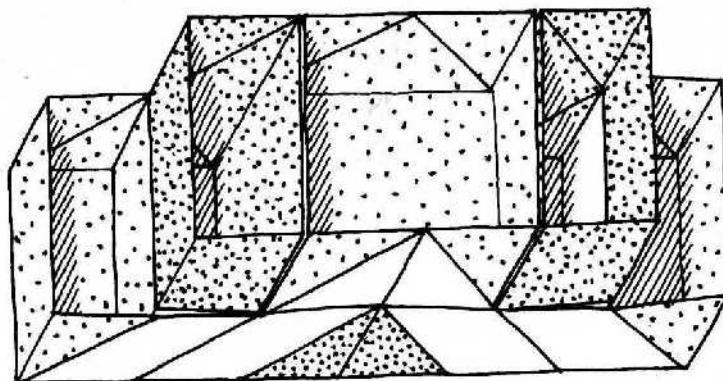
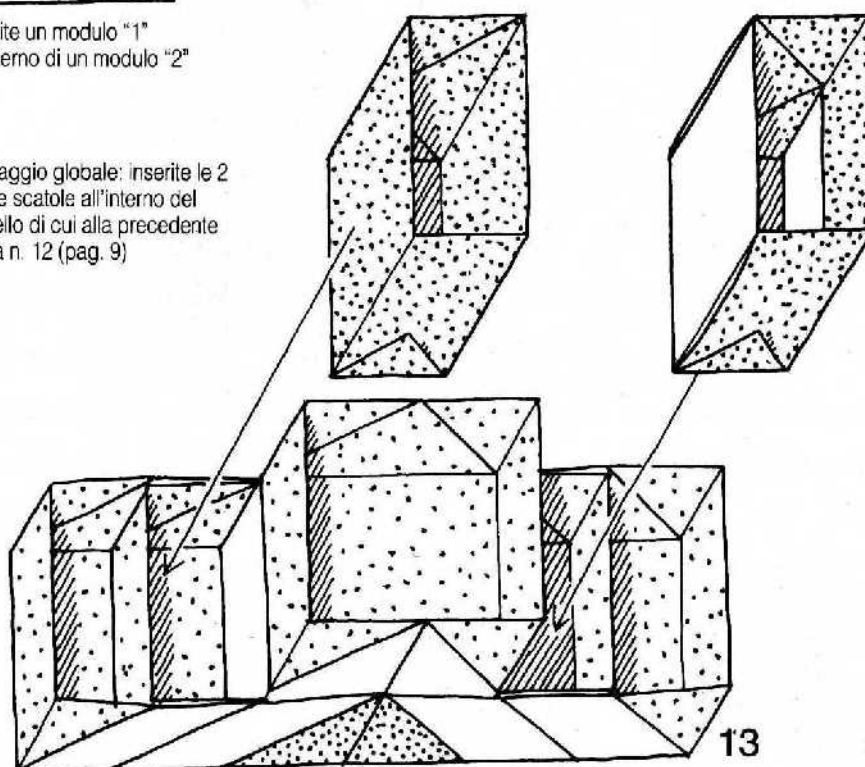


Inserite un modulo "1"
all'interno di un modulo "2"



Montaggio effettuato del
modulo "1" con il modulo "2"
Fate 2 scatole così.

Montaggio globale: inserite le 2
nuove scatole all'interno del
modello di cui alla precedente
figura n. 12 (pag. 9)

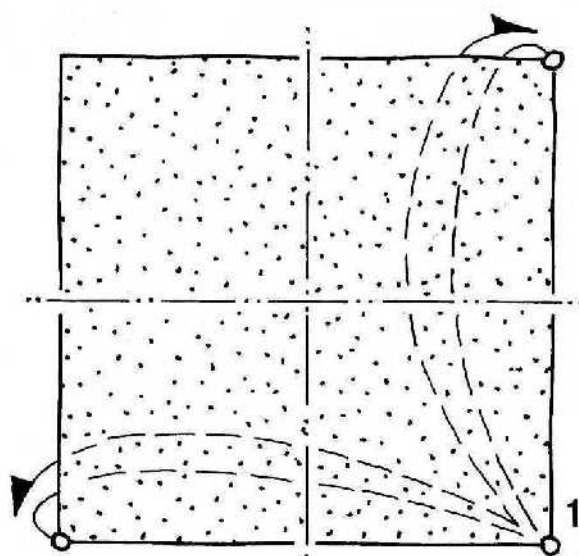


Portaoggetti da scrivania ultimato

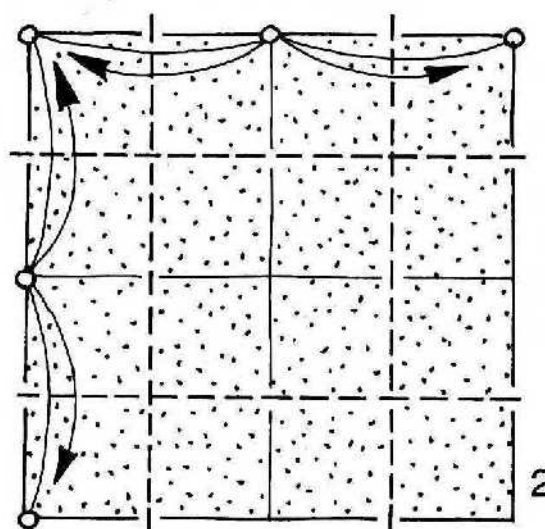
MULTISCATOLA

Trattasi di un contenitore multiplo formato da un numero indefinito di scomparti, ognuno dei quali è costituito da un modulo di "tipo 3".

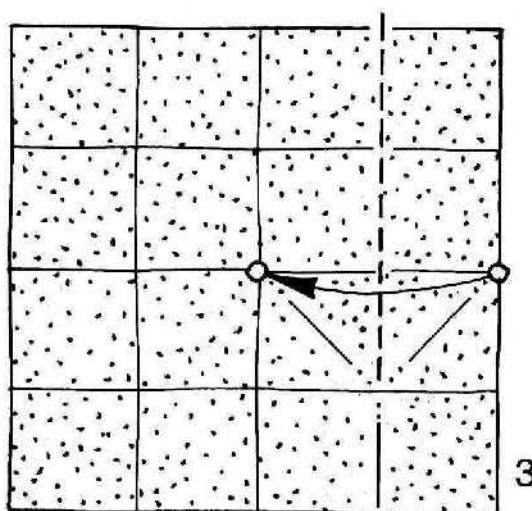
Adoperate fogli quadrati monocolori o bicolori di almeno cm 15 di lato.



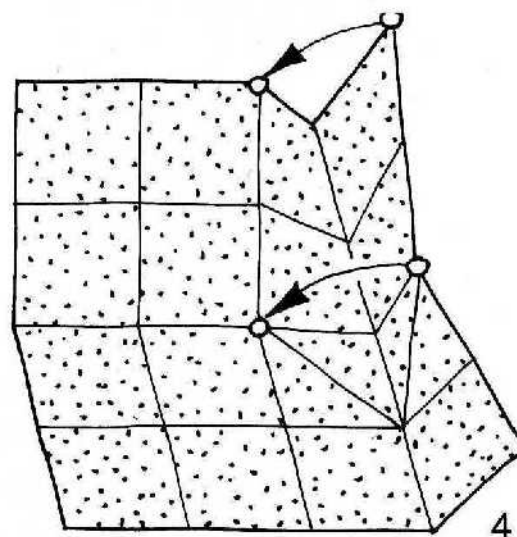
2 pieghe mediane a monte



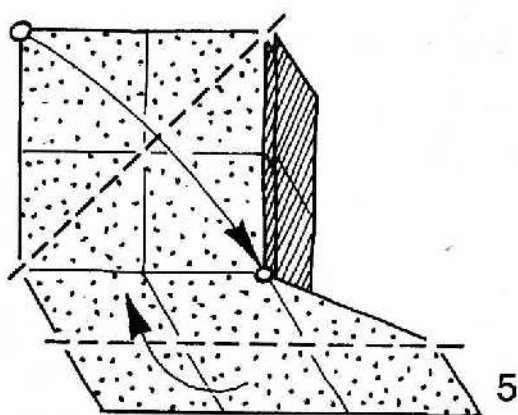
4 pieghe a valle



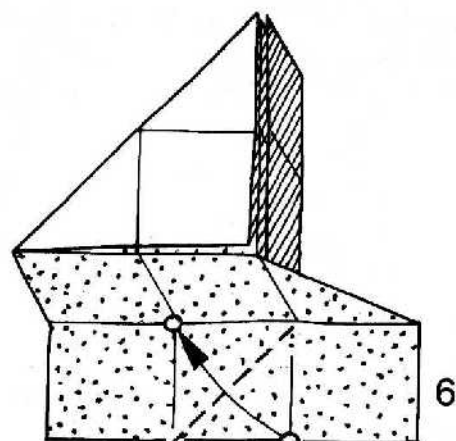
3 pieghe a monte e ruotate usufruendo di una preesistente piega a valle



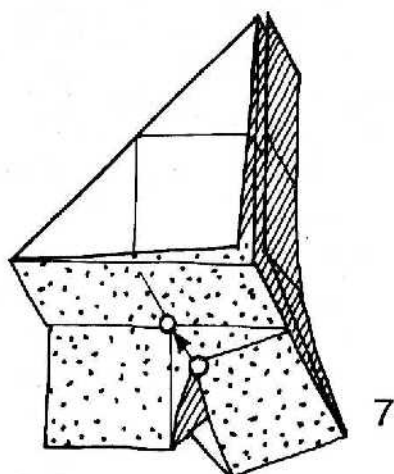
Ruotate 3D



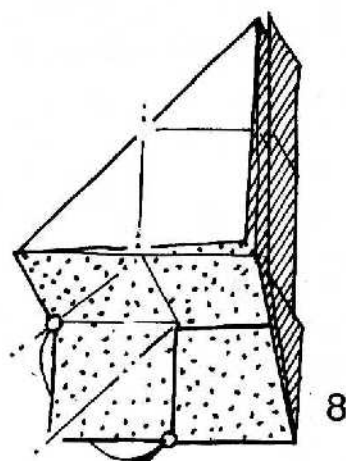
2 pieghe a valle e ruotate



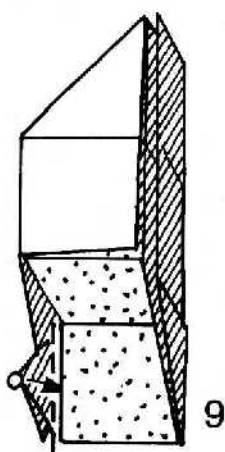
1 piega a valle e ruotate usufruendo di preesistente piega a monte



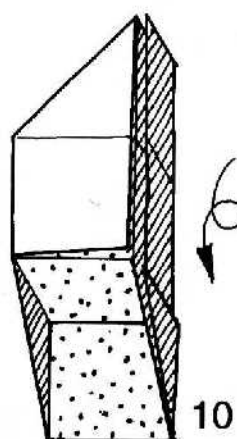
Continuate a ruotare



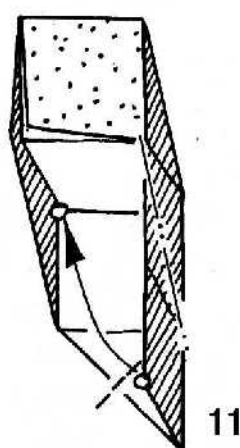
2 pieghe a valle e ruotate usufruendo di altra piega a monte preesistente



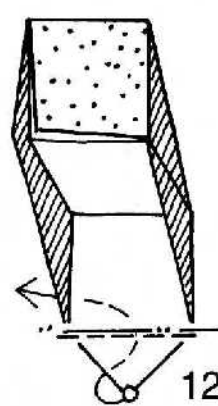
Inserite il triangolo nella tasca indicata



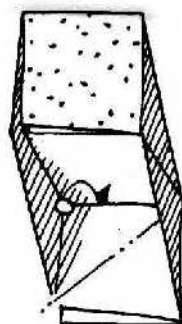
Capovolgete



1 piega a monte, 1 piega a valle e ruotate

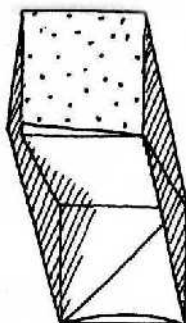


1 piega rovescia interna



13

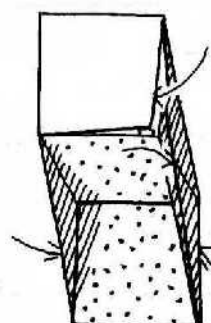
1 piega a monte e
ruotate all'interno



Capovolgete

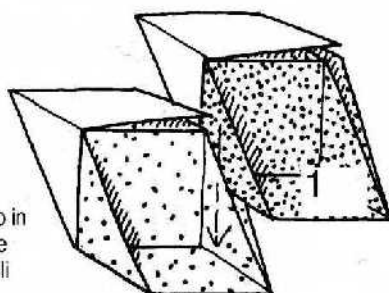


14

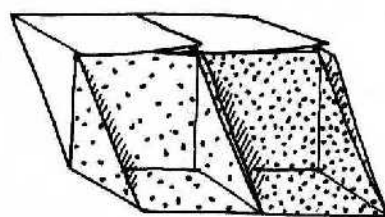


15

Modulo "3" ultimato:
notate la presenza di 2 tasche
orizzontali e di 2 verticali

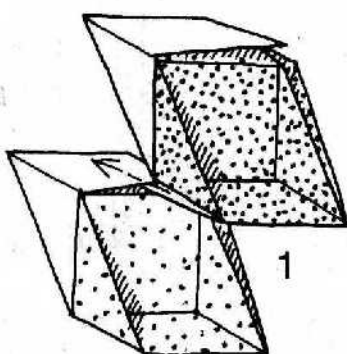


Montaggio in
orizzontale
di 2 moduli



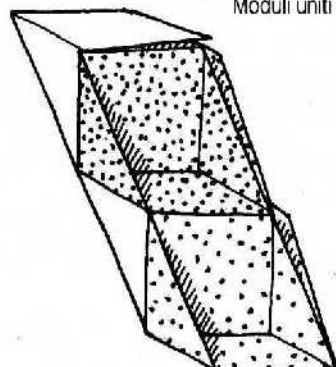
2

Moduli uniti



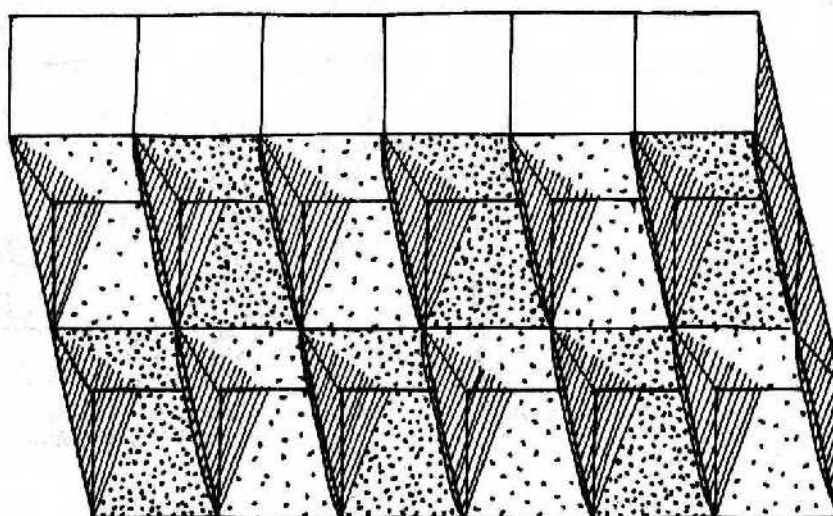
1

Montaggio in verticale di 2 moduli



2

Moduli uniti

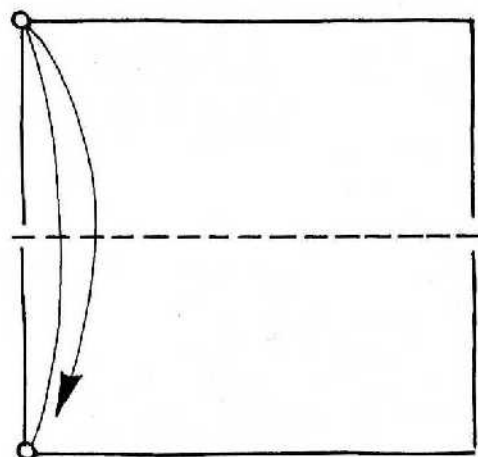


Contenitore formato da 12 moduli

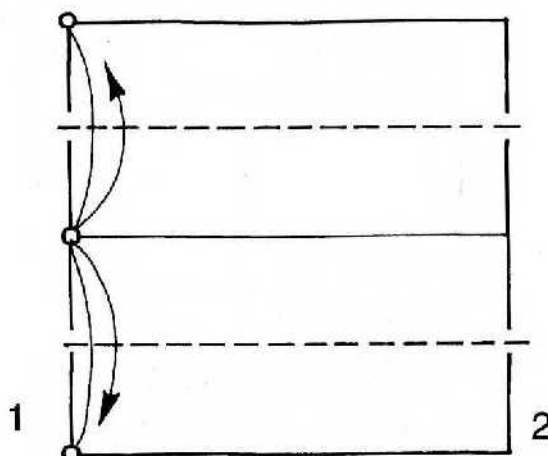
SCATOLA - NASTRO

È formata da 2 tipi di moduli, tipo "4" e tipo "5". Può essere estesa in lunghezza indefinita.

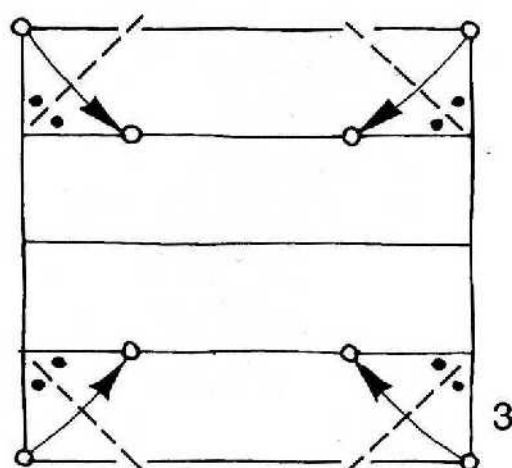
Costruzione del modulo "4"



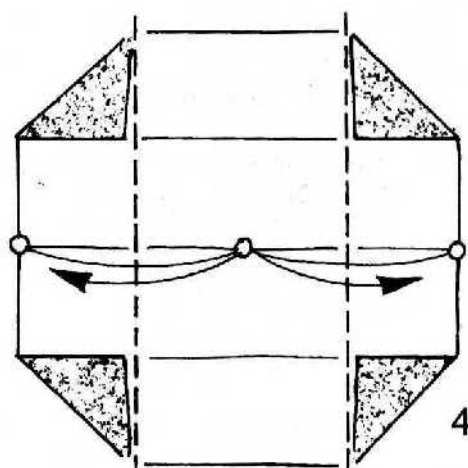
1 piega mediana a valle



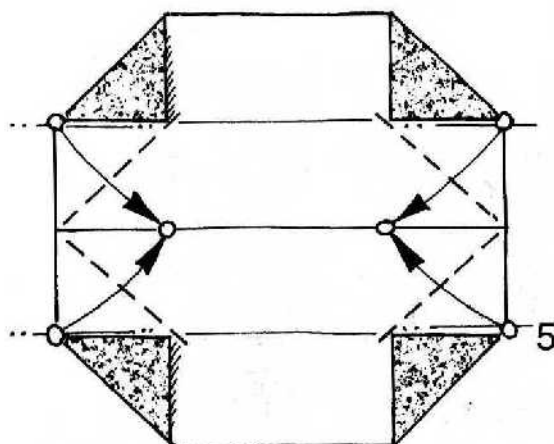
2 pieghe a valle



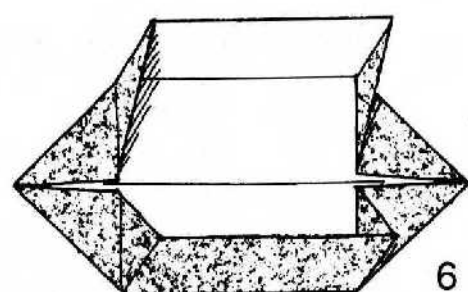
4 pieghe bisettrici a valle e ruotate



2 pieghe a valle

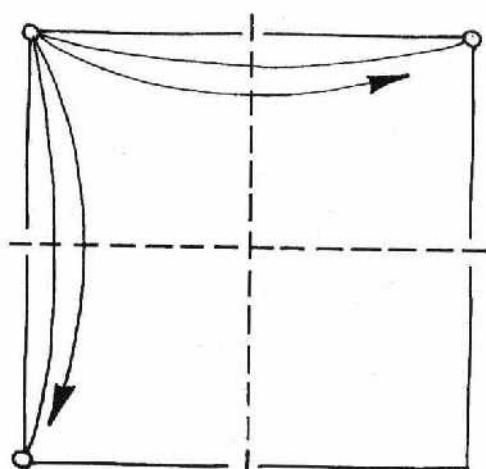


4 pieghe a monte. 4 pieghe a valle e ruotate

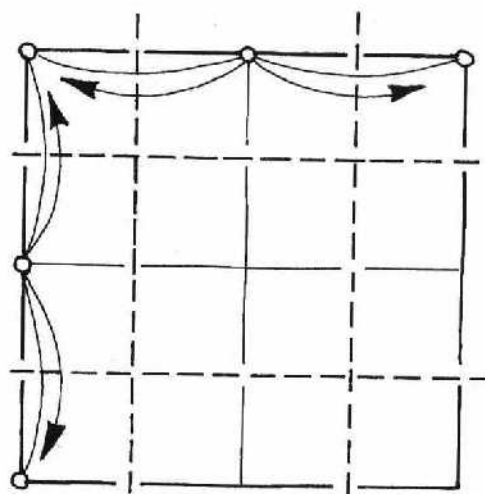


Modulo "4" ultimato

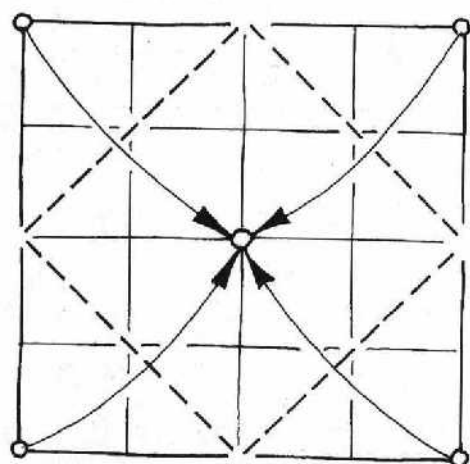
Costruzione del modulo "5"



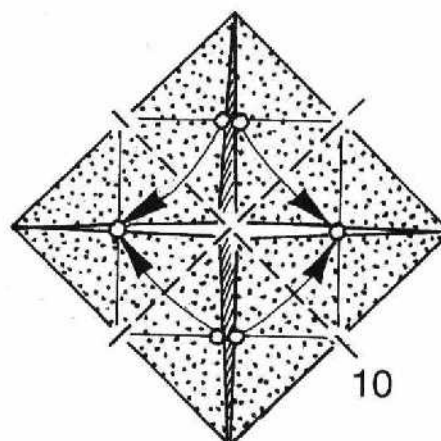
2 pieghe mediane a valle



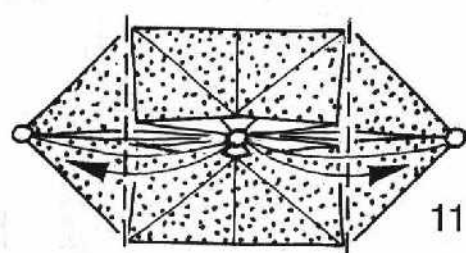
4 pieghe a valle



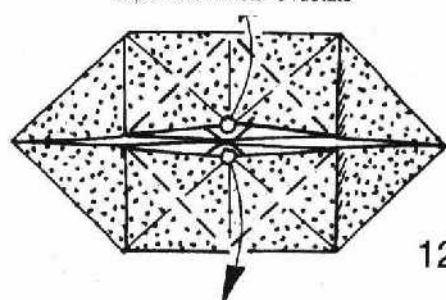
4 pieghe a valle e ruotate



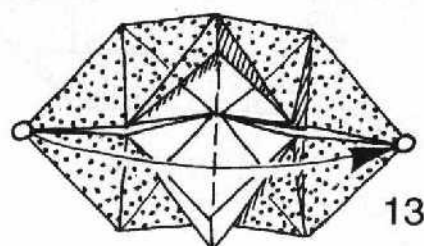
4 pieghe a valle solo sulla superficie in vista e ruotate



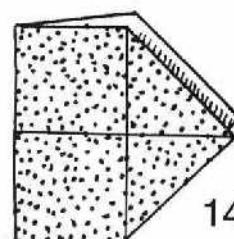
2 pieghe a valle



4 pieghe a valle solo sulla superficie in vista e ruotate

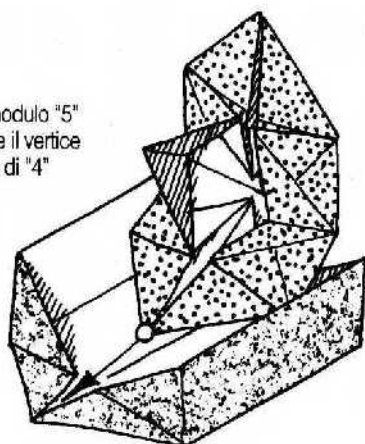


Congiungete i vertici indicati

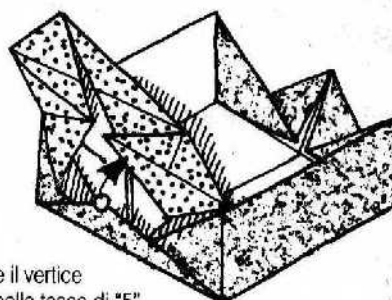


Modulo "5" ultimato

Montaggio del modulo "5"
con il "4". Inserite il vertice
di "5" nella tasca di "4"



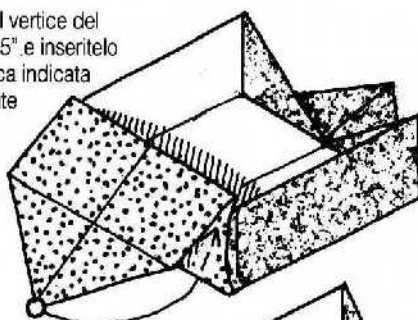
1



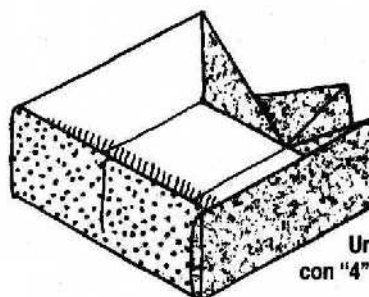
2

Inserite il vertice
di "4" nella tasca di "5"

Ruotate il vertice del
modulo "5" e inseritelo
nella tasca indicata
sottostante
di "4"

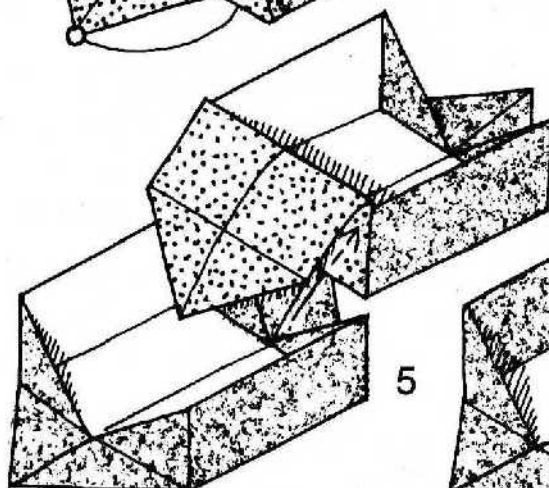


3

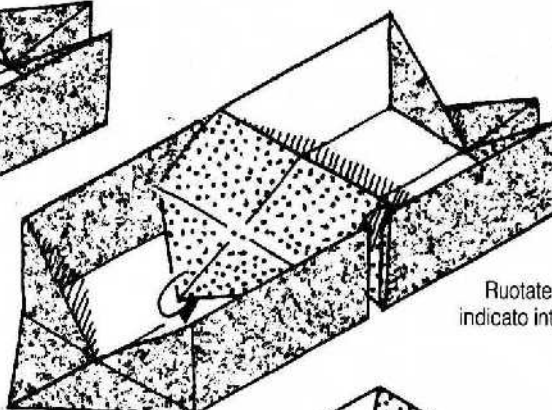


4

Unione di "5"
con "4" ultimata



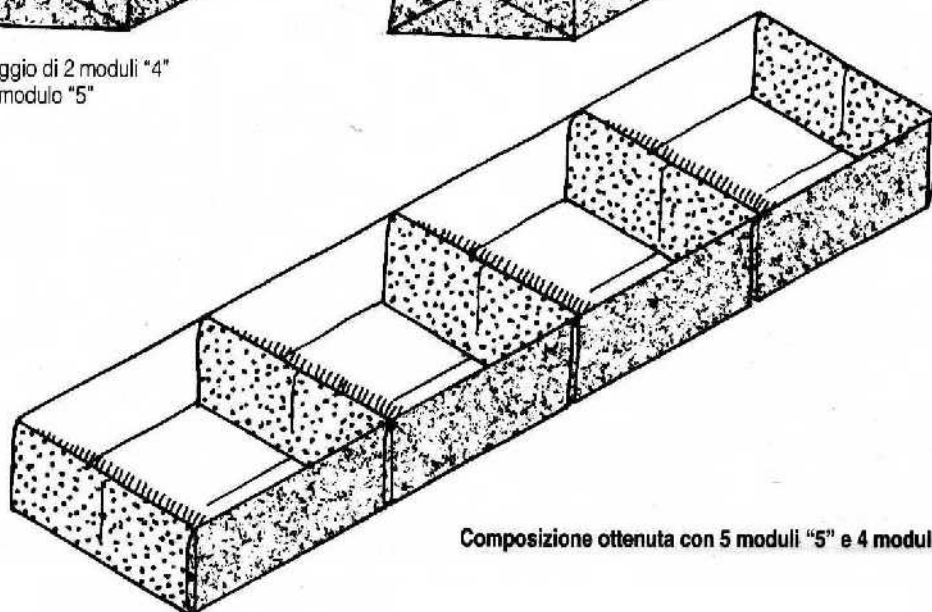
5



6

Ruotate il vertice
indicato intascando

Montaggio di 2 moduli "4"
con 1 modulo "5"

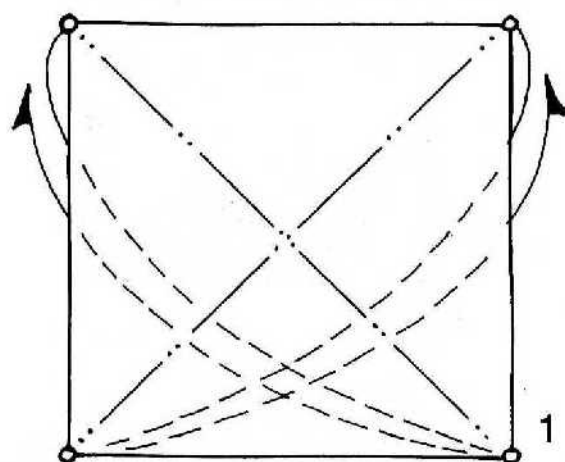


Composizione ottenuta con 5 moduli "5" e 4 moduli "4"

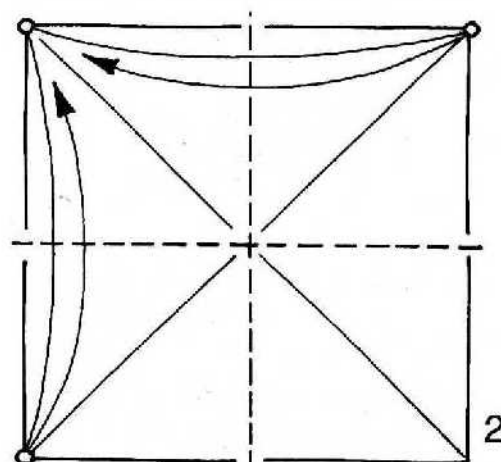
SCATOLA-CUBO A COPERCHIO INCERNIERATO

Sono necessari 11 moduli, 2 di tipo "4", 4 di tipo "5", 1 modulo "cerniera" e 4 moduli "interni". Adoperate fogli quadrati monocolori o bicolori, di tinte diverse.

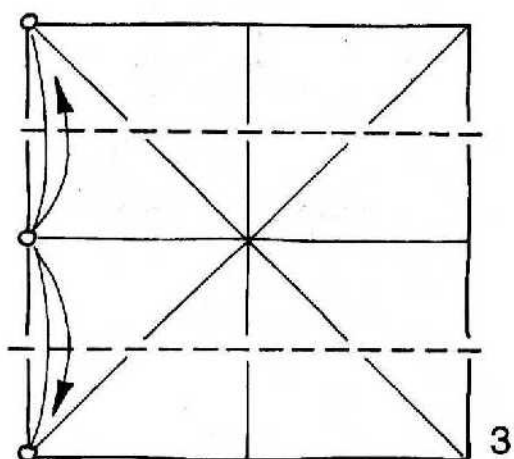
Costruzione del modulo "cerniera"



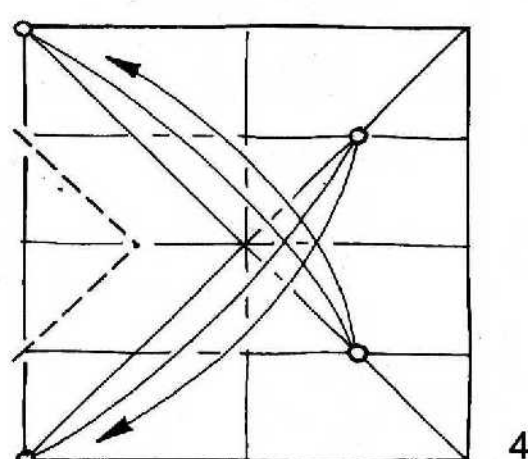
2 pieghe a monte



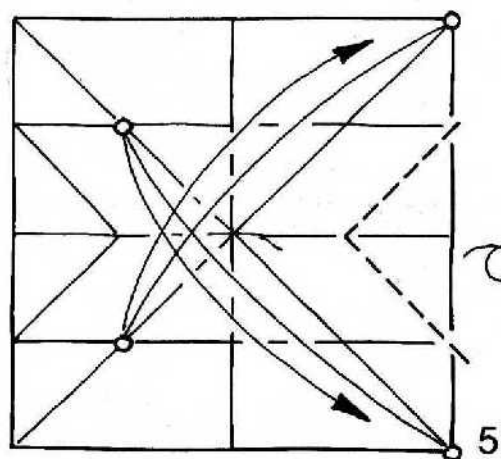
2 pieghe mediane a valle



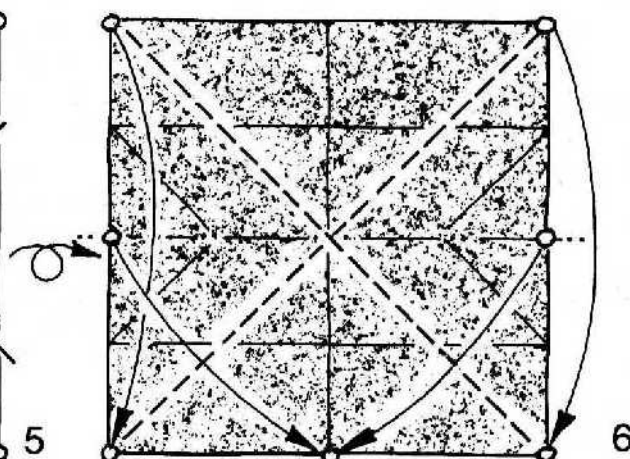
2 pieghe a valle



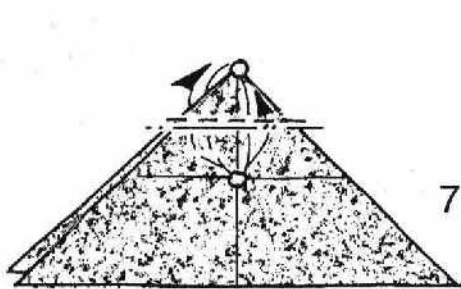
2 pieghe a valle



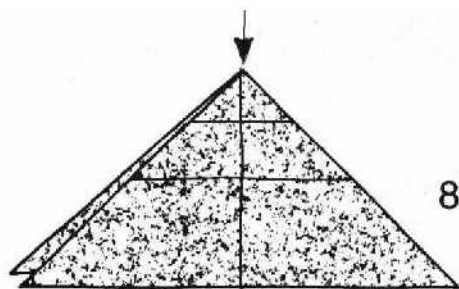
2 pieghe a valle e ribaltate



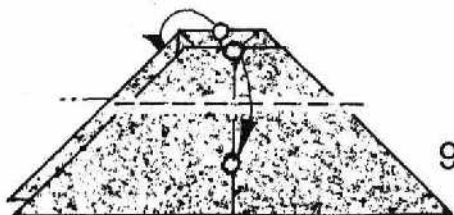
Usufruento di 2 pieghe a valle e 1 a monte preesistenti, ruotate



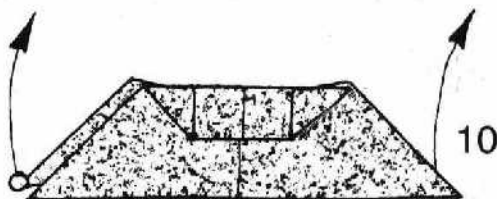
1 piega a valle ed 1 a monte coincidenti



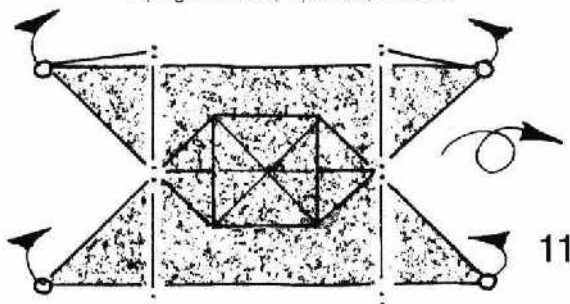
Fate rientrare il vertice indicato



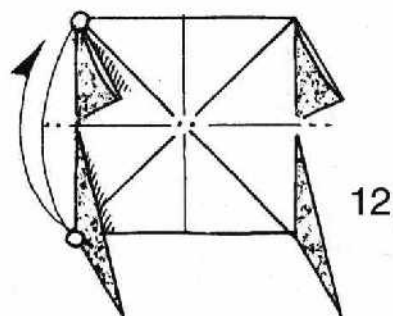
2 pieghe a valle, 1 per lato, e ruotate



Aprite

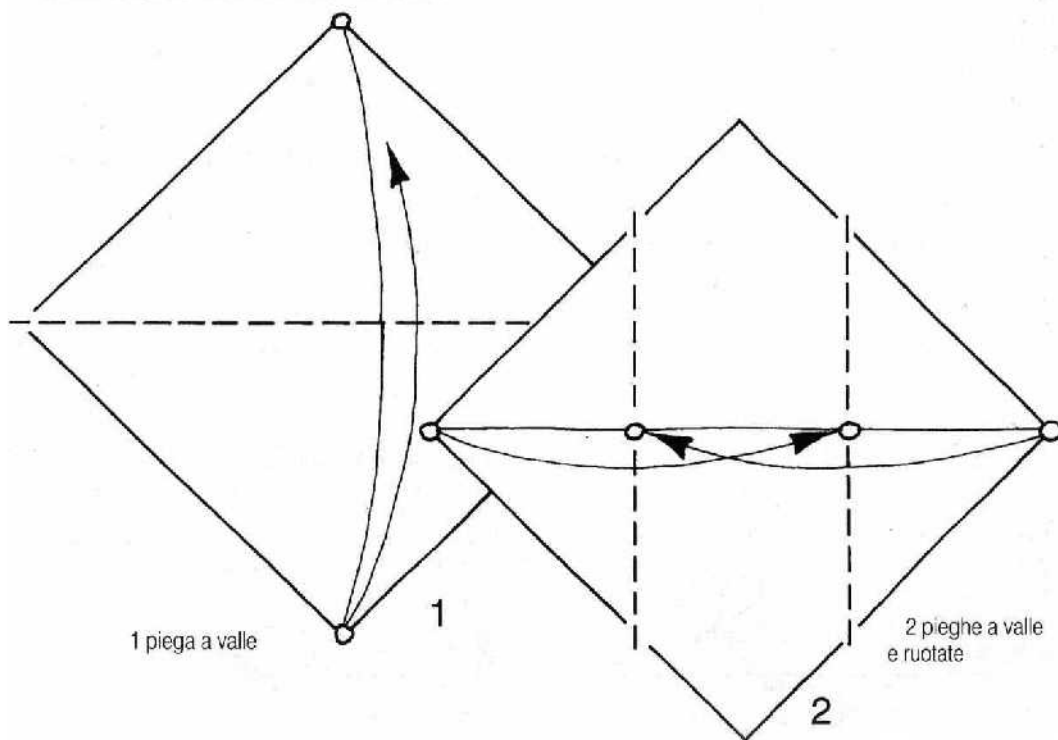


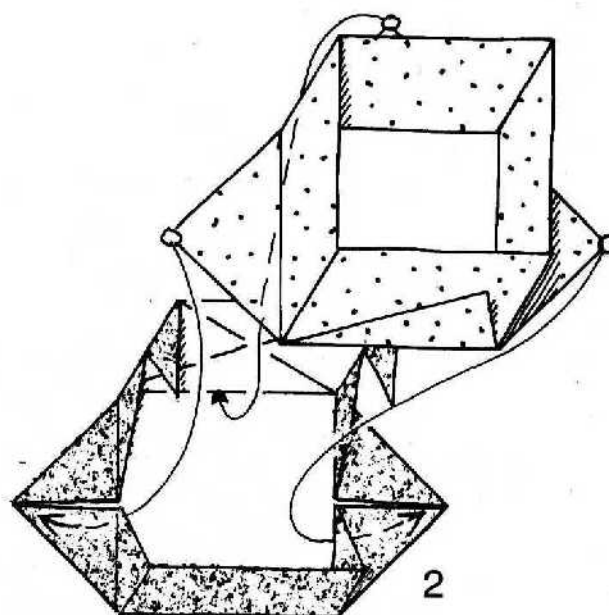
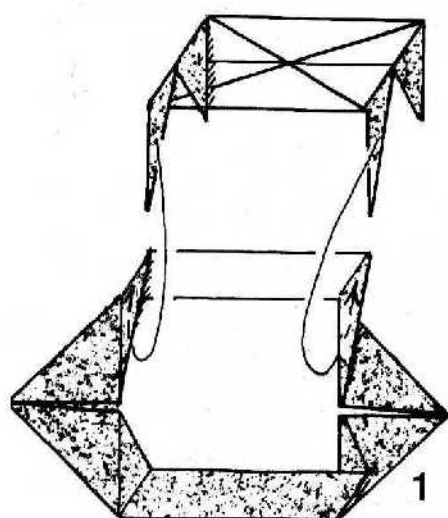
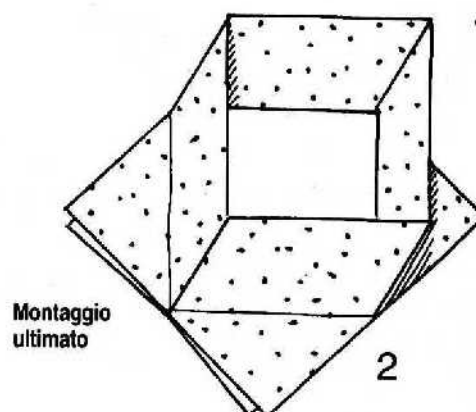
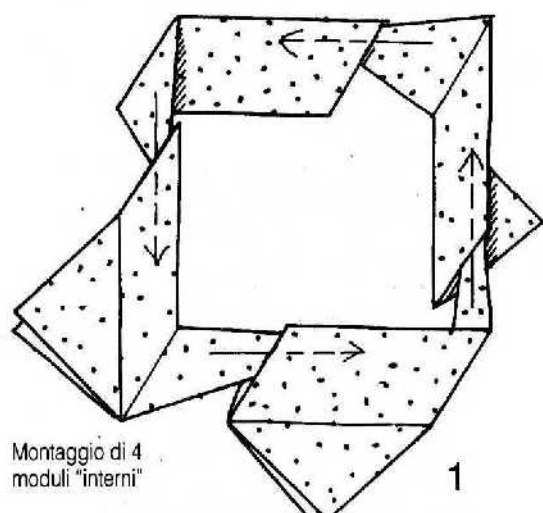
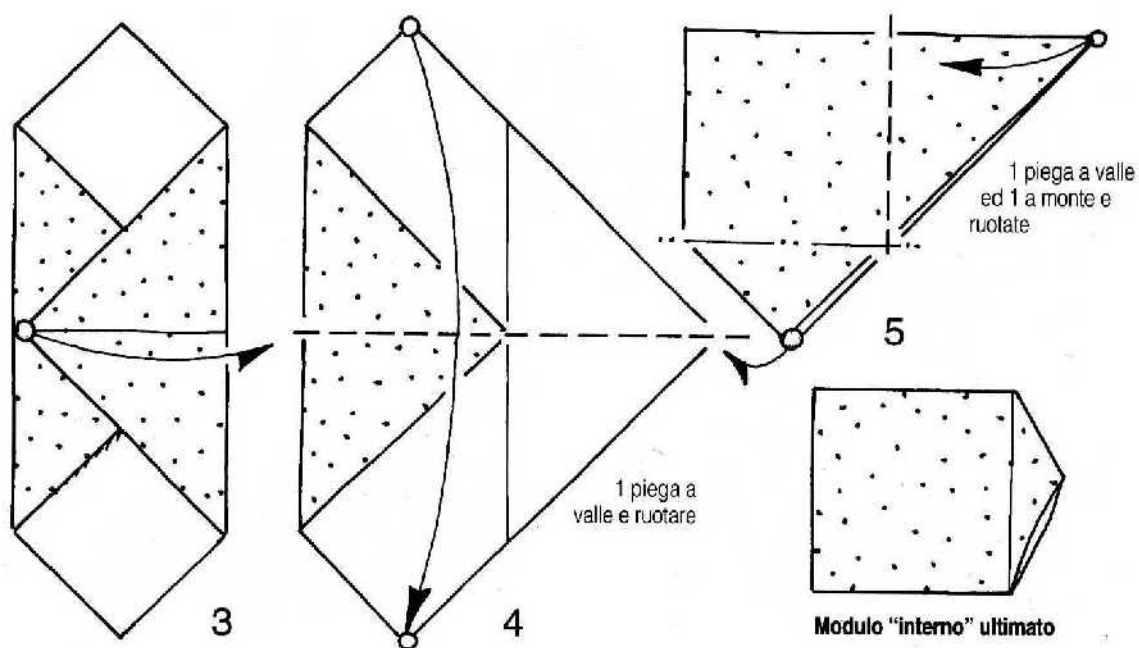
2 pieghe a monte e ribaltate

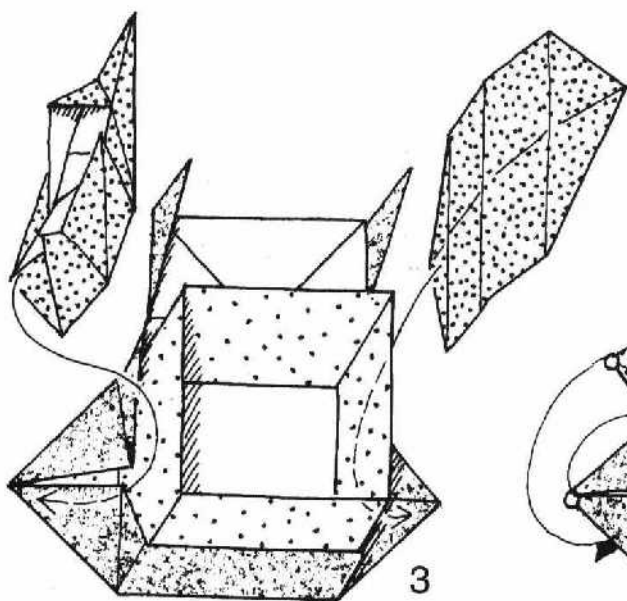


Modulo "cerniera" ultimato

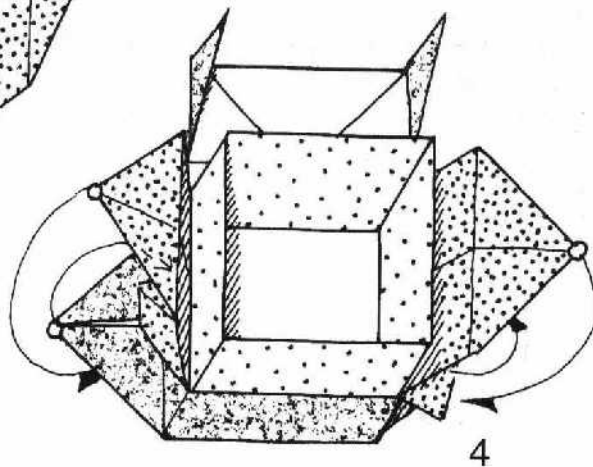
Costruzione del modulo "interno"



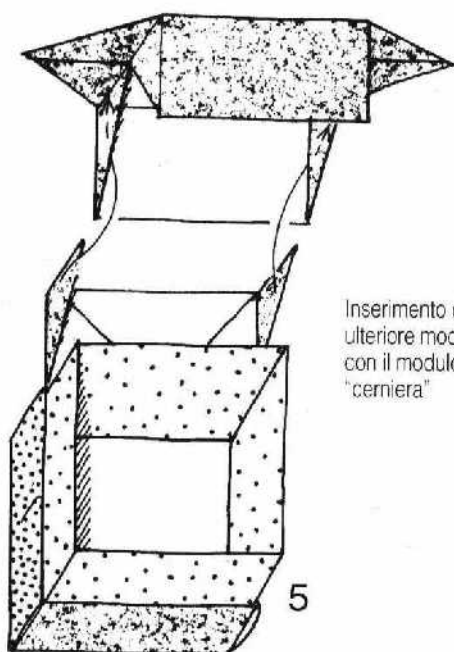




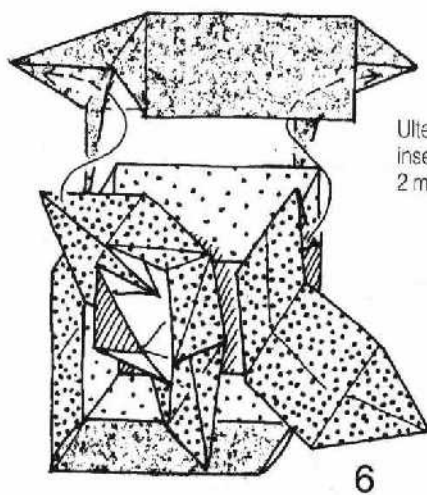
Inserimento di 2 moduli "5"



Il bloccaggio dei 2 moduli "5" avviene analogamente a quanto visto per la costruzione della scatola a nastro

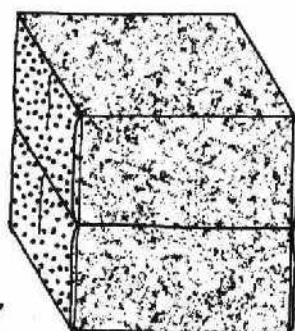
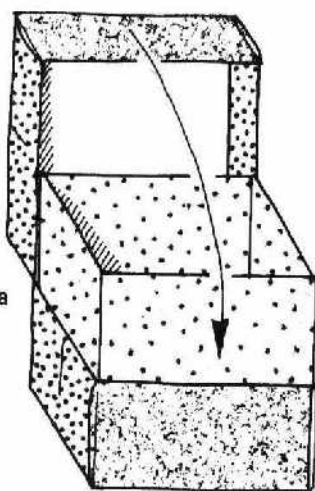


Inserimento di ulteriore modulo "4" con il modulo "cerniera"



Ulteriore inserimento di 2 moduli "5"

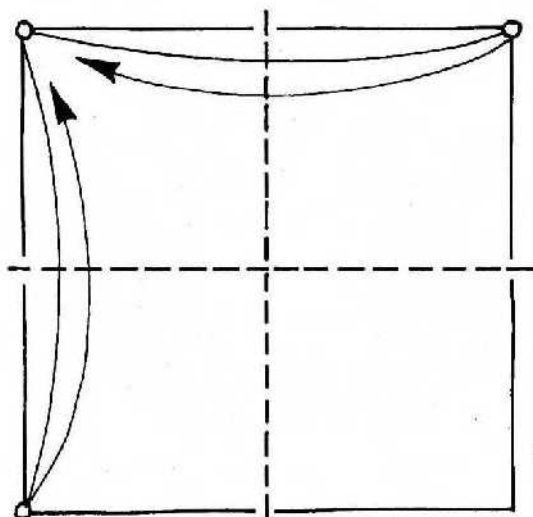
Scatola-cubo ultimata aperta



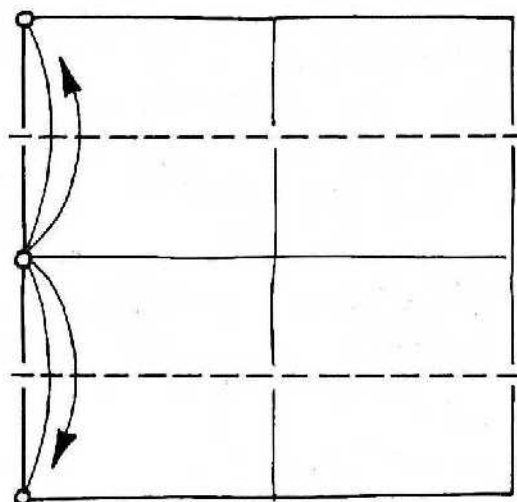
Scatola-cubo ultimata chiusa

QUADRISCATOLA

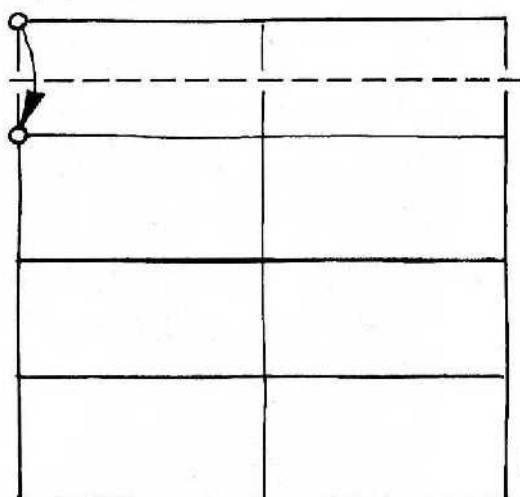
È un contenitore aperto a 4 scomparti. Si realizza unendo 4 moduli tipo "6". Usate fogli bicolori di almeno cm 15x15.



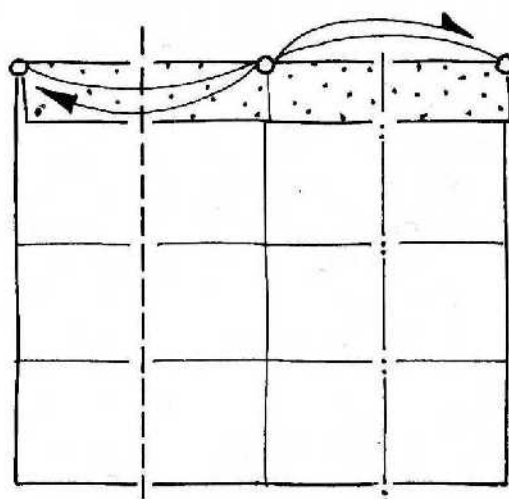
2 pieghe mediane a valle



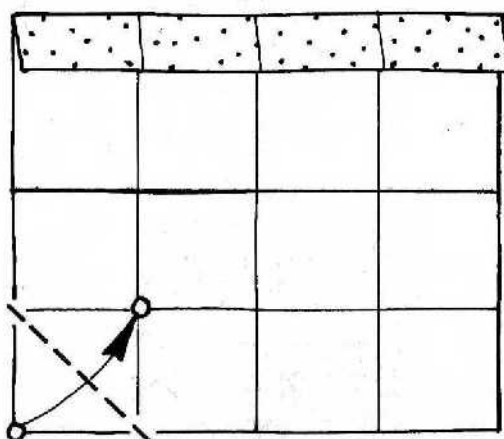
2 pieghe a valle



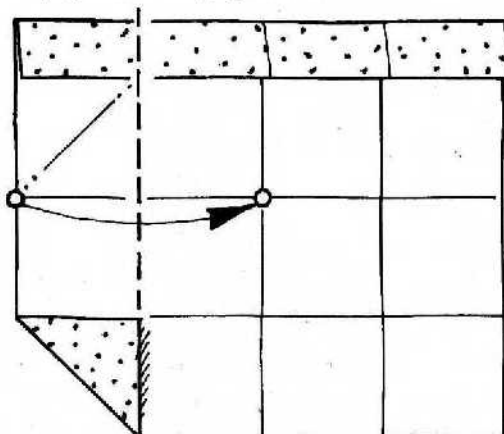
1 piega a valle e ruotate



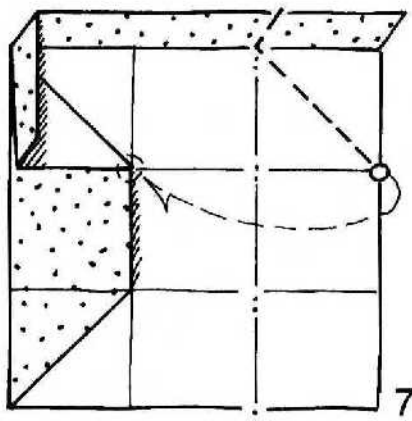
1 piega a valle ed 1 piega a monte



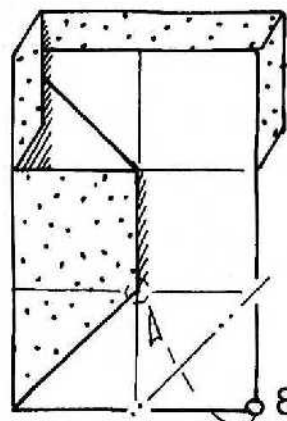
1 piega a valle e ruotate



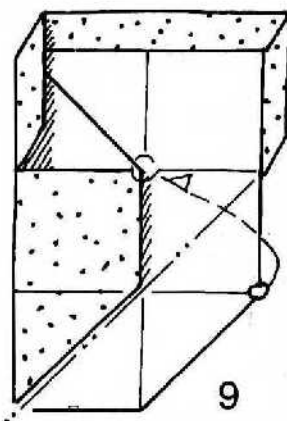
1 piega a monte e, usufruendo di preesistente piega a valle, ruotate 3D



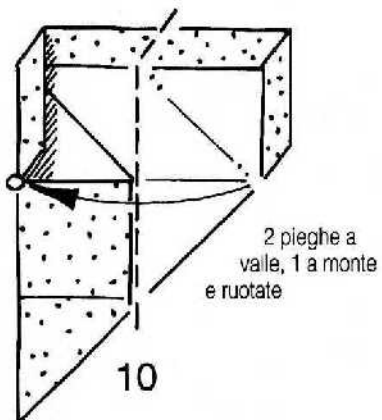
2 pieghe a valle e, usufruendo di preesistente piega a monte, ruotate 3D



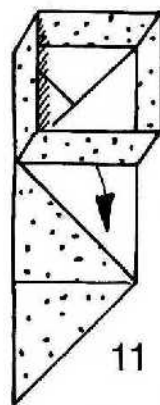
1 piega a monte e ruotate



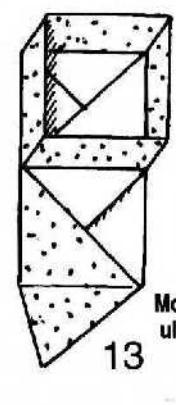
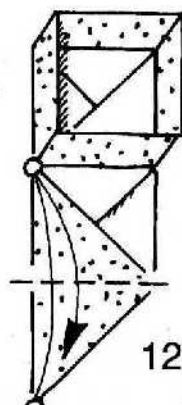
1 piega a monte e ruotate



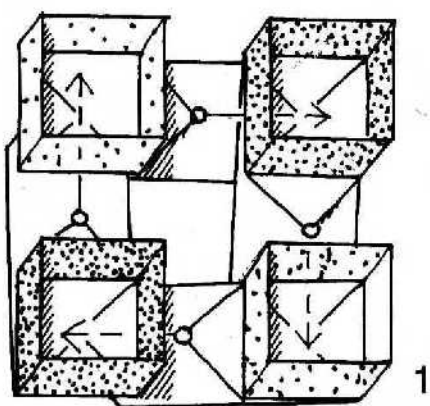
2 pieghe a valle, 1 a monte e ruotate



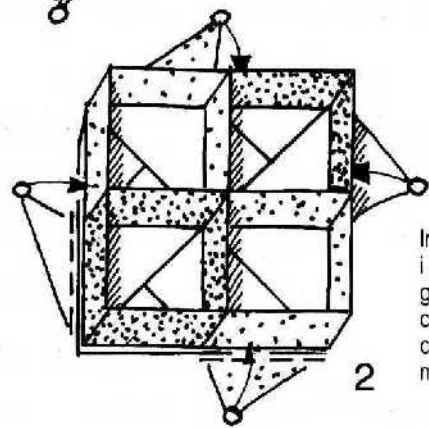
Estraete la superficie triangolare sottostante



Modulo "6" ultimato

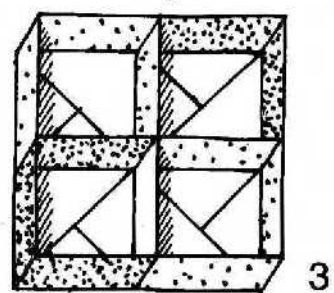


Montaggio di 4 moduli "6." Inserite i vertici indicati nelle tasche



Intascate i 4 triangoli indicati bloccando il modello

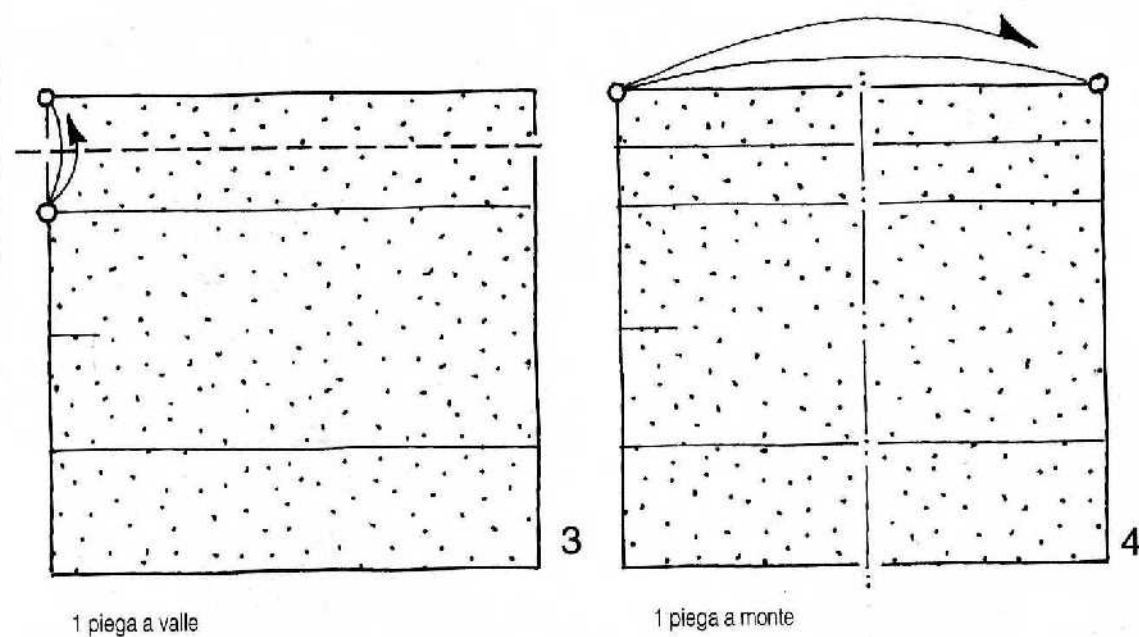
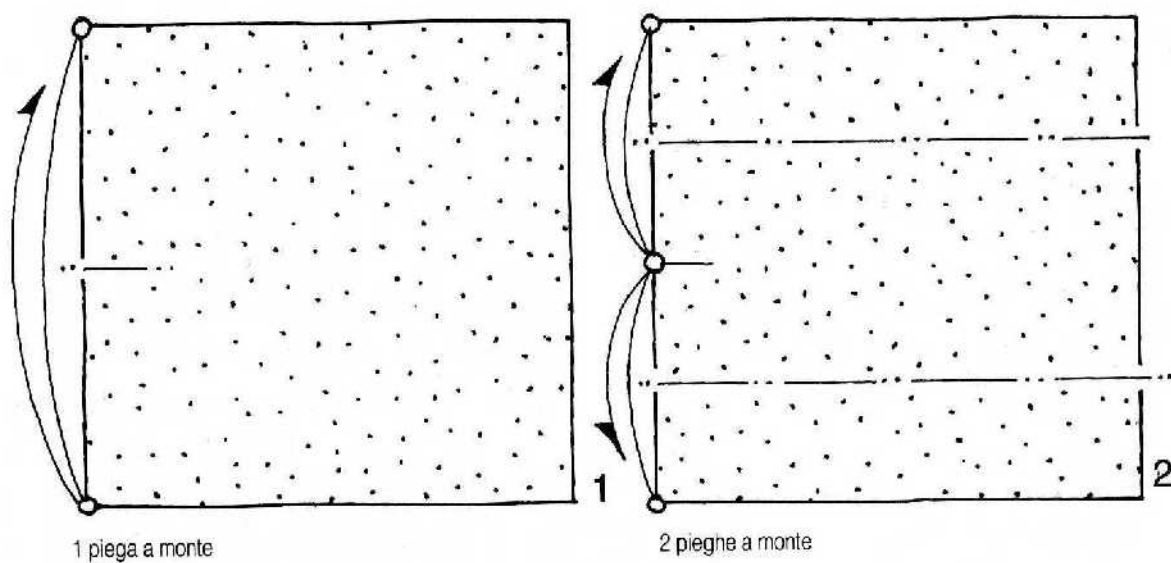
Quadriscatola ultimata

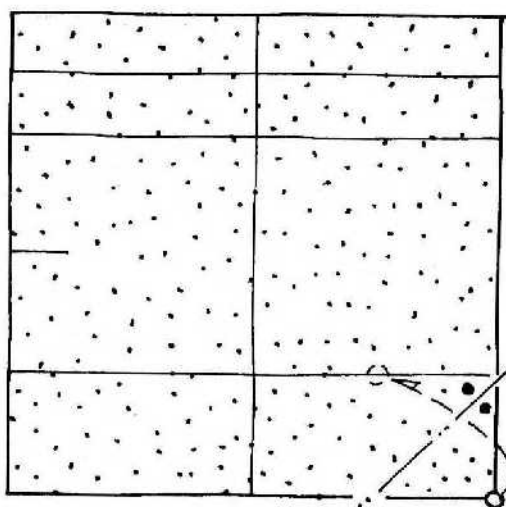


3

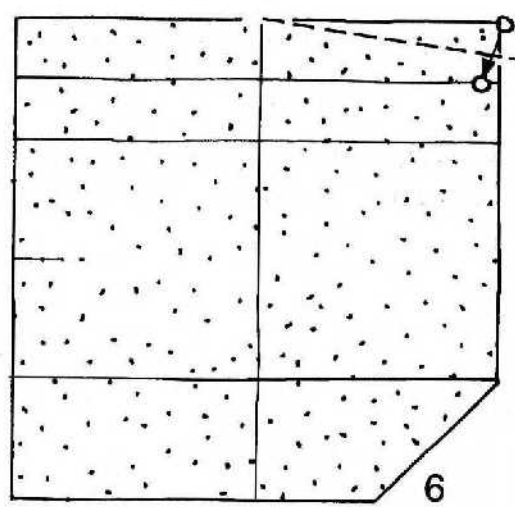
FONDO QUADRATO ALTO "A"

È il primo dei 6 fondi da abbinare ad uno dei 18 coperchi quadrati illustrati in seguito. Per la costruzione dei 4 moduli uguali, adoperate fogli quadrati bicolori di tinte differenti.

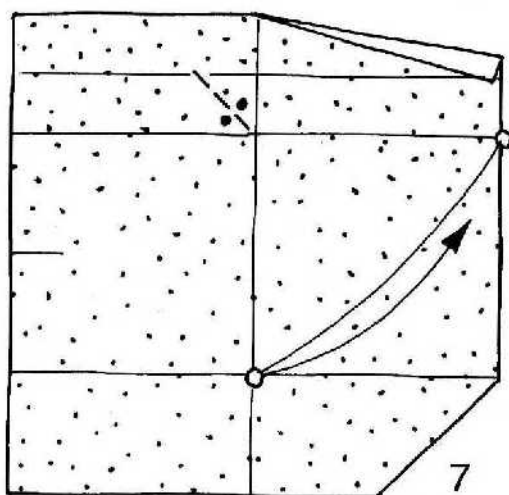




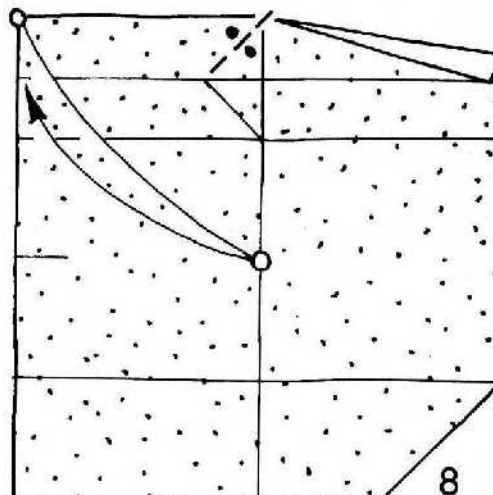
1 piega bisettrice a monte e ruotate



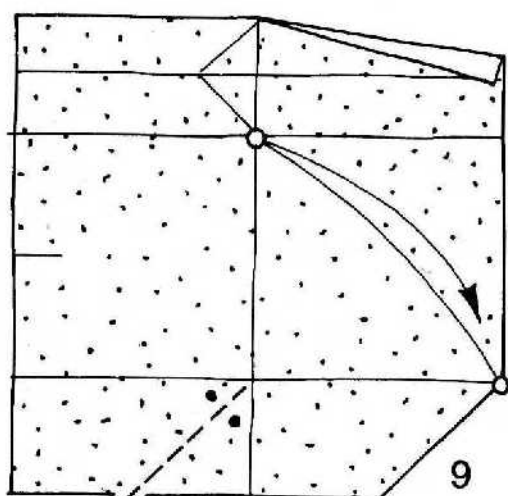
1 piega a valle e ruotate



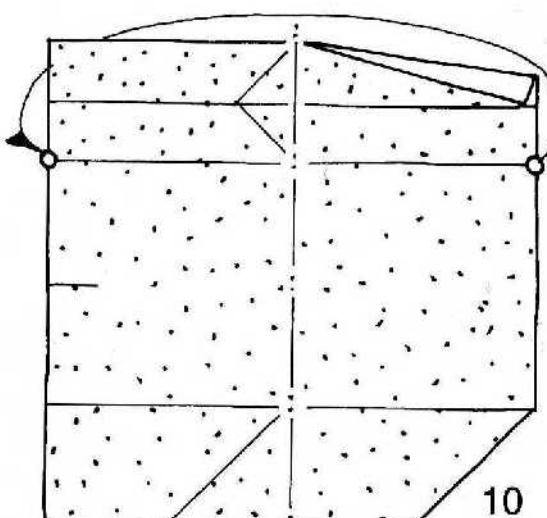
1 piega bisettrice a valle



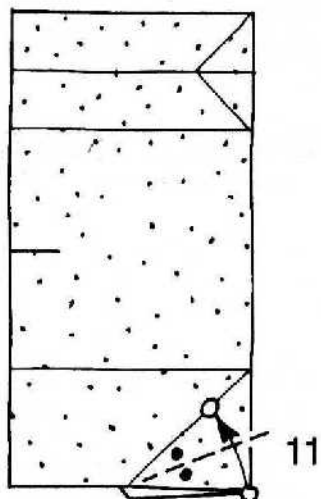
1 piega bisettrice a valle



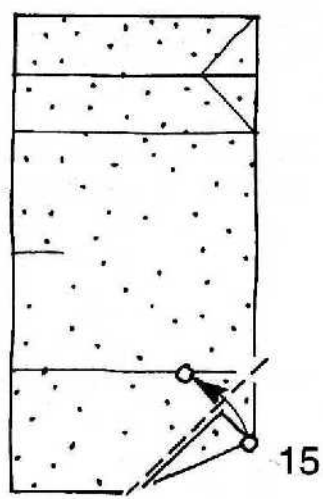
1 piega bisettrice a valle



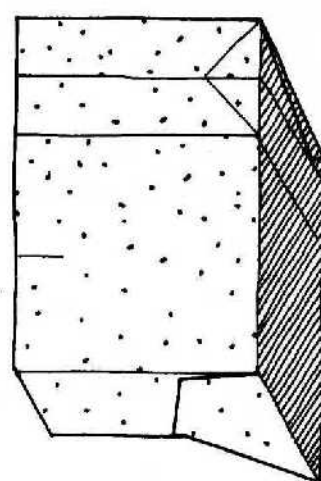
1 piega a monte e ruotate



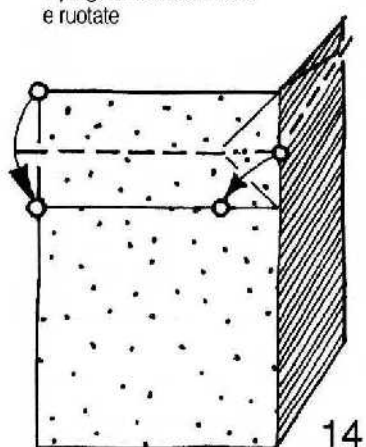
1 piega bisettrice a valle e ruotate



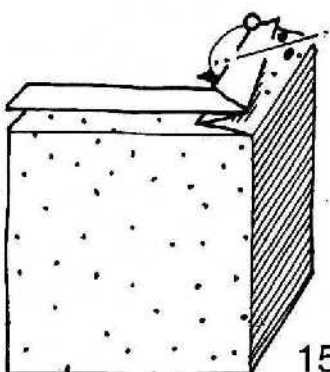
1 piega a valle solo sulla faccia in vista e ruotate 3D



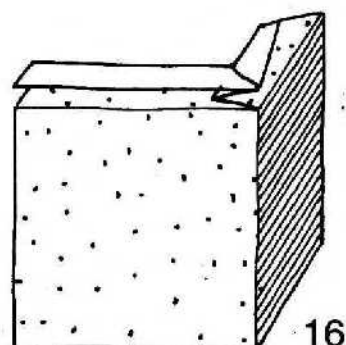
Assonometria: vista inferiore



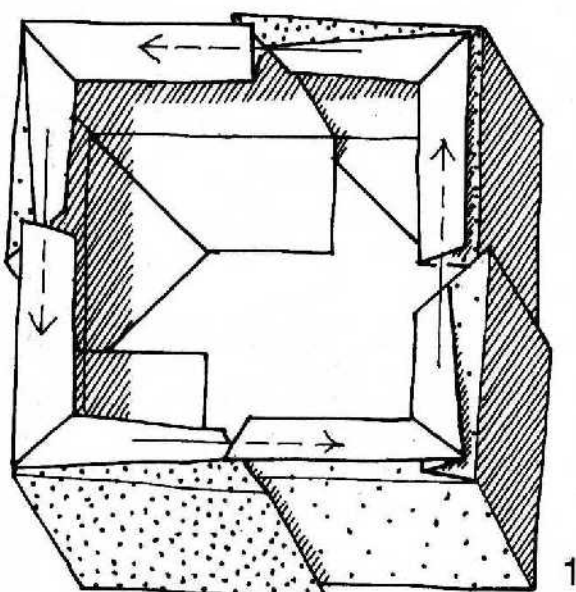
Assonometria: vista superiore;
1 piega a monte e ruotate
utilizzando 2 pieghe a valle
preesistenti



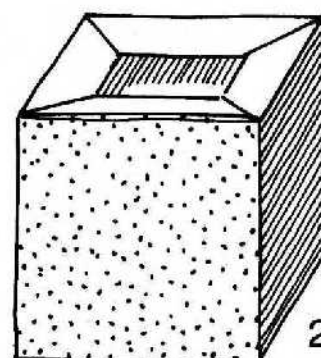
1 piega bisettrice a monte e ruotate



Modulo ultimato



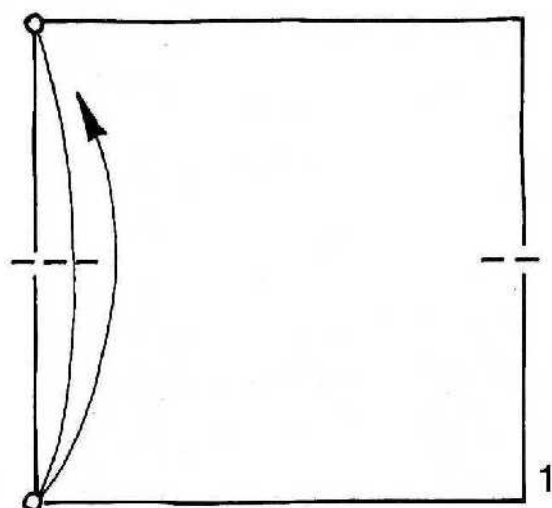
Montaggio di 4 moduli



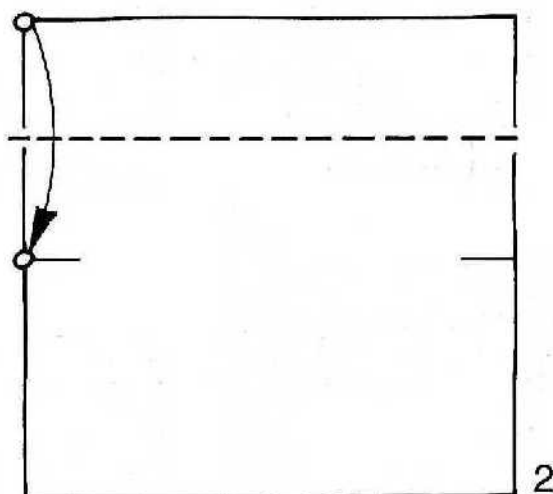
Fondo "A" ultimato

FONDO QUADRATO ALTO "B"

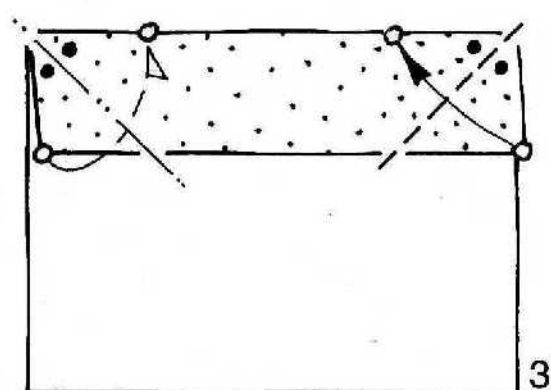
Fondo di forma cubica di facile esecuzione. Sono necessari 4 moduli uguali da realizzare con fogli quadrati monocolori o bicolori, di tinte differenti



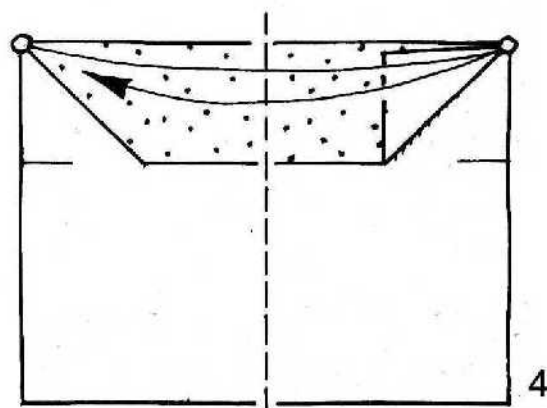
2 piccole pieghe mediane a valle



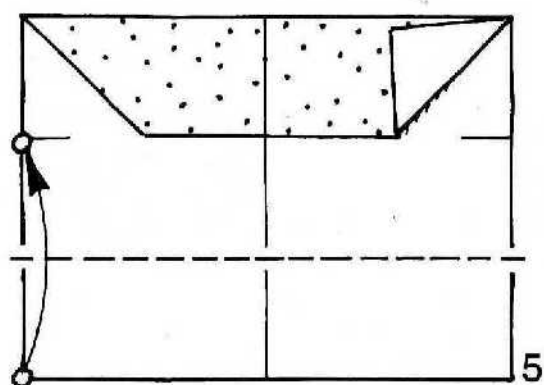
1 piega a valle e ruotate



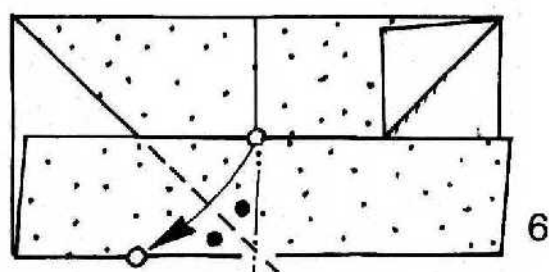
2 pieghe bisettrici, 1 a monte ed 1 a valle e ruotate



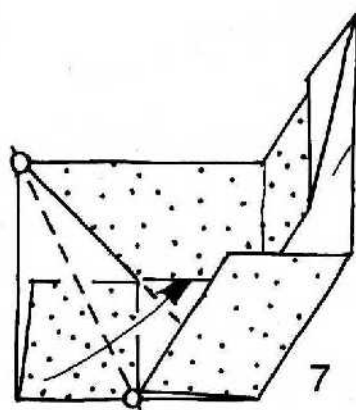
1 piega mediana a valle



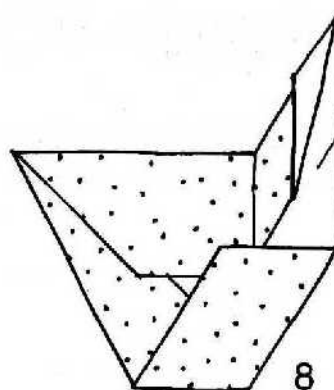
1 piega a valle e ruotate



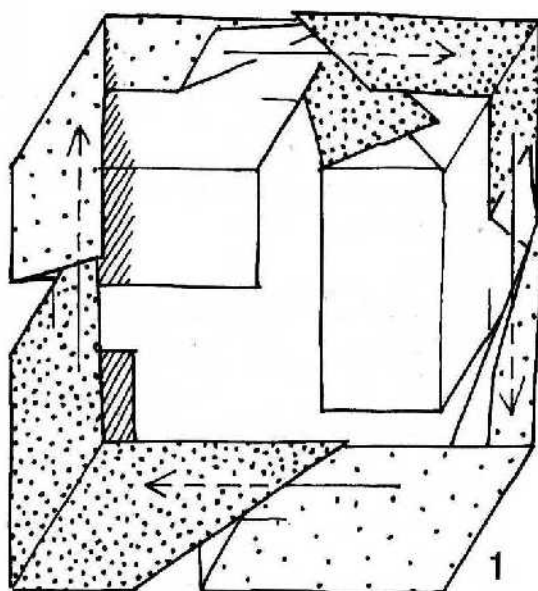
1 piega bisettrice a valle solo sulla faccia in vista e ruotate 3D



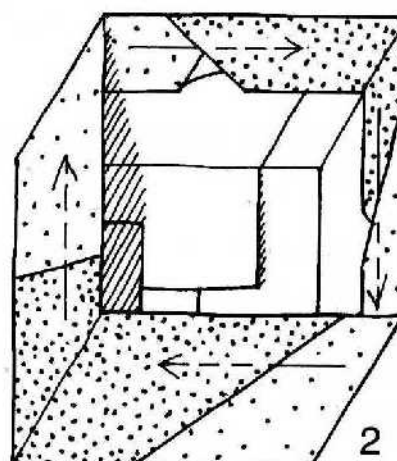
1 piega a valle e ruotate inserendo il vertice indicato



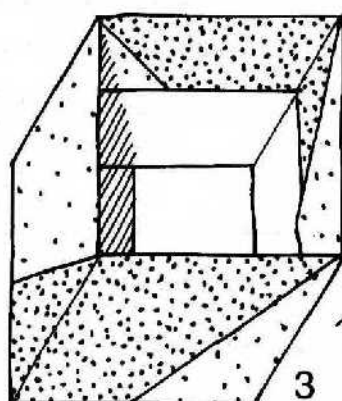
**Modulo ultimato
con il fondo in vista**



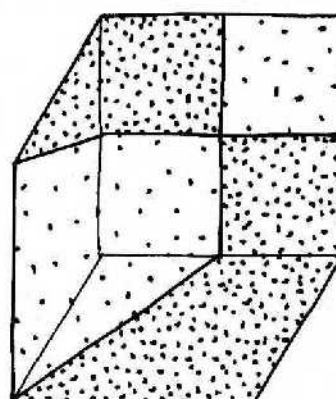
Montaggio di 4 moduli



Inserite i vertici indicati di ogni modulo
all'interno delle tasche del modulo
successivo



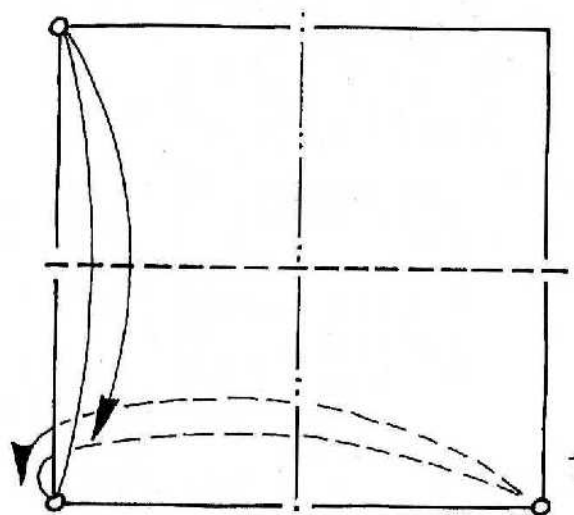
Fondo "B" ultimato



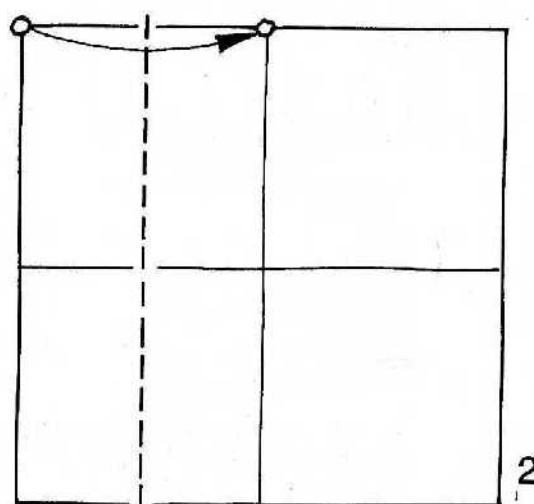
Fondo "B" ultimato ribaltato

FONDO QUADRATO BASSO "C"

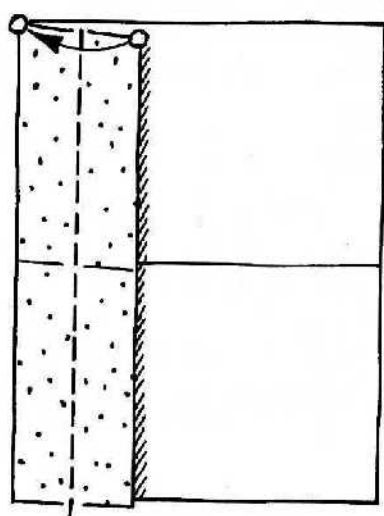
Sono necessari 4 moduli uguali da realizzare con fogli quadrati monocolori o bicolore.



2 pieghe mediane, 1 a valle ed 1 a monte

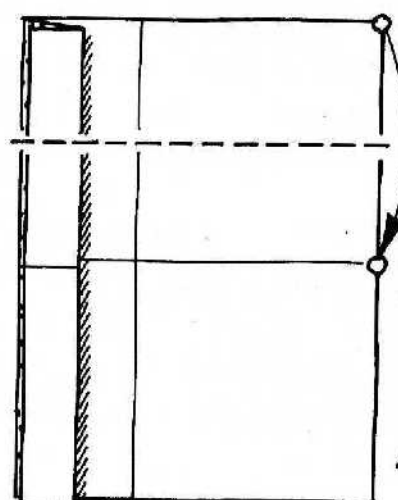


1 piega a valle e ruotate



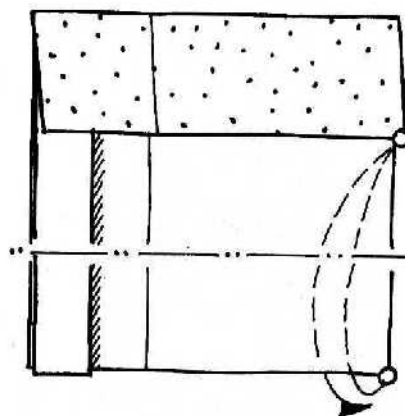
1 piega a valle solo sulla superficie in vista e ruotate

3



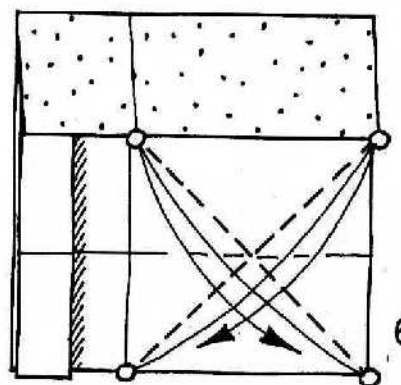
1 piega a valle e ruotate

4



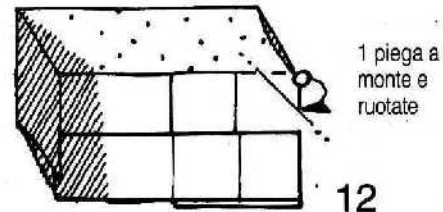
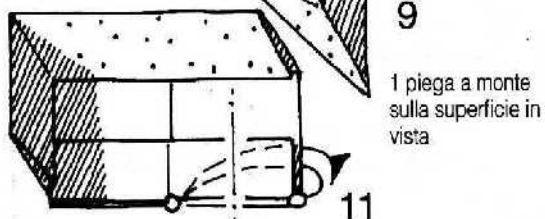
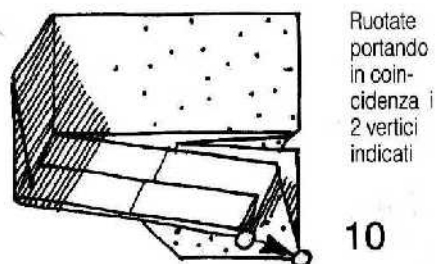
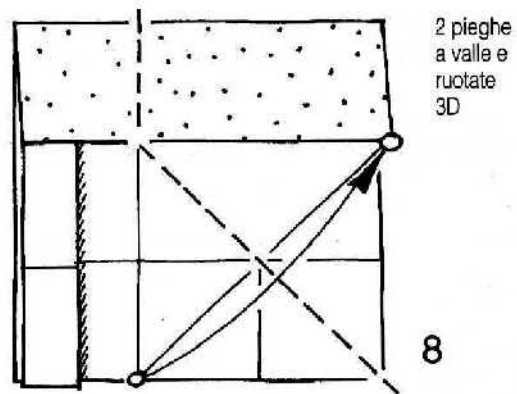
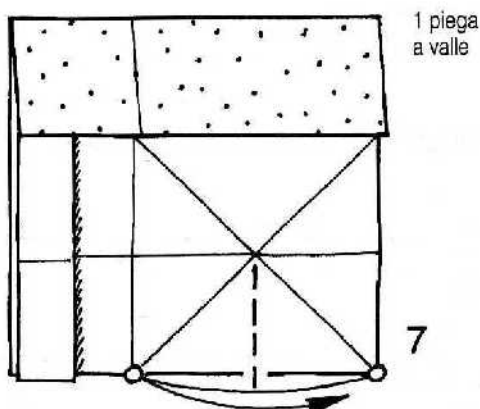
1 piega a monte

5

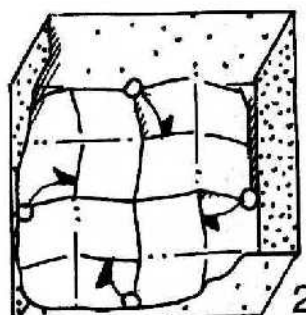
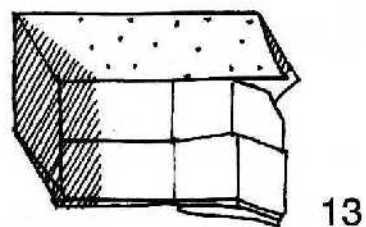
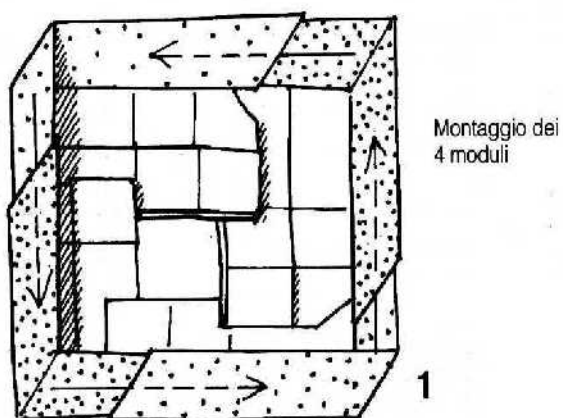


2 pieghe diagonali a valle

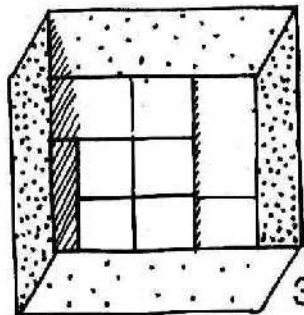
6



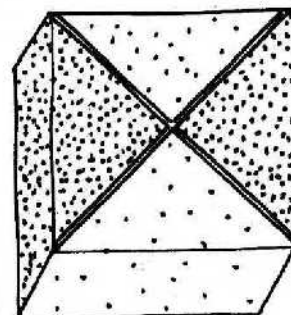
Modulo ultimato



Ruotate le 4 superfici indicate bloccando il modello



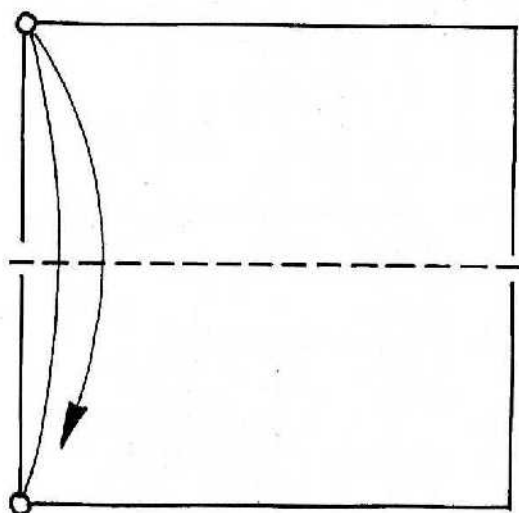
Fondo "C" ultimato



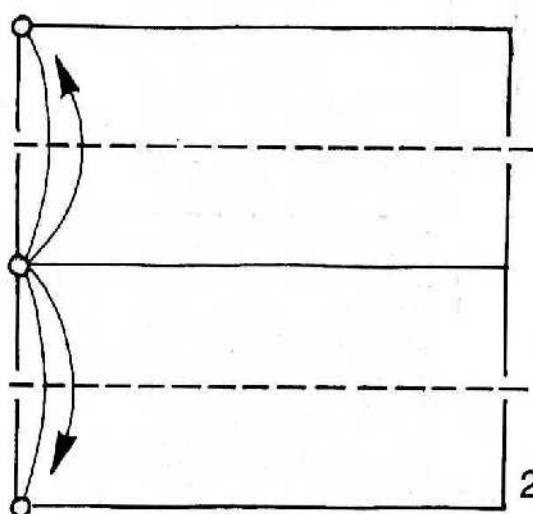
Fondo "C" ultimato ribaltato

FONDO QUADRATO BASSO "D"

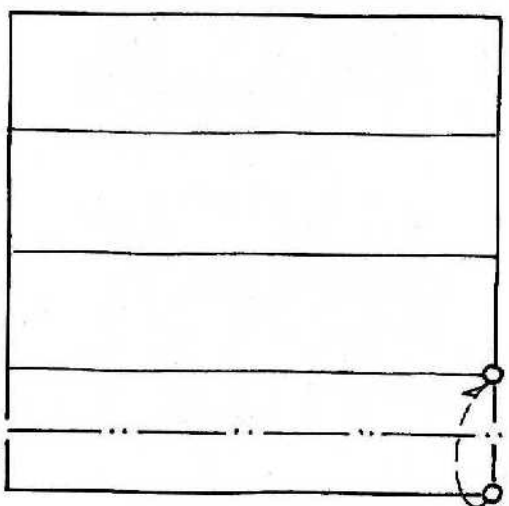
Sono necessari 4 moduli uguali da realizzare con fogli quadrati monocolori o bicolori.



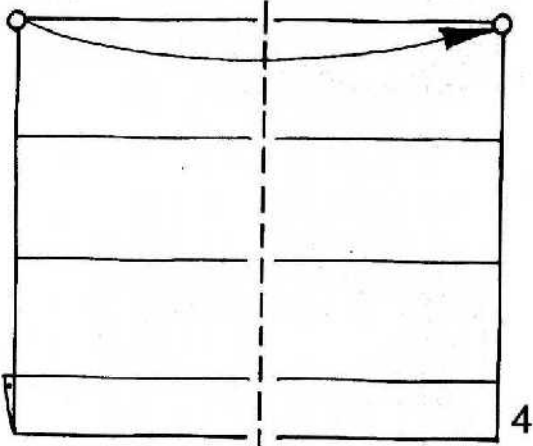
1 piega mediana a valle



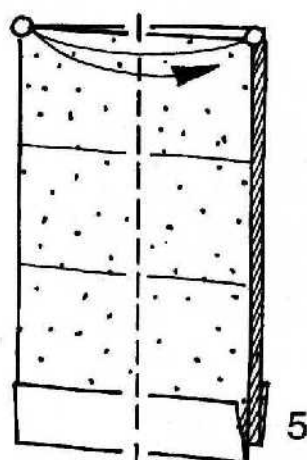
2 pieghe a valle



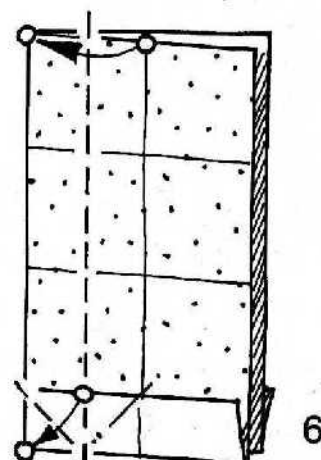
1 piega a monte e ruotate



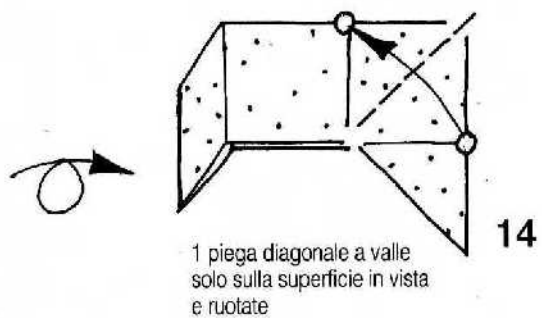
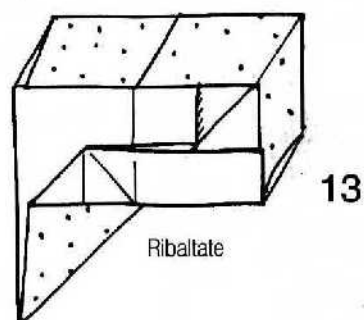
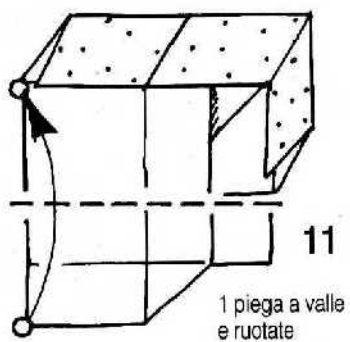
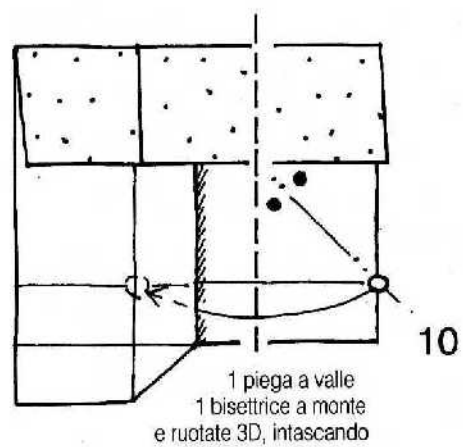
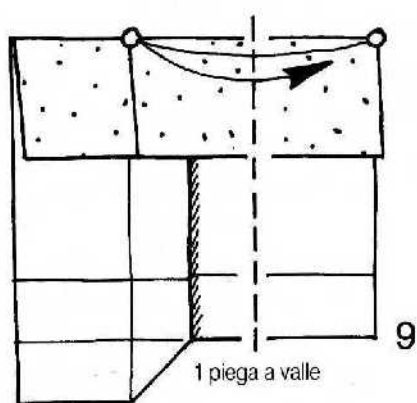
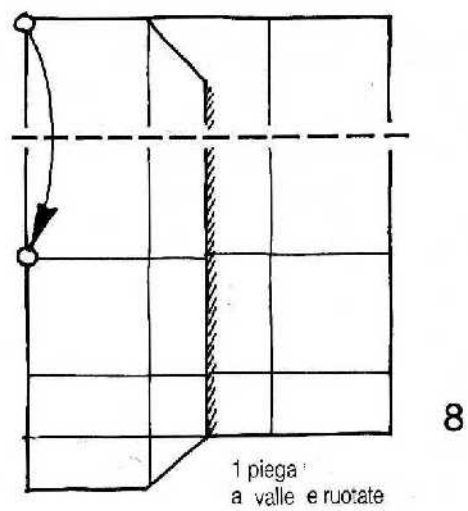
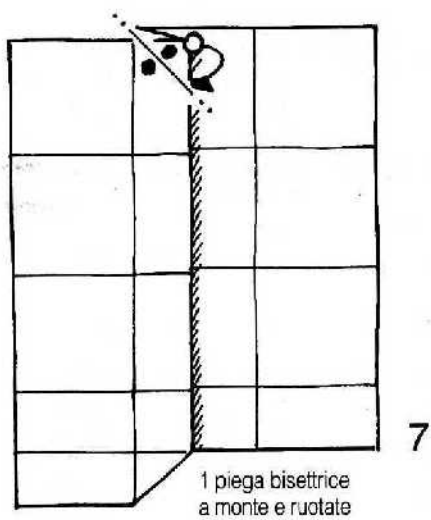
1 piega a valle e ruotate



1 piega a valle



2 pieghe a valle, 1 a monte e ruotate

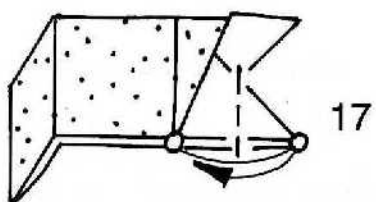




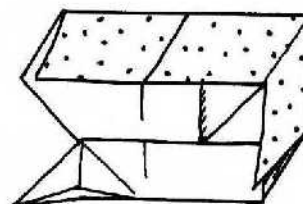
1 piega diagonale a valle solo sulla faccia in vista e ruotate



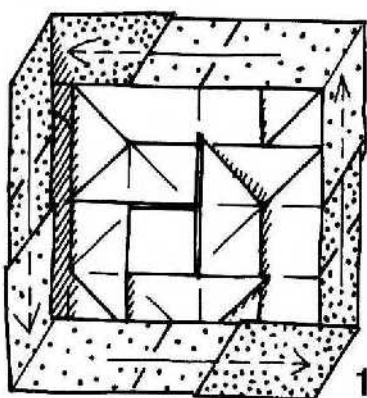
1 piega bisettrice a monte e ruotate



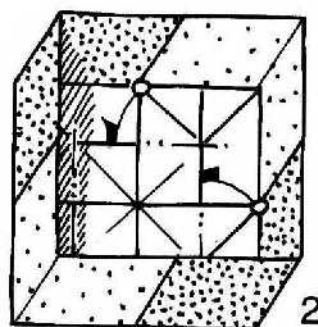
1 piega a valle e ribaltate



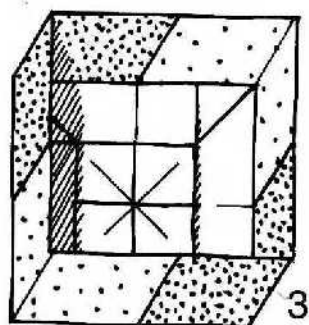
Modulo ultimato



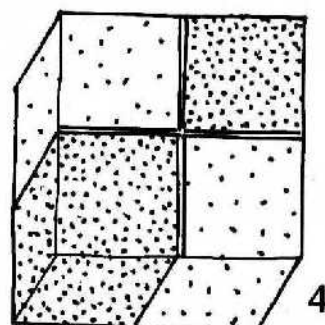
Montaggio dei 4 moduli



Piegate a monte e intascate i 4 vertici indicati bloccando il modello



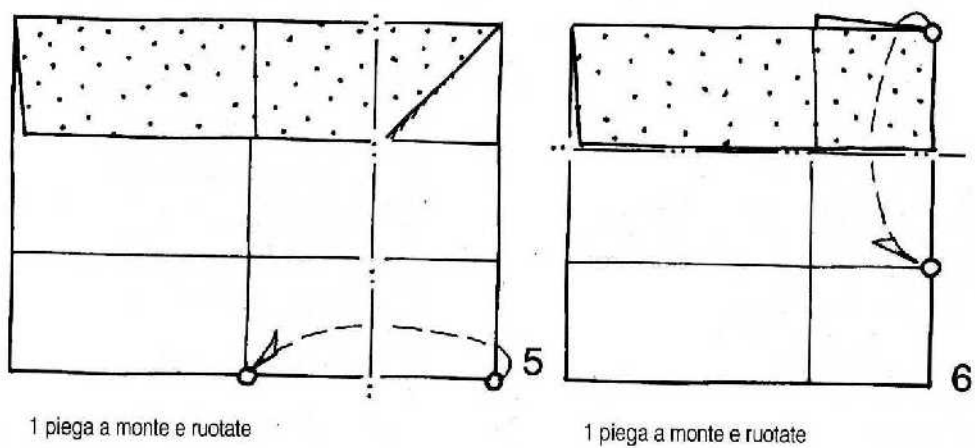
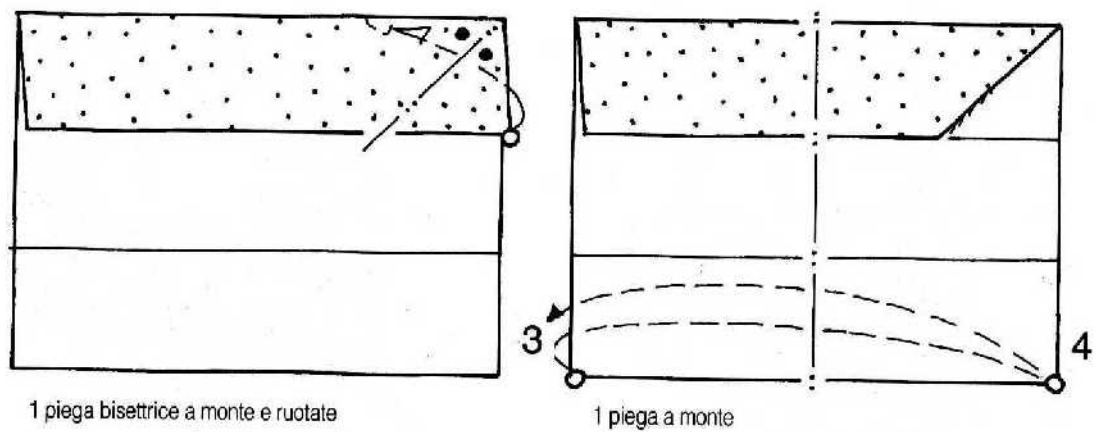
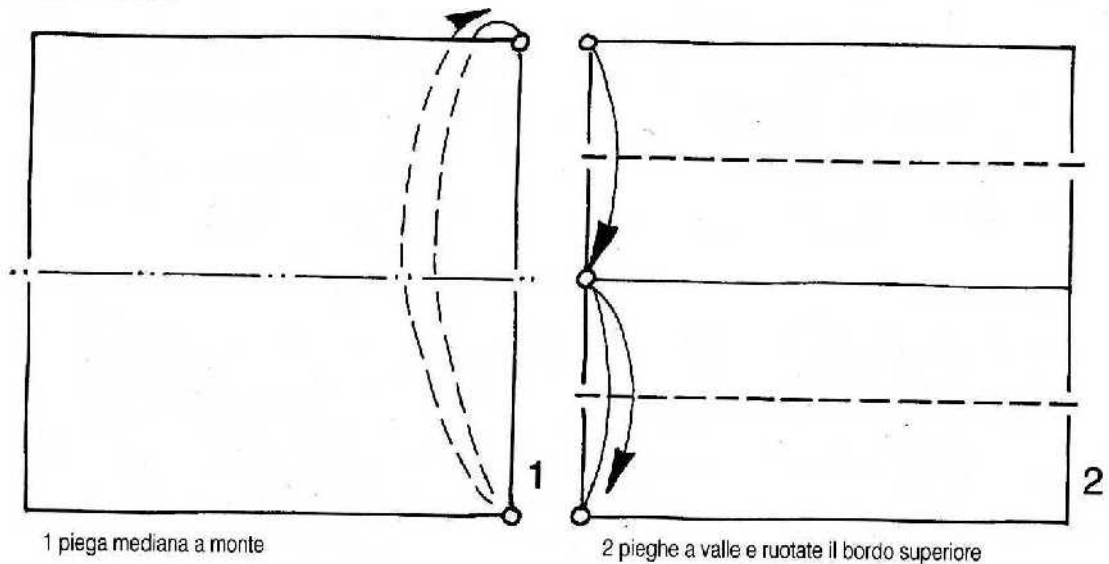
Fondo "D" ultimato

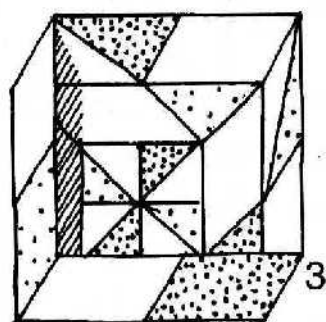
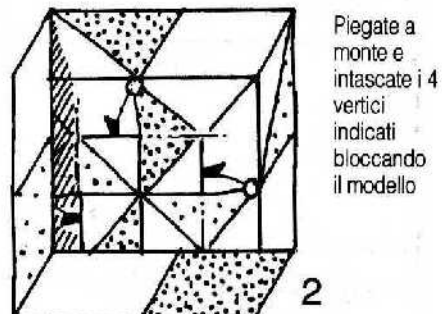
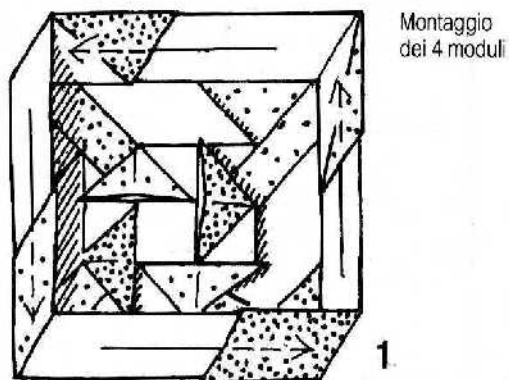
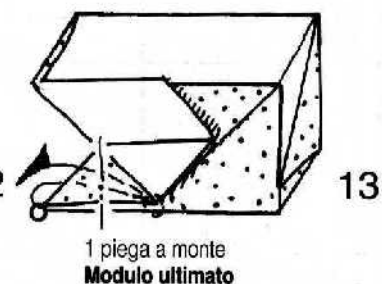
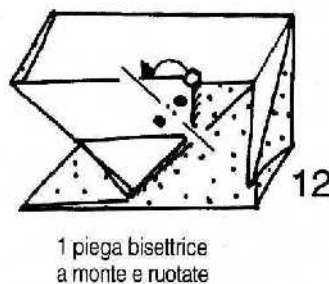
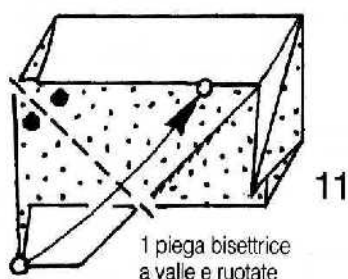
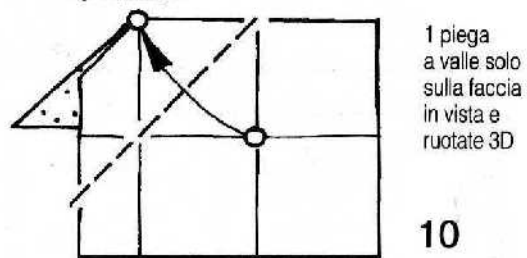
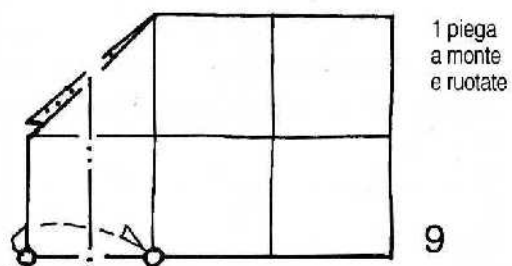
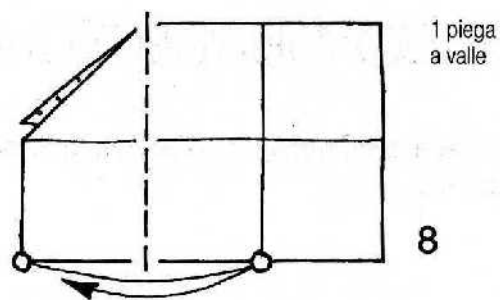
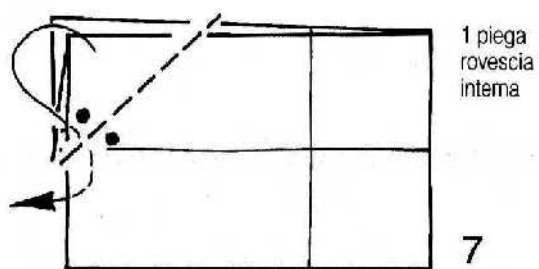


Fondo "D" ultimato ribaltato

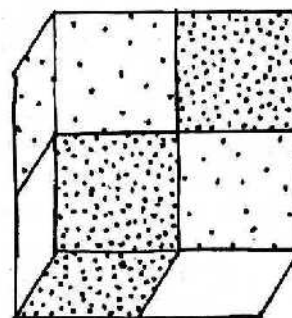
FONDO QUADRATO BASSO "E"

Sono necessari 4 moduli uguali da realizzare con fogli quadrati bicolori. Il modello risulterà ad 8 colori.





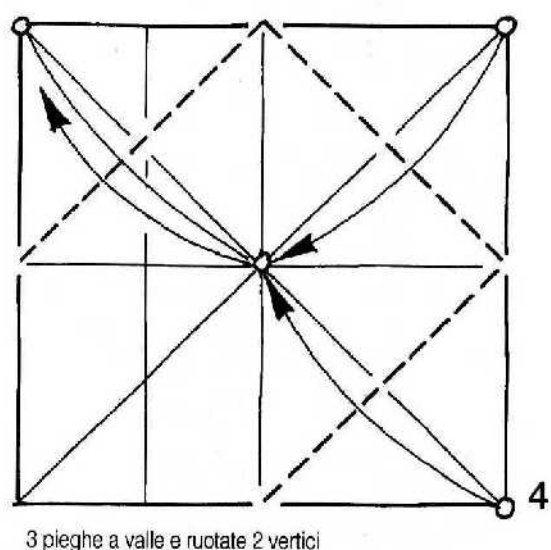
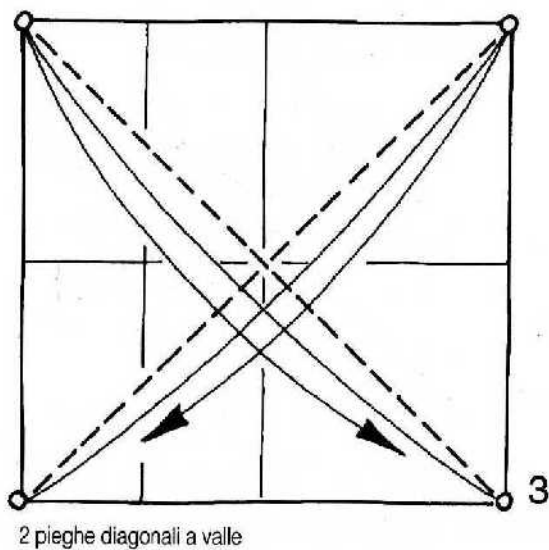
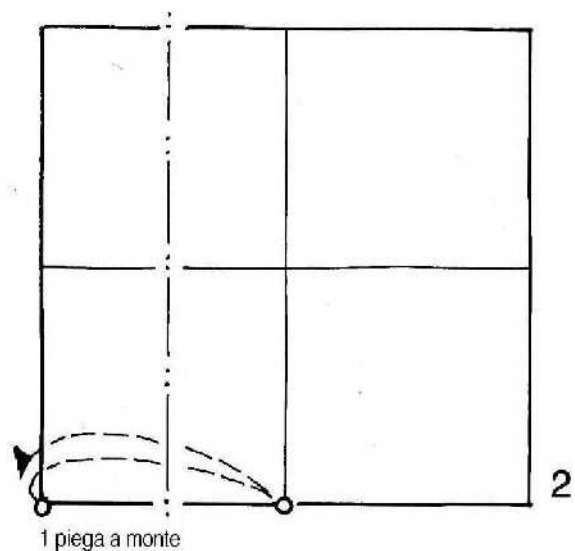
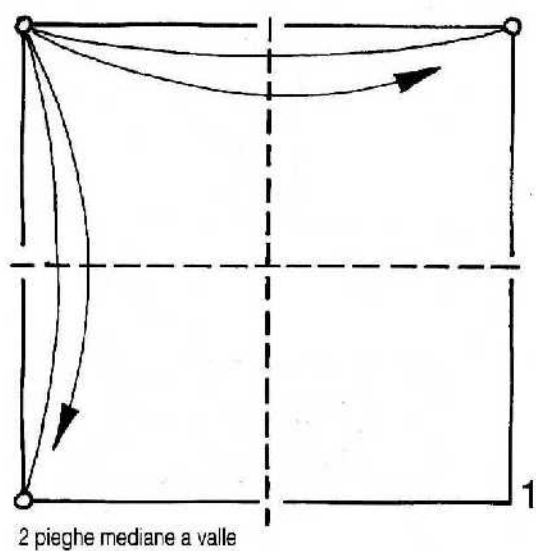
Fondo "E" ultimato

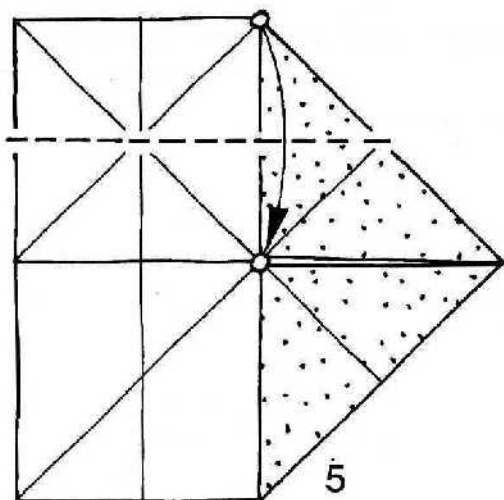


Fondo "E" ultimato ribaltato

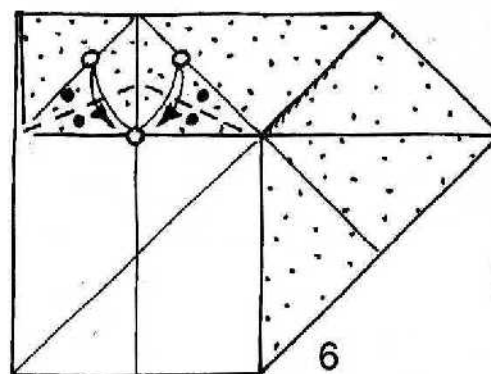
FONDO QUADRATO BASSO "F"

Sono necessari 4 moduli uguali da realizzare con fogli quadrati monocolori o bicolori.

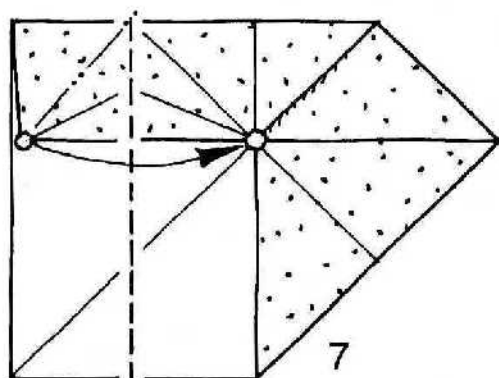




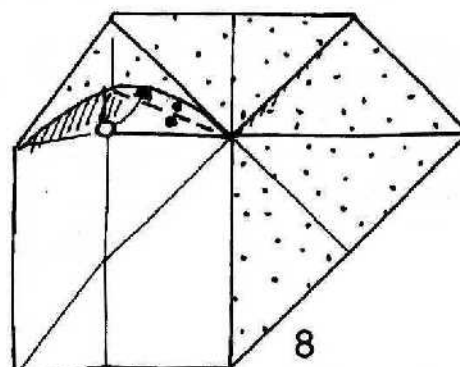
1 piega a valle e ruotate



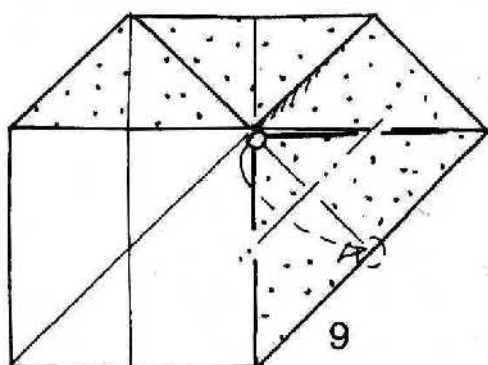
2 pieghe bisettrici a valle



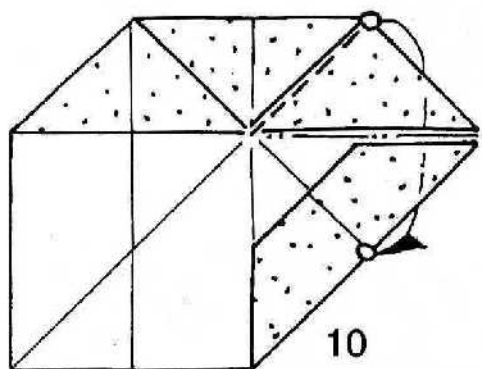
1 piega a valle e ruotate



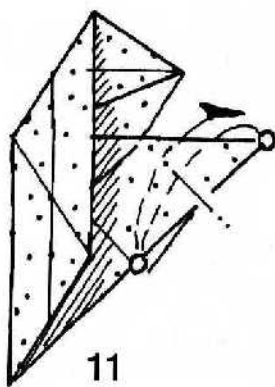
1 piega bisettrice a valle e ruotate



1 piega a monte e ruotate

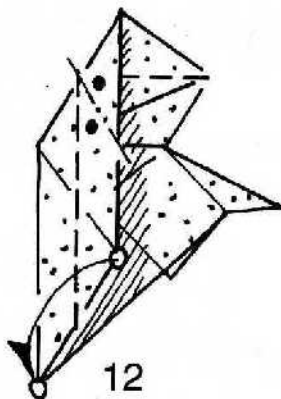


1 piega a monte ed 1 a valle e ruotate 3D



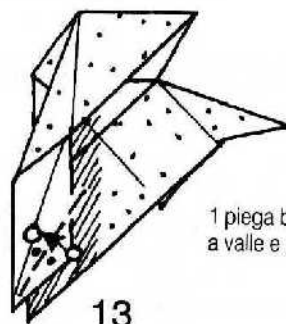
11

1 piega a monte



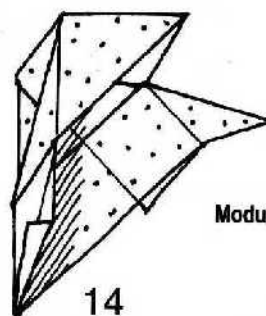
12

1 piega a valle ed 1 piccola bisettrice a monte e ruotate



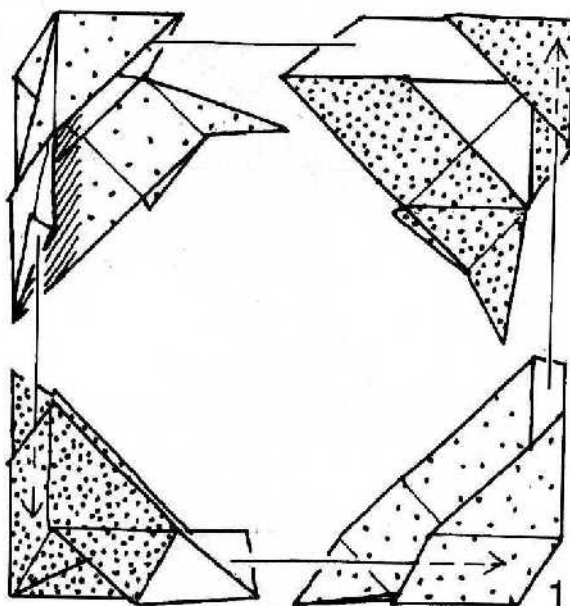
13

1 piega bisettrice a valle e ruotate

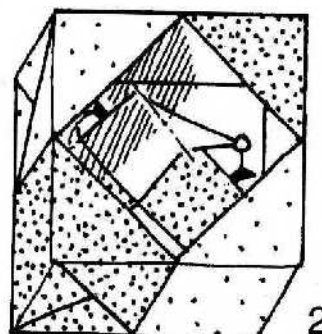


14

Modulo ultimato

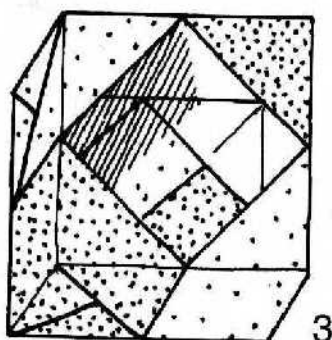


Montaggio dei 4 moduli; inserite i 4 vertici indicati nelle tasche



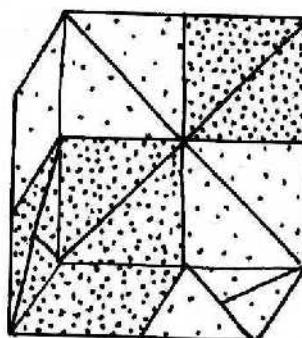
2

Piegate a monte ed intascate i 4 vertici indicati bloccando il modello



3

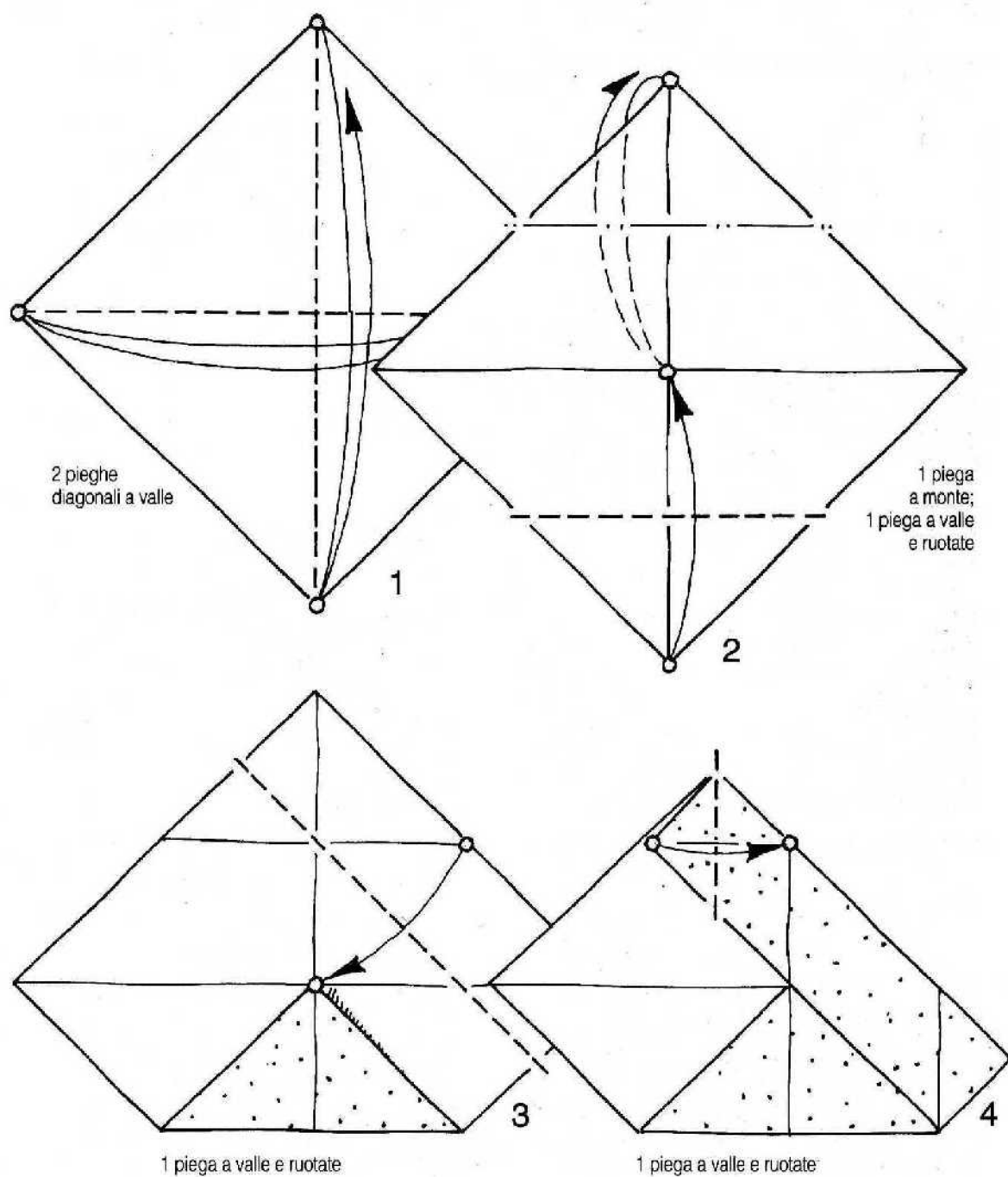
Fondo "F" ultimato

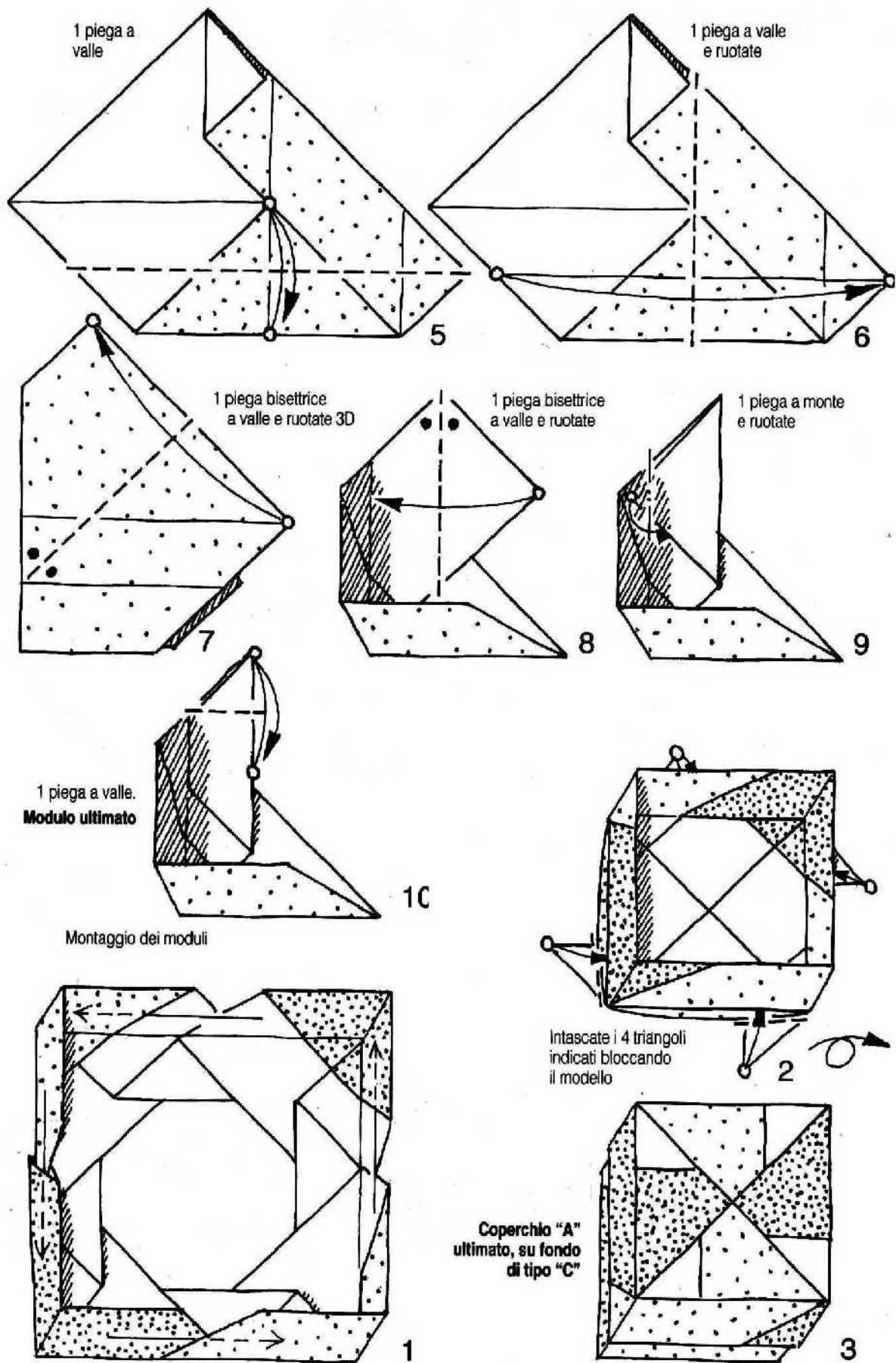


Fondo "F" ultimato ribaltato

COPERCHIO QUADRATO "A"

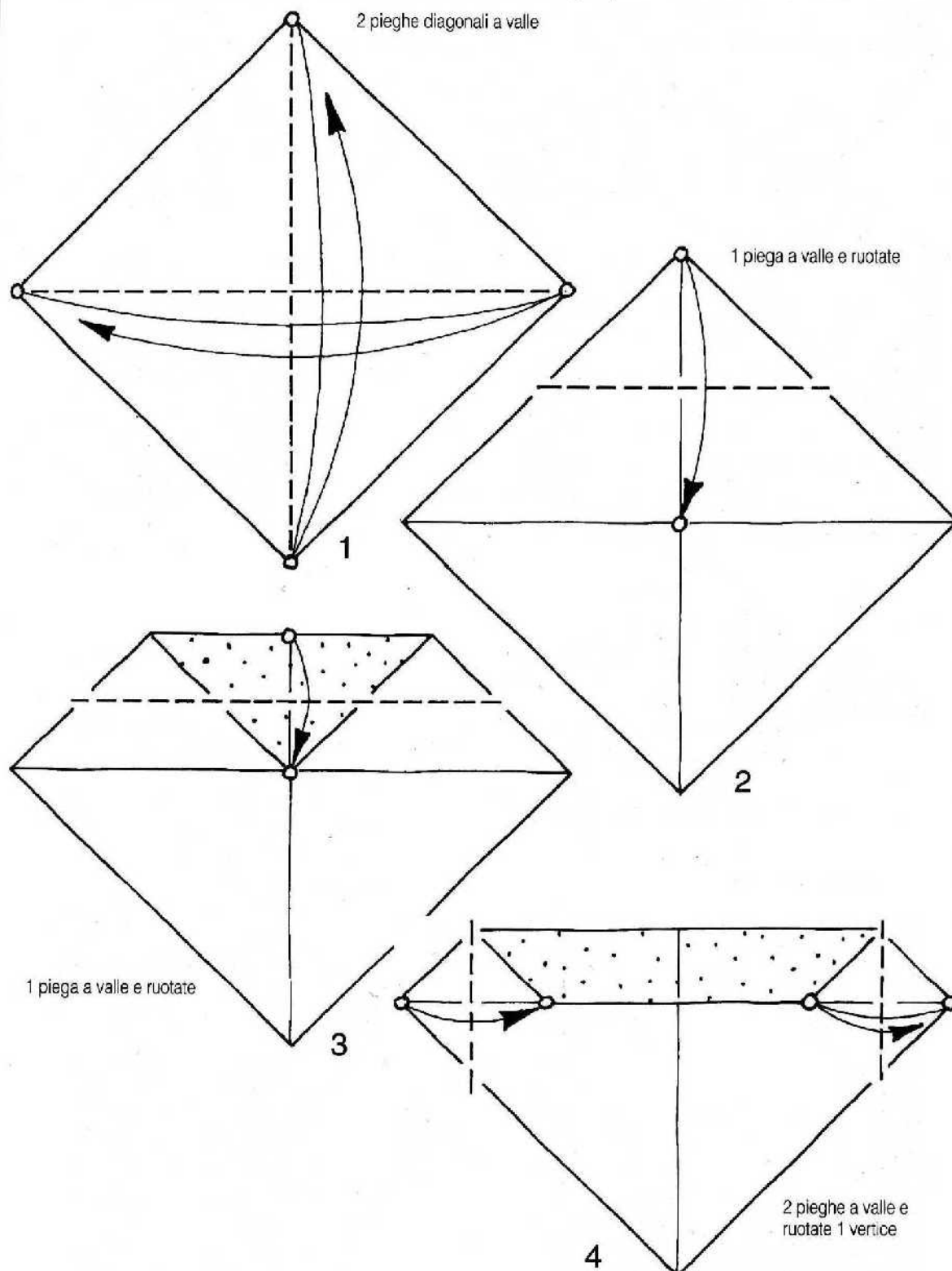
Sono necessari 4 moduli uguali, da realizzare con fogli quadrati bicolori.

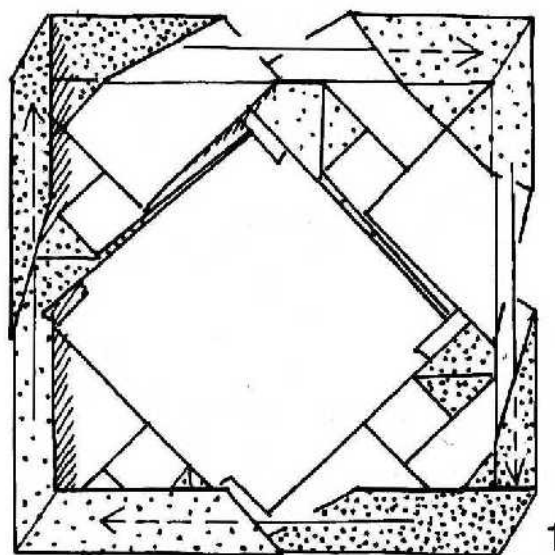
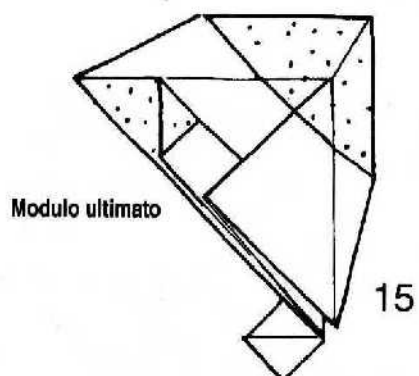
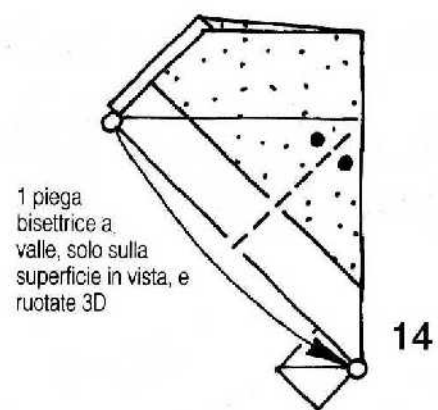
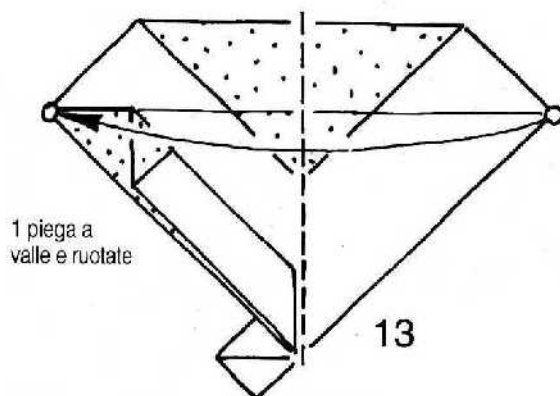




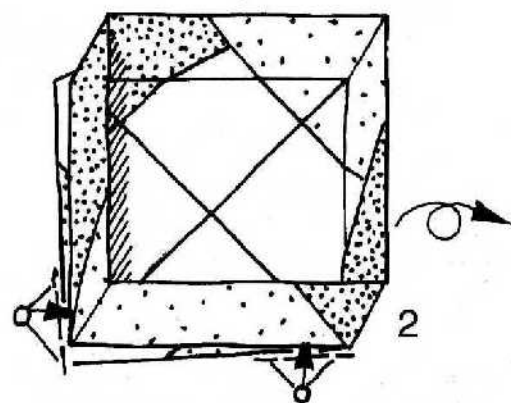
COPERCHIO QUADRATO "B"

Sono necessari 4 moduli uguali da realizzare con fogli quadrati monocolori o bicolori.

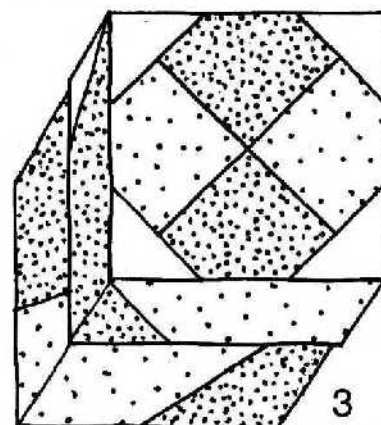




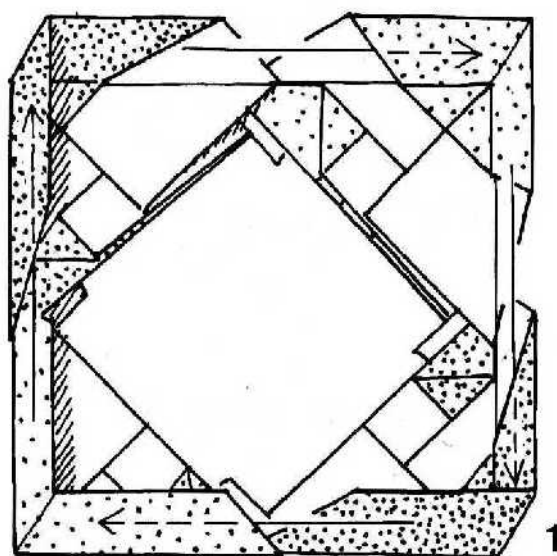
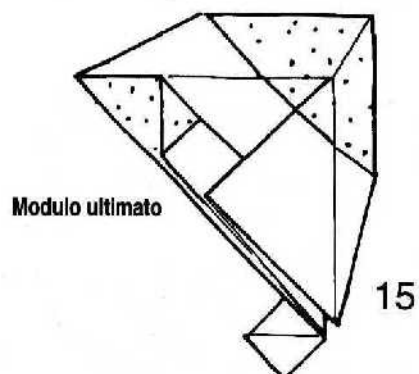
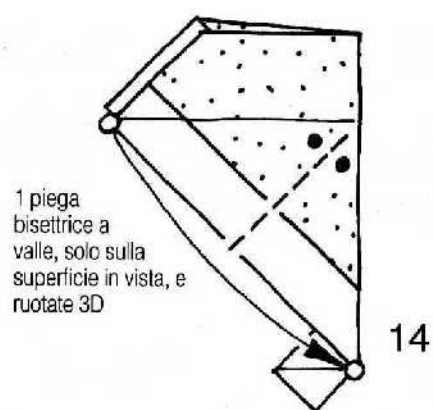
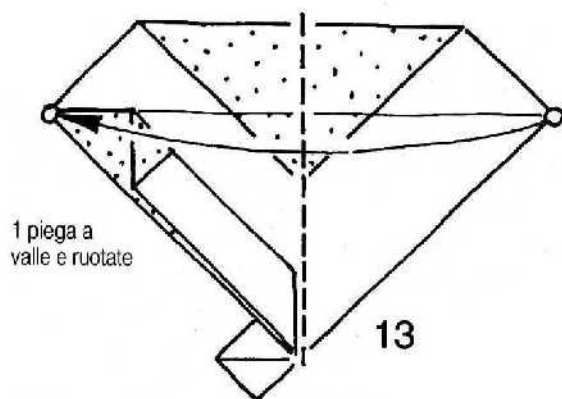
Montaggio dei 4 moduli. Inserite i vertici indicati nelle tasche



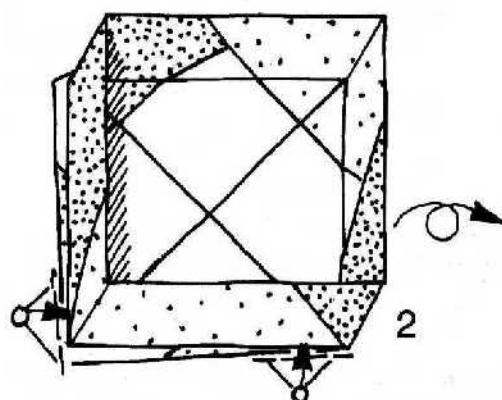
Intascate i 4 triangoli indicati bloccando il modello



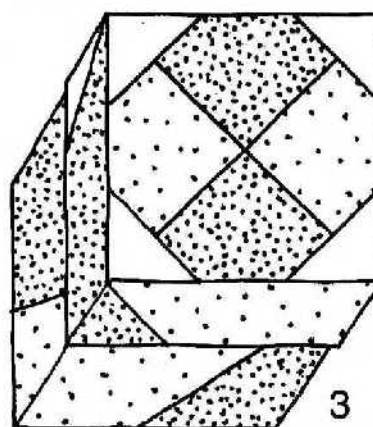
Coperchio "B" ultimato su fondo di tipo "B"



Montaggio dei 4 moduli. Inserite i vertici indicati nelle tasche



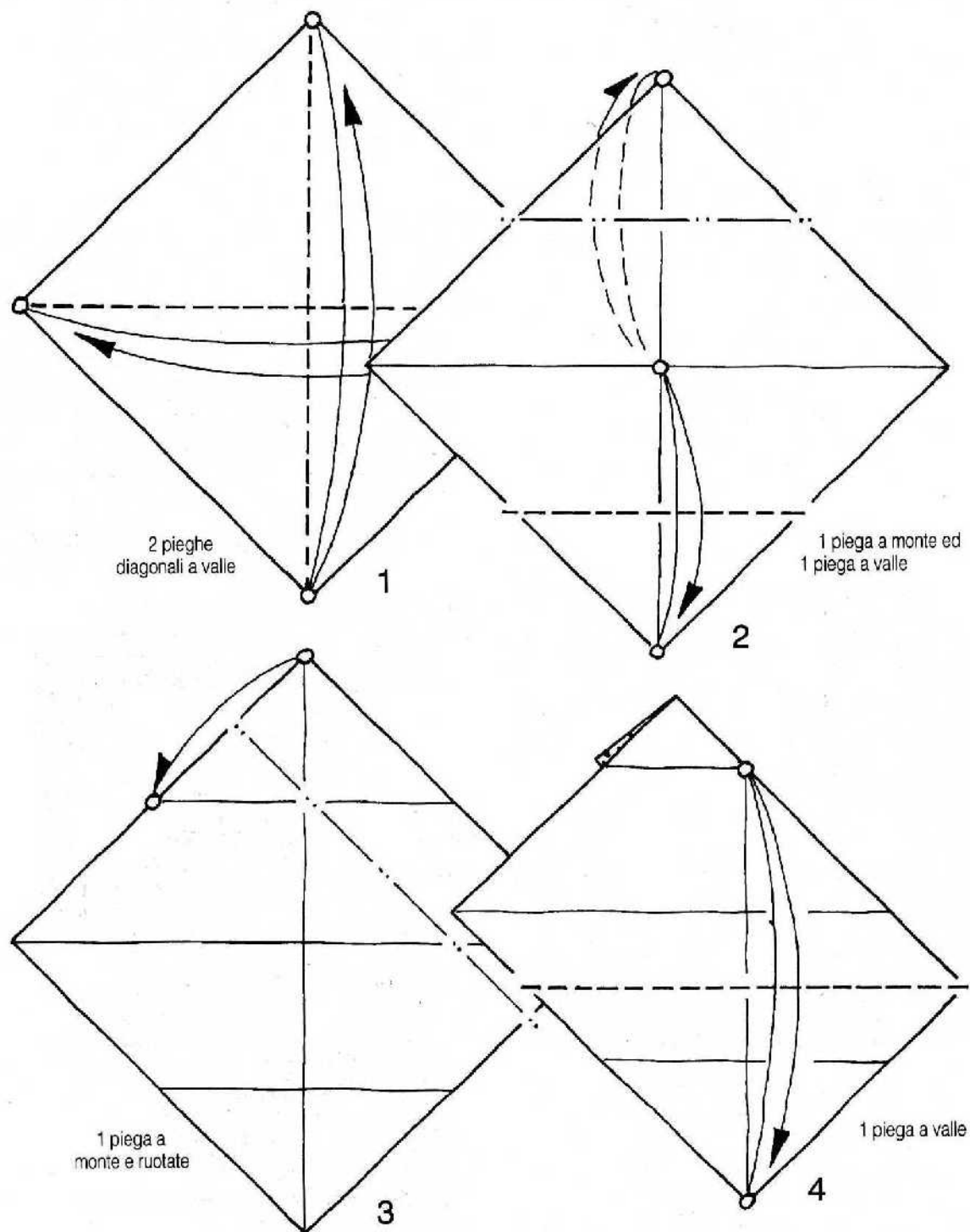
Intascate i 4 triangoli indicati bloccando il modello

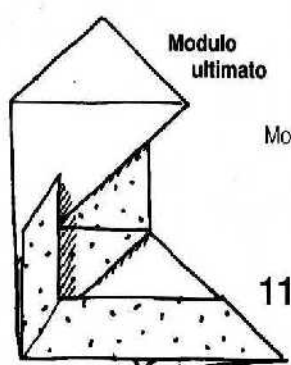
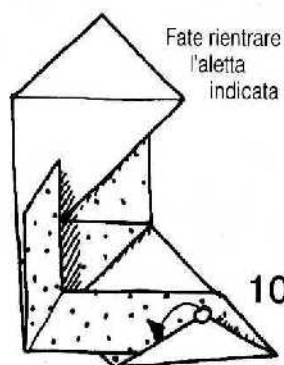
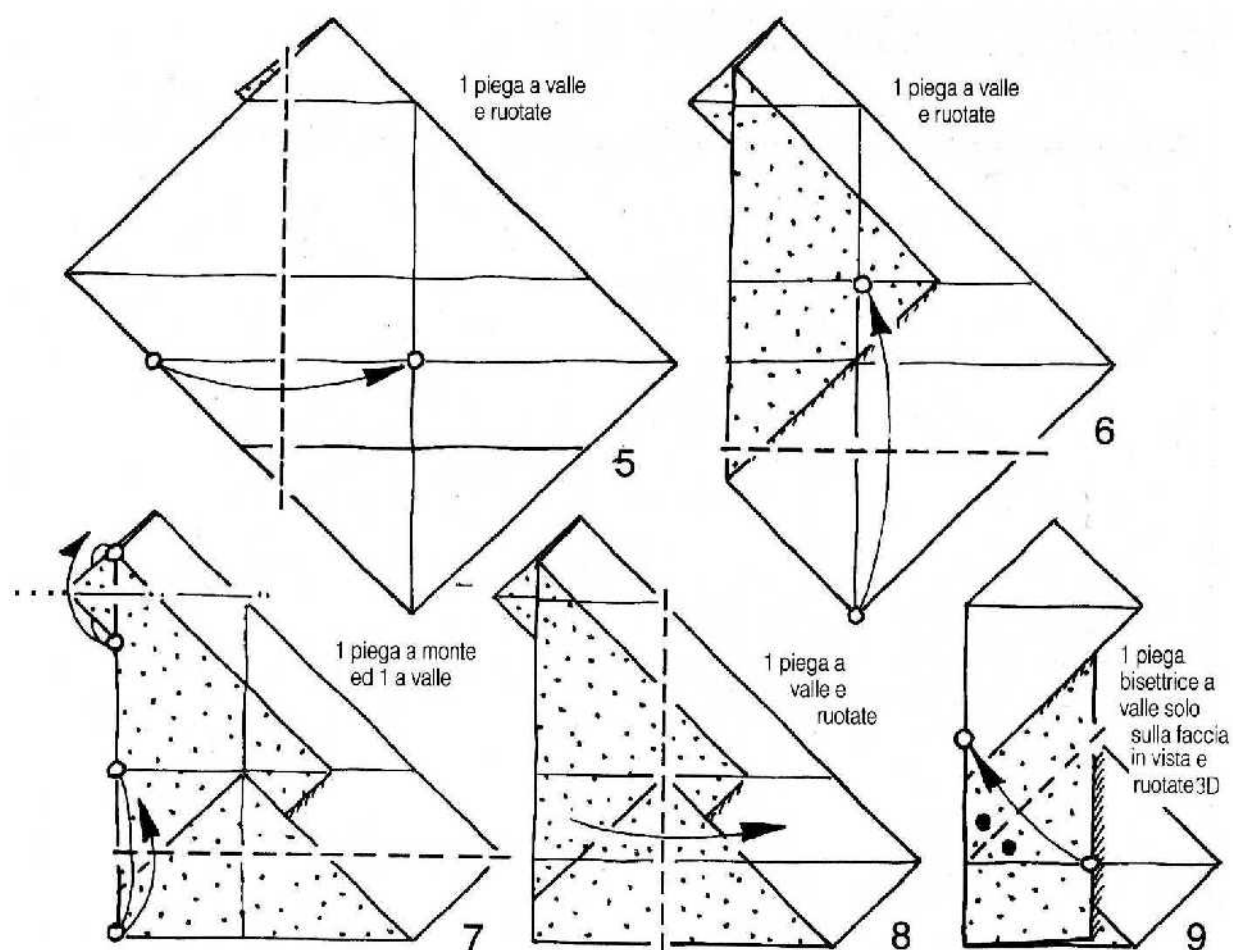


Coperchio "B" ultimato su fondo di tipo "B"

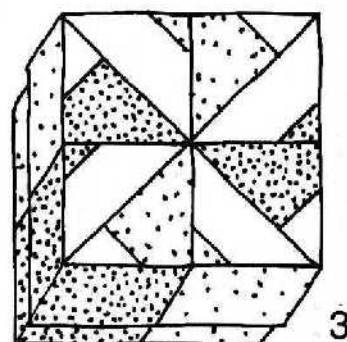
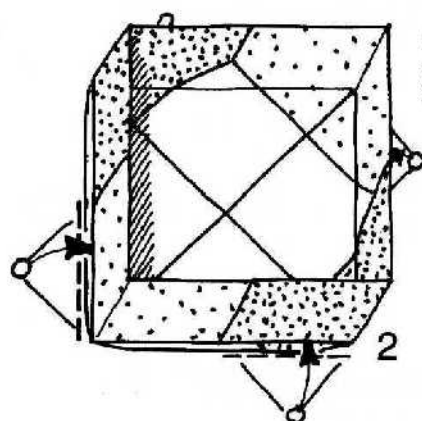
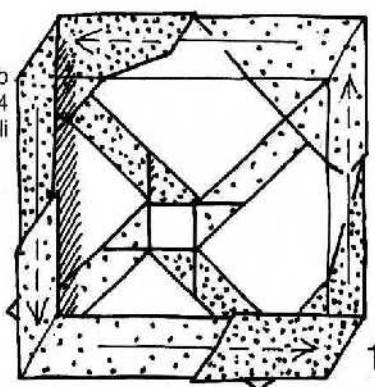
COPERCHIO QUADRATO "C"

Sono necessari 4 moduli uguali da realizzare con fogli quadrati monocolori o bicolori.



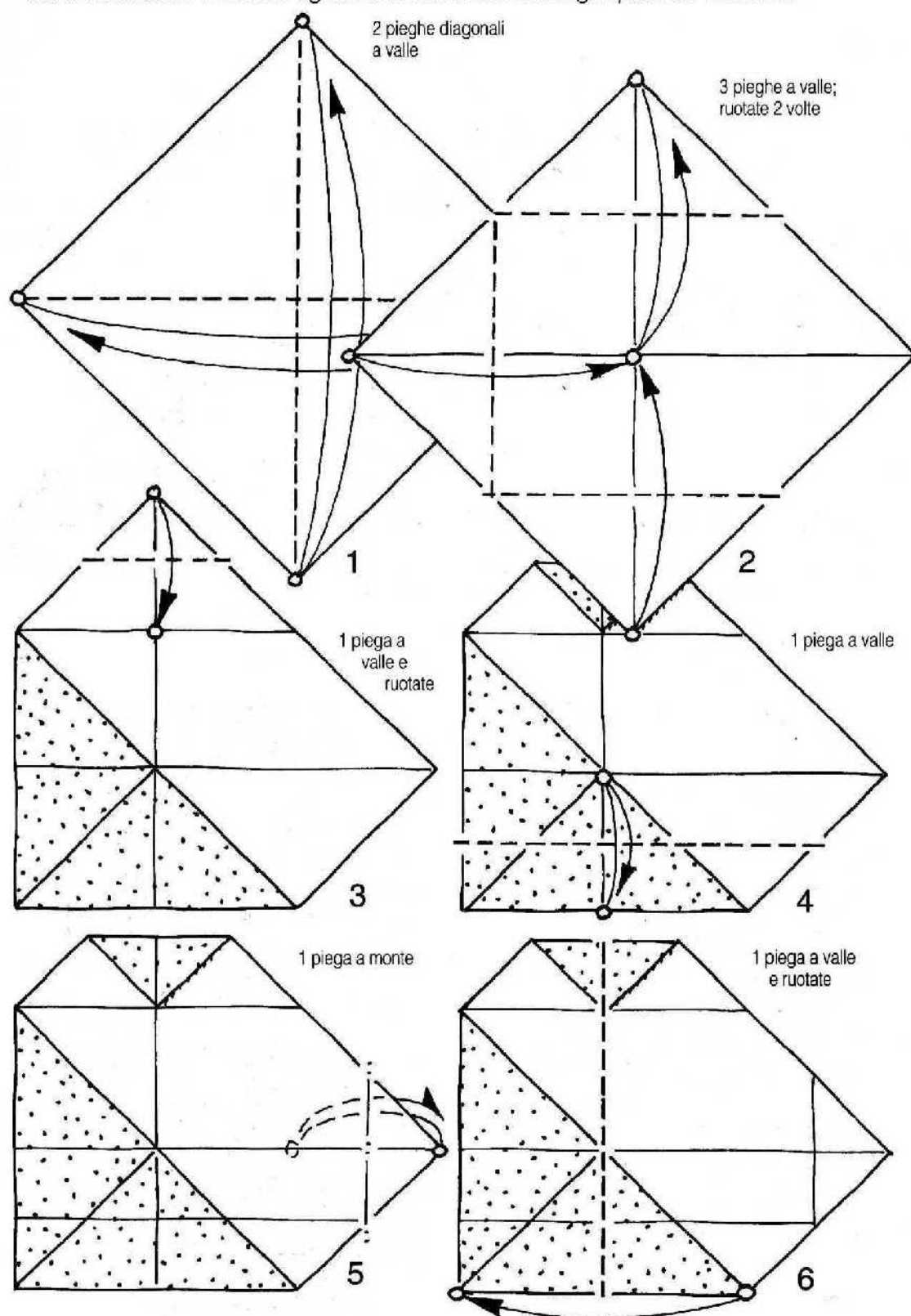


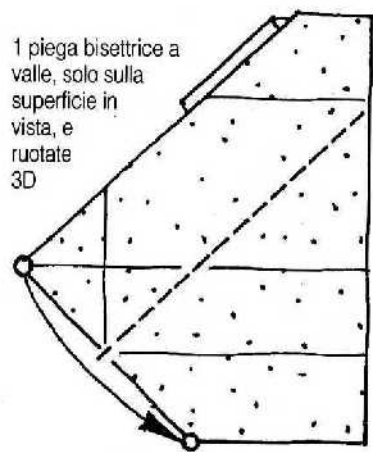
Montaggio dei 4 moduli



COPERCHIO QUADRATO "D"

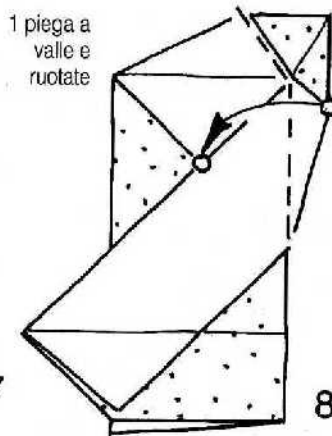
Sono necessari 4 moduli uguali da realizzare con fogli quadrati bicolori.





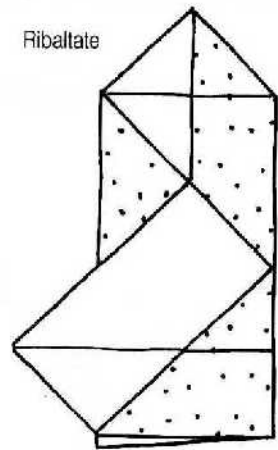
1 piega bisettrice a valle, solo sulla superficie in vista, e ruotate 3D

7



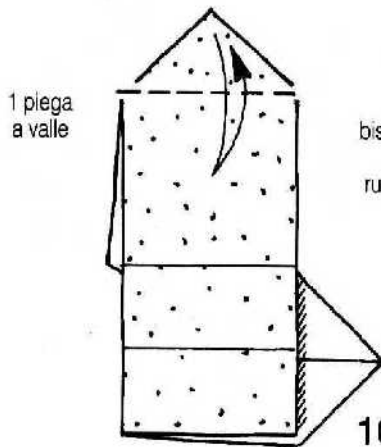
1 piega a valle e ruotate

8



Ribaltate

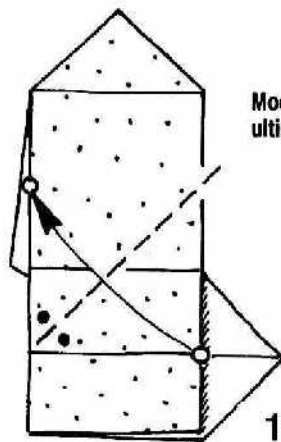
9



1 piega a valle

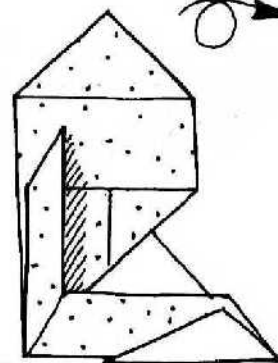
1 piega bisettrice a valle e ruotate 3D

10

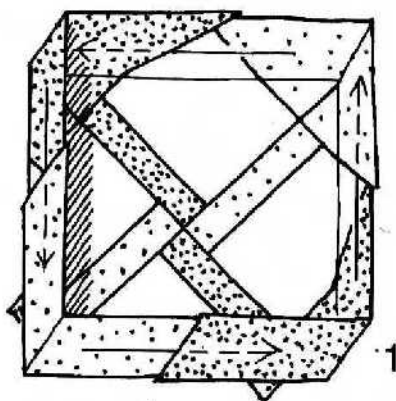


Modulo ultimato

11

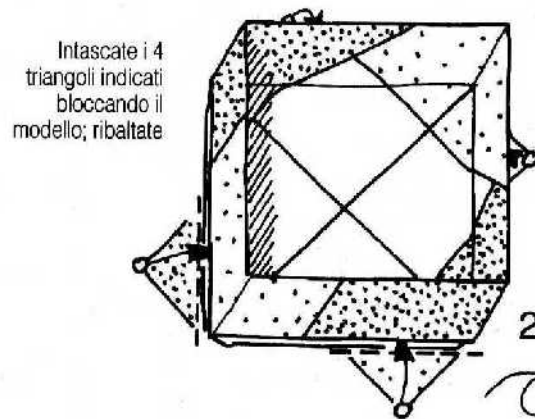


12



Montaggio dei 4 moduli

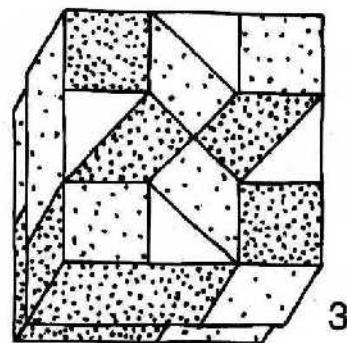
1



Intascate i 4 triangoli indicati bloccando il modello; ribaltate

2

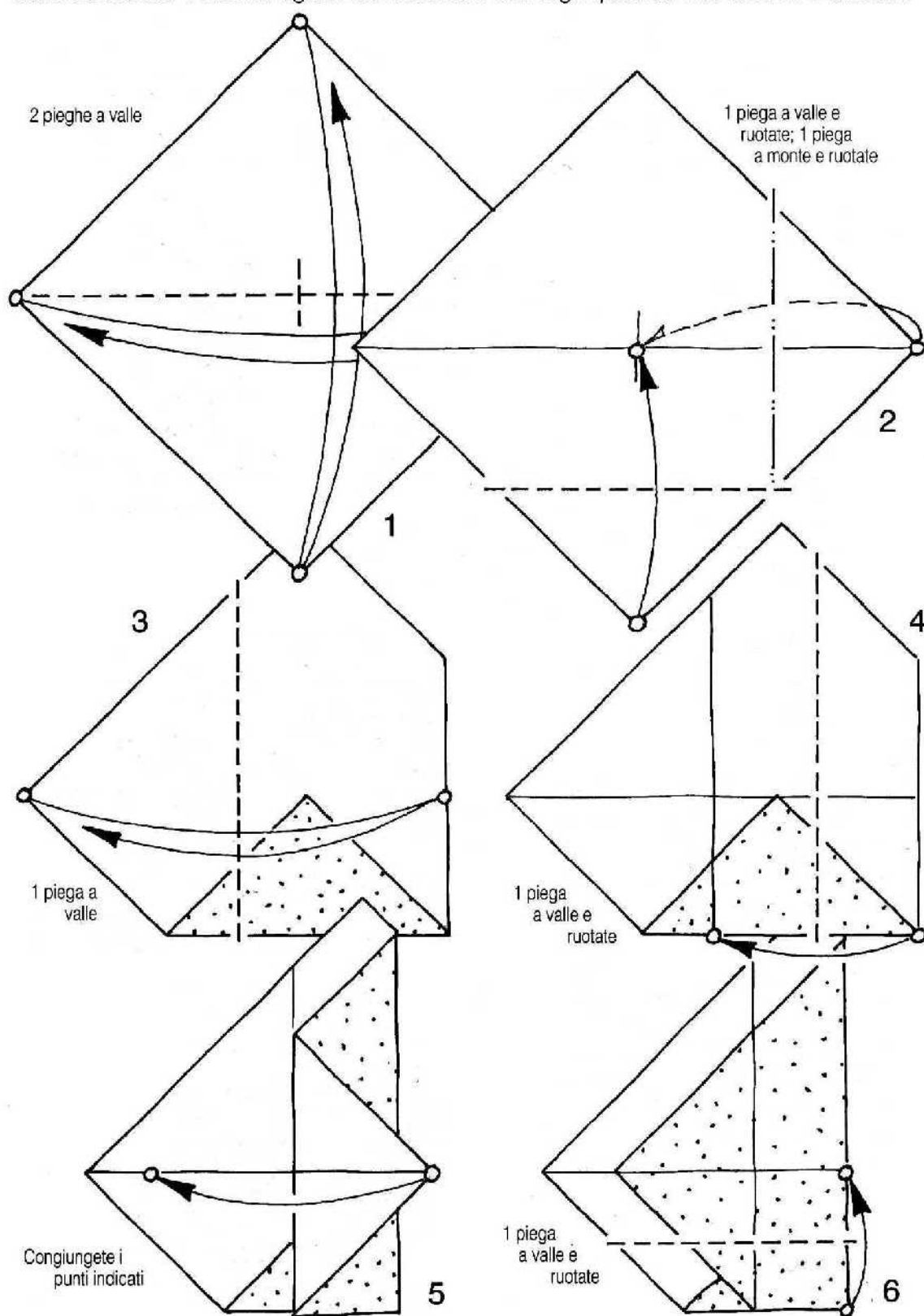
Coperchio "D" ultimato, su fondo di tipo "D"

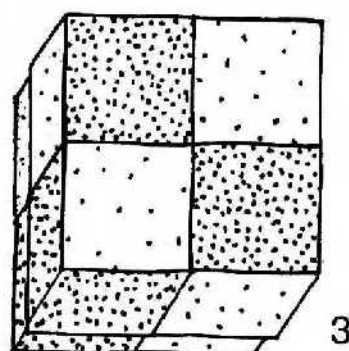
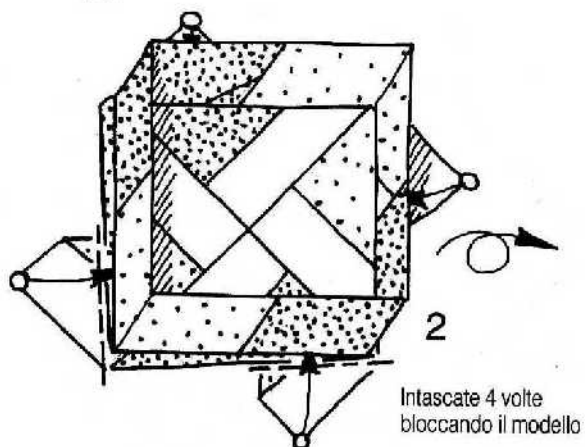
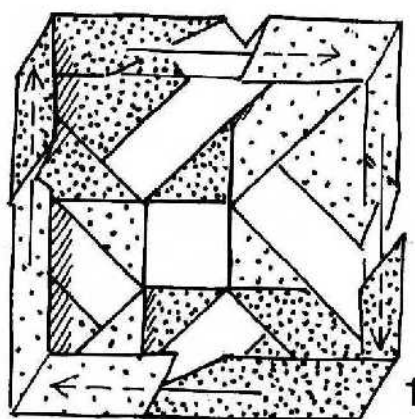
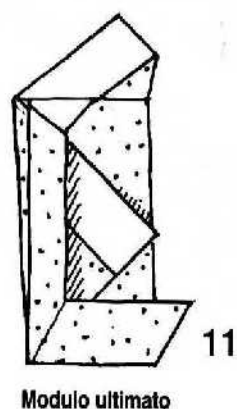
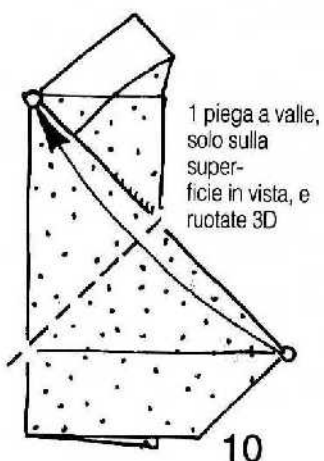
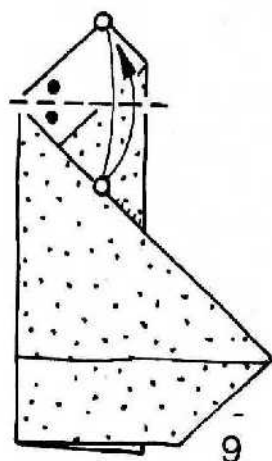
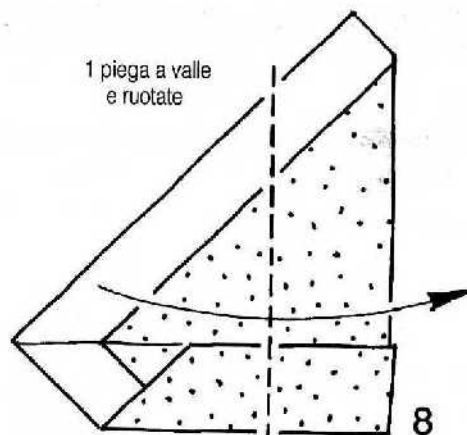
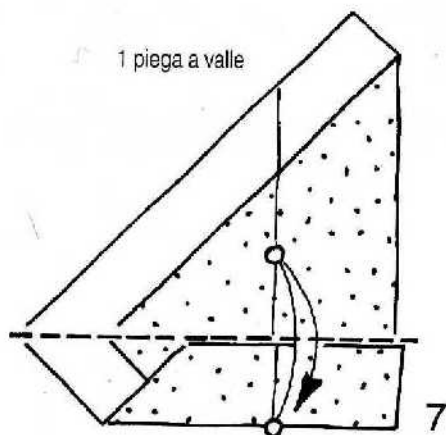


3

COPERCHIO QUADRATO "E"

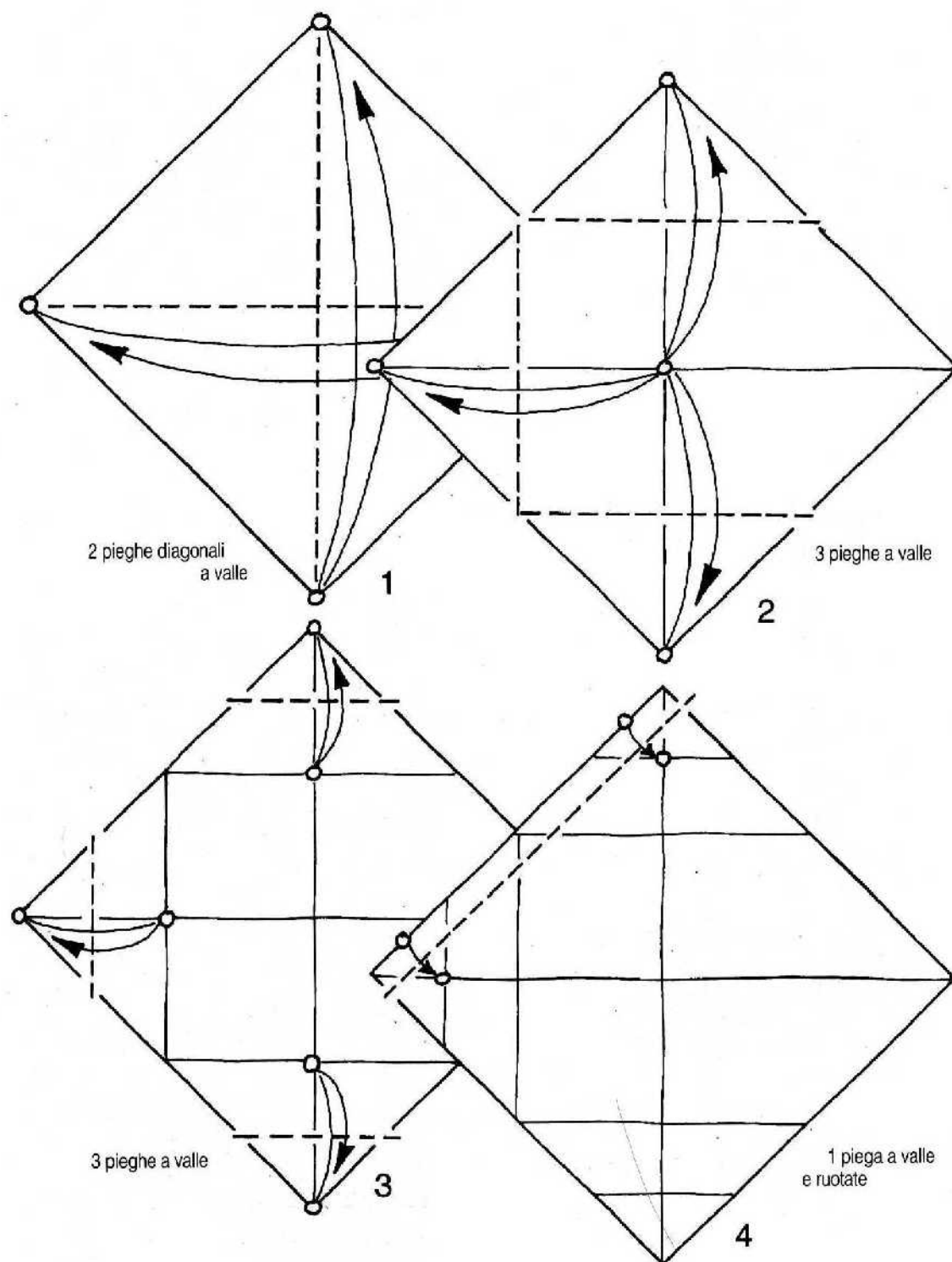
Sono necessari 4 moduli uguali da realizzare con fogli quadrati monocolori o bicolori.

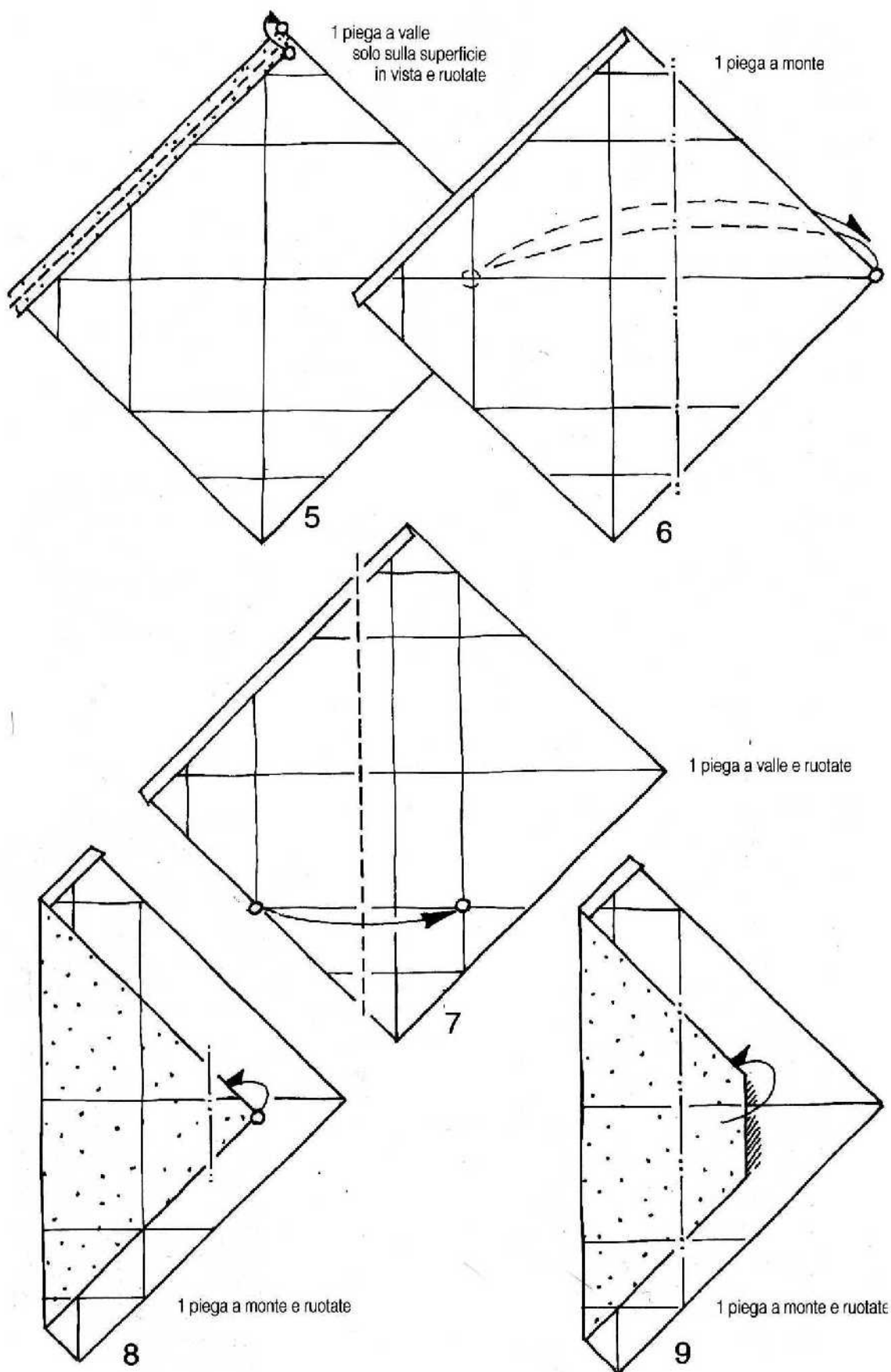


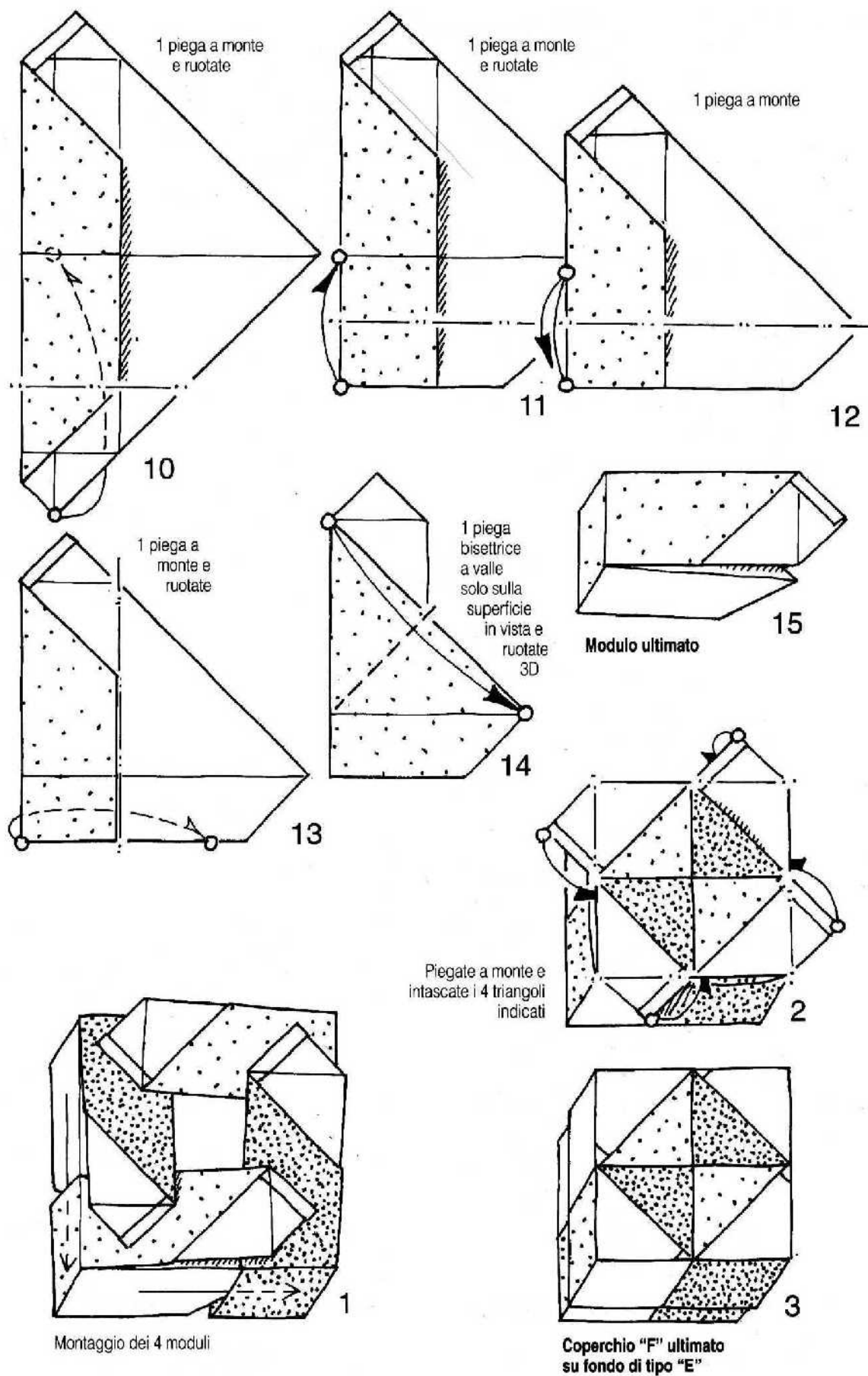


COPERCHIO QUADRATO "F"

Sono necessari 4 moduli uguali da realizzare con fogli quadrati bicolori.

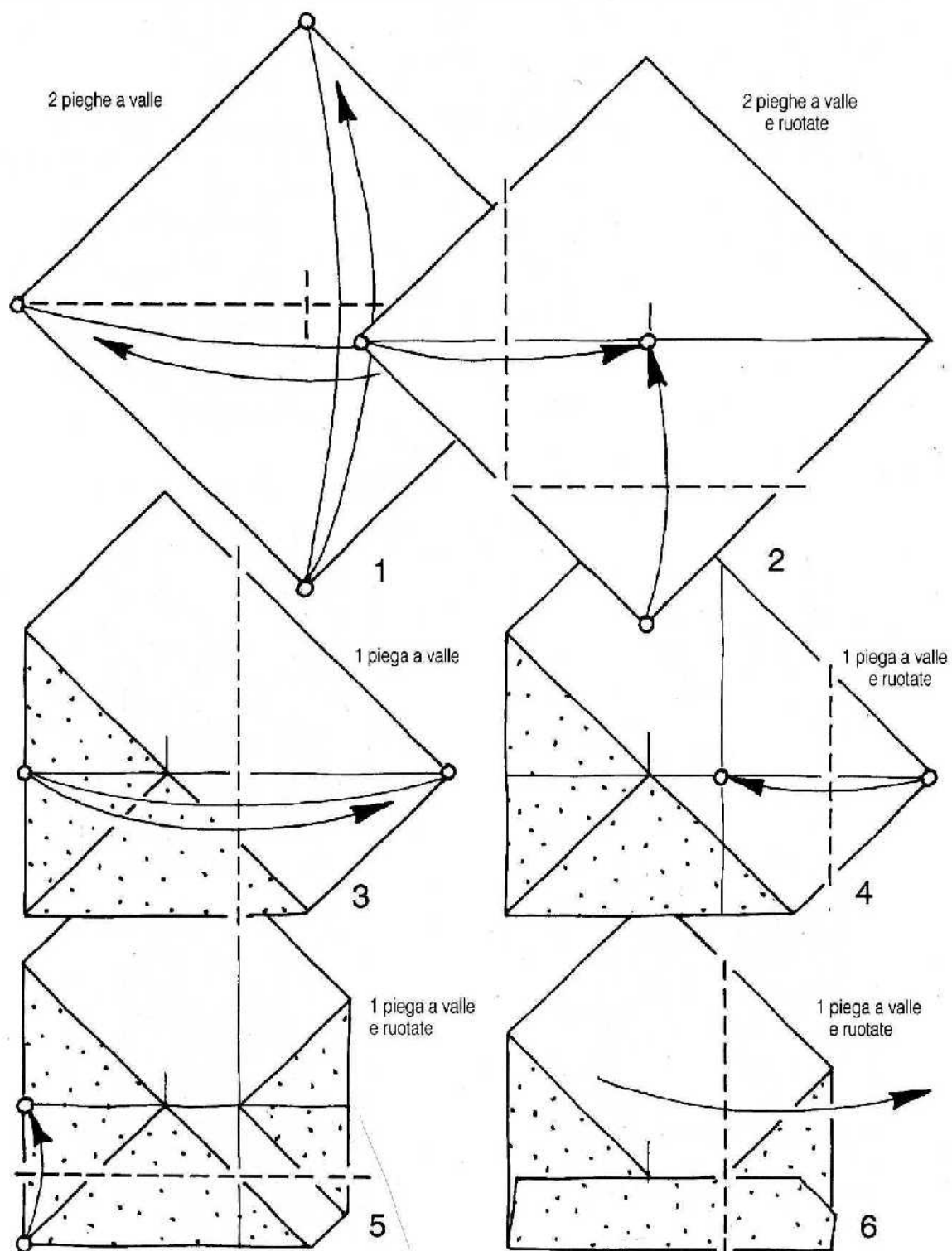


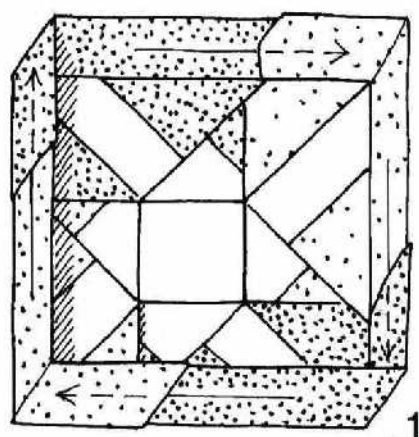
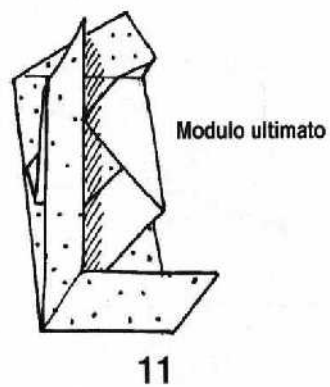
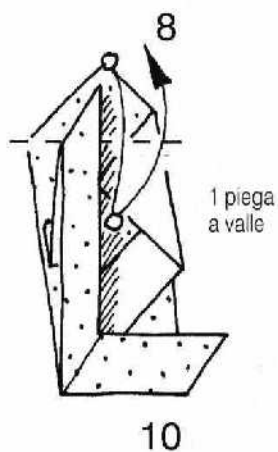
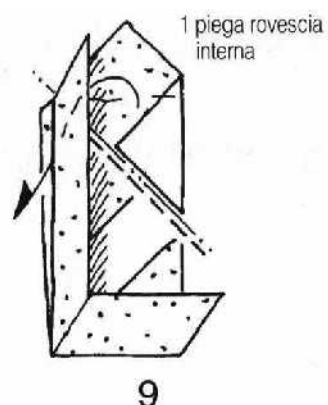
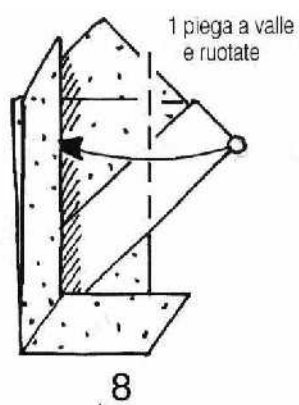
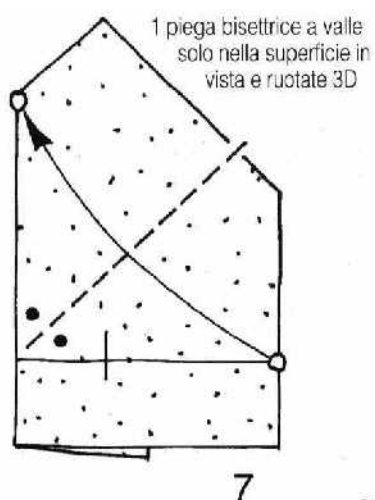




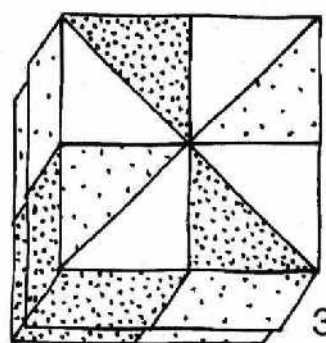
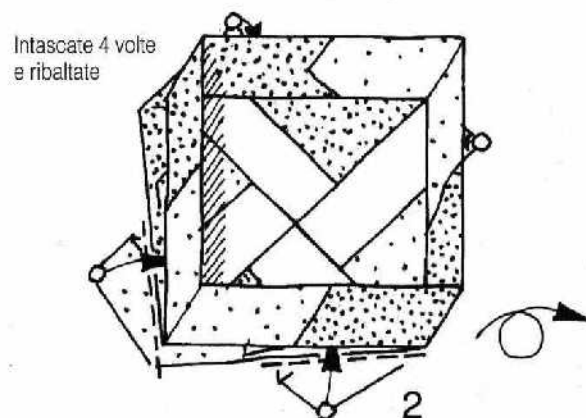
COPERCHIO QUADRATO "G"

Sono necessari 4 moduli uguali, da realizzare con fogli quadrati bicolori

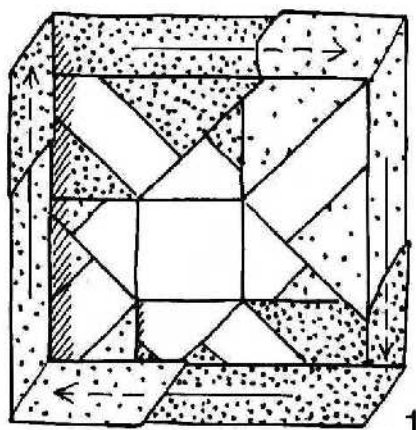
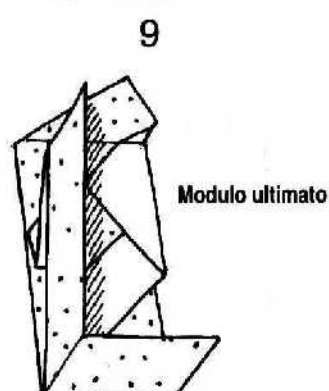
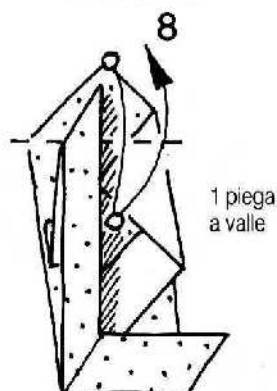
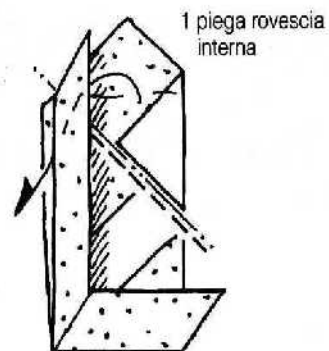
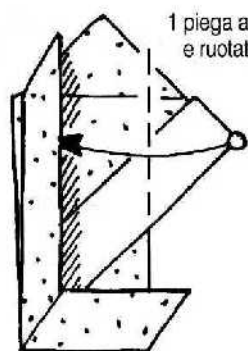
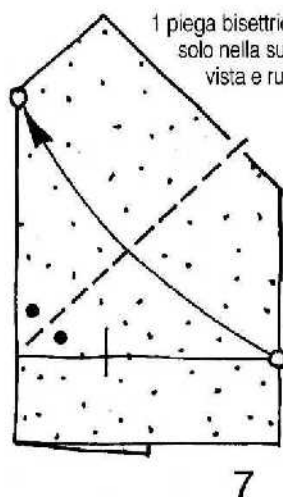




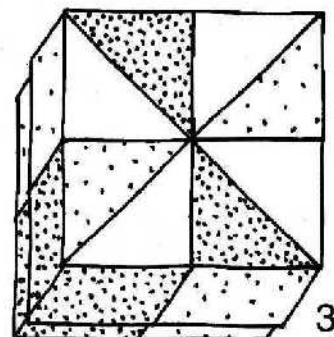
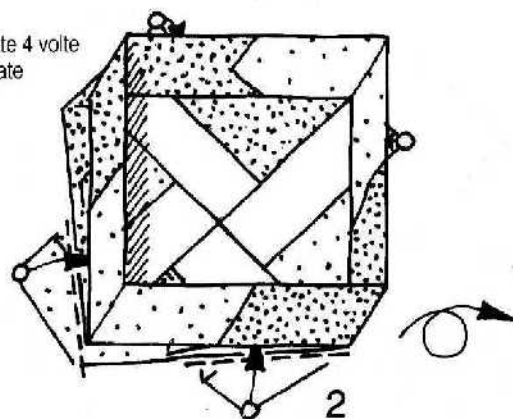
Montaggio dei 4 moduli



Coperchio "G" ultimato su fondo di tipo "D"



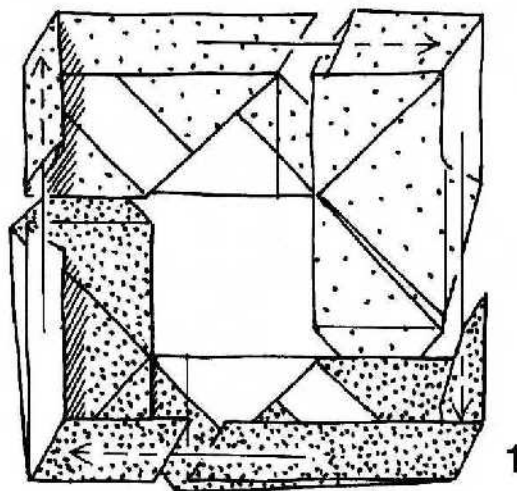
Intascate 4 volte e ribaltate



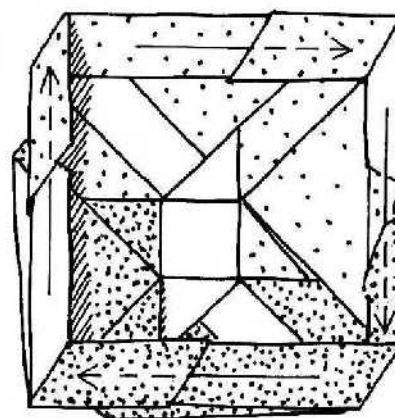
Coperchio "G" ultimato su fondo di tipo "D"

COPERCHIO QUADRATO "L"

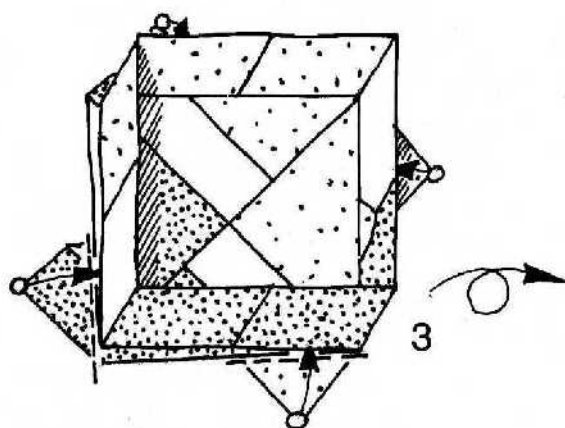
Sono necessari 2 moduli di tipo "F" e 2 di tipo "G" da realizzare con fogli quadrati bicolori.



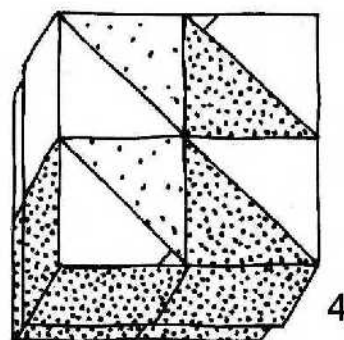
Montaggio dei 4 moduli



2



Intascate 4 volte e ribaltate

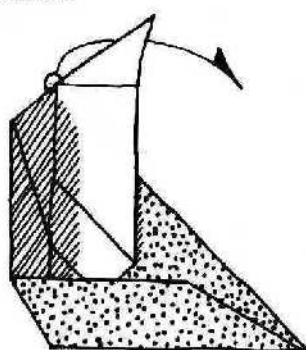


Coperchio "L" ultimato su fondo
formato da 2 moduli "D" e 2 "E"

COPERCHIO QUADRATO "M"

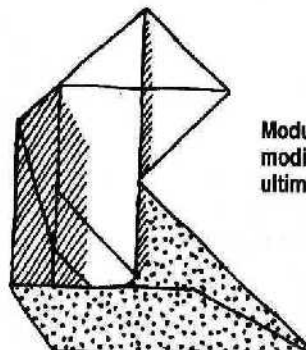
Sono necessari 2 moduli di tipo "A" modificati e 2 di tipo "G" modificati, da realizzare con fogli quadrati bicolori

Modulo "A":
ruotate la
superficie
sottostante



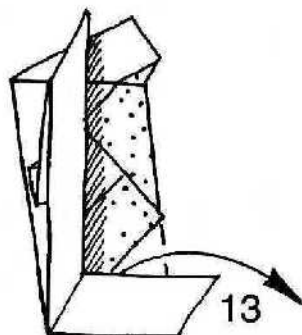
11

Modulo "A"
modificato,
ultimato



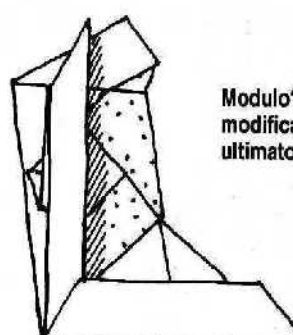
12

Modulo "G":
a colori invertiti
ruotate la
superficie
indicata



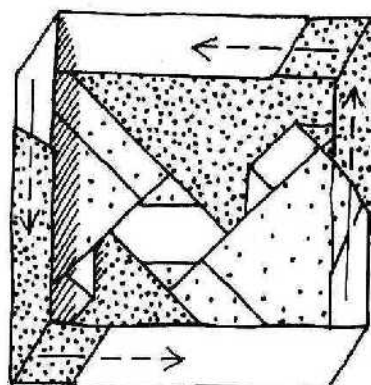
13

Modulo "G"
modificato,
ultimato

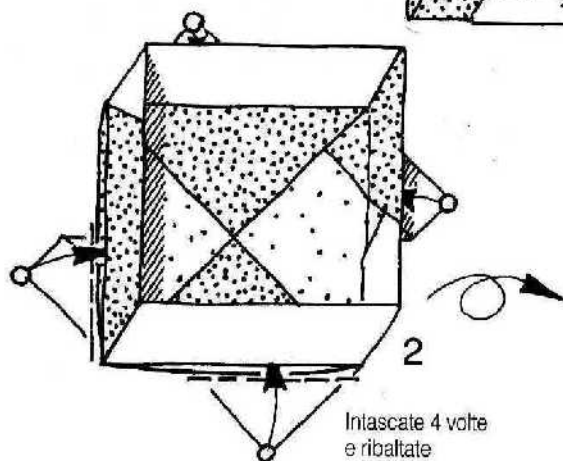


14

Montaggio dei 4 moduli

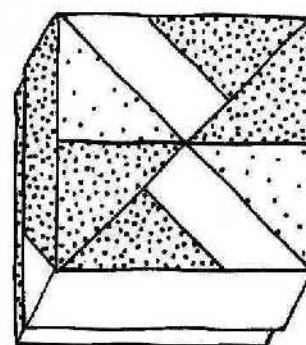


1



2

Inlasciate 4 volte
e ribaltate

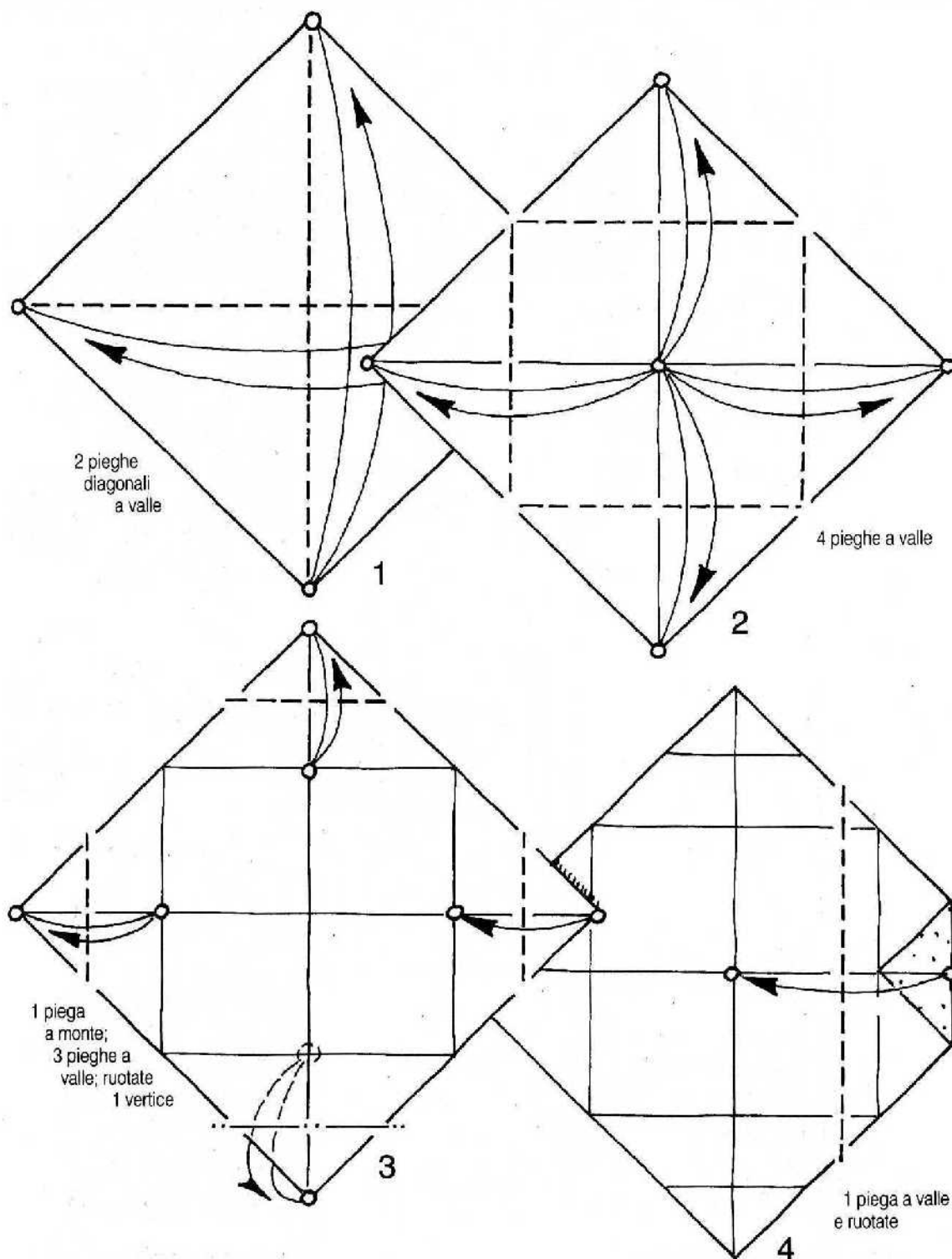


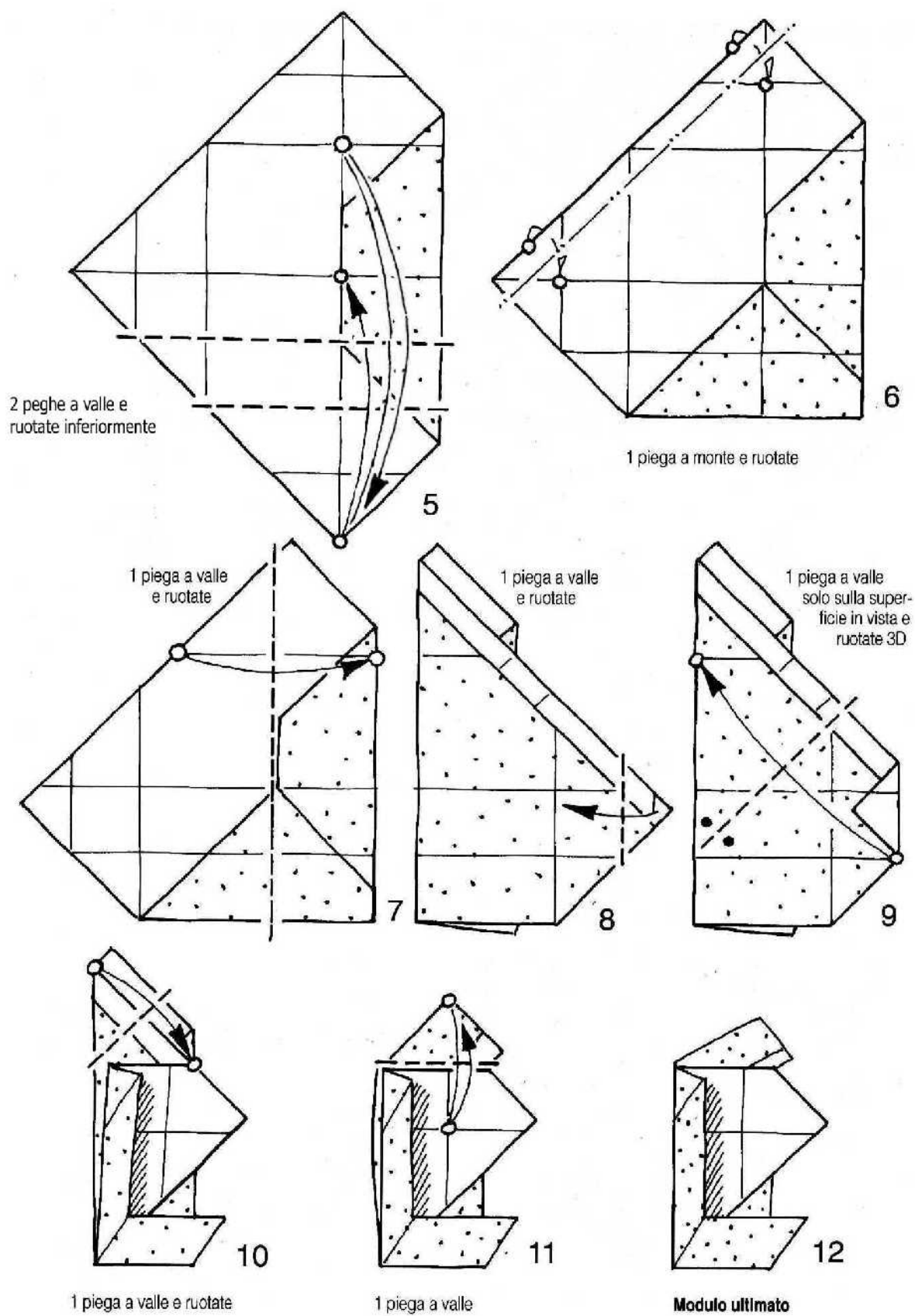
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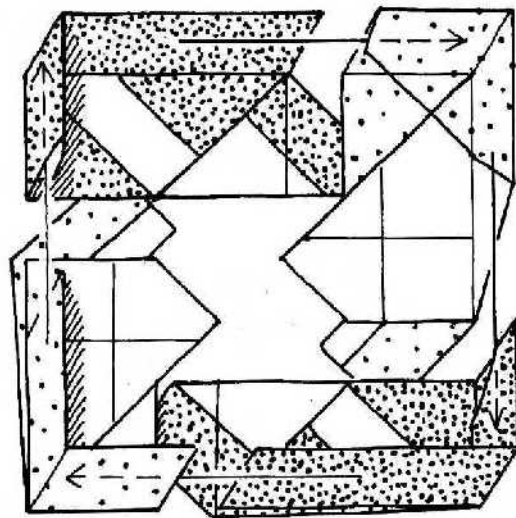
Coperchio "M" ultimato
su fondo di tipo "C"

COPERCHIO QUADRATO "N"

Sono necessari 2 moduli "N" uguali e 2 di tipo "G" da realizzare con fogli quadrati bicolori.

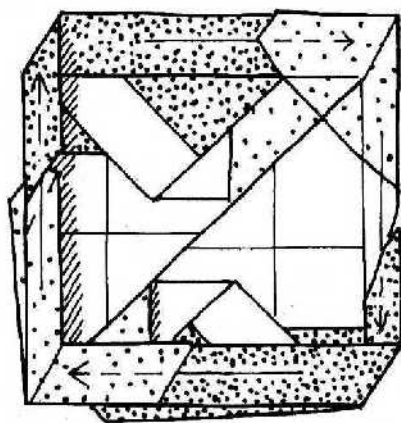




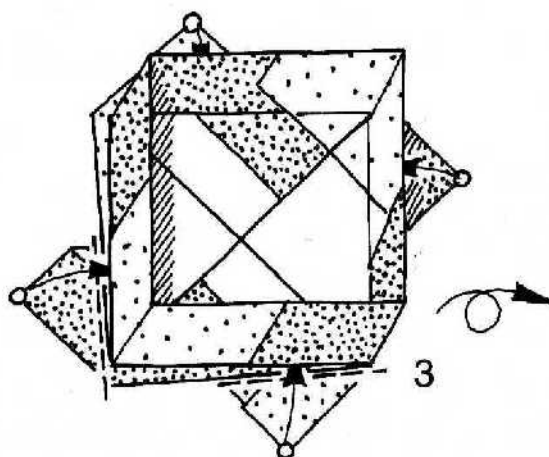


Montaggio dei 4 moduli

1

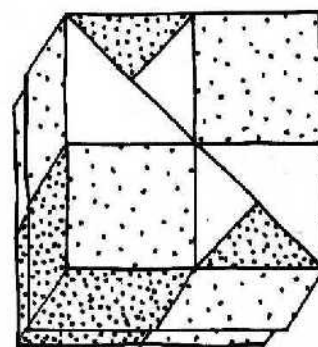


2



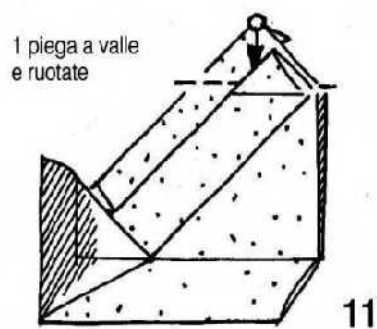
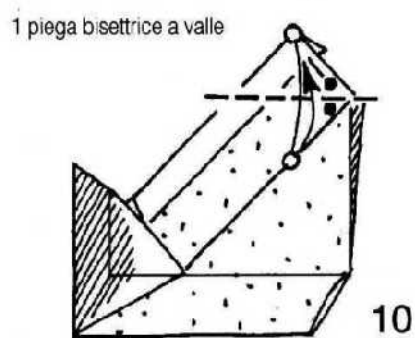
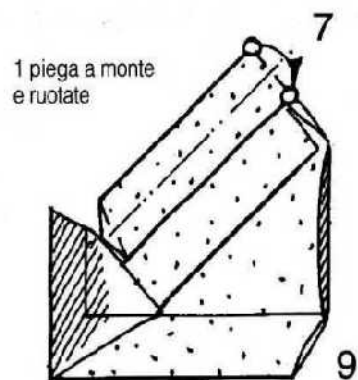
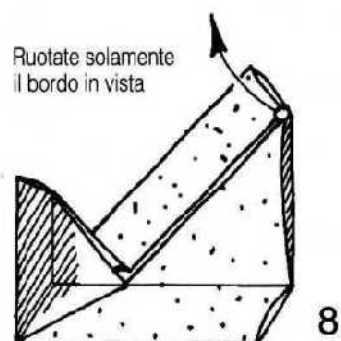
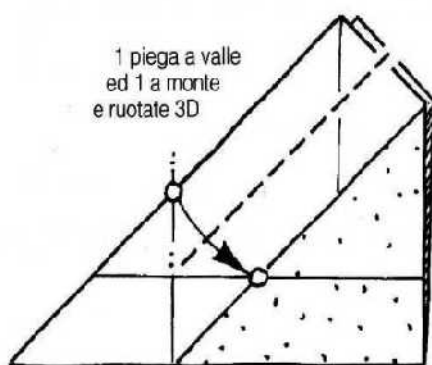
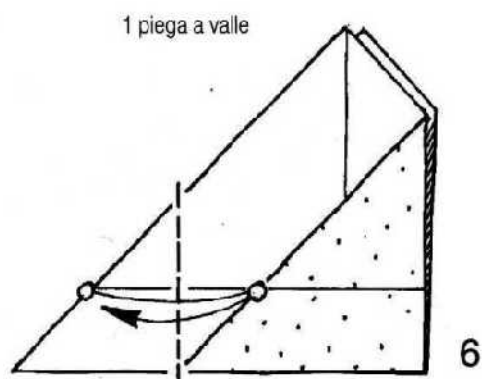
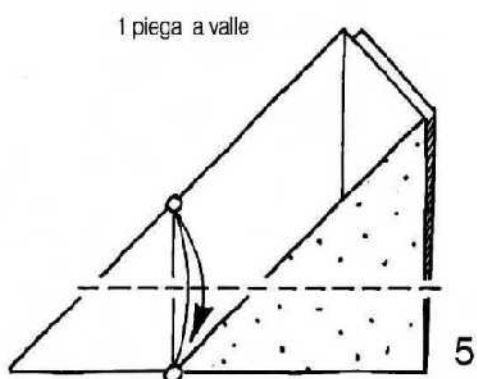
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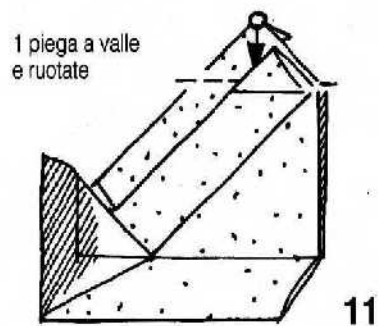
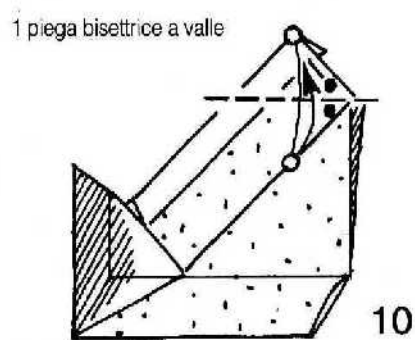
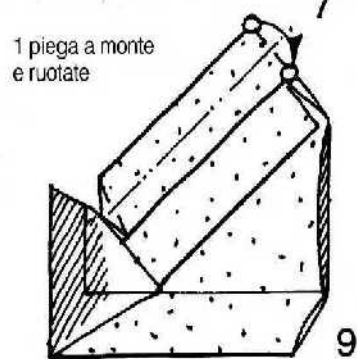
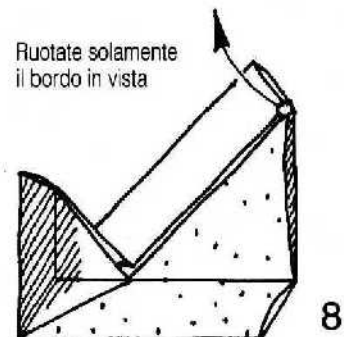
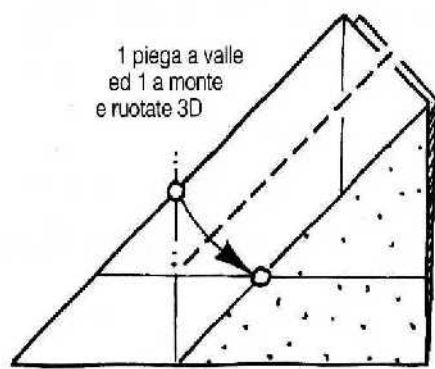
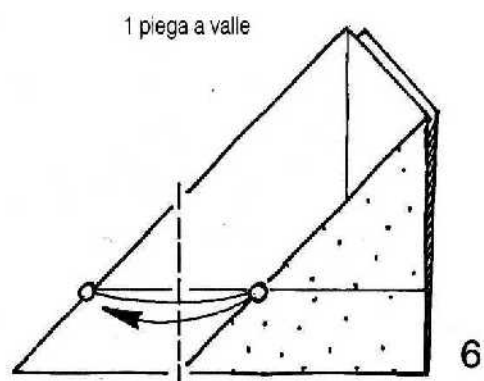
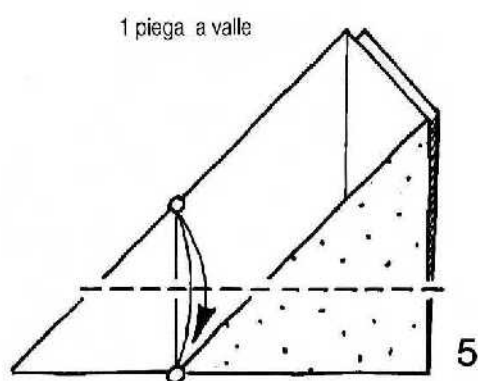
Intascate 4 volte e ribaltate



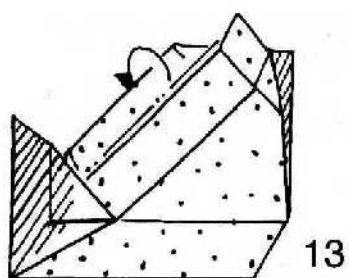
4

Coperchio "N" ultimato
su fondo di tipo "D"



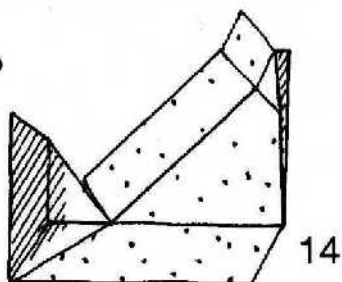


1 piega a monte
e ruotate

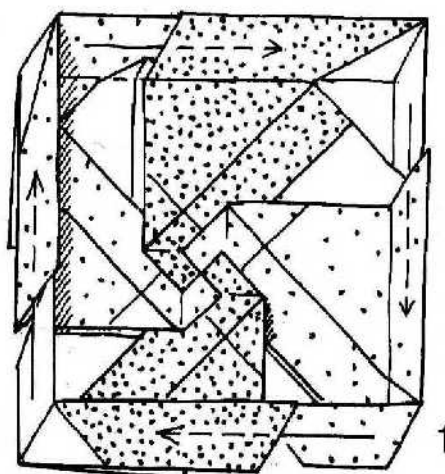


13

Modulo ultimato

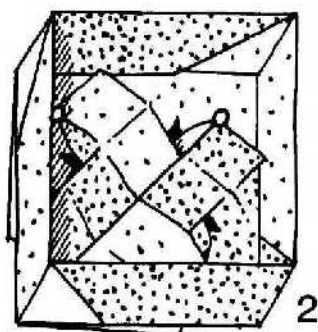


14



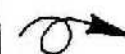
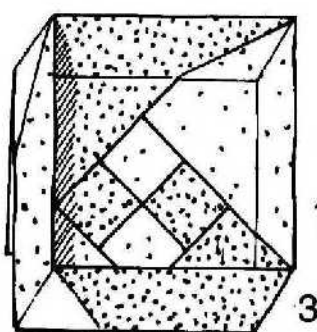
1

Montaggio di 4 moduli



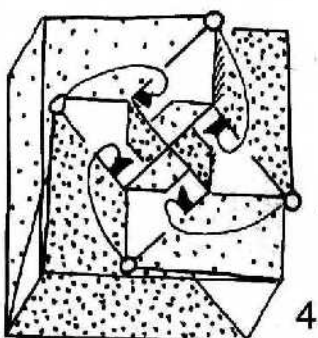
2

Ripiegate a monte le 4 superfici
indicate bloccando il modello



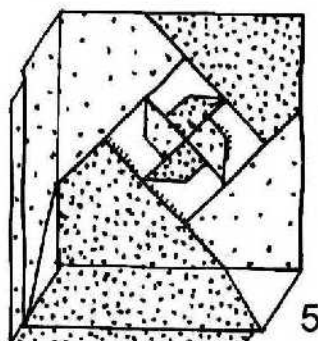
3

Ribaltate



4

Inserite i 4 vertici indicati
nelle tasche sottostanti

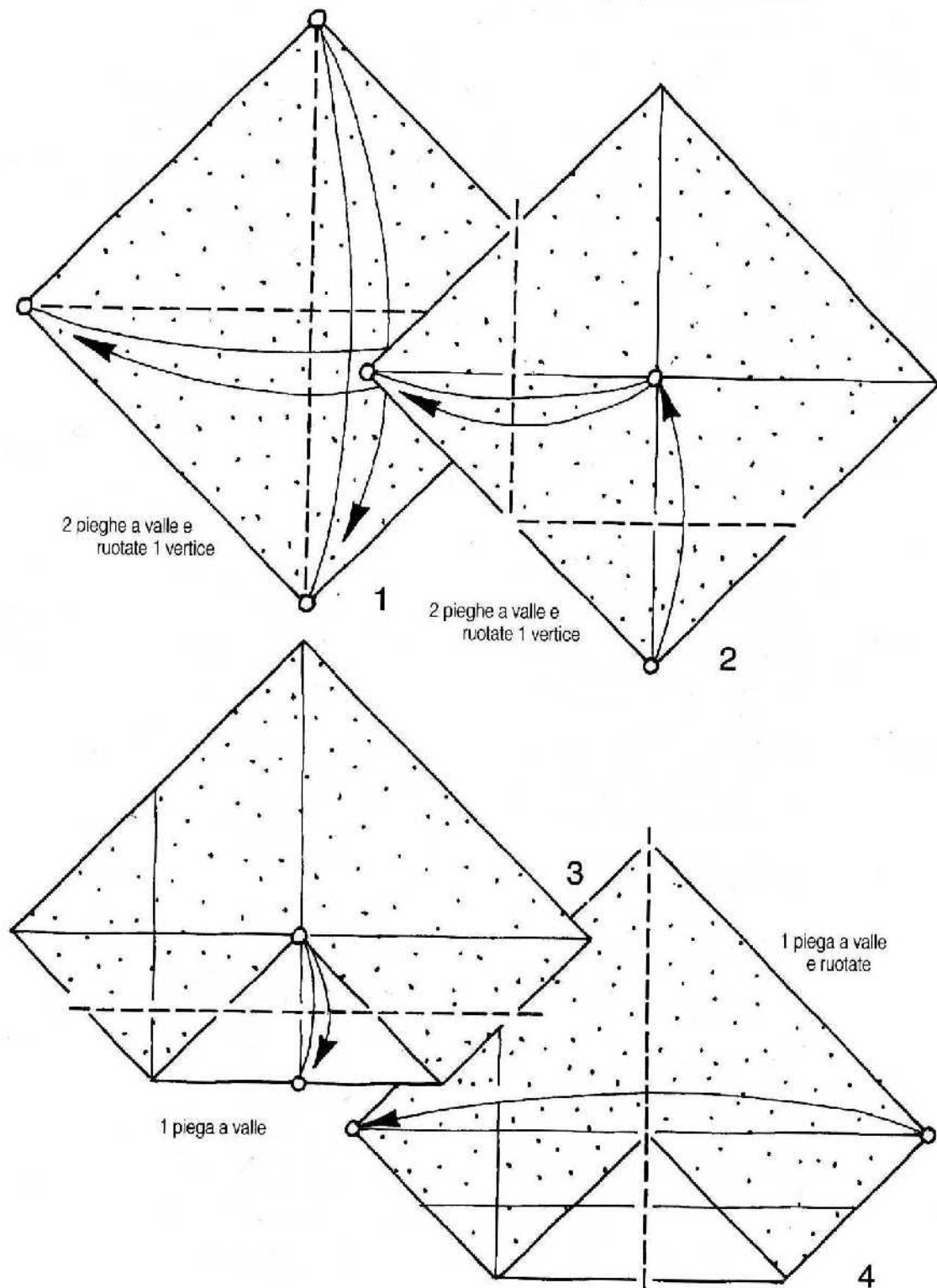


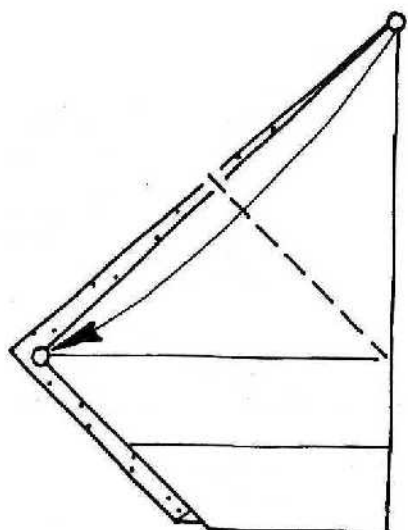
5

Coperchio quadrato "ultimato"
su fondo di tipo "C"

COPERCHIO "A BANDIERINE"

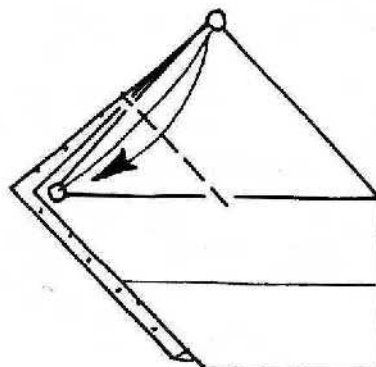
Sono necessari 4 moduli uguali, da realizzare con fogli quadrati bicolori.





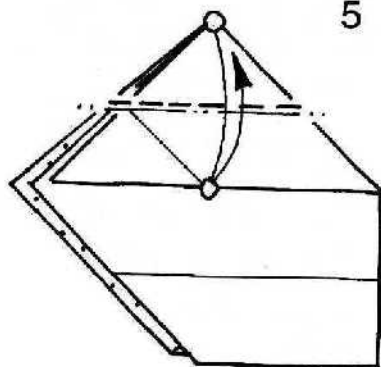
1 piega a valle e ruotate

5



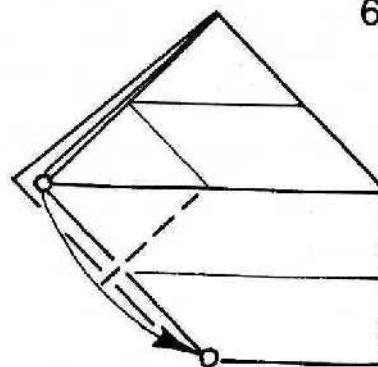
1 piega a valle solo sulla faccia in vista

6



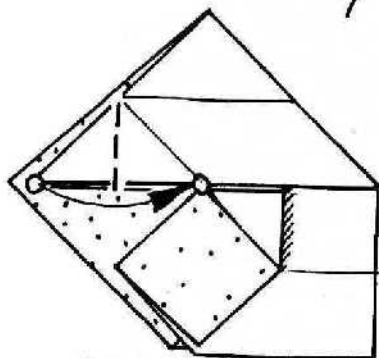
Piegate sia a monte che a valle

7



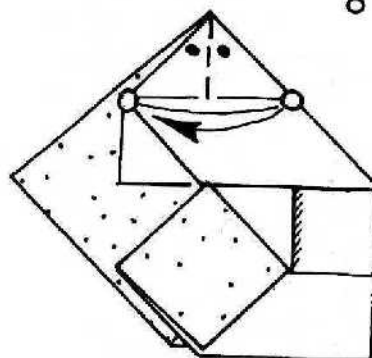
1 piega a valle solo sulla faccia in vista e ruotate

8



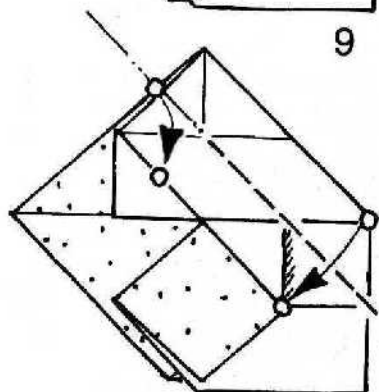
1 piega a valle e ruotate

9



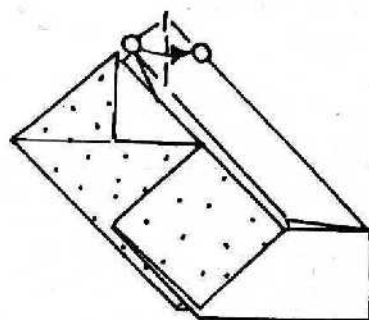
1 piega bisettrice a valle solo sulla faccia in vista

10



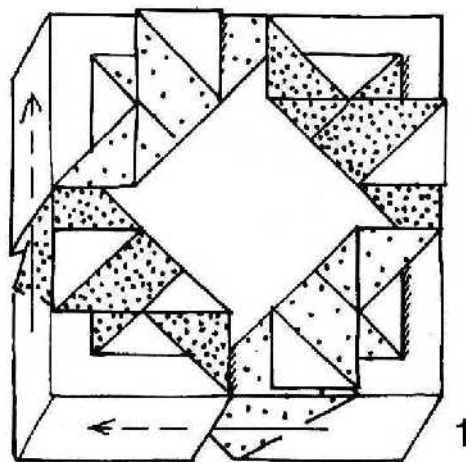
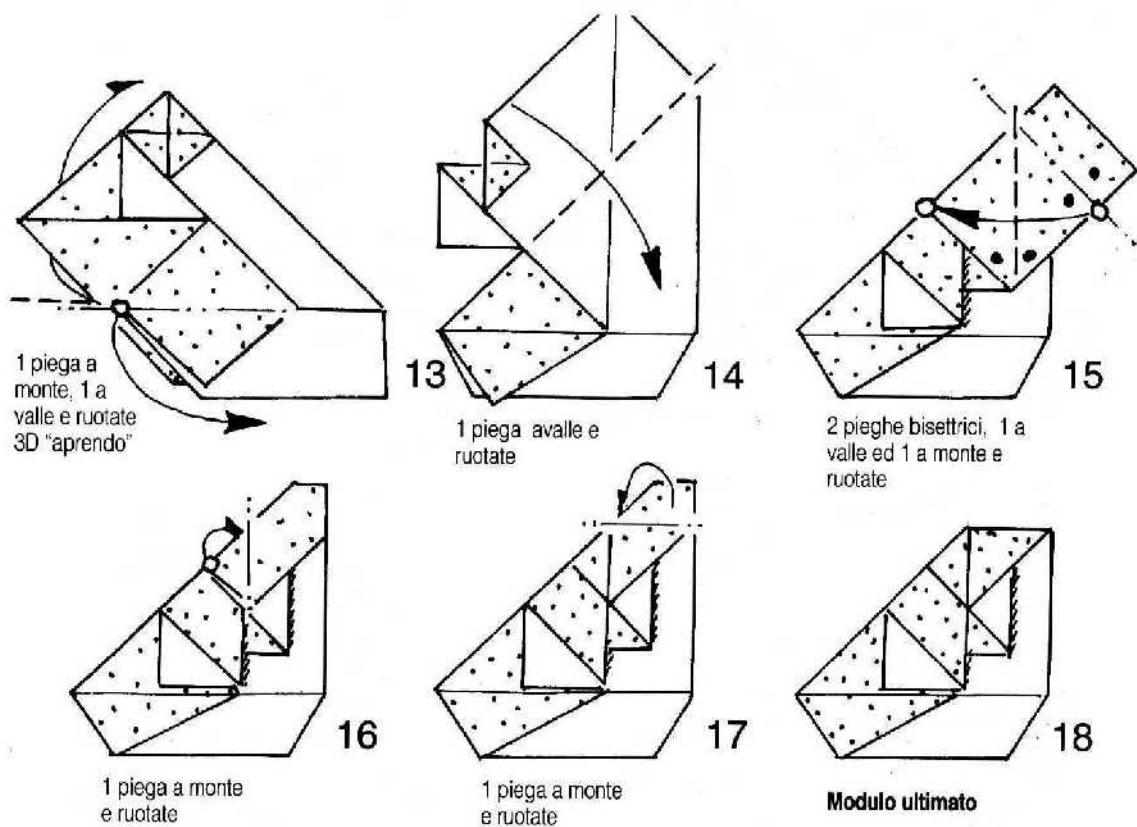
1 piega a monte, 1 a valle e ruotate

11

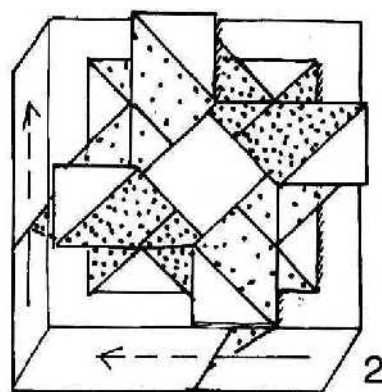


1 piega a valle e ruotate

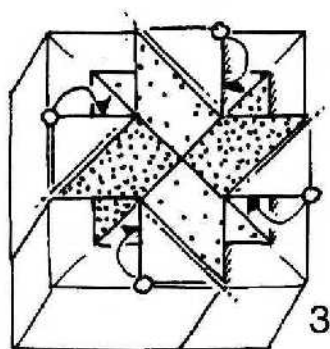
12



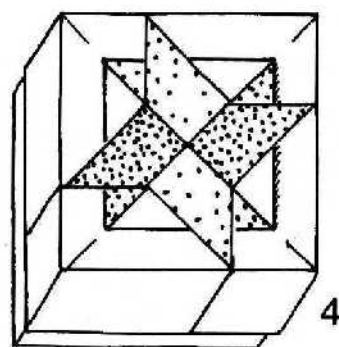
Montaggio dei 4 moduli



Montaggio dei 4 moduli



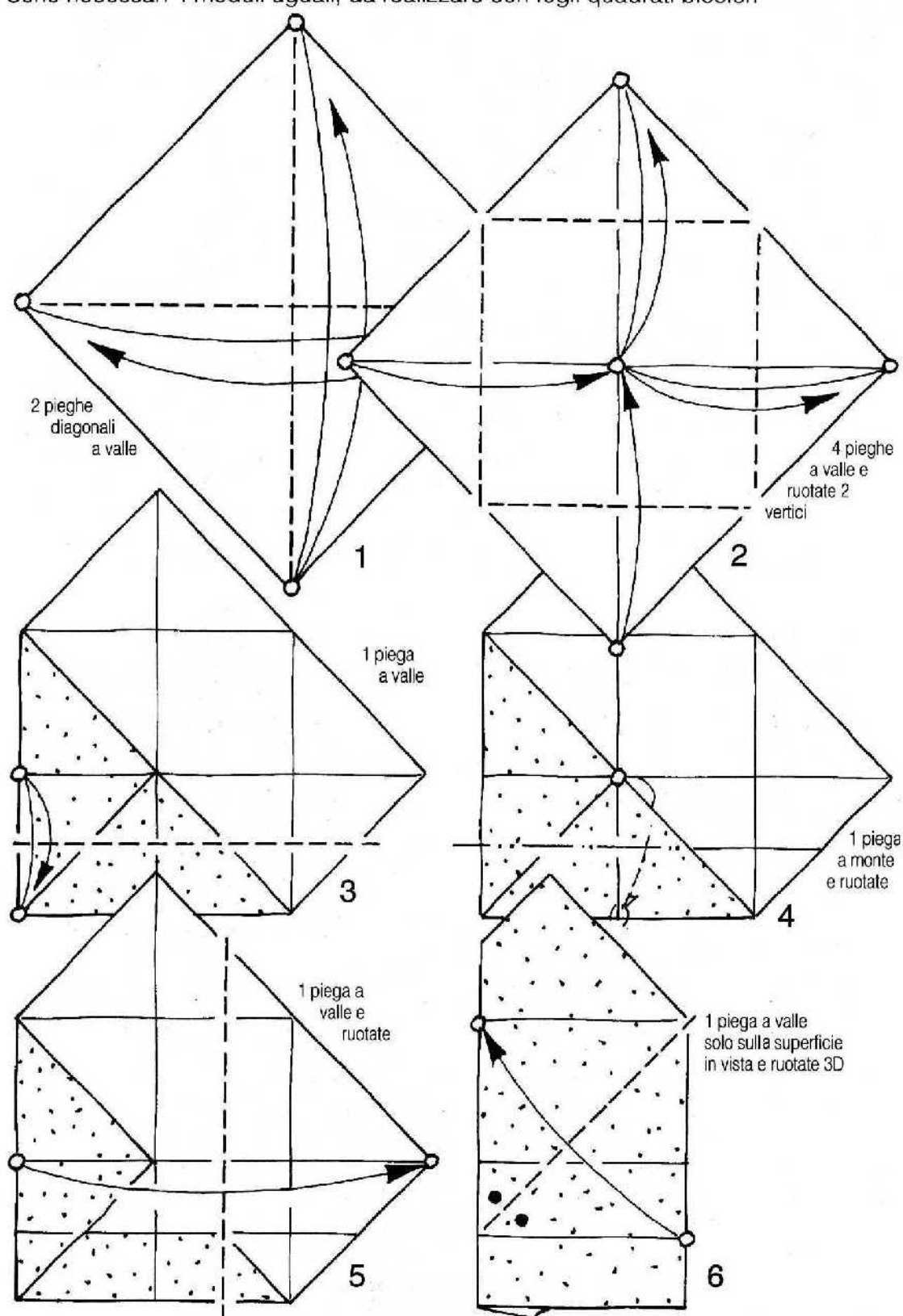
Piegate a monte e intascate i 4 triangoli indicati

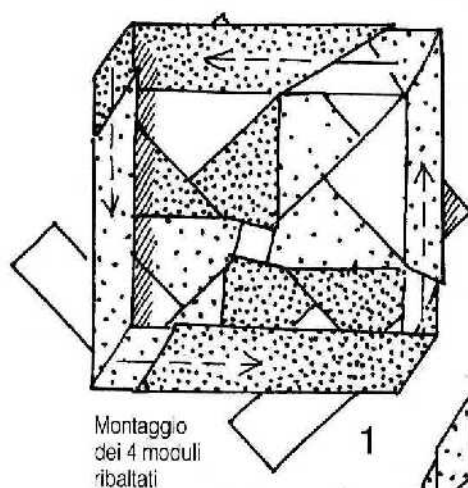
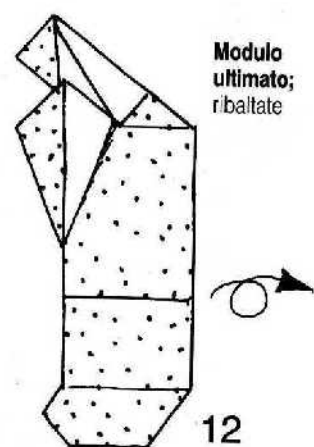
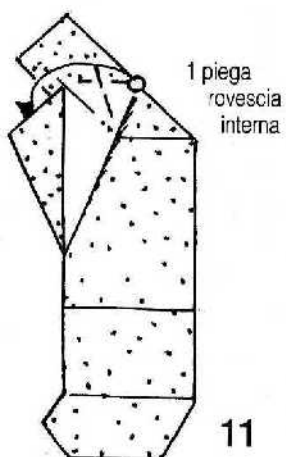
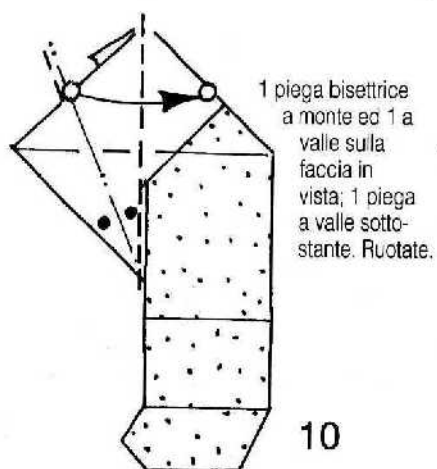
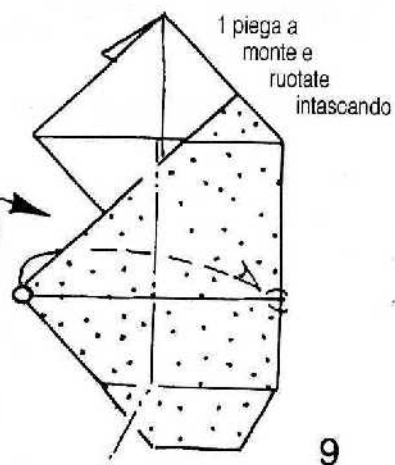
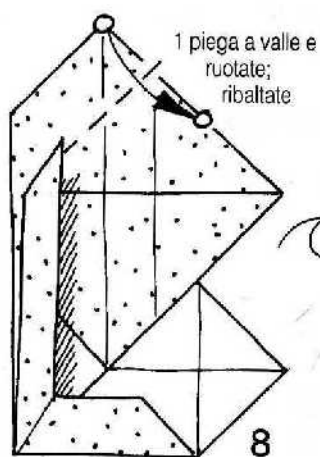
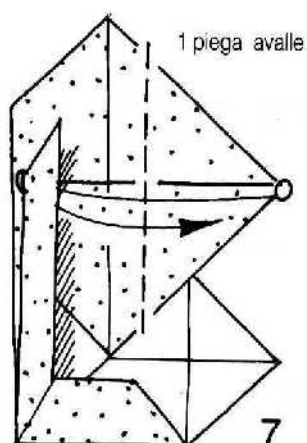


Coperchio quadrato "a bandierine" ultimato su fondo di tipo "C"

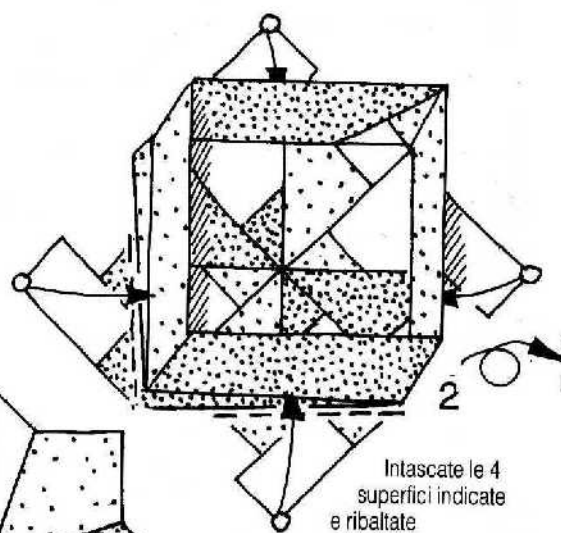
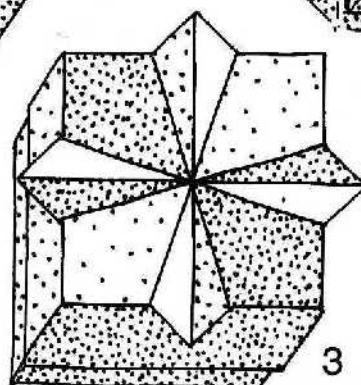
COPERCHIO "A STELLA"

Sono necessari 4 moduli uguali, da realizzare con fogli quadrati bicolori



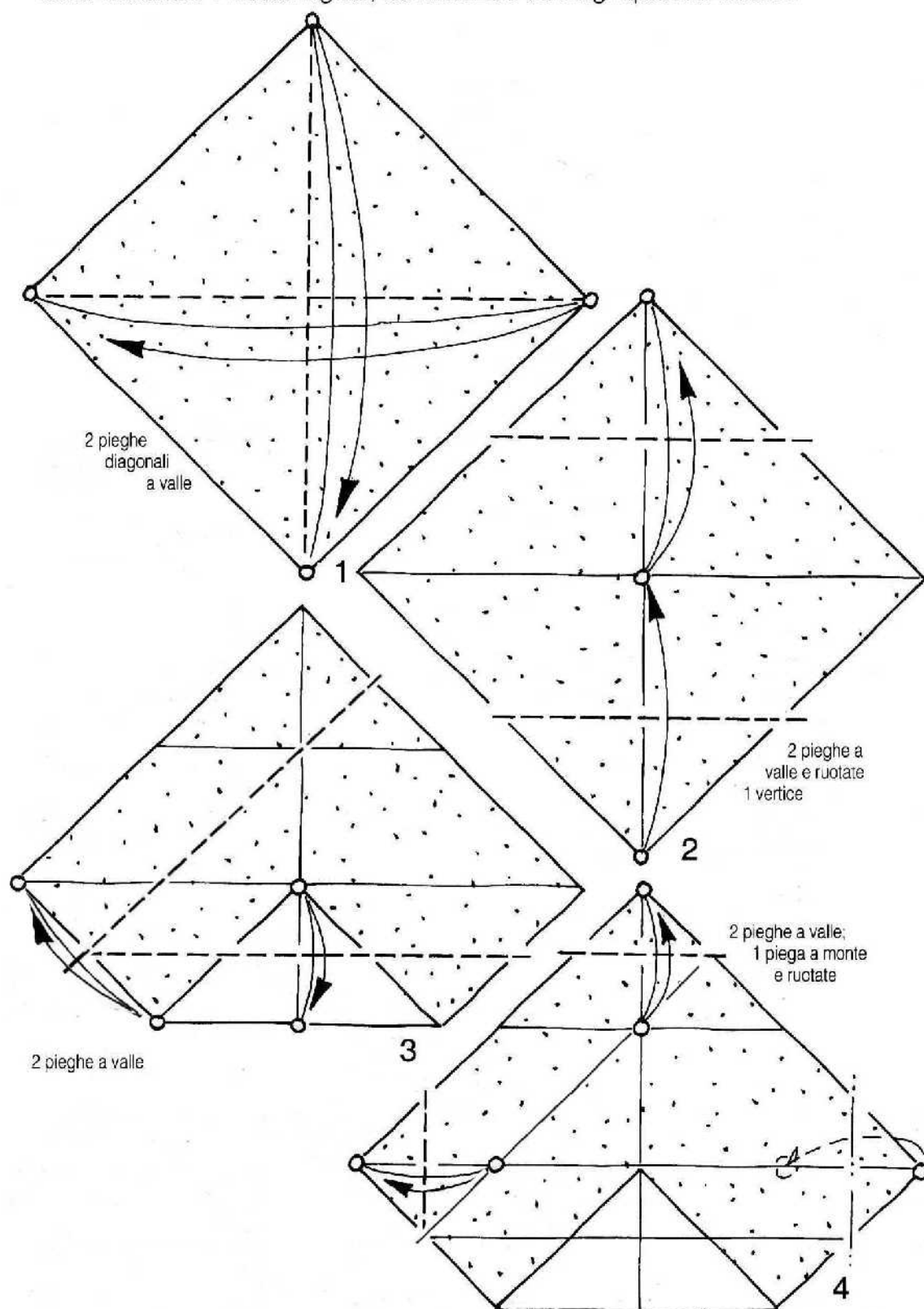


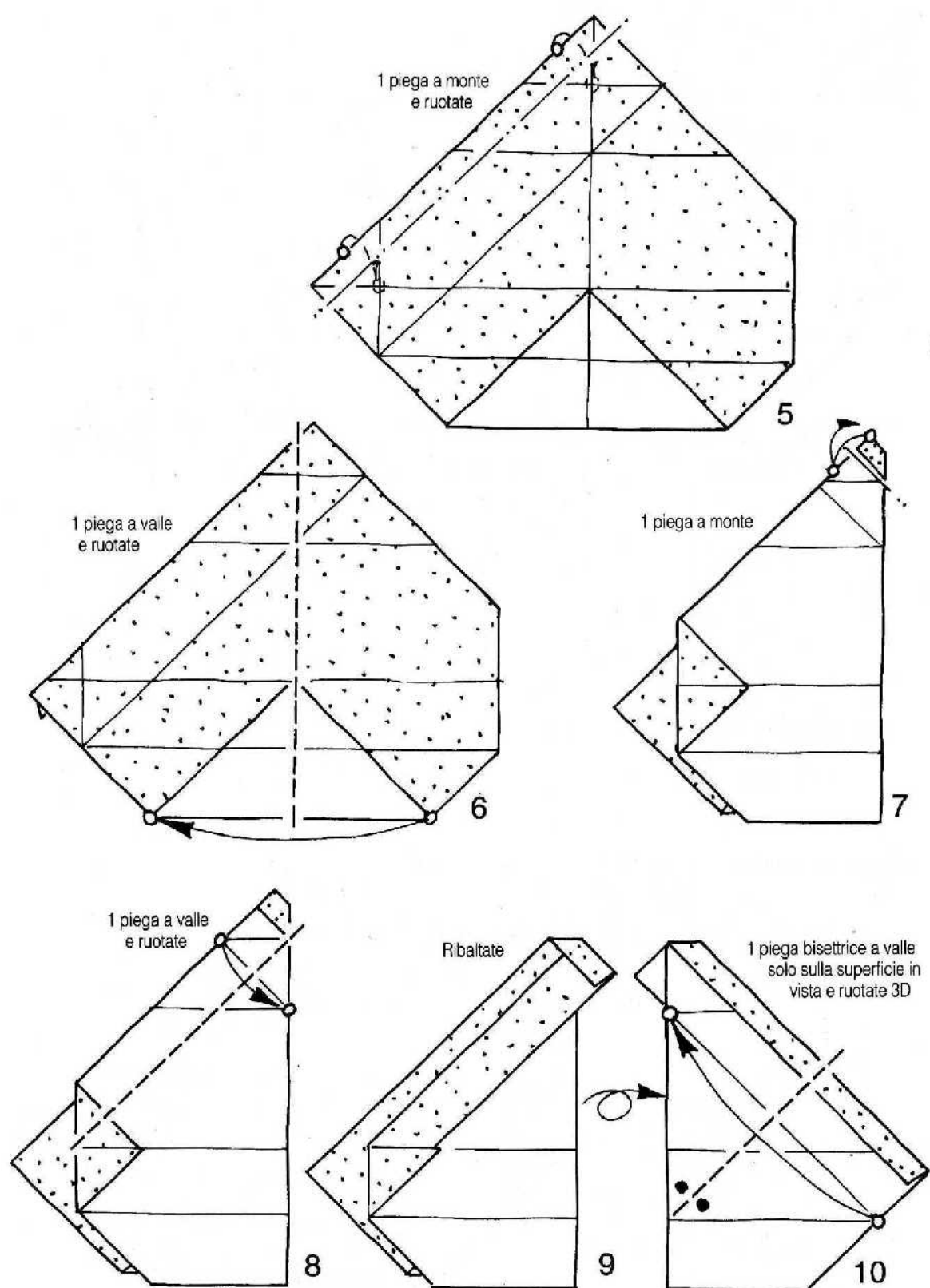
Coperchio quadrato "a stella" ultimato su fondo di tipo "C"

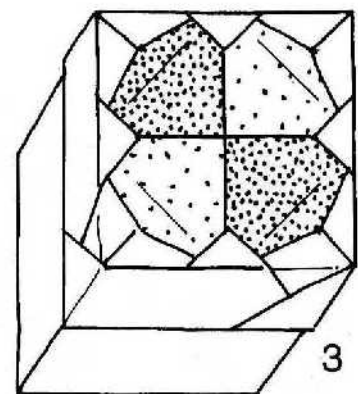
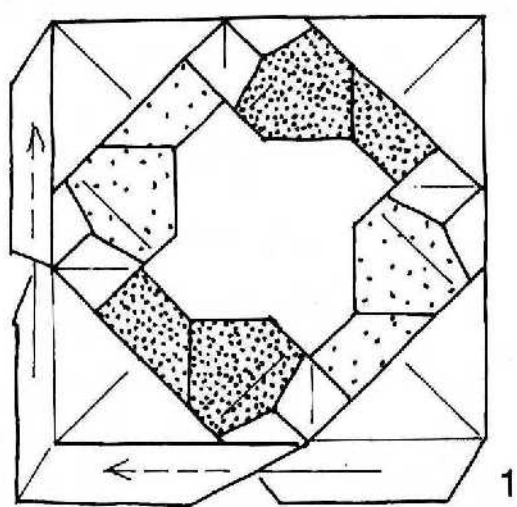
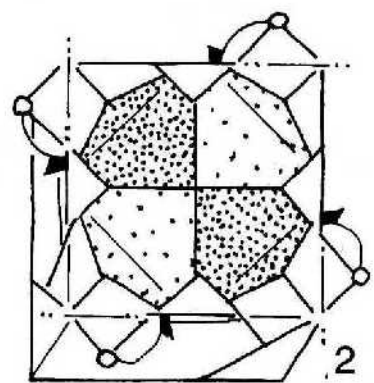
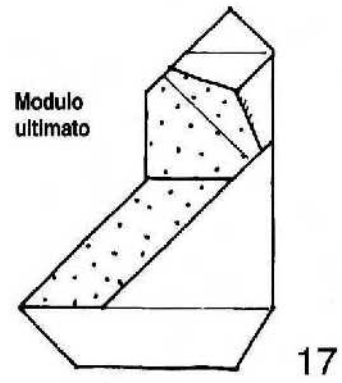
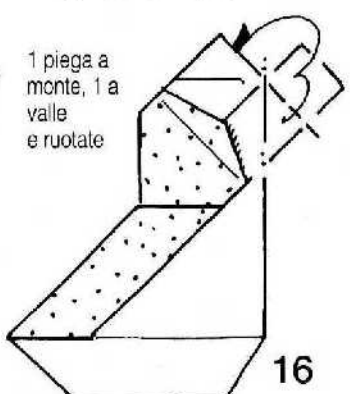
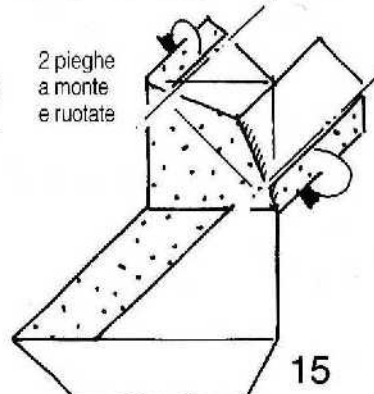
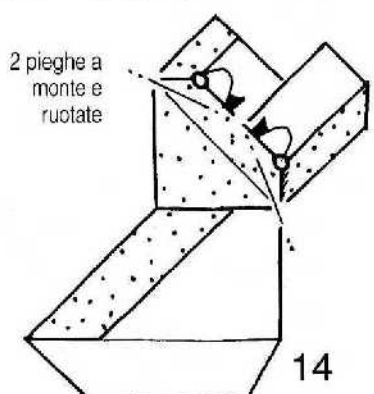
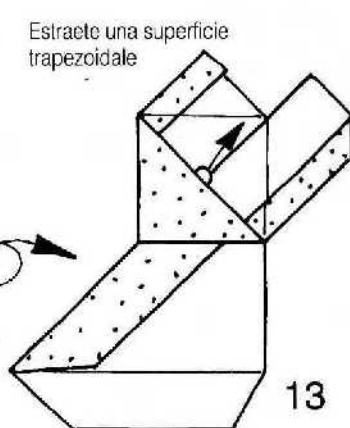
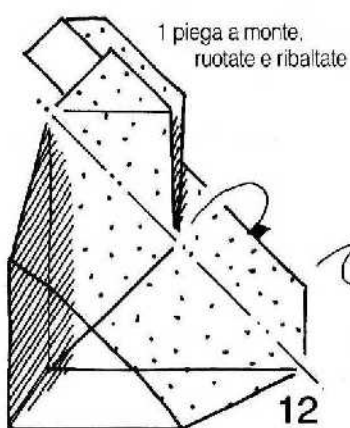
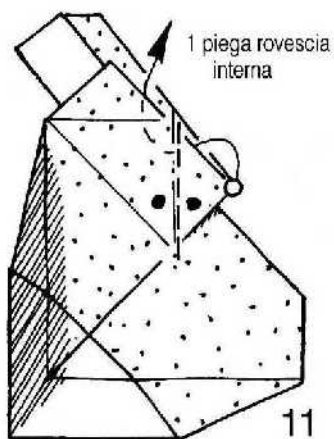


COPERCHIO A QUADRIFOGLIO"

Sono necessari 4 moduli uguali, da realizzare con fogli quadrati bicolori

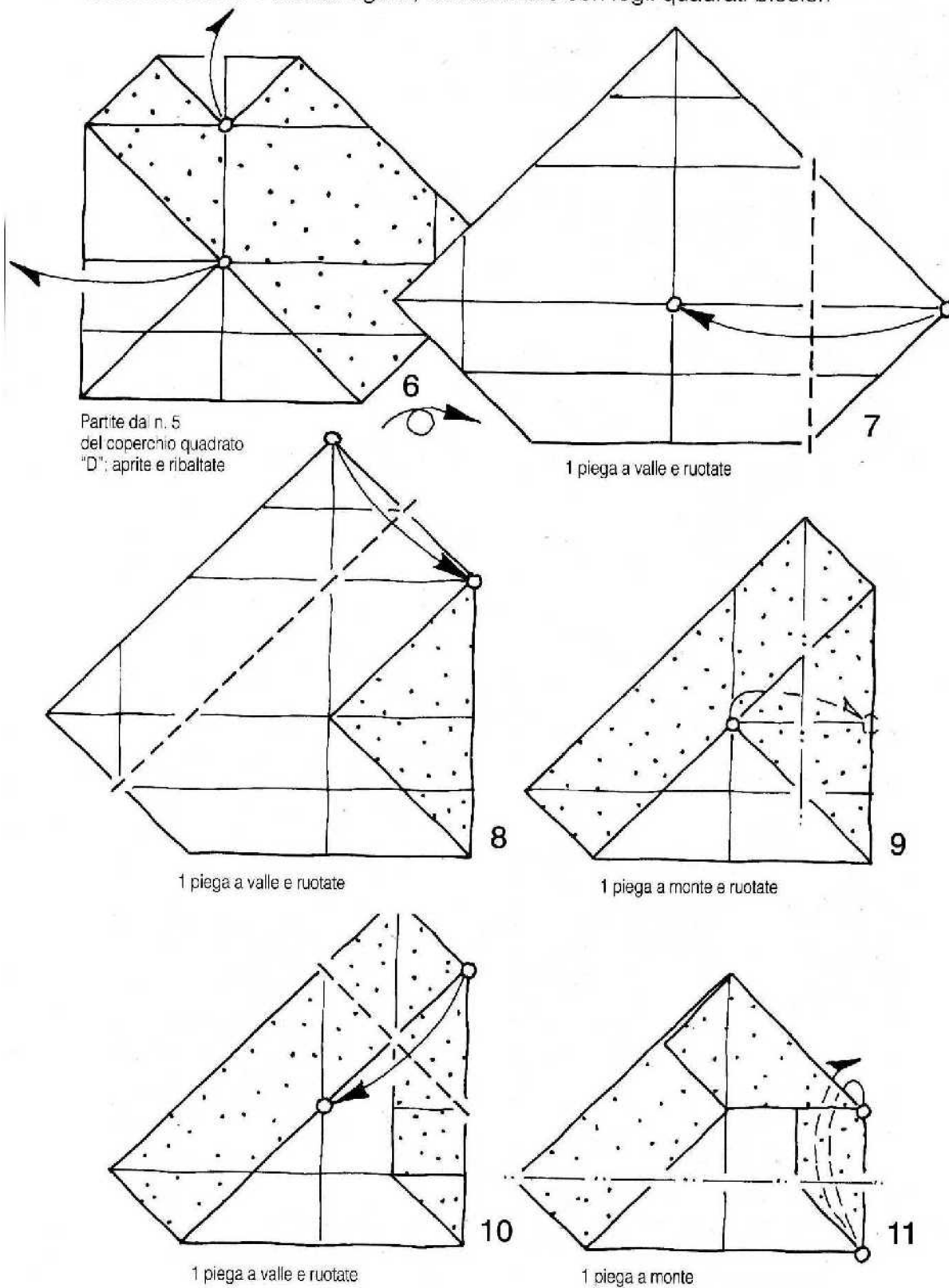


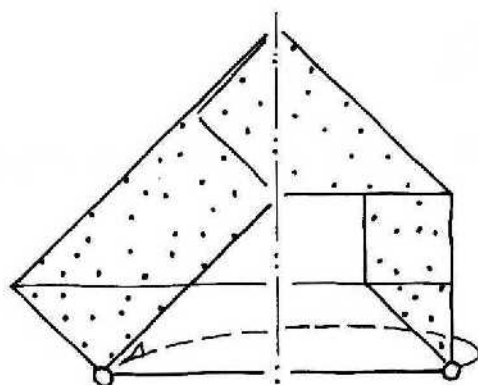




COPERCHIO "A CROCE"

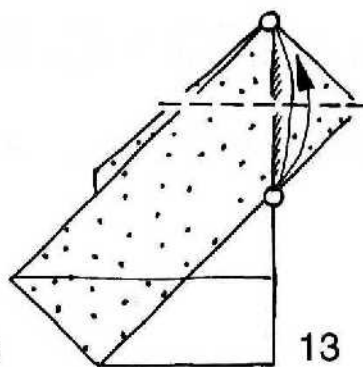
Sono necessari 4 moduli uguali, da realizzare con fogli quadrati bicolori





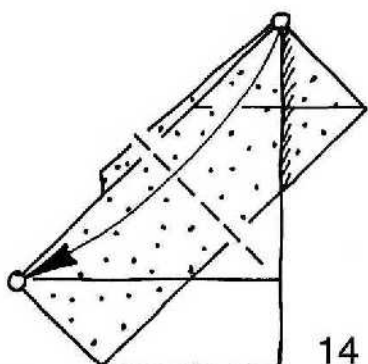
1 piega a monte e ruotate

12



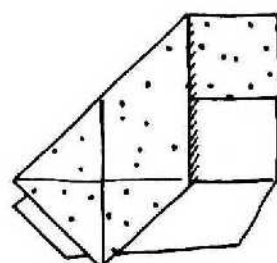
1 piega a valle

13



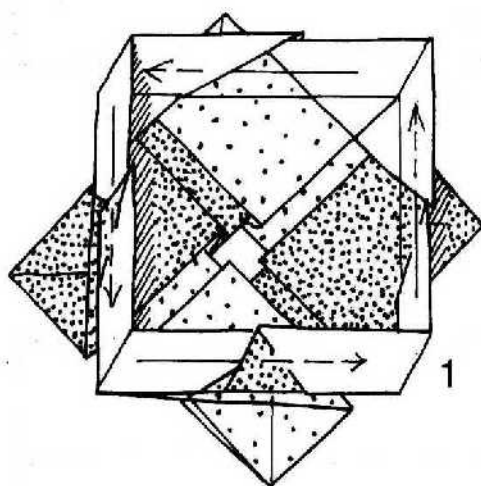
1 piega a valle solo sulla faccia in vista e ruotate 3D

14



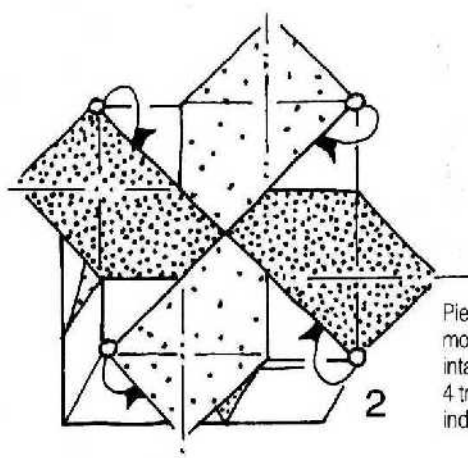
Modulo ultimato;
ribaltate

15



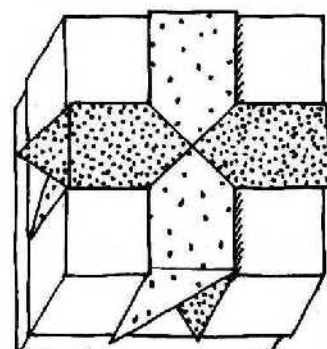
Montaggio di 4 moduli ribaltati

1



Piegate a monte ed intascate i 4 triangoli indicati

2



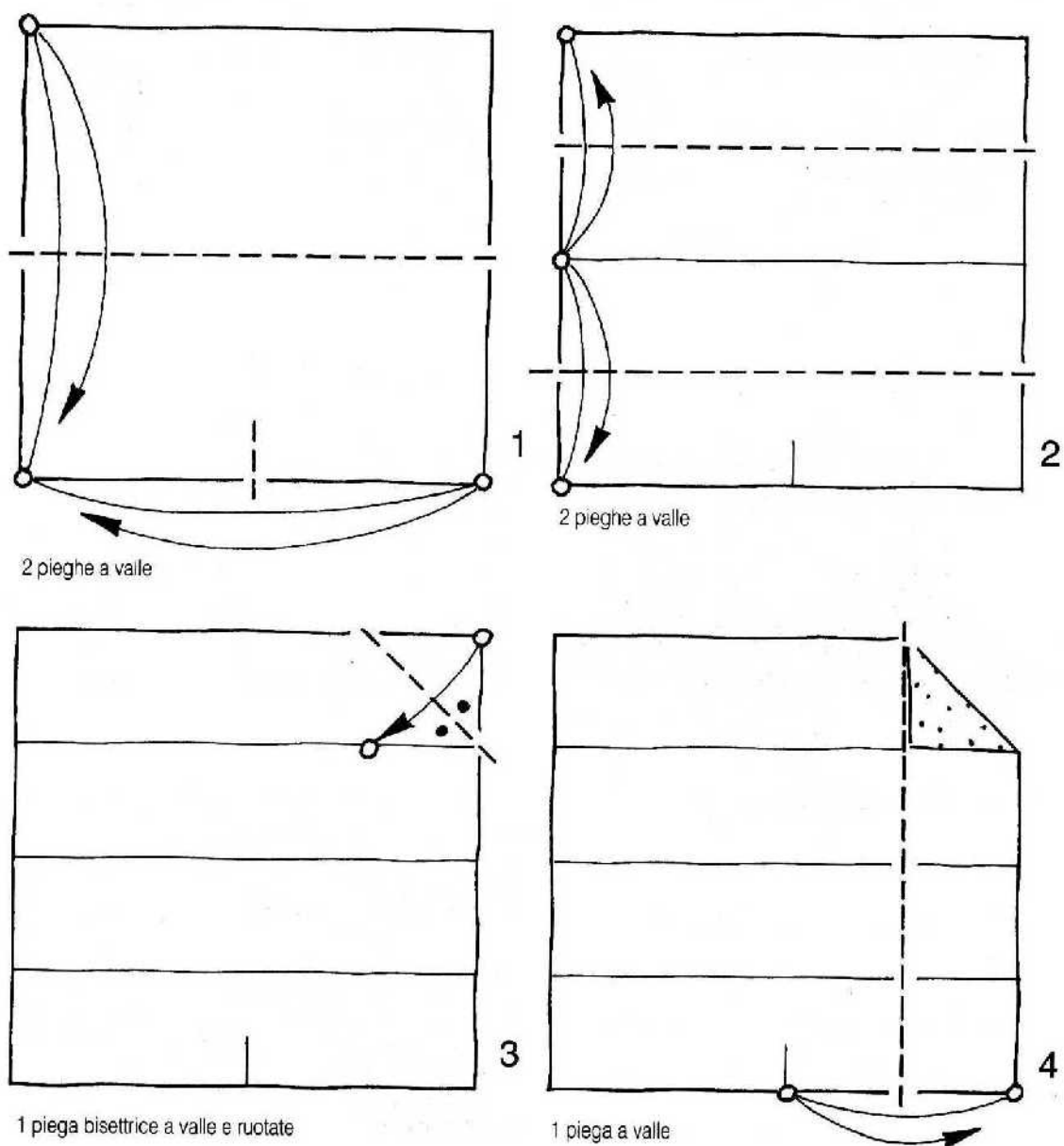
3

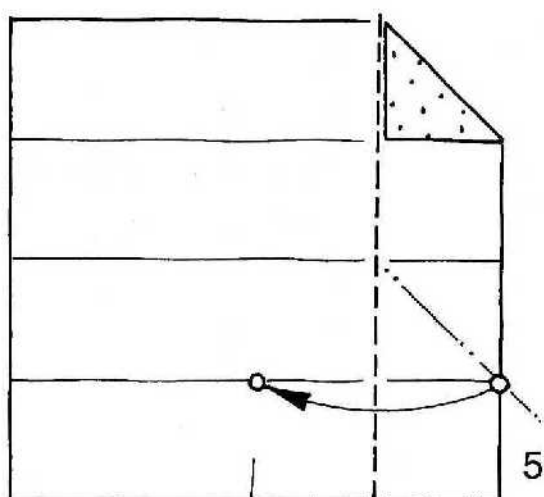
Coperchio "a croce" ultimato
su fondo tipo "C"

FONDO RETTANGOLARE

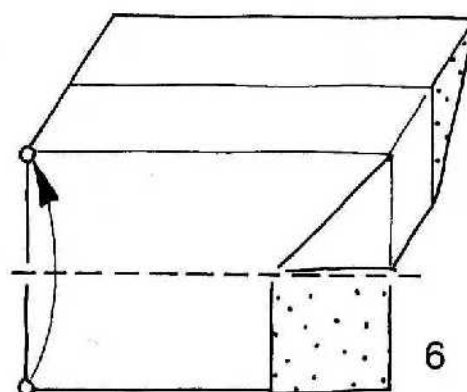
Sono necessari 4 moduli, uguali a 2 a 2, da realizzare con fogli quadrati monocolori o bicolori.

Costruzione modulo "1"

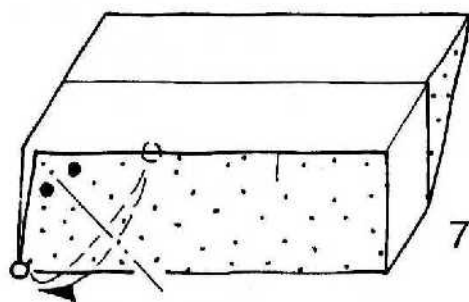




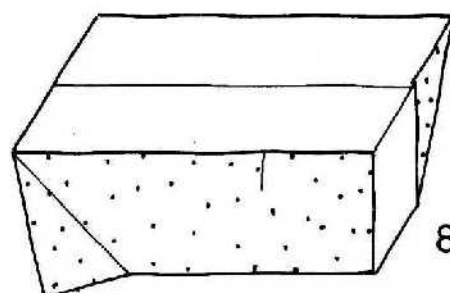
1 piega a monte e, utilizzando una preesistente piega a valle, ruotate 3D



Usufruento di piega a valle preesistente, ruotate

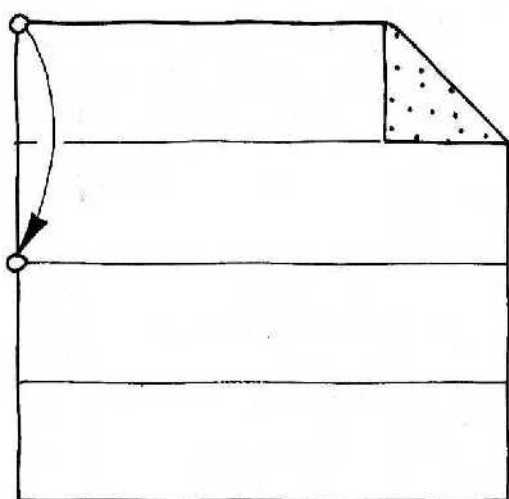


1 piega bisettrice a monte

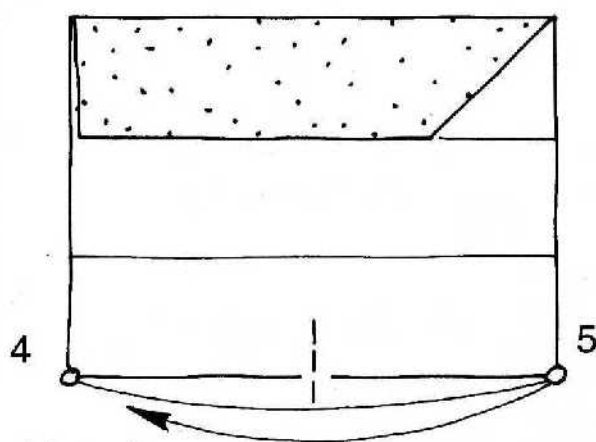


Modulo "1" ultimato

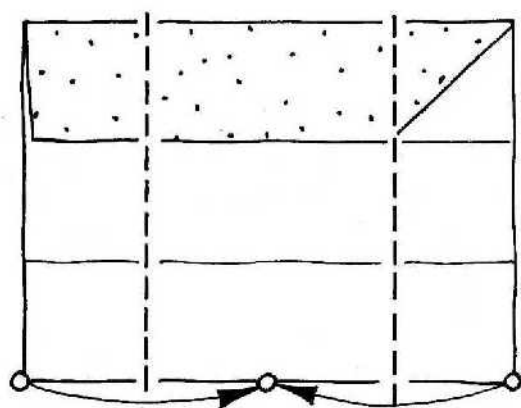
Costruzione del modulo "2"



Partite dalla figura n. 3 del modulo "1"

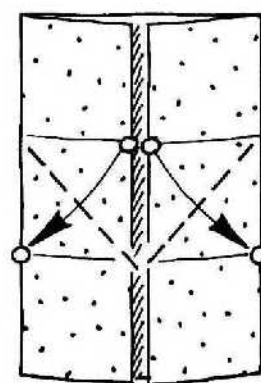


1 piega a valle



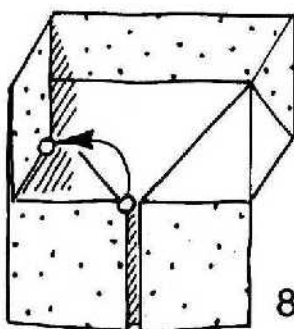
2 pieghe
a valle e
ruotate

6



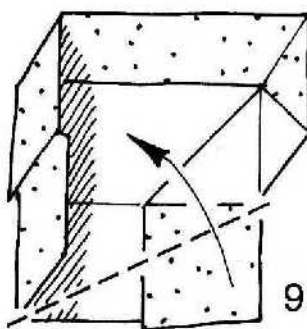
2 pieghe
a valle e
ruotate 3D

7



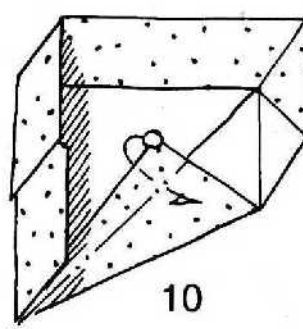
8

Ruotate la superficie indicata



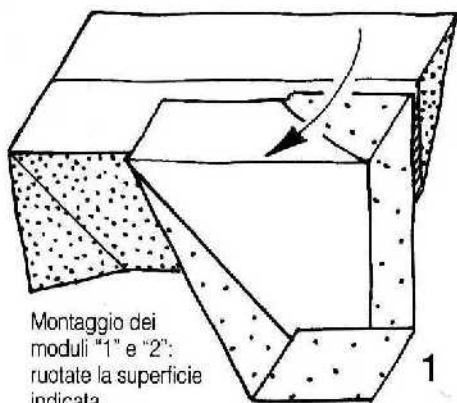
9

1 piega a valle e ruotate



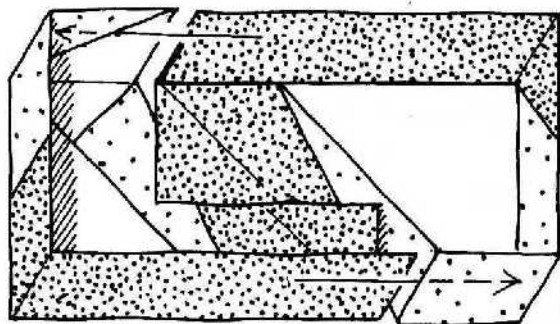
10

1 piega a monte e ruotate
bloccando: **modulo "2" ultimato**



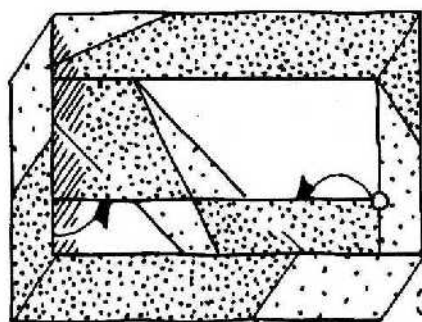
1

Montaggio dei
moduli "1" e "2":
ruotate la superficie
indicata



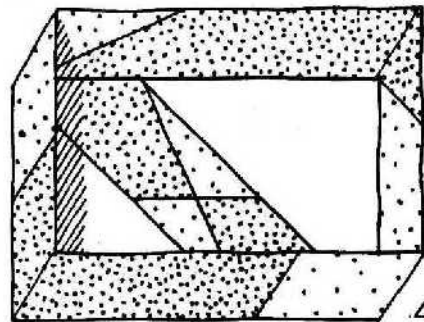
2

Montaggio di 4 moduli, 2 di tipo "1" e 2 di tipo "2"



3

2 pieghe a monte e ruotate bloccando il modello



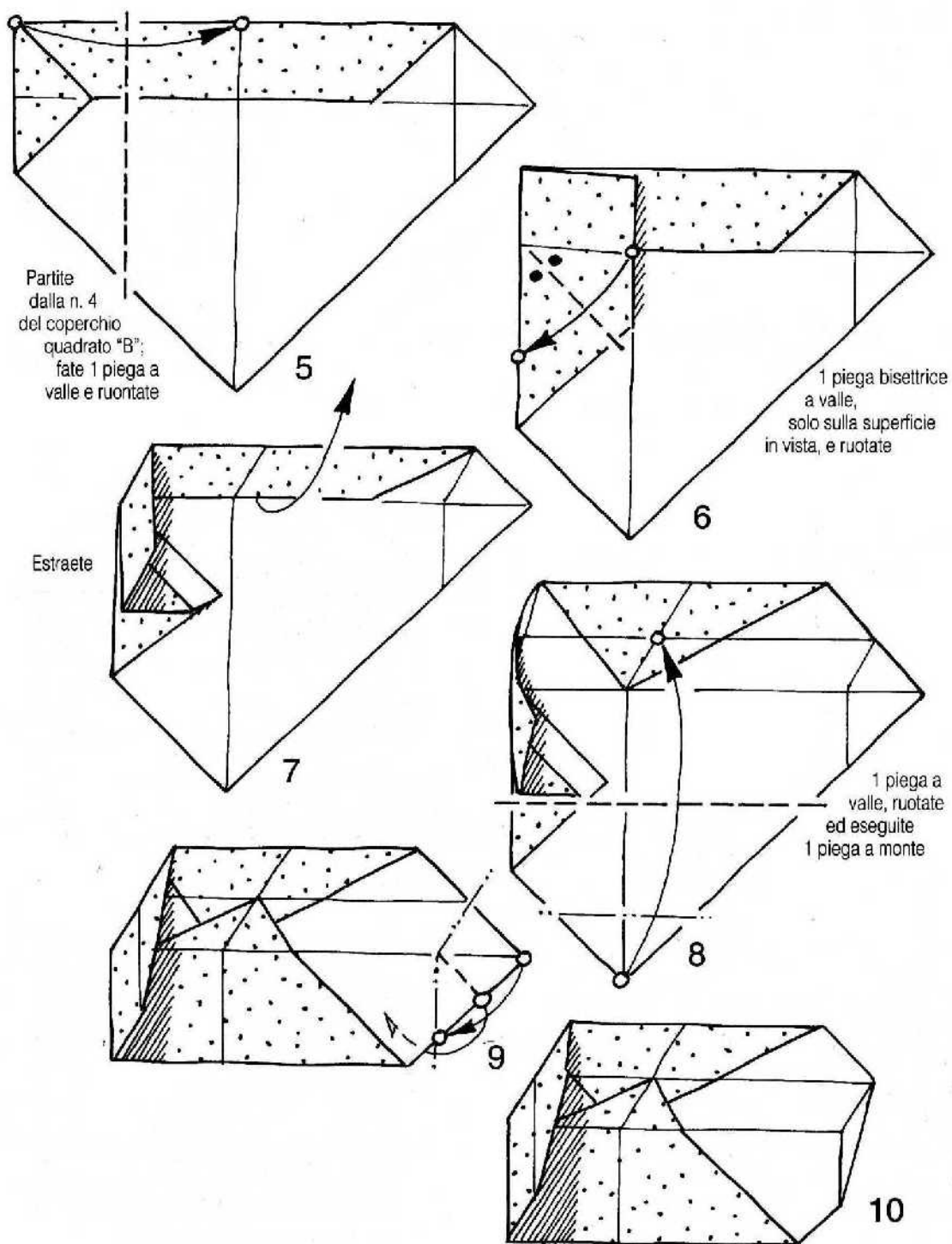
4

Fondo rettangolare "A" ultimato

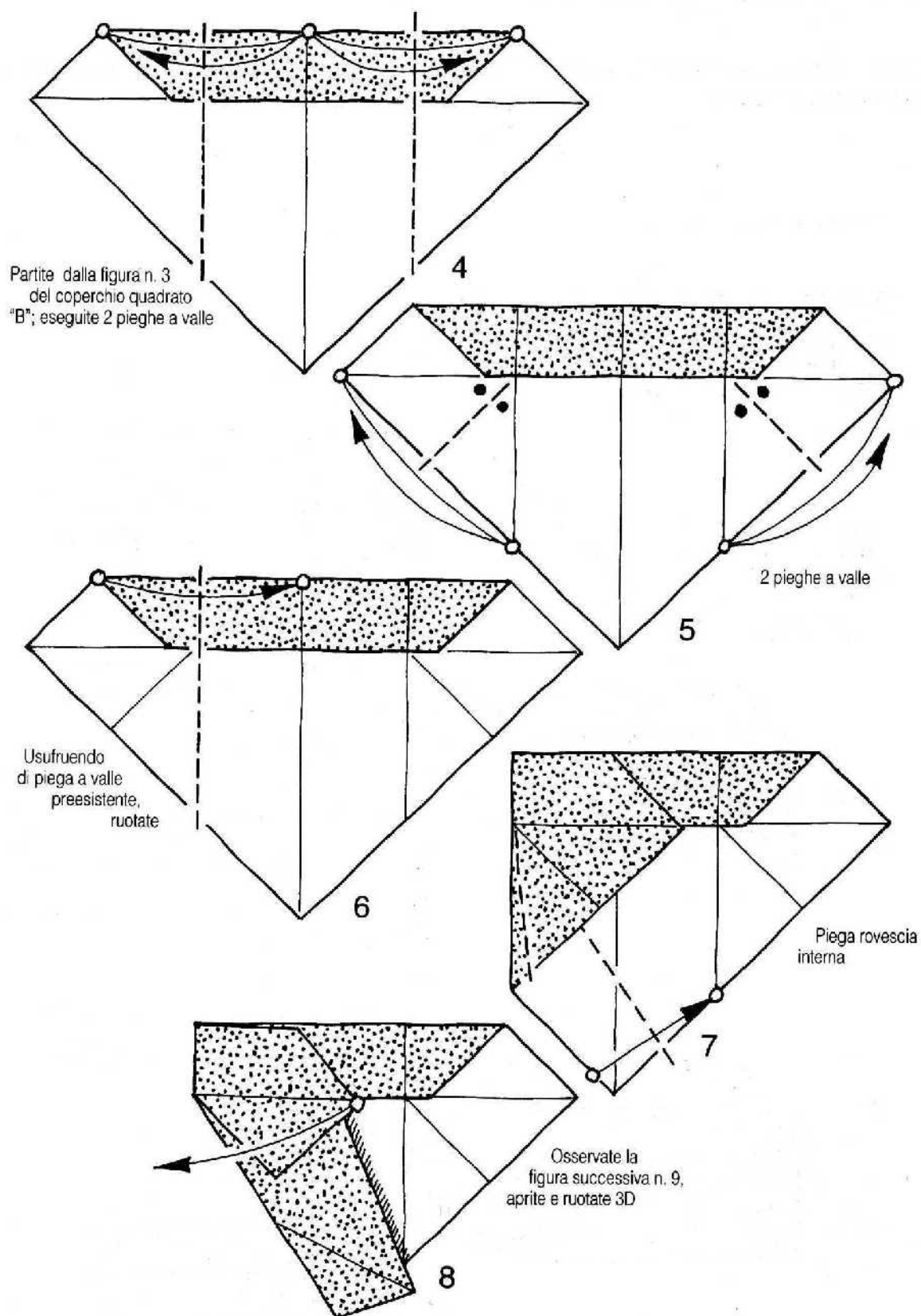
COPERCHIO RETTANGOLARE "A"

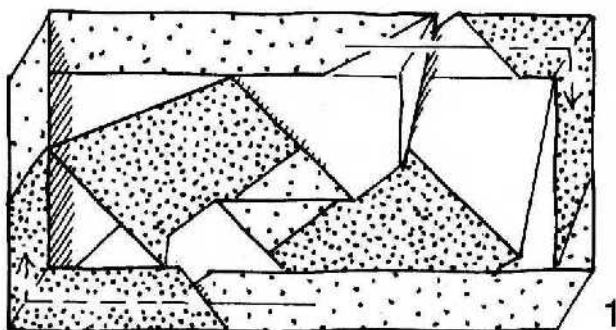
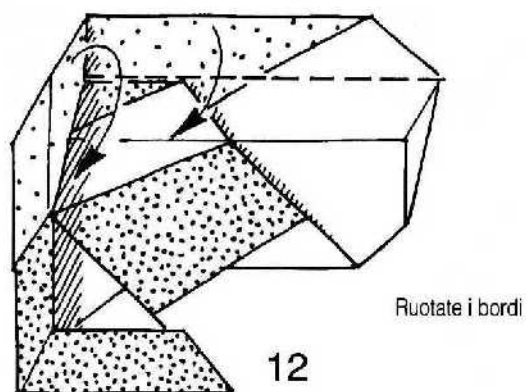
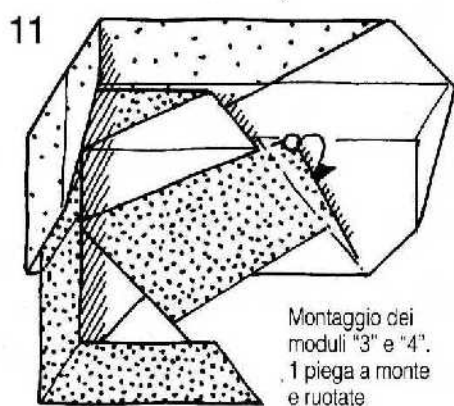
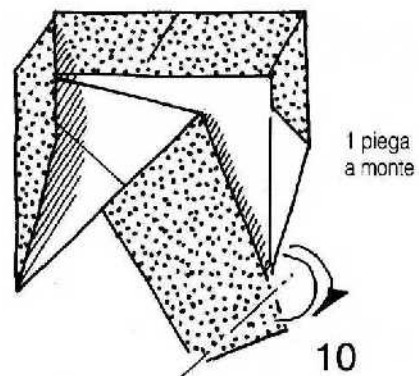
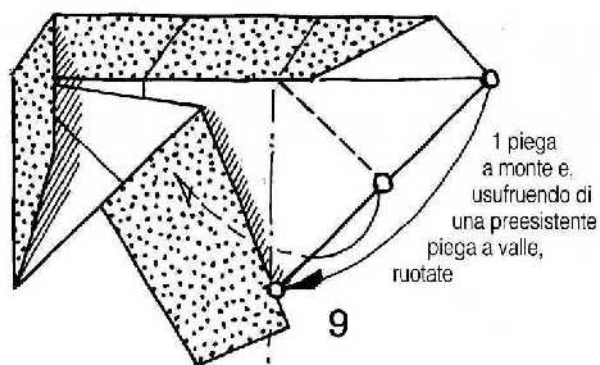
Sono necessari 4 moduli, 2 di tipo "3" e 2 di tipo "4", da realizzare con fogli quadrati monocolori o bicolori.

Costruzione del modulo "3"

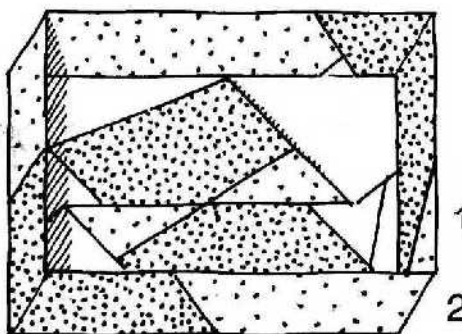


Costruzione del modulo "4"

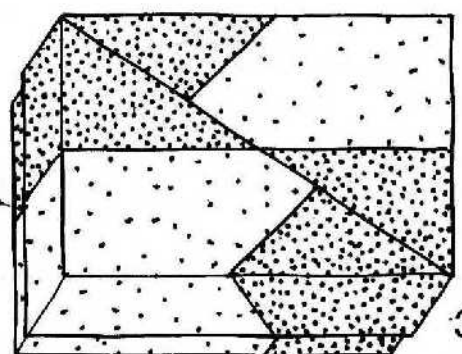




Montaggio di 4 moduli,
2 di tipo "3" e
2 di tipo "4"



2



3

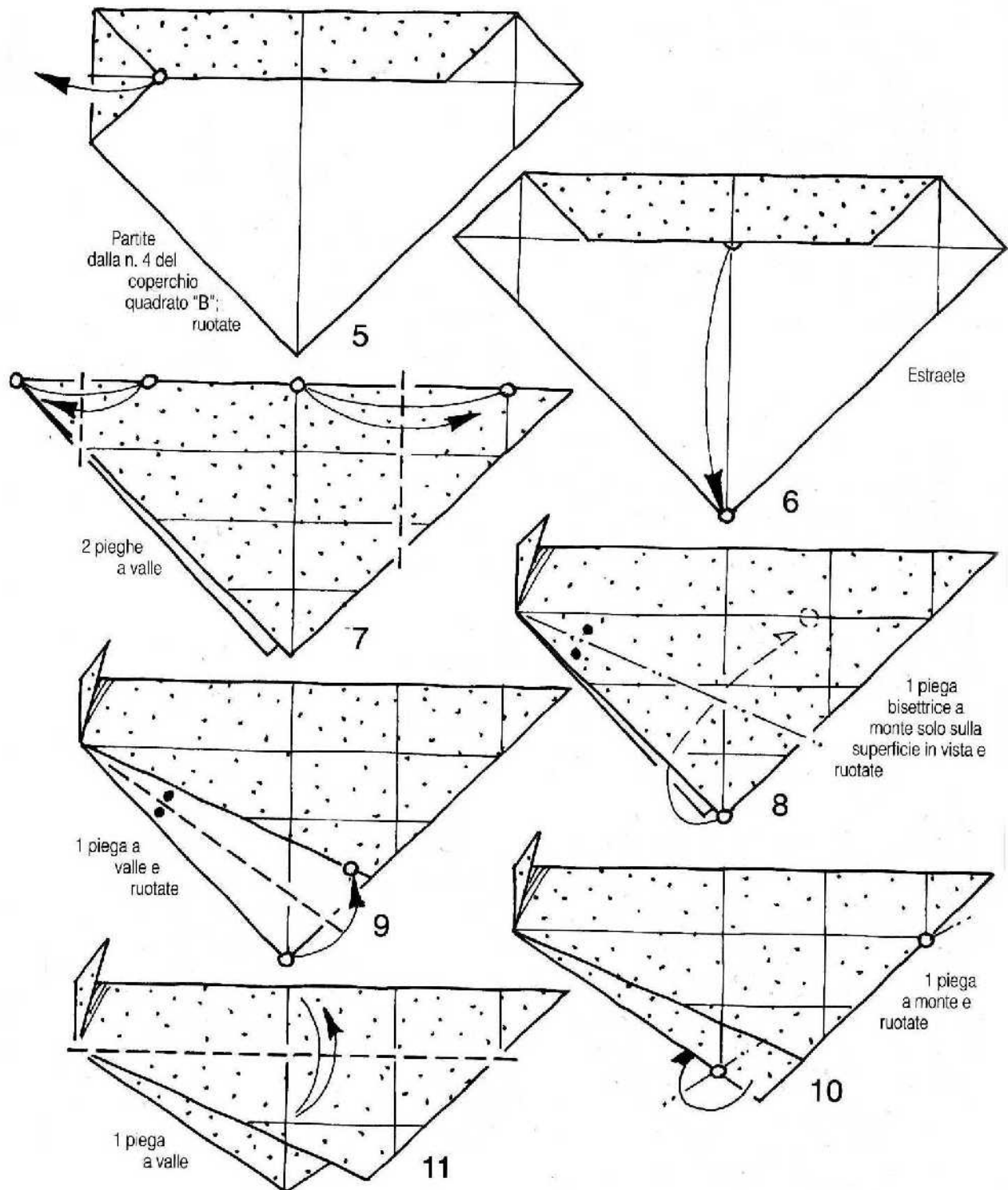
Coperchio rettangolare "A" rovesciato ultimato

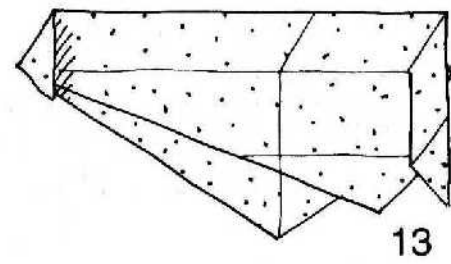
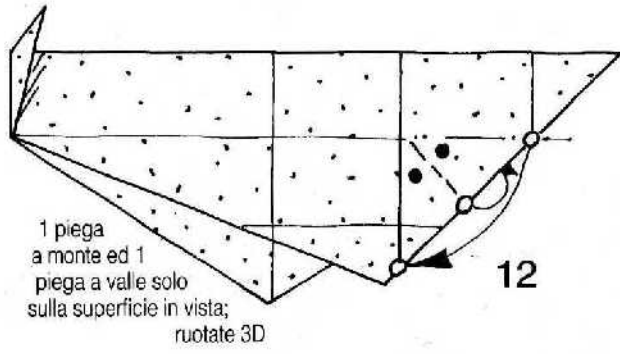
Coperchio "A" ultimato con fondo

COPERCHIO RETTANGOLARE "B"

Sono necessari 4 moduli, 2 di tipo "5" e 2 di tipo "6", da realizzare con fogli quadrati monocolori o bicolori.

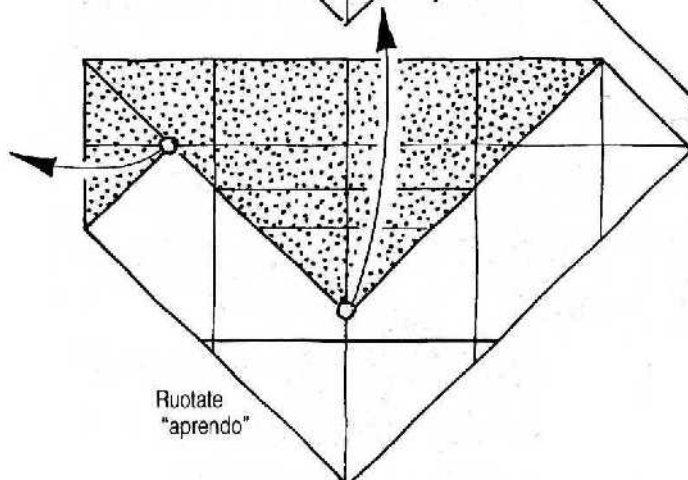
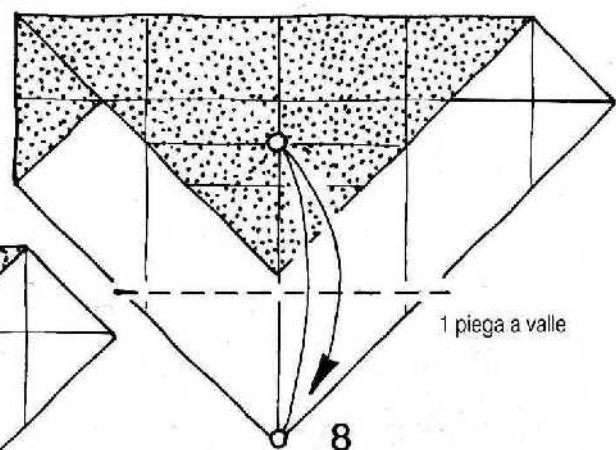
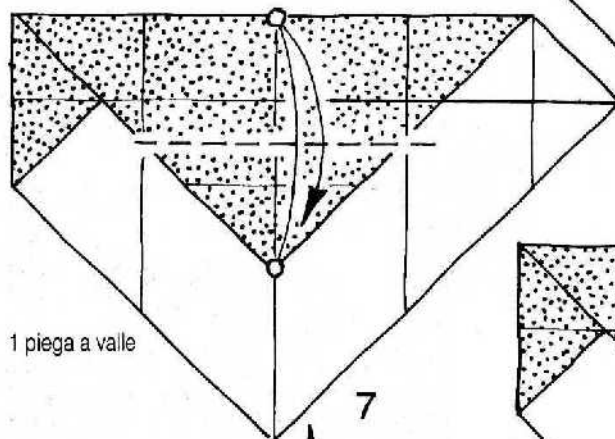
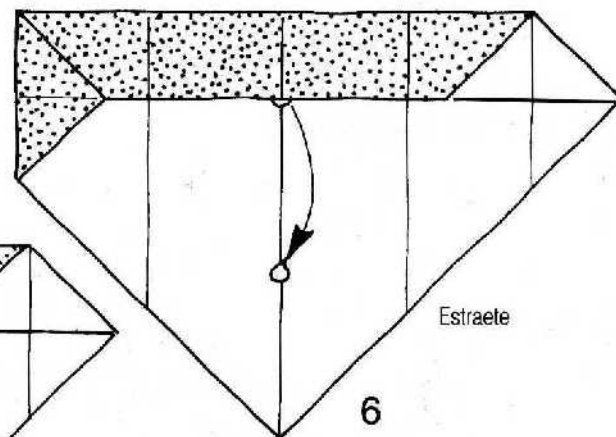
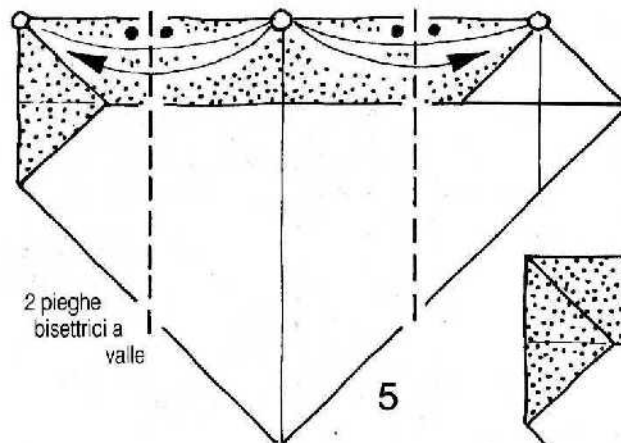
Costruzione del modulo "5"

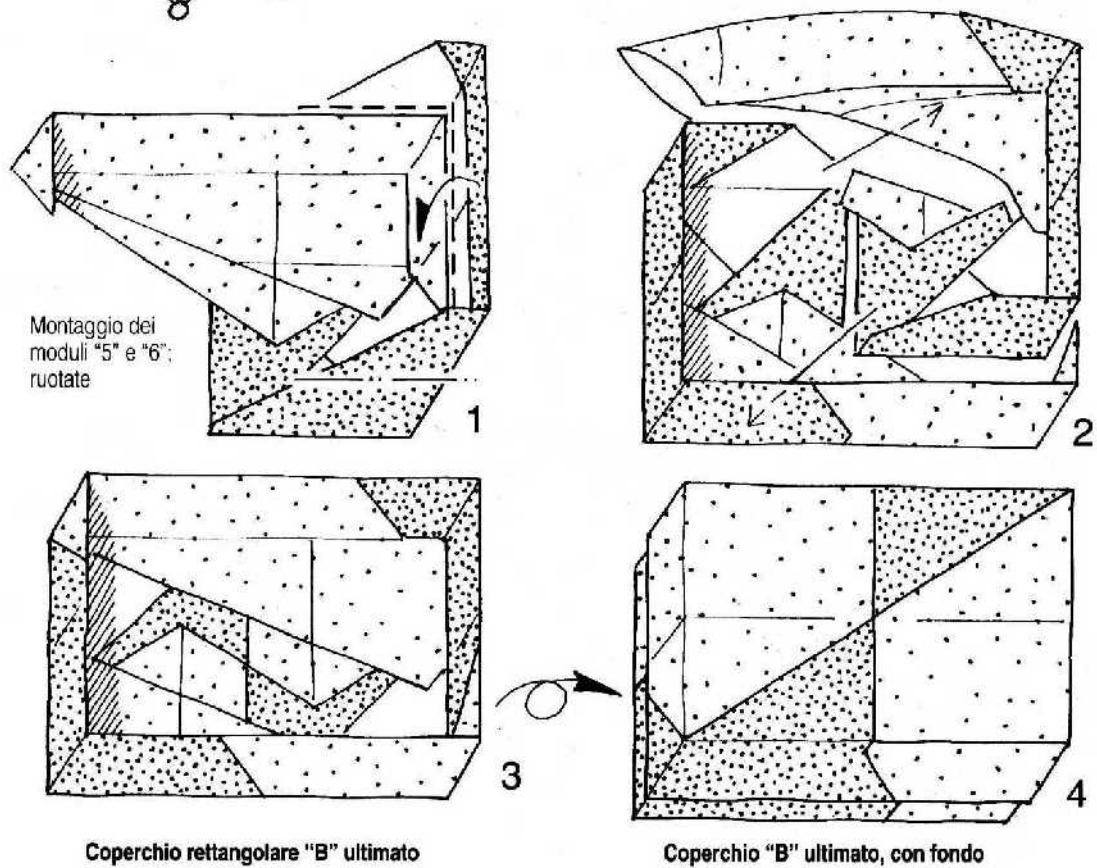
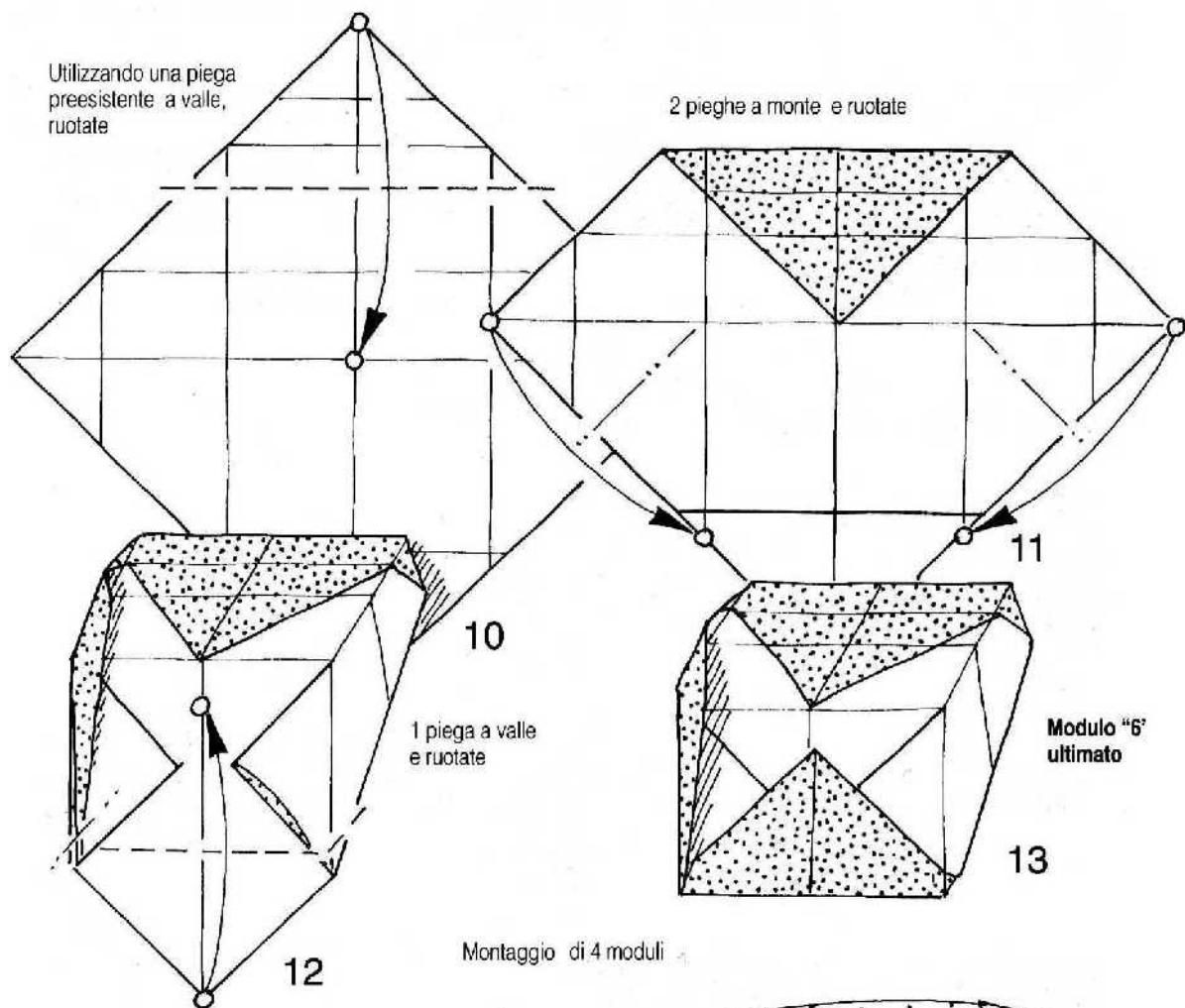




Modulo "5" ultimato

Costruzione del modulo "6"

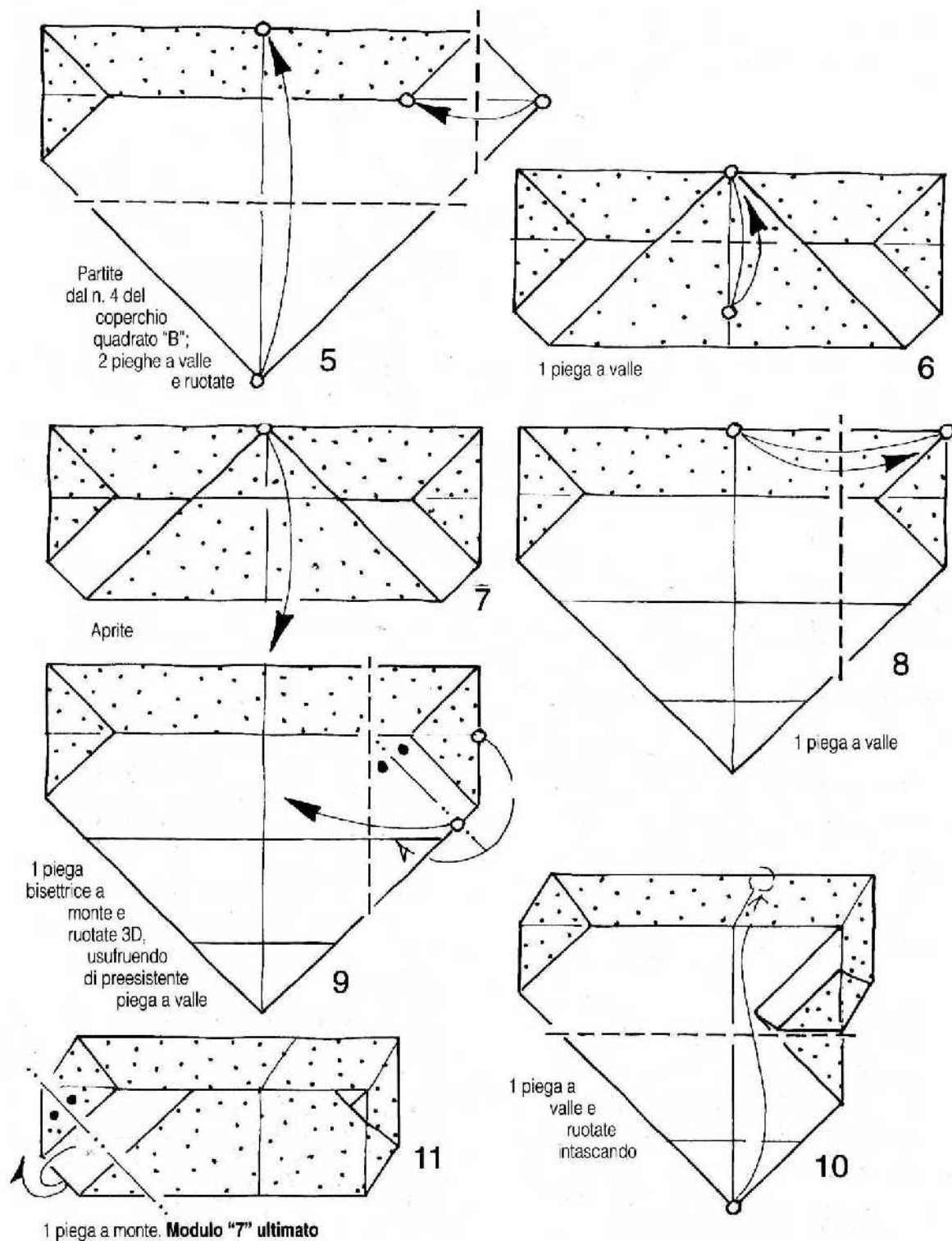




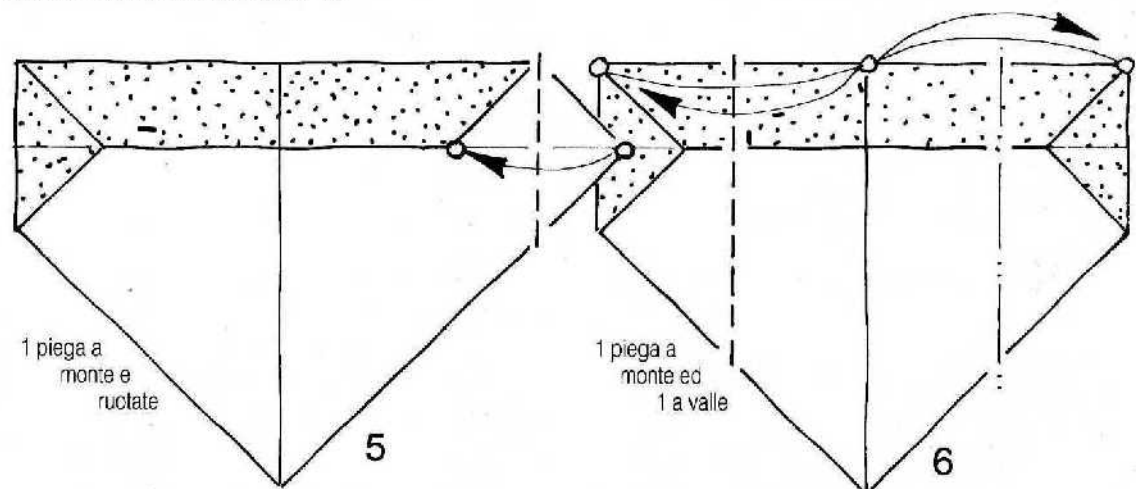
COPERCHIO RETTANGOLARE "C"

Servono 4 moduli, 2 di tipo "7" e 2 di tipo "8", da realizzare con fogli quadrati bicolori.

Costruzione del modulo "7"

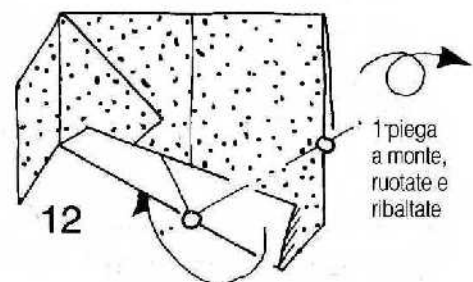
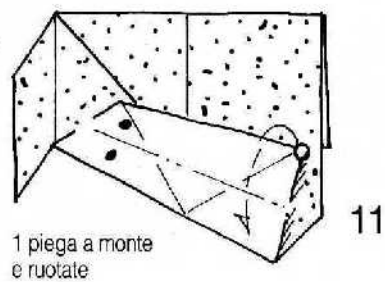
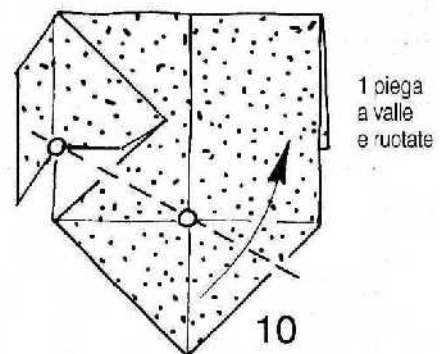
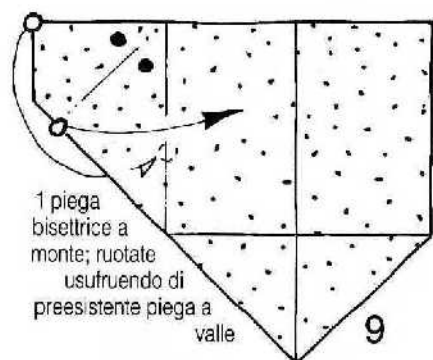
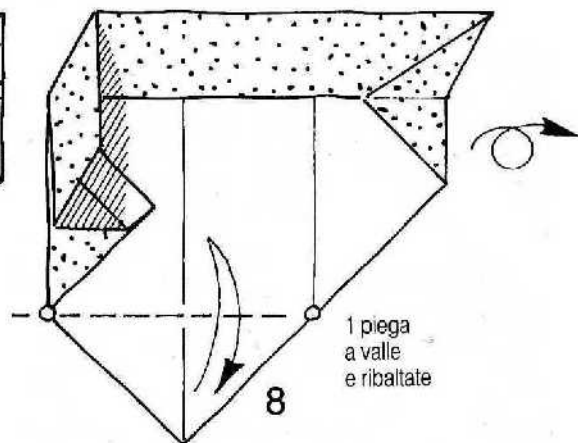
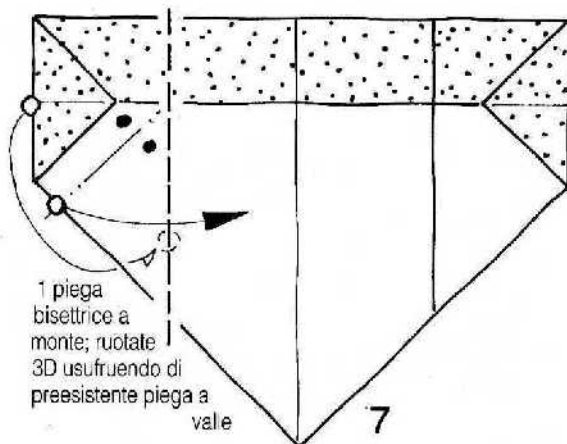


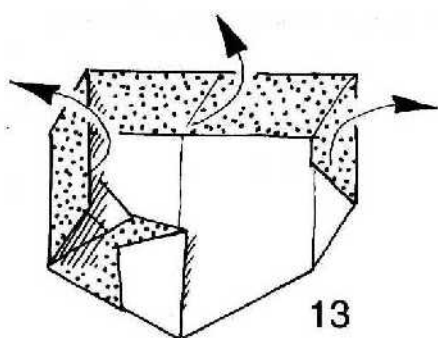
Costruzione del modulo "8"



1 piega a monte ed 1 a valle

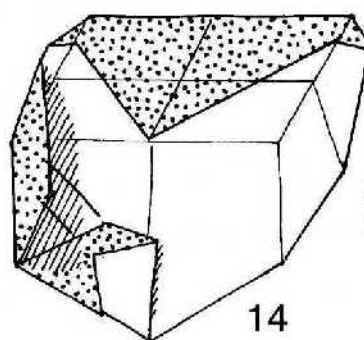
6





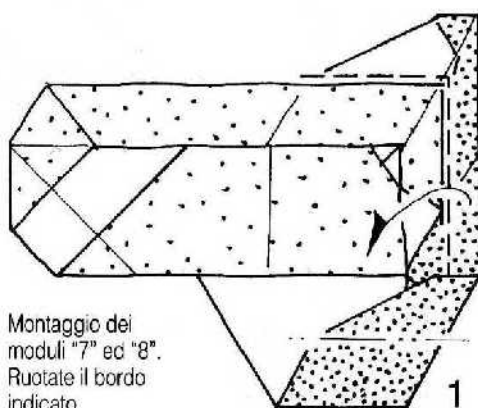
13

Sollevare la superficie indicata



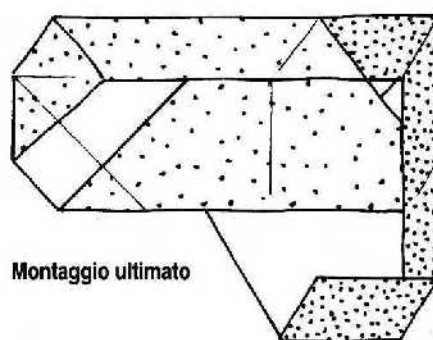
14

Modulo "8"
ultimato



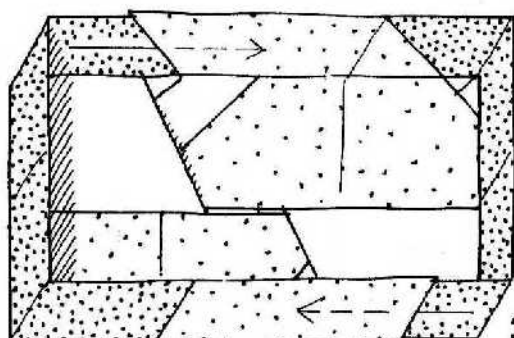
1

Montaggio dei
moduli "7" ed "8".
Ruotate il bordo
indicato



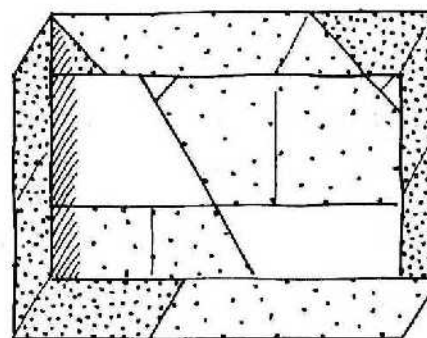
2

Montaggio ultimato



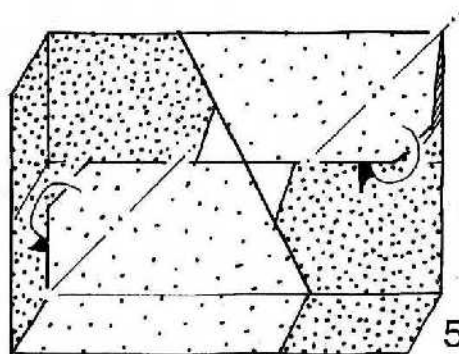
3

Montaggio di 4 moduli



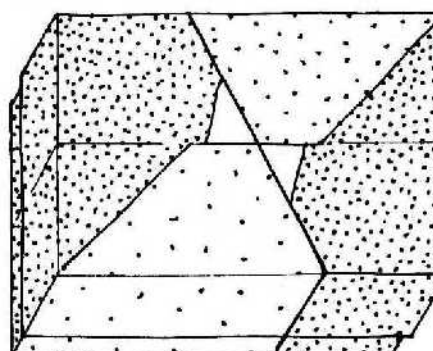
4

Rioaltare



5

Ruotate le superfici indicate bloccando il modello



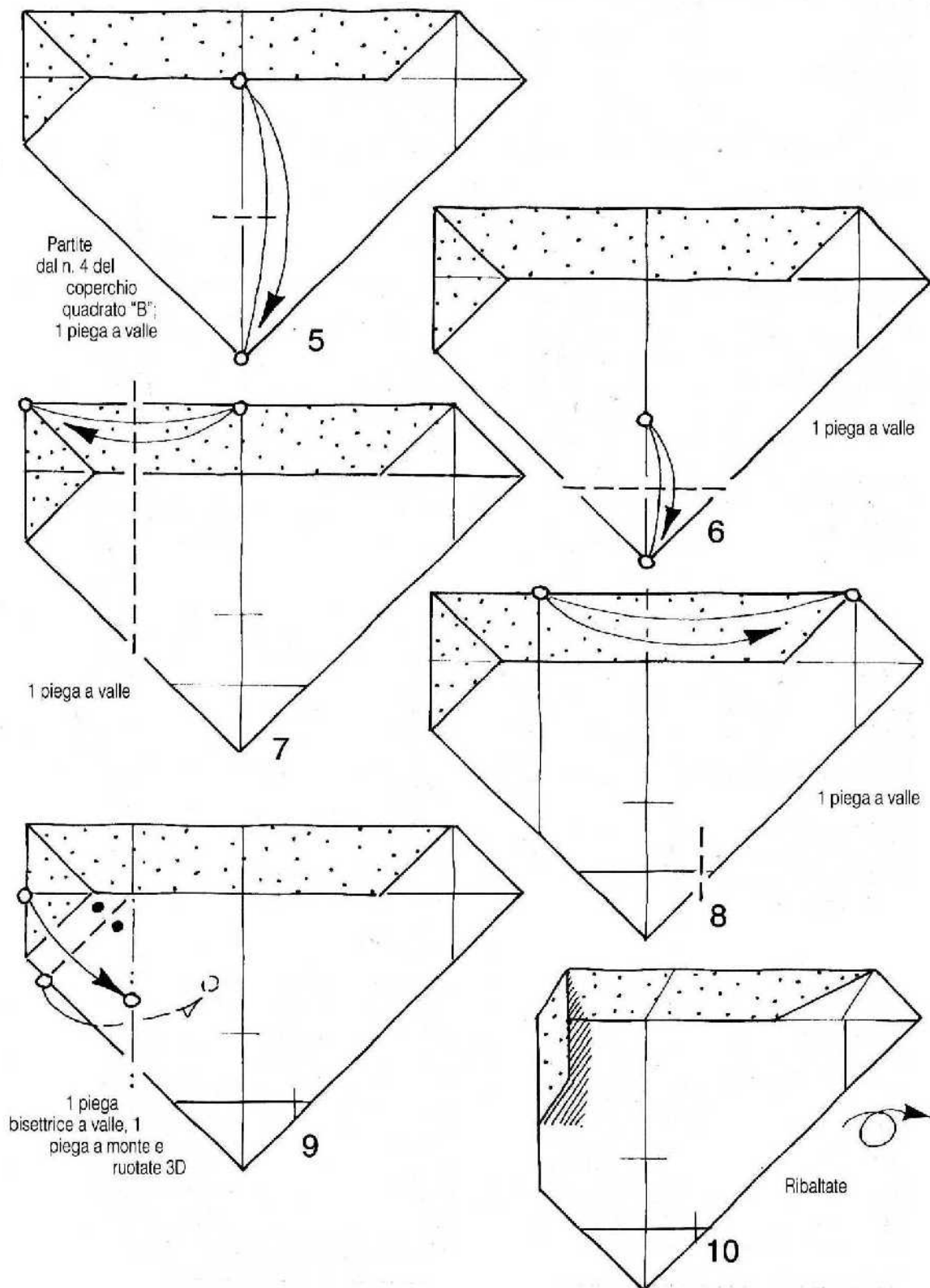
6

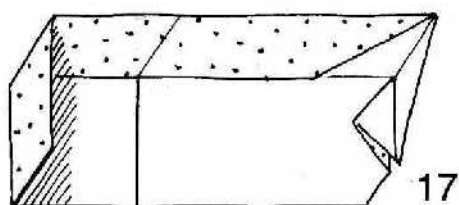
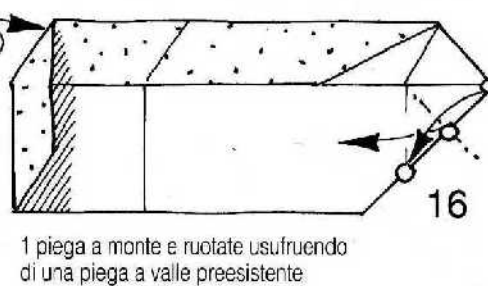
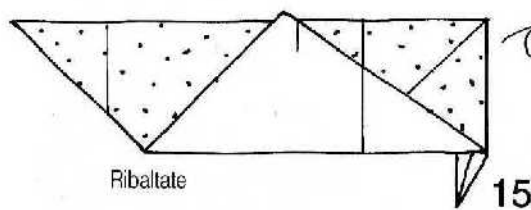
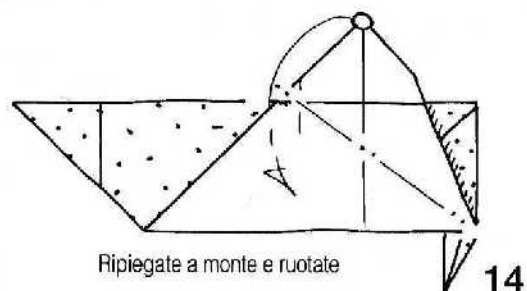
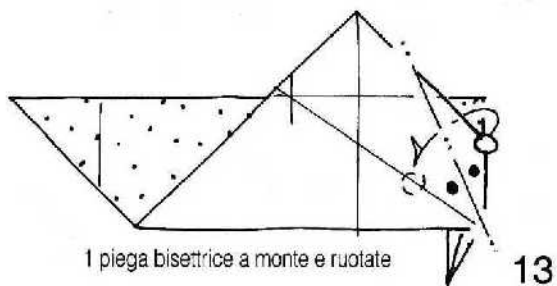
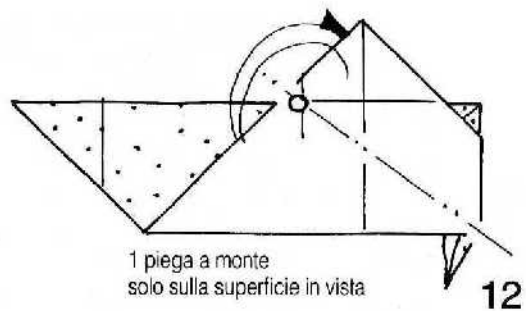
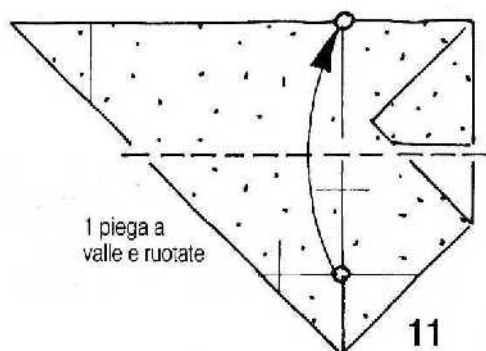
Coperchio "C" ultimato, con fondo

COPERCHIO RETTANGOLARE "D"

Servono 4 moduli, 2 di tipo "9" e 2 di tipo "10", da realizzare con fogli quadrati bicolori.

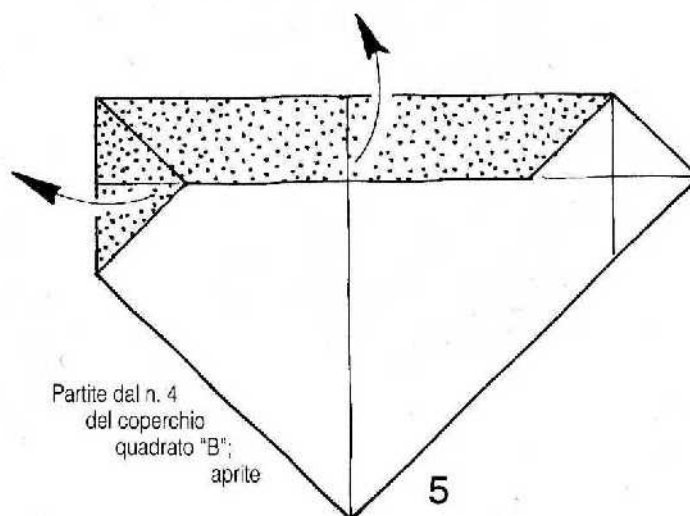
Costruzione del modulo "9"

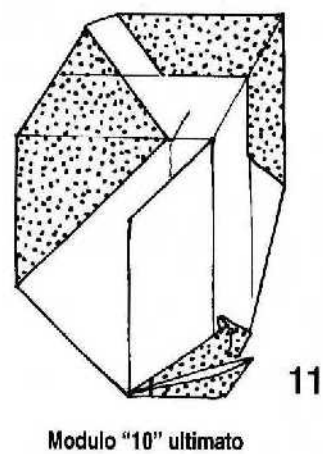
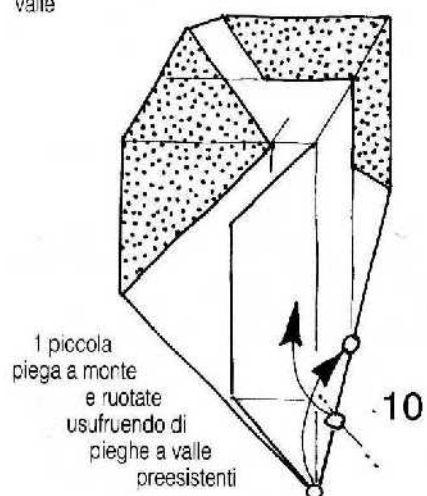
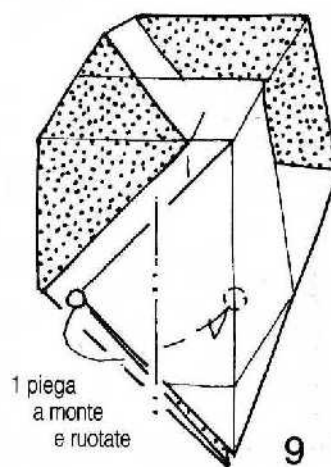
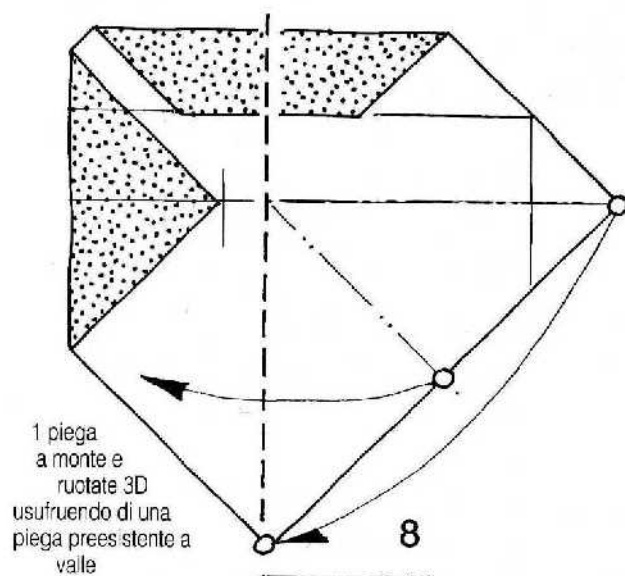
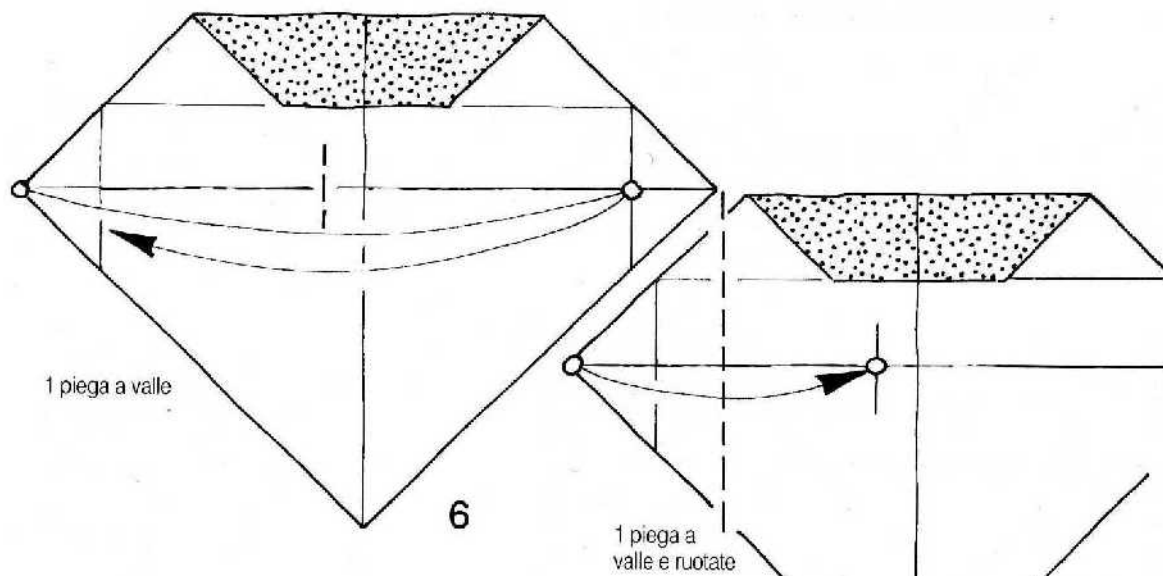


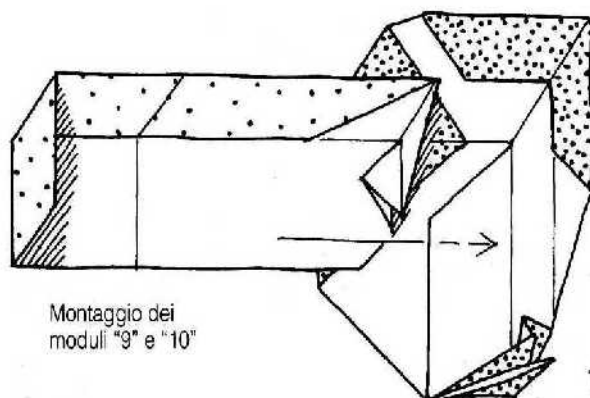


Modulo "9" ultimato

Costruzione del modulo "10"

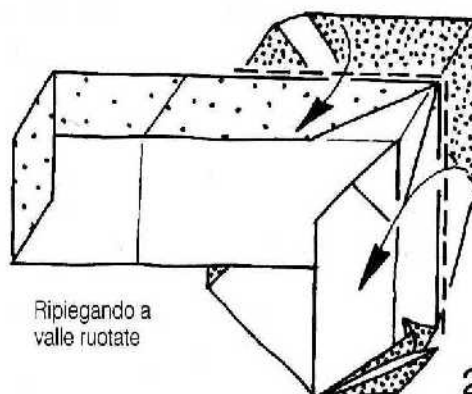






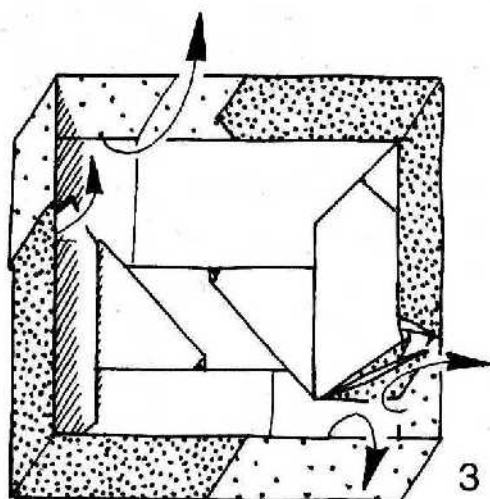
Montaggio dei
moduli "9" e "10"

1



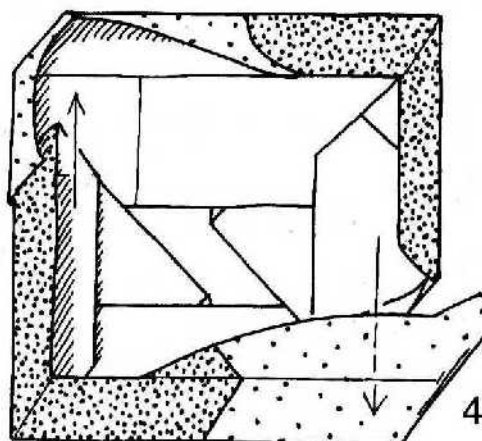
Ripiegando a
valle ruotate

2



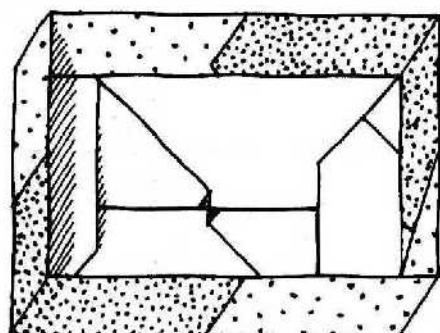
Montaggio di 4 moduli.
Sollevate i bordi indicati.

3



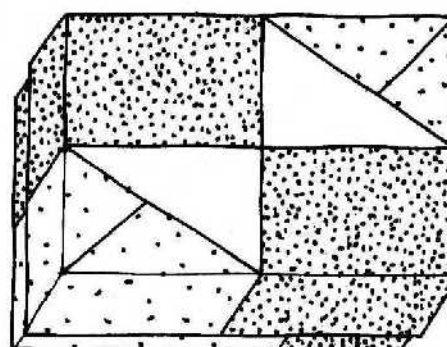
Inserite a vicenda un modulo nell'altro, poi
riabbassate i bordi

4



5

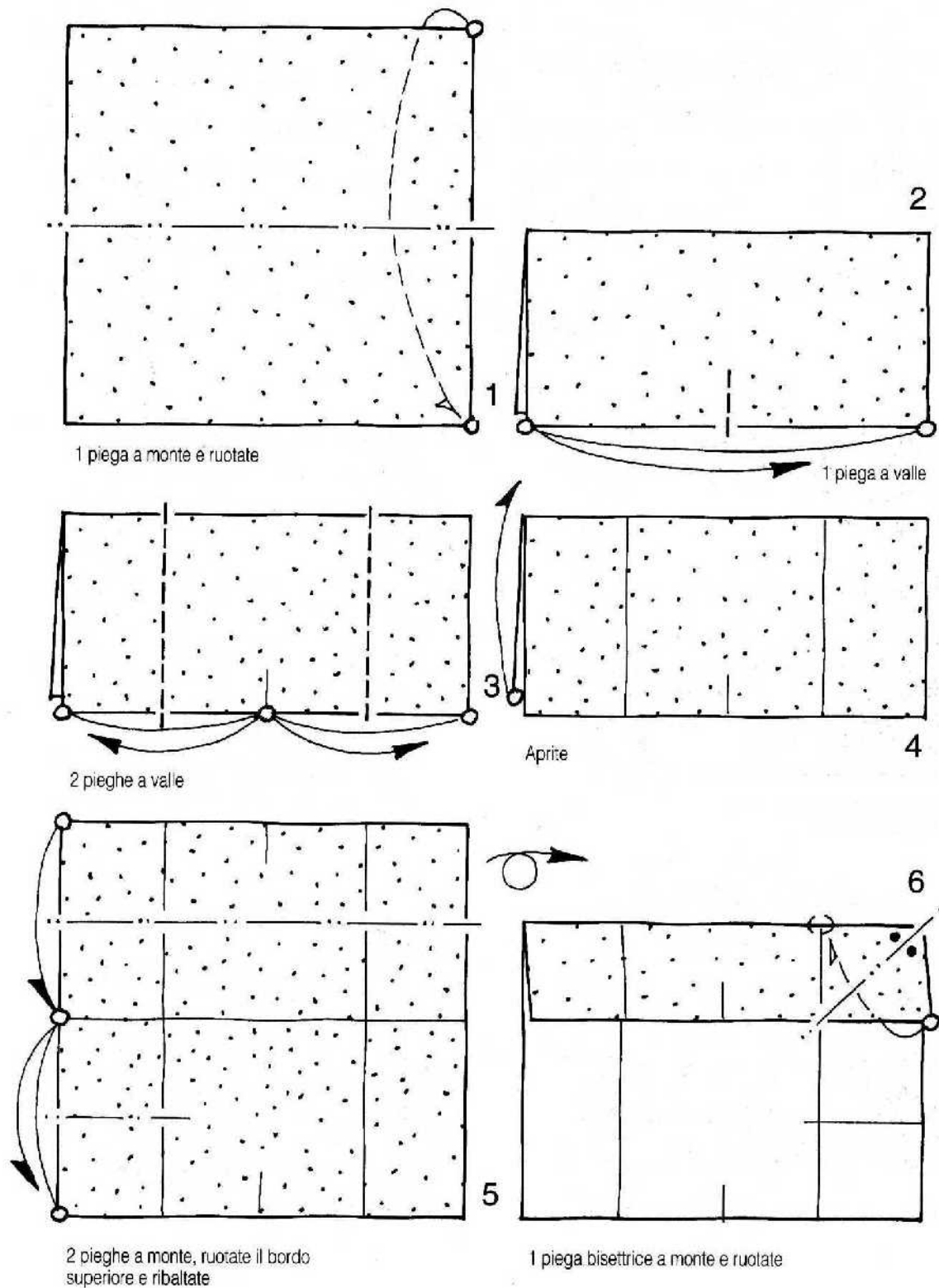
Coperchio rettangolare "D" rovesciato ultimato

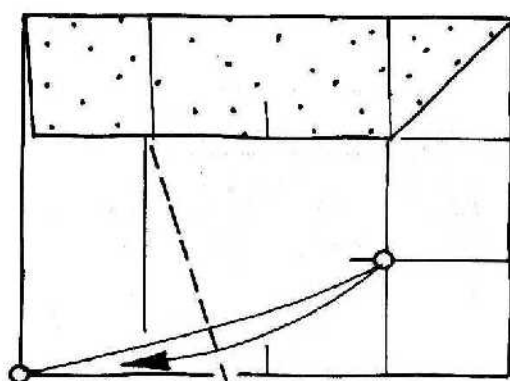


Coperchio "D" ultimato, con fondo

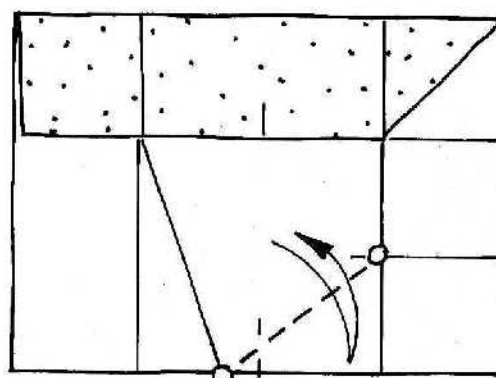
FONDO ESAGONALE

Sono necessari 3 moduli uguali, da realizzare con fogli quadrati monocolori o bicolor

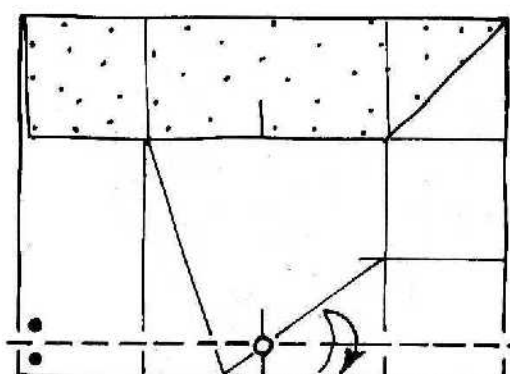




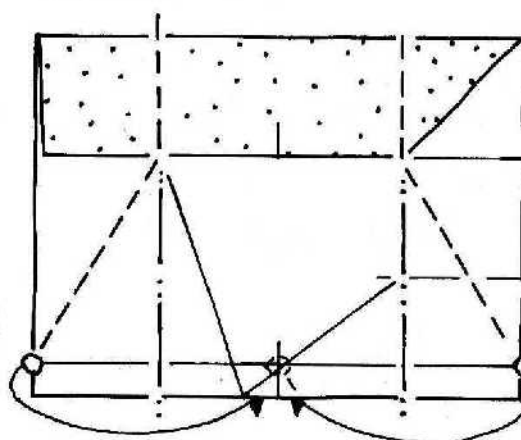
1 piega a valle



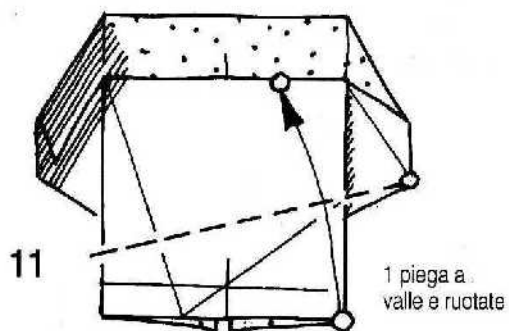
1 piega a valle



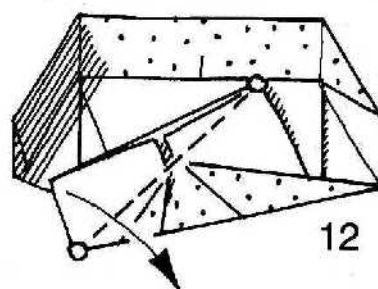
1 piega bisettrice a valle



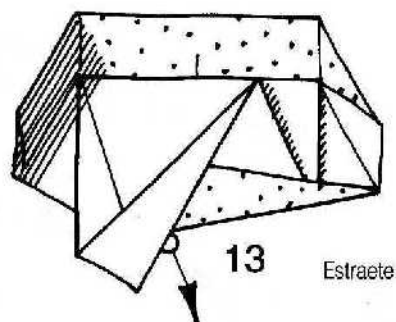
4 pieghe a valle e, usufruendo di 2 pieghe preesistenti a monte, ruotate 3D



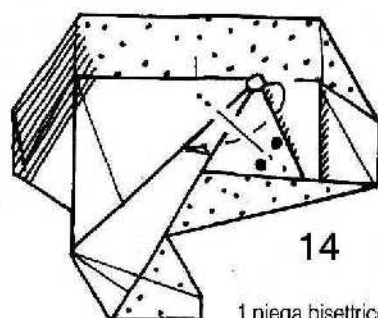
1 piega a valle e ruotate



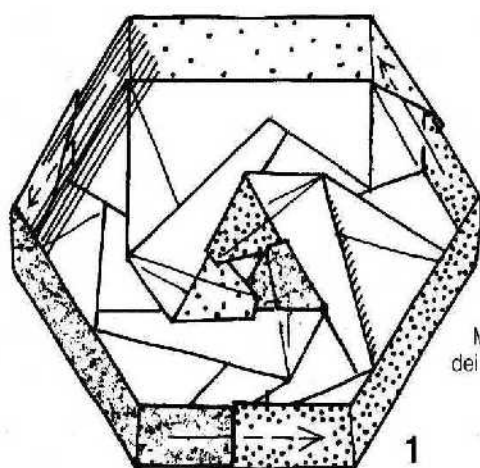
1 piega a valle e ruotate



Estraete

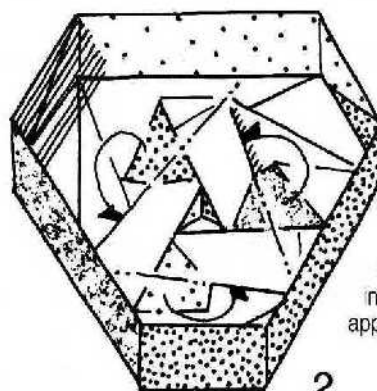


1 piega bisettrice a monte e ruotate.
Modulo ultimato



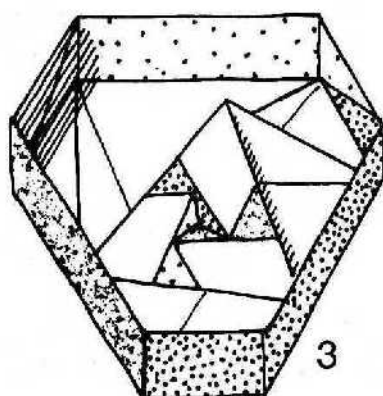
Montaggio
dei 3 moduli

1



Piegate
a monte
intascate le 3
appendici indicate

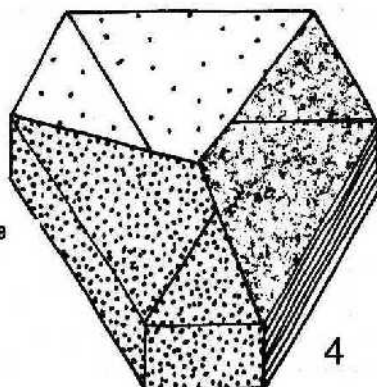
2



3



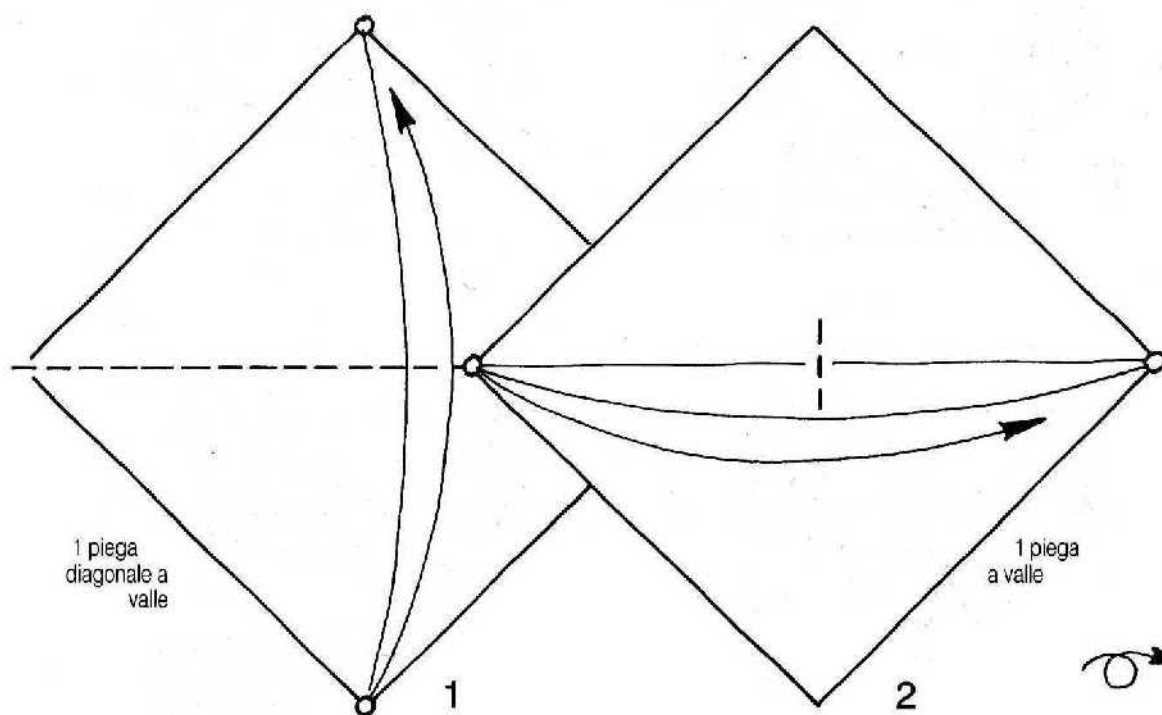
Fondo esagonale
ultimato



4

COPERCHIO ESAGONALE

Servono 3 moduli uguali da realizzare con fogli quadrati bicolori



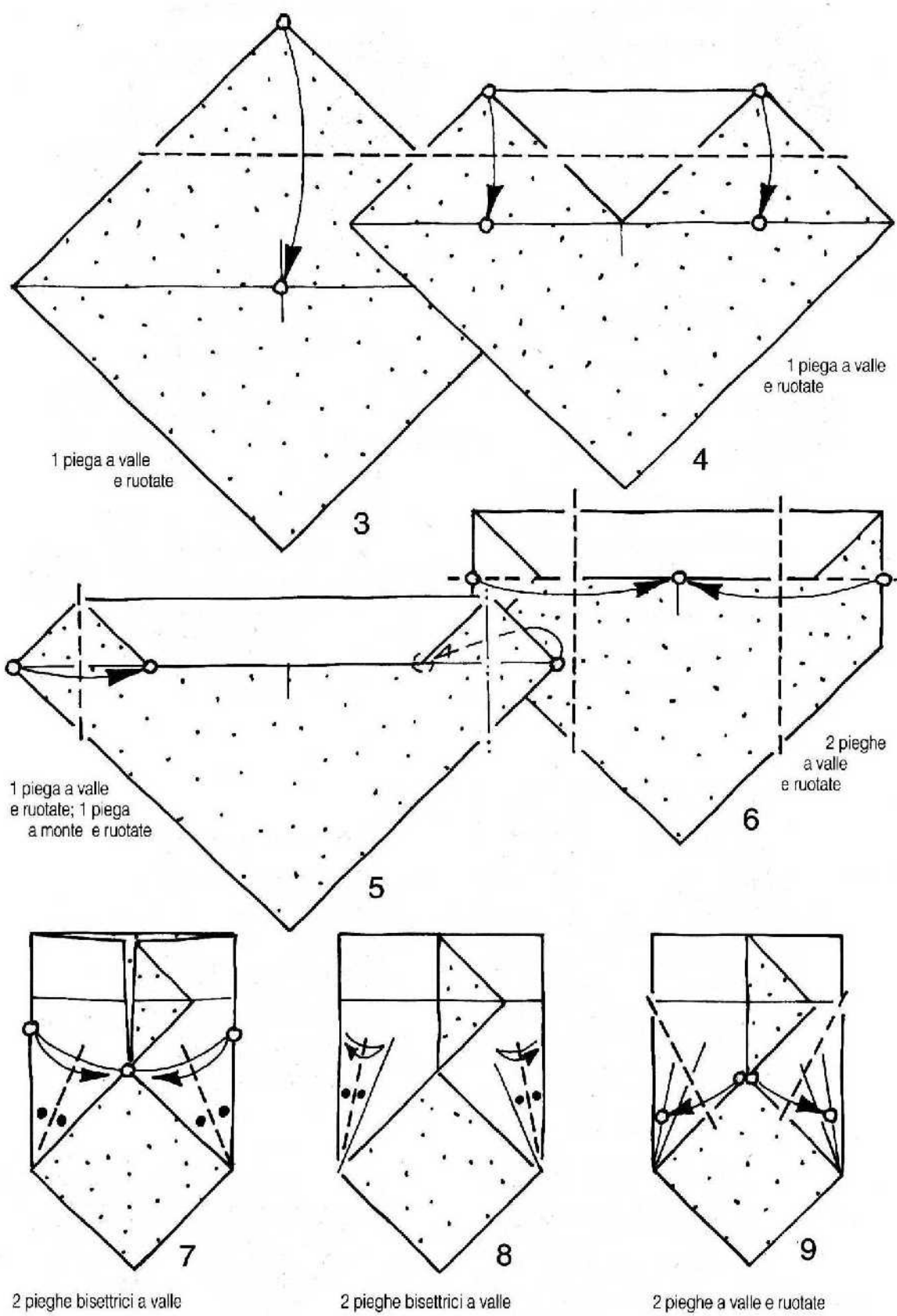
1 piega
diagonale a
valle

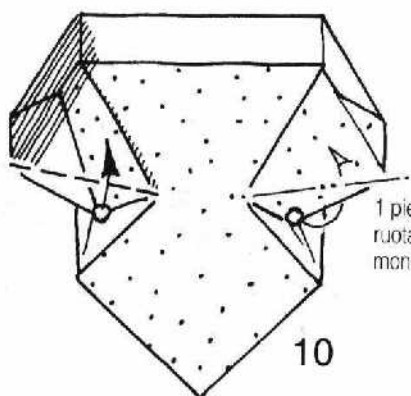
1

1 piega
a valle

2

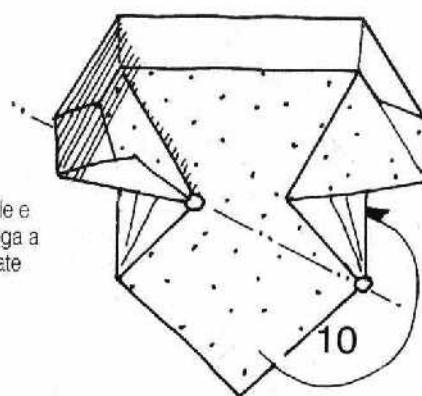






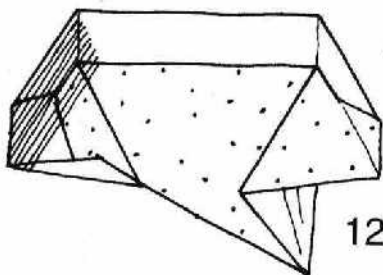
1 piega a valle e ruotate; 1 piega a monte e ruotate

10



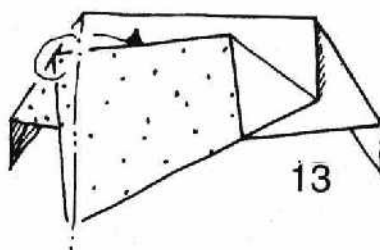
1 piega a monte e ruotate

10



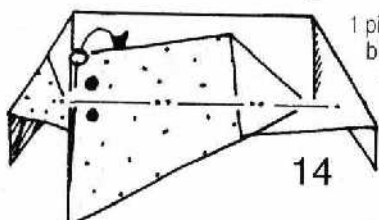
Ribaltate

12



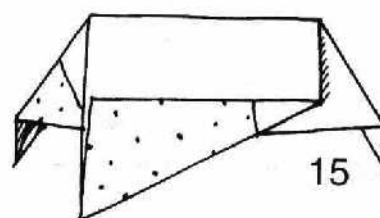
1 piega a monte e ruotate

13



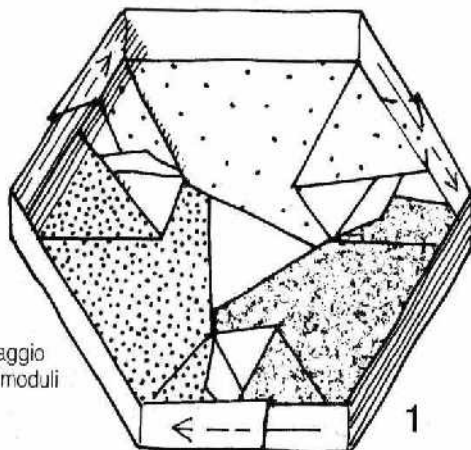
1 piega bisettrice a monte e ruotate

14



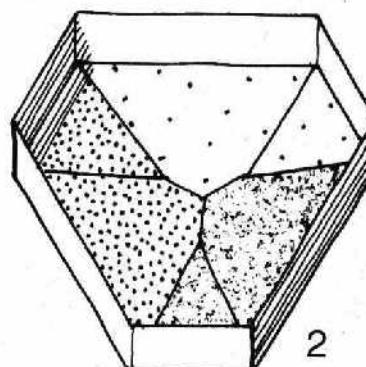
Modulo ultimato
Ribaltate

15



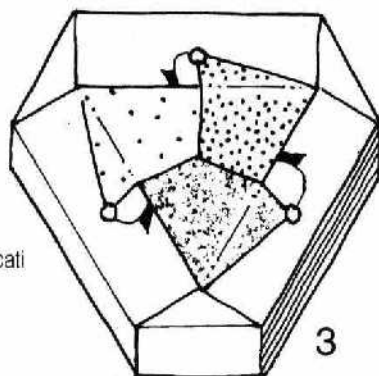
Montaggio dei 3 moduli

1



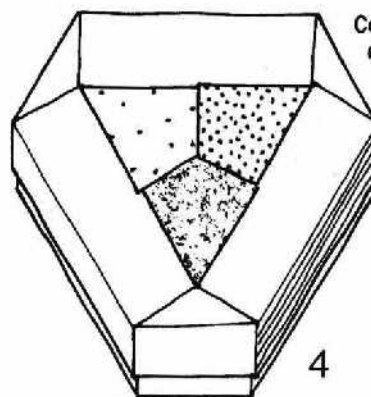
Ribaltate

2



piegate e ruotate e trasciate i 3 angoli indicati

3

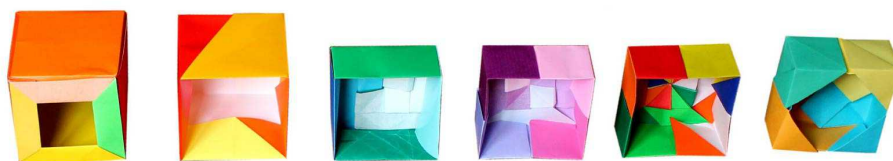


Coperchio esagonale ultimato su fondo

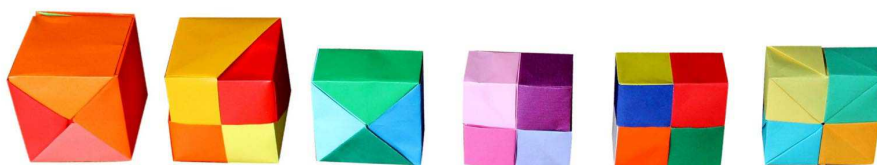
4

PUBBLICAZIONI DI FRANCO PAVARIN

Aerei , jet ed astronavi di carta volanti	IL CASTELLO	1986
Origami animati	"	1987
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Origami motoscafi navi barche e velieri	"	1990
Origami scatole e contenitori	"	1990
Pieghe forme e colori	"	1994
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Naves voladoras	"	2006
Quaderni Quadrato magico n.20 e 48	CDO	
Maschere, elmi e copricapi	web	2010
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21 nuovi aerei origami volanti	web	2014
Maschere origami 3D volume 1	web	2014
Maschere origami 3D volume 2	web	2015



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