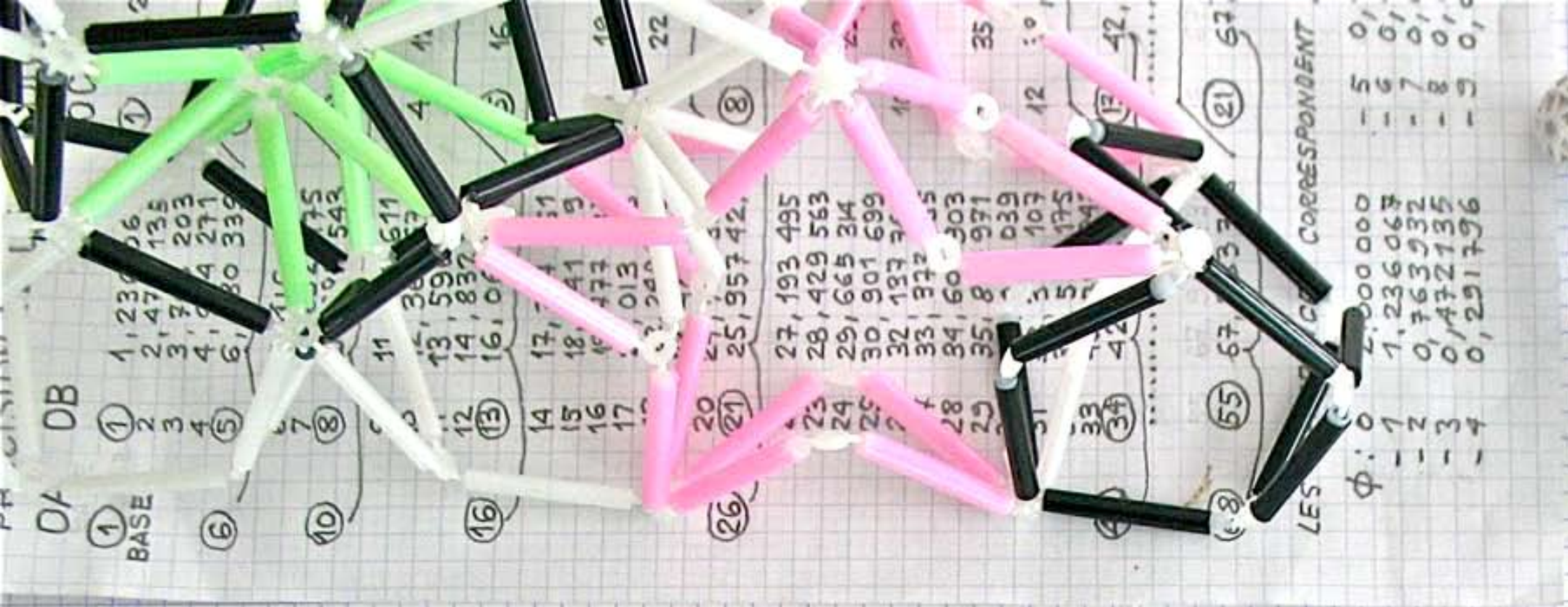
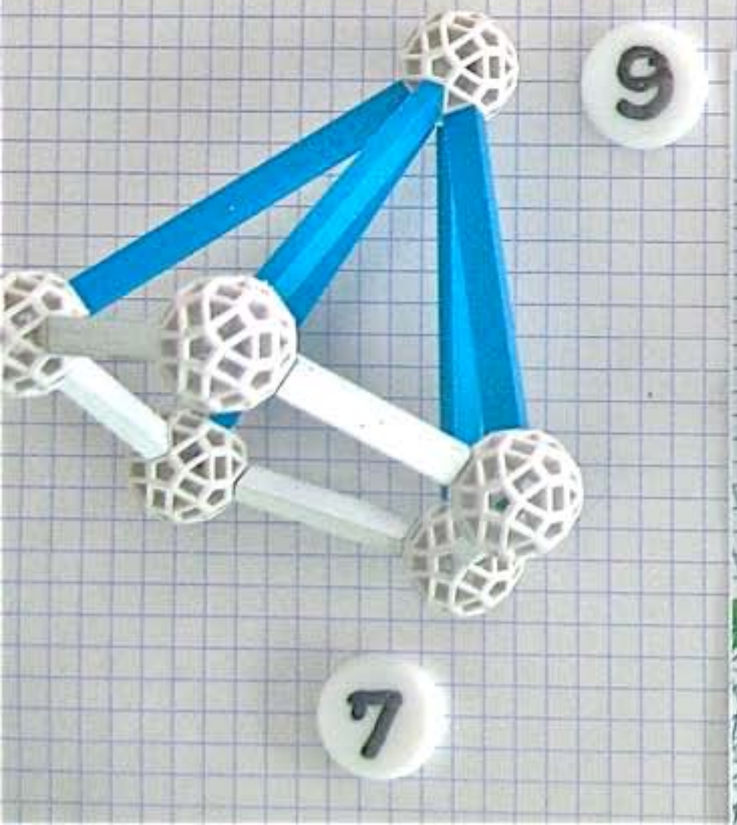
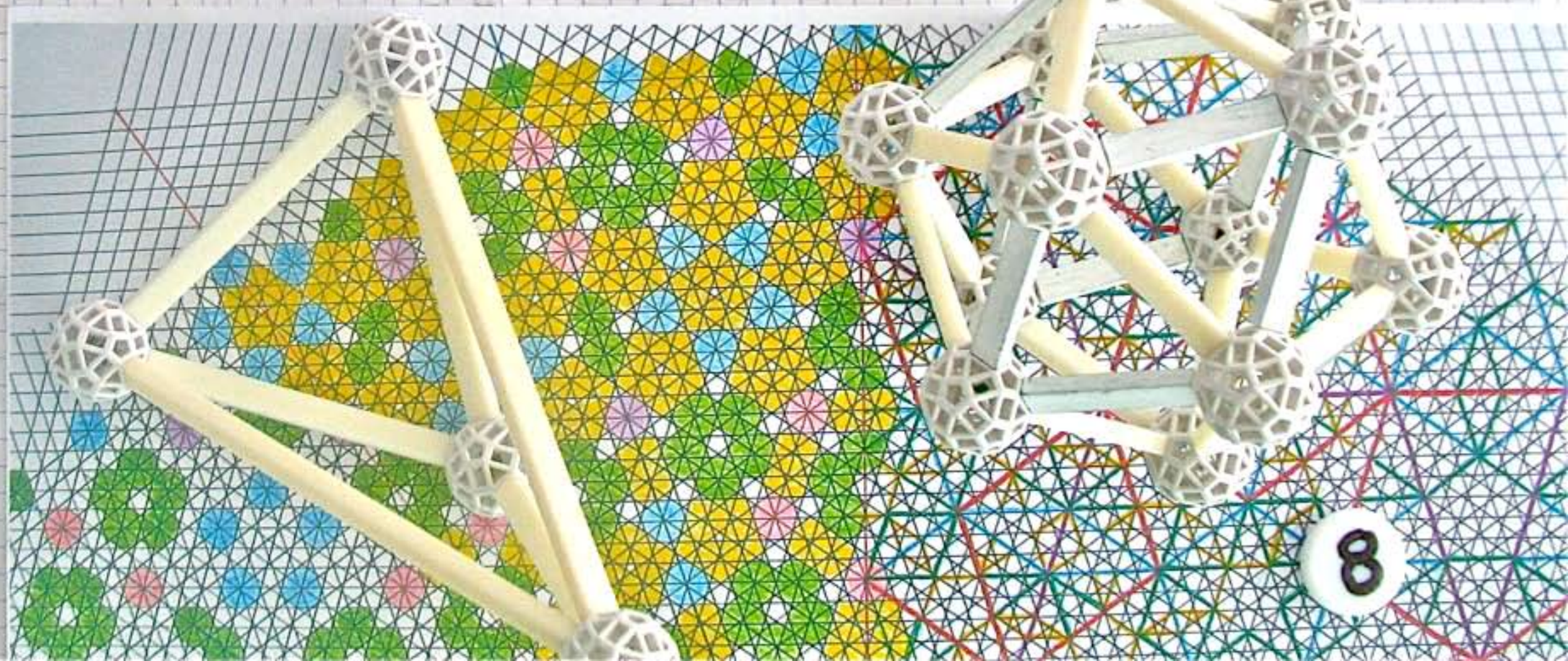
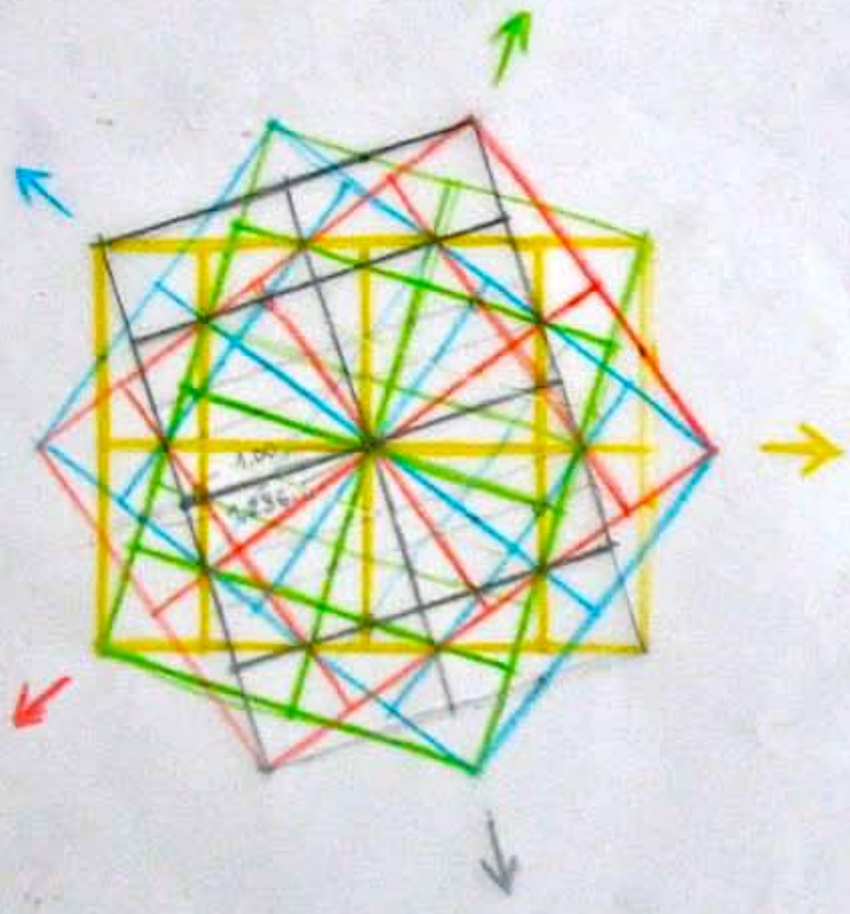


LA PRECISION FLOUE CUBIQUE

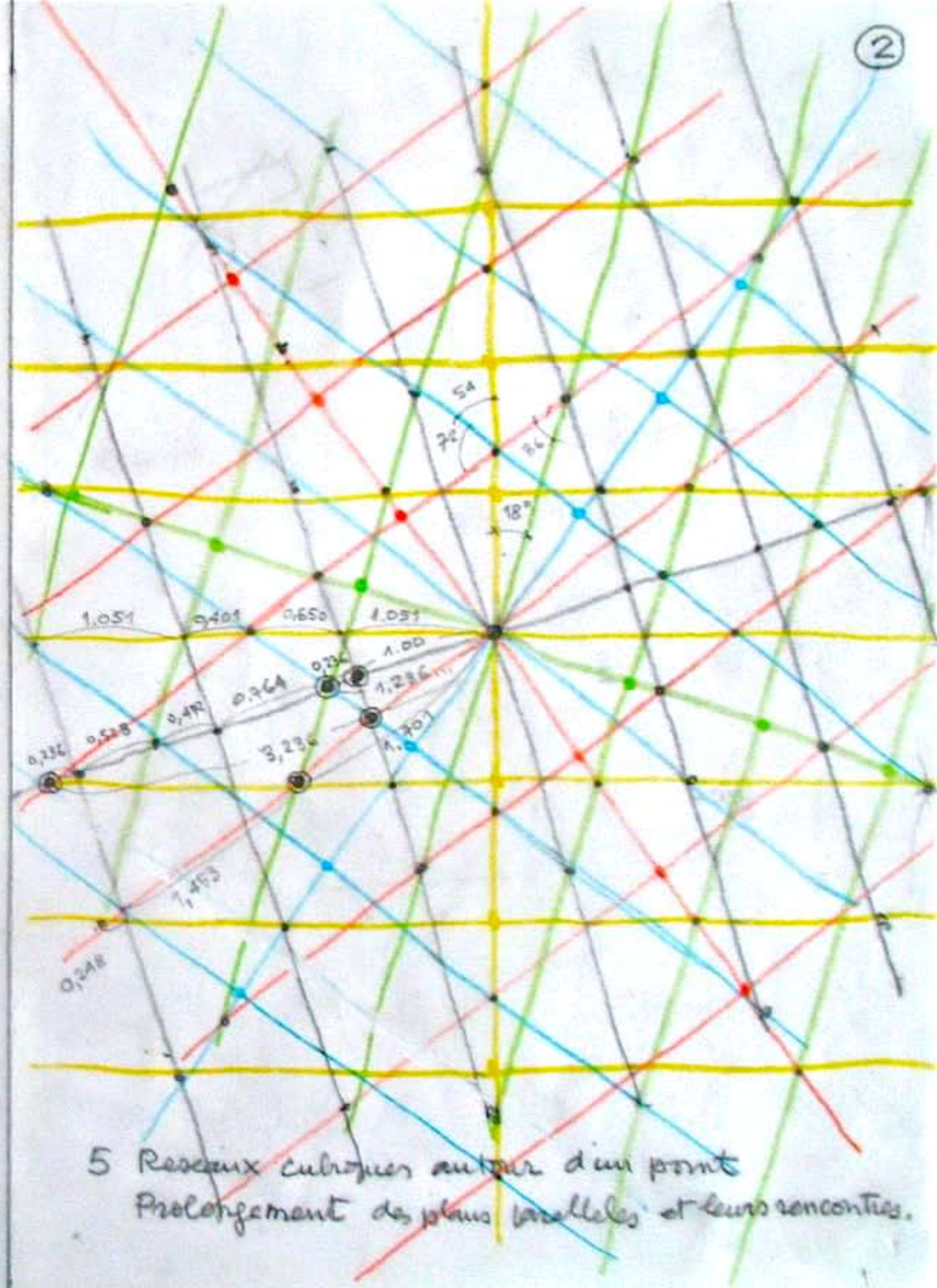
F.V. OCTOBRE 2010



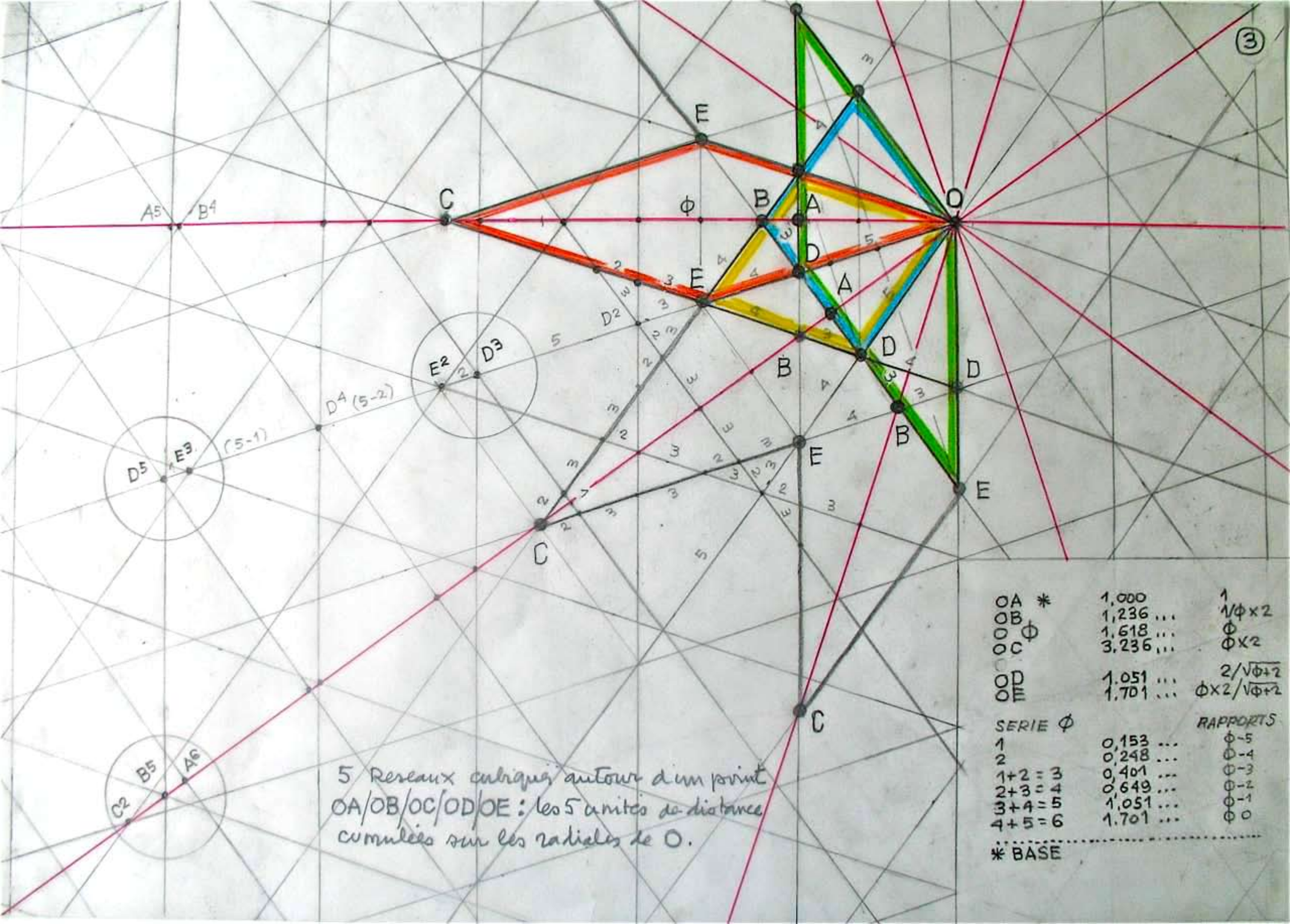




5 Reseaux cubiques autour d'un point (40 cubes)
Directions des plans parallèles (une plan penta.)



5 Reseaux cubiques autour d'un point
Prolongement des plans parallèles et leurs rencontres.



5 Reseaux cubiques autour d'un point
OA/OB/OC/OD/OE : les 5 unités de distance
cumulées sur les radiales de O.

OA *	1,000	1
OB	1,236 ...	$\sqrt{\Phi}\times 2$
O Φ	1,618 ...	Φ
OC	3,236 ...	Φ×2
OD	1,051 ...	$2/\sqrt{\Phi+2}$
OE	1,701 ...	$\Phi\times 2/\sqrt{\Phi+2}$

SERIE Φ		RAPPORTS
1	0,153 ...	Φ-5
2	0,248 ...	Φ-4
1+2 = 3	0,401 ...	Φ-3
2+3 = 4	0,649 ...	Φ-2
3+4 = 5	1,051 ...	Φ-1
4+5 = 6	1,701 ...	Φ 0

* BASE

PRECISION FLOUE CUBIQUE · DISTANCES DE O/ABC (4)

OA	OB		OC		DIFFERENCES
(1)	(1)	1,236 067	(1)	3,236 067	+ 2,000 000
BASE	2	2,472 135			
	3	3,708 203			180 339
	4	4,944 271			291 796
(6)	(5)	6,180 339	(2)	6,472 135	+ 0,472 135
	6	7,416 407			111 457
	7	8,652 475			180 339
(10)	(8)	9,888 543	(3)	9,708 203	− 0,291 796
	9	11,124 611			
	10	12,360 679	4	12,944 271	
	11	13,596 747			068 883
	12	14,832 815			111 456
(16)	(13)	16,068 883	(5)	16,180 339	+ 0,180 339
	14	17,304 951			
	15	18,541 019			
	16	19,777 087	6	19,416 407	
	17	21,013 155			
	18	22,249 223	7	22,652 475	
	19	23,485 291			042 573
	20	24,721 359			068 883
(26)	(21)	25,957 427	(8)	25,888 543	− 0,111 456
	22	27,193 495			
	23	28,429 563			
	24	29,665 314	9	29,124 611	
	25	30,901 699			
	26	32,137 767	10	32,360 679	
	27	33,373 835			
	28	34,609 903			
	29	35,854 971	11	35,596 747	
	30	37,082 039			
	31	38,318 107	12	38,832 815	
	32	39,554 175			026 311
	33	40,790 243			042 572
(42)	(34)	42,026 311	(13)	42,068 883	+ 0,068 883
	.....		.....		
					016 262
					026 311
(68)	(55)	67,983 738	(21)	67,957 427	− 0,042 573

LES DIFFERENCES CORRESPONDENT A UNE SERIE Φ DECROISSANTE :

Φ : 0	2,000 000	− 5	0,180 339	− 10	0,016 262
− 1	1,236 067	− 6	0,111 456	.....	
− 2	0,763 932	− 7	0,068,883		
− 3	0,472 135	− 8	0,042,572		
− 4	0,291 796	− 9	0,026 311		

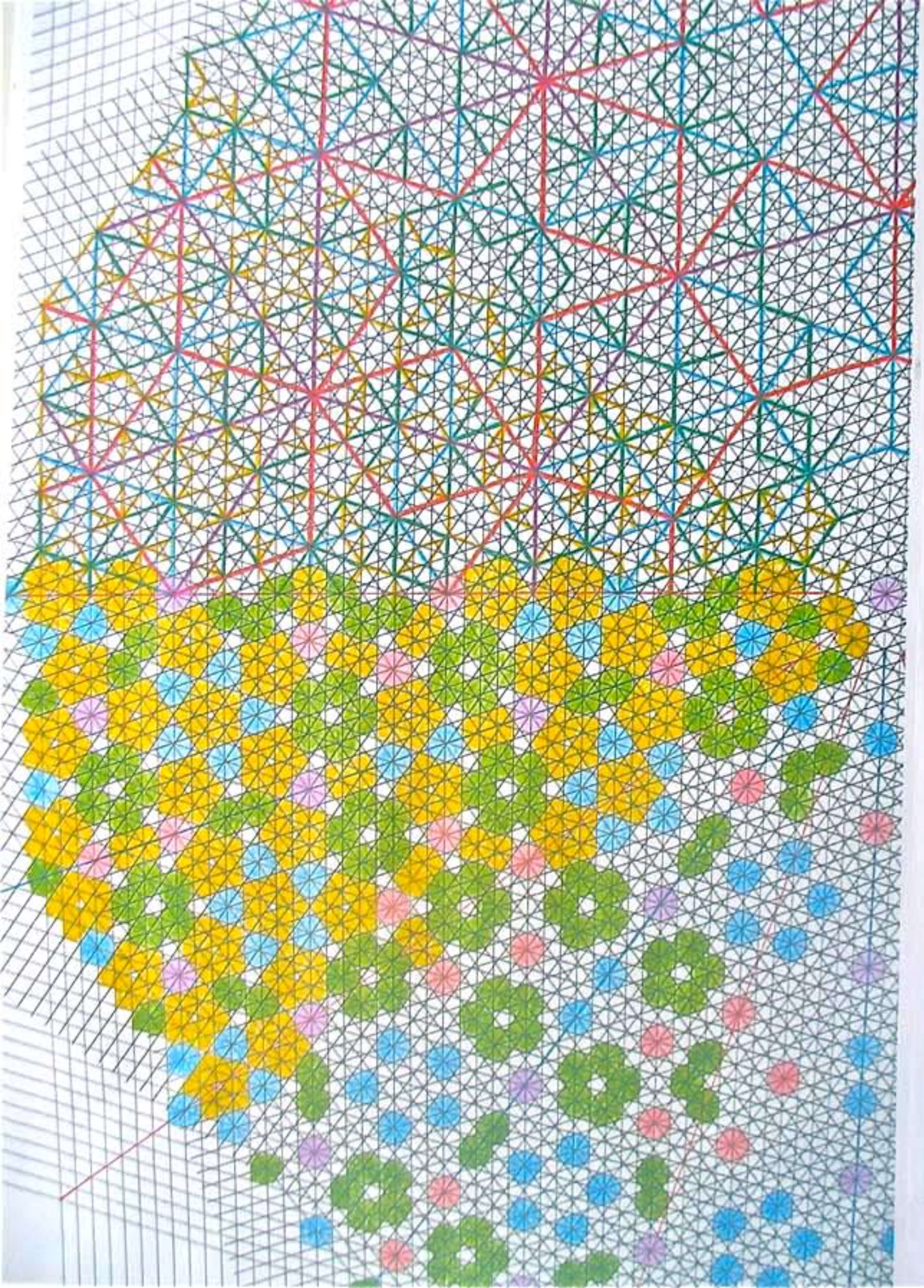
PRECISION FLOUE CUBIQUE · DISTANCES DE O/DE (5)

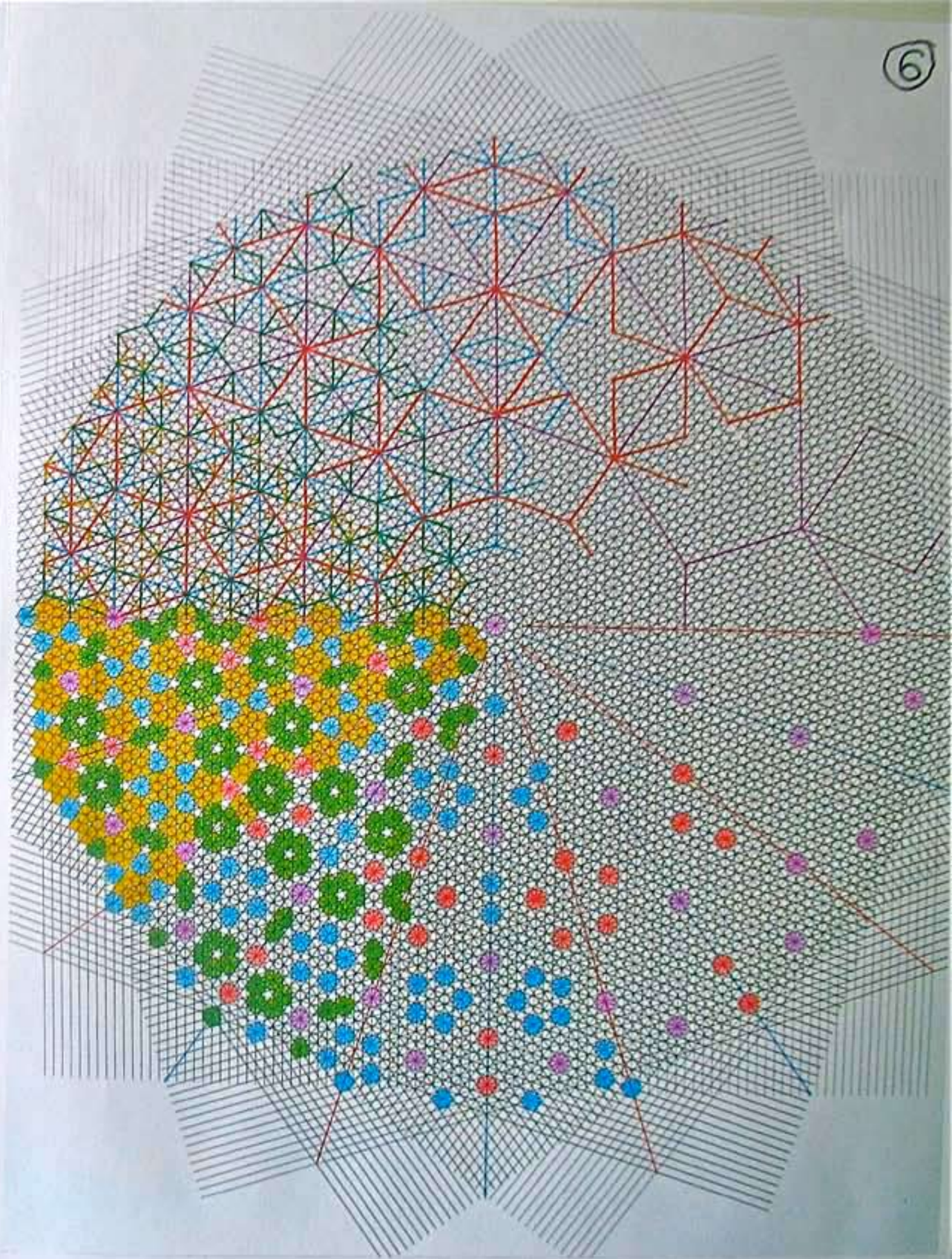
OD		OE		DIFFERENCES
(1)	1,051 462	(1)	1,701 301	+ 0,649 839
2	2,102 924	"	" " "	− 0,401 622
3	3,154 386	2	3,402 603	+ 0,248 217
4	4,205 848			
(5)	5,257 311	(3)	5,103 904	− 0,153 407
6	6,308 773	4	6,805 206	
7	7,360 235			
(8)	8,411 697	(5)	8,506 508	+ 0,094 811
9	9,463 160	6	10,207 809	
10	10,514 622			
11	11,566 084	7	11,909 111	
12	12,617 546			
(13)	13,669 008	(8)	13,610 412	− 0,058 596
14	14,720 471			
15	15,771 933	9	15,311 714	
16	16,823 395			
17	17,847 857	10	17,013 016	
18	18,926 320	11	18,714 317	
19	19,977 782			
20	21,029 244	12	20,415 619	
(21)	22,080 706	(13)	22,116 921	+ 0,036 215
22	23,132 168	14	23,818 222	
23	24,183 631			
24	25,235 093	15	25,519 524	
25	26,286 555			
26	27,338 017	16	27,220 825	
27	28,389 480	17	28,922 127	
28	29,440 942			
29	30,492 404	18	30,623 429	
30	31,543 866			
31	32,595 328	19	32,324 730	
32	33,646 791			
33	34,698 253	20	34,026 032	
(34)	35,749 715	(21)	35,727 333	− 0,022 382
.....		.....		
(55)	57,830 422	(34)	57 844 254	+ 0,013 832

LES DIFFERENCES CORRESPONDENT A UNE SERIE Φ DECROISSANTE :

Φ : 0	1,701 301	− 5	0,153 406	− 10	0,013 823
− 1	1,051 462	− 6	0,094 810	.....	
− 2	0,649 839	− 7	0,058 595		
− 3	0,401 622	− 8	0,036 214		
− 4	0,248 216	− 9	0,022 381		

$$\frac{OC}{OE} = 1.902\,113\ldots \quad \sqrt{\Phi+2} \quad (3,618\,033\ldots)$$

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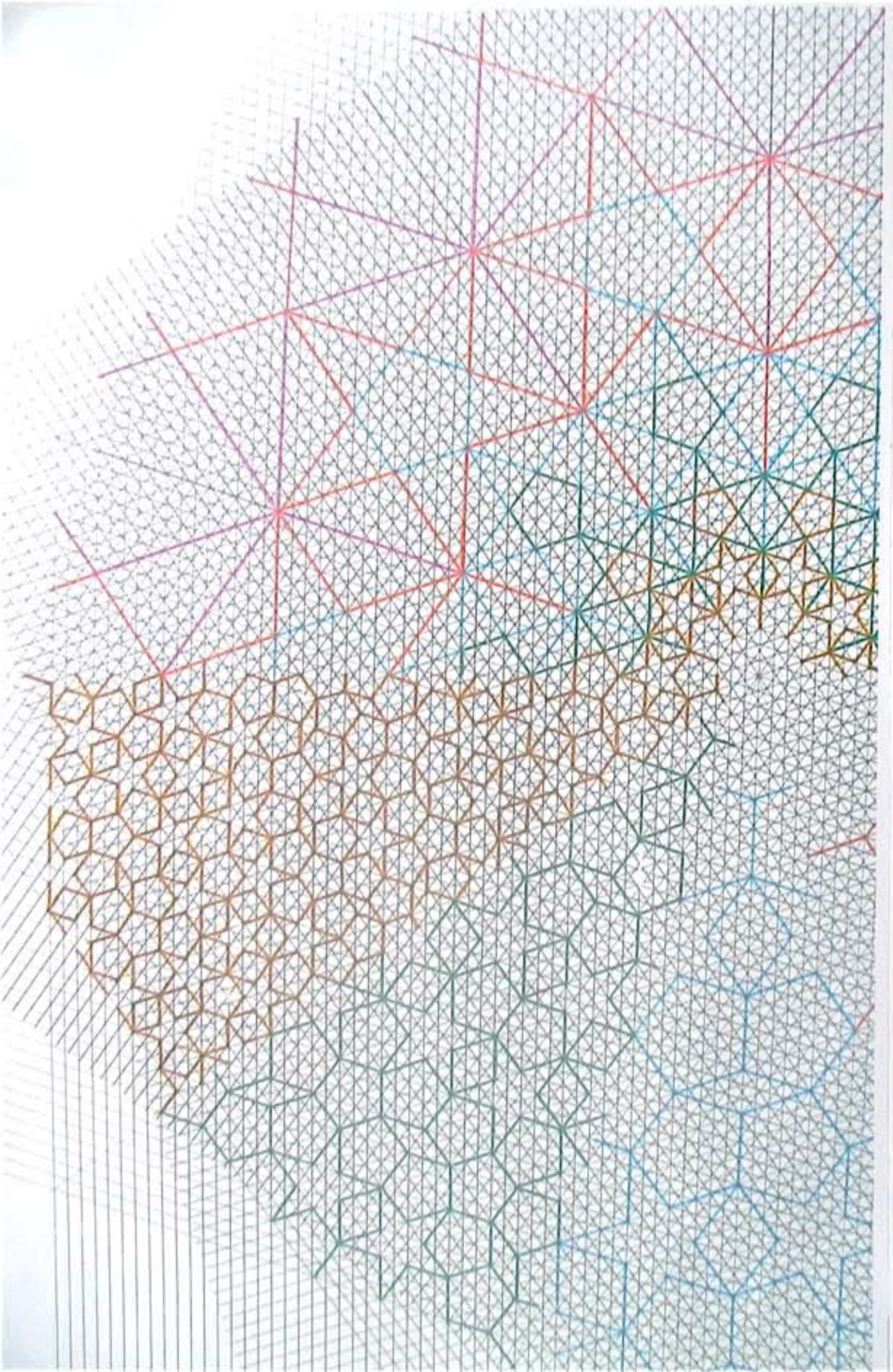

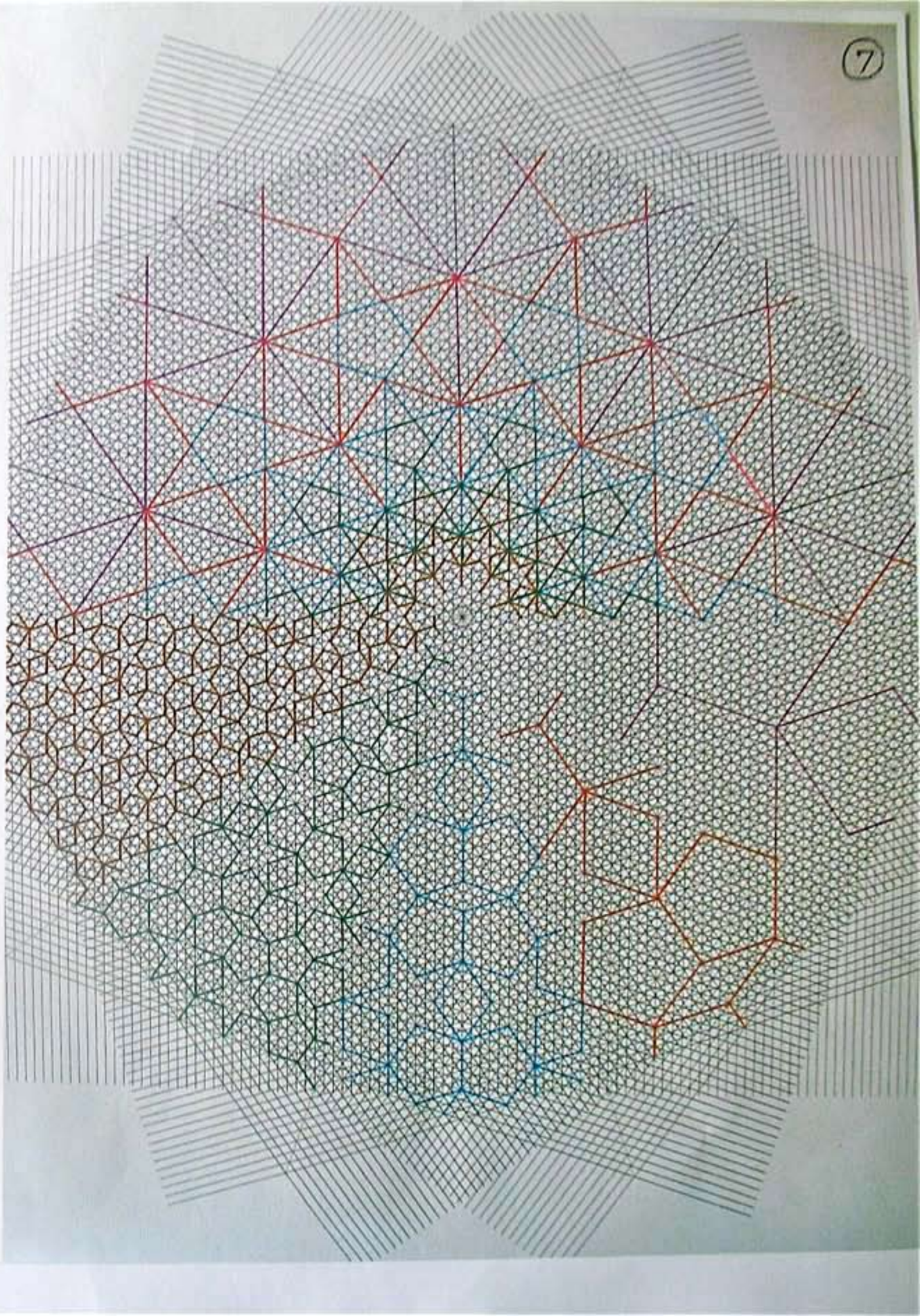
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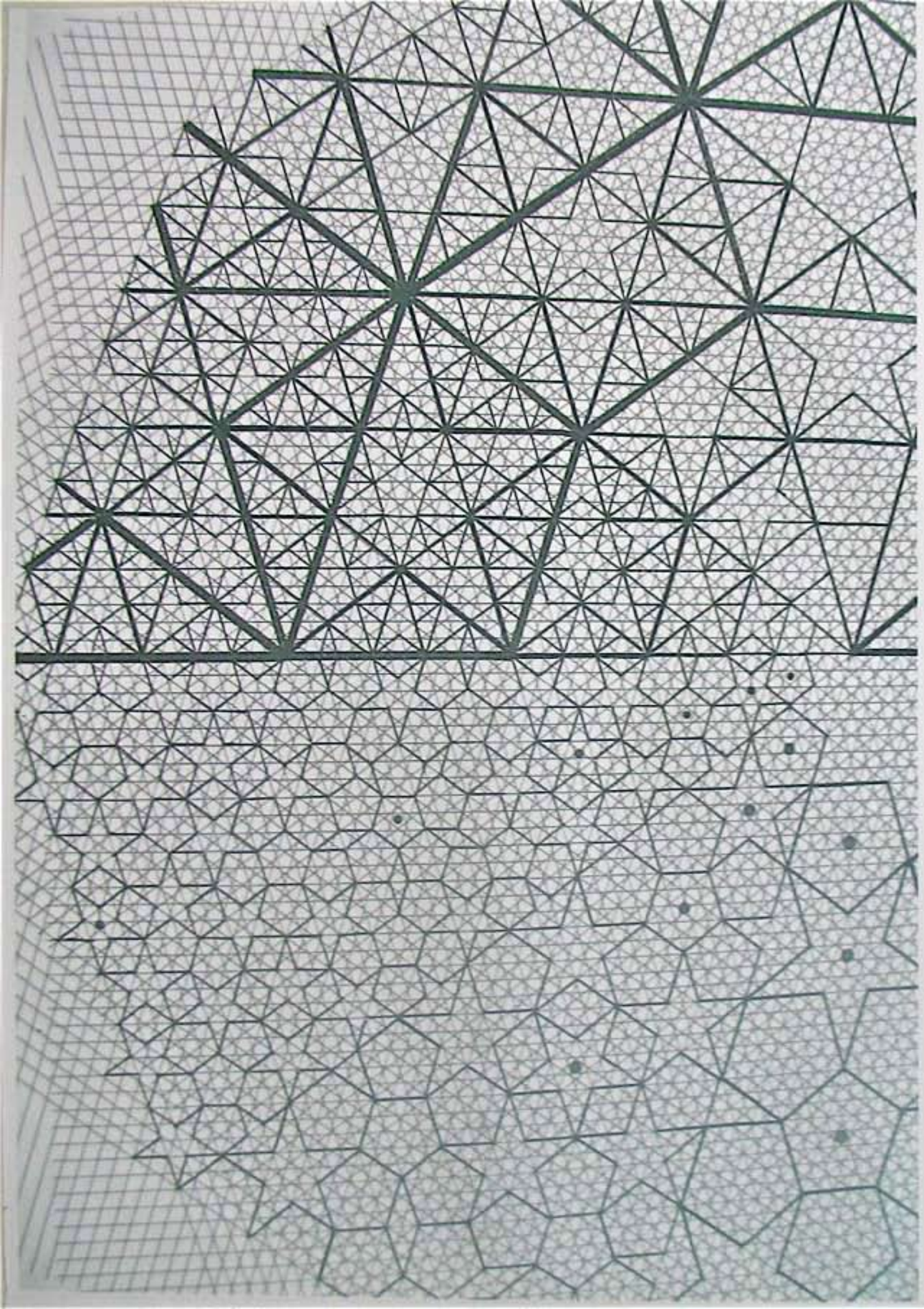
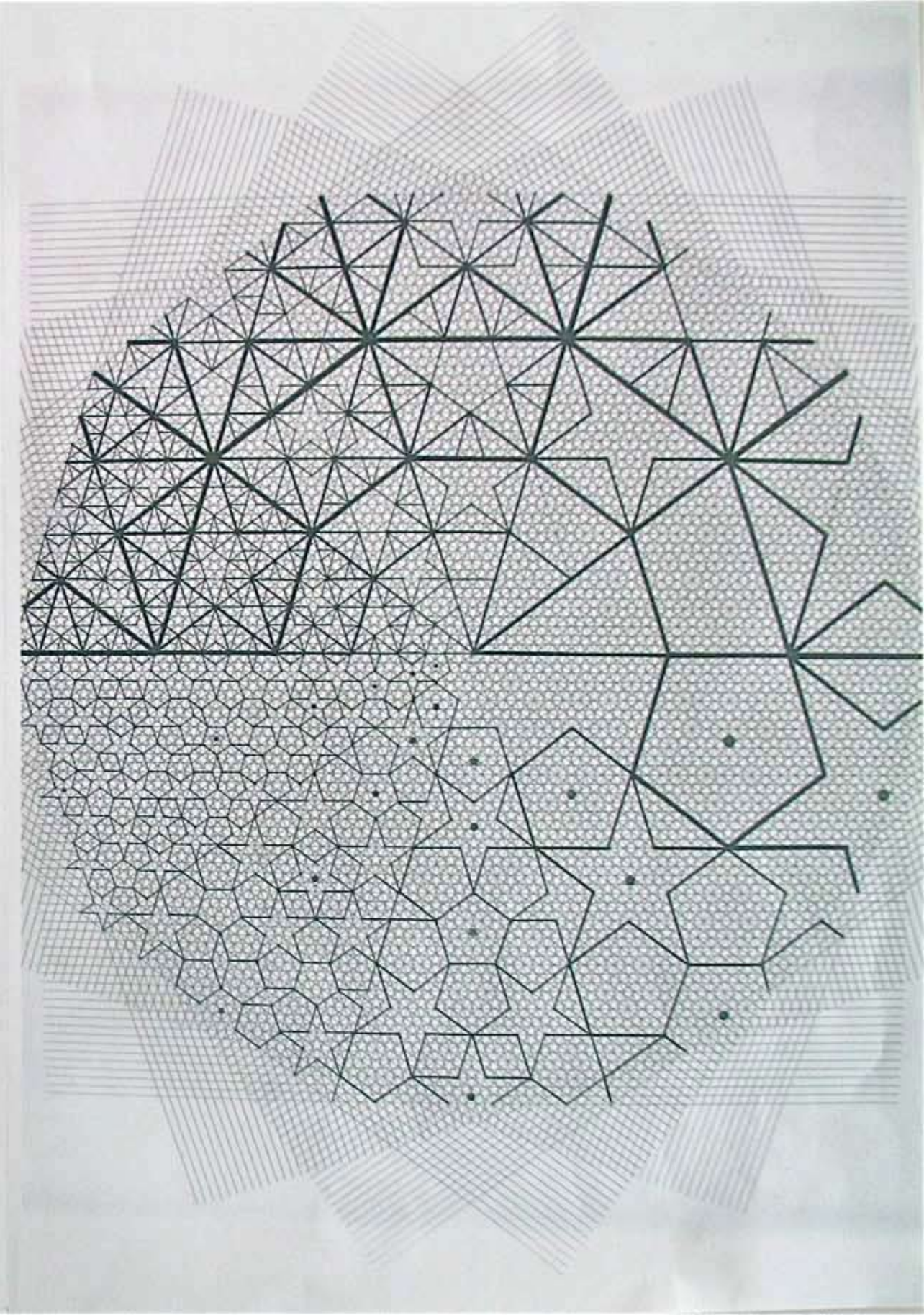
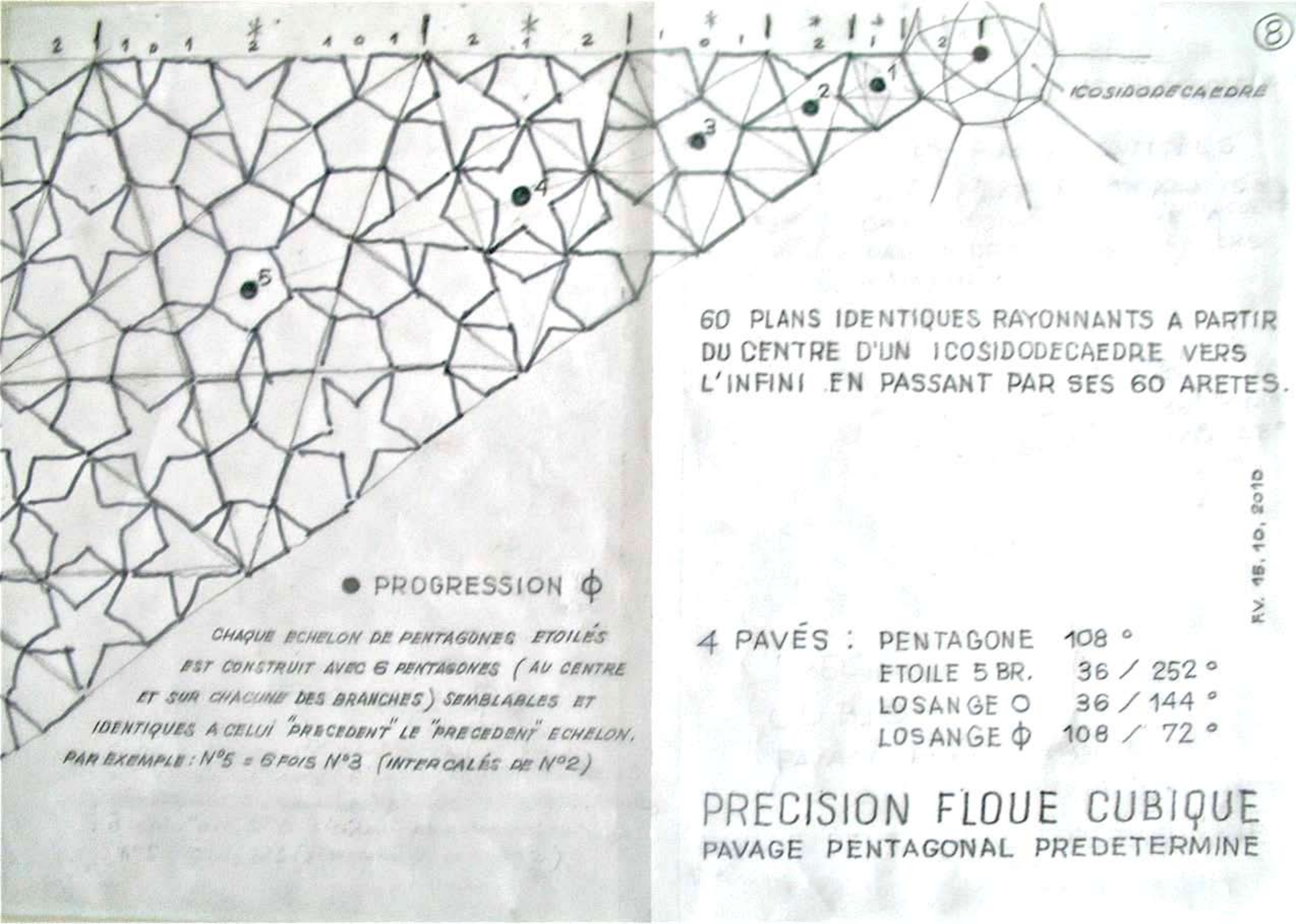
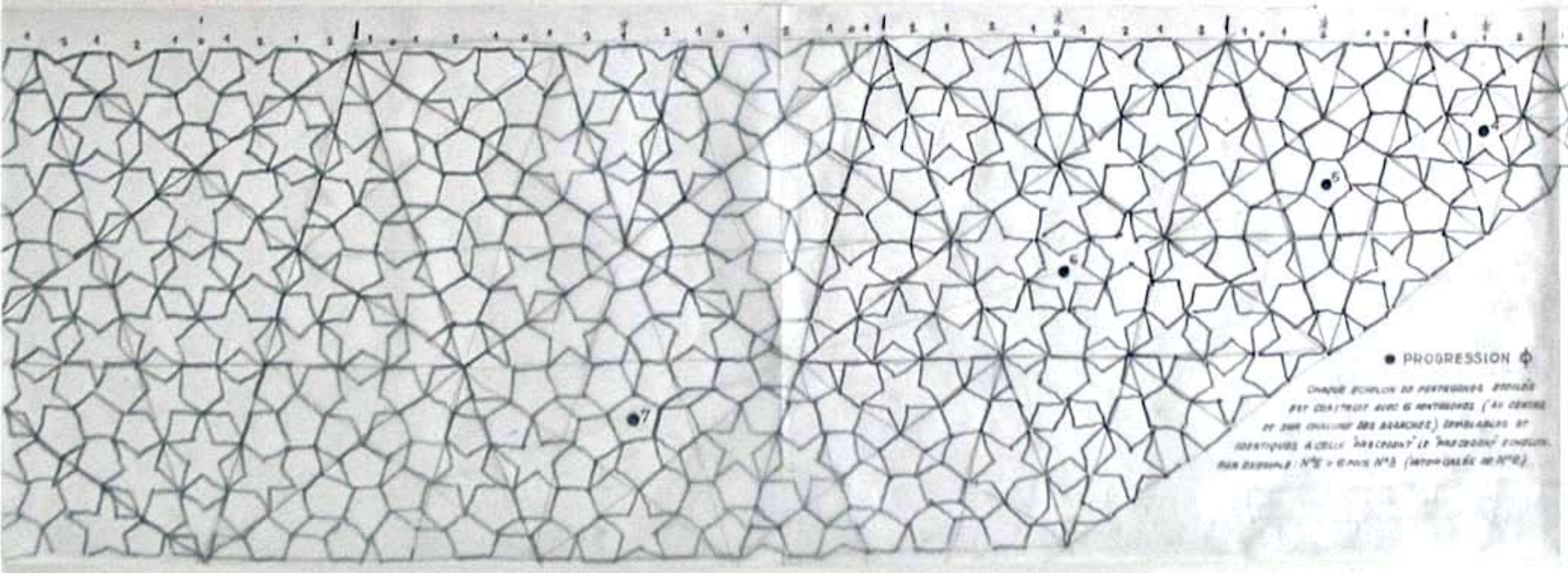




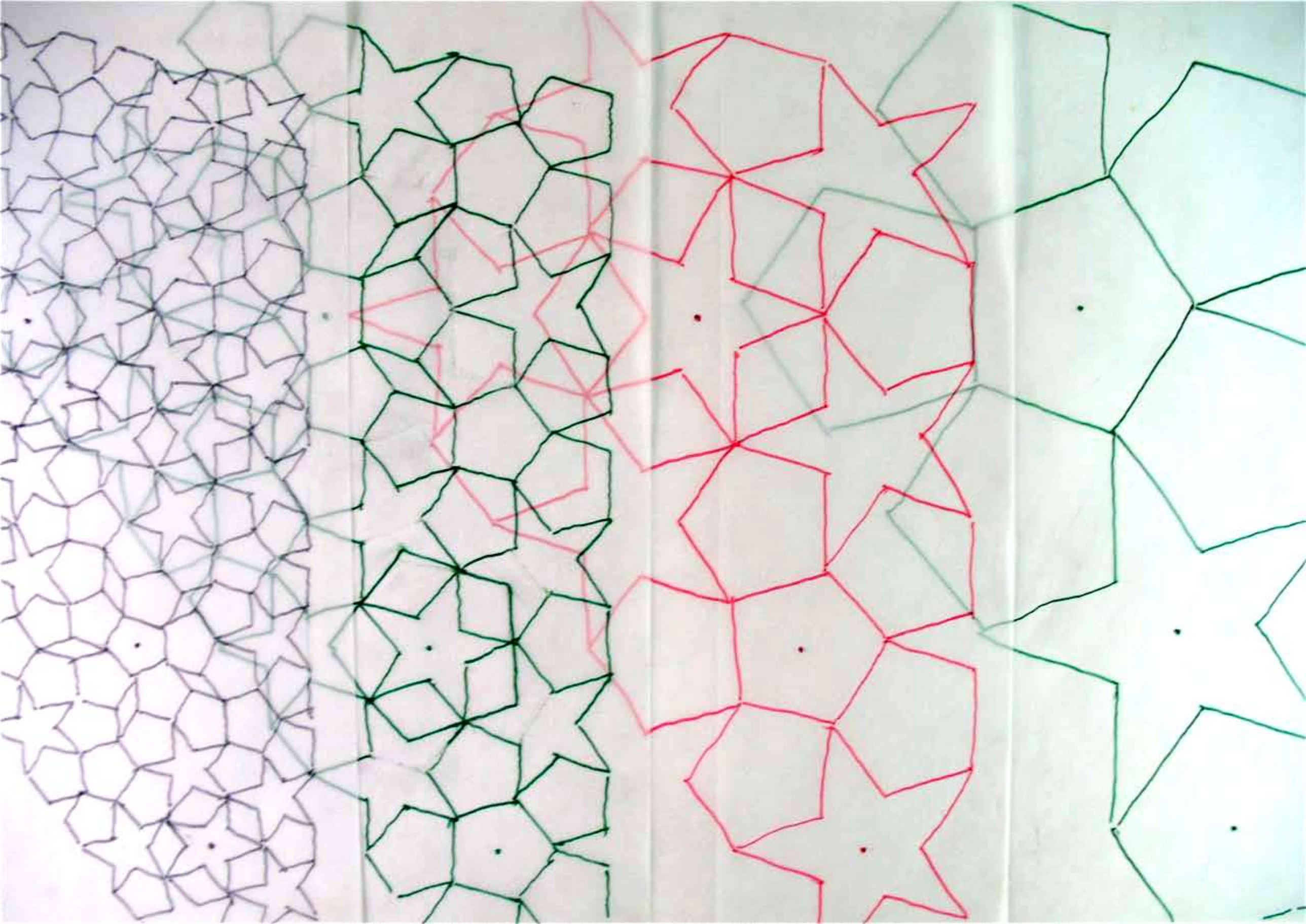

ICOSIDODECAEDRE
1
2
3
4
5
60 PLANS IDENTIQUES RAYONNANTS A PARTIR DU CENTRE D'UN ICOSIDODECAEDRE VERS L'INFINI EN PASSANT PAR SES 60 ARETES.
● PROGRESSION Φ
CHAQUE ECHELON DE PENTAGONES ETOILÉS EST CONSTRUIT AVEC 6 PENTAGONES (AU CENTRE ET SUR CHACUNE DES BRANCHES) SEMBLABLES ET IDENTIQUES A CELUI "PRECEDENT" LE "PRECEDENT" ECHELON.
PAR EXEMPLE : N°5 = 6 FOIS N°3 (INTERCALÉS DE N°2)
4 PAVÉS : PENTAGONE 108 °
ETOILE 5 BR. 36 / 252 °
LOSANGE O 36 / 144 °
LOSANGE Φ 108 / 72 °
PRECISION FLOUE CUBIQUE
PAVAGE PENTAGONAL PREDETERMINE
F.V. 15, 10, 2010

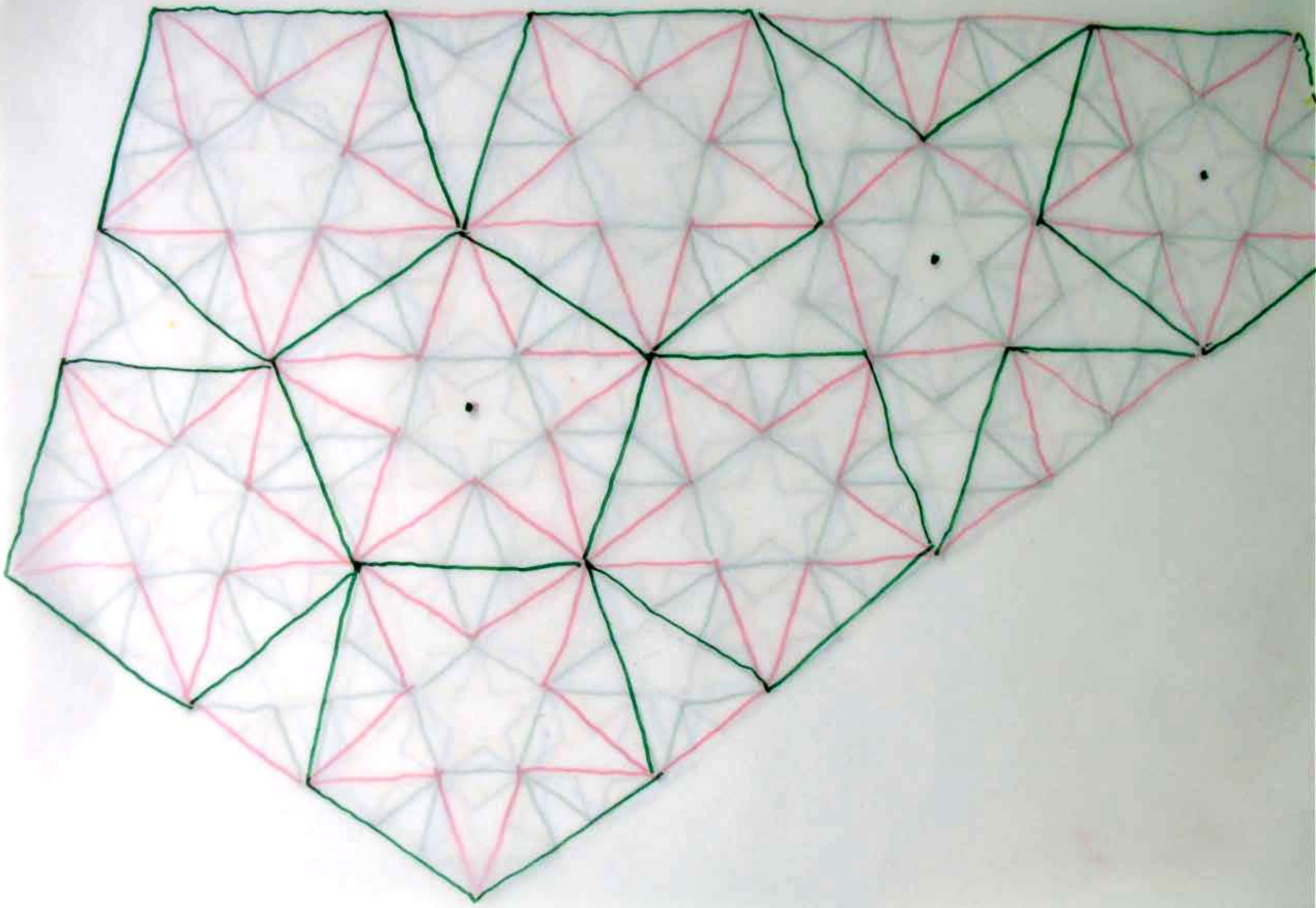


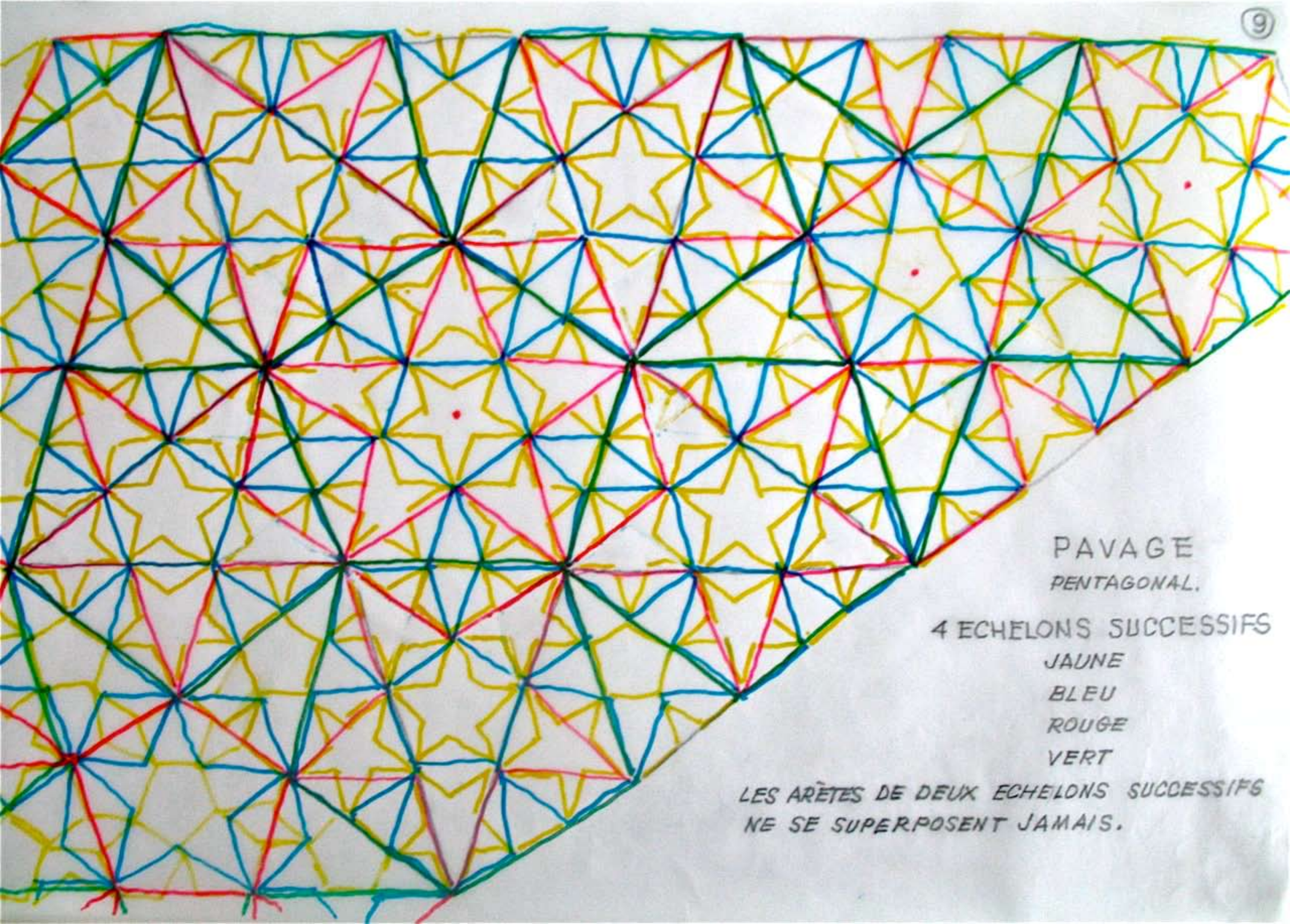
60 PLANS IDENTIQUES RAYONNANTS A PARTIR DU CENTRE D'UN ICOSIDODECAEDRE VERS L'INFINI EN PASSANT PAR SES 60 ARETES.

4 PAVÉS : PENTAGONE 108 °
ETOILE 5 BR. 36 / 252 °
LOSANGE O 36 / 144 °
LOSANGE Φ 108 / 72 °

PRECISION FLOUE CUBIQUE
PAVAGE PENTAGONAL PREDETERMINE





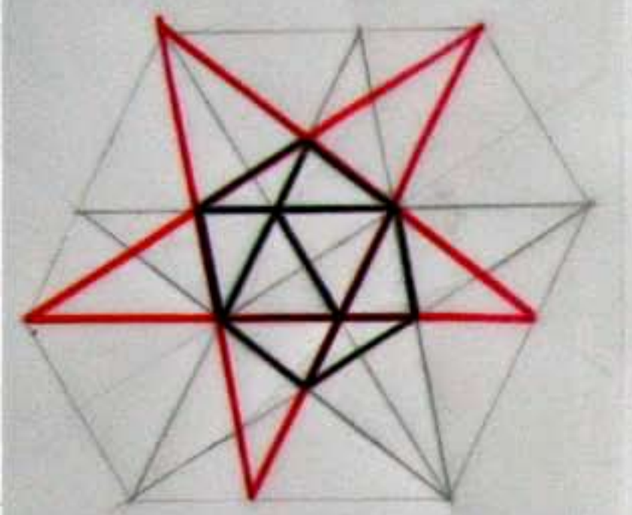


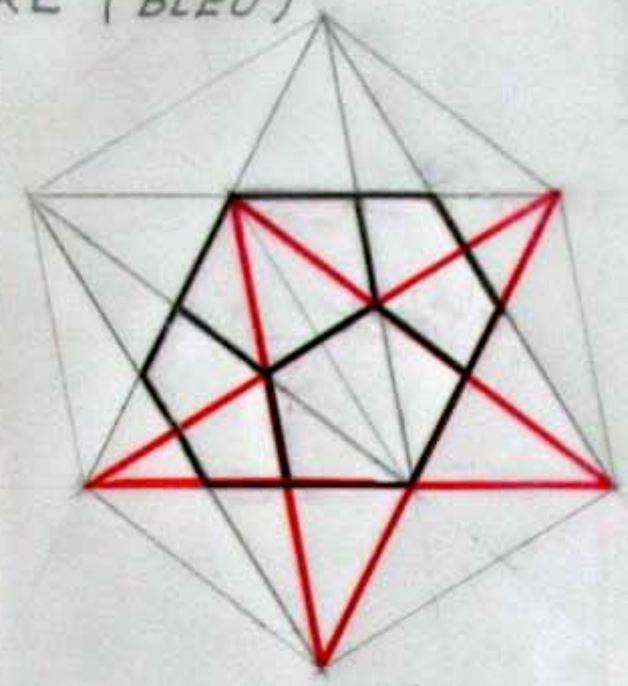
PAVAGE
PENTAGONAL.

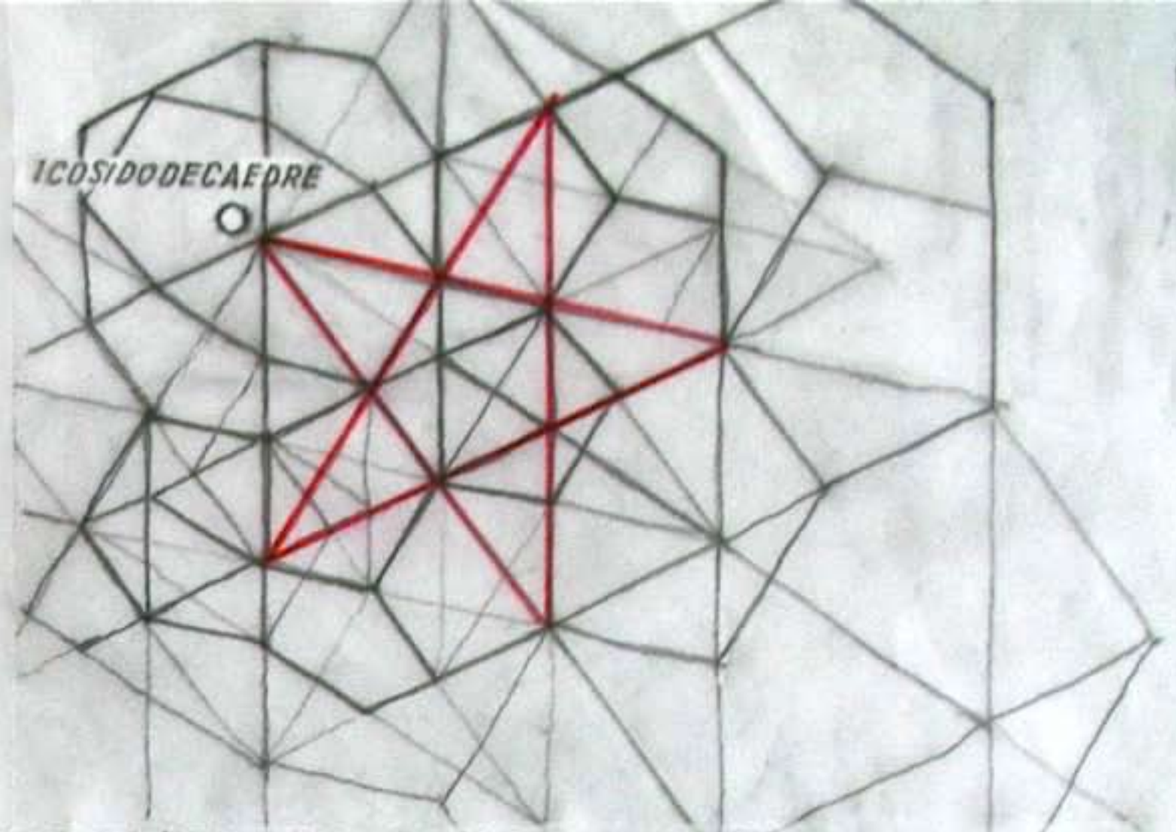
4 ECHELONS SUCCESSIFS
JAUNE
BLEU
ROUGE
VERT

LES ARÊTES DE DEUX ECHELONS SUCCESSIFS
NE SE SUPERPOSENT JAMAIS.

VUES PLANS CARRE *(BLEU)*

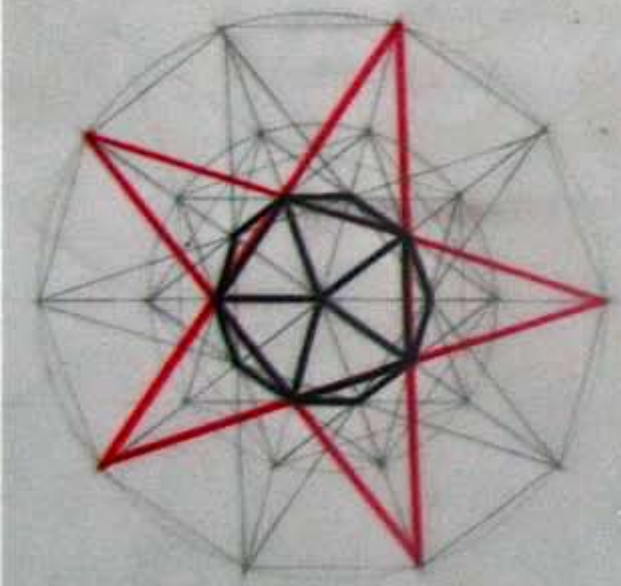




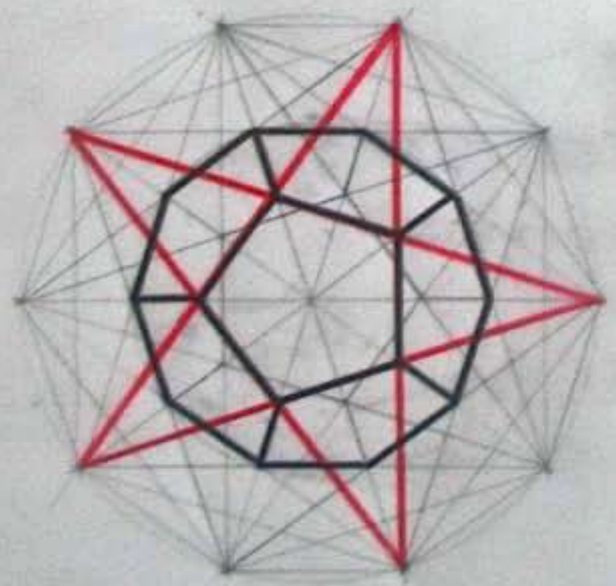


LE PENTAGONE ETOILÉ EST L'INTERFACE DES ICOSAEDRES ET DES DODECAEDRES ETOILES
IL EST LE LIEN DE LEUR ALTERNANCE CONCENTRIQUE OU LATERALE.

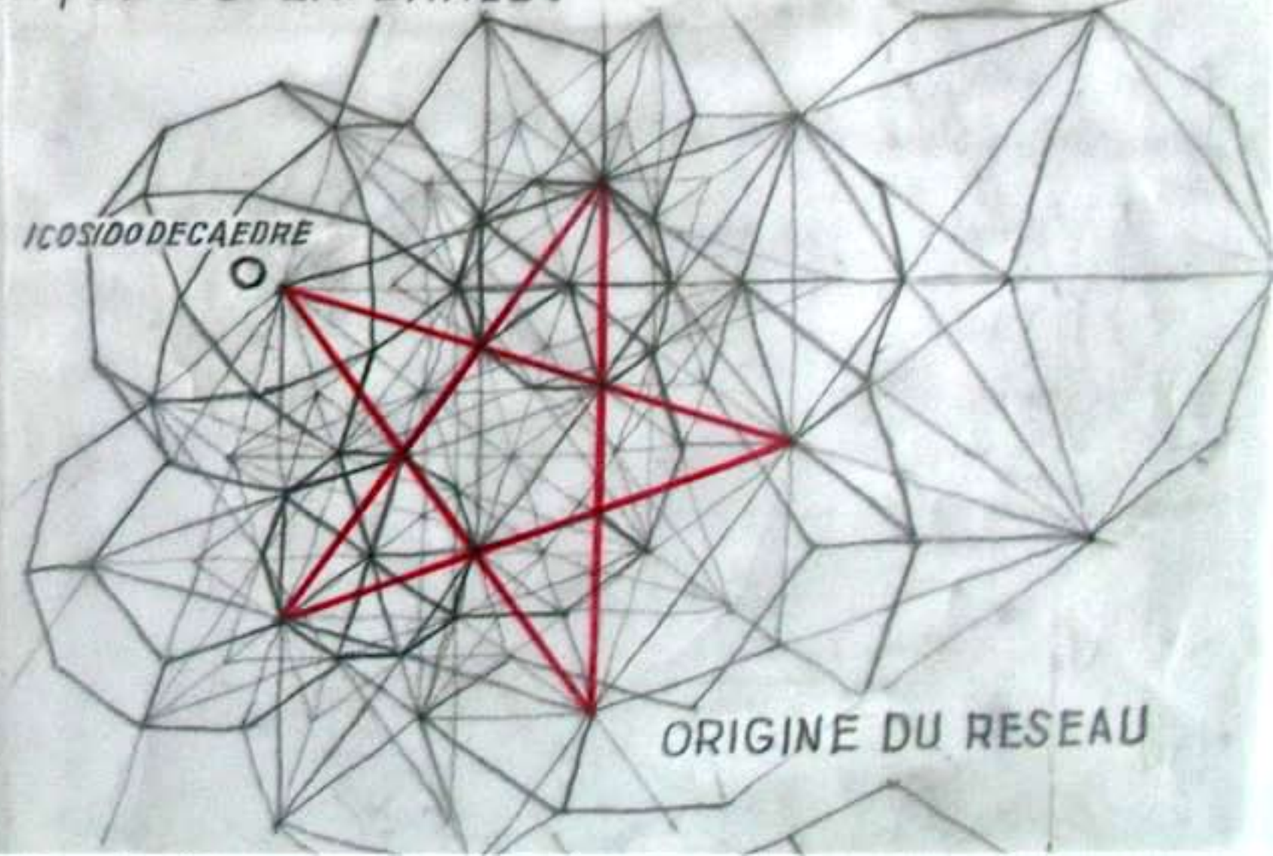
VUES PLANS PENTA. *(ROUGE)*



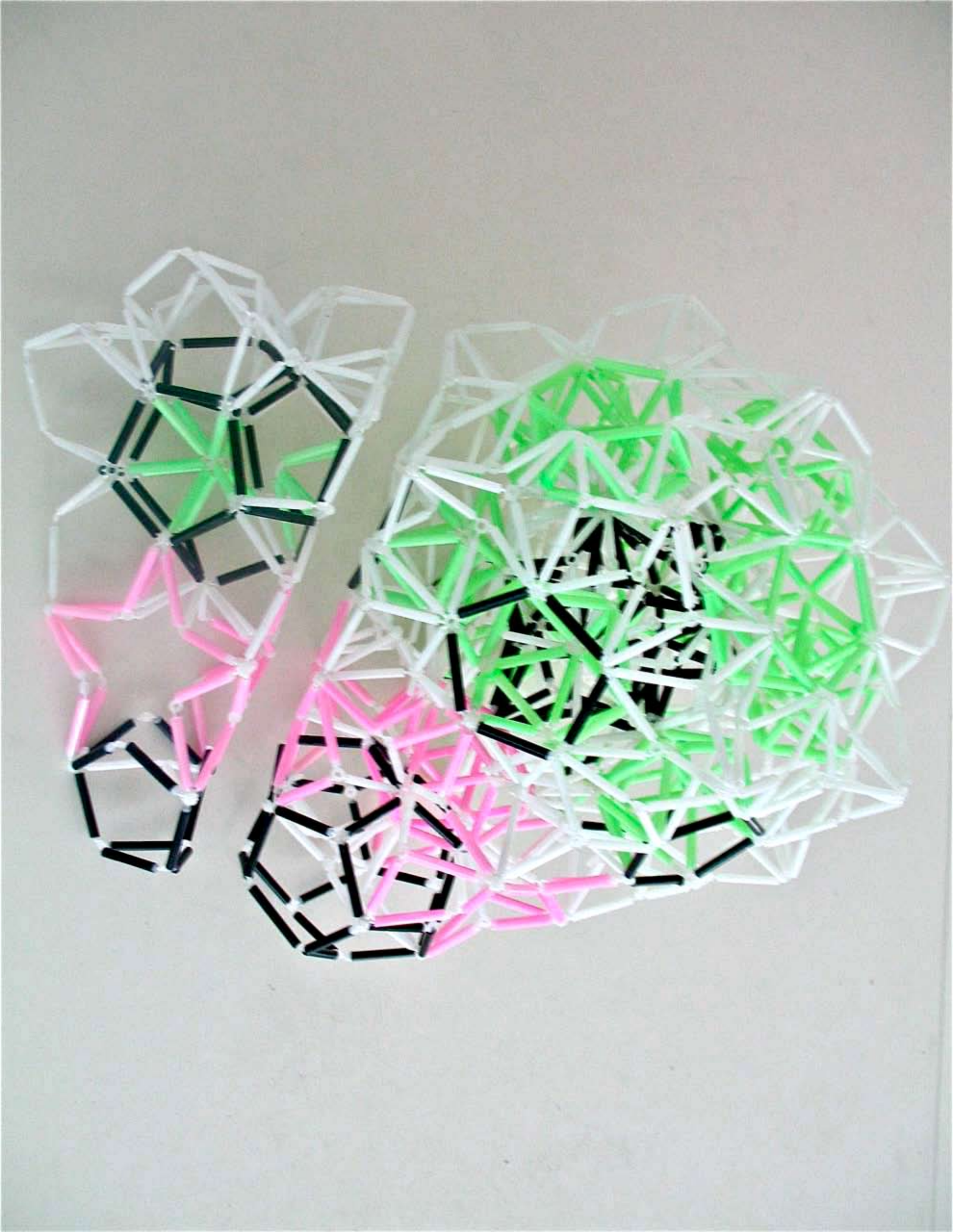
ICOSA. ETOILÉ

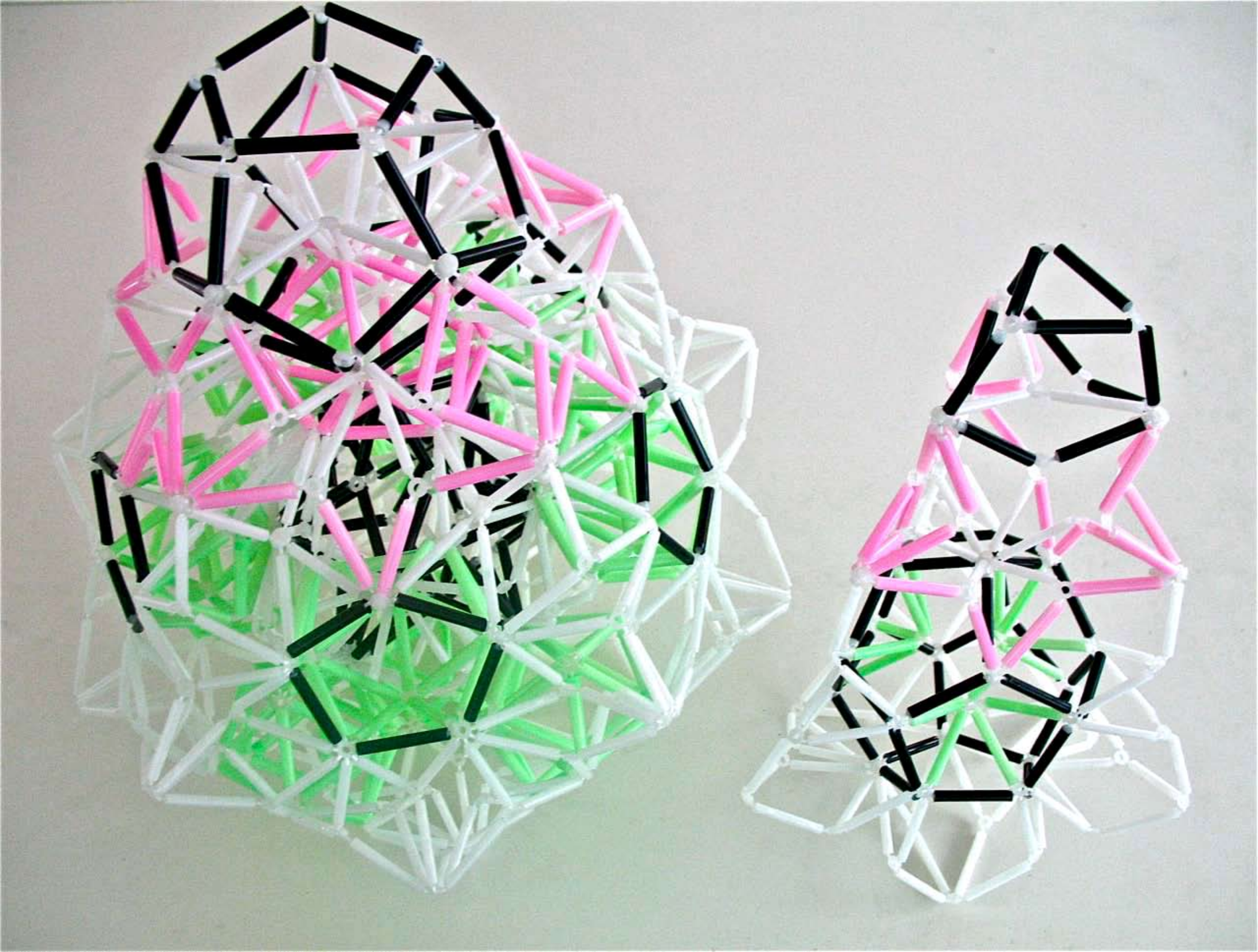


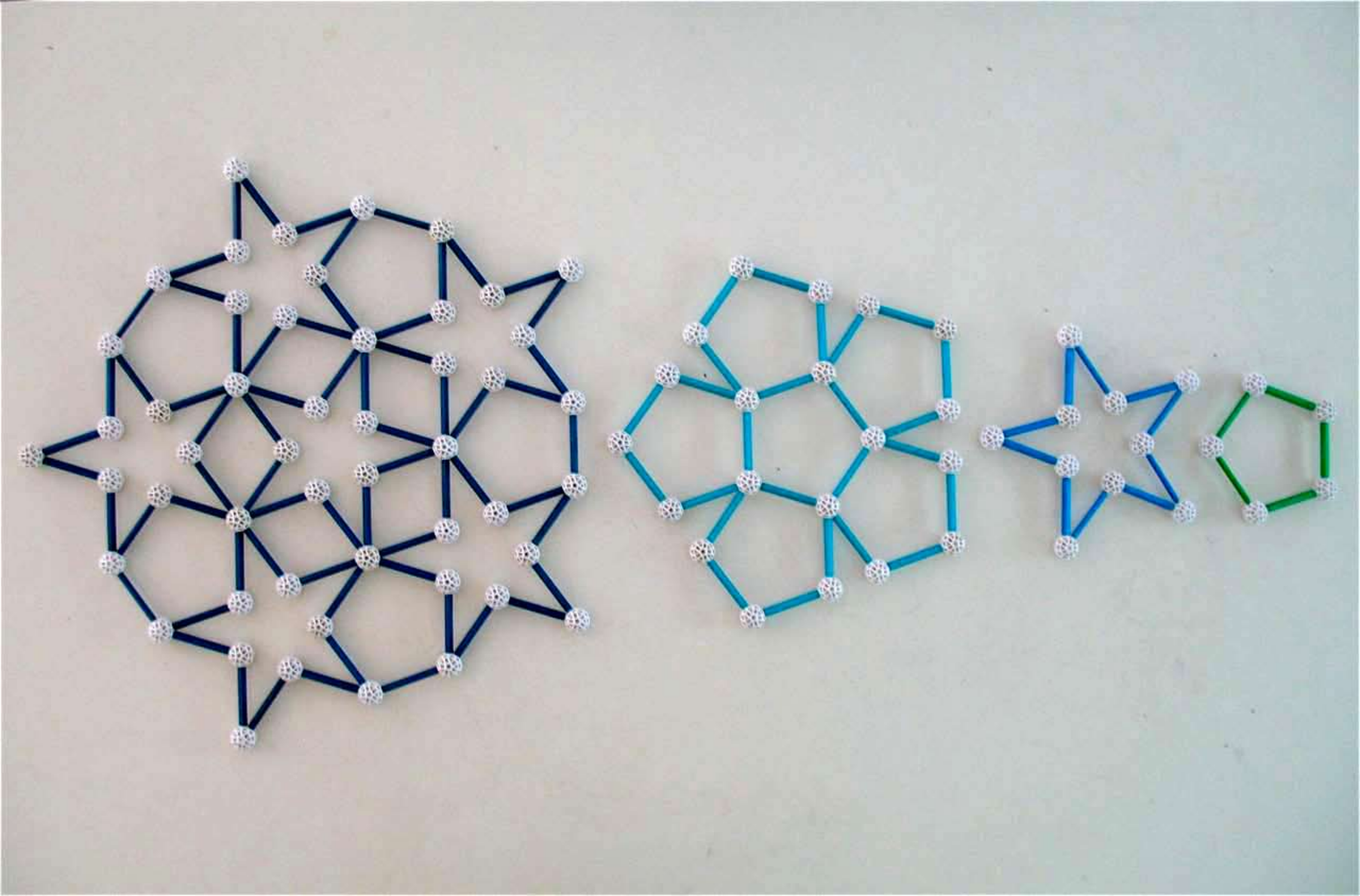
DODECA. ETOILÉ

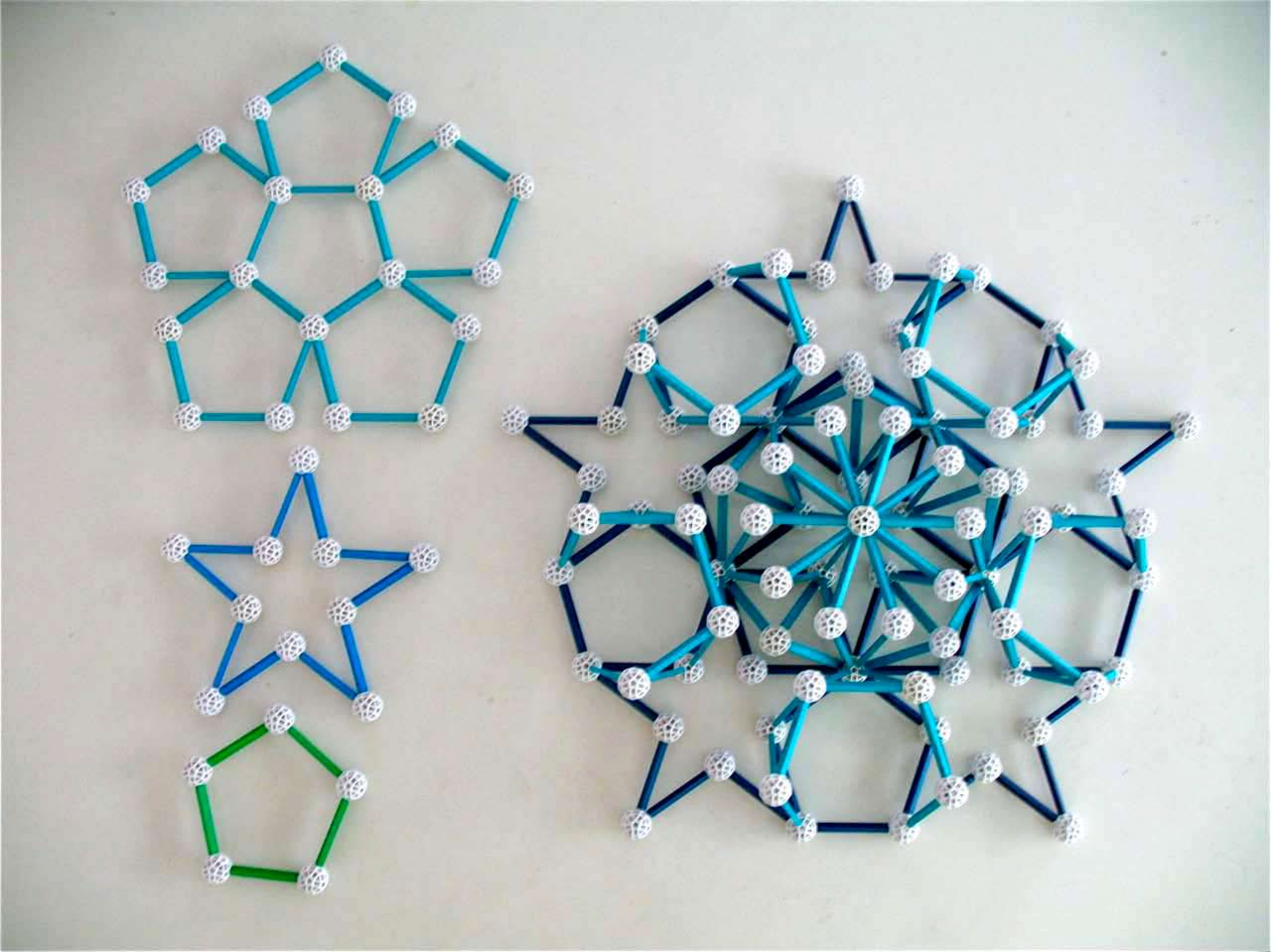


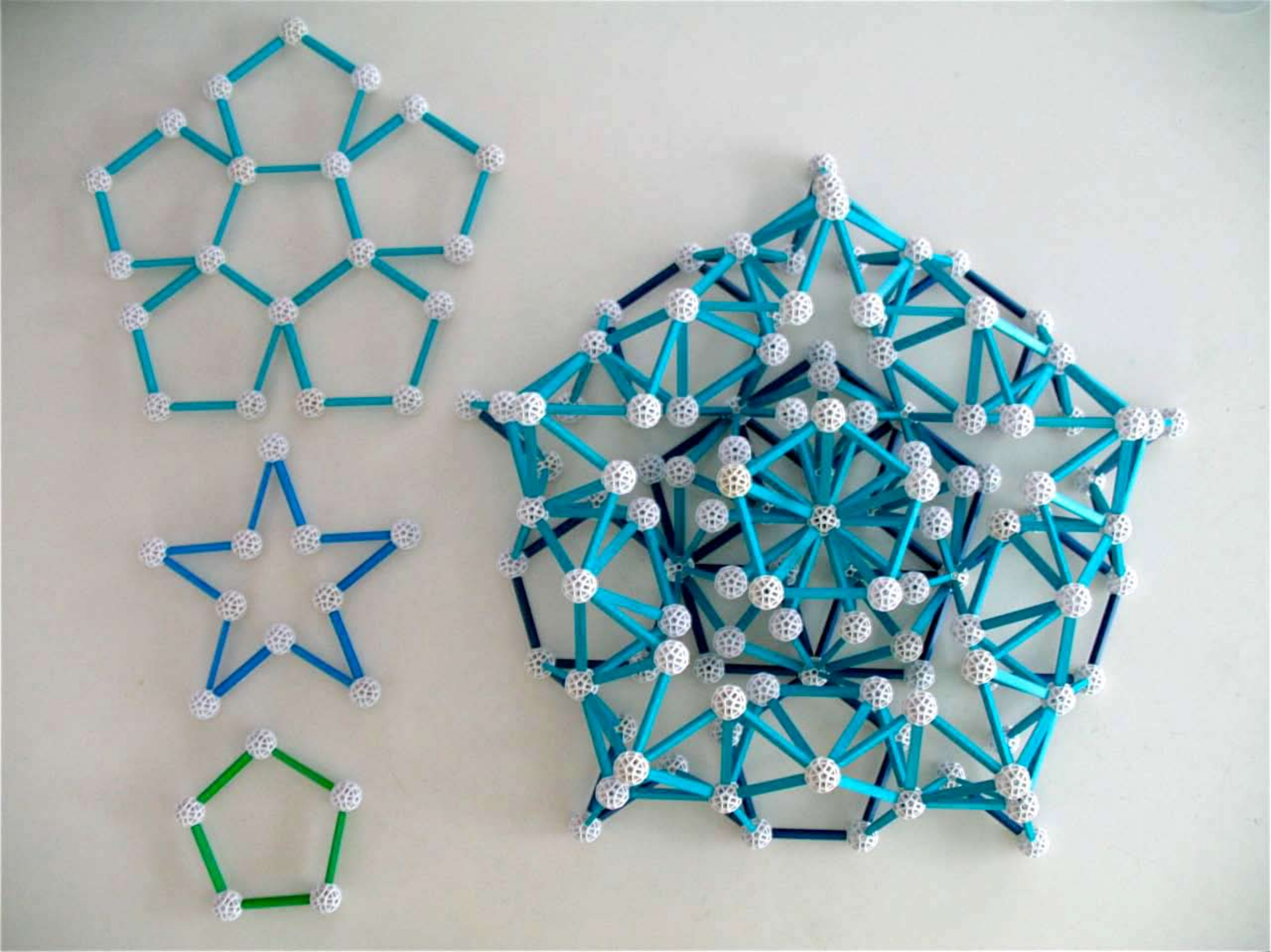
ORIGINE DU RESEAU

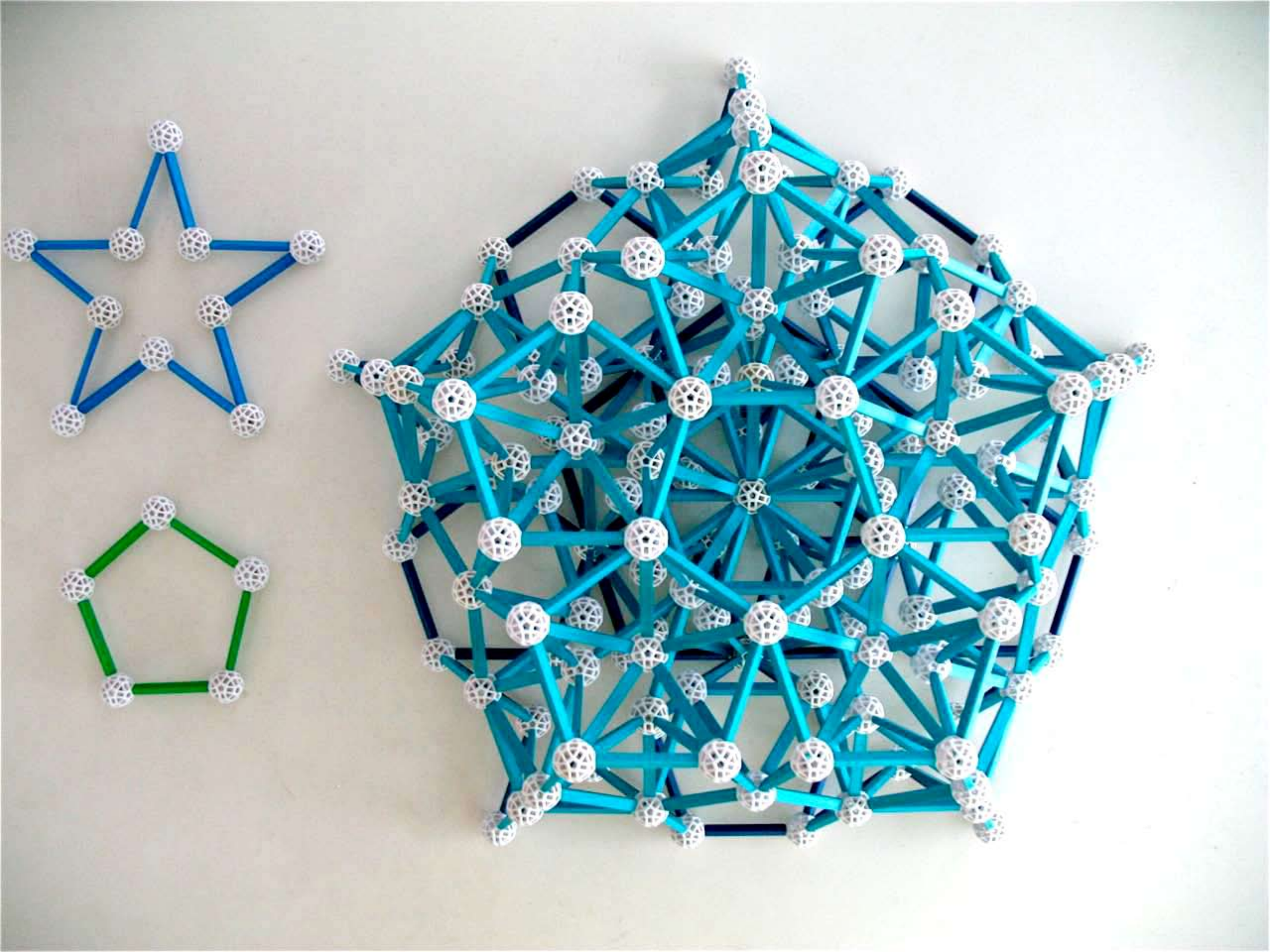


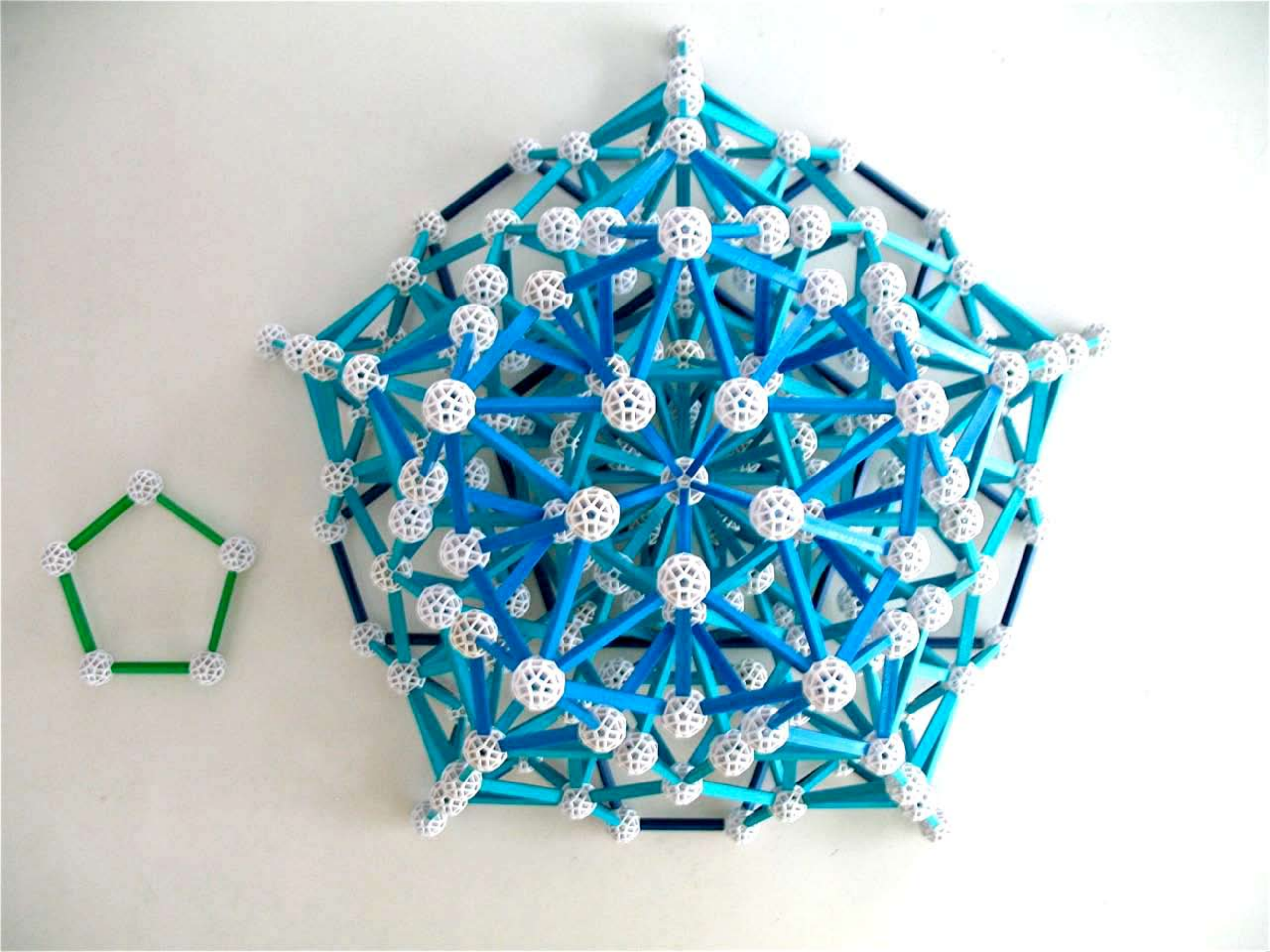


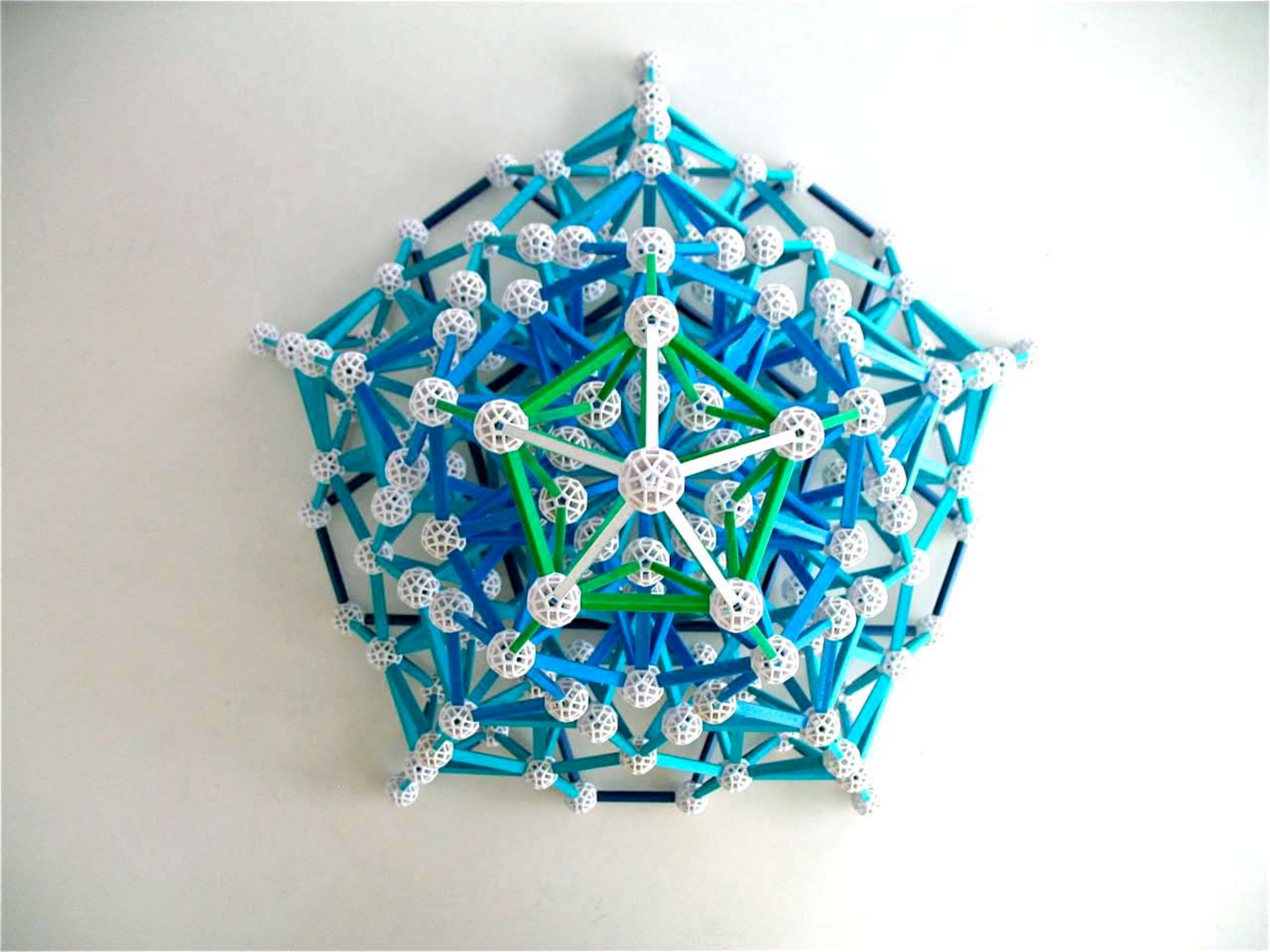


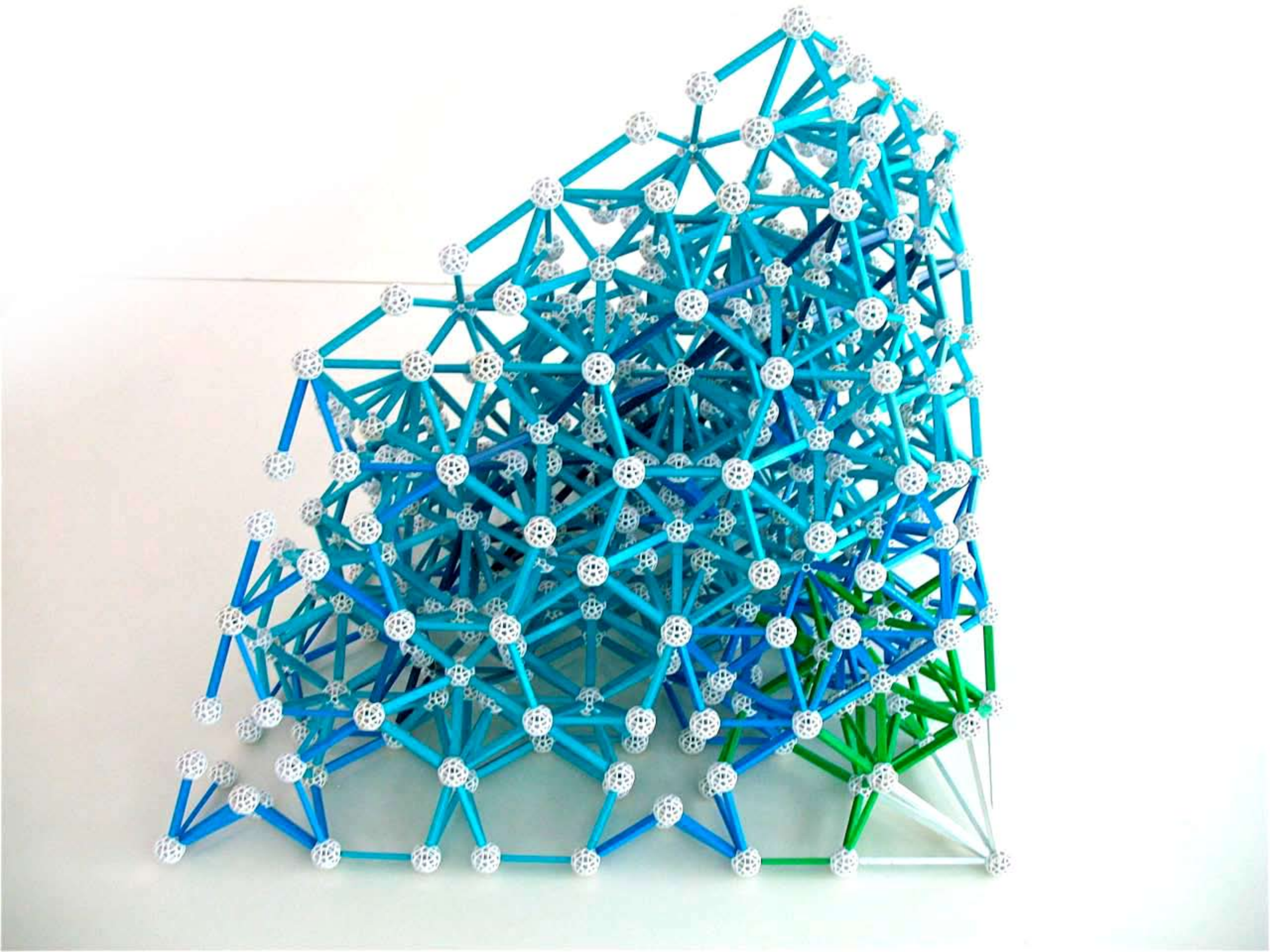


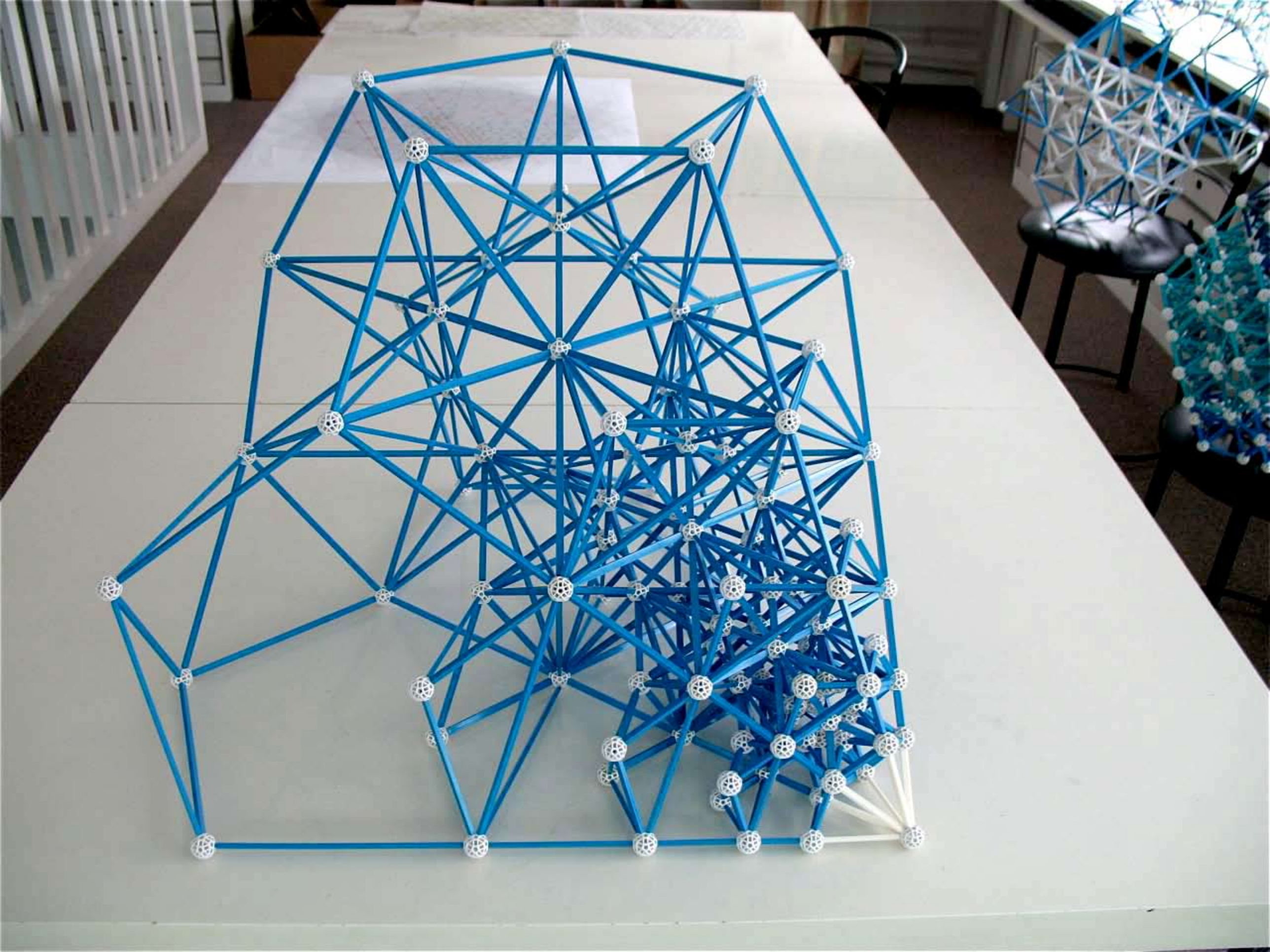






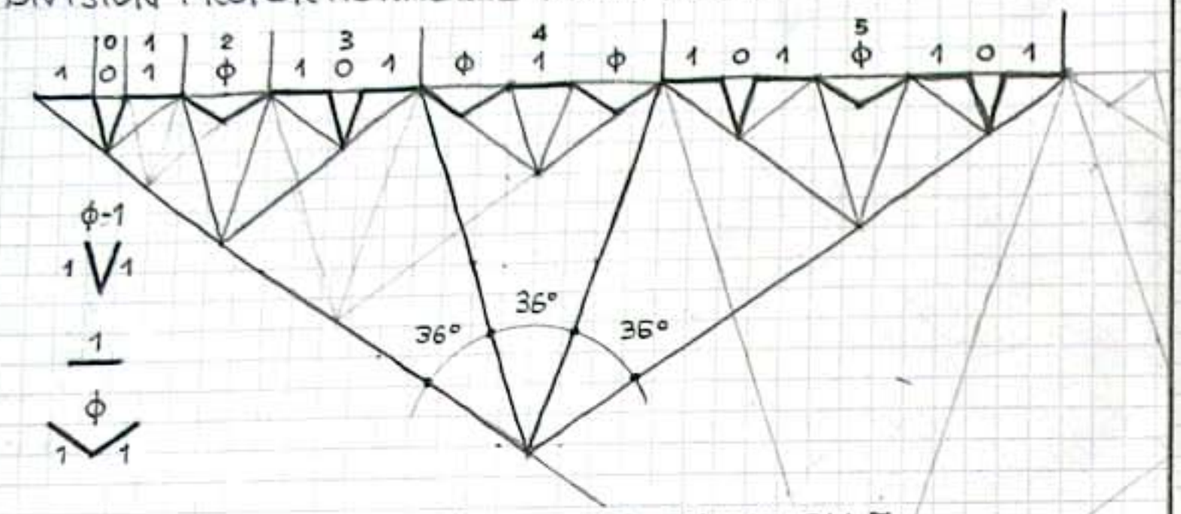




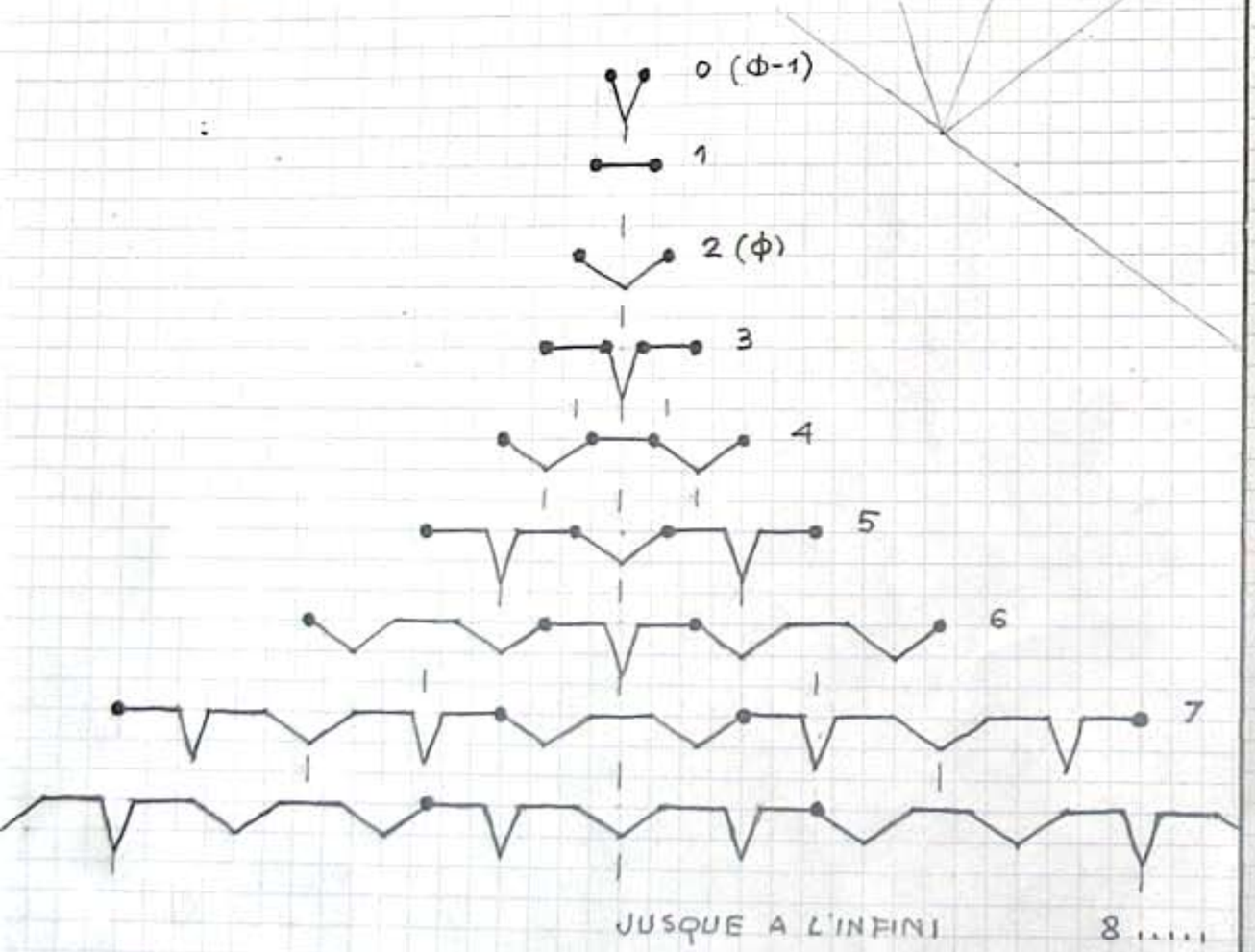


1 LONGUEURS 0.1.Φ AVEC 1 SEULE ARETE

DIVISION PROPORTIONNELLE D'UNE DROITE



PROGRESSION EN EXPANSION PROPORTIONNELLE

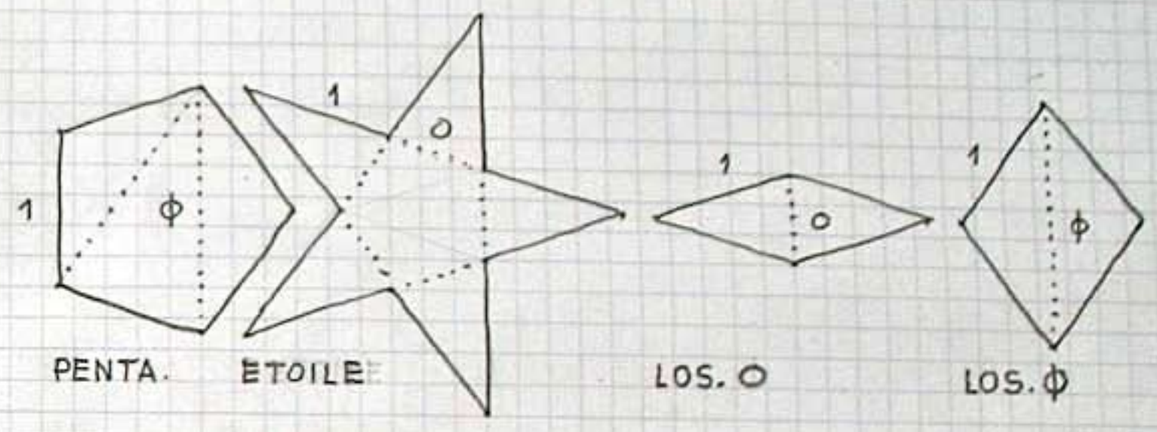


JUSQUE A L'INFINI

2 SURFACES DANS LES PLANS PRINCIPAUX

- PLANS PENTAGONE - 1 SEULE ARETE

PENTAGONE	108°
ETOILE 5BR.	36 / 252°
LOSANGE 0	36 / 144°
LOSANGE Φ	108 / 72°



SURFACES DANS LES PLANS INTERMEDIAIRES

- PLANS PENTAGONE - ARETES 0, 1, Φ

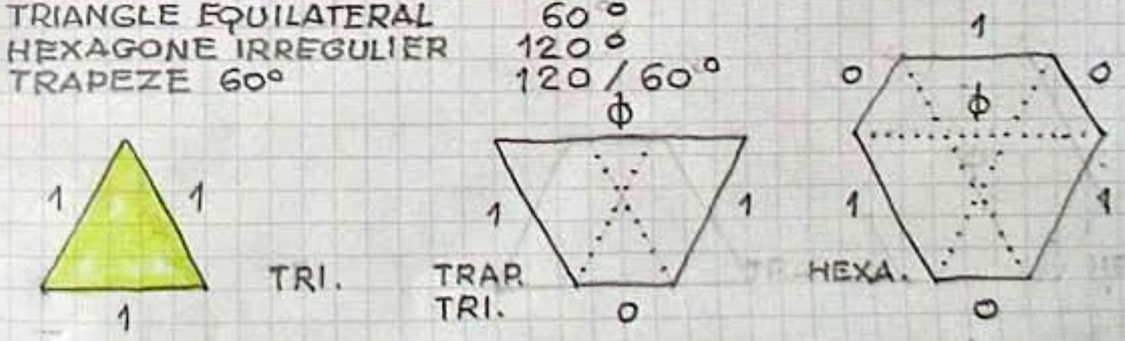
TRIANGLE AIGU	36 / 72 / 72°
TRIANGLE OBTUS	144 / 36 / 36°
TRAPEZE 72°	108 / 72°

- PLANS CARRE

CARRE 90°

- PLANS TRIANGLE - ARETES 0, 1, Φ

TRIANGLE EQUILATERAL	60°
HEXAGONE IRREGULIER	120°
TRAPEZE 60°	120 / 60°



3 COMPOSANTS MINIMUM

EN SURFACES : 4 POLYGONES

- AIGU — TRIANGLE AIGU — 36 / 72 / 72 °
- OBTU — TRIANGLE OBTUS — 144 / 36 / 36 °
- TRI — TRIANGLE EQUILATERAL — 60 °
- CARRE — CARRE — 90 °

EN VOLUMES : 4 POLYEDRES

DEFINIS PAR LE NOMBRE ET LA FORME DE LEUR FACES

- CALOTTE TRI. — BASE TRI ϕ / 3 OBTU
- CARRE AIGU — 1 CARRE / 1 TRI. / 2 OBTU / 1 AIGU ϕ
- TETRA A — 2 TRI. / 2 AIGU.
- TETRA D — 1 TRI / 2 OBTU / 1 AIGU ϕ

TOUS LES VOLUMES DU RESEAU PEUVENT ETRE COMPOSÉS OU DECOMPOSÉS AVEC CES COMPOSANTS MINIMUM – Y COMPRIS EUX MEMES – SANS AUCUN AUTRE APPORT.
ILS PEUVENT ETRE DE PLUSIEUR TAILLES DIFFERENTES DANS LE MEME ENSEMBLE.

PAR EXEMPLE :

- TETRA D — 19 COMPOSANTS
  3 CALOTTES TRI. / 6 TETRA A / 10 TETRA D

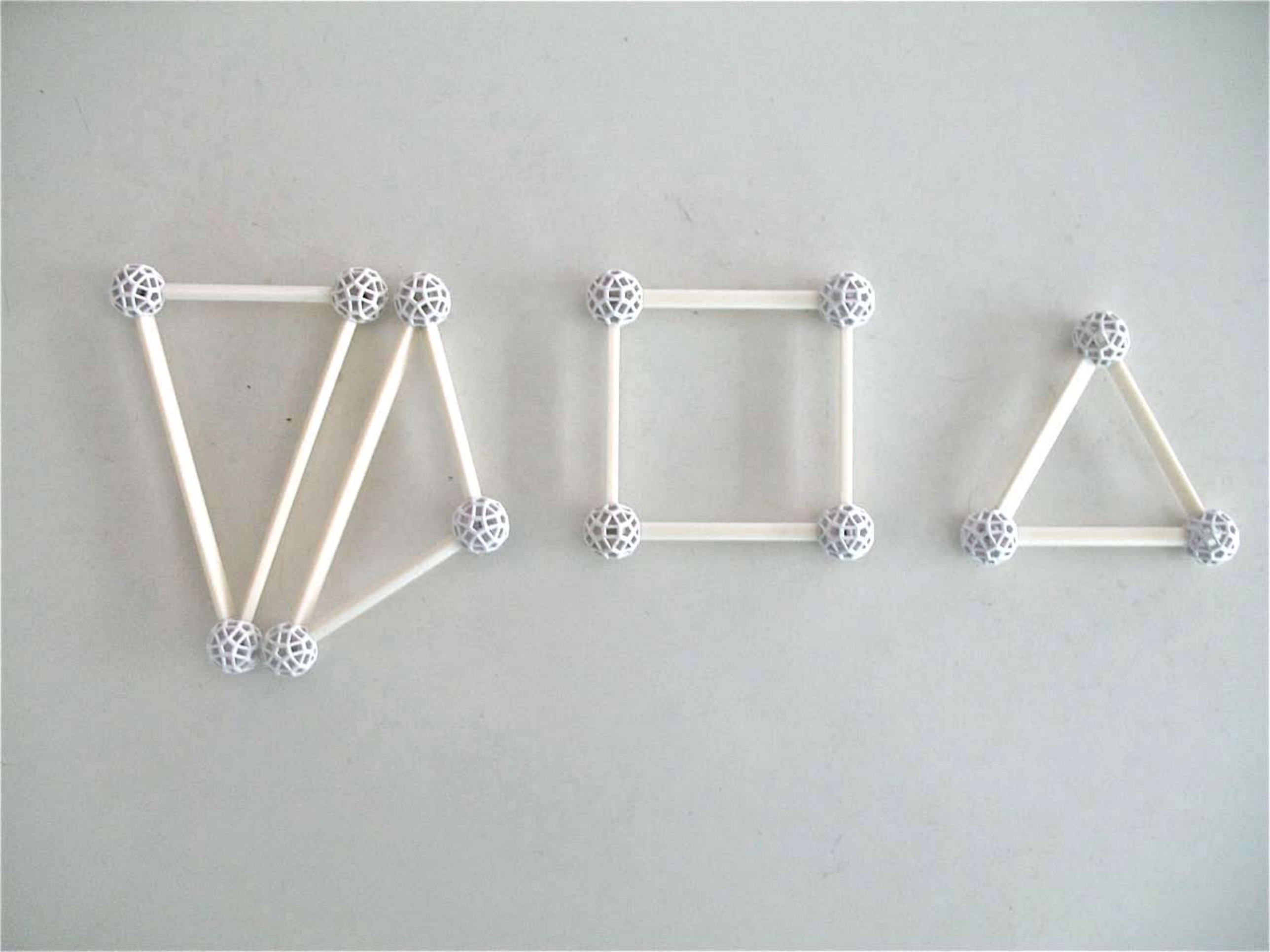
  OU
- DODECAEDRE — 252 COMPOSANTS
  64 CAL. TRI. / 84 TETRA A / 104 TETRA D
- ICOSAEDRE — 50 COMPOSANTS
  16 CAL. TRI / 10 TETRA A / 24 TETRA D

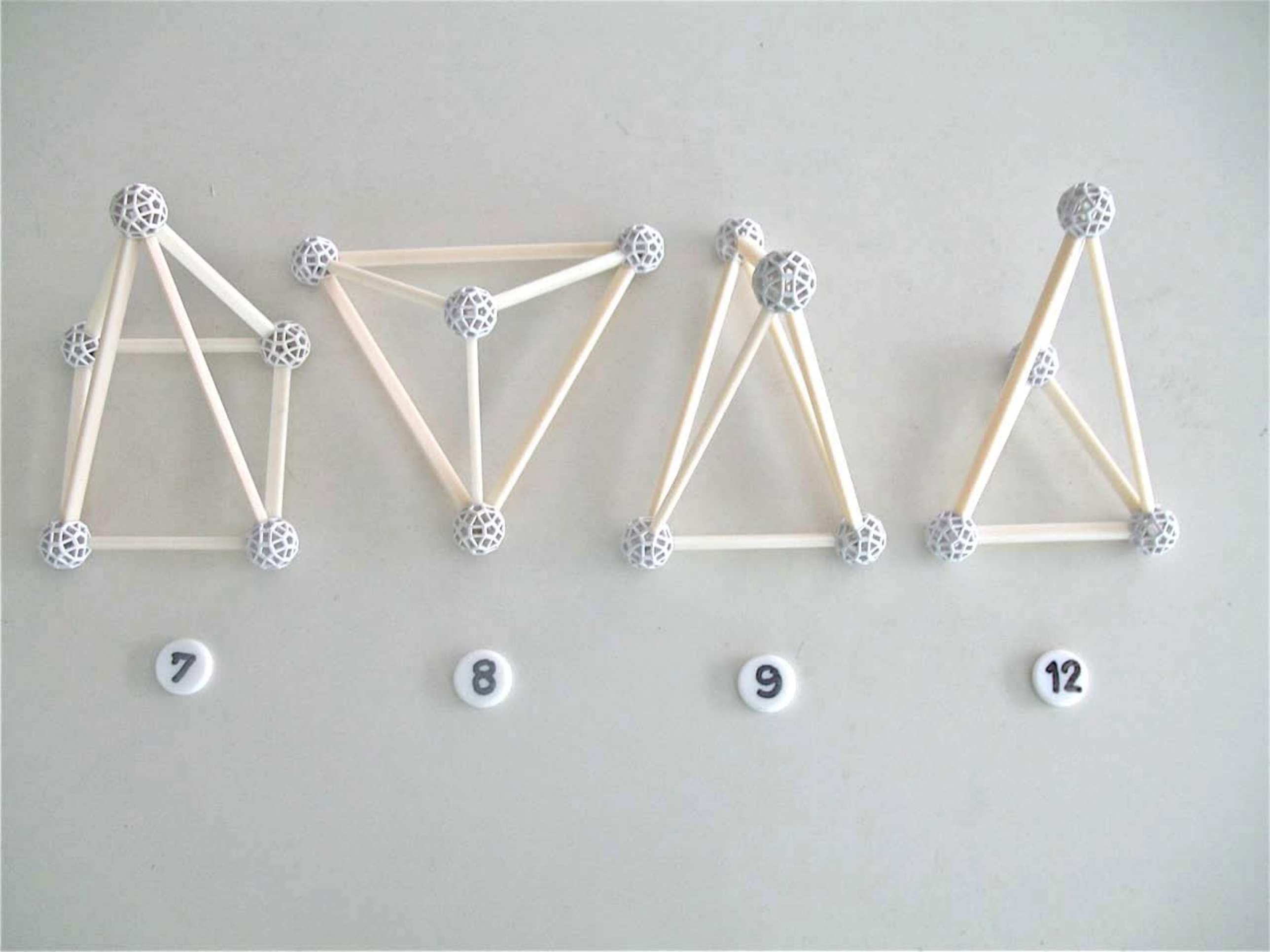
POUR ETRE PLUS PRATIQUE ET PLUS FACILEMENT IDENTIFIABLE CES COMPOSANTS MINIMUM SONT REGROUPÉS DANS LES 12 VOLUMES DE BASE DE LA PAGE SUIVANTE.

4 COMPOSANTS MINIMUM DES 12 VOLUMES DE BASE

PAR ORDRE DU NOMBRE D'ENTREES CUMULEES PAR VOLUME

	DESIGNATION	COMPOSITION		NOMBRES	
8	CALOTTE TRI.	LES 4 COMPOSANTS MINIMUM		1	
7	CARRE AIGU			1	
9	TETRA A			1	
12	TETRA D			1	
5	POINTE TRI.	1 TETRA A		1	
		1 TETRA D		1	2
10	TETRA B	1 TETRA A		1	
		2 TETRA D		2	3
11	TETRA C	2 CAL. TRI		2	
		1 TETRA B	1 TETRA A	1	
			2 TETRA D	2	5
6	POINTE TRAP.	1 TETRA A		1	
		1 CAL. TRI.		1	
		1 TETRA B	1 TETRA A	1	
			2 TETRA D	2	5
3	CARRE TRAP.	2 CAR. AIGU		2	
		2 POINTE TRI	2 TETRA A	2	
			2 TETRA D	2	6
4	POINTE PENTA.	1 TETRA A		1	
		2 CAL. TRI.		2	
		2 TETRA B	2 TETRA A	2	
			4 TETRA D	4	9
2	ICOSAEDRE	1 P. PENTA.	1 TETRA A	1	
			2 CAL. TRI.	2	
			2 TETRA B	6	
		6 TETRA D		6	
		7 TETRA C	14 CAL. TRI	14	
			7 TETRA B	21	50
1	DODECAEDRE	1 ICOSAEDRE	1 P. PENTA.	9	
			6 TETRA D	6	
			7 TETRA C	35	
		20 POINTE TRI.	20 TETRA A	20	
			20 TETRA D	20	
		30 TETRA A		30	
		12 CAL. PENTA.	12 TETRA D	12	
			24 TETRA C	120	252

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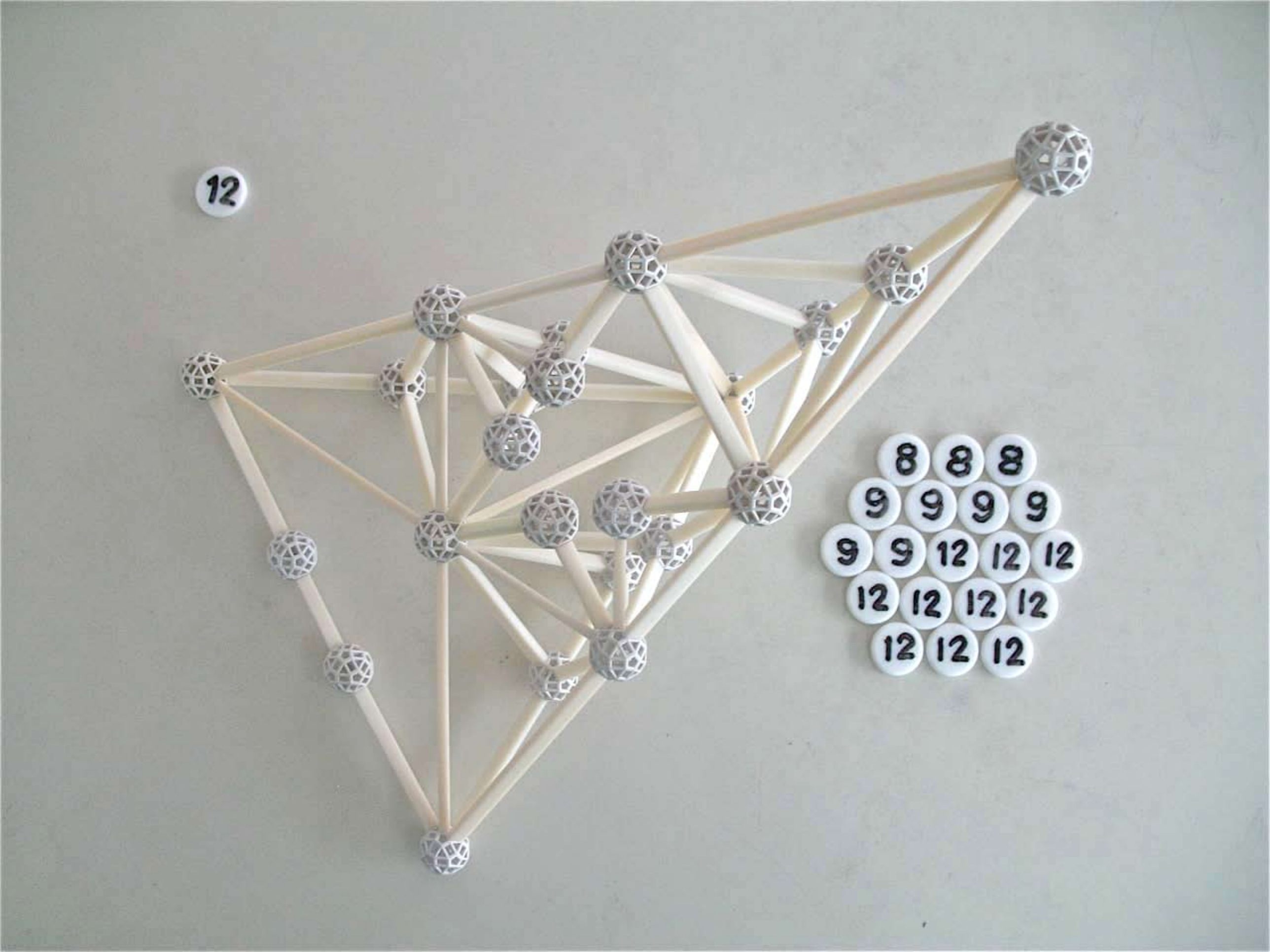
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5 VOLUMES DE BASE, EN RESEAU CONTINU

POUR UN SEUL ECHELON AVEC DES LONGUEURS D'ARETES O, 1 ET Φ

CHAQUE VOLUME EST DEFINI PAR LE NOMBRE ET LA FORME DE SES FACES, LES INDICATIONS O ET Φ PRECISENT LEUR TAILLE ET PAR DEFAUT LA TAILLE 1 QUI CONTIENT LA MAJORITE D'ARETES DE LONGUEUR 1

DANS CES VOLUMES LES ARETES O ET Φ PEUVENT ETRE VIRTUELLES.

1	DODECA. O	: 12 PENTA. O
2	ICOSA. O	: 20 TRI. O
3	CARRE TRAP O	: 4 TRI. O / 4 TRAP. O
4	POINTE PENTA	: BASE PENTA. O / 5 AIGU
	" " Φ	: " PENTA. / 5 AIGU Φ
5	POINTE TRI.	: BASE TRI. O / 3 AIGU
	" " Φ	: " TRI. / 3 AIGU Φ
6	POINTE TRAP.	: BASE TRAP. O / 3 AIGU / 1 TRI.
	" " Φ	: " TRAP. / 3 AIGU Φ / 1 TRI. Φ
7	CARRE AIGU	: 1 CARRE / 1 TRI. / 2 OBTU / 1 AIGU Φ
8	CALOTTE TRI.	: BASE TRI. Φ / 3 OBTU
9	TETRA A	: 2 TRI. / 2 AIGU
10	" B	: 2 AIGU / 2 OBTU
11	" C	: 2 TRI. / 2 OBTU
12	" D	: 1 TRI. / 2 OBTU / 1 AIGU Φ

VOLUMES PARTIELS COMPLEMENTAIRES

POUR RESEAU INTERROMPU LIMITE PAR LES PLANS TRIANGLE

21	TRONQ. TRI.	: BASE TRI. Φ / 3 AIGU / 3 OBTU / 1 TRI. O
22	CALOTTE TRAP.	: BASE TRAP. TRI. / 2 AIGU / 1 OBTU / 1 TRI. O
23	TRONQ. TRAP.	: " " " / 1 AIGU / 1 OBTU / 2 TRI.
24	CALOTTE HEXA.	: BASE HEXA. / 3 AIGU / 3 TRI.
25	TRONQ. HEXA	: " " / 3 CARRE / 3 AIGU / 1 TRI.

6 VOLUMES GROUPES COMPOSES AVEC LES PRECEDENTS

CES VOLUMES, DONT LA LISTE N'EST PAS LIMITATIVE REGROUPENT LES PRECEDENTS. ILS FACILITENT LEUR PERCEPTION ET LEUR COMPTAGE DANS LES ENSEMBLES LES PLUS CARACTERISTIQUES ET LES PLUS COURANTS

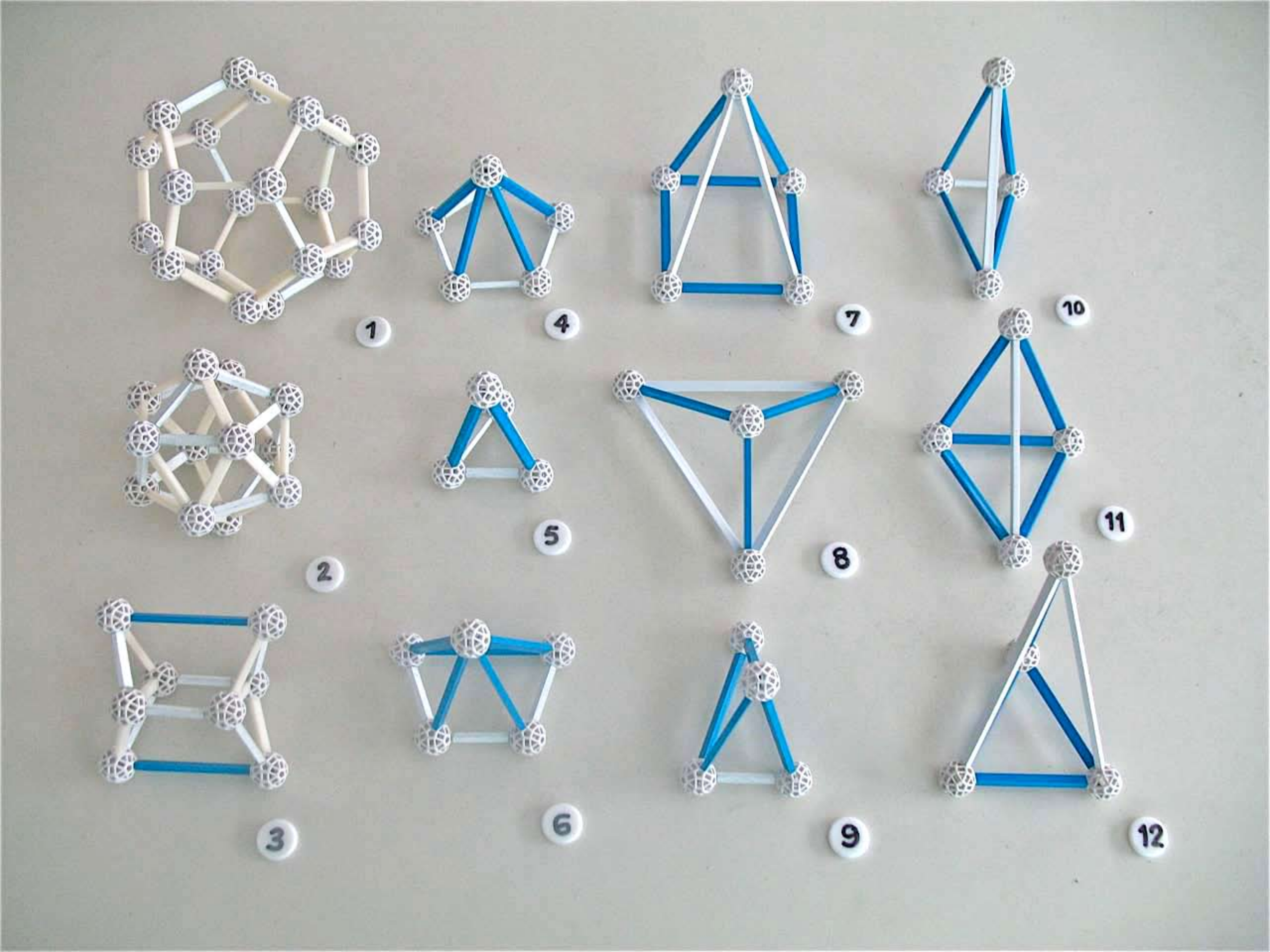
ILS SONT DEFINI PAR LE NOMBRE ET LA FORME DES VOLUMES DE BASE QU'ILS CONTIENNENT.

			NOMBRE VOLUMES DE BASE
31	ICOSA	: 1 POINTE PENTA. Φ / 7 TETRA. C / 6 TETRA D	14
32	DODECA. CONCAVE	: 1 ICOSA. O / 20 POINTE TRI. / 30 TETRA A	51
33	DODECA. ETOILE	: 1 DODECA. O / 12 POINTE PENTA.	13
34	CHAMP.	: 1 POINTE TRI. Φ / 3 CARRE AIGU / 3 TETRA B	7
35	CHAMP. Φ	: 1 ICOSA. O / 14 POINTE TRI. / 15 TETRA. A	30
36	CARRE CAL. PENTA	: 1 CARRE AIGU / 2 TETRA. B / 2 TETRA. C / 1 TETRA. D	6
37	CARRE ETOILE	: 1 CARRE TRAP. O / 4 POINTES TRAP.	5
38	CARRE TRAP. Φ	: 1 CARRE AIGU / 1 POINTE TRI. Φ	2
39	POINTE CAL. PENTA	: 1 POINTE PENTA. Φ / 2 TETRA. C / 2 TETRA. D	4
40	ARETE OCTA.	: 2 TETRA. B / 2 TETRA. C	4

VOLUMES PARTIELS COMPLEMENTAIRES

POUR RESEAU INTERROMPU SECTIONNANT DES VOLUMES GROUPES MAIS COMPOSES DE VOLUMES DE BASE COMPLETS.

51	ICOSA. TRONQ.	: 1 POINTE PENTA Φ / 5 TETRA. C / 5 TETRA D	11
52	CALOTTE PENTA.	: 2 TETRA C / 1 TETRA D	3
53	DODECA. ETOIL. TRONQ	: 1 DODECA. O / 11 POINTE PENTA	12
54	INTER TRI.	: 1 POINTE TRI. / 3 TETRA A / 3 TETRA C	7
55	CALOTTE HEXA. Φ	: 1 POINTE TRI. / 3 TETRA A / 3 TRONQ. TRAP.	9
56	TRONQ HEXA. Φ	: 1 ICOSA. O / 10 P.TE TRI. / 6 TETRA. A / 3 CAL. TRI.	20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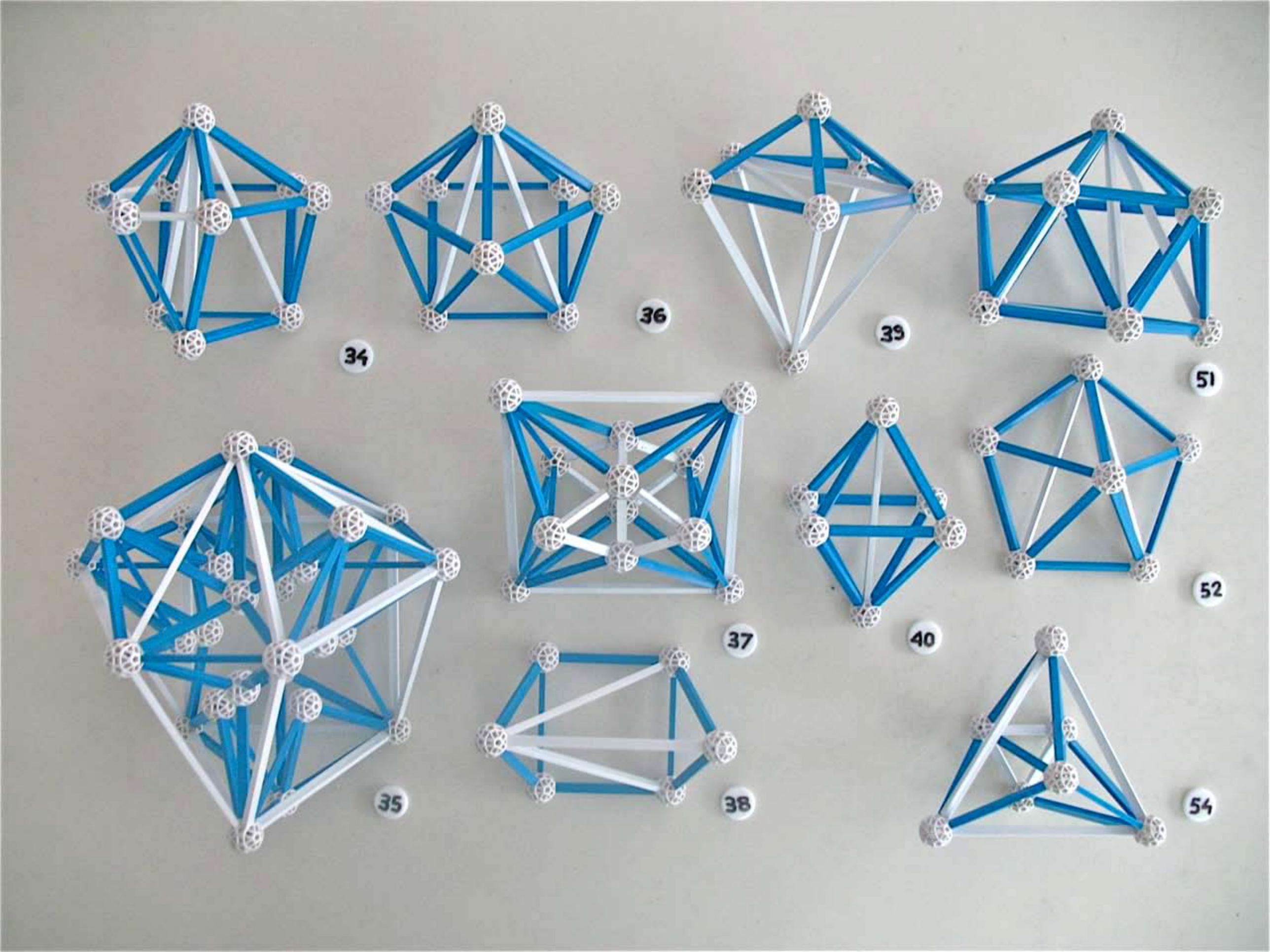
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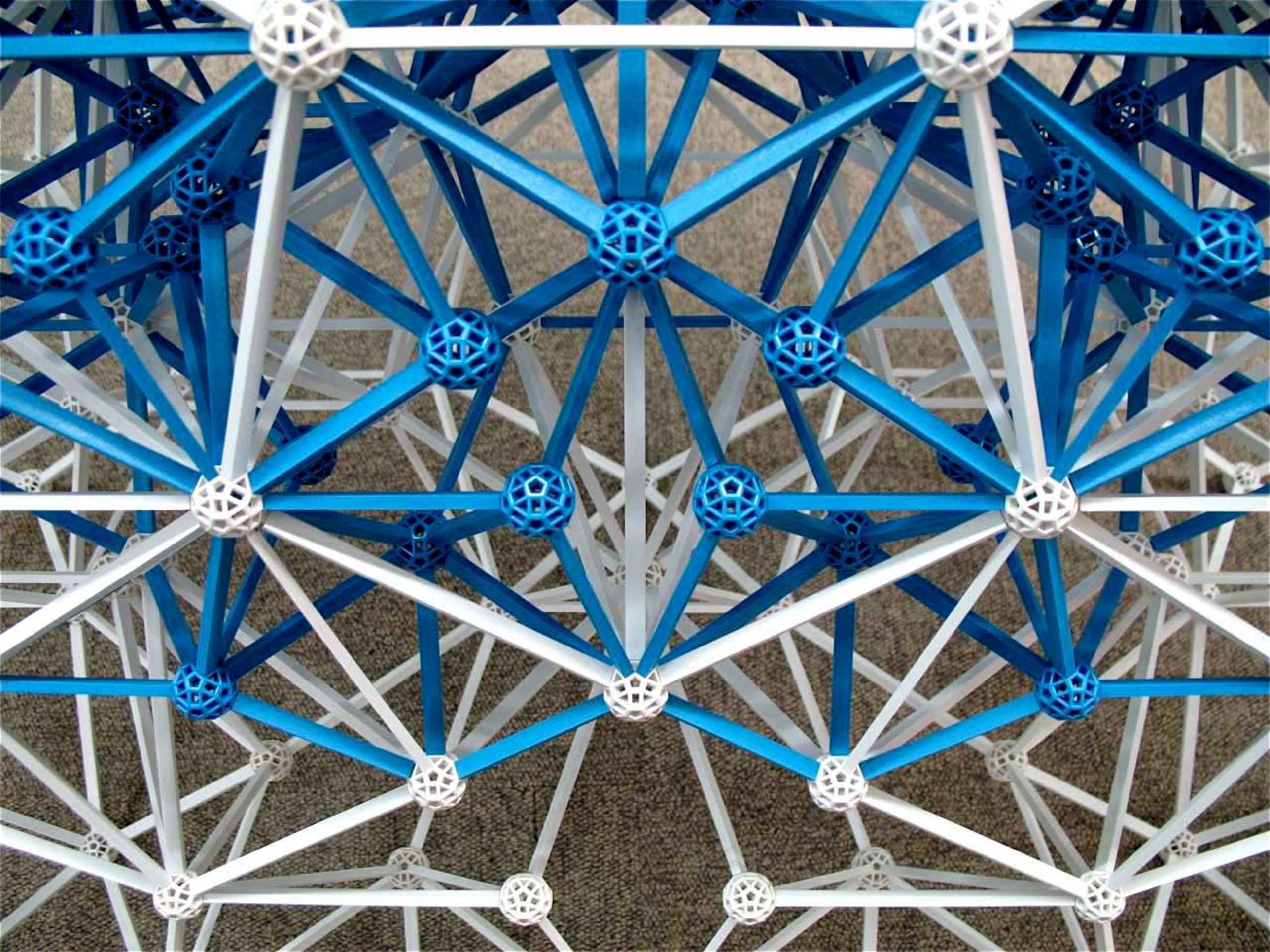
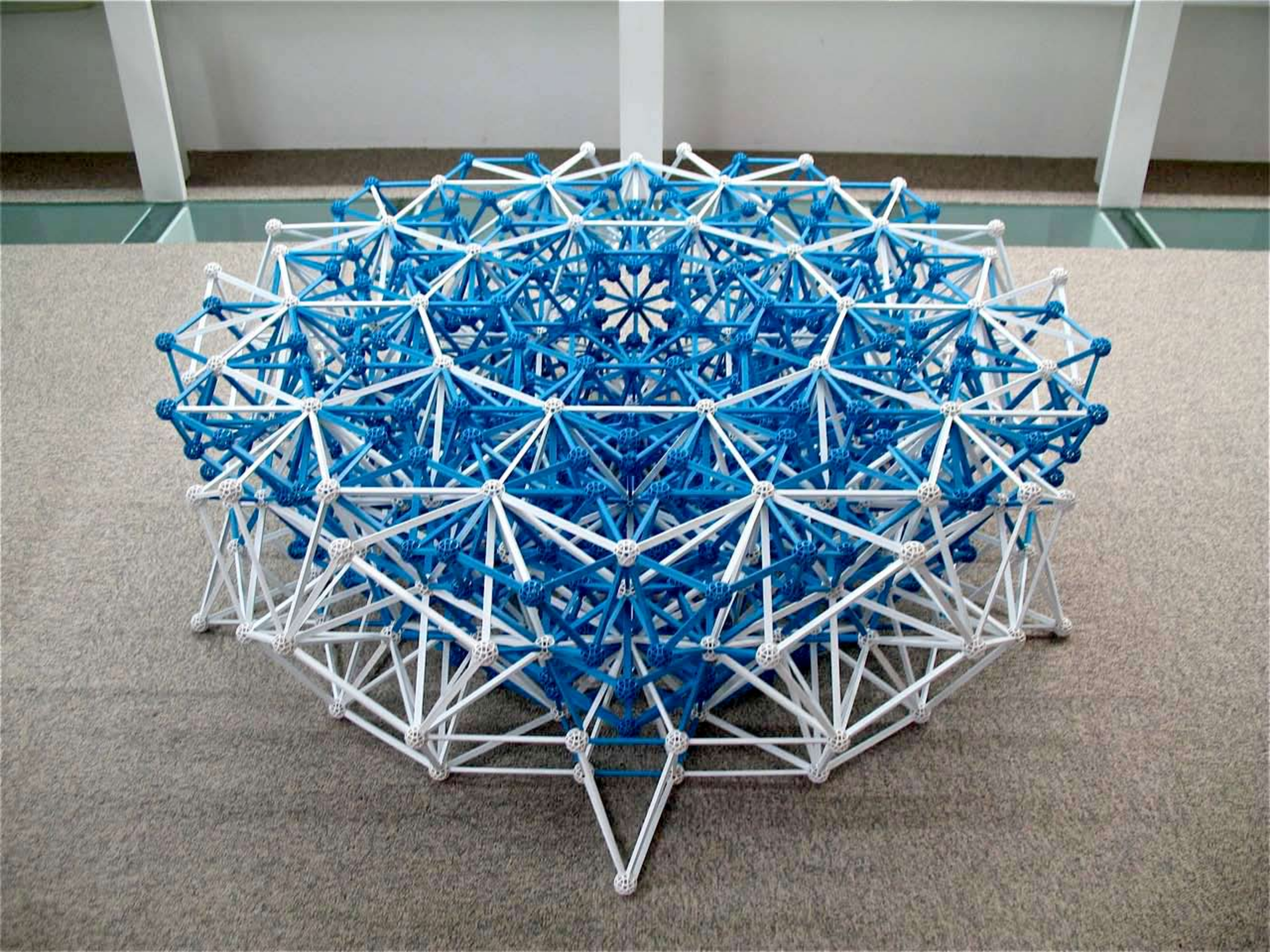
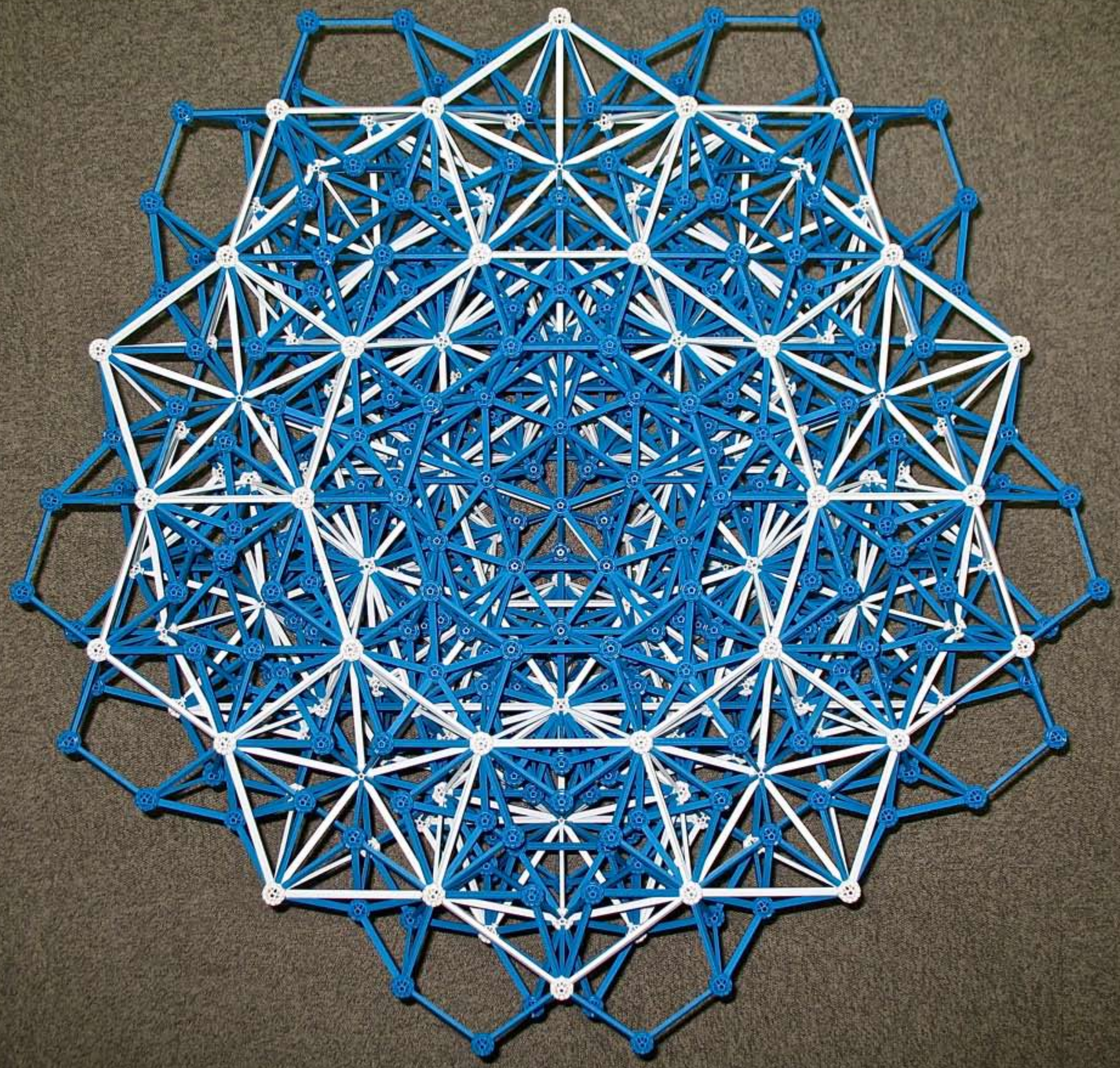
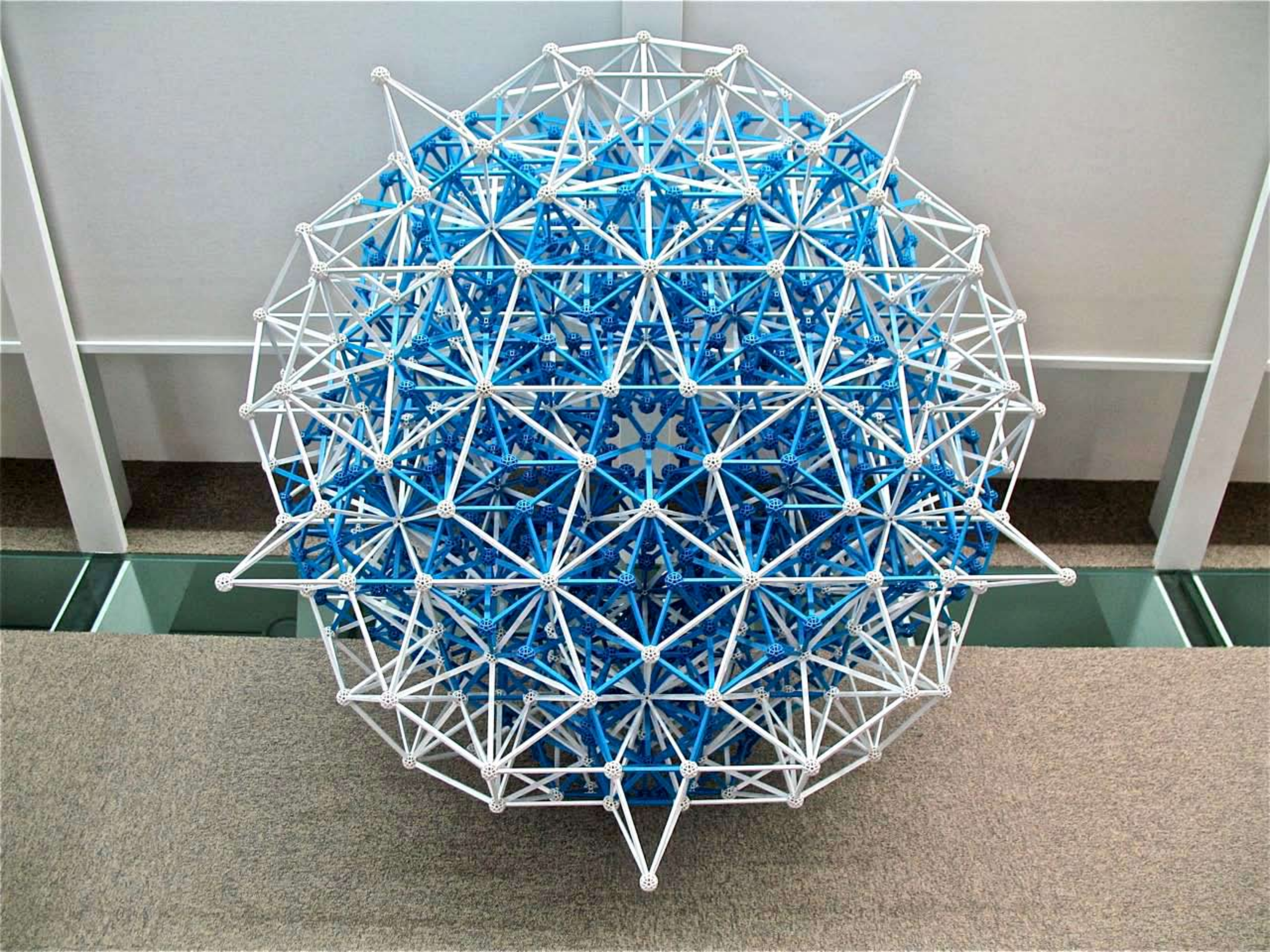
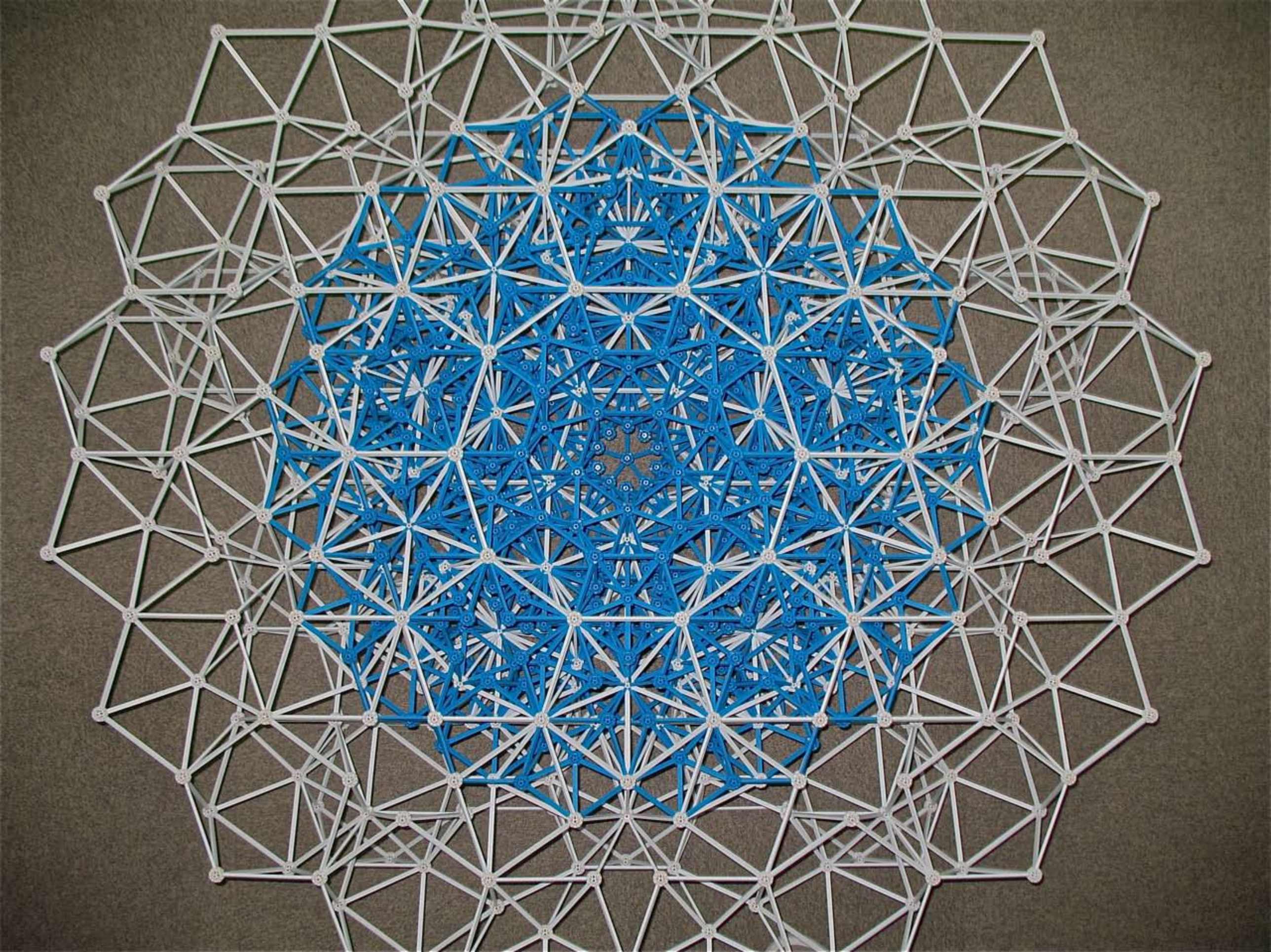
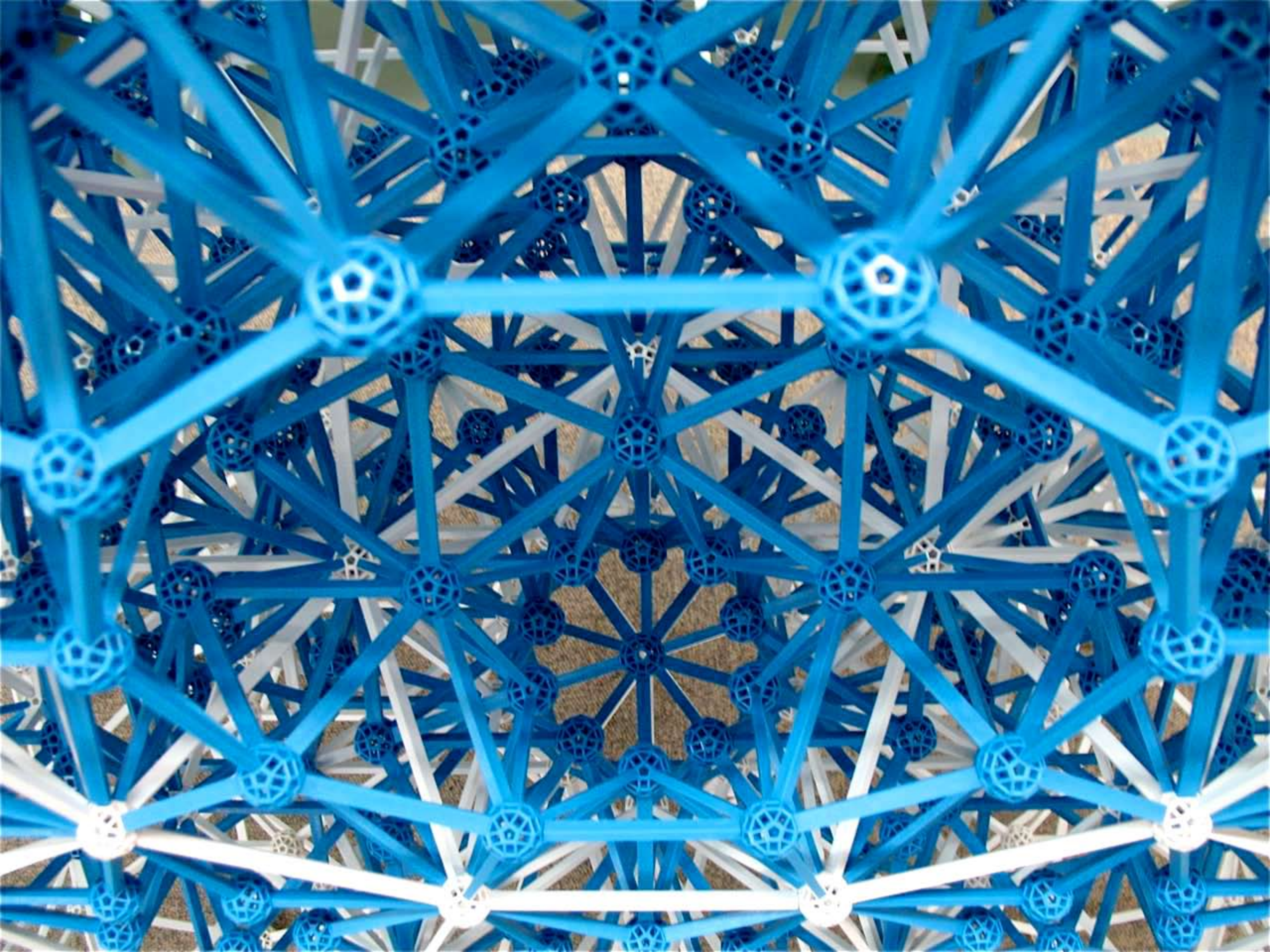
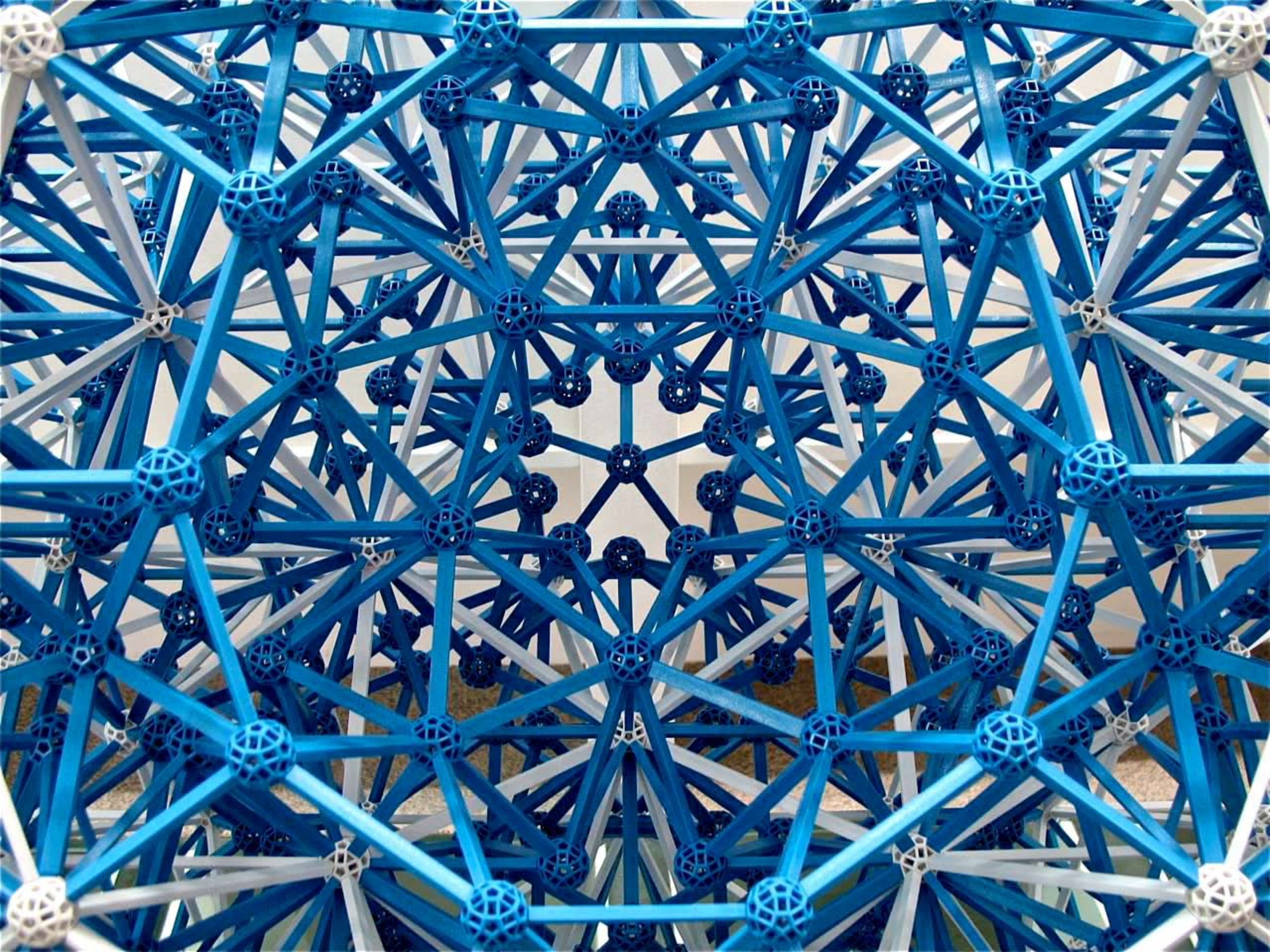
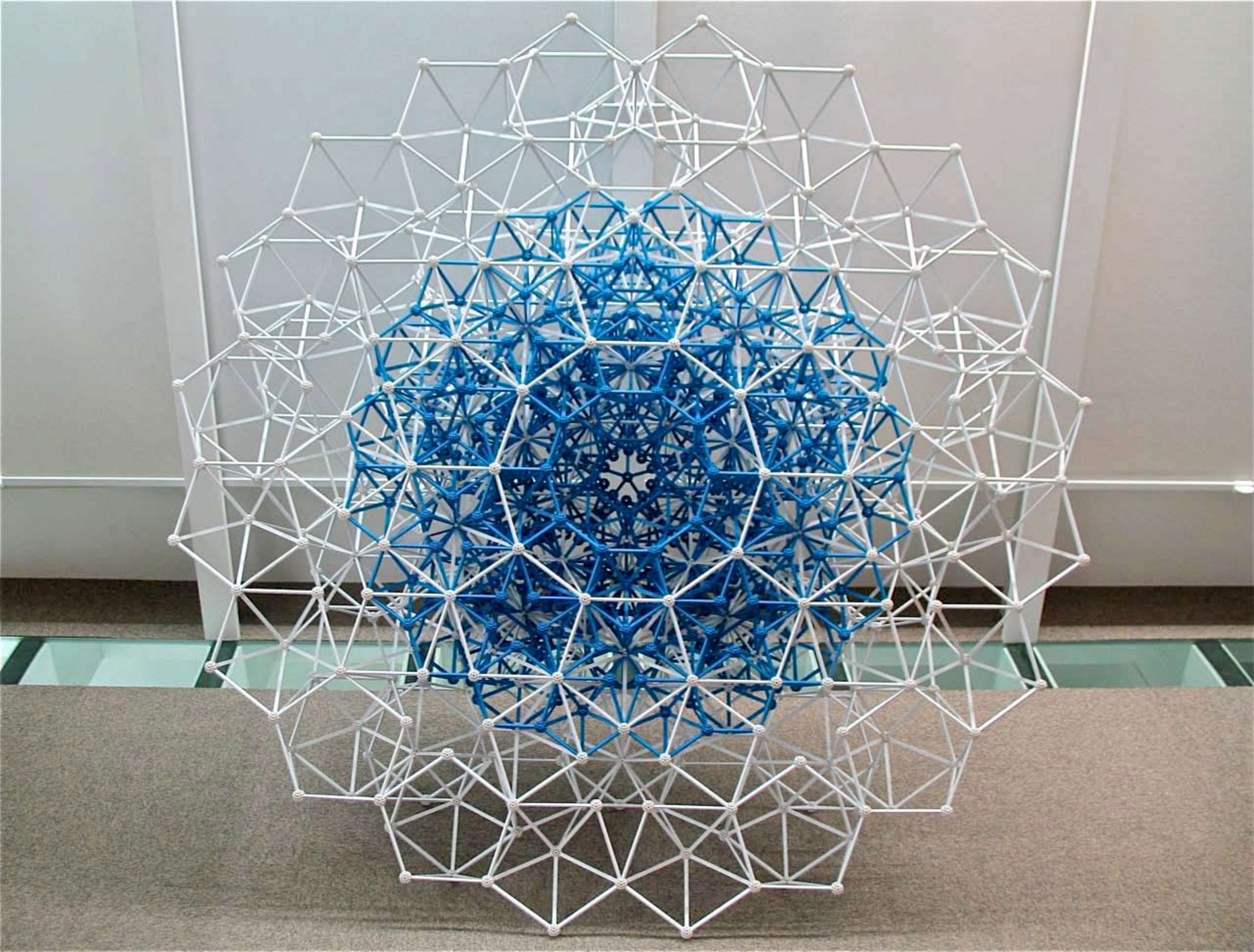
7 COMPOSITION DES ICOSAEDRES ET DES DODECAEDRES

ISOLES ET PRIS SEPAREMENT PAR ECHELON DE GRANDEUR

SITUATION	DESIGNATION	N° REF.	NOMBRE VOL. DE BASE		
1 ICOSAEDRE 1					
ENSEMBLE	ICOSA.	31	14		14
2 DODECAEDRE 1					
1 CENTRE	ICOSA. O	2	1	DODECA CONCAVE N°32	
20 SOMMETS	POINTE TRI	5	20		
30 ARETES	TETRA. A	9	30		
12 FACES	CALOTTE PENTA.	52 P.	36		87
3 ICOSAEDRE 2					
1 CENTRE	DODECA. O	1	1	DODECA ETOILE N°33	
12 SOMMETS	POINTE PENTA.	4	12		
30 ARETES	TETRA B	10 P.	30		
20 FACES	CALOTTE TRI	8 P.	20		63
4 DODECAEDRE 2					
1 CENTRE	ICOSA.	31	14	ICOSA 1	
20 SOMMETS	CHAMP.	34	140		
30 ARETES	TETRA. C	11 P.	30		
12 FACES	POINTE PENTA.	4 P.	12		196
5 ICOSAEDRE 3					
1 CENTRE	DODECA. CONCAVE	32	51	DODECA 1	
12 SOMMETS	ICOSA	31	168		
30 ARETES	TETRA A	9	30		
20 FACES	CALOTTE HEXA.	24 P.	20		269

SERIES D'ALTERNACES ICOSAEDRE/DODECAEDRE CONCENTRIQUE

6 DODECAEDRE 3					
1 CENTRE	1 DODECA. ETOILE	33	13	ICOSA. 2	
20 SOMMETS	1 CHAMP. Φ	35	600		
	3 CALOTTE PENTA.	52 P.	180		
30 ARETES	2 ARETE OCTA.	40	240		
	1 CARRE ETOILE	37	180		
12 FACES	1 ICOSA. TRONQ	51 P.	132		1345
7 ICOSAEDRE 4					
1 CENTE	1 ICOSA.	31	14	DODECA 2	
	20 CHAMP.	34	140		
12 SOMMETS	12 DODECA. ETOILE	33	156		
	10 TETRA. B	10 P.	120		
	5 CALOTTES TRI.	8 P.	60		
30 ARETES	1 ARETE OCTA.	40	120		
	2 CARRE CAL. PENTA.	36	360		
20 FACES	3 CALOTTE TRAP	22 P.	60		
	3 TETRA A	9 P.	60		
	1 POINTE TRI	5 P.	20		1110
8 DODECAEDRE 4					
1 CENTRE	1 DODECA. CONCAVE	32	51	ICOSA. 3	
	12 ICOSA.	31	168		
	30 TETRA. A	9	30		
20 SOMMETS	3 CARRE TRAP. Φ	38	120		
	2 CHAMP.	34	280		
	9 CARRE CAL. PENTA.	36	1080		
	1 ICOSA.	31	280		
	12 TETRA. C	11 P.	240		
	3 POINTE PENTA	4 P.	60		
30 ARETES	1 TETRA. A	9	30		
	2 TETRA. D	12	60		
	2 POINTE CAL. PENTA.	39	240		
	1 DODECA. CONCAVE	32	1530		
	2 CALOTTES PENTA	52 P.	240		
12 FACES	1 DODECA. ETOILE TRONQ.	53	144		
	5 TETRA B	10	60		
	5 TETRA B	10 P.	60		4673

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