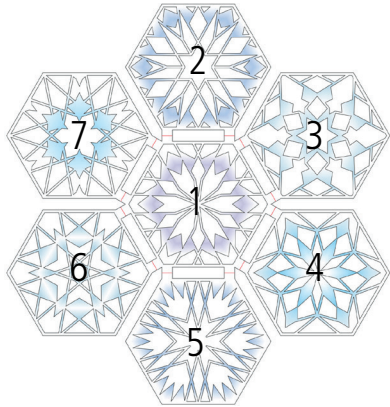
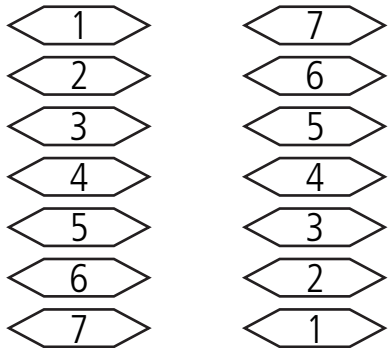


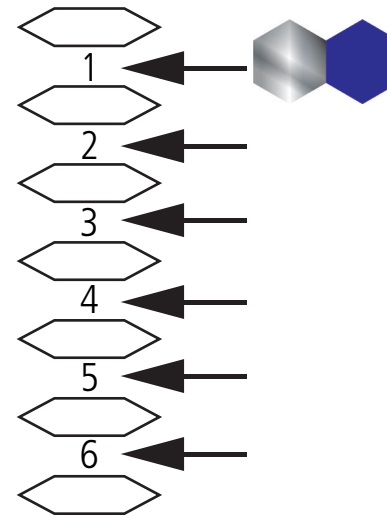
# Christmas Card Concept for Iggesund and Holmen Group – Addendum: Calculating the exact number of different designs



1) Each large element consists of 7 different cutouts. They can be folded forwards and backwards.



2) If they are stacked, each snowflake-design can appear on each level within the stack. This leads to  $7 \times 6 \times 5 \times 4 \times 3 \times 2 = 5040$  different combinations.



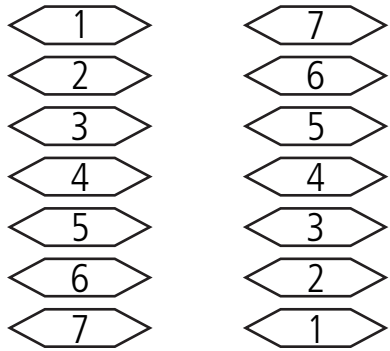
3) The small element can be inserted in 6 different positions into the stack. It makes a difference, if the blue or the silver side is on top. This multiplies the number of TECHNICAL POSSIBLE combinations by 12:  
 $5040 \times 12 = 60480$   
 If we add the 5040 combinations that can be created WITHOUT the use of the small element, we receive  
 $60480 + 5040 = 65520$  „technical“ combinations.

But since the small element „blocks“ the view, the number of individual VIEWS is slightly different. Please see next pages.

# Christmas Card Concept for Iggesund and Holmen Group – Addendum: Calculating the exact number of different designs

Both views are DIFFERENT:

Looking from here



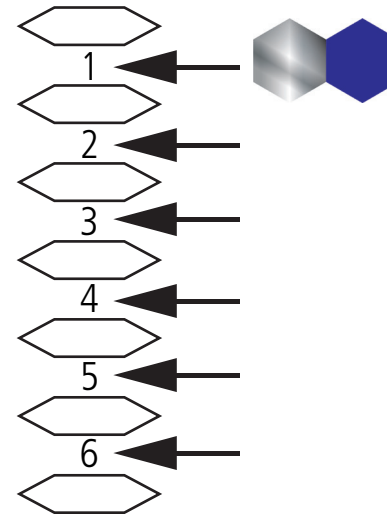
Looking from here



4) Since front and back of the large element is printed with DIFFERENT colors and designs, the view on the stack from ABOVE is different from the view on the stack from BELOW.

This doubles the number of individual VIEWS (without the use of the small element):

$$5040 \times 2 = 10080$$

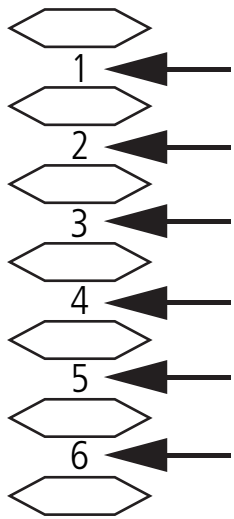


5) When the small SOLID element is added, you can not see through the whole structure any more. You can only see the snowflakes in FRONT of the solid element. Depending on the position on the stack, you will see between 1 and 6 snowflakes.

This leads to

$$\begin{aligned}
 &7 \\
 &+ 42 \\
 &+ 210 \\
 &+ 840 \\
 &+ 2520 \\
 &+ 5040 \\
 &= 8659 \text{ different views}
 \end{aligned}$$

Christmas Card Concept for Iggesund and Holmen Group – Addendum: Calculating the exact number of different designs



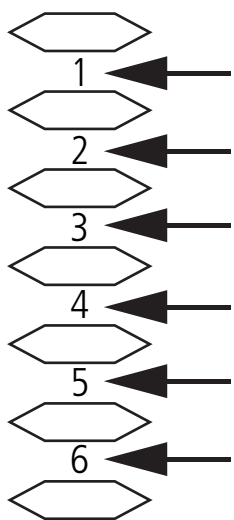
6)  
 But since the small element has DIFFERENT COLORS on each side, it can be inserted in TWO different ways. (blue on top or silver on top)  
 This DOUBLES the number of views:  
 $8659 \times 2 = 17318$  views

7)  
 And once again, the view from ABOVE is different from the view from BELOW. This doubles the views once more:  
 **$17318 \times 2 = 34636$**

8)  
 Conclusion:  
 When using only the large element,  
 10080 different views of a snowflake can be created.

When using both elements, 34636 different views of a snowflake can be created.

blue on top or silver on top



So the TOTAL NUMBER OF DIFFERENT SNOWFLAKES that can be created with this card design is:

**44716**