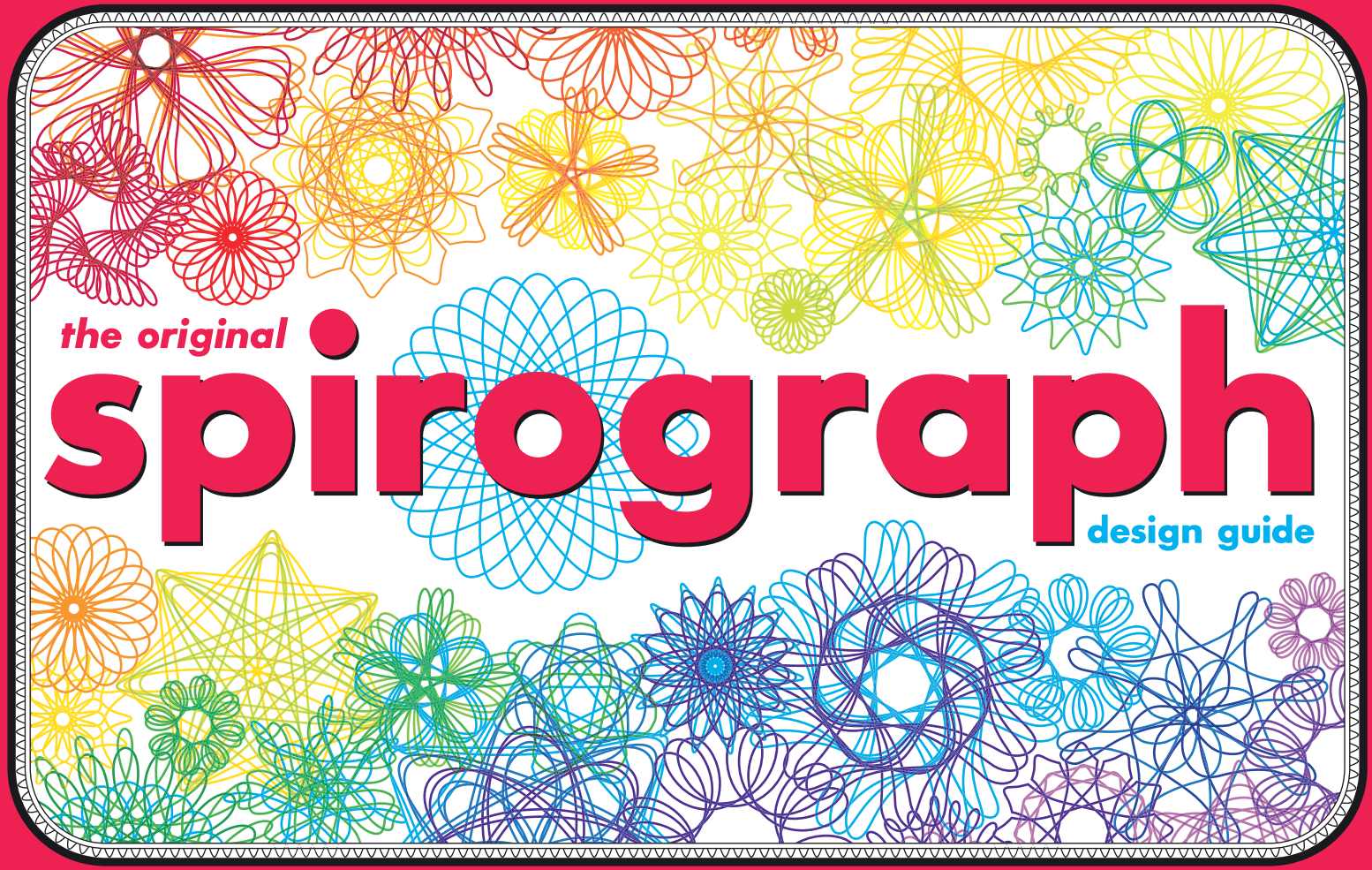
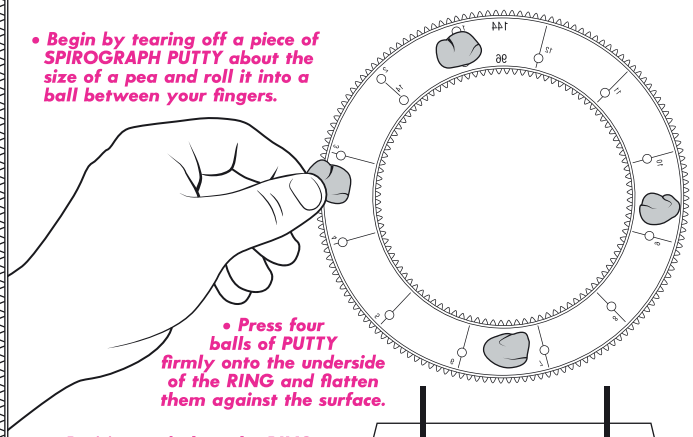

the original
spirograph
design guide

Getting Started



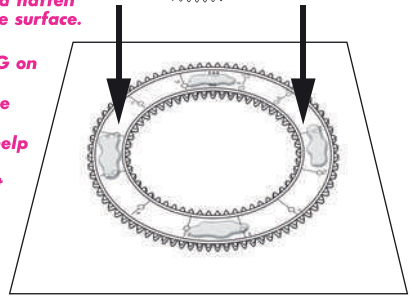
The reusable SPIROGRAPH PUTTY holds the fixed position Spirograph pieces securely in place on the paper. Making sure that the piece is locked in position will improve the accuracy of the finished design.

- Begin by tearing off a piece of SPIROGRAPH PUTTY about the size of a pea and roll it into a ball between your fingers.



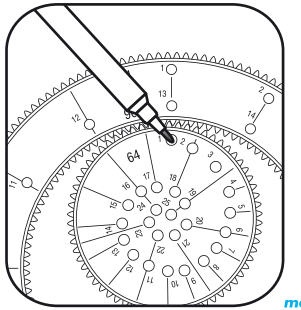
- Press four balls of PUTTY firmly onto the underside of the RING and flatten them against the surface.

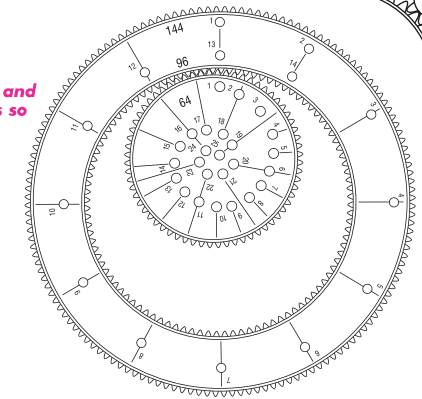
- Position and place the RING on the paper with the PUTTY pieces facing down. Press the RING firmly down onto the paper and twist slightly to help the PUTTY stick securely to the paper. Make sure that the edges of the RING are making contact with the paper surface so that the WHEELS will not slide underneath the RING.



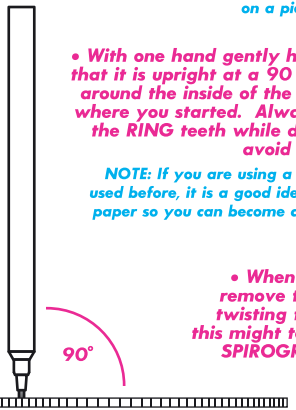
NOTE: To protect furniture, always place your paper on a placemat or other protective surface before creating your Spirograph design. Ball point pens can leave marks or indentations on some surfaces.

- Place a WHEEL inside the RING and engage the teeth of both pieces so they interlock as shown.





- Place a marker into one of the numbered holes on the WHEEL. NOTE: When using your markers for the first time, scribble for a few moments on a piece of scrap paper in order to get the ink flowing.



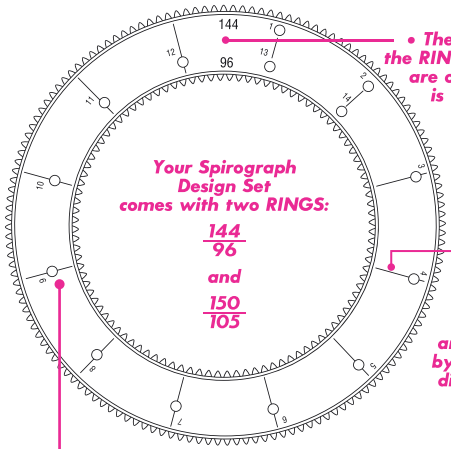
- With one hand gently holding the RING, position your marker so that it is upright at a 90 degree angle. Move the WHEEL carefully around the inside of the RING and continue until your line meets where you started. Always keep the WHEEL teeth in contact with the RING teeth while drawing and move the WHEEL slowly to avoid slipping of the gears.

NOTE: If you are using a WHEEL or WHEEL HOLE that you have never used before, it is a good idea to do a few test designs on a piece of scrap paper so you can become comfortable with the movement of the pieces.

- When you are finished with your design, remove the RING from your paper by gently twisting to release. Do not pull straight up as this might tear the paper. Gather up the remaining SPIROGRAPH PUTTY and store for future use.

What the Markings Mean

• The markings on each Spirograph piece have different meanings. Understanding these meanings will allow you to create even more amazing Spirograph Designs.

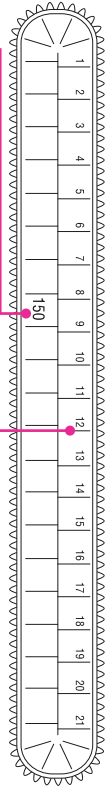


Your Spirograph Design Set comes with two RINGS:

$\frac{144}{96}$ and $\frac{150}{105}$

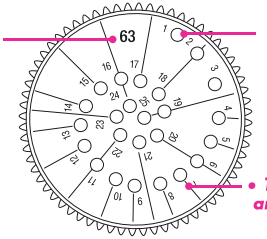
• The large numbers engraved on the RINGS indicate how many teeth are on the RING. The top number is for the outside track and the bottom number is for the inside track.

• The POSITIONING LINES are used to determine the different starting points for your patterns. You can use the same WHEEL HOLE and achieve 2 different results by beginning your design from different POSITIONING LINES.



• You can use your marker in the numbered HOLES on the RING to create large designs by rotating the RING around a fixed WHEEL.

• The large numbers engraved on each of the WHEELS indicate the number of teeth.



• Each numbered WHEEL hole produces a slightly different pattern.

• The POSITIONING LINES are used to determine the different starting points for your patterns.

In Practice

• Below is a simple example of how changes in the number of teeth on the RING can result in drastically different Spirograph Patterns.

Both of these designs were created using Hole No. 1 of WHEEL No. 45



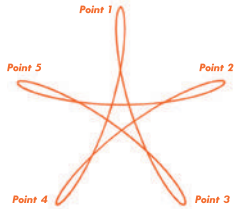
Using the inner track of the $\frac{144}{96}$ RING



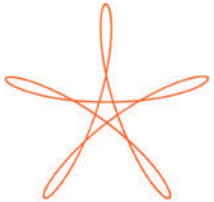
Using the inner track of the $\frac{150}{105}$ RING

Wheel Holes

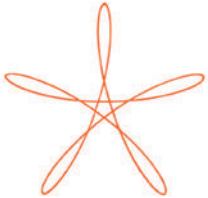
The number of teeth on a WHEEL and RING determines the number of points on the pattern. The examples below were drawn by using every hole on WHEEL No. 63 with the inside track of RING 150/105. You can see that while the shape of the pattern changes, the number of points stays the same.



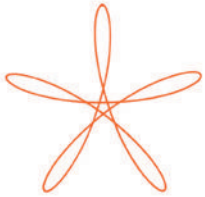
Hole No. 1



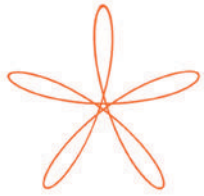
Hole No. 2



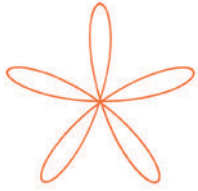
Hole No. 3



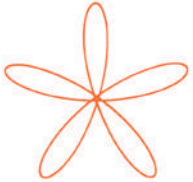
Hole No. 4



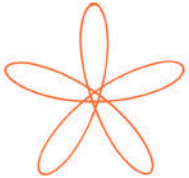
Hole No. 5



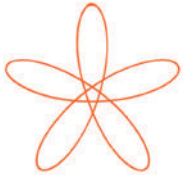
Hole No. 6



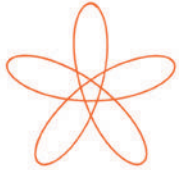
Hole No. 7



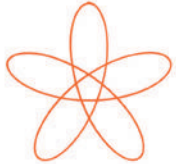
Hole No. 8



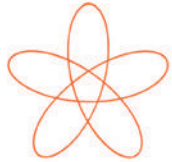
Hole No. 9



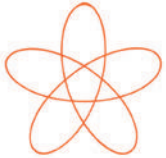
Hole No. 10



Hole No. 11



Hole No. 12



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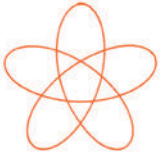
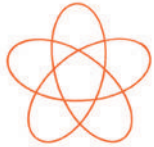


Hole No. 14



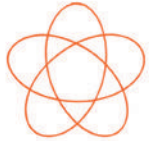
Hole No. 15



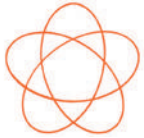
Hole No. 16



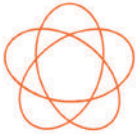
Hole No. 17



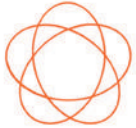
Hole No. 18



Hole No. 19



Hole No. 20



Hole No. 21



Hole No. 22



Hole No. 23



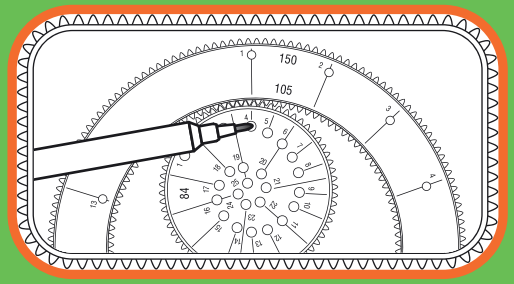
Hole No. 24



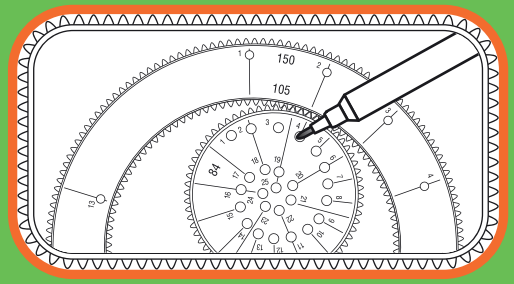
Hole No. 25

Designs using the Positioning Lines

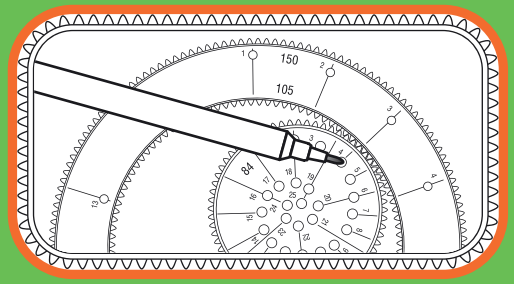
By using the POSITIONING LINES to begin your design at different starting points along the RING, you can create more complex patterns. The design below uses HOLE No. 4 on WHEEL No. 84 on the inside track of RING 150/105, using a different color marker for each different starting position.



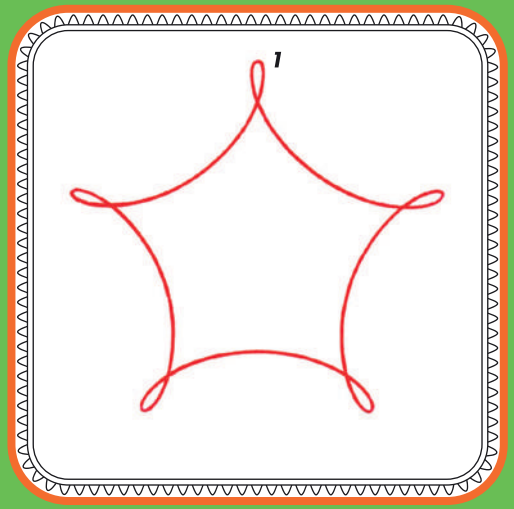
Hole No. 4 in Starting Position No. 1 on the RING.

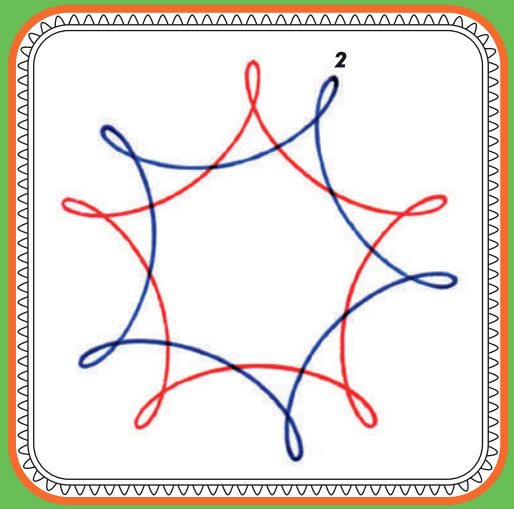


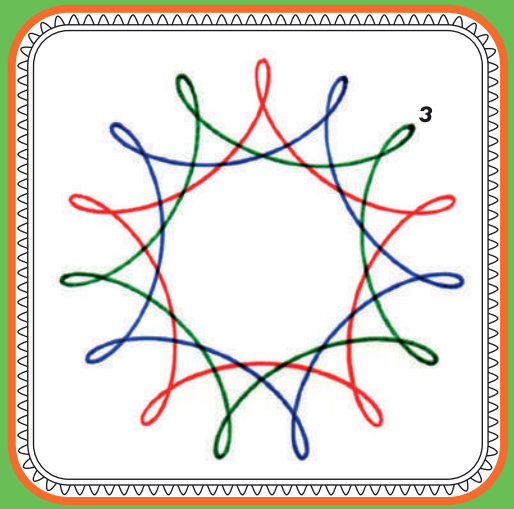
HOLE No. 4 in Starting Position No. 2 on the RING.



HOLE No. 4 in Starting Position No. 3 on the RING.







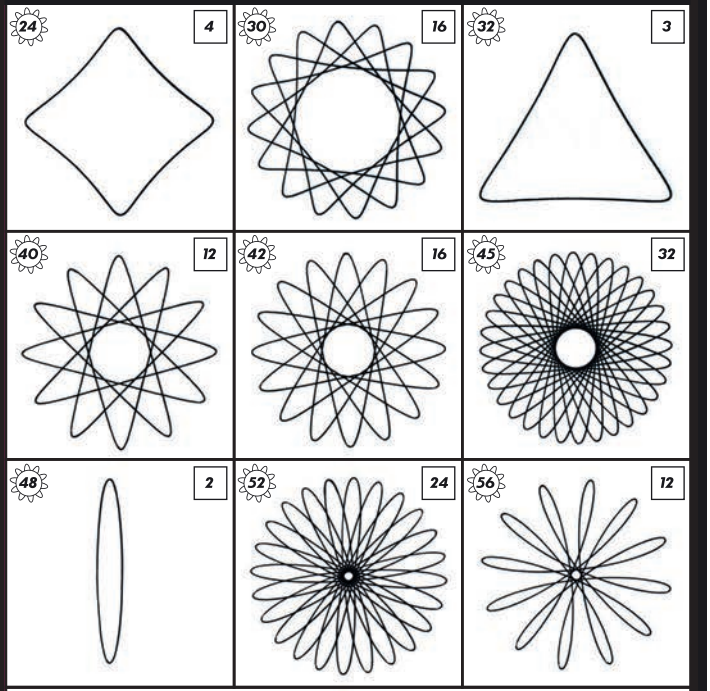
Spirograph Basic Pattern Guide

The patterns below were drawn using Hole No. 1 of each WHEEL

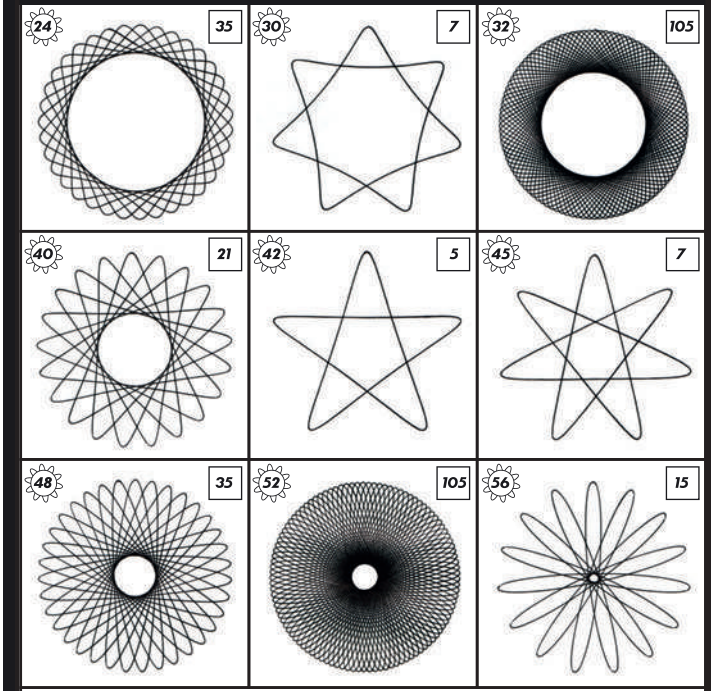
= **WHEEL used to create pattern**

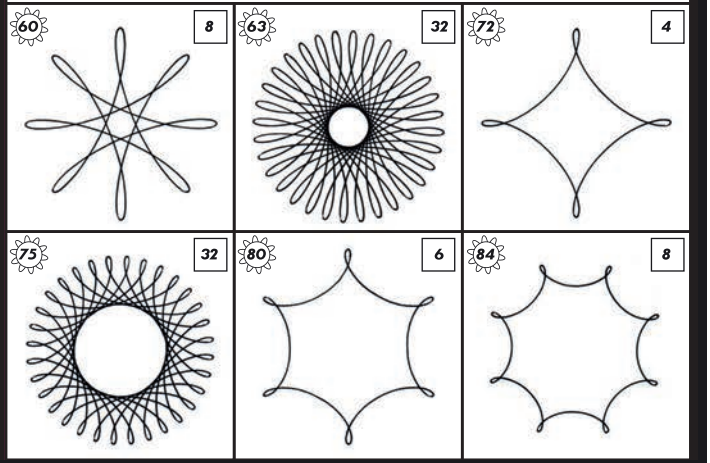
= **Number of points in pattern**

Patterns created using RING No. 144/96

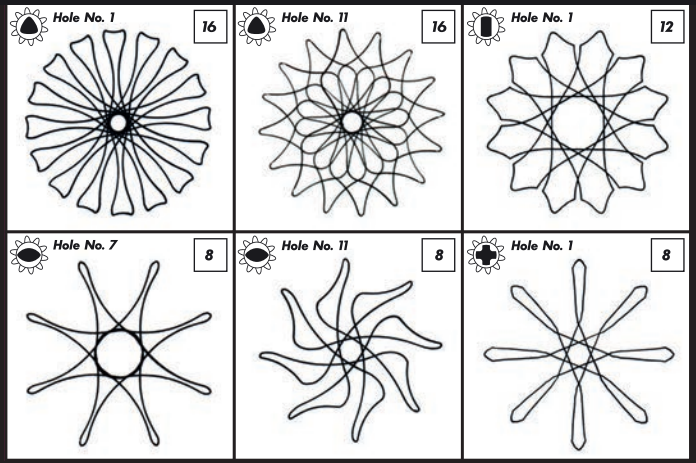


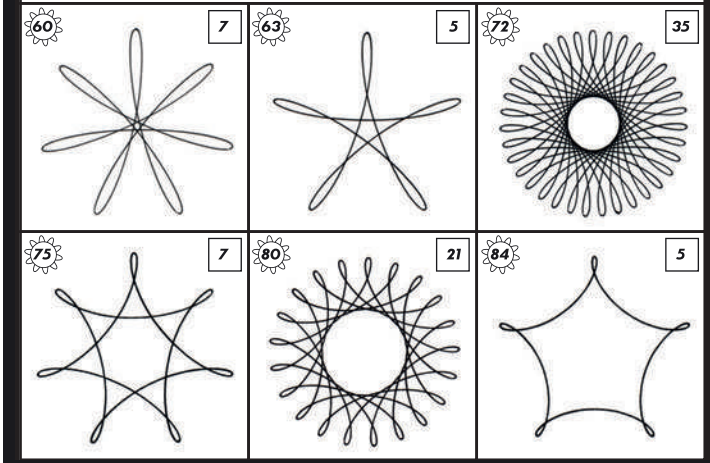
Patterns created using RING No. 150/105



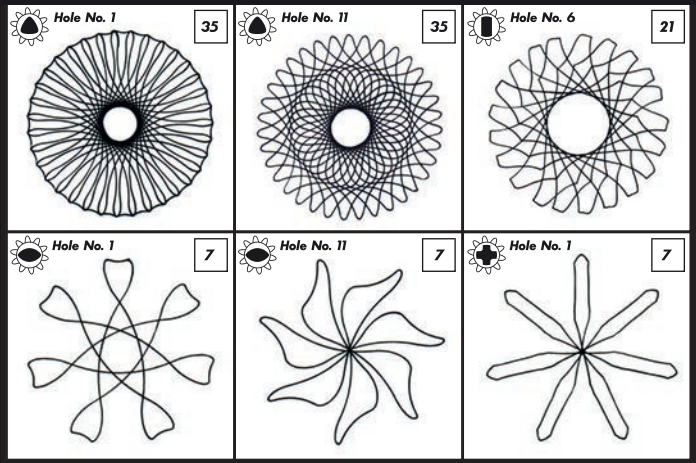


Examples of patterns created using different HOLES of the SHAPED WHEELS.





Examples of patterns created using different HOLES of the SHAPED WHEELS.



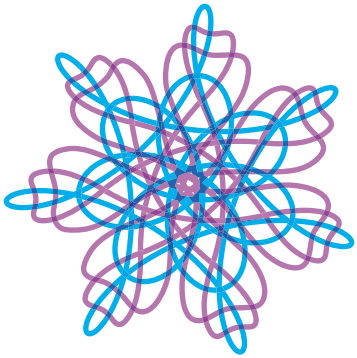
Designs with Wheels Inside Rings

Design Key

150/105 • 80 • HOLES: 1-6-16-21

150/105	80	HOLES: 1-6-16-21
Indicates the RING used	Indicates the WHEEL used	Indicates the HOLE used on the WHEEL and the color of the marker

Use this Key to follow the instructions for creating any Spirograph patterns.



150/105 • OVAL WHEEL • HOLES: 1-2

75 • HOLES: 1-20

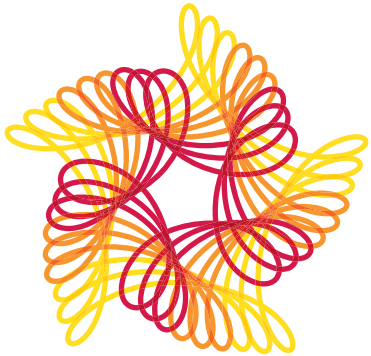
Place the OVAL WHEEL so that Hole 1 lines up with POSITIONING LINE No. 1 on the RING.

With a Magenta Marker in Hole 1, draw a pattern until the line meets where it began.

Align Hole 2 with POSITIONING LINE No. 1 on the RING and draw a pattern with a Magenta Marker in Hole 2.

Place WHEEL No. 75 so that Hole 1 lines up with POSITIONING LINE No. 1 on the RING and draw a pattern with a Blue Marker in Hole 1.

Align Hole 20 with POSITIONING LINE No. 1 on the RING and draw a pattern with a Blue Marker in Hole 20.



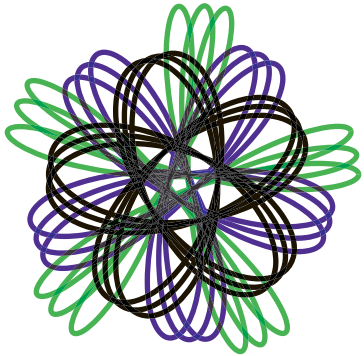
150/105 • 84 • HOLES: 2-4-6-8-10-12 14-16-18

Place WHEEL No. 84 so that Hole 2 lines up with POSITIONING LINE No. 1 on the RING.

With a Yellow Marker in Hole 2, draw a pattern until the line meets where it began.

Align Hole 4 with the spot where the last pattern ended and move the WHEEL two teeth to the right on the RING. Draw a pattern with a Yellow Marker in Hole 4.

Repeat the same steps, moving two teeth to the right each time, using a Yellow Marker in Hole 6, an Orange Marker in Holes 8, 10 & 12, and a Red Marker in Holes 14, 16 & 18.

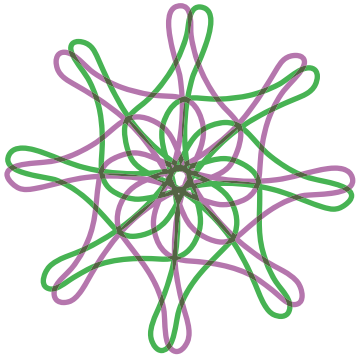


150/105 • 63 • HOLES: 1-1-1-8-8-8 14-14-14

Place Wheel No. 63 so that Hole 1 lines up with POSITIONING LINE No. 1 on the RING.

Draw three patterns using a Green Marker in Hole 1, each time moving the WHEEL two teeth to the right on the RING from the ending position of the previous pattern.

Align Hole 8 with the spot where the last pattern ended and move the WHEEL two teeth to the right on the RING. Draw three patterns with a Purple Marker in Hole 8, each time moving the WHEEL two teeth to the right on the RING from the ending position of the previous pattern. Repeat this step to draw three patterns using a Black Marker in Hole 14.

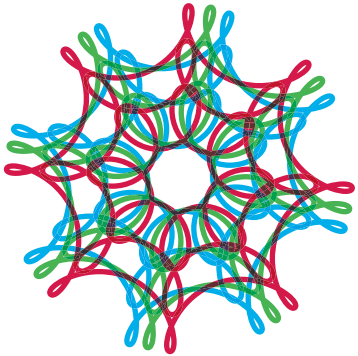


144/96 •  • HOLES: 9-9

Place the OVAL WHEEL so that Hole 9 lines up with POSITIONING LINE No. 1 on the RING.

With a Green Marker in Hole 9, draw a pattern until the line meets where it began.

Leaving the RING secured in place on the paper, flip over the OVAL WHEEL so the numbers are face down. Align Hole 9 with POSITIONING LINE No. 1 on the RING, and draw a pattern with a Magenta Marker in Hole 9.



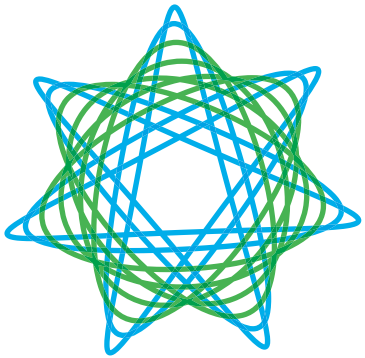
144/96 •  • HOLES: 2-2-2-10-10-10 22-22-22

Place WHEEL No. 84 so that Hole 2 lines up with POSITIONING LINE No. 1 on the RING.

With a Red Marker in Hole 2, draw a pattern until the line meets where it began.

Move the WHEEL two teeth to the right on the RING and draw a pattern with a Green Marker in Hole 2. Move the WHEEL two teeth to the right from the ending position of the last pattern and draw a pattern with a Blue Marker in Hole 2.

Align Hole 10 with POSITIONING LINE No. 1 on the RING. Draw three patterns (Red, Green, then Blue) using hole 10, moving two teeth to the right on the RING after each pattern. Repeat this step using Hole 22.



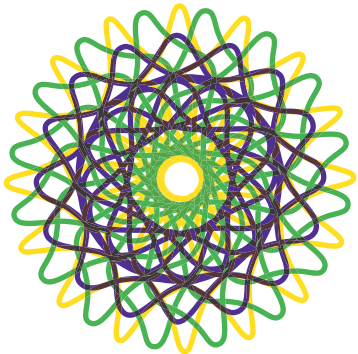
150/105 •  • HOLES: 1-6-11-16

Place Wheel No. 45 so that Hole 1 lines up with POSITIONING LINE No. 1 on the RING.

With a Blue Marker in Hole 1, draw a pattern until the line meets where it began.

Align Hole 6 with POSITIONING LINE No. 1 and draw a pattern with a Blue Marker in Hole 6.

Repeat the previous step with a Green Marker in Holes 11 & 16, starting each pattern with the new hole lined up with POSITIONING LINE No. 1.



144/96 •  • HOLES: 8-10-11

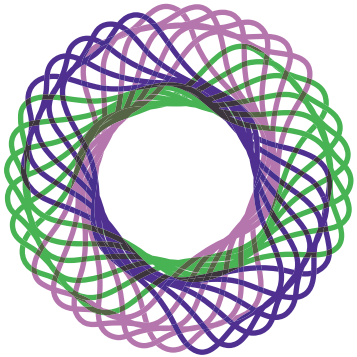
Place the TRIANGLE WHEEL so that Hole 8 lines up with POSITIONING LINE No. 1 on the RING.

With a Purple Marker in Hole 8, draw a pattern until the line meets where it began.

Align Hole 10 with POSITIONING LINE No. 1 on the RING and draw a pattern with a Green Marker in Hole 10.

Align Hole 11 with POSITIONING LINE No. 1 on the RING and draw a pattern with a Yellow Marker in Hole 11.

Designs with Wheels Inside Rings



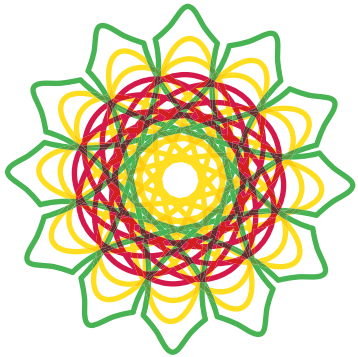
150/105 • ▲ • HOLES: 9-9-9

Place the TRIANGLE WHEEL so that Hole 9 lines up with POSITIONING LINE No. 1 on the RING.

With a Magenta Marker in Hole 9, draw six revolutions around the RING.

Carefully leaving the WHEEL in place, use a Green Marker in Hole 9 and draw six more revolutions around the RING.

Repeat the previous step with a Purple Marker in Hole 9 until the line meets where the pattern began.



144/96 • ▮ • HOLE: 1

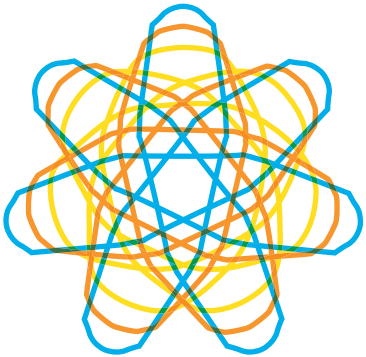
56 • HOLES: 10-14-20

Place the BAR so that Hole 1 lines up with POSITIONING LINE No. 1 on the RING.

With a Green Marker in Hole 1, draw a pattern until the line meets where it began.

Place WHEEL No. 56 so that Hole 10 lines up with POSITIONING LINE No. 1 on the RING. With a Yellow Marker in Hole 10, draw a pattern until the line meets where it began.

Repeat the previous step using a Yellow Marker in Hole 14, and then a Red Marker in Hole 20, starting each pattern with the new hole lined up with POSITIONING LINE No. 1.



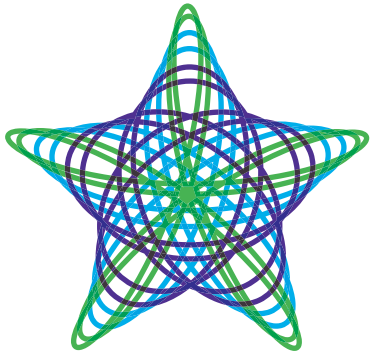
150/105 • ✚ • HOLES: 2-3-4

Place the QUAD WHEEL so that Hole 2 lines up with POSITIONING LINE No. 1 on the RING.

With a Blue Marker in Hole 2, draw a pattern until the line meets where it began.

Align Hole 3 with POSITIONING LINE No. 1 on the RING and draw a pattern with an Orange Marker in Hole 3.

Align Hole 4 with POSITIONING LINE No. 1 on the RING and draw a pattern with a Yellow Marker in Hole 4.



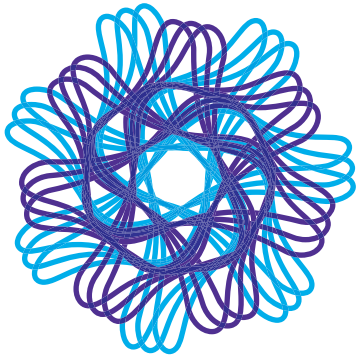
150/105 • 63 • HOLES: 1-5-9-13-17-21

Place WHEEL No. 63 so that Hole 1 lines up with POSITIONING LINE No. 1 on the RING.

With a Green Marker in Hole 1, draw a pattern until the line meets where it began.

Align Hole 5 with POSITIONING LINE No. 1 and draw a pattern using a Green Marker in Hole 5.

Repeat the previous step using a Blue Marker in Holes 9 & 13, and a Purple Marker in Holes 17 & 21, starting each pattern with the new hole lined up with POSITIONING LINE No. 1.

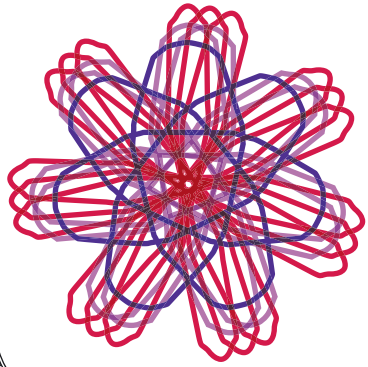


150/105 • OVAL WHEEL • HOLES: 8-8-8-9-9-9

Place the OVAL WHEEL so that Hole 8 lines up with POSITIONING LINE No. 1 on the RING.

Draw three patterns using a Purple Marker in Hole 8, each time moving the WHEEL two teeth to the right on the RING from the ending position of the previous pattern.

Align hole 9 with the spot where the last pattern ended and move the WHEEL two teeth to the right on the RING. Draw a pattern with a Blue Marker in Hole 9. Repeat twice more, each time moving two teeth to the right on the RING from the ending position of the previous pattern.



150/105 • QUAD WHEEL • HOLES: 1-1-1-2-2-3

Place the QUAD WHEEL so that Hole 1 lines up with POSITIONING LINE No. 1 on the RING.

Draw three patterns using a Red Marker in Hole 1, each time moving the WHEEL two teeth to the right on the RING from the ending position of the previous pattern.

Align Hole 2 with POSITIONING LINE No. 1 on the RING. Draw two patterns with a Magenta Marker in Hole 2, moving two teeth to the right on the RING after the first pattern.

Align Hole 3 with POSITIONING LINE No. 1 on the RING. Draw a pattern with a Purple Marker in Hole 3.



150/105 • 30 • HOLES: 1-3

45 • HOLES: 6-8

60 • HOLES: 11-13

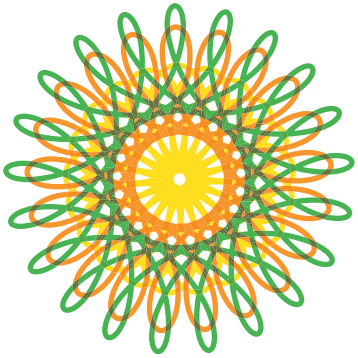
75 • HOLES: 16-18

Place WHEEL No. 30 so that Hole 1 lines up with POSITIONING LINE No. 1 on the RING.

With a Blue Marker in Hole 1, draw a pattern until the line meets where it began. Align Hole 3 with POSITIONING LINE No. 1 on the RING and draw a pattern with a Blue Marker in Hole 3.

Using WHEEL No. 45, draw patterns with an Orange Marker in Hole 6 and then Hole 8, starting each pattern with the new hole lined up with POSITIONING LINE No. 1.

Repeat the previous step using WHEEL No. 60 with a Green Marker in Holes 11 & 13, and WHEEL No. 75 with an Orange Marker in Holes 16 & 18.



150/105 • 80 • HOLES: 1-10-19

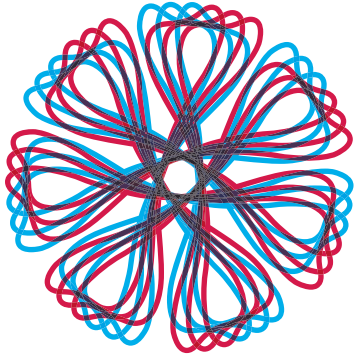
Place Wheel No. 80 so that Hole 1 lines up with POSITIONING LINE No. 1 on the RING.

With a Green Marker in Hole 1, draw a pattern until the line meets where it began.

Align Hole 10 with POSITIONING LINE No. 1 on the RING and draw a pattern using an Orange Marker in Hole 10.

Align Hole 19 with POSITIONING LINE No. 1 on the RING and draw a pattern using a Yellow Marker in Hole 19.

Designs with Wheels Inside Rings

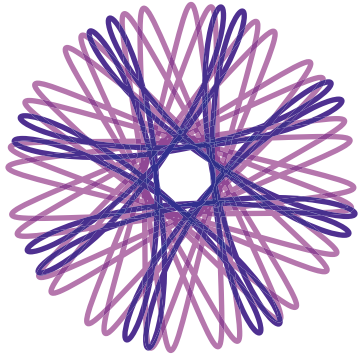


150/105 •  • **HOLES: 13-13-13**
13-13-13

Place the OVAL WHEEL so that Hole 13 lines up with POSITIONING LINE No. 1 on the RING.

Draw three patterns using a Red Marker in Hole 13, each time moving the WHEEL two teeth to the right on the RING from the ending position of the previous pattern.

Leaving the RING secured in place on the paper, flip over the OVAL WHEEL so the numbers are face down. Align Hole 13 with POSITIONING LINE No. 1 on the RING, and repeat the pattern three times as before with a Blue Marker in Hole 13, moving the WHEEL two teeth to the left after each pattern instead of to the right.



144/96 • **42** • **HOLES: 1-1**

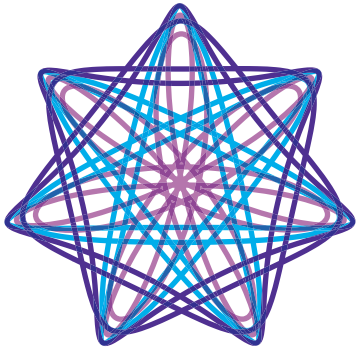
60 • **HOLES: 1-1**

Place WHEEL No. 42 so that Hole 1 lines up with POSITIONING LINE No. 1 on the RING.

With a Magenta Marker in Hole 1, draw a pattern until the line meets where it began.

Align Hole 1 with the spot where the last pattern ended and move the WHEEL two teeth to the right on the RING. Draw another pattern with a Magenta Marker in Hole 1.

Place WHEEL No. 60 so that Hole 1 lines up with the spot where the last pattern ended and move the WHEEL two teeth to the right on the RING. Draw a pattern using a Purple Marker in Hole 1. Repeat this step to draw a second purple pattern.



150/105 • **30** • **HOLES: 1-5**

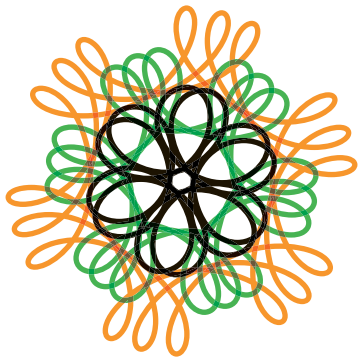
45 • **HOLES: 1-5**

60 • **HOLES: 1-5**

Place WHEEL No. 30 so that Hole 1 lines up with POSITIONING LINE No. 1 on the RING.

With a Purple Marker in Hole 1, draw a pattern until the line meets where it began. Align Hole 5 with POSITIONING LINE No. 1 on the RING and draw a pattern with a Purple Marker in Hole 5.

Repeat the same steps using WHEEL No. 45 with a Blue Marker in Holes 1 & 5, and WHEEL No. 60 with a Magenta Marker in Holes 1 & 5.

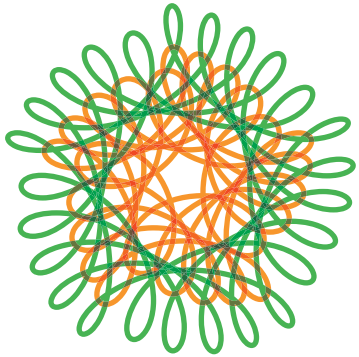


144/96 • **80** • **HOLES: 5-5-5-14-14-14**
22-22

Place Wheel No. 80 so that Hole 5 lines up with POSITIONING LINE No. 1 on the RING.

Draw three patterns using an Orange Marker in Hole 5, each time moving the WHEEL three teeth to the right on the RING from the ending position of the previous pattern.

Align Hole 14 with the spot where the last pattern ended and move the WHEEL three teeth to the right on the RING. Draw three patterns with a Green Marker in Hole 14, each time moving the WHEEL three teeth to the right on the RING from the ending position of the previous pattern. Repeat this step to draw two patterns using a Black Marker in Hole 22.



150/105 • 84 • HOLES: 1-3-5-7-9 12-14-16-18-20

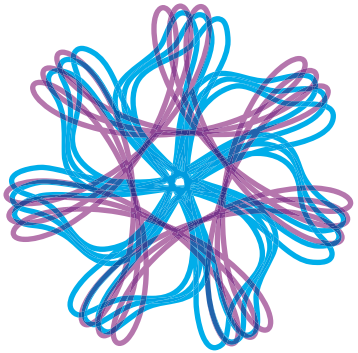
Place WHEEL No. 84 so that Hole 1 lines up with POSITIONING LINE No. 1 on the RING.

With a Green Marker in Hole 1, draw a pattern until the line meets where it began.

Align Hole 3 with the spot where the last pattern ended and move the WHEEL four teeth to the right on the RING. Draw a pattern with a Green Marker in Hole 3. Repeat the same step, moving four teeth to the right each time, using a Green Marker in Holes 5, 7 & 9.

Align Hole 12 with POSITIONING LINE No. 1 on the RING and draw a pattern with an Orange Marker in Hole 12.

Align Hole 14 with the spot where the last pattern ended and move the WHEEL four teeth to the right on the RING. Draw a pattern with an Orange Marker in Hole 14. Repeat the same step, moving four teeth to the right each time, using an Orange Marker in Holes 16, 18 & 20.



150/105 • • HOLES: 11-11-11

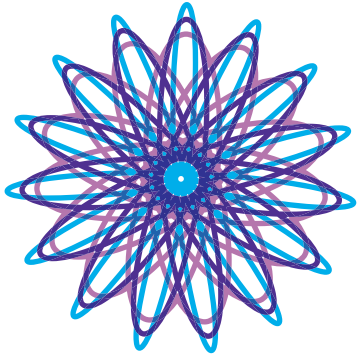
75 • HOLES: 5-5-5

Place the OVAL WHEEL so that Hole 11 lines up with POSITIONING LINE No. 1 on the RING.

Draw three patterns using a Blue Marker in Hole 11, each time moving the WHEEL two teeth to the right on the RING from the ending position of the previous pattern.

Place WHEEL No. 75 so that Hole 5 lines up with POSITIONING LINE No. 1 on the RING.

Draw three patterns with a Magenta Marker in Hole 5, each time moving two teeth to the right on the RING from the ending position of the previous pattern.



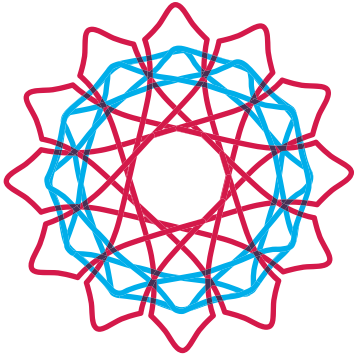
150/105 • 56 • HOLES: 1-5-9

Place WHEEL No. 56 so that Hole 1 lines up with POSITIONING LINE No. 1 on the RING.

With a Blue Marker in Hole 1, draw a pattern until the line meets where it began.

Align Hole 5 with POSITIONING LINE No. 1 on the RING and draw a pattern using a Purple Marker in Hole 5.

Align Hole 9 with POSITIONING LINE No. 1 on the RING and draw a pattern using a Magenta Marker in Hole 9.



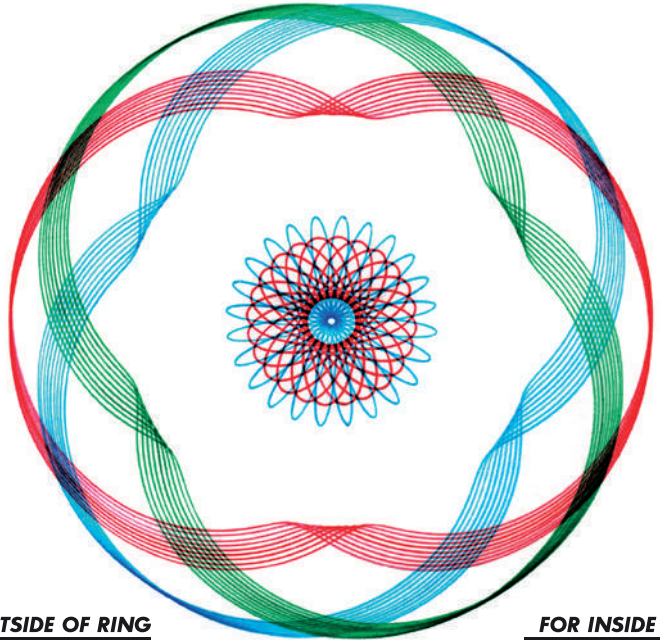
144/96 • • HOLES: 1-3

Place the BAR so that Hole 1 lines up with POSITIONING LINE No. 1 on the RING.

With a Red Marker in Hole 1, draw a pattern until the line meets where it began.

Align Hole 3 with POSITIONING LINE No. 1 on the RING and draw a pattern with the Blue Marker in Hole 3.

Big Designs Using the Outside of Rings



FOR OUTSIDE OF RING

144/96 • 72 • HOLES: 9x9 - 9x9 - 9x9

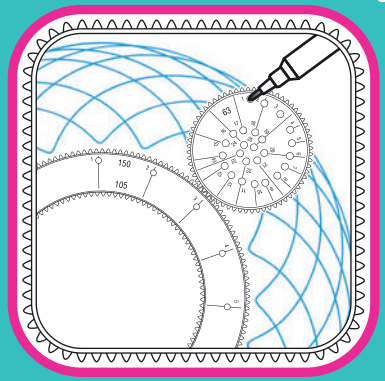
Secure the RING to the paper with SPIROGRAPH PUTTY and align Hole 9 on WHEEL No. 72 with POSITIONING LINE No. 1 on the RING. Use a Red Marker in Hole 9 to draw nine patterns, moving the starting position one tooth to the right on the RING for each pattern. Repeat steps with a Green Marker at position 3 on the RING and a Blue Marker at position 5.

FOR INSIDE OF RING

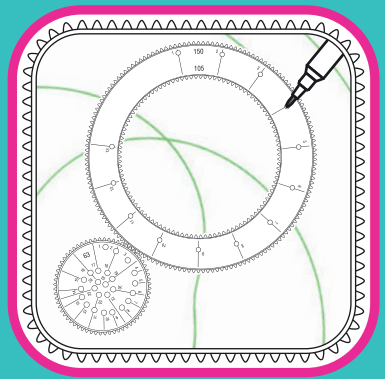
52 • HOLES: 1-10

Leave the RING locked in position on the paper with the SPIROGRAPH PUTTY and align Hole 1 on WHEEL 52 with POSITIONING LINE No. 1 on the inside track of the RING. Draw a pattern with a Blue Marker in Hole 1. Align Hole 10 with POSITIONING LINE No. 1 on the RING and draw a pattern with a Red Marker in Hole 10.

• *Below are two ways to draw jumbo sized designs.*

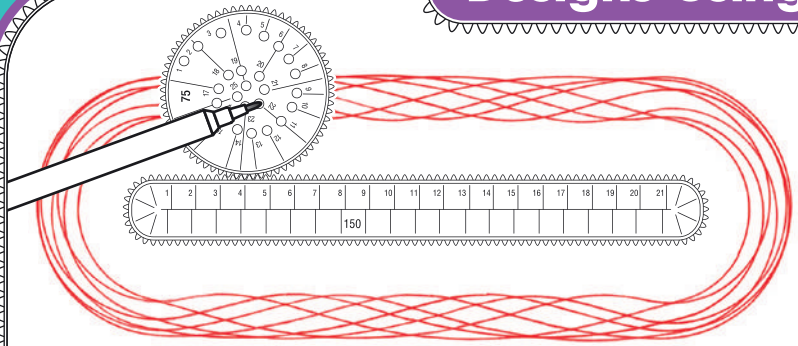


• *Secure a RING to the paper with the SPIROGRAPH PUTTY and revolve a WHEEL around the outside track as shown above.*

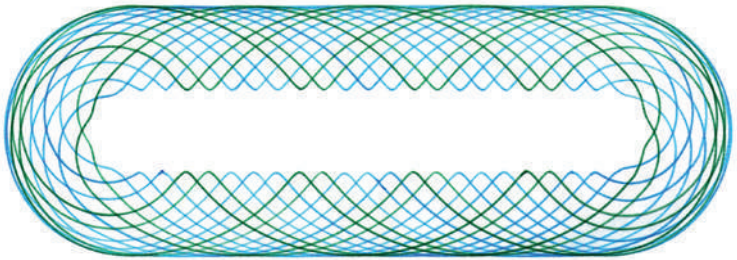


• *Secure a WHEEL to the paper with the SPIROGRAPH PUTTY and revolve a RING around the outside of the wheel as shown above.*

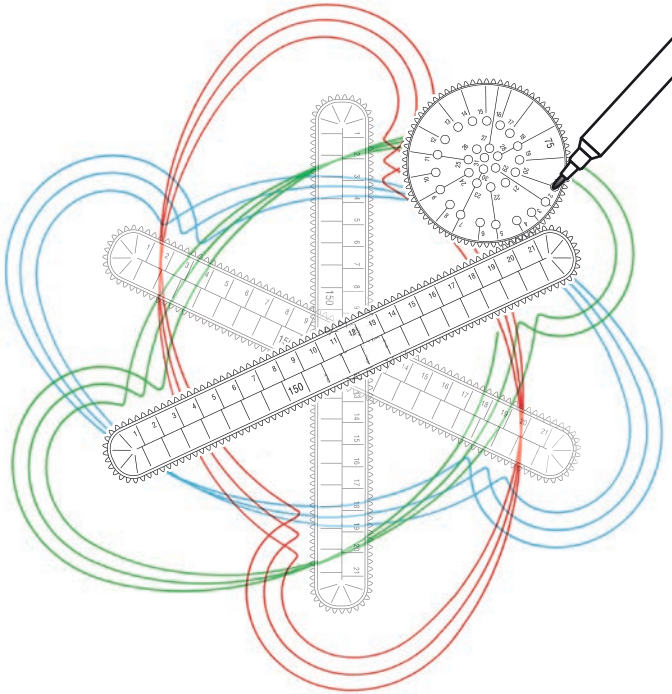
Designs Using the Rack



• *Secure the RACK to the paper with SPIROGRAPH PUTTY and rotate WHEELS and RINGS around the outside to create unique shaped Spirograph® designs.*



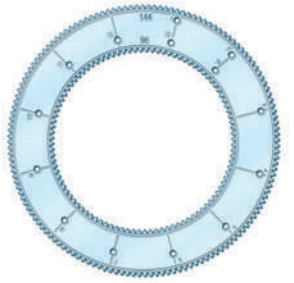
45 • *Using Hole 1 on WHEEL No. 45, draw three Blue patterns starting at POSITIONING LINES 1, 2, and 20 on the RACK. Then use a Green Marker in Hole 1 to draw two patterns starting at POSITIONING LINES 3 and 4.*



• *Rotate and move the RACK into different positions to create design variations and interesting duplications of patterns.*

Note: The small corners of the RACK can be tricky, so be sure to keep the teeth engaged securely as you rotate the WHEELS.

the original spirograph

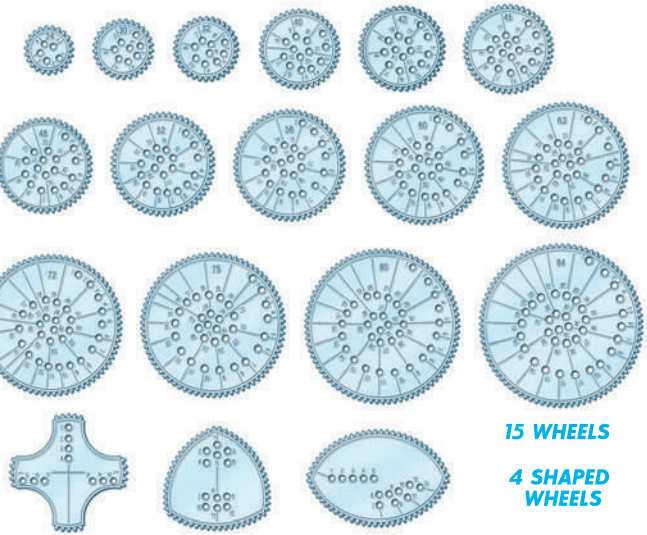


2 RINGS



RACK





15 WHEELS

4 SHAPED WHEELS



SPIROGRAPH PUTTY



8 ART MARKERS

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- To avoid damage/indentation on wood surfaces, place a protective layer such as a placemat or a pad of paper, underneath your drawing area. Spirograph marker inks may stain some surfaces and fabrics.
- Spirograph Putty and Spirograph marker inks have been evaluated and approved by a board certified toxicologist.
- Spirograph Putty can be removed from most surfaces and is also reusable. It is designed to be used as intended with paper and the included Spirograph components, and should be stored properly in the case between uses. Avoid contact with wallpaper, delicate surfaces, walls painted with flat paint and carpet.
- The pen holes in the Spirograph pieces have been sized to fit most standard pens available on the market.

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