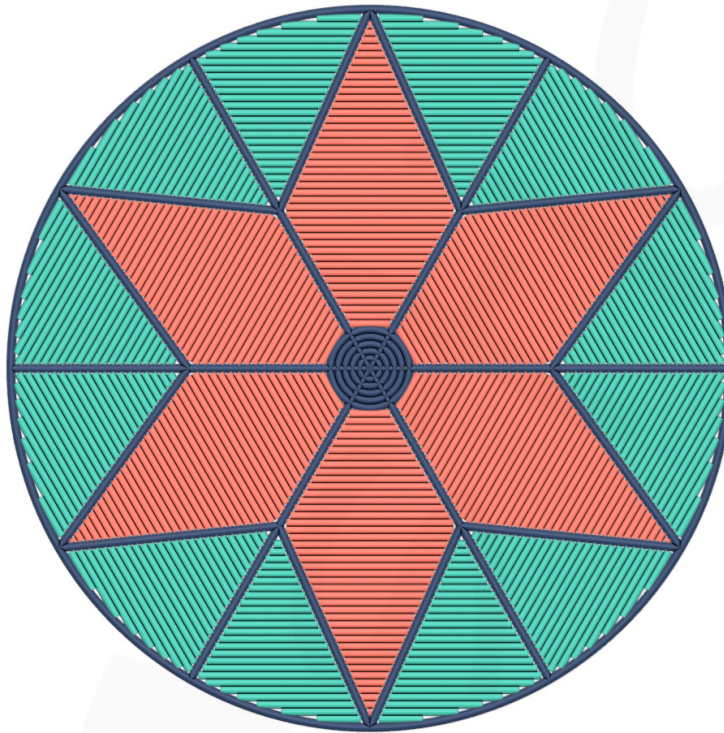


MAKE • DISCOVER • COLLECT

Rosette with Your Own Palette

Beginners aged 8 and up, with assistance suited to the device and skill level • Approximately 40–65 minutes, including 25–45 minutes of pen work



Choose your own PLA palette and repeat a colorful module in six sectors. The connected spokes and fills form a flat rosette, 10 cm in diameter, for your pattern collection.

✓ Your outcome

Create a rhythmic decoration from a repeated module.

Construction illustration. The instructions show the successive stages. Full-size (1:1) templates are supplied on a separate sheet.

What you need

A 3D pen, the selected filament and equipment available in your workspace. See the complete list below.

Tools

- | | |
|--|--------------------------|
| ☐ PLA-compatible 3D pen | 1 per participant |
|--|--------------------------|

Filament

- | | |
|---|--|
| ☐ PLA in selected colors, with a diameter compatible with the device | according to the material allowance |
|---|--|

Equipment

- | | |
|---|--------------------------|
| ☐ Standard transparent mat from the kit, suitable for pen work | 1 per participant |
|---|--------------------------|

Printouts

- | | |
|---|--------------------------|
| ☐ Rosette template on plain paper, printed at 100% (1:1) | 1 per participant |
|---|--------------------------|

Equipment

- | | |
|--|-----------------|
| ☐ Ruler for checking the 20 mm reference line | 1 shared |
|--|-----------------|

Filament — amounts include extra

- | | |
|---|------------------------|
| ☐ PLA 1.75 mm — frame and center | 0.8 m · ≈ 2.4 g |
| ☐ PLA 1.75 mm — fills of the fields near the center | 2.3 m · ≈ 6.9 g |
| ☐ PLA 1.75 mm — fills of the fields near the perimeter | 2.4 m · ≈ 7.2 g |

Total filament: 5.5 m · approximately 16.5 g

The quantities include extra filament. Grams indicate estimated net filament mass, excluding packaging.

Before you start

- 1 Print at 100% scale and, before placing the mat, use a ruler to check the 20 mm reference line. You can replace the example colors with your own.
- 2 After confirming the scale, place the transparent mat over the template and choose your PLA colors. Prepare the pen according to the device instructions. The tip is hot; get adult assistance suited to the device and your skill level.

An estimate from the brief, not a measurement or time limit. Working pace, color changes, and device requirements may extend the activity; allowing the piece to cool completely takes priority over the estimate. You can pause after completing the frame or a module and allowing the piece to cool.

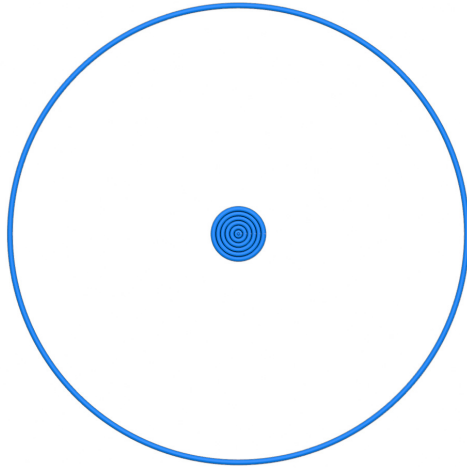


How to read the instructions

The large image shows the completed stage. Small views show the action and current parts. ×N means repeat the whole action N times, cooling and checking each time. Illustrations are not at 1:1 scale.

STAGE 01 / 04 • Session 1

Build the outline and center



The outer frame and the center of the rosette are formed.

NOW Shared rosette frame

Blue / dark emphasis: the part used in this action. Arrows: visual guides. Illustration not to scale.

PARTS FOR THIS STAGE

1 × Shared rosette frame · PLA | template W01

→ T001 • Techniques — reference appendix

Trace the rosette outline with PLA. Close the perimeter by joining the end of the strand to its beginning. Draw a small circle in the center and add adjoining strands around it until the central area is filled.



Check

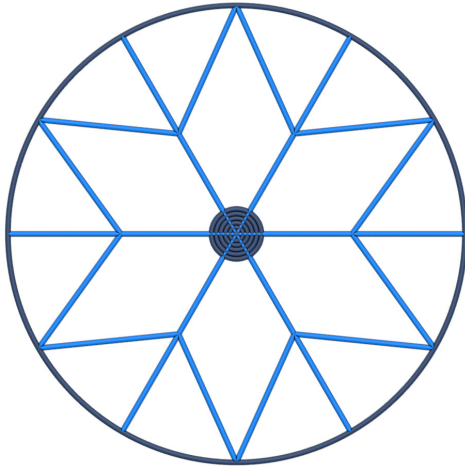
The perimeter is closed and the central area is filled.

If it does not work

Use fresh PLA to close any gap in the perimeter or between the strands in the center.

STAGE 02 / 04 • Session 1

Connect the six sectors



Spokes are added to the outline and center, forming a shared frame for the fills.

NOW Shared rosette frame

Blue / dark emphasis: the part used in this action. Arrows: visual guides. Illustration not to scale.

PARTS FOR THIS STAGE

1 × Shared rosette frame · PLA | template W01

→ T001 • Techniques — reference appendix

Make six spokes from the center to the perimeter and join them to both. In each sector, add the angled area boundaries shown on the template; join their ends to the spokes and their tips to the perimeter.



Check

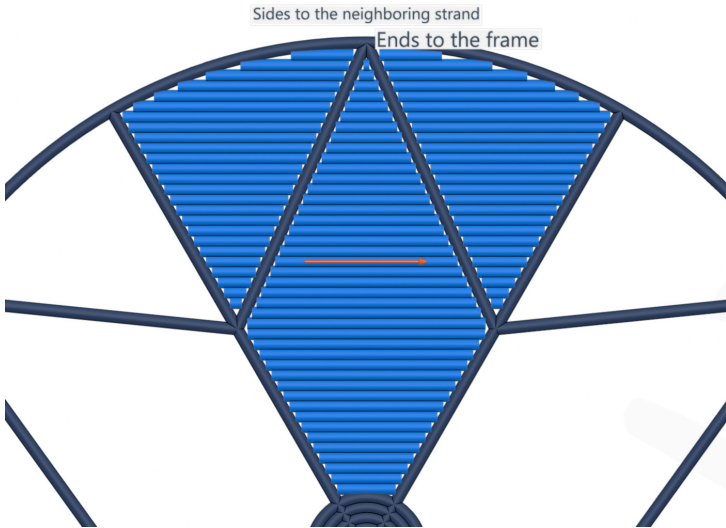
Six spokes connect the center to the perimeter; every area has a closed frame.

If it does not work

Use fresh PLA to connect any unattached end of a spoke or area boundary.

STAGE 03 / 04 • Session 1

Create your colorful module



Close-up: strand ends join the frame; sides join the neighboring strand

NOW Fills for areas near the center · Fills for areas near the perimeter

Blue / dark emphasis: the part used in this action. Arrows: visual guides. Illustration not to scale.

PARTS FOR THIS STAGE

1 × Fills for areas near the center · PLA | template follow the written method

1 × Fills for areas near the perimeter · PLA | template follow the written method

→ T002, T003 • Techniques — reference appendix

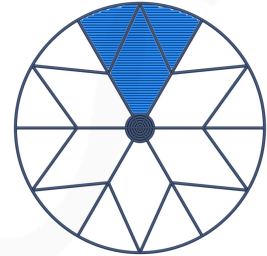
Choose colors for the areas in the first sector. Lay strands side by side from one edge of an area to the other: join the ends to the frame and the sides to neighboring strands. Start with short strands and fill the areas in this sector.

✓ Check

One sector shows your own color arrangement; the strands touch the frames and one another.

If it does not work

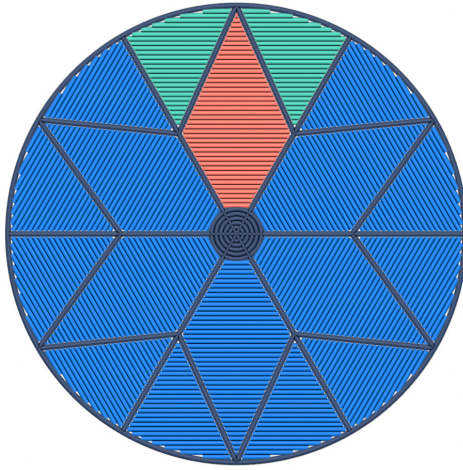
Use fresh PLA to fill any gaps along the frame and between strands.



The completed first module on the existing frame

STAGE 04 / 04 • Session 1

Repeat the palette around the rosette



All earlier elements remain, while five more modules complete the colorful rosette.

NOW Fills for areas near the center · Fills for areas near the perimeter

Blue / dark emphasis: the part used in this action. Arrows: visual guides. Illustration not to scale.

PARTS FOR THIS STAGE

1 × Fills for areas near the center · PLA | template W01

1 × Fills for areas near the perimeter · PLA | template W01

→ T002, T003 • Techniques — reference appendix

Fill the corresponding areas in the other five sectors, repeating your color arrangement. Check the connections and fill any visible gaps. Wait for the piece to cool completely. Compare the six modules and add the rosette to your own pattern collection.



Check

Six modules repeat the color arrangement. Once cool, the spokes and fills remain in one piece.

If it does not work

Fill any visible gaps with fresh PLA and wait again until the piece is completely cool.

Finished — check the outcome



Check

The rosette shows six repetitions of the selected color arrangement.



Check

Each spoke connects the center to the perimeter, and the fills adhere to the frames and neighboring strands.



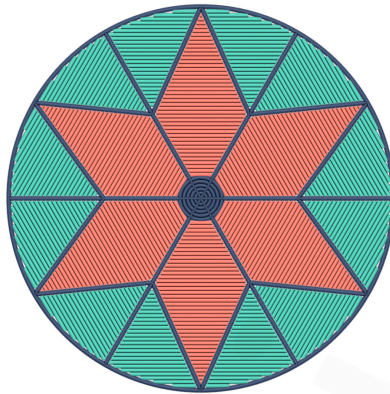
Check

Once completely cool, the rosette remains in one piece and can be added to the collection.

Storage

Store the model in a cool place away from sunlight and heat. Repair it on a suitable 3D-pen work surface using the same material as the part.

Finished rosette — top view



Techniques — reference appendix

T001 • Stage 1 • Stage 2

1 × Shared rosette frame · PLA | template W01

Make the outline and center, then six spokes and angled area boundaries using a single template. Join the fresh strands at every contact point.

T002 • Stage 3 • Stage 4

1 × Fills for areas near the center · PLA | template follow the written method

1 × Fills for areas near the center · PLA | template W01

Fill the areas with adjacent strands; join the ends to the frame and the sides to a neighboring strand. Repeat the arrangement in six sectors.

T003 • Stage 3 • Stage 4

1 × Fills for areas near the perimeter · PLA | template follow the written method

1 × Fills for areas near the perimeter · PLA | template W01

Fill the sector's side areas with your selected color. Join each strand to the edges of the area and to the neighboring strand.