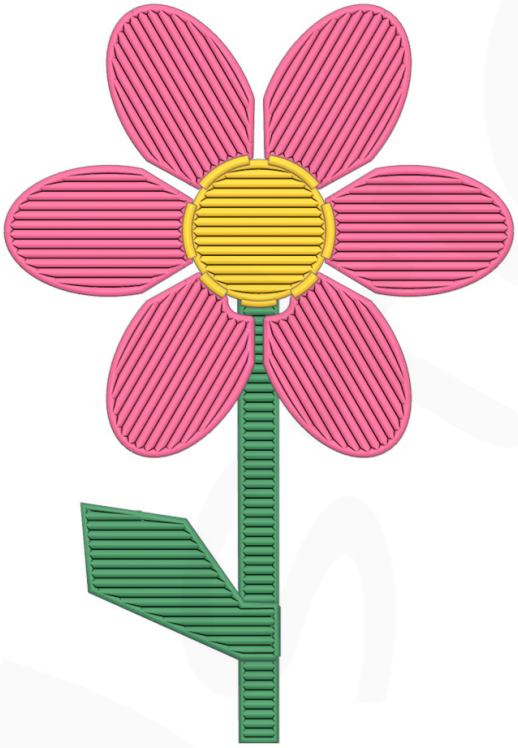
MAKE • DISCOVER • COLLECT

A Flower for Mum

Beginners aged 8+; at home or in a workshop, with adult support as specified in the device instructions. • About 35–55 minutes; work at your own pace, with no lesson time limit.



Make a flat flower with six petals, a stem, a leaf and a centre. Choose PLA colours and arrange them in your own pattern. Once it has cooled, give the flower to Mum or use it in your own composition.

Your outcome

Make a recognisable flat flower using your own choice of PLA colours while keeping the character of the approved test.

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.

Equipment and printouts

☐	PLA-compatible EDUstick pen Settings and adult support as specified in the device instructions.	**1 pc.**
☐	Pen power supply Compatible with the device instructions.	**1 set**
☐	Transparent work mat Approved for use with PLA; place the template under the mat.	**1 pc.**
☐	A4 templates and instructions Print the templates at 100%; check the 20 mm line.	**1 set**
☐	Millimetre ruler For checking the print scale.	**1 pc.**

Filament — amounts include extra

☐	PLA 1.75 mm — green	**0.5 m · ≈ 1.5 g**
☐	PLA 1.75 mm — yellow	**0.2 m · ≈ 0.6 g**
☐	PLA 1.75 mm — pink	**1.2 m · ≈ 3.6 g**

Total filament: 1.9 m · approximately 5.7 g

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

Before you start

Mat and cooling

Use a standard transparent mat for all outlines and supported assembly. Leave the parts to cool, then gently remove them with an adult's help.

1. Print the templates at 100% scale without fitting them to the page. Use a ruler to check the 20 mm reference line.
2. Place the template under a standard transparent mat approved for use with PLA. Prepare a nearby space for the cool parts.
3. Choose colours for the stem and leaf, the centre and the six petals. The illustration uses green, yellow and pink; you can choose your own colours.
4. An adult checks the pen and filament instructions, prepares the power supply and helps with colour changes. Do not touch the nozzle or fresh PLA.

Editorial estimate for a beginner: preparation 5–8 min, making the parts 18–27 min, fitting and joining 8–14 min, final cooling and checking 4–6 min. Cooling of the parts is included in their making time. The time is neither a measurement nor a lesson limit.

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 / 09 • Session 1

Draw the stem

Finished stem

Stem outline

Successive strands

NOW Stem

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

PARTS FOR THIS STAGE

1 × Stem · PLA 1.75 mm | template F1

Trace the template on the transparent mat. Fill the inside with successive adjacent strands of PLA, following the template until they touch the outline and one another. Keep the base intact. Let it cool, remove it with an adult's help and set it aside. Finished cross-section [mm]: 1.2 × 1.2.

Support: Transparent work mat approved for use with PLA; template underneath. Strand direction: Start with a closed outline, then add the fill strands in the order shown by the template paths. Cooling: Leave it on the mat to cool before removing and assembling it.

Tip access: The nozzle is accessible from above; keep fingers away from fresh PLA.

Choose a colour for the stem. Trace template F-L and fill it from top to bottom with adjacent strands of PLA. Let it cool, remove it and set it aside.

Check

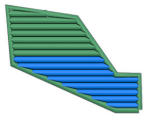
The stem is completely filled and has straight edges.

If it does not work

Fill the gap on the mat; let it cool.

STAGE 02 / 09 • Session 1

Add the leaf



Stem and leaf

Complete leaf outline

Filling in progress

NOW Leaf

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

PARTS FOR THIS STAGE

1 × Leaf · PLA 1.75 mm | template F1

Trace the template on the transparent mat. Fill the inside with successive adjacent strands of PLA, following the template until they touch the outline and one another. Keep the base intact. Let it cool, remove it with an adult's help and set it aside. Finished cross-section [mm]: 1.2 × 1.2.

Support: Transparent work mat approved for use with PLA; template underneath. Strand direction: Start with a closed outline, then add the fill strands in the order shown by the template paths. Cooling: Leave it on the mat to cool before removing and assembling it.

Tip access: The nozzle is accessible from above; keep fingers away from fresh PLA.

Trace F-LI, including its wide base. Fill the outline with successive strands of PLA in your chosen leaf colour. Let it cool, remove it and set it beside the stem.

✓ **Check**

You have two separate parts; the base of the leaf is solid.

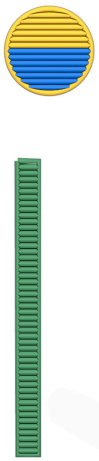
If it does not work

Fill the missing area to match the template and let it cool.

STAGE 03 / 09 • Session 1

Draw the centre

Three finished parts



Centre outline

Partly filled

NOW Centre

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

PARTS FOR THIS STAGE

1 × Centre · PLA 1.75 mm | template F1

Trace the template on the transparent mat. Fill the inside with successive adjacent strands of PLA, following the template until they touch the outline and one another. Keep the base intact. Let it cool, remove it with an adult's help and set it aside. Finished cross-section [mm]: 1.2 × 1.2.

Support: Transparent work mat approved for use with PLA; template underneath. Strand direction: Start with a closed outline, then add the fill strands in the order shown by the template paths. Cooling: Leave it on the mat to cool before removing and assembling it.

Tip access: The nozzle is accessible from above; keep fingers away from fresh PLA.

Choose a colour for the centre. An adult helps you change the filament. Trace and fill F-S with adjacent strands. Let it cool, remove it and set it beside the stem and leaf.

✓ **Check**

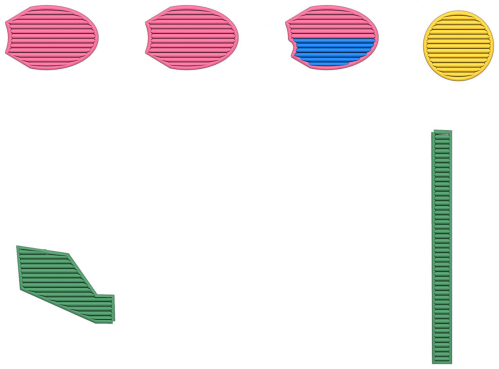
You have three cool parts, each separate from the others.

If it does not work

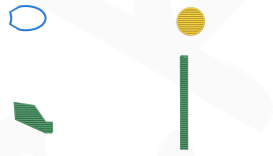
Fill the gap on the mat and let it cool.

STAGE 04 / 09 • Session 1

Make petals 1–3



Stage outcome



Trace the dedicated template • What to repeat: Petal 2: outline; Petal 3: outline

Fill without covering the notch • What to repeat: Petal 2: filling in progress; Petal 3: filling in progress

NOW Petal 1 · Petal 2 · Petal 3

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

PARTS FOR THIS STAGE

1 × Petal 1; 1 × Petal 2 · PLA 1.75 mm | template F1

Trace the template on the transparent mat. Fill the inside with successive adjacent strands of PLA, following the template until they touch the outline and one another. Keep the base intact. Let it cool, remove it with an adult's help and set it aside. Finished cross-section [mm]: 1.2 × 1.2.

Support: Transparent work mat approved for use with PLA; template underneath. Strand direction: Start with a closed outline, then add the fill strands in the order shown by the template paths. Cooling: Leave it on the mat to cool before removing and assembling it.

Tip access: The nozzle is accessible from above; keep fingers away from fresh PLA.

1 × Petal 3 · PLA 1.75 mm | template F1

Trace the dedicated F-P3 template, keeping the notch at the base. Fill the inside with adjacent strands of PLA, following the template; do not fill the notch. Let it cool, remove it with an adult's help and set it aside. Finished cross-section [mm]: 1.2 × 1.2. Support: Transparent work mat approved for use with PLA; template underneath.

Strand direction: Start with a closed outline, then add the fill strands in the order shown by the template paths. Cooling: Leave it on the mat to cool before removing and assembling it. Tip access: The nozzle is accessible from above; keep fingers away from fresh PLA.

Choose the PLA colours. Trace, fill and cool F-P1, F-P2 and the lower F-P3. Leave the notch at the base of F-P3 open.

✓ **Check**

You have three separate, cool petals; the notch in F-P3 remains open.

If it does not work

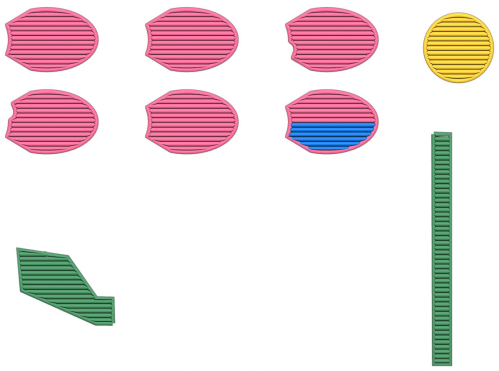
Make the missing petal using its assigned template.

Make petals 1–3 — construction details

Cool the dedicated petal • What to repeat: Petal 2: finished part; Petal 3: finished part

STAGE 05 / 09 • Session 1

Make petals 4–6



Stage outcome

Trace the dedicated template • What to repeat: Petal 5: outline; Petal 6: outline

Fill without covering the notch • What to repeat: Petal 5: filling in progress; Petal 6: filling in progress

NOW Petal 4 · Petal 5 · Petal 6

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

PARTS FOR THIS STAGE

1 × Petal 4 · PLA 1.75 mm | template F1

Trace the dedicated F-P4 template, keeping the notch at the base. Fill the inside with adjacent strands of PLA, following the template; do not fill the notch. Let it cool, remove it with an adult's help and set it aside. Finished cross-section [mm]: 1.2 × 1.2. Support: Transparent work mat approved for use with PLA; template underneath.

Strand direction: Start with a closed outline, then add the fill strands in the order shown by the template paths. Cooling: Leave it on the mat to cool before removing and assembling it. Tip access: The nozzle is accessible from above; keep fingers away from fresh PLA.

1 × Petal 5; 1 × Petal 6 · PLA 1.75 mm | template F1

Trace the template on the transparent mat. Fill the inside with successive adjacent strands of PLA, following the template until they touch the outline and one another. Keep the base intact. Let it cool, remove it with an adult's help and set it aside. Finished cross-section [mm]: 1.2 × 1.2.

Support: Transparent work mat approved for use with PLA; template underneath. Strand direction: Start with a closed outline, then add the fill strands in the order shown by the template paths. Cooling: Leave it on the mat to cool before removing and assembling it.

Tip access: The nozzle is accessible from above; keep fingers away from fresh PLA.

Trace, fill and cool F-P4, F-P5 and F-P6. The lower F-P4 has its own notch; do not fill it. Keep the cool petals separate.

Check

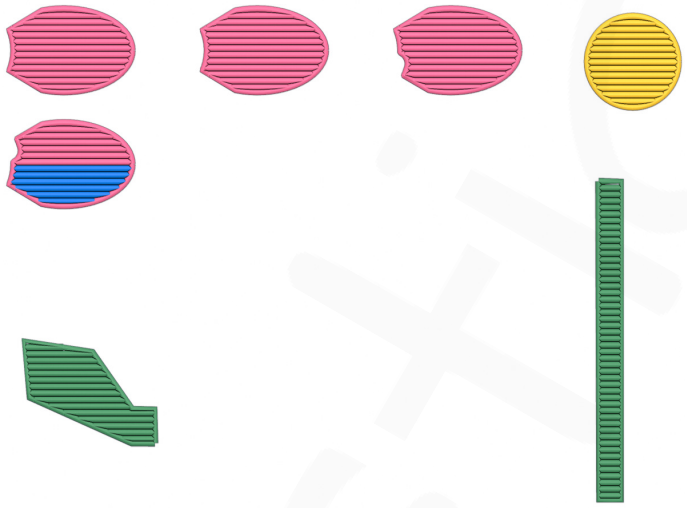
You have six separate, cool petals; the notches in F-P3 and F-P4 are open. You can take a break.

If it does not work

Make the missing petal using its assigned template.

Make petals 4–6 — construction details

Cool the dedicated petal • What to repeat: Petal 5: finished part; Petal 6: finished part



STAGE 06 / 09 • Session 1

Join the leaf to the stem

Stage outcome

NOW Stem · Leaf · Leaf overlap joint

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

PARTS FOR THIS STAGE

1 × Leaf overlap joint · PLA 1.75 mm | template follow the written method

Once the rectangular end of the leaf is positioned on the stem, an adult applies fresh green PLA along their shared right-hand edge for 6 mm. A 4 × 6 mm overlap supports the entire joint. Finished cross-section [mm]: 1.2 × 1.2. Support: Both fitted, cool parts lie on the mat; the join is supported by their shared edge.

Strand direction: One continuous strand along the entire retained contact edge, touching both parts. Cooling: After each join, keep the connection still until it cools. Tip access: An adult guides the nozzle from above; do not squeeze the hot joint with your fingers.

Place the wide end of the leaf on the stem: make a 4 × 6 mm overlap, with its lower edge 10 mm above the end of the stem. An adult applies PLA along the right edge of the overlap, touching both parts. Let it cool.

Check

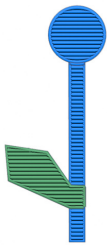
The entire base rests on the stem and stays attached after cooling.

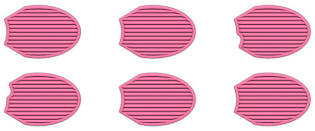
If it does not work

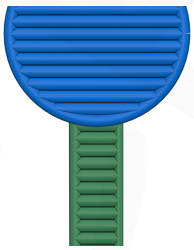
Fit the cool parts together. An adult repairs any loose section along the contact edge; let it cool.

STAGE 07 / 09 • Session 1

Add the centre







Centre on the overlap

Supported joint about 4 mm long

Stage outcome

NOW Stem · Centre · Full-width stem joint

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

PARTS FOR THIS STAGE

1 × Full-width stem joint · PLA 1.75 mm | template follow the written method

Once the centre is positioned over the 3 mm stem overlap, an adult adds fresh yellow PLA along the lower edge of the centre across the full width of the stem (about 4 mm). The strand runs over the existing parts, with no gap to bridge. Finished cross-section [mm]: 1.2 × 1.2.

Support: Both fitted, cool parts lie on the mat; the join is supported by their shared edge. Strand direction: One continuous strand along the entire retained contact edge, touching both parts. Cooling: After each join, keep the connection still until it cools.

Tip access: An adult guides the nozzle from above; do not squeeze the hot joint with your fingers.

Place the centre on the top end of the stem, tucking about 3 mm of the stem underneath it. An adult applies fresh PLA along the lower edge of the centre, across the width of the stem. The strand touches both parts. Let it cool.

✓ **Check**

The centre is joined to the stem; the six petals are still separate.

If it does not work

Move the cool parts together. An adult fills the gap along the contact edge; let it cool.

STAGE 08 / 09 • Session 1

Join the first petal

Fitting the first petal

First joint

NOW Petal 1 · Petal 1 joining arc

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

PARTS FOR THIS STAGE

1 × Petal 1 joining arc · PLA 1.75 mm | template follow the written method

Once the concave edge of the cool petal is fitted, an adult applies fresh yellow PLA along its contact with the centre in one gentle arc about 6.6 mm long. The entire arc touches both edges. Do not add crosswise strips or dots. Finished cross-section [mm]: 1.2 × 1.2.

Support: Both fitted, cool parts lie on the mat; the join is supported by their shared edge. Strand direction: One continuous strand along the entire retained contact edge, touching both parts. Cooling: After each join, keep the connection still until it cools.

Tip access: An adult guides the nozzle from above; do not squeeze the hot joint with your fingers.

Place the cool petal with its concave base against the centre. An adult adds one continuous strand of PLA along the entire 6–7 mm contact edge, touching both edges. The parts lie on the mat; leave about 1 mm of clearance from the neighbouring petals. Let it cool.

✓ **Check**

The first petal stays attached to the centre along the entire arc.

If it does not work

Improve the fit of the cool parts, then repair the joint; let it cool.

STAGE 09 / 09 • Session 1

Finish your flower

Stage outcome

Position the petal with clearance • What to repeat: Fit petal 2; Fit petal 3; Fit petal 4; Fit petal 5; Fit petal 6

Longer arc • What to repeat: Join petal 2; Join petal 5; Join petal 6

NOW Petal 2 · Petal 2 joining arc · Petal 3 · Petal 3 joining arc · Petal 4 · Petal 4 joining arc · Petal 5 · Petal 5 joining arc · Petal 6 · Petal 6 joining arc

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

PARTS FOR THIS STAGE

1 × Petal 2 joining arc; 1 × Petal 5 joining arc; 1 × Petal 6 joining arc · PLA 1.75 mm | template follow the written method

Once the concave edge of the cool petal is fitted, an adult applies fresh yellow PLA along its contact with the centre in one gentle arc about 6.6 mm long. The entire arc touches both edges. Do not add crosswise strips or dots. Finished cross-section [mm]: 1.2 × 1.2.

Support: Both fitted, cool parts lie on the mat; the join is supported by their shared edge. Strand direction: One continuous strand along the entire retained contact edge, touching both parts. Cooling: After each join, keep the connection still until it cools.

Tip access: An adult guides the nozzle from above; do not squeeze the hot joint with your fingers.

1 × Petal 3 joining arc; 1 × Petal 4 joining arc · PLA 1.75 mm | template follow the written method

An adult applies fresh PLA along a shortened 3.6 mm arc between the centre and the lower petal, on the side away from the stem. The strand touches both edges and ends before the notch. Let it cool. Finished cross-section [mm]: 1.2 × 1.2. Support: Both fitted, cool parts lie on the mat; the join is supported by their shared edge.

Strand direction: One continuous 3.6 mm strand along the marked arc, away from the stem joint, touching both the centre and the petal. Cooling: After each join, keep the connection still until it cools. Tip access: An adult guides the nozzle from above; do not squeeze the hot joint with your fingers.

Attach F-P2–F-P6 in order. At F-P3/F-P4, leave about 1 mm of clearance from the stem joint and end the 3.6 mm arcs before the notches. The other arcs are 6–7 mm long. Cool each joint.

✓ **Check**

The six petals, leaf and stem remain connected; the clearances stay open.

If it does not work

Repair the loose contact with fresh PLA on the mat and let it cool.

Finish your flower — construction details

Lower 3.6 mm arc • What to repeat: Join petal 4

Finished — check the outcome

Check
You can recognise a flat flower with six petals, a centre, a leaf and a stem.

Check
Each part has a filled outline, and the bases retain the shape of the template.

Check
Once cooled, all the parts stay together when you gently lift the flower by its centre.

Check
You choose the colours and how to use the finished flower.

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.