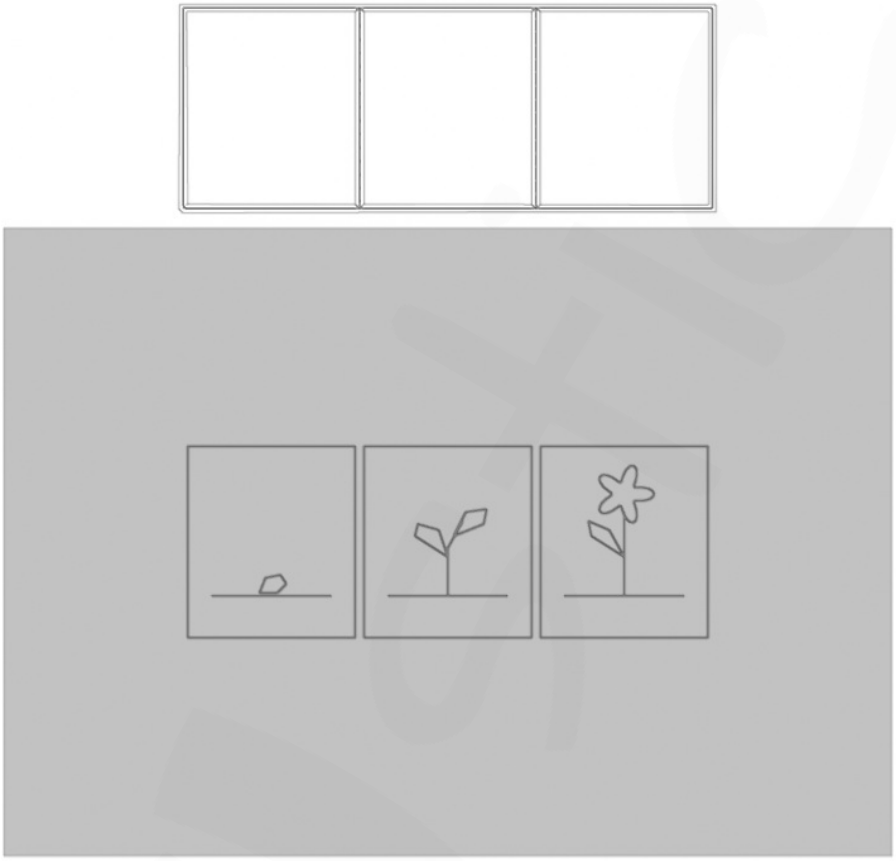
MAKE • DISCOVER • COLLECT

Frame for your own comic

Beginners from about age 10, teenagers and adults • 20–35 min with the 3D pen; 40–65 min total (estimate)



Build a flat frame, trace three panels, and draw your own short story.

Your outcome

Build a tool for telling a short story with pictures.

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	
☐ 3D pen for PLA	**1**
Materials	
☐ PLA 1.75 mm	**As specified in the materials list**
Support	
☐ Transparent flexible mat, min. 200 × 100 mm	**1**
Paper	
☐ A4 template printout, 100%	**1**
☐ Clean sheet of A4 paper	**1**
Tools	
☐ Sharpened pencil	**1**
☐ Ruler	**1**
Filament — amounts include extra	
☐ PLA 1.75 mm — colour shown in the illustration	**2.0 m · ≈ 6.0 g**

Total filament: 2.0 m · approximately 6.0 g

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

Before you start

Device operation

Permitted age, supervision, preparation, PLA settings, and safe operation are specified in the instructions for the specific device.

1. Print template W01 on A4 at 100% scale / actual size, without fitting it to the page. Use a ruler to check the 20 mm reference line.
2. Place the template on a flat, stable table and put the transparent mat over it. The template must remain visible, and the entire perimeter and both crossbars must be supported. Prepare a clean sheet of A4 paper and a sharpened pencil.
3. Choose PLA colours for your frame. Prepare the pen according to the device instructions. Do not touch the hot nozzle or place it on paper.
4. Think up your own short story: a beginning, an event and an ending.

Editorial estimates without physical measurement; cooling is based on the actual condition of the PLA and the device instructions. The 65 min session time is metadata, not a work 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 / 05 • Session 1

Make a closed perimeter

Closed perimeter — without the crossbars yet.

NOW Template printout · Flexible mat · Perimeter (full-frame template)

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

PARTS FOR THIS STAGE

1 × Perimeter (full-frame template) · PLA | template follow the written method

Two touching passes side by side, along the template lines. A strand 3 mm wide and about 1.6 mm thick; no layering. Close both loops at the lower-left edge.

Trace the outer perimeter of the template in PLA on the mat. Make two touching passes side by side: the strip should be 3 mm wide and approximately 1.6 mm thick. Fuse the end to the beginning at the lower-left edge. Do not add another layer; leave the perimeter flat on the mat.

✓ **Check**

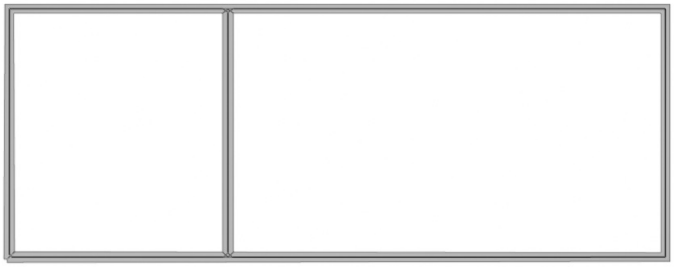
The perimeter is continuous, flat and closed; the inner edge remains even.

If it does not work

Fill the gap on the supported frame using the same technique and PLA; do not narrow the openings for the future panels.

STAGE 02 / 05 • Session 1

Add the first crossbar



The first crossbar connects the lower and upper rails.

NOW Perimeter (full-frame template) · Left crossbar

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

PARTS FOR THIS STAGE

1 × Left crossbar · PLA | template follow the written method

Two passes side by side, as for the perimeter, from the bottom rail to the top rail. Fuse the ends within the rails without filling the openings.

Along the left line of the template, make the first crossbar: two touching passes side by side, from the lower rail to the upper rail. Fuse both ends to the perimeter in the marked areas. Leave the frame flat on the mat.

✓ **Check**

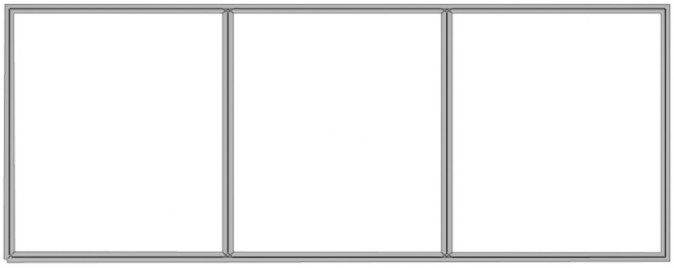
The crossbar connects both rails and is not a loose stick; both corners at each end remain accessible to the pencil.

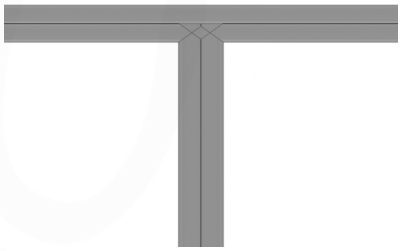
If it does not work

Repair the missing joint on the mat. Add PLA in the joint area without filling the corners.

STAGE 03 / 05 • Session 1

Add the second crossbar





Fuse the end to the rail; do not fill the corners.

Second crossbar — three equal openings are formed.

NOW Perimeter (full-frame template) · Left crossbar · Right crossbar

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

PARTS FOR THIS STAGE

1 × Right crossbar · PLA | template follow the written method

Two passes side by side, as for the perimeter, from the bottom rail to the top rail. Fuse the ends within the rails without filling the openings.

Along the right line of the template, make the second crossbar in the same way as the first. Fuse both ends to the rails in the marked areas without filling the corners. Wait until the work has cooled completely.

✓ **Check**

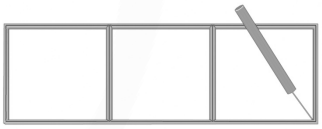
You can see three equal openings and four complete joints between the crossbars and the perimeter.

If it does not work

If a joint is not continuous, repair it on the support as before. Do not move or bend the hardened crossbar; remake any incorrect geometry according to the template.

STAGE 04 / 05 • Session 1

Trace three panels



Guide the pencil along the edge of each opening.

After the frame is set aside, three complete panels remain.

NOW Pencil while tracing · Outline and your own story · Perimeter (full-frame template) · Left crossbar · Right crossbar

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

Place the completely cooled frame flat on a clean sheet of A4 paper. Hold it without covering the openings. Guide the pencil along all the inner edges of the three openings, reaching all 12 corners. Do not move the frame while tracing. Lift the frame and set it beside the sheet. Check the three closed outlines.

✓ **Check**

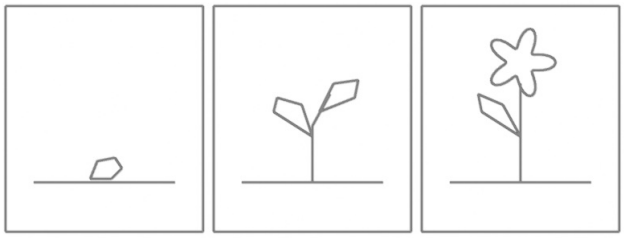
There are three complete panels on the A4 sheet: each has four sides and four corners.

If it does not work

Complete any omitted line with the frame realigned. If the pencil cannot reach a corner, correct the stencil according to the template and repeat the test.

STAGE 05 / 05 • Session 1

Draw your story



Example of the first comic strip. You choose your own story.

NOW Outline and your own story

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

Draw your own story: the beginning in the first panel, an event in the second and the ending in the third. Choose a character and a theme; simple symbols are enough. The plant in the illustration is only an example. Read the story from left to right.

Keep the frame for your next comic strip, tidy the workspace and switch off the pen according to its instructions.

✓ **Check**

The three pictures form a short story; the participant can identify what happened at the beginning, then what happened next and what happened at the end. The frame can be reused.

If it does not work

If the sequence is unclear, add a detail that connects the panels or show the change more clearly; there is no need to copy the example story.

Finished — check the outcome

Check
The finished model is one flat, connected frame with the approved 180 × 70 mm external outline, two crossbars, and three equal openings.

Check
The entire frame fits on A4 and remains stable while tracing.

Check
The pencil reaches all 12 inside corners; the frame can be used to make three complete, closed outlines.

Check
The crossbars are joined to the perimeter at both ends; cooling and removal do not require bending rigid PLA.

Check
Your own picture story is created in three panels; the frame is kept for the next use.

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.