

MAKE • DISCOVER • COLLECT

Cat from a Single Outline

Beginner, under adult supervision; age and degree of independent use must follow the instructions for the specific PLA pen. • Estimated: 22–38 min in total; 12–24 min using the pen.



Make a flat cat measuring 8 × 6 cm. Keep the ears rounded and the tail curling back to the body. Fill the head with strands, then choose your own colors and stripe rhythm for the body. Use the finished cat as a decoration.



Your outcome

Create a recognizable cat silhouette without excessive detail.

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

- | | |
|---|---------------------|
| ☐ 3D pen for PLA with its own stand | 1 per person |
| ☐ Transparent mat from the kit, suitable for PLA | 1 |

1:1 printout

- | | |
|---|----------|
| ☐ W01 printout, 100% | 1 |
|---|----------|

Equipment

- | | |
|--------------------------------|----------|
| ☐ Ruler | 1 |
|--------------------------------|----------|

Filament — amounts include extra

- | | |
|--|------------------------|
| ☐ PLA 1.75 mm — outline and supporting lines - brick red, for example | 0.5 m · ≈ 1.5 g |
| ☐ PLA 1.75 mm — Head fill - gold, for example - sample color, your choice | 0.2 m · ≈ 0.6 g |
| ☐ PLA 1.75 mm — Stripes in the large body area - turquoise, for example - sample color, your choice | 0.3 m · ≈ 0.9 g |
| ☐ PLA 1.75 mm — Stripes in the small body area - purple, for example - sample color, your choice | 0.1 m · ≈ 0.3 g |

Total filament: 1.1 m · approximately 3.3 g

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

Before you start

- 1 Print W01 at 100% scale, without fitting it to the page. Use a ruler to check the 20 mm segment.
- 2 Place the transparent mat from the kit, suitable for PLA, on a stable worktop. Slide W01 underneath it.
- 3 With an adult's help, prepare the pen and PLA according to the device instructions. Choose colors for the outline, lines, and fills.

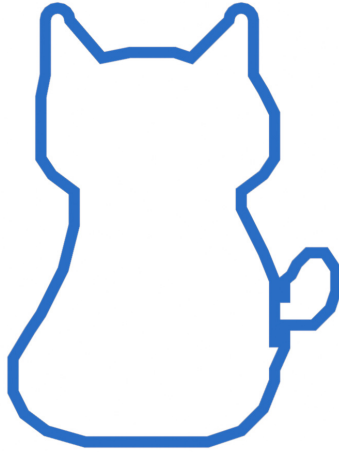


How to read the instructions

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

Make the cat outline



Start the cat outline

Close the outline and curl the tail back

NOW Cat - outline and supporting lines

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

PARTS FOR THIS STAGE

1 × Cat - outline and supporting lines · PLA - colors of your choice | template W01

Follow the W01 template with the outline. Keep the ears rounded; close the body and connect the returning tail to the side. Finished cross-section [mm]: 2 × 1. Support: Draw the outline flat over the template on the mat.

Strand direction: From START, go up the right side, around the ears, and down the left side to the bottom; close the body, then make the tail return to the side. Tip access: From above, without resting your hand on fresh PLA.

From START, run one strand up the right side, around the rounded ears, and down the left side, following the W01 template. Finish the bottom of the body. At START, join the fresh strand beside the earlier strand along the marked section. Continue along the tail and connect its return to the side of the cat.



Check

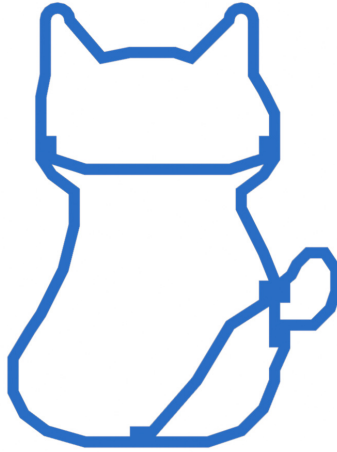
The body outline is closed, and the tail is connected at its base and return.

If it does not work

If you see a gap, ask an adult to help you connect its edges with a short strand of PLA on the mat.

STAGE 02 / 04 • Session 1

Connect the inside with lines A and B



Add line A

Add line B

NOW Cat - outline and supporting lines

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

Follow the template to draw line A below the head. Join both ends to the sides of the outline. Follow the template to draw line B from the bottom of the body to the right side. Join both ends to the outline.



Check

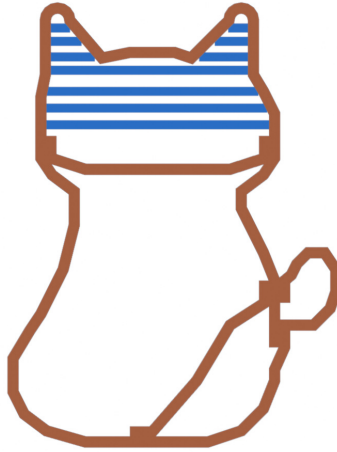
Lines A and B divide the inside of the cat into areas and stay attached to the outline.

If it does not work

If you see a gap, ask an adult to help you connect its edges with a short strand of PLA on the mat.

STAGE 03 / 04 • Session 1

Fill the head with strands



Fill the head with strands

NOW Head fill - gold, for example

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

PARTS FOR THIS STAGE

1 × Head fill - gold, for example · PLA - colors of your choice | template follow the written method

Run strands inside the area from one edge to the other, joining both ends to the existing PLA. Do not add loose dots or strands outside the outline. Finished cross-section [mm]: 1.6 × 1. Support: Flat on the mat, inside the existing area.

Choose a color for the head. Run closely spaced strands from one edge of the area above line A to the other. Join both ends of each strand to the existing PLA. The strands will be shorter in the ears; keep their shape clearly visible.



Check

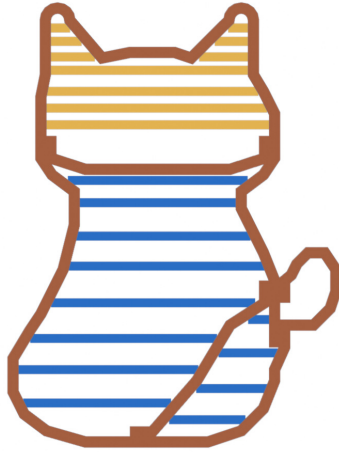
The head has a visible fill, and every strand connects to the edges of the area.

If it does not work

If you see a gap, ask an adult to help you connect its edges with a short strand of PLA on the mat.

STAGE 04 / 04 • Session 1

Give the cat your own pattern



Give the cat your own pattern

NOW Stripes in the large body area - turquoise, for example · Stripes in the small body area - purple, for example
Blue / dark emphasis: the part used in this action. Arrows: visual guides. Illustration not to scale.

PARTS FOR THIS STAGE

1 × Stripes in the large body area - turquoise, for example; 1 × Stripes in the small body area - purple, for example · PLA - colors of your choice | template follow the written method

Run strands inside the area from one edge to the other, joining both ends to the existing PLA. Do not add loose dots or strands outside the outline. Finished cross-section [mm]: 1.6 × 1. Support: Flat on the mat, inside the existing area.

In the two remaining areas, choose PLA colors and a stripe rhythm: denser or more widely spaced. Run each stripe from one edge of the area to the other and join both ends. Keep the outline visible and the center of the tail empty. Wait until the piece is completely cool. Display the cat as a flat decoration.

Point out the ears, body, and curled-back tail—what makes it recognizable as a cat?

✓ Check

Your own pattern reaches the edges of the areas, and the silhouette still resembles a seated cat.

If it does not work

If you see a gap, ask an adult to help you connect its edges with a short strand of PLA on the mat.

Finished — check the outcome



Check

You can recognize a seated cat measuring approximately 80 × 60 mm.



Check

The tail connects to the body at its base and return, and lines A and B stay attached to the outline.



Check

The filling strands reach the edges of the areas. Your own pattern keeps the ears and tail clearly visible.

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.