



Lucy Ball



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Summary

Soccer ball with inside compartment from individual segments and custom magnet option in between any parts or portions



3.38 hrs



1 pcs



0.15 mm



0.40 mm



PLA



27 g



Prusa MK4

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Lucy Ball

Soccer ball to be build from separate segments.

Can be used as “box”, stash, hidden compartment with optional magnet locking.

Size:

- outside ball **120mm** diameter
- inside free area sphere **100mm** diameter
- part walls **10mm**

Usual proven print settings will work, no extra setup needs for printing this model. Best results on 0,4 nozzle / 0,15 layer, but also tested with 0,6 nozzle with layers up to 0,3. Only butterfly connectors are easier to push in while having those printed in thinner layers.

You will need **5x5x2 magnets** when using 100% size of the model.

Watch for description of files here on printables.

Each segment should be printed standing on side, with optional mouse ears going inside direction of future ball (invisible then, if removing mouse ear leaves some mark).

Brim toward the round outside face is not recommended as it ruins final look.

Pre-supported parts are prepared in 3mf files. Use of organic supports is highly recommended, on tips of inside-lock portions. Paint-supports are best option as there is not much to support.

Without support is print possible to come out nicely, but lock gap is later not so firm and you might have troubles to insert butterfly connectors/magnets later on.

Check your seam setting (and possibly prevent seams on outside face):

some fillaments can make seams look bad on visible (smooth) outside part.

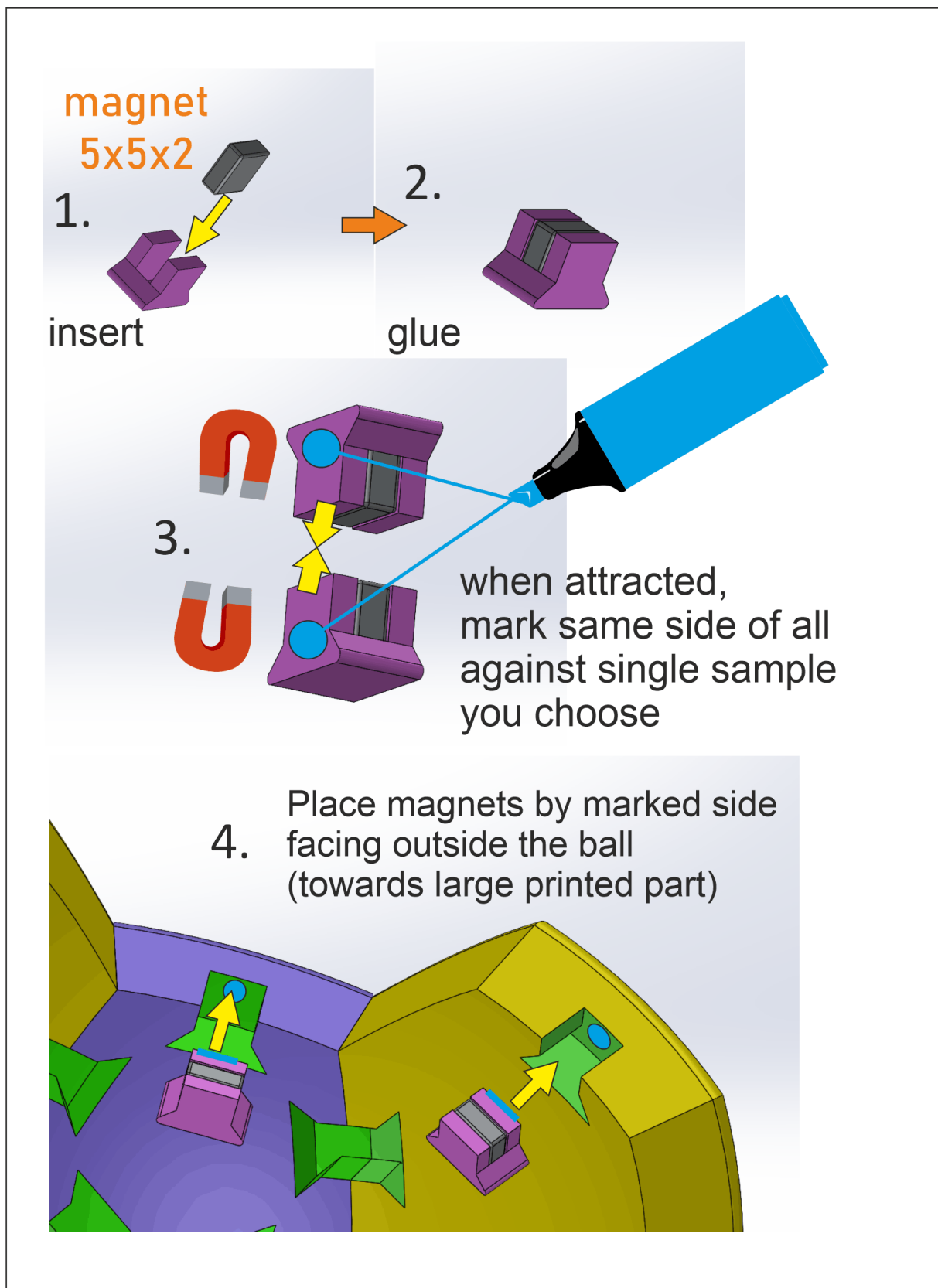
Butterfly connectors should fit well with little force to push in. Then it can hold whole thing even without glue, depending on your tolerances.

Always assemble in following order:

1. align just main(hexa or penta) part to others.
2. from inside side of the ball push butterfly connector IN to both connecting parts at once.

If you need to remove butterfly connector use nose pliers and pull just butterfly towards center of the ball, do not pull hexa or penta parts from each other.

Any combination of ball-ports for magnet-opening is possible. When creating magnet mounts mark correct orientation by following:



Glue only when you are sure that polarity of your part to its counterpart is correct.

From my experience two magnets on each part is enough, but it depends how strong your magnets are. If you use three or more, it may be too difficult to open ball afterwards.

If you are planning to split ball to two equal parts, and you do not want to use angled sides of hexa parts (and you dont want to have empty slots there) use for those hexa parts “**hexa for one mag 3cons.3mf**” file, it does have only single slot for magnets and regular three for rest of half-ball (ass seen on render in yellow colors).

If you are planning to split ball equally and you do want to use less magnets then everywhere in hexa parts, for those parts you are planning to not use magnet at all, you can use “**hexa nomag 3connectors.STL**” which has no slots on half of that particular hexa part.

If you don't want to leave your creation loosely roll everywhere, there is hanger-modified parts available or flat-modified parts for straight face on planned future bottom part.

Model files



eachone.3mf

☐ every single part placed on printbed



eachone-more-stability.3mf

☐ every part placed and more supported by manual "mouse ears" etc



penta.stl

☐ plain penta part



hexa.stl

☐ plain hexa part



butterfly.stl

☐ regular printed connector for connection of two main printed segments



half-butterfly-mag.stl

☐ half of butterfly connector for magnet to be glued in



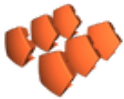
hexa-formag.stl

☐ hexa with single slot for magnet to be placed, but no other slots (clean) on sides,



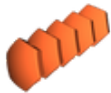
hexa-nomag-3connectors.stl

☐ hexa with no upper connector slots, when not using magnets on this parts at all



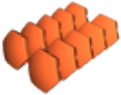
penta-more-stability-supported.3mf

☐ supported penta parts for half of sphere mouse ears 1st layer



hexa-for-one-mag-3cons.3mf

☐ hexa part for use with magnet on top, no connector slot on sides



hexa-more-stability-supported.3mf

☐ set of hexa parts for half of sphere supported mouse ears



penta-hanger.3mf

☐ penta part with hanger ring outside



hexa-hanger.stl

☐ hexa part with hanger ring outside



hexa-hanger-more-stability-supported.3mf

☐ hexa part with hanger ring outside, increased s



hexa-flat.stl

☐ outside flat hexa part



penta-flat.stl

☐ outside flat penta part

Print files



eachone-more-stability_04n_015mm_pla_mk4_3h23m.bgcode

🌀 PLA 🌀 0.40 mm ≡ 0.15 mm ⌚ 3.38 hrs ⚖️ 27 g 🖨️ Prusa MK4

☐ sample print of each part

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