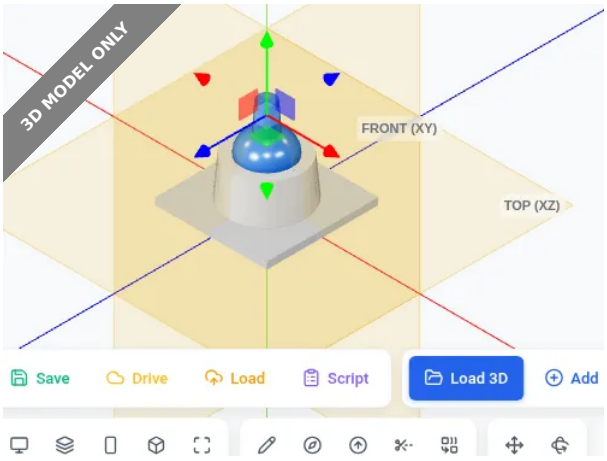


Customizable Ellipsoid Joint Model - Working Teaching Model

TrueGeometry

VIEW IN BROWSER

updated 21. 10. 2026 | published 21. 10. 2026

Summary

Working ellipsoid joint (knuckle-type): oval ball rocks in an oval cup. Parametric teaching model.

Learning > Chemistry & Biology

Tags: parametric education teaching stem joint anatomy biology knuckle ellipsoid

WORKING SYNOVIAL JOINT MODEL - ELLIPSOID (like the knuckle of a finger)

Customizable parametric teaching model - sizes and clearances are sliders in TrueGeometry Playground (free, in the browser).

An oval ball rocks and spins in a matching oval cup - like your knuckle, it rocks back and forth but cannot spin freely like a ball joint. Lift the ball out by its stem to see both surfaces.

This is one of six models in the Synovial Joint Teaching Set (hinge, ball-and-socket, pivot, saddle, plane, ellipsoid) - collect the full set for the classroom.

SIMPLIFIED TEACHING MODEL - not anatomically exact. For education and demonstration only. Not a medical device, and no medical claims are made.

WHAT YOU GET

- Full assembly STL (all parts in place, print-in-place)- The complete TrueGeometry Playground recipe (customize sizes, $GAP clearance, $SQUASH oval factor)
- How-to-run-scripts guide (PDF)

PRINT NOTES

- No supports needed. The ball prints in place inside the cup with $GAP clearance (default 0.4 mm) - tune $GAP for your printer; increase it if the ball fuses.
- The bowl is a single boolean subtract (noted in the recipe); other overlaps are intentional and the slicer merges them.
- PLA works well.

HONEST STATUS

Designed in TrueGeometry Playground, not yet test-printed by us - please post a Make if you print it. AI-assisted design.

The full recipe (every command, ready to paste) is attached in Other files, and the included guide PDF shows how to run and customize it step by step.

Customize it in TrueGeometry Playground: https://www.truegeometry.com/CoreWebGLTG/KBEAgentHTTP.html

License: CC BY-NC 4.0 - free for students and teachers to print and share. Commercial use requires TrueGeometry's consent.

Read the full build + customization guide: https://blog.truegeometry.com/0_0_0_0/blogs/post-68a70c6d.html

Model files



1-joint-ellipsoid.stl

Other files



3-truegeometry-how-to-run-scripts.pdf

License

This work is licensed under a
Creative Commons (4.0 International License)

Attribution-NonCommercial

✖ | Sharing without ATTRIBUTION
✔ | Remix Culture allowed
✖ | Commercial Use
✖ | Free Cultural Works
✖ | Meets Open Definition