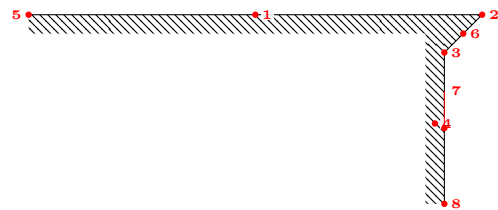


Platform: floor, transition, and wall

```
platform-right (node)
Keys: defaults
minimum width      5cm
minimum height     2cm
strip width        0.25cm
wall angle         -90 degrees
wall inset         0cm
wall drop          0cm
pulley edge        off; preset uses 0.5cm inset and drop
Size aliases: platform width = minimum width; platform depth = minimum height.
Anchors: center, north, south, east, west, north east, north west, south east, south west, surface, pulley-center, wall-root, floor-center, wall-center, text
Families: bottom-0..100, right-0..100, surface-0..100, left-0..100, transition-0..100, wall-surface-0..100, wall-back-0..100, wall-base-0..100, wall-tip-0..100
Also: draw, fill, line width, color, opacity, rotate, scale, anchor, minimum width, minimum height, inner sep, outer sep.
Defaults hook: every platform.
surface runs left to right across the floor; bottom, left, and right cover its other edges. wall-surface and wall-back run from root to tip; wall-base and wall-tip span the end caps. transition runs from pulley-center to wall-root. Upward walls require zero inset and drop. Use 50 for any edge midpoint.
Use the manual for geometry rules and collision-safe aliases.
```



Anchors			
#	Name	#	Name
1	surface	2	pulley-center
3	wall-root	4	wall-center
5	surface-0	1	surface-50
2	surface-100	2	transition-0
6	transition-50	3	transition-100
3	wall-surface-0	7	wall-surface-50
8	wall-surface-100		

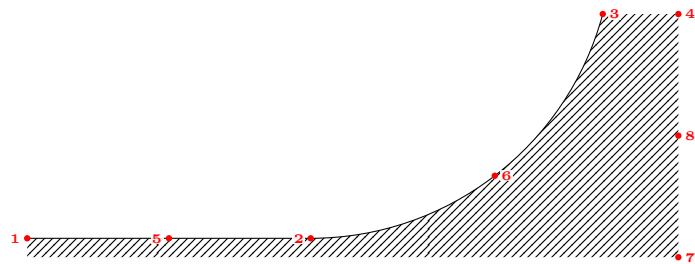
Wedge: usable incline and pulley-edge transition

wedge (node)
Keys: defaults
minimum width4cm
wedge heightderived
wedge angle30 degrees
wedge right angle atbr
wedge top inset0cm
wedge top drop0cm
pulley edgeoff; preset uses 0.5cm inset and 1cm drop
surface guide length0.5cm
Size aliases: wedge width = minimum width.
Anchors: surface-start, surface-end, center, north, south, east, west, north east, north west, south east, south west, bl, br, top, pulley-center, wall-root, transition-mid, base-mid, right-mid, slope-mid, slope-right-mid, centroid, mid, text
Families: base-0..100, right-0..100, slope-0..100, transition-0..100, surface-0..100, tangent-before-0..100, tangent-after-0..100, normal-0..100, right-surface-0..100, right-tangent-before-0..100, right-tangent-after-0..100, right-normal-0..100
Also: draw, fill, line width, color, opacity, rotate, scale, anchor, minimum width, minimum height, inner sep, outer sep.
Defaults hook: every wedge.
base, right, and slope follow the outline counterclockwise from bl. surface runs left to right on the primary usable incline; in top mode right-surface selects the second incline. right-mid equals right-50; slope-mid equals surface-50. A pulley edge is supported in br and bl modes, and its centroid follows the filled four-point body. Directions and normals are local to the node.
Use the manual for geometry rules and collision-safe aliases.

Anchors			
#	Name	#	Name
1	bl	2	br
3	top	3	pulley-center
4	wall-root	5	centroid
1	surface-0	6	surface-50
3	surface-100	3	transition-0
7	transition-50	4	transition-100

Curved ramp: floor, arc, and back

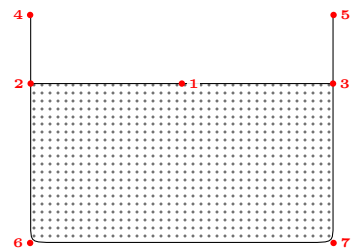
```
curved-ramp (node)
Keys: defaults
curved ramp floor length      3.75cm
curved ramp radius           4cm
curved ramp angle            90
curved ramp back extension    1cm
ramp depth                   0.25cm
ramp direction                right
ramp guide length             0.5cm
Anchors: center, surface-start, surface-mid, surface-end, curve-center, curve-start,
curve-mid, curve-end, floor-start, floor-mid, floor-end, base-start, base-end, back-top,
back-bottom, text
Families: floor-0..100, start-0..100, base-0..100, back-0..100, top-0..100,
surface-0..100, curve-0..100, tangent-before-0..100, tangent-after-0..100,
normal-0..100, curve-tangent-before-0..100, curve-tangent-after-0..100,
curve-normal-0..100; legacy .0..100 shorthand also available
Also: draw, fill, line width, color, opacity, rotate, scale, anchor, minimum width,
minimum height, inner sep, outer sep.
Defaults hook: every curved-ramp.
surface follows floor plus arc by distance; curve follows the arc only. floor, start,
base, back, and top cover the remaining boundary.
Use the manual for geometry rules and collision-safe aliases.
```



Anchors			
#	Name	#	Name
1	surface-start	2	curve-start
3	curve-end	4	back-top
1	floor-0	5	floor-50
2	floor-100	2	curve-0
6	curve-50	3	curve-100
7	back-0	8	back-50
4	back-100		

Fluid tank: named attachment points

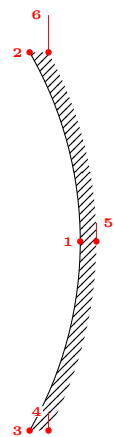
```
fluid tank (node)
Keys: defaults
fluid width      3cm
fluid height     3cm
fluid left level .7
fluid right level .7
Anchors: center, north, south, east, west, north east, north west, south east, south
west, left-surface, right-surface, surface, text, base, base east, base west, mid, mid
east, mid west
Families: surface-0..100, bottom-0..100, right-0..100, left-0..100, bottom-left-0..100,
bottom-right-0..100
Also: draw, fill, line width, color, opacity, rotate, scale, anchor, minimum width,
minimum height, inner sep, outer sep.
Defaults hook: every fluid tank.
surface runs left to right. bottom, right, left and the two rounded bottom corners follow
the drawn outline counterclockwise.
Use the manual for geometry rules and collision-safe aliases.
```



Anchors	
# Name	# Name
1 surface	2 left-surface
3 right-surface	4 north west
5 north east	6 south west
7 south east	

Mirror: reflecting and rear surfaces

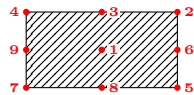
```
concave-mirror (node)
Keys: defaults
mirror radius      5cm
mirror thickness    0.25cm
mirror aperture angle 30 degrees
Anchors: center, north, south, east, west, north east, north west, south east, south
west, vertex, arc-mid, surface-mid, front-mid, back-mid, front-top, front-bottom,
surface-top, surface-bottom, back-top, back-bottom, top, bottom, text
Families: surface-0..100, front-0..100, back-0..100, top-0..100, bottom-0..100; legacy
.0..100 shorthand also available
Also: draw, fill, line width, color, opacity, rotate, scale, anchor, minimum width,
minimum height, inner sep, outer sep.
Defaults hook: every concave-mirror.
Use the manual for geometry rules and collision-safe aliases.
```



Anchors			
#	Name	#	Name
1	vertex	2	surface-top
3	surface-bottom	3	surface-0
1	surface-50	2	surface-100
3	front-0	1	front-50
2	front-100	4	back-0
5	back-50	6	back-100

Cartesian element: every boundary

```
rectangular element (node)
Keys: defaults
element width      8mm
element height     6mm
element width label dx
element height label dy
show dimensions    off
Anchors: center, text, centroid, north, south, east, west, north east, north west, south
east, south west, top-left, top-right, bottom-left, bottom-right
Families: bottom-0..100, right-0..100, top-0..100, left-0..100
Also: draw, fill, line width, color, opacity, rotate, scale, anchor, minimum width,
minimum height, inner sep, outer sep.
Defaults hook: every rectangular element.
A Cartesian differential area with independent width and height, complete boundary
anchors, and optional dimension labels.
Use the manual for geometry rules and collision-safe aliases.
```



Anchors			
#	Name	#	Name
1	center	1	centroid
2	top-0	3	top-50
4	top-100	5	right-0
6	right-50	2	right-100
7	bottom-0	8	bottom-50
5	bottom-100	4	left-0
9	left-50	7	left-100

Paths and pics use reference cards

spring (node and path)
Keys: defaults
minimum width 3cm (node)
minimum height 0pt (node)
pre length 5pt
post length 5pt
amplitude 4.5pt
segment length 4.5pt
aspect 0.5
Size aliases: spring length = minimum width.
Anchors: center, start, end, coil-start, coil-end, north, south, east, west, north east, south west, north west, south east, text
Families: axis-0..100
Also: draw, fill, line width, color, opacity, rotate, scale, anchor, minimum width, minimum height, inner sep, outer sep.
Defaults hook: every spring.
Use draw[spring] (A)--(B) for a two-point connection, or node[spring] (S) for a positioned coil. Node length defaults to 3cm; spring length and minimum width set its length. start/end are exact axis attachments, coil-start/coil-end delimit the leads, and axis-0..100 samples the straight axis, not the coil wire. show anchors/show keys apply to nodes; physicshelpspring describes both forms. Lead lengths may be zero; their sum must be smaller than the node length. amplitude and segment length must be positive.
Use the manual for geometry rules and collision-safe aliases.

fluid tank diagram (pic)
Keys: defaults
fluid width 3cm
fluid height 3cm
fluid left level .7
fluid right level .7
Anchors: origin, center, bottom, top, left, right, left-surface, right-surface, surface
Also: draw, fill, line width, color, opacity, rotate, scale.
Defaults hook: every fluid tank.
Open vessel. Equal endpoint levels give a horizontal free surface. Use (F-origin), (F-center), and the listed (F-...) coordinates; these are pic coordinates, not node anchors.
Use the manual for geometry rules and collision-safe aliases.