Half Plate Offsets

BrickCon 2008

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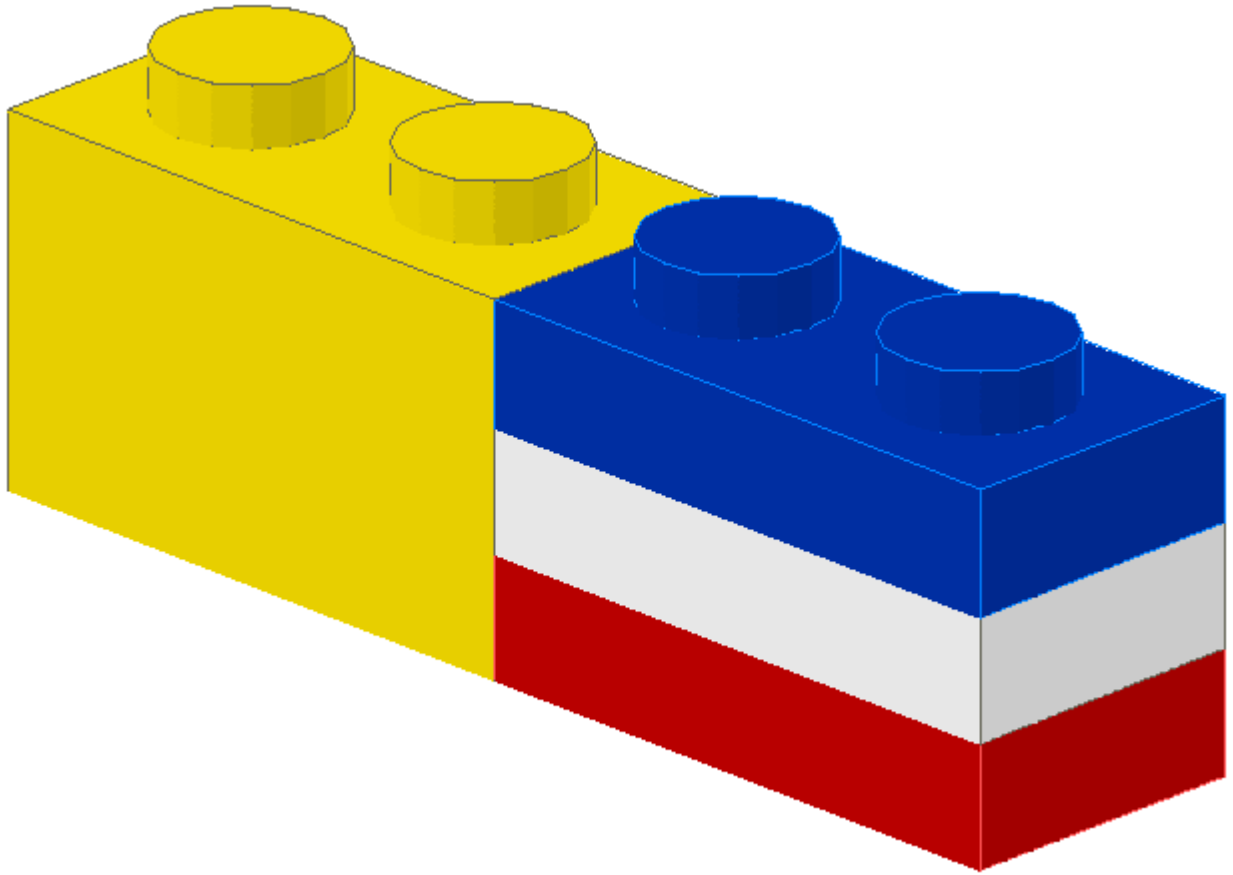
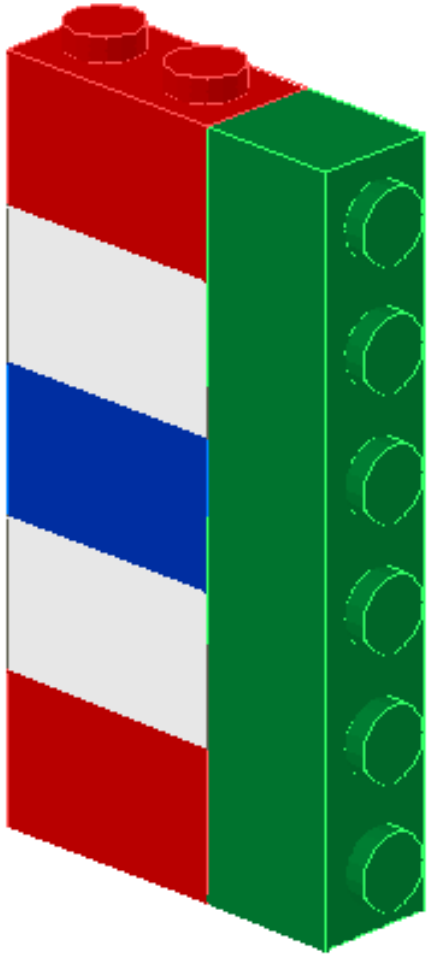
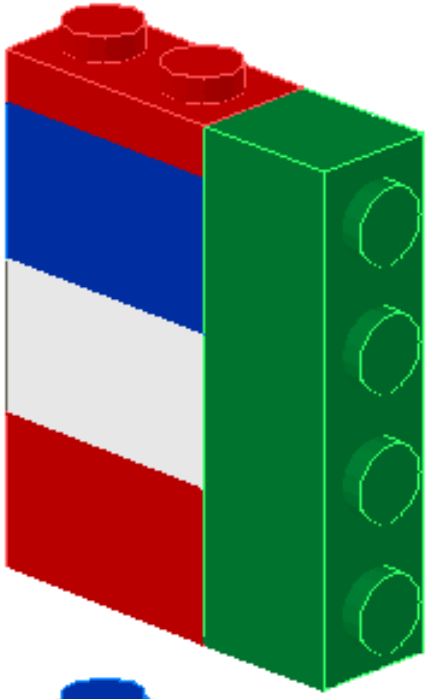
Basic LEGO Geometry
1 brick = 3 plates



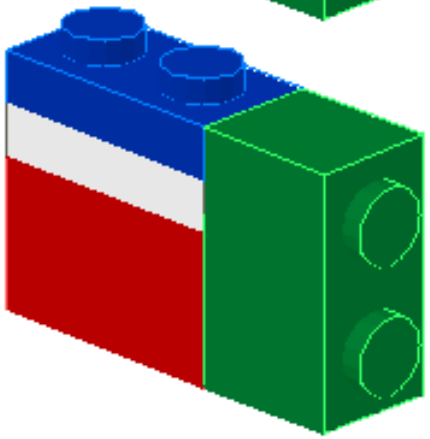
Basic LEGO Geometry
6:5 & 2:5 Ratios

6 studs =
5 bricks
or 15 plates



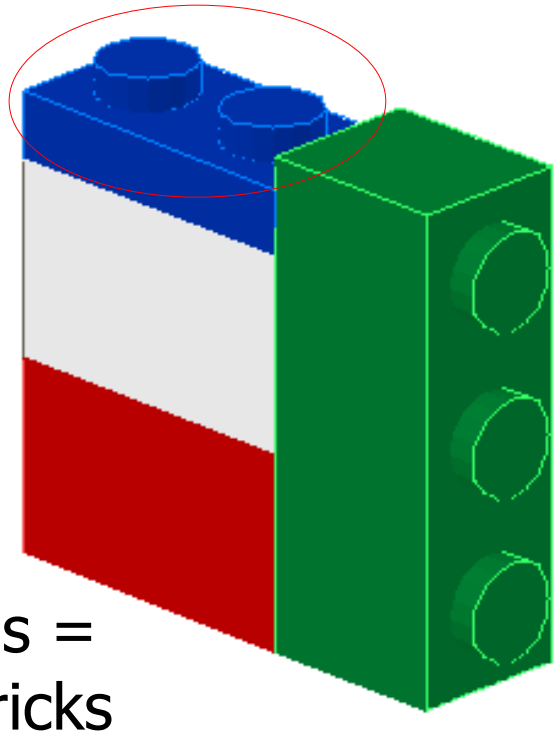


4 studs =
3 1/3 bricks
or 10 plates



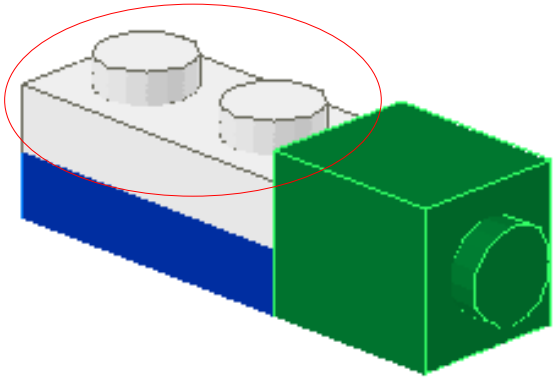
2 studs =
1 2/3 bricks
or 5 plates

Basic LEGO Geometry
6:5 = 3:2½



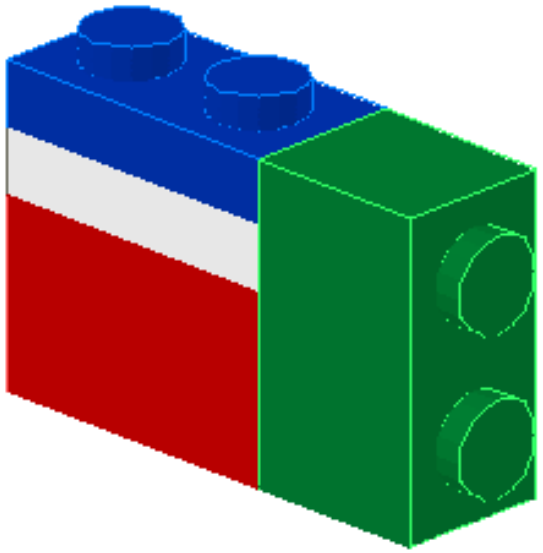
3 studs =
2 ½ bricks
or 7 ½ plates

=

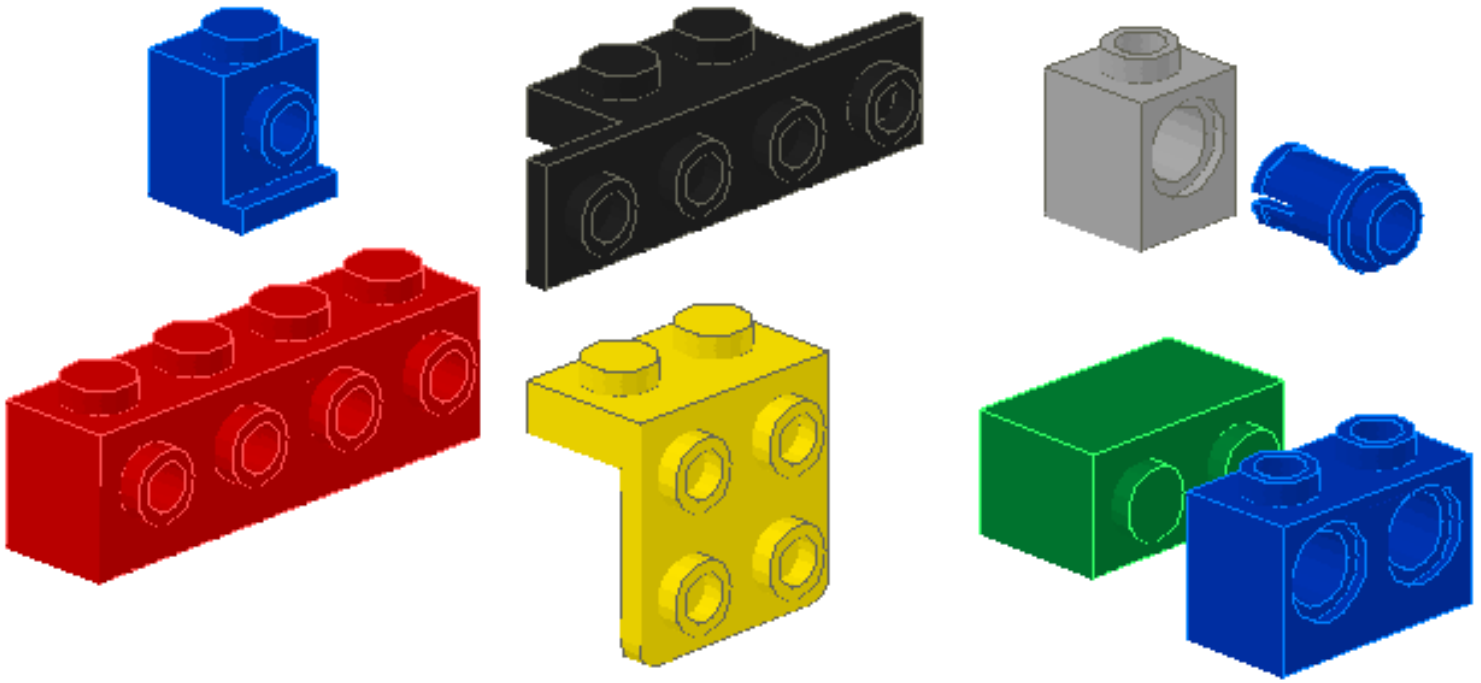


1 stud =
2 ½ plates

+

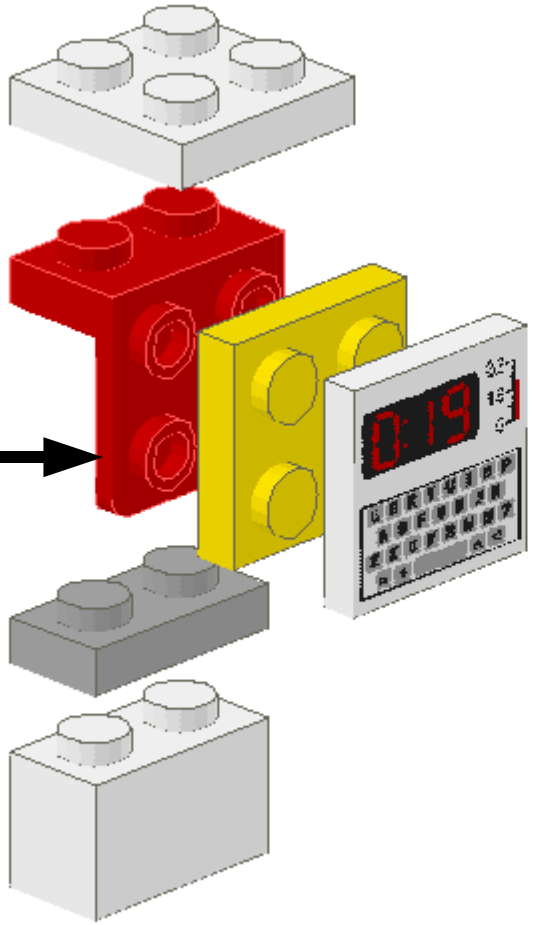


SNOT Parts
(Studs Not On Top)

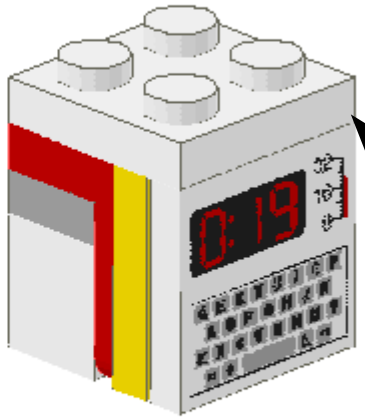


Using ½ plate thickness from brackets

½ plate from bracket
+ 1 plate + 1 tile
= 2 ½ plates or 1 stud

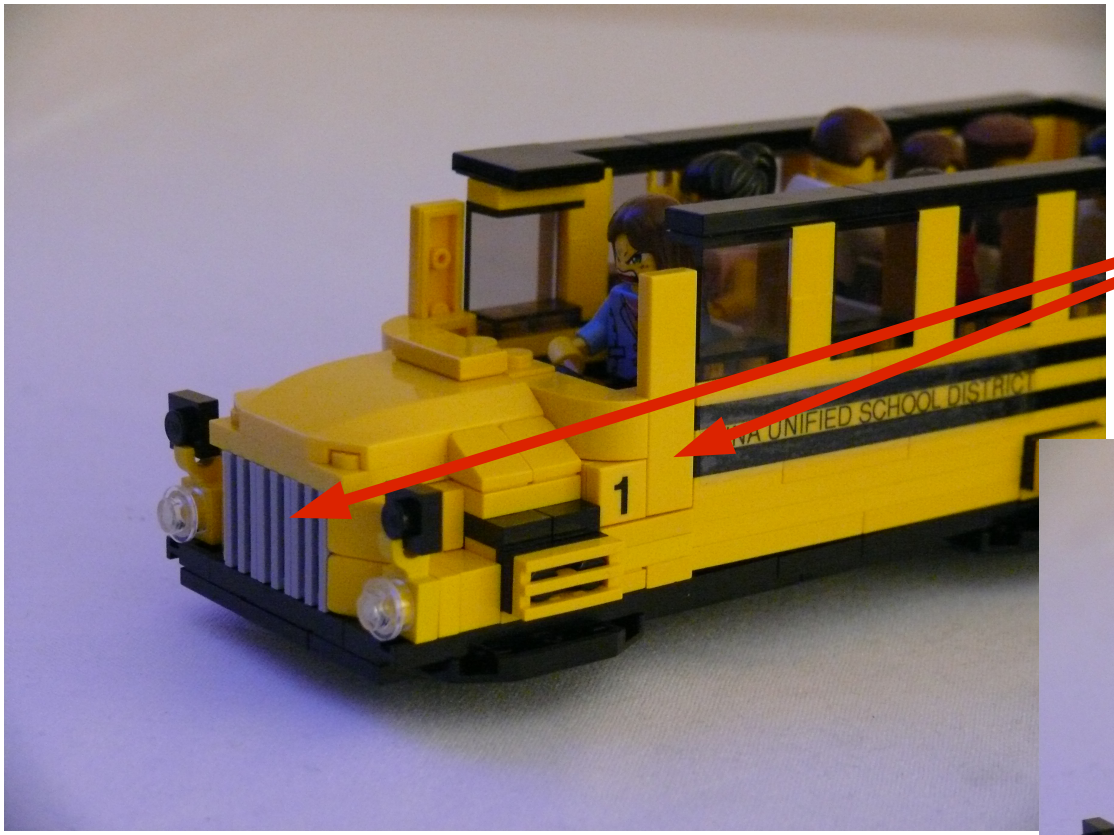


½ plate thick



Computer tile is flush with edge of white 2x2

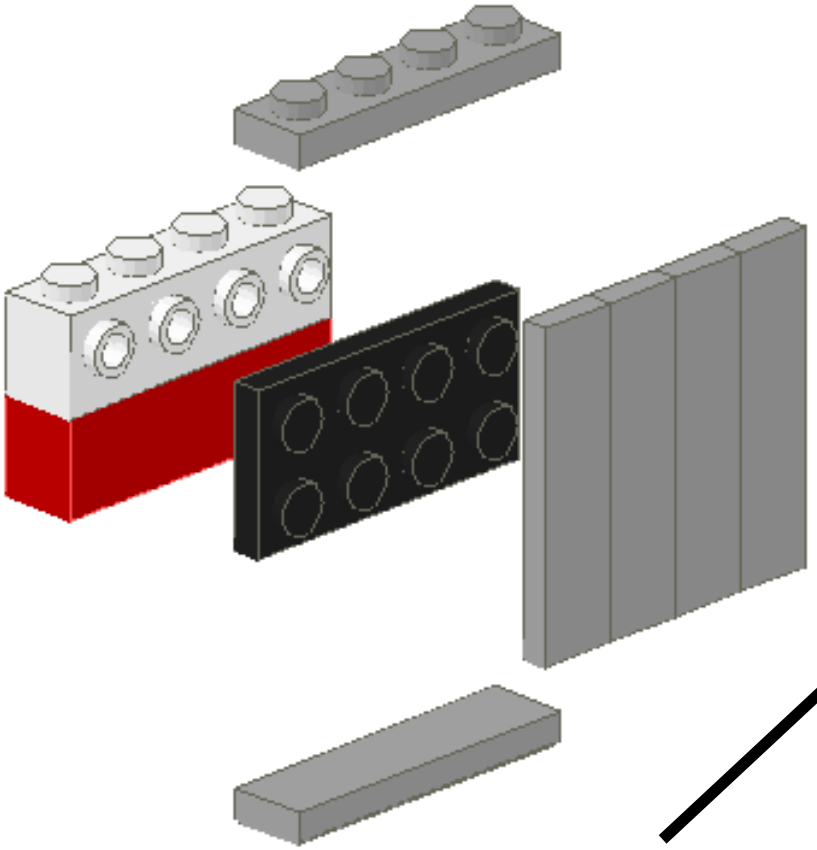
Flush tile examples



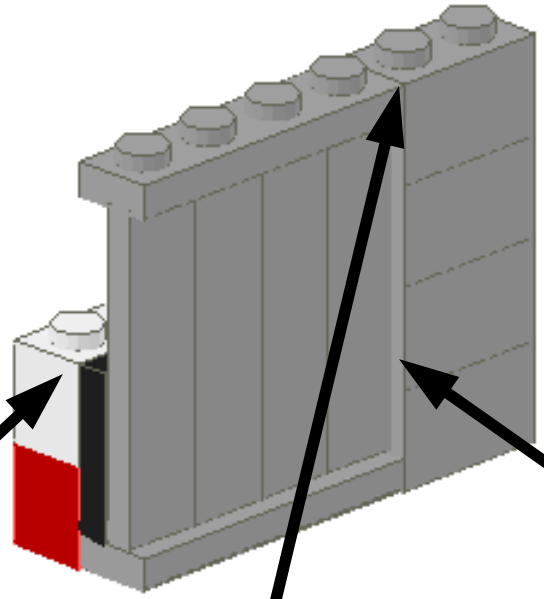
Lunar School Bus uses this technique in two places

Half-plate offset #1: inset panels

Use half-plate offsets to add texture to an otherwise flat wall



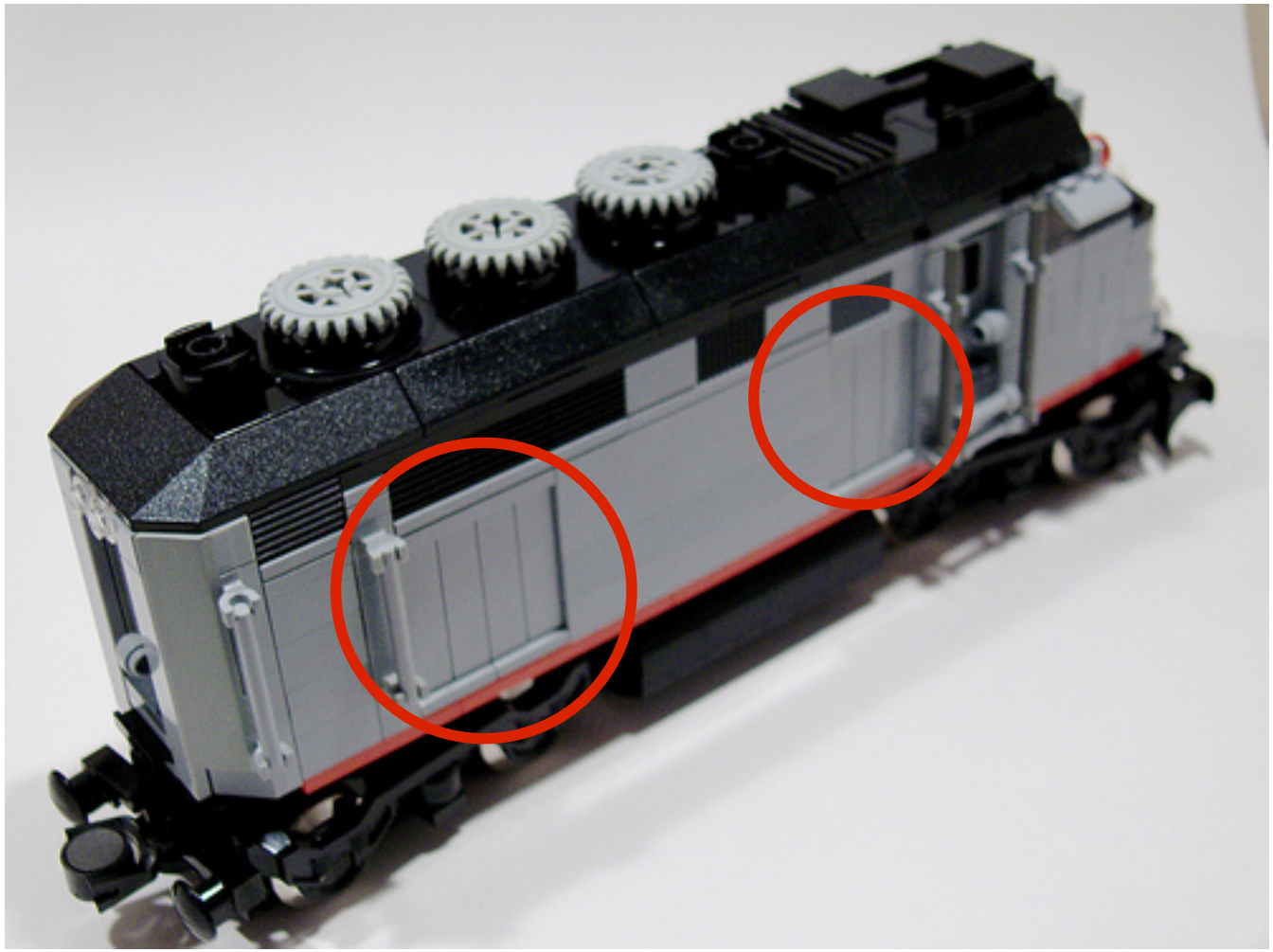
1 plate + 2 studs (1 2/3 brick)
= 2 bricks



Tiles are ½ plate inset

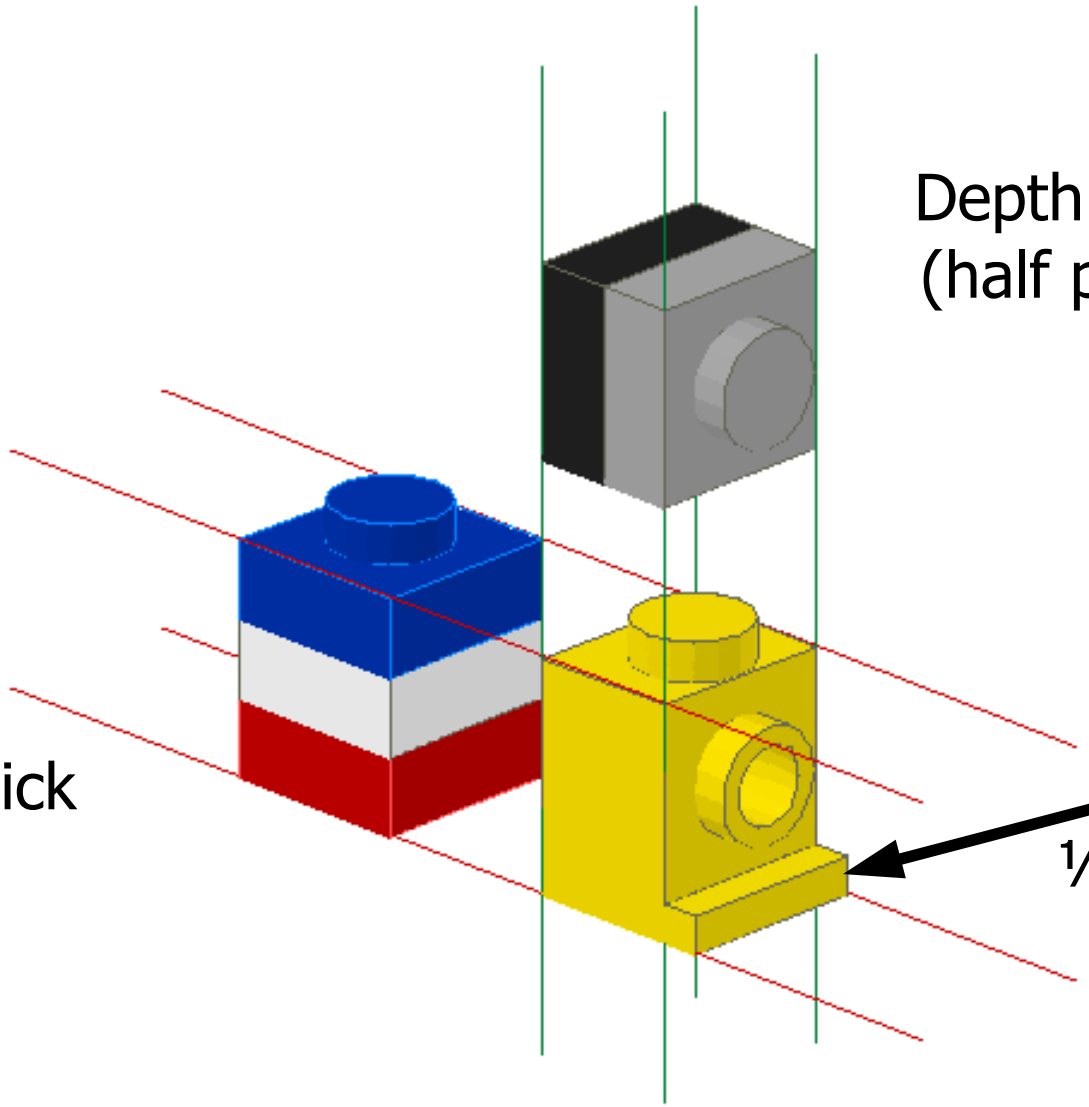
2 plates + 4 studs (3 1/3 bricks)
= 4 bricks

Inset panels example



My F40PH Caltrain locomotive

Headlight Brick Dimensions

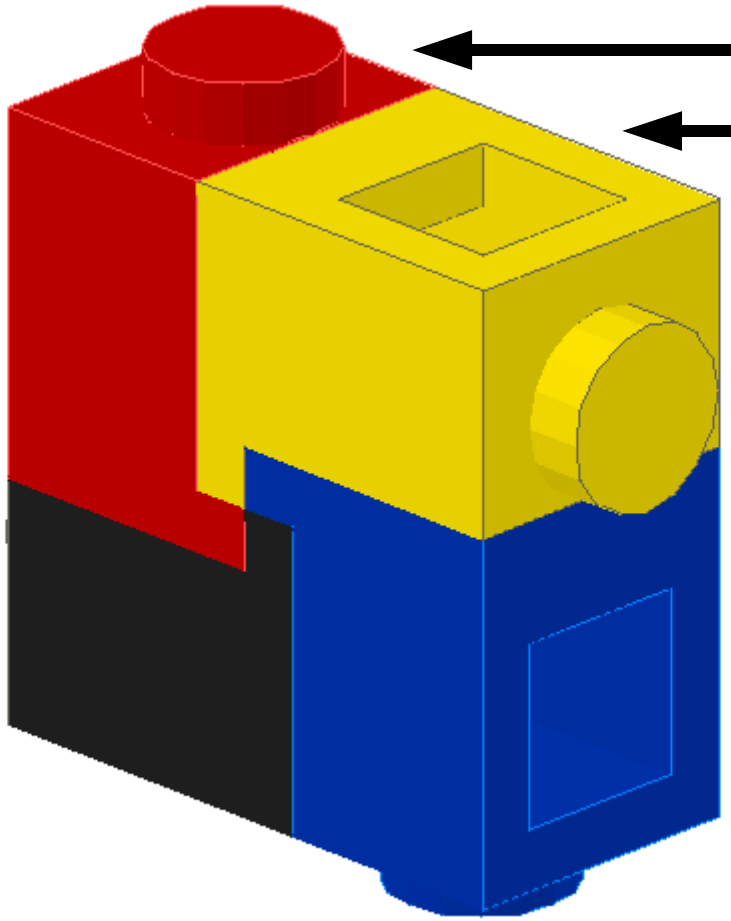


Depth = 2 plates
(half plate inset)

Height = 1 brick
or 3 plates

"foot" is
½ plate thick &
½ plate high

Four headlight bricks

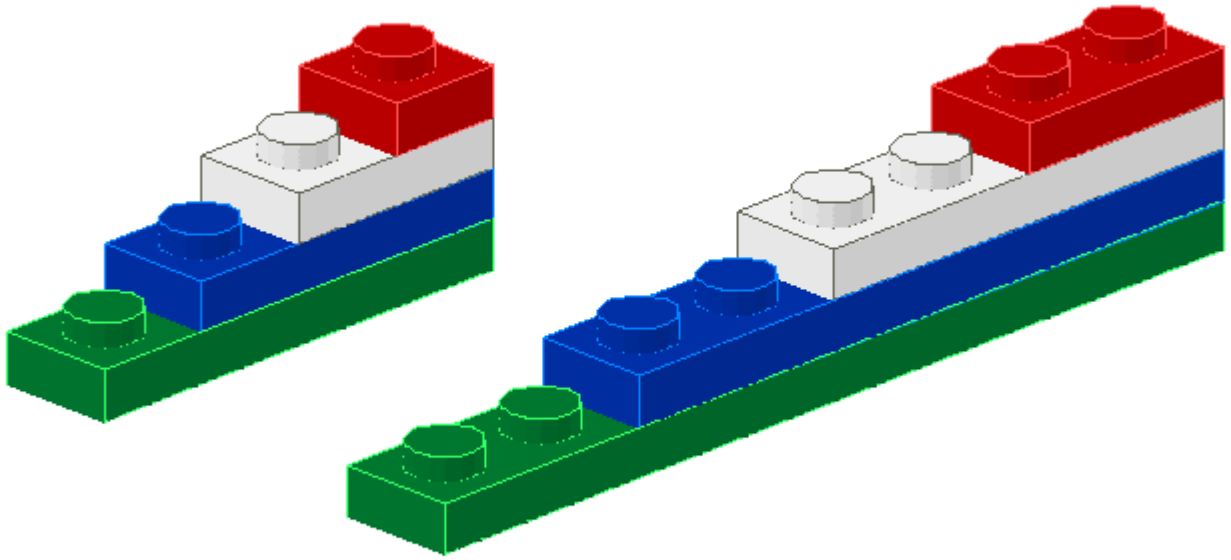


2 plates (red) +
3 plates (yellow) =
5 plates = 2 studs

Result: 5 plates or 2 studs in each of 4 directions.

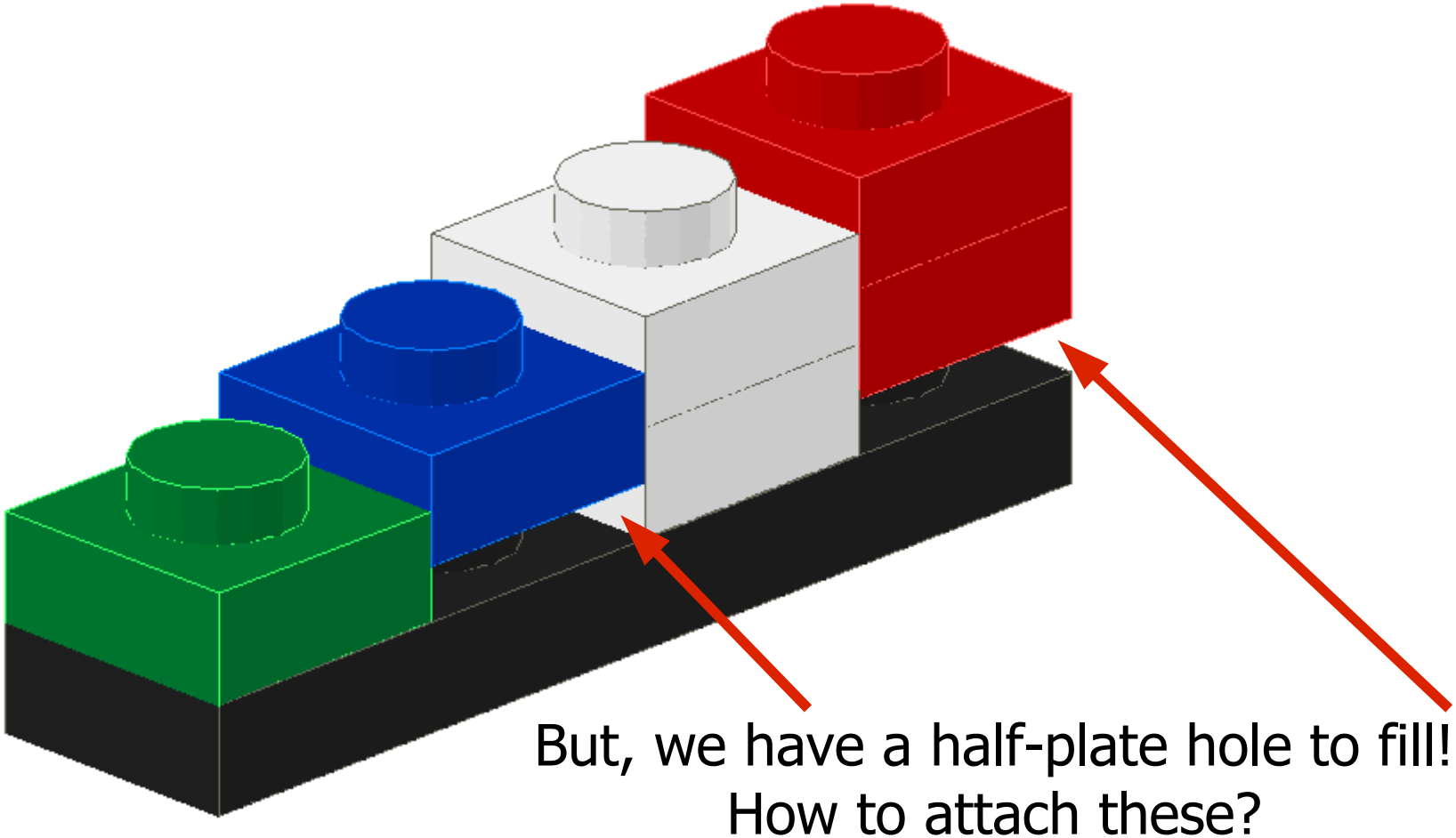
Problem: Gradual Steps

How do you make a gentle slope?
What if these are too steep?



Gradual Steps

For a more gradual slope, we'd like to mount every other one ½ plate higher

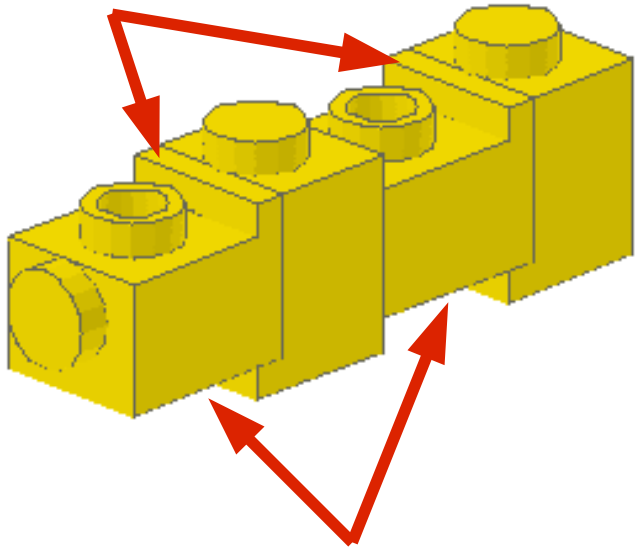


But, we have a half-plate hole to fill!
How to attach these?

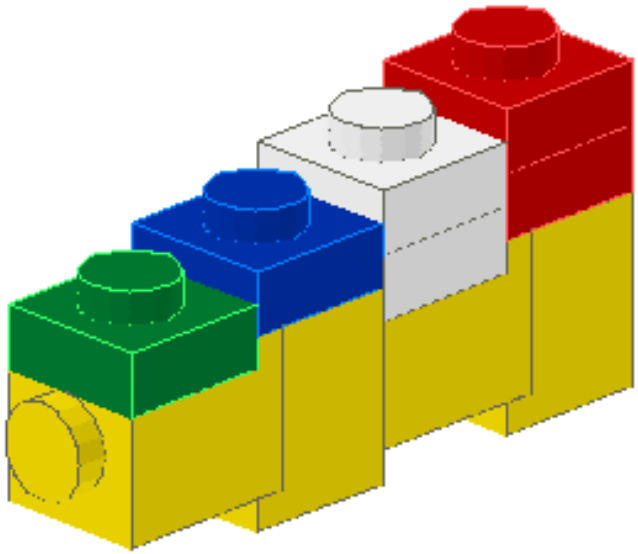
Solution: Headlight Bricks

Alternate rotations for headlight bricks to take advantage of ½ plate offset in "foot"

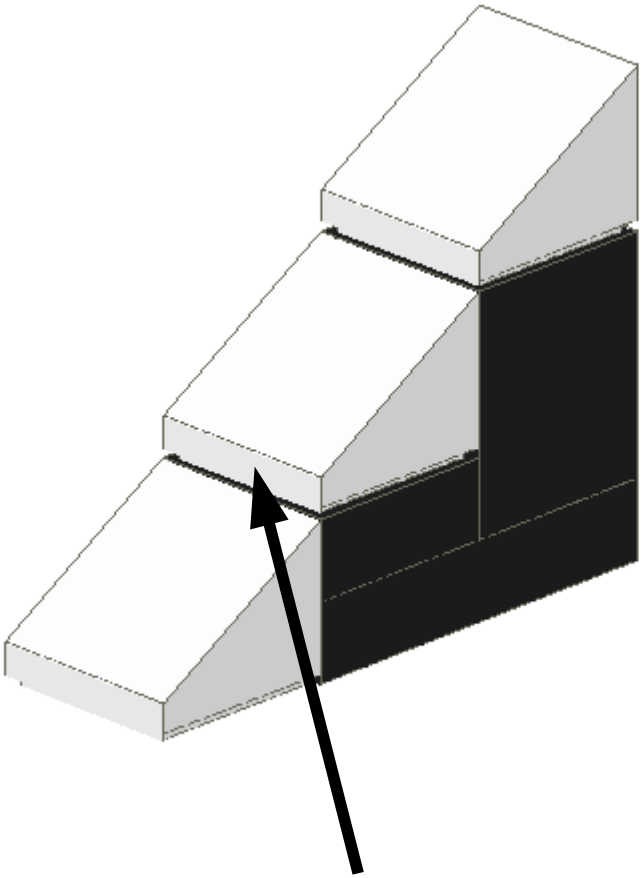
2 plates + ½ plate = 1 stud



Half-plate lift from "foot"



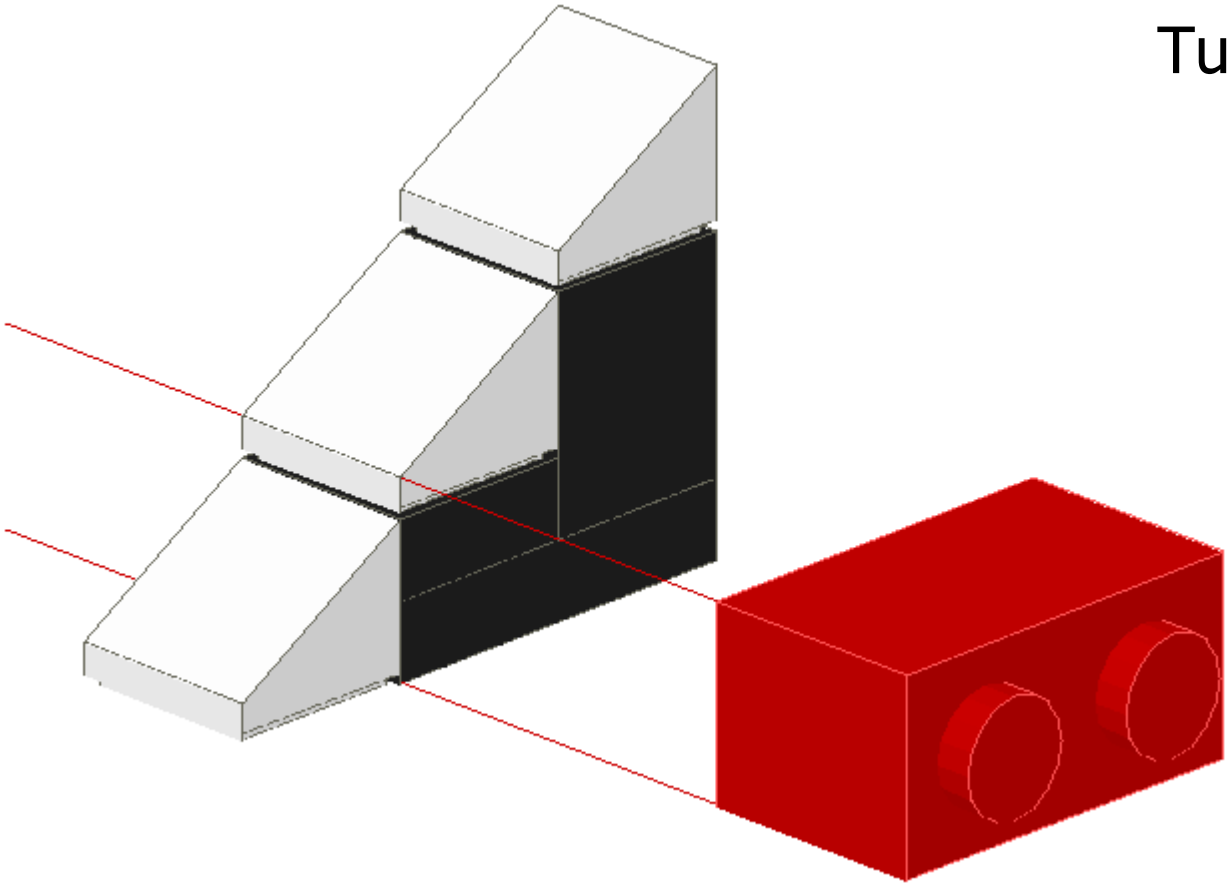
Problem with “cheese slope”: Stairstep effect



This notch is needed for it to fit a stud inside, but is ugly.

The 1x1 “cheese slope” is a very useful part but doesn't combine well with others of its kind to make a smooth slope.

Problem with “cheese slope”: Stairstep effect

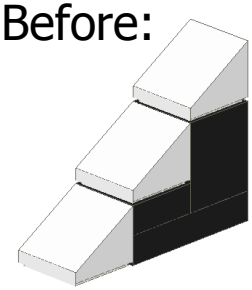


Turns out that “notch” is ½ plate thick.

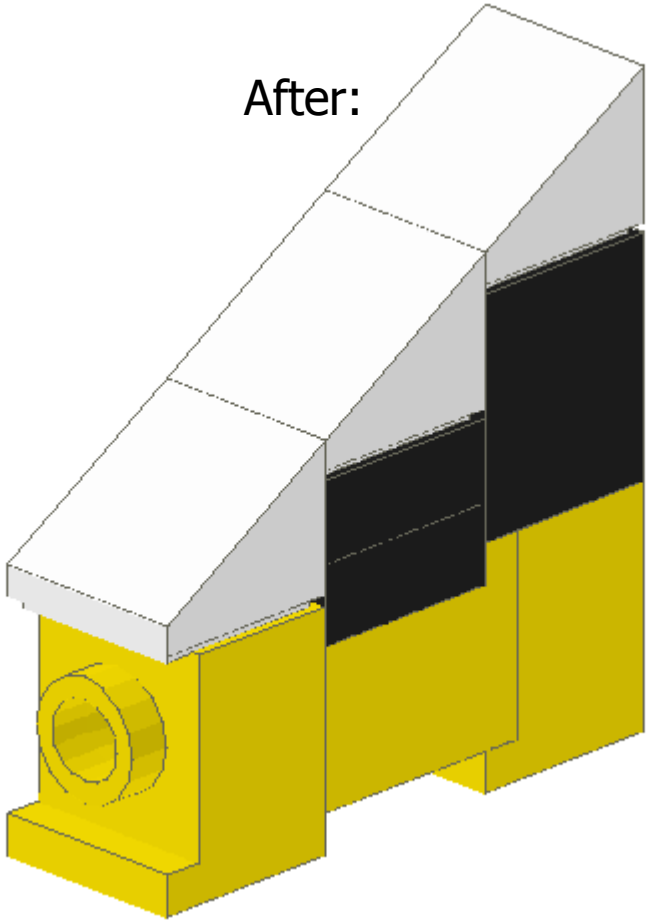
2 plates (height of cheese slope) + ½ plate = 1 stud

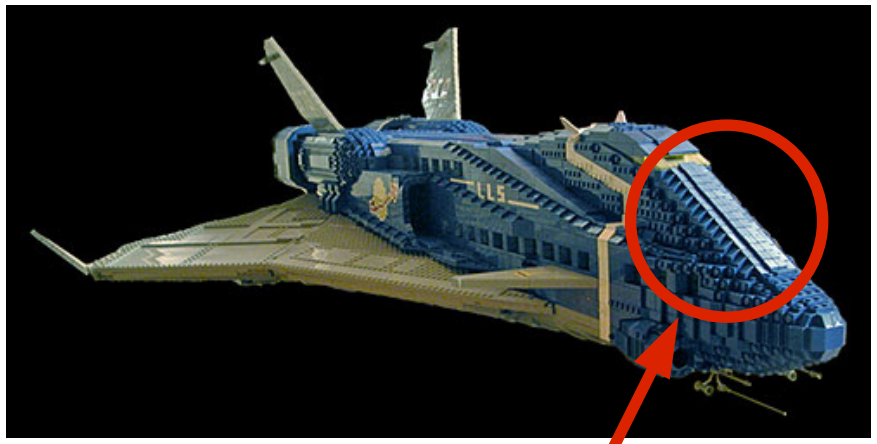
Solving the stairstep effect

Before:



After:





Used in Bram Lambrecht's "Legoland Spacelines 979" seen at BrickCon 2007

http://www.flickr.com/photos/bram/1461137007/
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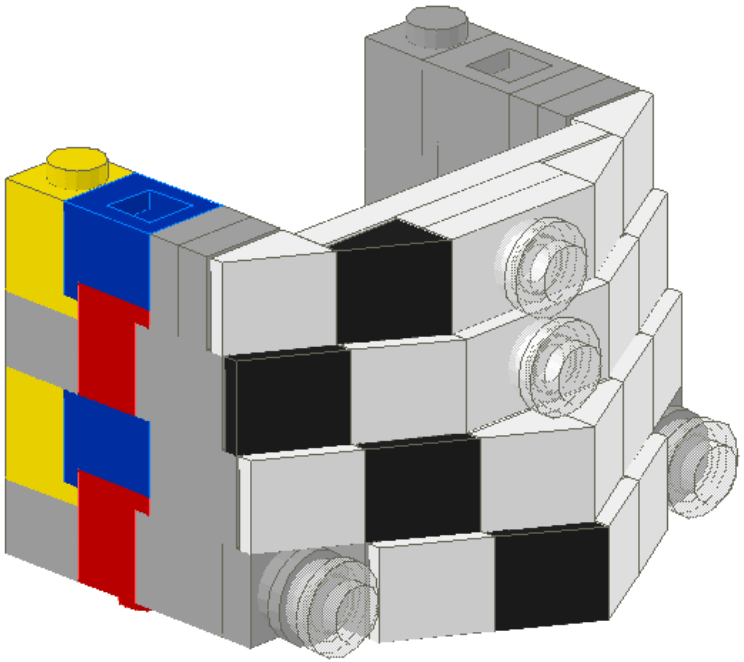
Mount the center slope ½ plate lower for a smooth surface!

Useful for trains, too



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Q&A

Thank you

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