

Tika, Pip, Coco and Sully found a bare patch. A big tree used to grow there.

Tika, Pip, Coco, Sully



**Tika dropped a seed.
That is how toucans
plant new trees.**



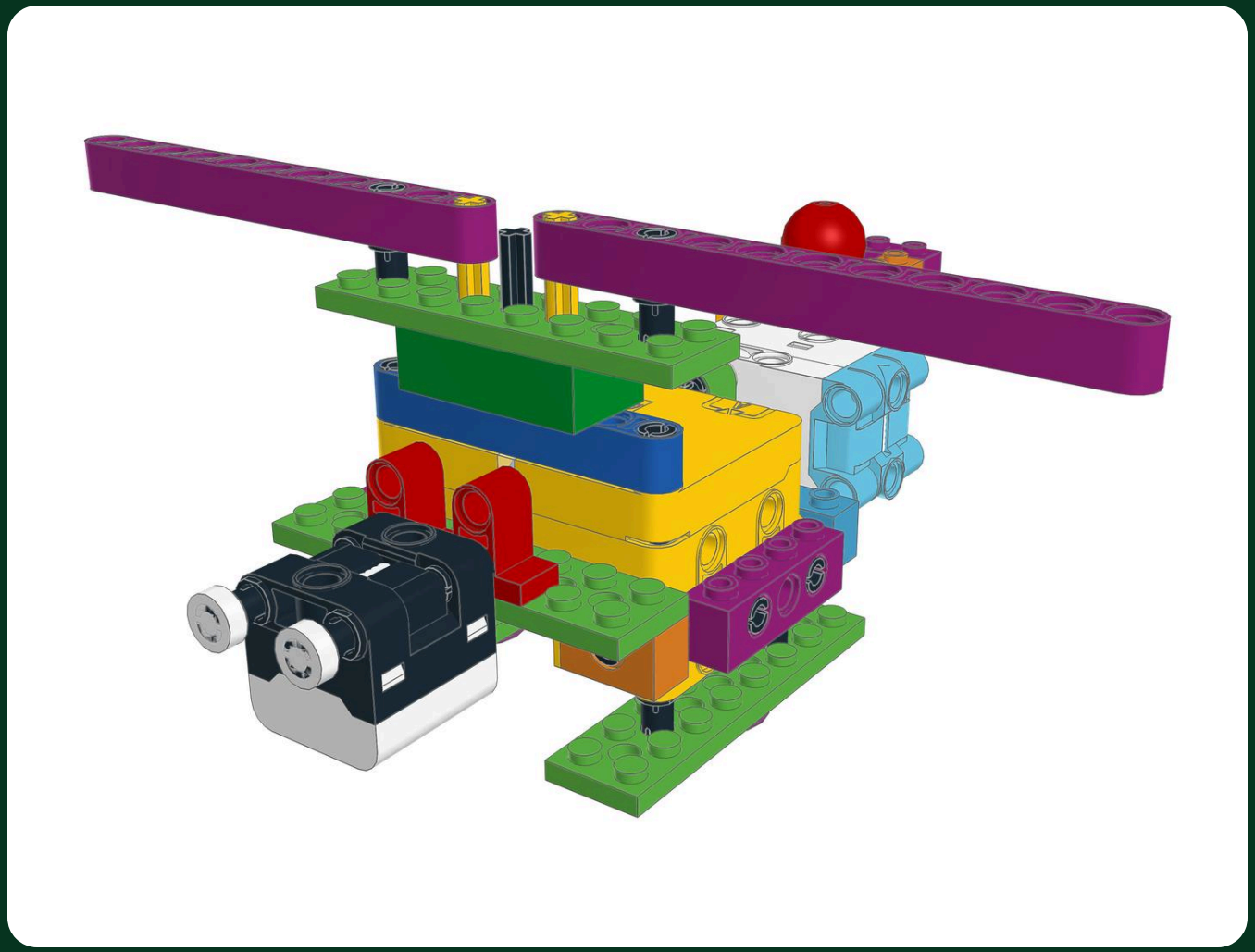
But the patch was big.
Sully counted the spots
and ran out of claws.

Sully, Tika



Pip pointed up. A drone was dropping seeds from the sky!

Pip, Coco, Sully, Tika



Build a seed drone. When it sees red, it drops a seed.

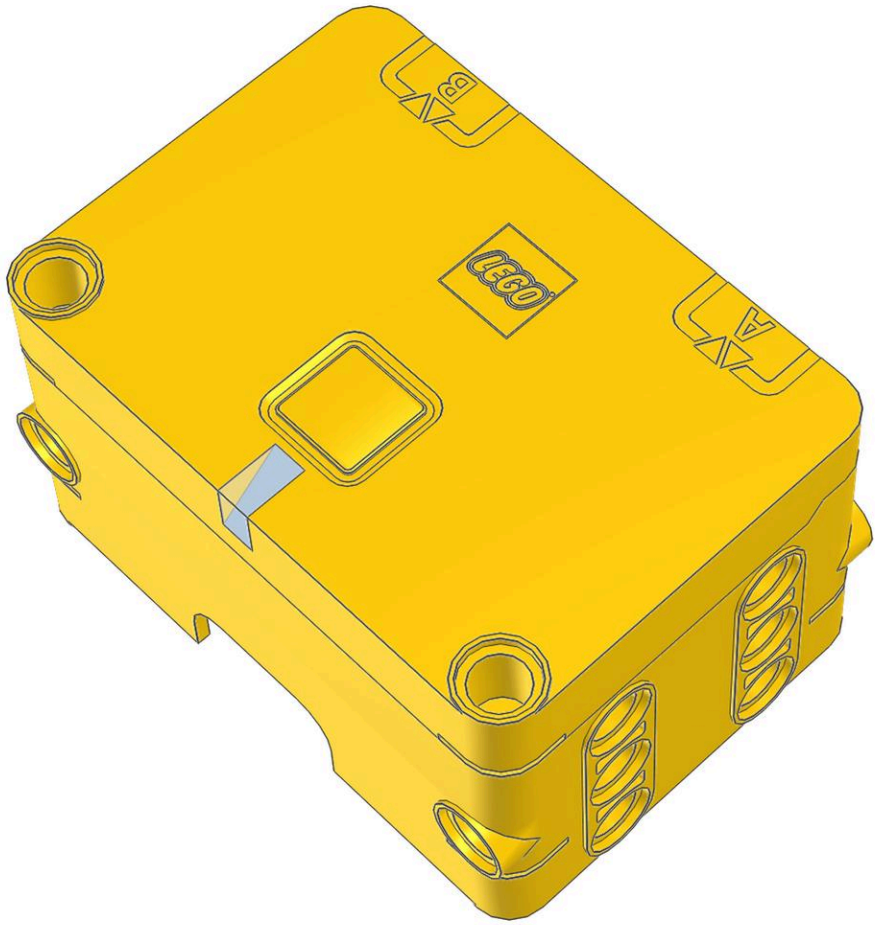
1 hub

Essential

ADD

- 1x Bright Yellow Small Hub | kit 45345

USB shape toward you; two round ports away.



Check: The Hub sits flat. You see the USB shape, not the round ports.

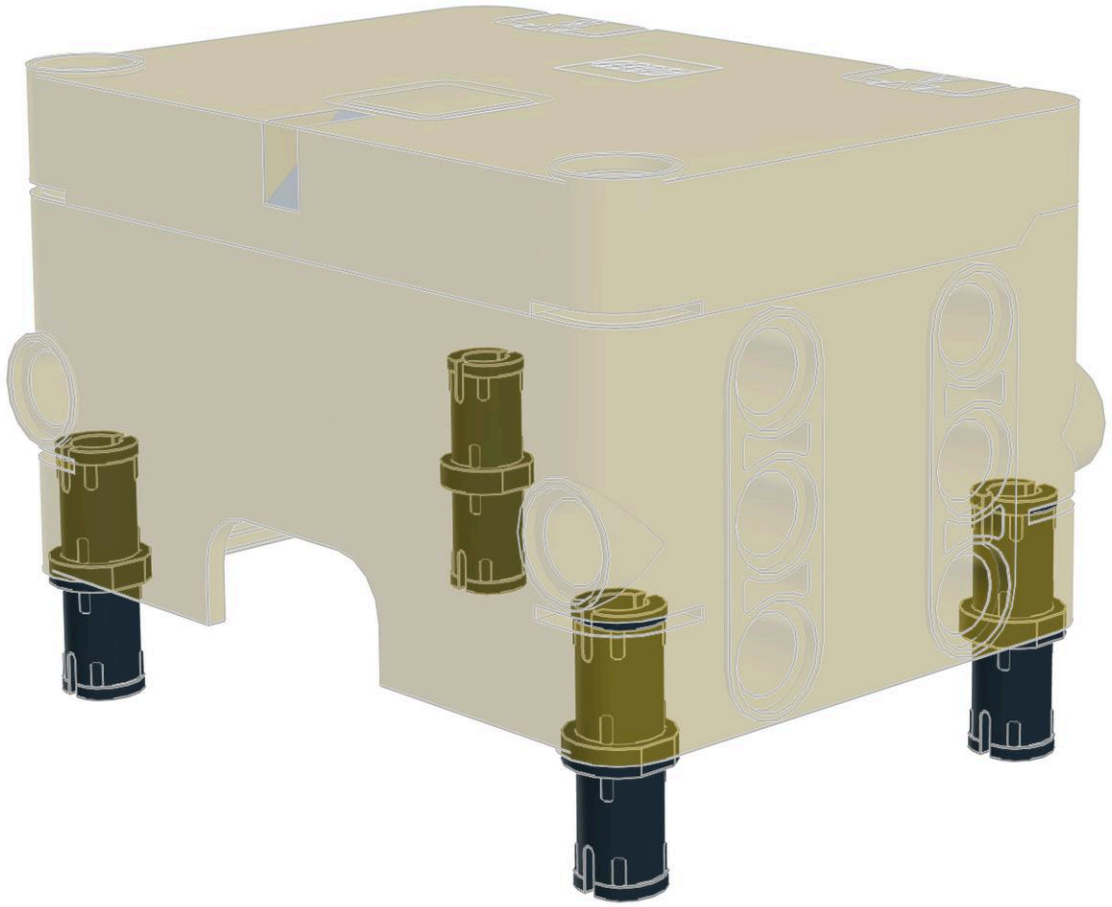
2 landing pins

Essential

ADD

- 4x Black connector peg with friction | kit 45345

Four matching corner holes underneath -- skip the one-sided middle hole.



Check: Four pegs point down from the Hub, two on each side, making a rectangle. The left and right pairs match.

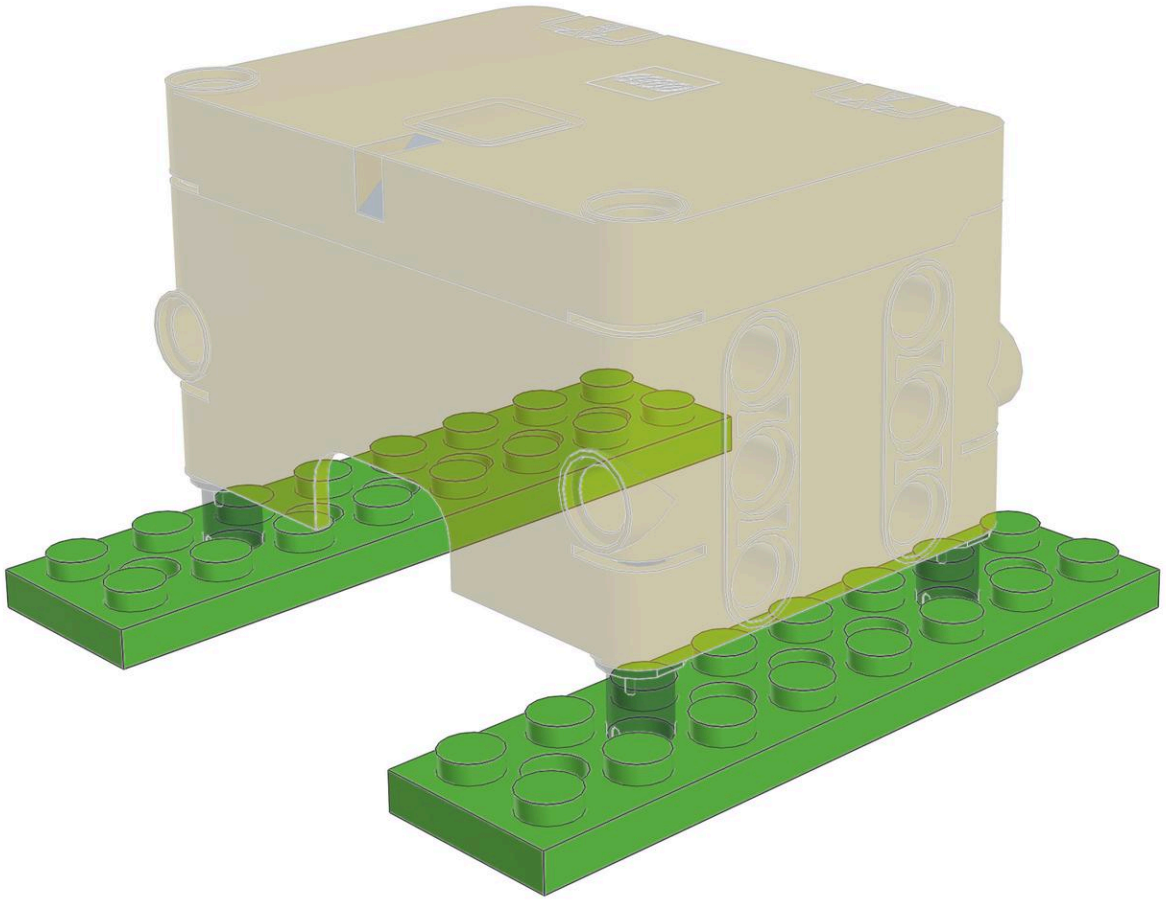
3 landing plates

Essential

ADD

- 2x Bright Green 2x8 plate with holes | kit 45345

Two long green rails run nose-to-back under the Hub.



Check: Two green rails run beside the Hub from nose to back. They are level and do not touch the yellow shell.

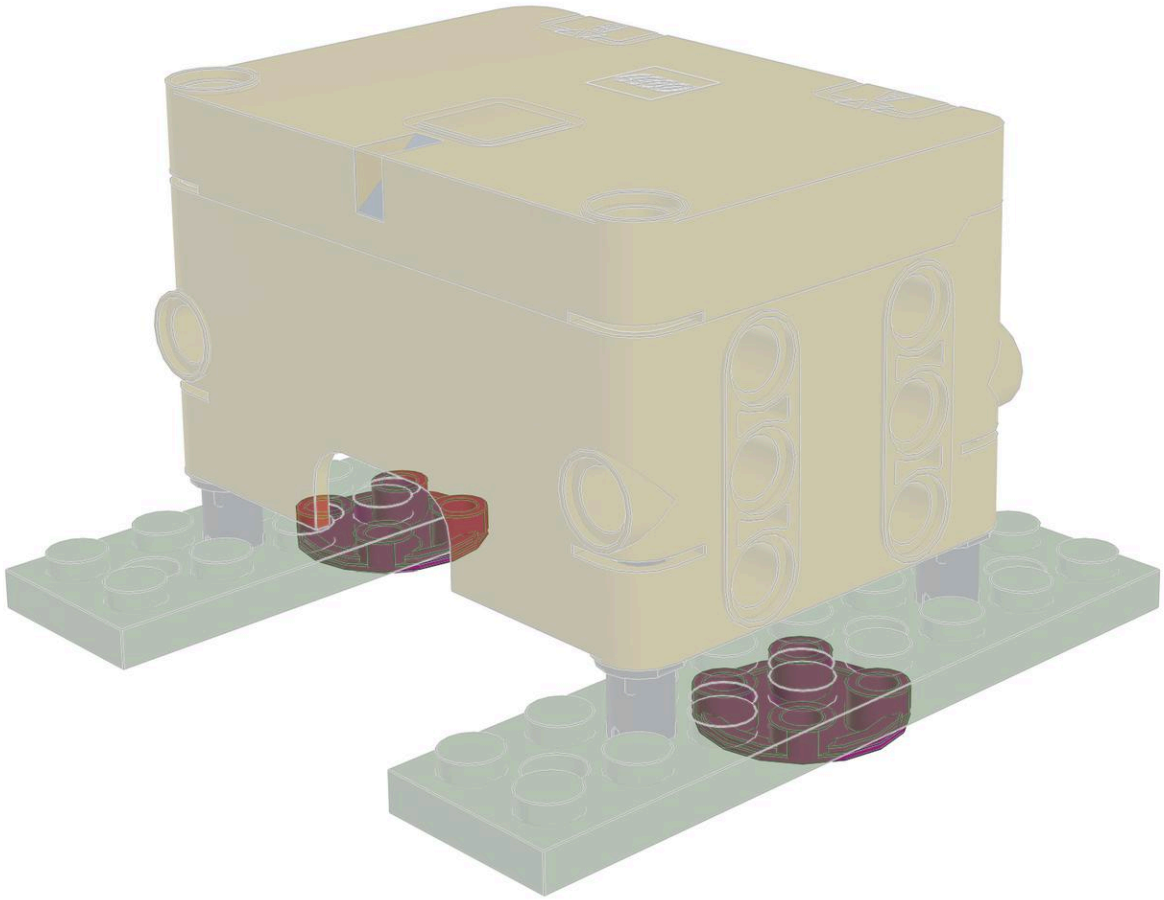
4 skid shoes

Essential

ADD

- 2x Bright Reddish Violet round slide shoe 2x2 | kit 45345

Press one round shoe under the middle of each rail.



Check: Turn the drone upright. It stands on two purple shoes; the Hub, green plates, and nose do not scrape the table.

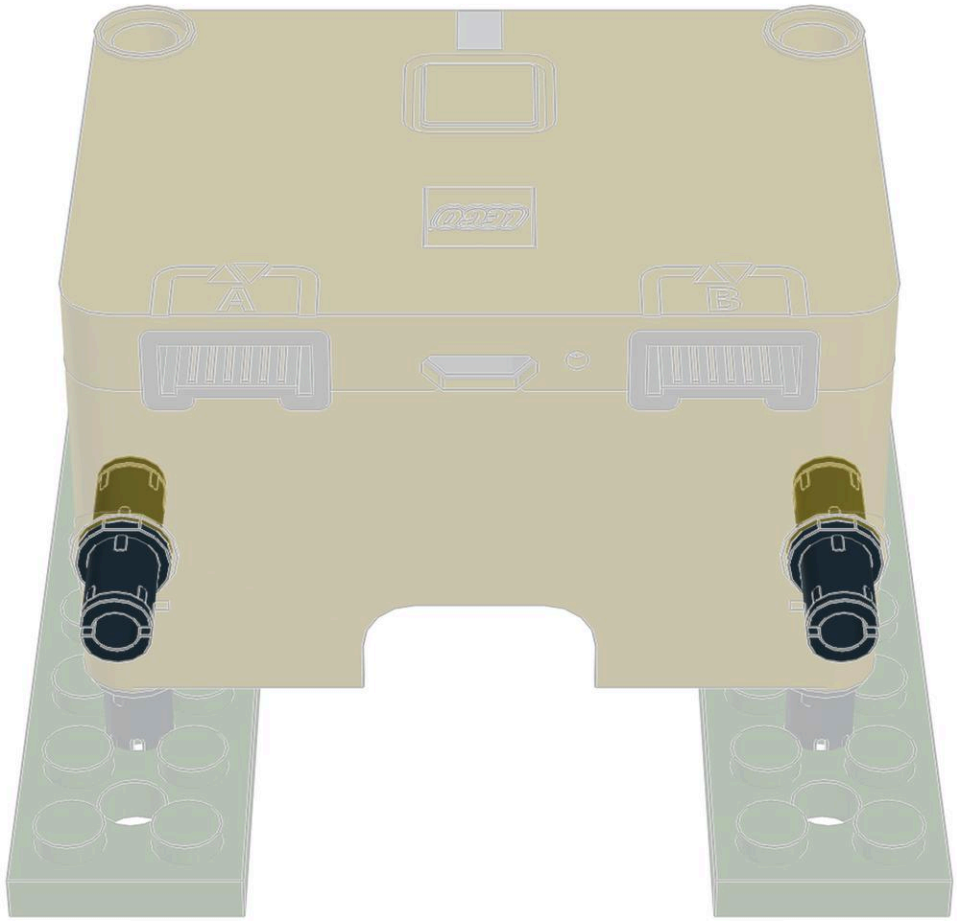
5 tail pins

Essential

ADD

- 2x Black connector peg with friction | kit 45345

Two rear pegs frame the round cable ports.



Check: Two pegs point backward and frame the ports without covering either opening.

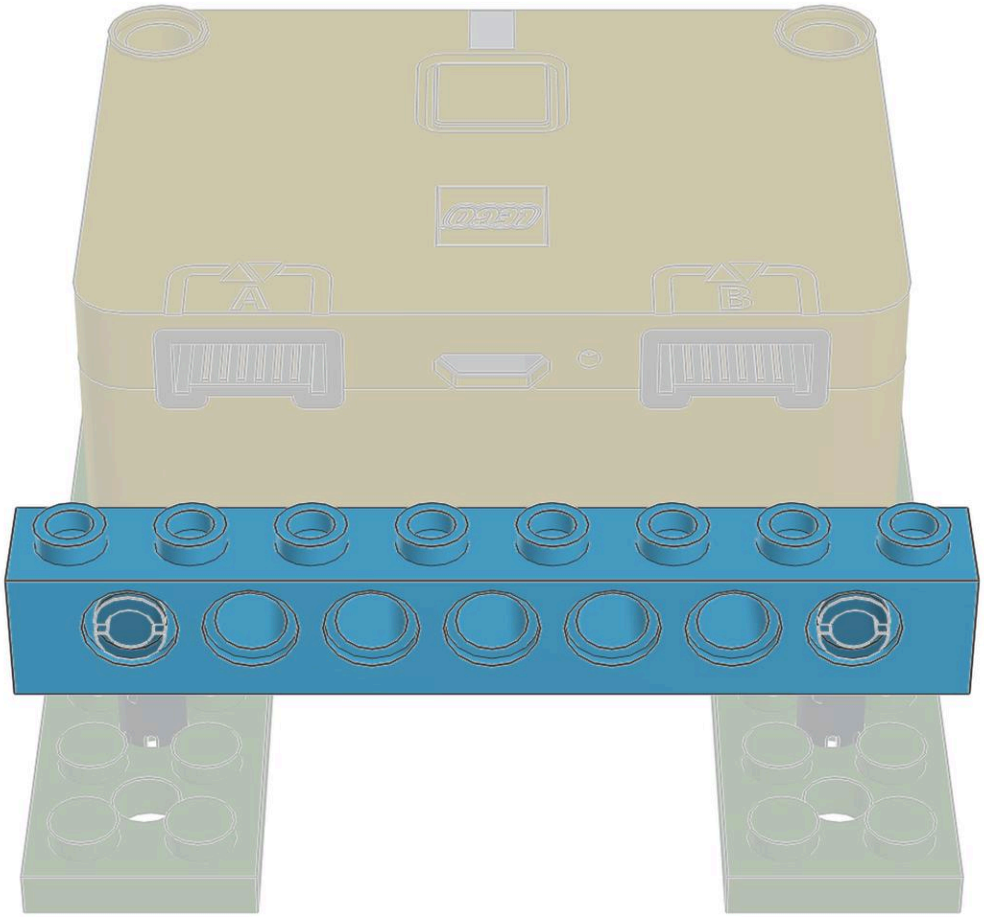
6 tail spine

Essential

ADD

- 1x Dark Azur 1x8 Technic brick | kit 45345

One long blue brick across the back: the spine the bay hangs from.



Check: The brick spans the full back of the Hub and does not teeter. You can still reach both round ports underneath it.

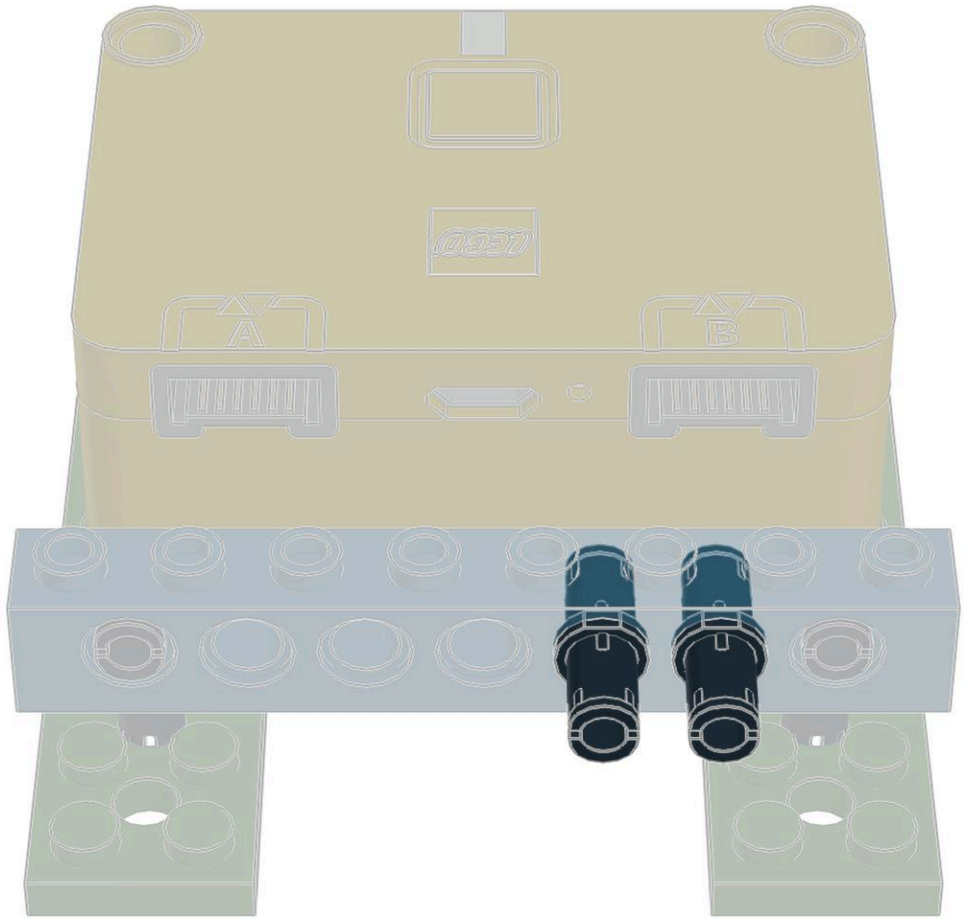
7 spine pins

Essential

ADD

- 2x Black connector peg with friction | kit 45345

Both end holes are full. Find the middle hole; fill the two beside it on one side.



Check: Two new pegs point straight back from two holes that touch each other. On one side of the pair is a full end hole; on the other side is the empty middle hole.

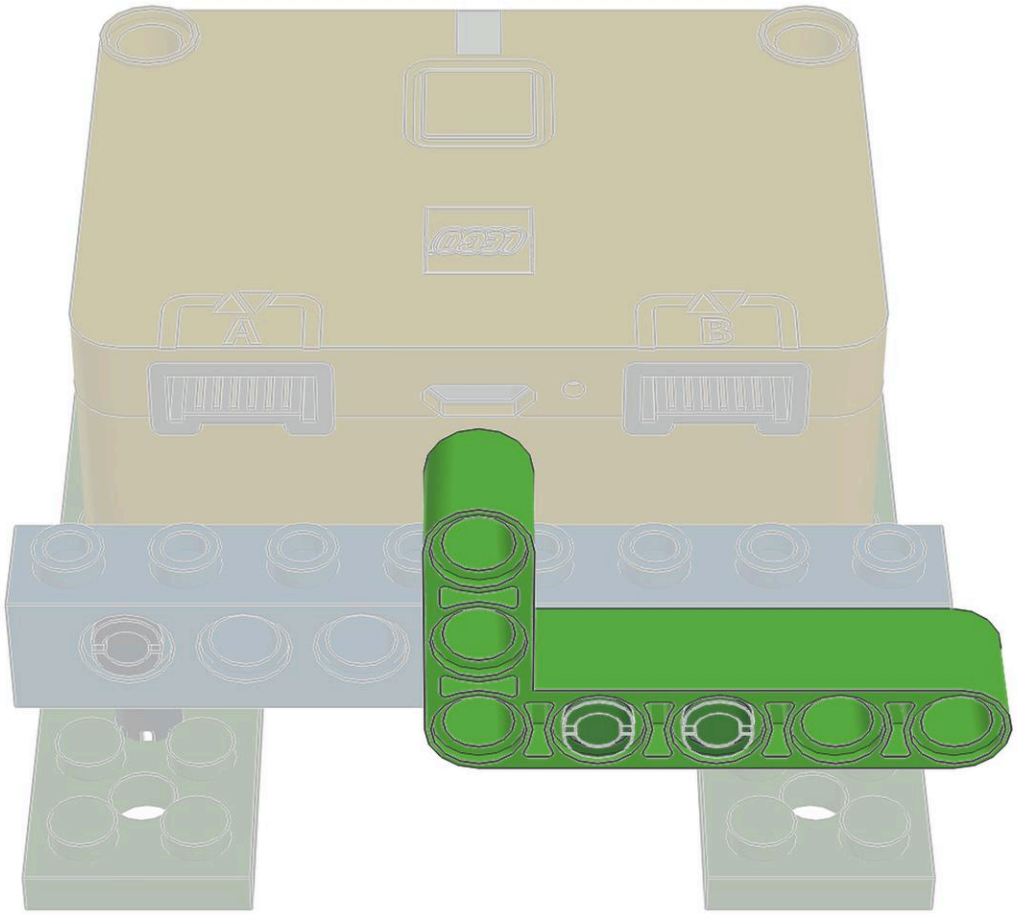
8 tail bracket

Essential

ADD

- 1x Bright Green 3x5 right-angle beam | kit 45345

Green L on edge: long arm flat, short arm climbing, holes facing you.



Check: The long arm is horizontal and the short arm climbs. Its holes look straight back at you, not up at the ceiling.

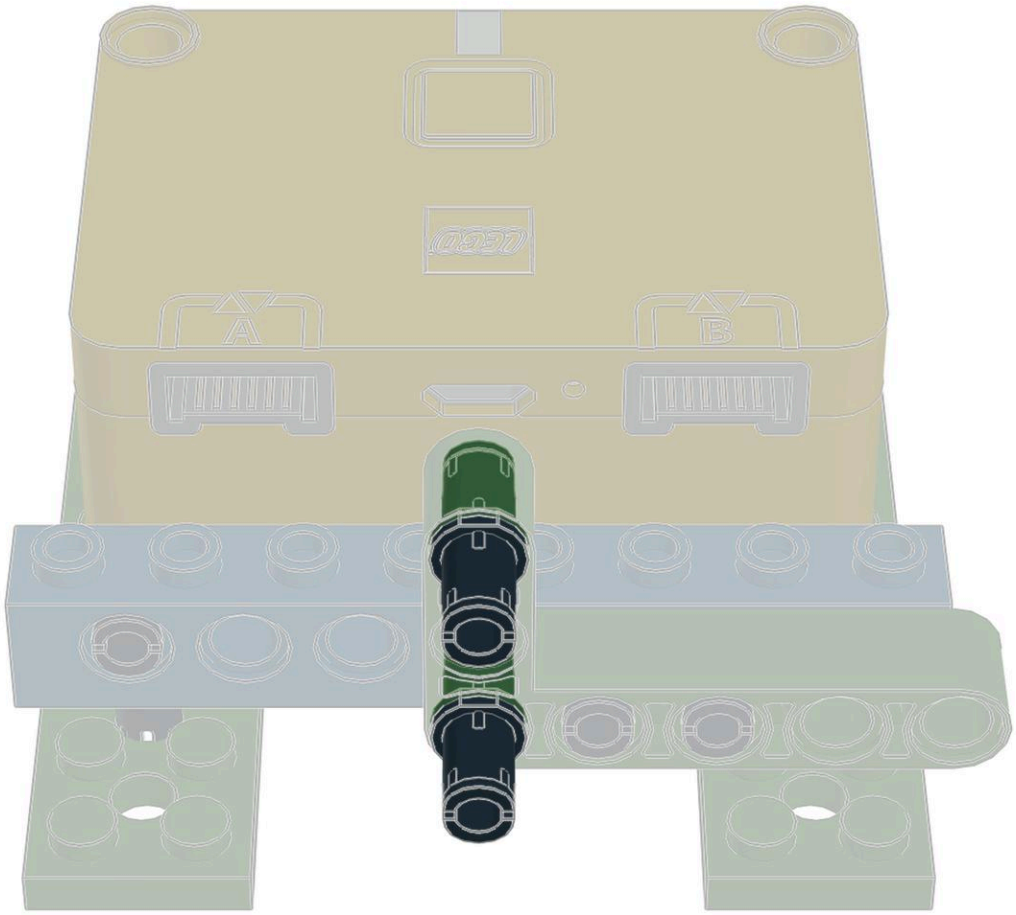
9 bracket pins

Essential

ADD

- 2x Black connector peg with friction | kit 45345

Top and bottom hole of the climbing arm; skip the middle.



Check: Two pegs stick straight back, one above the other, with one empty hole between them.

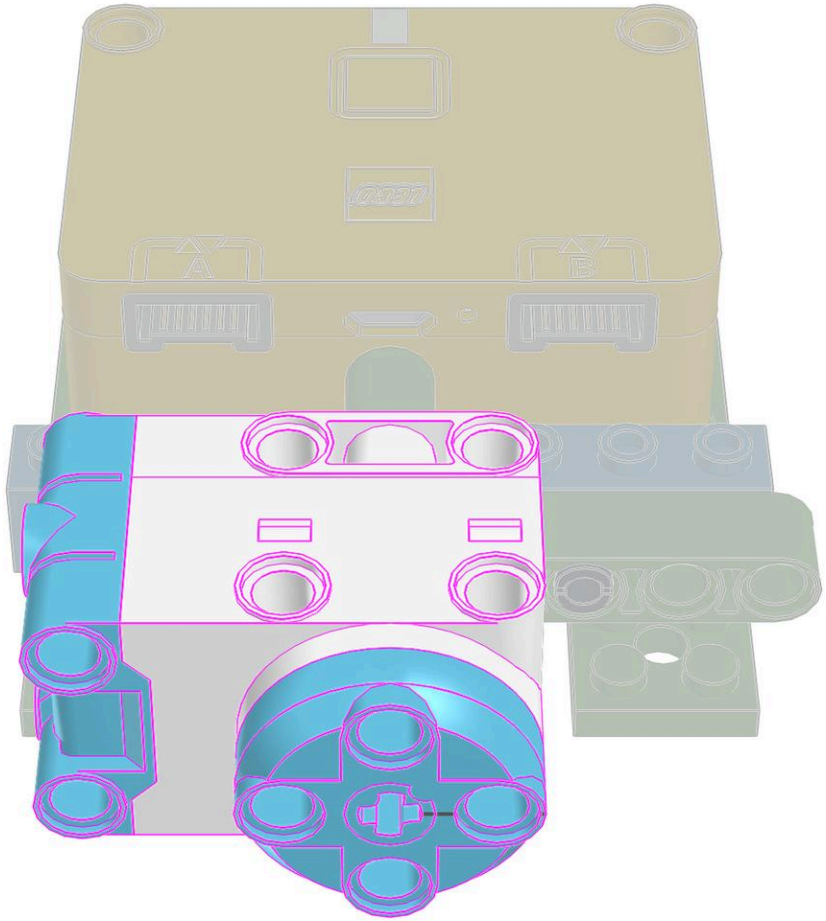
10 seed-bay motor

Essential

ADD

- 1x White Small Angular Motor | kit 45345

Stand the motor up. Turquoise output points straight back.



Check: The motor sits flush against the green bracket and does not swivel. The turquoise output is centred behind the drone.

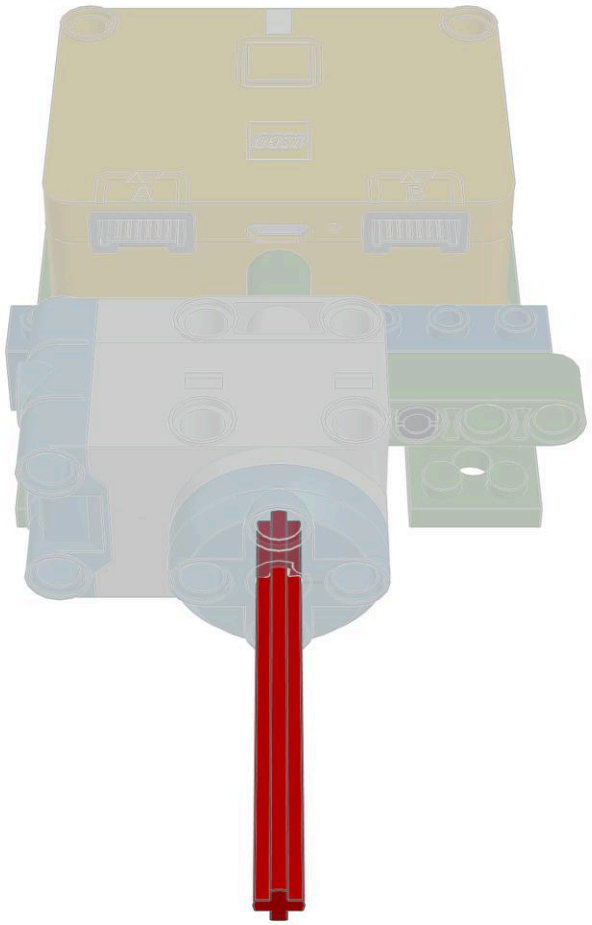
11 tray axle

Essential

ADD

- 1x Bright Red 6M cross axle | kit 45345

Push the long red axle straight back into the motor.



Check: The axle points straight back down the middle of the drone and turns only when the motor turns.

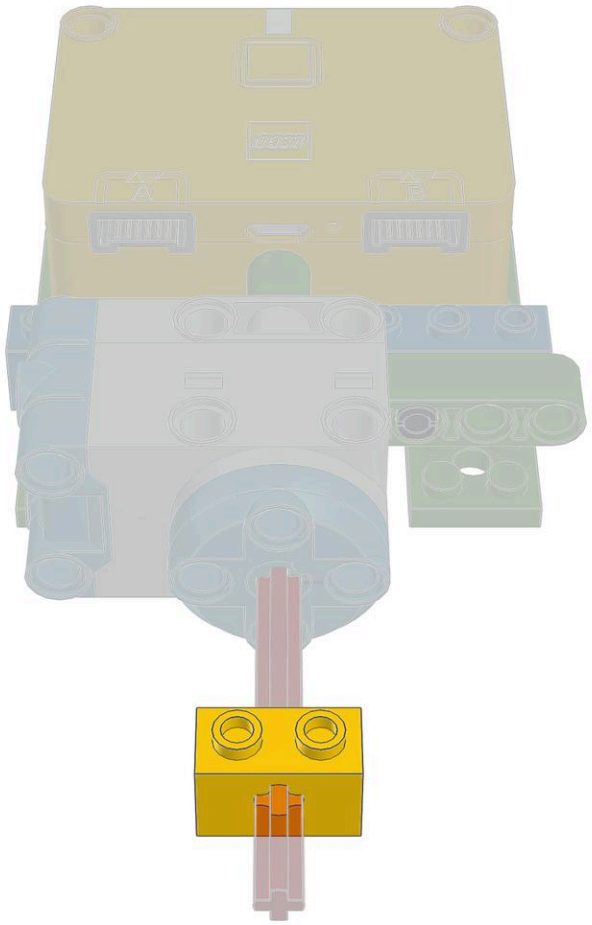
12 tray hinge

Essential

ADD

- 1x Bright Yellow 1x2 Technic brick with cross hole | kit 45345

Slide the yellow brick onto the axle end, studs up. No turning needed.



Check: The axle passes through the cross hole. Both yellow studs are level and face the ceiling.

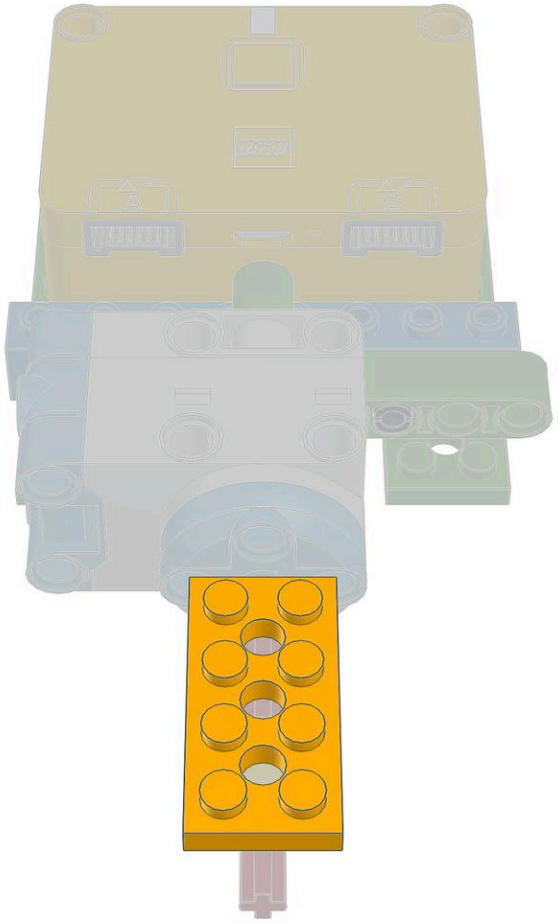
13 first tray plate

Essential

ADD

- 1x Flame Yellowish Orange 2x4 plate with holes | kit 45345

Turn the plate front-to-back and press it onto the hinge studs.



Check: The plate lies flat and front-to-back, and the yellow hinge brick is hidden underneath the middle of it.

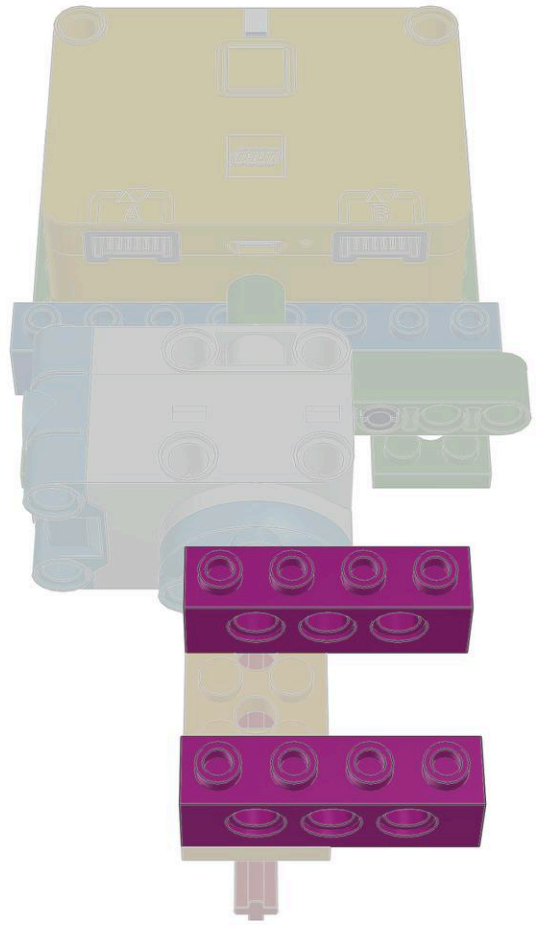
14 tray walls

Essential

ADD

- 2x Bright Reddish Violet 1x4 Technic brick | kit 45345

A purple wall on each long edge. Two studs hang off -- that is for the next plate.



Check: Two purple walls face each other. Two studs of each wall hang into empty space -- that is what the next plate clicks onto.

15 make it square

Essential

ADD

- 1x Flame Yellowish Orange 2x4 plate with holes | kit 45345

Second plate clicks onto the hanging studs and makes a square.



Check: The floor is a square, not a long strip. The hanging wall studs now sit on the new plate, so nothing flaps.

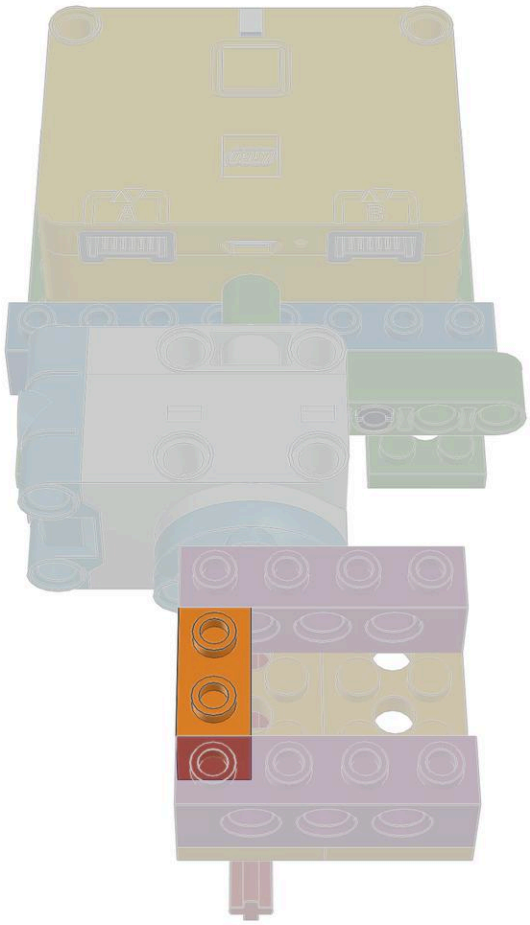
16 end stop

Essential

ADD

- 1x Bright Orange 1x2 Technic brick | kit 45345

The orange brick fills the left end. Three sides now; right end open.



Check: The tray now has three sides: two long purple walls and this short orange one. The right-hand end -- the one farthest from the drone's middle -- is wide open.

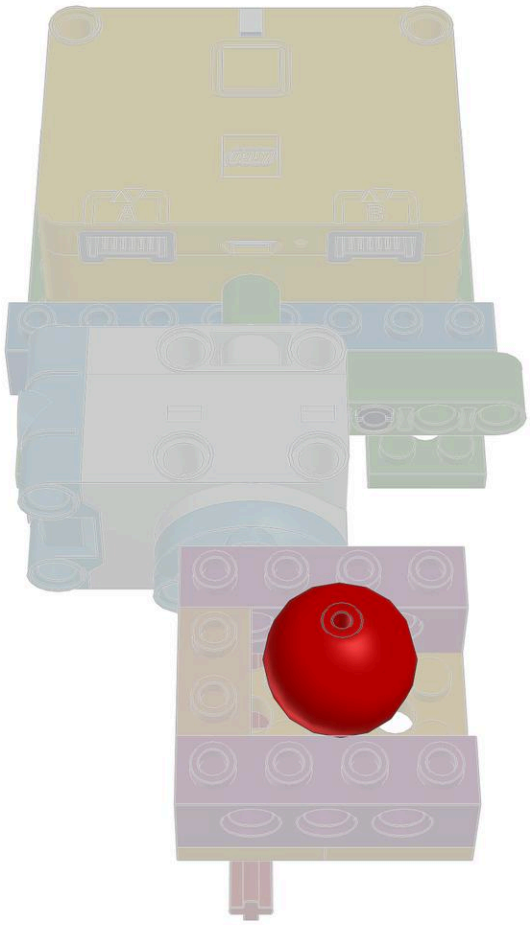
17 seed

Essential

ADD

- 1x Bright Red D16.5 ball | kit 45345

Press the seed down between the walls. It grips -- that is right.



Check: The ball sits proud of the walls and does not touch the floor. Shake the drone gently: the seed stays put. Now tip the tray over by hand and the seed rolls out the open end.

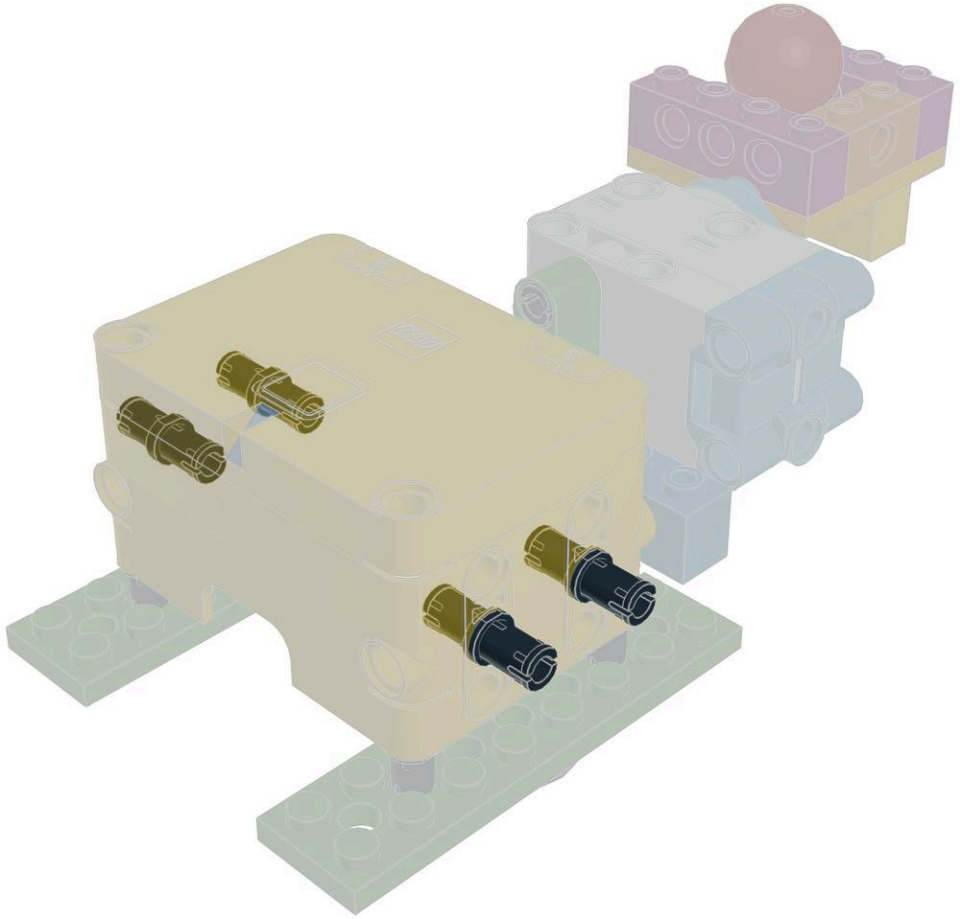
18 side-bar pins

Essential

ADD

- 4x Black connector peg with friction | kit 45345

Middle row of each side wall: front and back holes, middle empty.



Check: Four pegs stick straight out sideways, two on the left and two on the right, all at the same height.

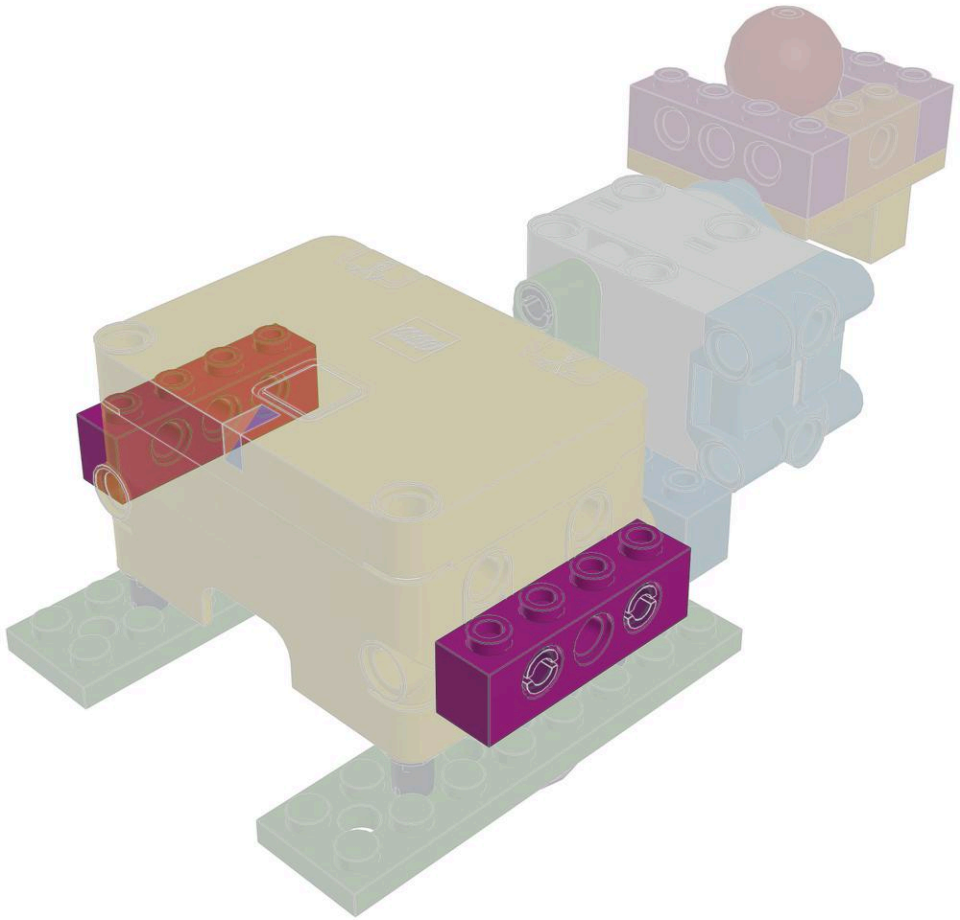
19 side bars

Essential

ADD

- 2x Bright Reddish Violet 1x4 Technic brick | kit 45345

One short bar per side. Hold the yellow Hub, not the bars.



Check: One short purple bar sticks out from each side, level with the other. Now pick the drone up by the yellow Hub, one hand cupped around each side. It comes up flat and level.

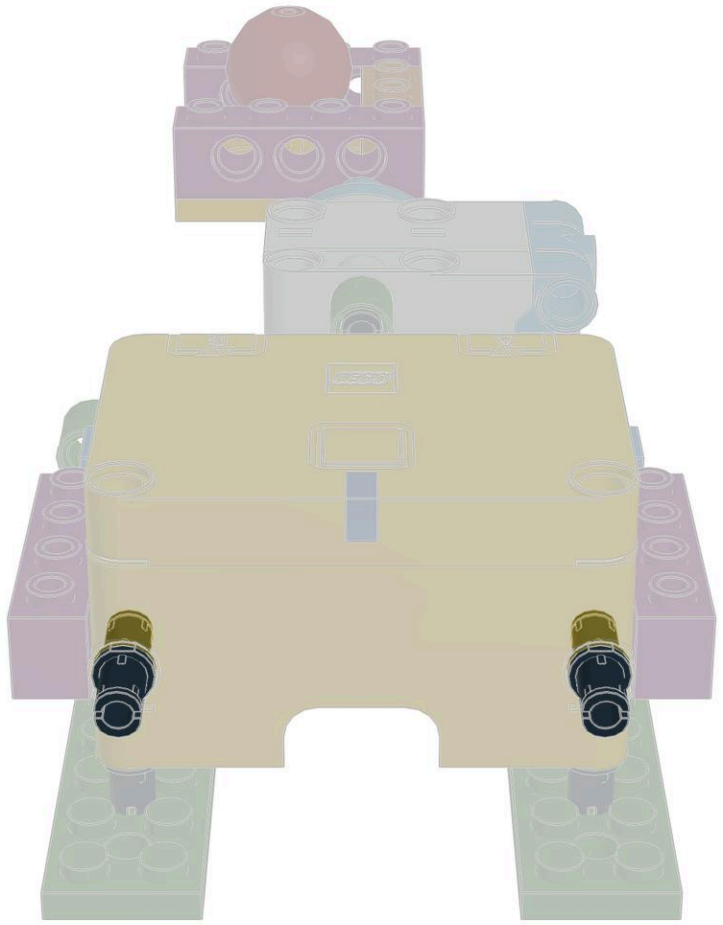
20 nose pins

Essential

ADD

- 2x Black connector peg with friction | kit 45345

Two pegs into the short wall with the USB shape.



Check: Two pegs point straight forward at the same height.

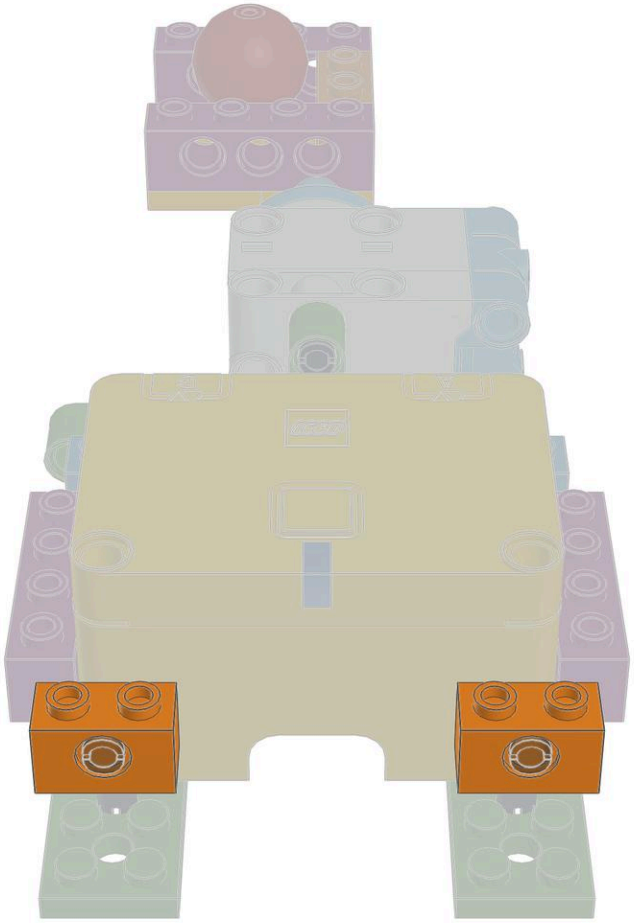
21 nose bricks

Essential

ADD

- 2x Bright Orange 1x2 Technic brick | kit 45345

One orange brick on each nose peg. They can still swivel -- that is fine.



Check: Two orange bricks, one on each peg, with a gap between them.

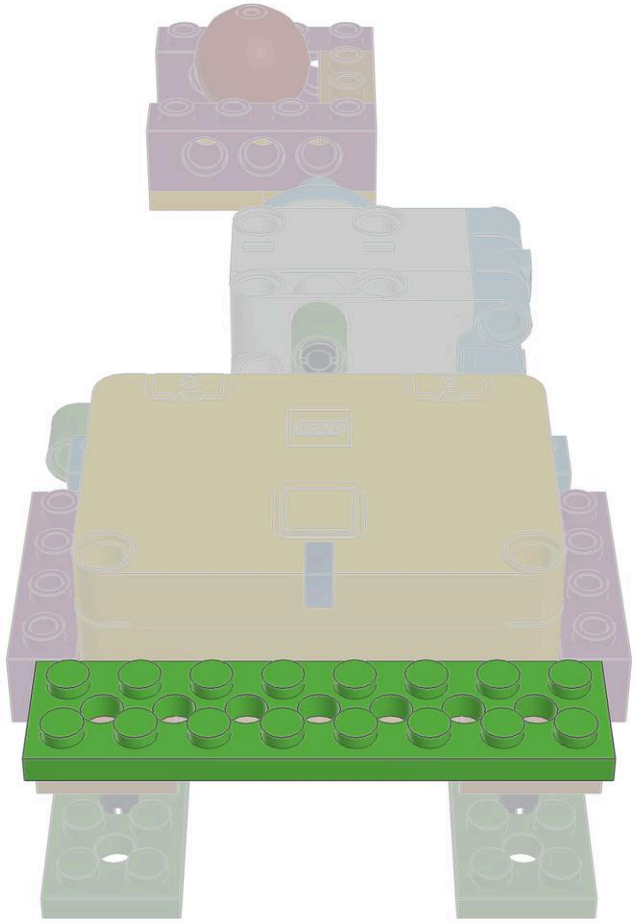
22 the face

Essential

ADD

- 1x Bright Green 2x8 plate with holes | kit 45345

One green shelf across both bricks. This is the face.



Check: Two separate orange bricks sitting under one flat green shelf. Neither brick can swivel now. This shelf is going to be the drone's face -- the sensor and the eyes go on it.

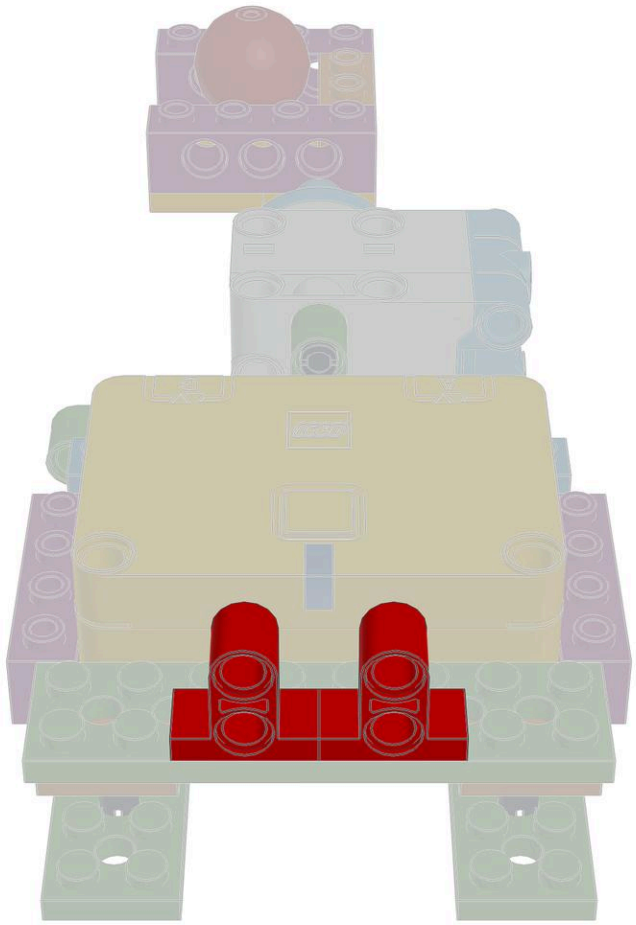
23 sensor brackets

Essential

ADD

- 2x Bright Red T-beam with 1x2 plate | kit 45345

Two red T-beams inside the centre; leave both outer corners bare.



Check: The two red holes look at you like a pair of eyebrows, and there is a clear 2x2 patch of green studs beyond each one.

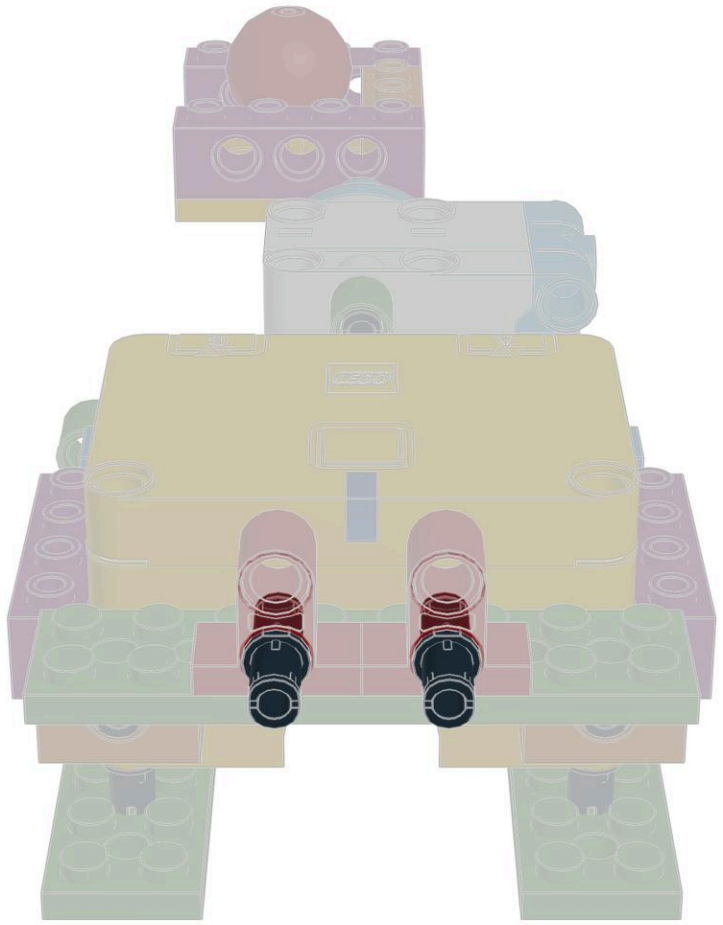
24 sensor pins

Essential

ADD

- 2x Black connector peg with friction | kit 45345

Push both pegs forward through the red holes.



Check: Two black pegs stand parallel, ready for the sensor.

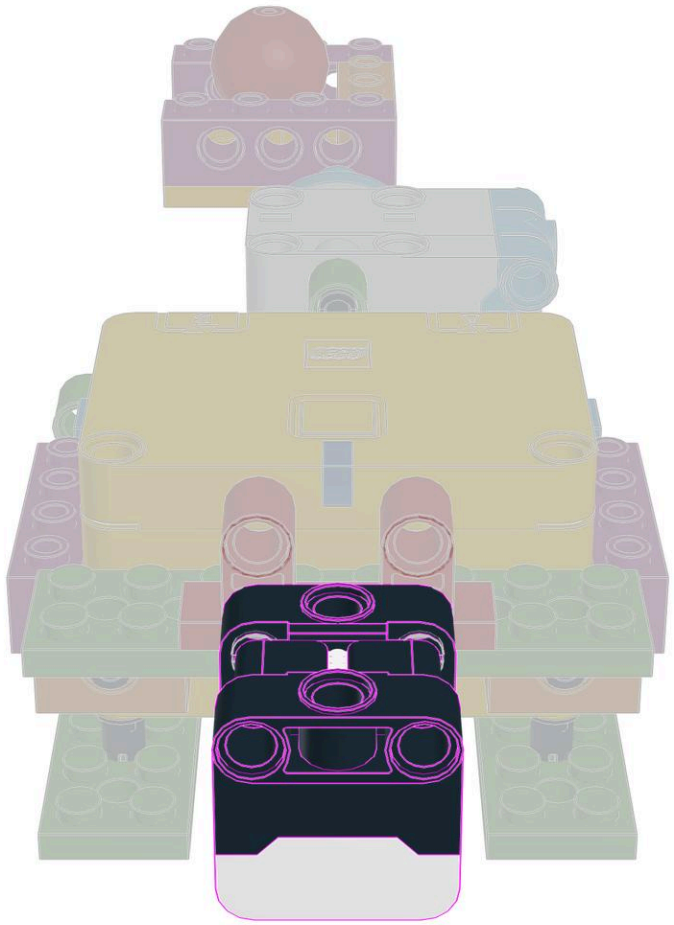
25 colour sensor

Essential

ADD

- 1x White Colour Sensor | kit 45345

Press on the white sensor with its dark lens pointing down.



Check: Peek under the nose: you can see the lens. It does not point forward, sideways, or up.

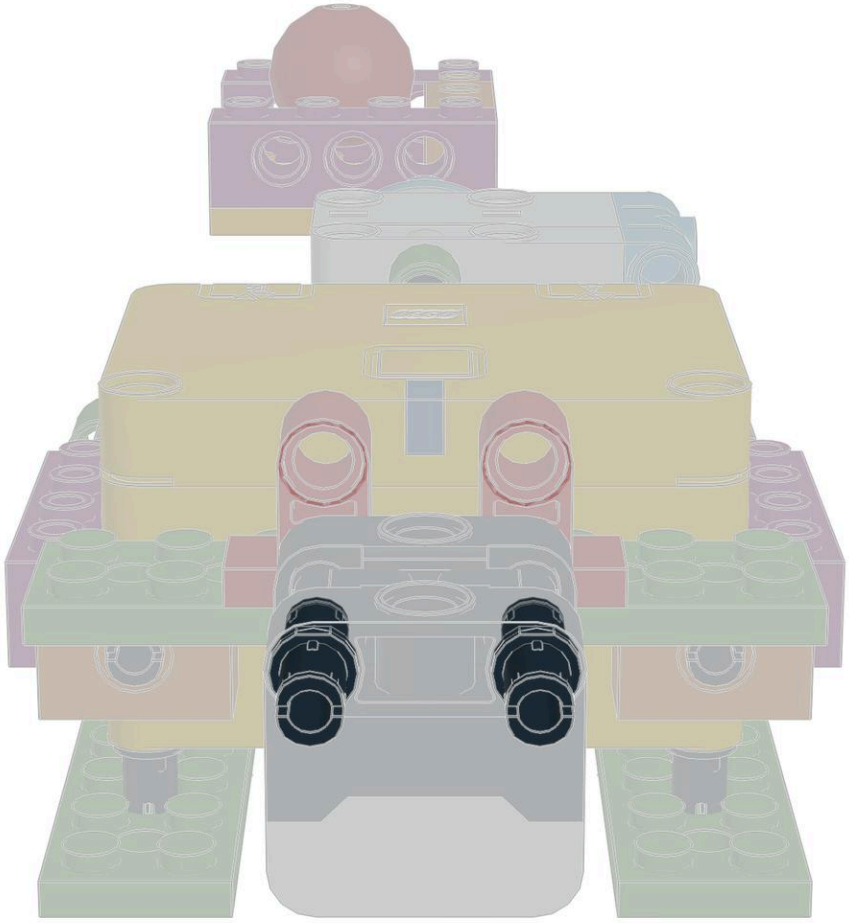
26 eye pins

Essential

ADD

- 2x Black connector peg with friction | kit 45345

Two pegs into the FRONT face of the sensor. The back holes are already used.



Check: Two short black pegs point out of the front of the sensor, level with each other, like two little stalks. They do not touch the red brackets behind them.

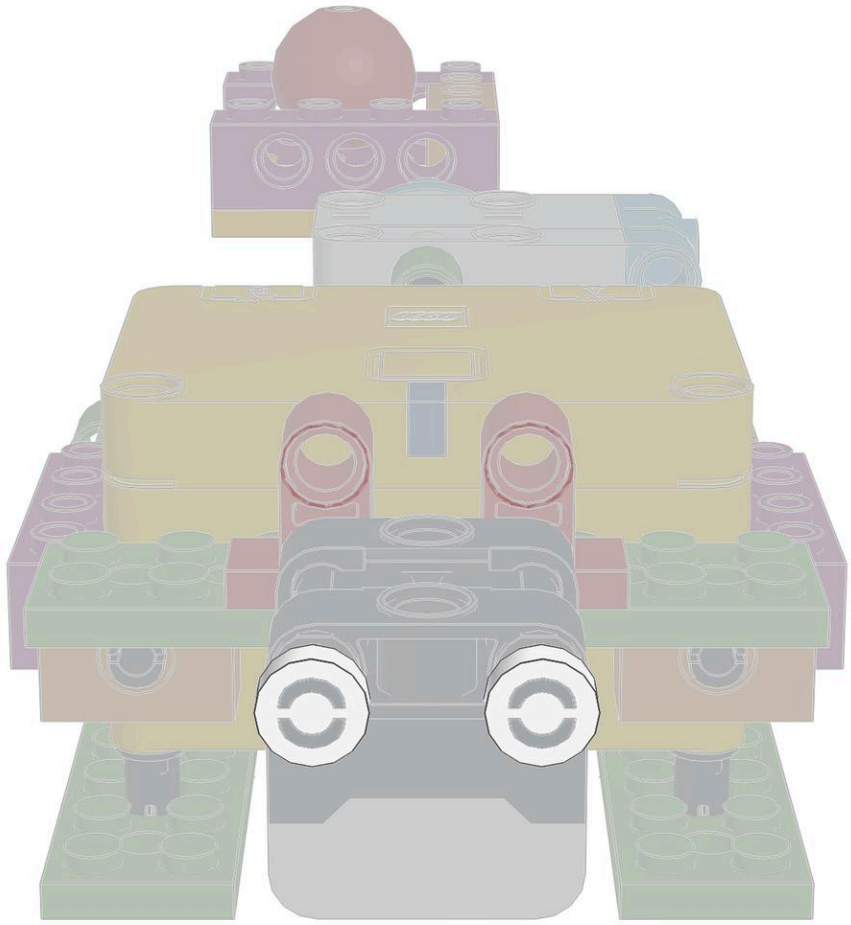
27 eyes

Essential

ADD

- 2x White 1x1 round tile with printed eye | kit 45345

One little eye pressed onto each peg tip. Blank in the picture, an eye on the real tile.



Check: The sensor now has two eyes and the drone is looking at you. Wiggle one gently: it grips the peg and stays on.

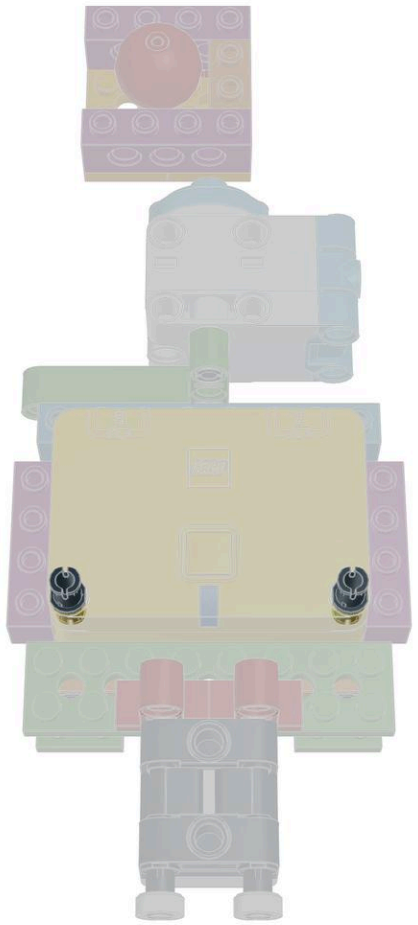
28 rotor-deck pins

Essential

ADD

- 2x Black connector peg with friction | kit 45345

Stand two pegs in the top pair nearest the nose.



Check: Both pegs point straight up from the yellow Hub.

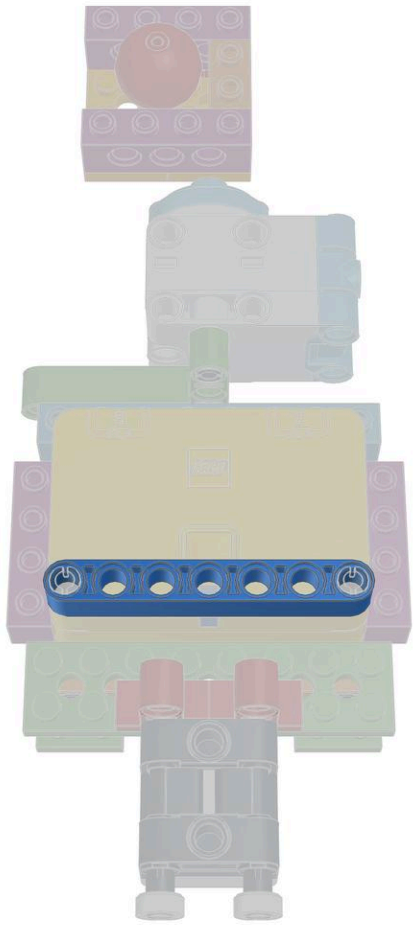
29 rotor bearing

Essential

ADD

- 1x Bright Blue 7M beam | kit 45345

Blue beam across the Hub; centre ROUND hole stays open.



Check: The beam lies left-to-right across the Hub. Its centre round hole is directly above the middle of the drone.

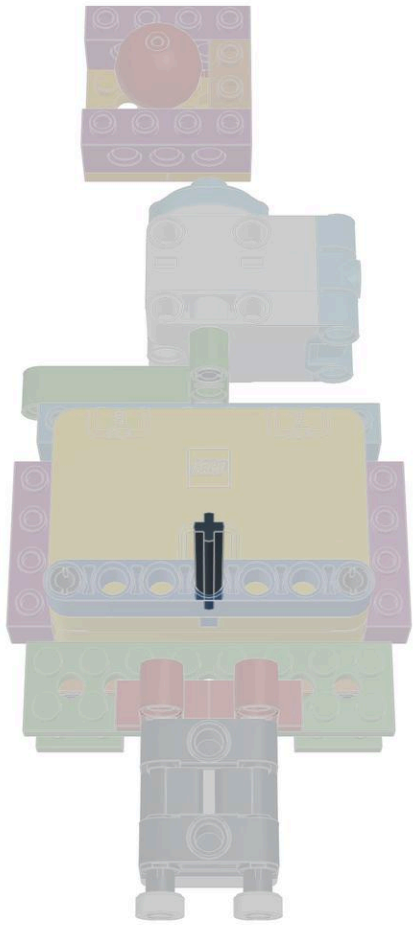
30 free-spin axle

Essential

ADD

- 1x Black 4M cross axle | kit 45345

Stand the black axle through the centre round hole. Round means it spins.



Check: The axle can turn inside the round beam hole when you twist it.

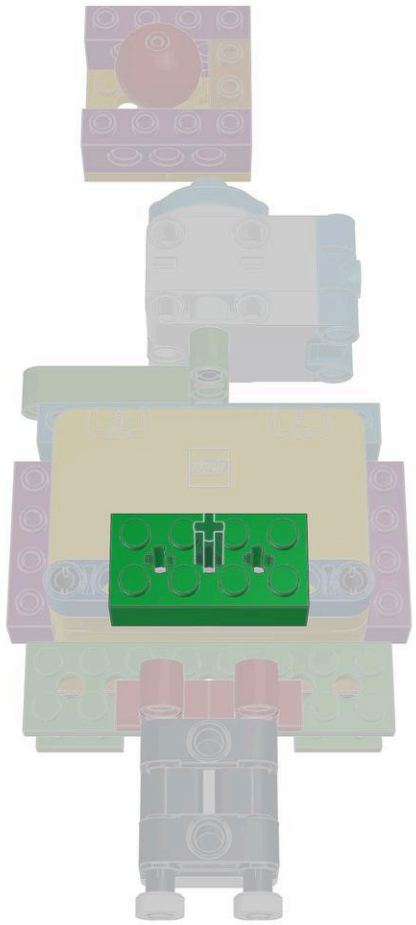
31 lock the hub

Essential

ADD

- 1x Dark Green 2x4 brick with cross holes | kit 45345

Lock the brick onto the axle. A cross hole grips.



Check: Turn the brick. The black axle turns with it, and the blue beam underneath stays still. That is the point of a cross hole: it grips the axle instead of letting it spin.

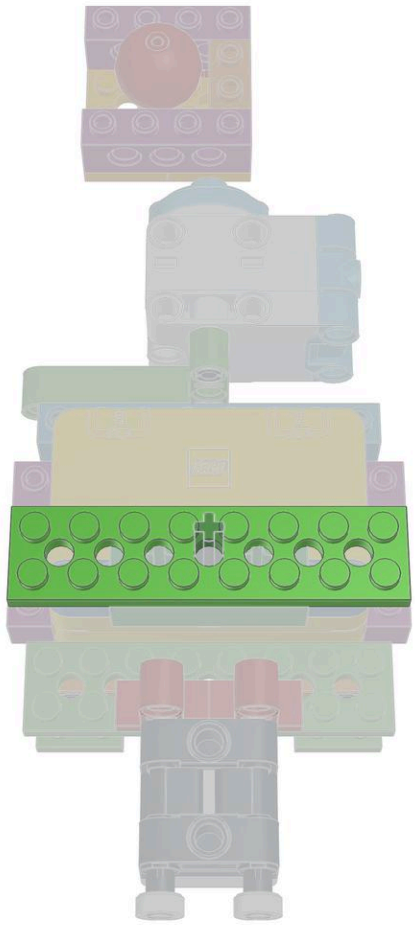
32 the rotor plate

Essential

ADD

- 1x Bright Green 2x8 plate with holes | kit 45345

Press the green plate on top.
Seven holes in a row.



Check: Seven round holes in a row along the top, with the same number of holes past the brick on the left as on the right. The plate and brick turn together with the axle.

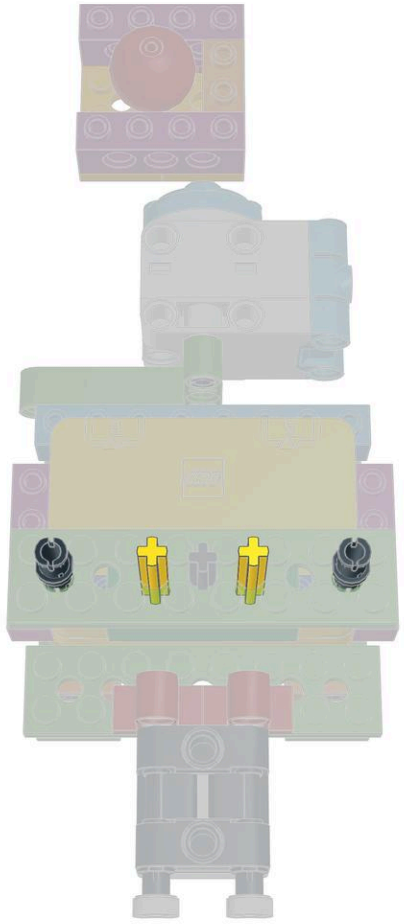
33 blade fasteners

Essential

ADD

- 2x Bright Yellow 3M cross axle | kit 45345
- 2x Black connector peg with friction | kit 45345

Yellow beside the middle -- it locks. Black at the far ends -- it grips.



Check: Four posts standing up: two yellow either side of the middle, one black at each end. Tug a yellow axle upward -- it should not come out. If it slides out easily, it is not in far enough, or it missed the hole in the dark-green brick underneath.

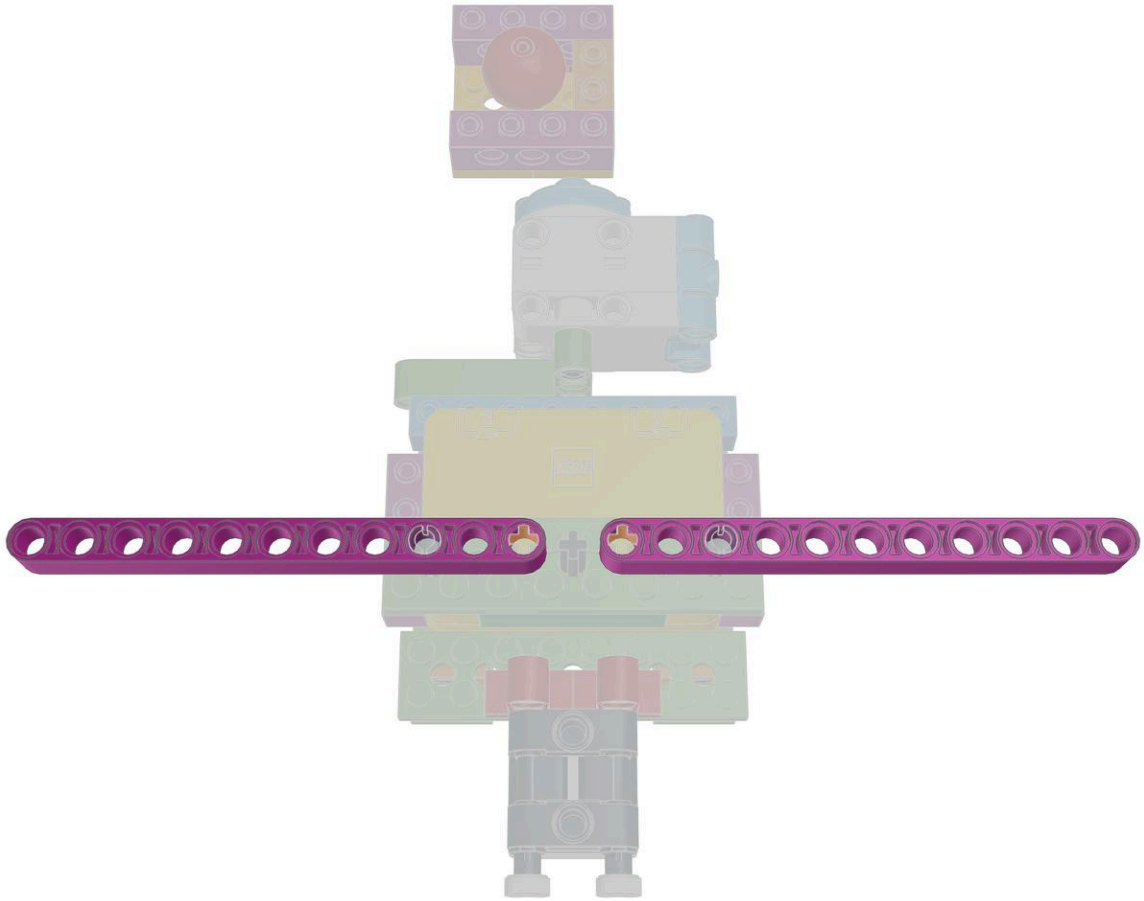
34 rotor blades

Essential

ADD

- 2x Bright Reddish Violet 11M beam | kit 45345

One long blade onto each axle-and-peg pair; flick gently to spin the rotor.



Check: The two blades form one long straight rotor, sitting level and floating just above the plate's studs -- beams have no bumps underneath, so they are held by the pegs, not by the plate. Flick a blade gently: the whole rotor turns, but neither blade swivels alone, and neither blade lifts off. It passes over the loaded seed tray at the back.

35 plug in and survey

Essential

ADD

- (none -- use the red band on the Rainforest Drop Zone)

Sensor A, motor B. Hold the yellow Hub and skim low over the red band.

Plug the downward Colour Sensor into port A and the seed-bay motor into port B. Put the red ball in the level tray. Hold the yellow Hub in both hands and skim the skids just above the red band.

Check: Both plugs and cables clear the tail spine. The lens stays close to the target, the rotor is clear of fingers, and the seed stays loaded.

36 code the drop

Essential

ADD

- (none)

See red, tip the tray, play the drop sound, then return it level.

In Icon Blocks, start a stack with the yellow "when colour" block set to RED on port A. Set motor B to half speed, turn it clockwise one quarter-turn to tip the tray, play one short effect sound until done, then turn motor B counterclockwise one quarter-turn.

Check: Move the sensor over the red drop zone once. One seed rolls out the open end of the tray, then the empty tray returns level for reloading.