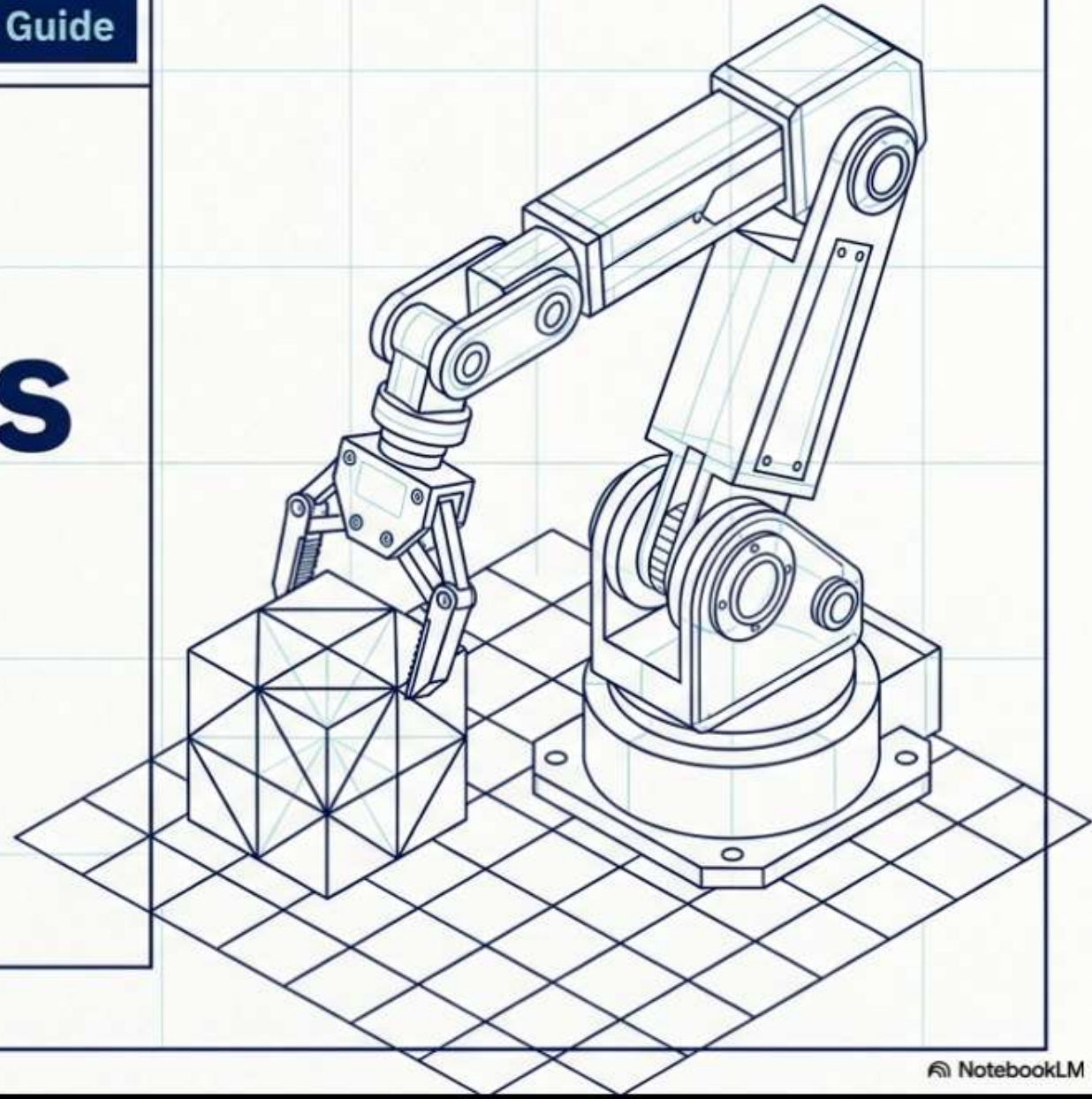


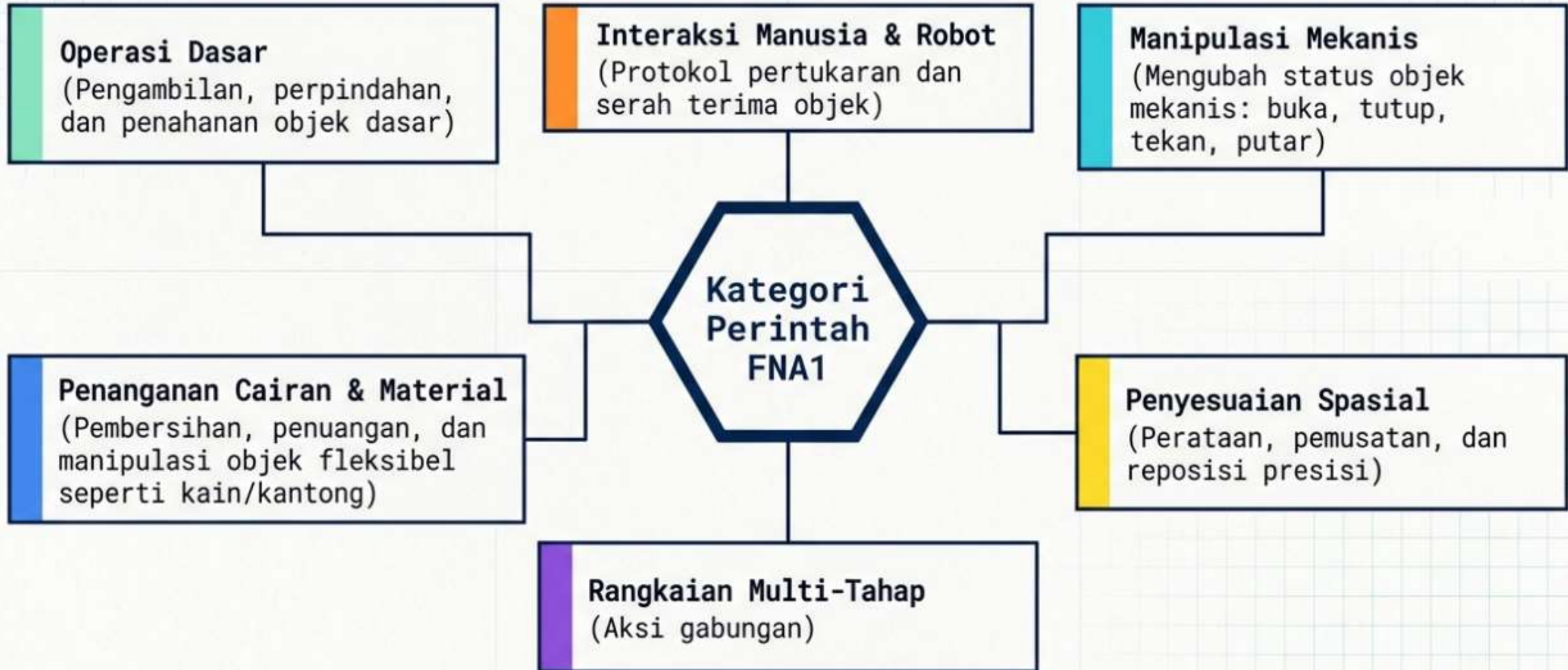
Visual Blueprint Edition - Standardized Reference Guide

FNA1 Descriptions Cheatsheet

Panduan Lengkap
Taksonomi Aksi &
Perintah Robotik



Arsitektur Perintah: 5 Makro-Taksonomi



Pengambilan & Peletakan (Pick Up and Place)

Kategori fundamental yang mendeskripsikan perintah eksplisit untuk mengambil, memindahkan, dan meletakkan objek di berbagai lokasi permukaan dan wadah.

- | | |
|---|--|
| - Pick up the apple from the center of table and place it in the basket | - Pick up the light blue mug from the table |
| - Pick up the orange and yellow blocks from the lunch bag and place them on the right side of the table | - Pick up the red building block |
| - Pick up the green block from the lunch bag and place it on the right side of the table | - Lift the small box from the rear shelf to the front counter |
| - Pick up the blue cup from the table and place it in the sink | - Pick up the red block from the front box to the right bin |
| - Pick up the rightmost blue cup from shelf | - Pick up the blue towel from the pile of towels |
| - Pick up the red shirt | - Place the blue towel on the left side of the table |
| - Pick up the blue pen from the table and place it in the bin | - Pick up the elephant puzzle piece |
| - Lift the yellow pen from the table and leave it in the bin | - Pick up the bottom left zip bag from the table |
| - Place the cup from the center table onto the top shelf | - Pick the blue towel from the center and place it on the left side of the table |
| - Set the plate from the left rack onto the table surface | - Pick up the purple measuring cup |
| - Drop the highlighter onto the center mat | - Pick up the hanger from the table |
| - Put the container from the right side onto the center table | - Pick up the brown jacket |
| - Pick up the torn paper from the area just lower left of the bin | - Place the bottle to the left of the red can |
| - Pick up the torn paper from the upper left side of the table | - Pick up the pink duvet |
| - Pick up the torn paper from the area just upper left of the bin | - Pick up the blue cushion on top of the table |
| - Pick up the torn paper from the lower left side of the table | - Place the blue cushion to the right of the gray cushion |
| - Leave the mug on the left shelf | |
| - Nest the small bowl from the right stack into the larger bowl | |

Operasi Dasar

Pergerakan, Pengangkatan & Penahanan (Move, Lift, Hold)

Variasi perintah pergerakan yang melibatkan pergeseran posisi absolut robot, pengangkatan sebagian objek, dan penahanan struktur.

Move (The Robot & Auxiliary)	Lift (Auxiliary)	Hold (Auxiliary)
<ul style="list-style-type: none">- Move the robot toward the table- Move the robot away from the table- Move the robot toward the left door- Move the robot towards the right edge of the bed- Move the pink cloth to the left side of the table- Move the green cup to the left side of the table- Move the robot away from the bed- Move the coffee pot to the lower left corner of the counter- Move the jacket forward so the hanger is closer to the clothes rack	<ul style="list-style-type: none">- Lift the bottom edge of the black lunchbox from the table- Lift up the towel from two corners and place it on the table	<ul style="list-style-type: none">- Push the top drawer into the gray sliding desk organizer- Hold the left side of the gray sliding desk organizer and push the top drawer into it- Hold the left side of the gray sliding desk organizer and push the top drawer into the gray sliding desk organizer- Hold the cabinet from the left side and open the drawer

Transisi Status Benda: Buka, Tutup & Kunci

Aksi yang secara langsung mengubah status mekanis pintu, penutup, atau wadah penyimpanan dari status terbuka menjadi tertutup dan sebaliknya.

Open

- Open the white door
- Open the left faucet
- Open the black toolbox lid
- Open the zip bag
- Push the left cabinet door
- Pull the top cabinet door
- Unlatch the right door
- Unlock the top door
- Open the clothes rack curtain

Close

- Close the white door
- Close the left door of the cabinet
- Close the zip bag
- Shut the right cabinet door
- Close the black toolbox lid
- Close the left faucet
- Lock the top door

Lock / Unlock

- Close the toolbox lid
- Push down the toolbox lid to fully close it and lock
- Push down the black toolbox lid to fully close it
- Unlatch the bottom lock of the plastic lid
- Unlatch the bottom lock of the plastic lid
- Lock the black toolbox
- Unlock the black toolbox
- Open the black toolbox lid

Manipulasi Mekanis Presisi (Push, Insert, Screw)

Interaksi motorik halus yang melibatkan tombol, sambungan listrik, penyisipan objek, dan mekanisme ulir botol.



Buttons / Push

- Turn the knob to the right
- Push the button lever
- Rotate the top air fryer knob to the right
- Rotate the bottom air fryer knob to the right
- Push the gray umbrella onto the table to retract
- Press the trashcan button to open
- Push down the trashcan lid to open
- Push the toaster lever
- Push the power button on the extension cord to turn on
- Press down the button of the extension cord
- Push the toaster lever down
- Press the spoon head to lift the handle for grasping
- Press the spoon head downward to lift the handle for grasping



Insert

- Insert the toaster cable into the power strip
- Plug in the toaster cable into the power strip
- Insert the yellow marker into the yellow cap
- Insert the charger into the power strip
- Insert the elephant piece into the top left corner of the game board
- Stack the red building block on top of the orange block
- Stack the red building block on the top of the blocks
- Pick up the elephant puzzle piece



Open Bottle – Screw / Unscrew

- Screw the cap onto the bottle
- Unscrew the cap onto the bottle
- Pick the bottle cap and place it on the bottle
- Release the bottle

Operasi Pembersihan & Penanganan Cairan

Kumpulan instruksi untuk memanipulasi zat cair, menyemprot, menuangkan, serta operasi pembersihan dan pengeringan permukaan.

Wipe

- Wipe the water from the plate using the green towel
- Sweep the glitter from the table using the blue broom
- Wipe the water on the table with the gray towel
- Wipe the plate with the sponge
- Wipe the plate in a circular motion
- Wipe horizontally the water on the table
- Wipe off the water on the center of the table
- Dry the plate using the towel
- Absorb the water on the left side of the table with the towel
- Soak up the water with the sponge
- Clean the whiteboard using the eraser
- Scrub the plate using the sponge
- Sweep the seeds onto the green bowl using the red dish brush
- Wipe the table using the green towel
- Place the green towel on the table

Pour

- Pour the cereal from the black bowl into the orange measuring cup
- Pick up the black bowl from the table and pour the cereal into the orange measuring cup
- Pour the rice from the right pink cup into the white bowl
- Fill the bowl with rice from the right pink cup
- Pour the water from the container into the topmost measuring cup
- Pour water from the pitcher into the blue cup
- Pour the apples from the bin into the [container]
- Pour the oil into the pan

Spray

- Pick up the spray bottle from the cabinet
- Hand off the spray bottle
- Spray liquid on the table

- Pour the bin sparge from thn into the mwater cup
- Pour the oil into to the pan

Open / Close Faucet

- Open the left faucet
- Close the left faucet
- Turn the faucet spout to the right
- Turn the faucet spout to the left

Empty (Auxiliary)

- Empty the pasta into the black trashcan using the spoon

Manipulasi Objek Fleksibel: Kain & Kantong

Penanganan khusus yang menangani sifat unik objek non-kaku, termasuk pelipatan, penggulungan, dan pengelolaan ritsleting kantong.

Bag Handling

- Open the zip bag
 - Unzip the bag
 - Widen the zip bag opening
 - Close the zip bag
 - Zip the bag
 - Partially open the zip bag
 - Pick up the [object] from the table and place it in the zip bag
- Hand off the zip bag
 - Place the zip bag on the right side of the table
 - Pick up the bottom left zip bag from the table and place it in the plate

Fold

- Pick up the blue towel from the pile of towels
- Align the top corner of the towel with the folded edge
- Flatten the blue towel
- Fold the blue towel to the left
- Fold the blue towel upward
- Fold the towel to the left
- Place the blue towel on the left side of the table
- Fold the red t-shirt to the left
- Flatten the towel
- Regrasp the corner of the towel
- Regrasp the edge of the cloth
- Hand off the pink duvet
- Tap the right edge of the pink duvet
- Fold the red tote bag to the left
- Align the left side of the red tote bag with the other side
- Reposition the red tote bag to the top left of the table
- Align the top right corner of the red tote bag with the other folded corner
- Reposition the red tote bag to the bottom of the table
- Fold the straps of the red tote bag downward
- Unfold the towel to the right
- Flatten the towel on the table
- Unfurl the tote bag on the table
- Straighten the napkin on the center of the table
- Pull the pink duvet to the right to cover the bed

Fold (Roll)

- Pick up the orange towel from the table
- Flatten the orange towel
- Fold the orange towel to the left
- Roll the orange towel upwards
- Roll the orange towel forward
- Place the orange towel on the left side of the table
- Flatten the left side of the orange towel
- Roll the red t-shirt to the left
- Align the top corner of the towel with the folded edge

Penyesuaian Spasial 1: Perataan & Penataan

Perintah Auxiliary yang digunakan untuk memperbaiki tata letak, menengahkan, atau merapikan objek pada permukaan.



Align (Auxiliary)

- Place the dragon fruit on the gray tray to the left side of the pomegranate
- Align the pomegranate on the gray tray with the dragon fruit
- Align the lid from the left surface onto the round container



Center (Auxiliary)

- Center the object from the right edge onto the left side of the table



Arrange (Auxiliary)

- Arrange the blocks from the scattered table into the center grid



Hang

- Pick up the purple measuring cup
- Hand off the purple measuring cup
- Hang the purple measuring cup on the right hook at top of the black pegboard
- Take the shirt off the hanger
- Unhook the measuring cup from the left hook of the pegboard
- Remove the spatula from the pegboard
- Hang the jacket on the hanger
- Hang the jacket on the clothes rack

Penyesuaian Spasial 2: Orientasi & Rotasi

Perintah Auxiliary yang memanipulasi sudut pandang, rotasi, atau posisi spesifik dari sebuah objek tanpa memindahkannya ke lokasi yang baru.



Reposition (Auxiliary)

- Reposition the pitcher handle to the bottom side so it is aligned with the tray
- Align the pitcher handle on the bottom side so it lines up with the tray
- Reposition the orange noodle pack so it is aligned with the black noodle pack
- Align the orange noodle pack so it is in line with the black noodle pack
- Reposition the blue towel so the corners point upward
- Rotate the bag clockwise
- Turn the bottle on the side
- Rotate the container clockwise
- Shake the bag to settle the items inside
- Shake the bag to settle the notebook inside
- Reposition the dustpan so that it is below the table



Turn / Rotate (Auxiliary)

- Turn the faucet spout to the right
- Rotate the bag clockwise
- Turn the blender knob clockwise to turn it on
- Turn the bottle on the side
- Rotate the bag clockwise so that the zipper is on the top
- Turn the blender knob counterclockwise to turn it off



Flip (Auxiliary)

- Flip the green bag upwards
- Flip the towel upside down

Rangkaian Aksi Multi-Tahap

Kategori khusus untuk aksi kompleks yang mengharuskan eksekusi urutan langkah mekanis atau spasial secara berkelanjutan (Multi-Stage).

