



# THAMES KOSMOS Huey The Line-Tracking Color-Sensing Robot Instruction Manual

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**THAMES -KOSMOS- Huey -The -Line-Tracking -Color-Sensing -Robot**



## SAFETY INFORMATION

**WARNING!** Not suitable for children under 3 years. Choking hazard — small parts may be swallowed or inhaled. Keep packaging and instructions as they contain important information. Store the experiment material out of the reach of small children.

### Safety for Experiments with Batteries:

To operate the models, you will need 3 AAA batteries (1.5-volt, type LR03), which could not be included in the kit due to their limited shelf life. The supply terminals are not to be short-circuited. A short circuit can cause the wires to overheat and the batteries to explode. Different types of batteries or new and used batteries are not to be mixed. Do not mix old and new batteries. Do not mix alkaline, standard (carbon-zinc), or rechargeable (nickel-cadmium) batteries. Batteries are to be inserted with the correct polarity (+ and -). See below. Press them gently into the battery compartment. Always close battery compartments with the lid. Non-rechargeable batteries are not to be recharged. They could explode! Rechargeable batteries are only to be charged under adult supervision. Rechargeable batteries are to be removed from the toy before being charged. Exhausted batteries are to be removed from the toy. Dispose of used batteries in accordance with environmental provisions, not in the household trash. Be sure not to bring batteries into contact with coins, keys, or other metal objects. Avoid deforming the batteries.

### Care and Maintenance:

Change batteries if power decreases. Always remove batteries from the toy when it is not being used for a long period of time. Keep the toy away from direct heat. Wipe the toy gently with a clean cloth. Do not submerge the toy into water as it will damage the electronic assemblies.

### Notes on Disposal of Electrical and Electronic Components

The electronic components of this product are recyclable. For the sake of the environment, do not throw them into the household trash at the end of their lifespan. They must be delivered to a collection location for electronic waste, as indicated by the following symbol: Please contact your local authorities for the appropriate disposal location. Model: 620396 This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## GETTING STARTED INSTALLING OR CHANGING BATTERIES

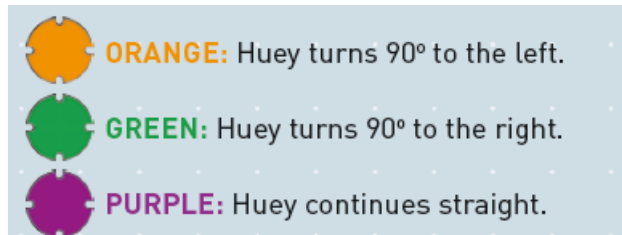
Unscrew the battery cover on the underside of Huey. Make sure to install the batteries with the correct polarity. Close the battery cover and tighten the screw.

## LEARNING OBJECTIVE

Guide your Huey robot through different maps from the start tile to the finish tile. Your job is to fill in the missing

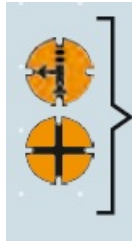
coding discs so that Huey follows the correct path. The colors of the coding discs tell Huey the direction to go. Be sure to avoid the red ghosts, or you will have to return to the start position.

## WHAT DO THE COLORS MEAN?



**NOTE:** when Huey moves over this color, it will change its speed and make different sounds.

Huey performs the same action on both types of coding discs. The discs with arrows are designed for children ages 5 to 7. The discs with the crosses are intended for children ages 7 and up.

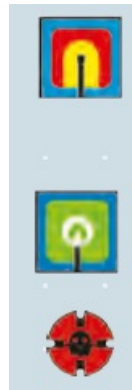


**START:** Place Huey on this tile to start the journey.

**Note:** Huey follows the black lines, so it can only travel in one direction from the start tile.

**FINISH:** You have reached your objective when Huey arrives home.

**GHOST::** If Huey moves over a ghost, it will make a sad sound and stop. You will need to debug your code by moving some coding discs, then return to the start tile to try again.



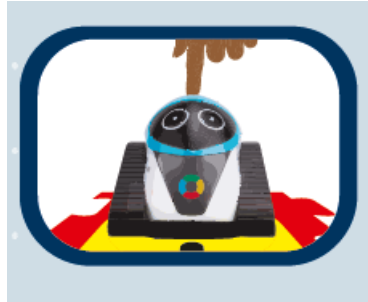
## HOW TO CODE AND PLAY

### Construct the map

You can set up a challenge from the Challenge Book or create your own path for Huey. Choose the map tiles and discs that you need. Huey must start on the start tile and finish on the finish tile. It will follow the black lines, and it will turn according to the coding discs (see the explanation of the colors on page 2).



If you are solving one of the challenges in the Challenge Book, you will find the colored coding discs that you need to complete the map in the upper right section of each challenge. Note: There may be empty holes left in the map that are not part of Huey's path to the finish line.



Place each coding disc in a map tile hole. Huey will perform the action indicated by the coding disc by reading its color.



Press the large central button on Huey's head to turn the power on. Huey will greet you. Place Huey on the yellow and red start tile, and it will start up. Check that it follows the path correctly until it reaches the finish tile. If Huey is programmed correctly, it will dance when it reaches home!

If Huey is not programmed correctly, you can use the suction cup to move the coding discs. Then repeat step 4 to test your new code. Huey detects the colors in the map with its color sensor. While it moves, Huey sends beams of light downward toward the map. These beams bounce off of the map and are reflected back to the sensor. Certain wavelengths of light are absorbed by the coding discs or tiles and are not reflected. Huey knows what color it is moving over by measuring the wavelengths of light that are reflected back to its sensor.

Each challenge in the Challenge Book follows the same structure:

These are the coding discs that you add to the holes in the map tiles to complete the path for Huey to follow.

Note: You need to use all of the coding discs to solve the challenge, but there may be some holes that remain empty.

These are the map tiles you need in order to build the challenge.

Note: your map tiles have blue backgrounds.

This is the level of difficult . See page 4 for more details.

## ADDITIONAL INFORMATION

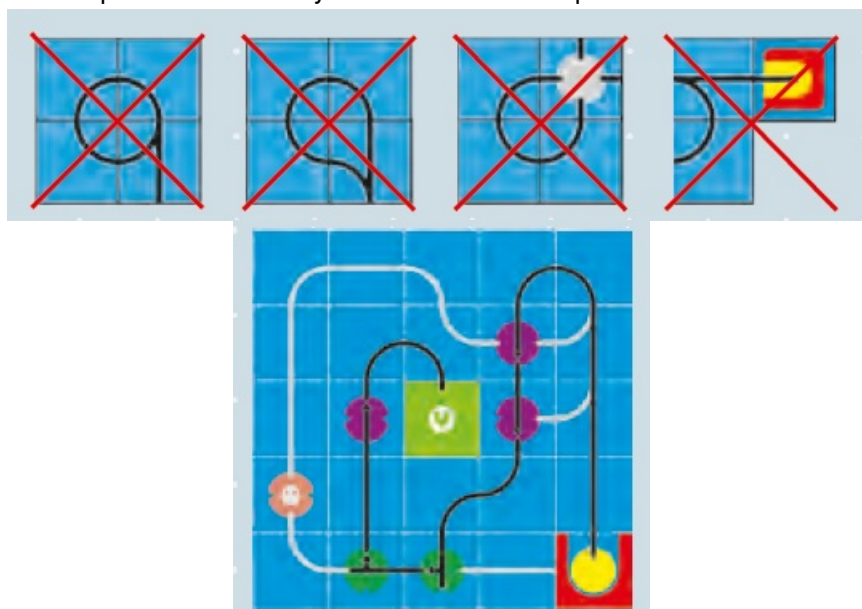
### MUTE MODE

Press the small button to the left of the main button to turn Huey's volume off.

**NOTE:** when Huey is in mute mode, you will not hear its start up noise when you place it on the start tile. Be patient ... it takes a few seconds for Huey to get going.

### RULES FOR FREE PLAY

When you construct your own maps for Huey, do not construct a small complete loop with four map tiles or individual turns that are sharper than 90°. Huey cannot follow these paths.



Huey must always start on the start tile. When given two options, Huey will follow the less extreme curve. In the example on the left, Huey follows the path indicated by the black line.

### CHALLENGE LEVELS

		BOARD SIZE	RECOMMENDED AGE
Level 1: Easy	○○○●	3 x 3	5 - 6 years
Level 2: Medium	○○●●	5 x 5	6 - 7 years
Level 3: Hard	○●●●	7 x 7	7 - 8 years
Level 4: Very hard	●●●●	9 x 9	> 8 years

There are 18 challenges in the Challenge Book included with the kit and 40 additional challenges in the Online Challenge Book, which you can access by scanning this QR code. 1st Edition 2021 Thames & Kosmos, LLC, Providence, RI, USA Thames & Kosmos® is a registered trademark of Thames & Kosmos, LLC. Distributed in North America by Thames & Kosmos, LLC. Providence, RI 02903 Phone: 800-587-2872; Web: [www.thamesandkosmos.com](http://www.thamesandkosmos.com) We reserve the right to make technical changes. Printed in China / Imprimé en China

### Documents / Resources



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Huey, The Line-Tracking Color-Sensing Robot, Huey The Line-Tracking Color-Sensing Robot

## References

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