



Nest Thermostats

Nest Pro Guide





Hey there!

Welcome to the Google Nest thermostats Pro Guide.

Here you will find everything you need to install **Nest thermostats** so customers can live comfortably and save energy.

Section	Page
Technical specs Nest thermostats are smart and efficient inside and out.	4
Installation guides A step-by-step guide to setting up Nest thermostats.	6
Category expertise Learn what makes these thermostats so cool.	11
Better Together Explore the benefits of using Nest thermostats with other Google Nest products.	14
Additional resources	15

Any Qs?

Pro line: 855-VIP-NEST or 855-847-6378

[For footnotes - head to the back of this guide](#)

[Got Feedback? Tell us what you think here.](#)

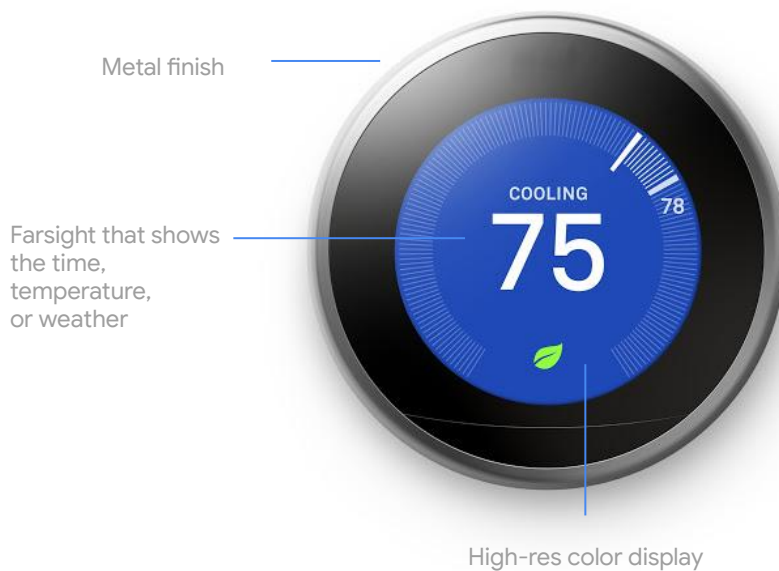


Meet Nest Thermostats

Nest gives you two smart choices.

Nest Learning Thermostat

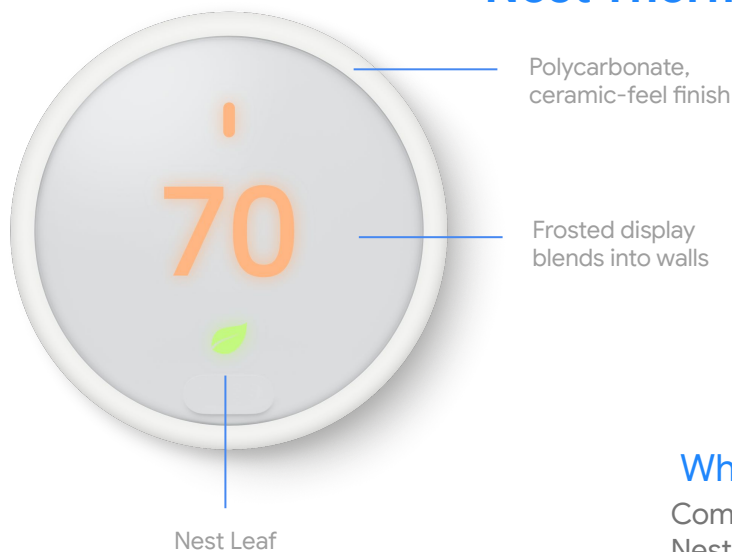
The 3rd generation Nest Learning Thermostats support up to three stages of heating and two stages of cooling for conventional systems, and two stages of heating and cooling with auxiliary heat for heat pumps.



What's in the box

- Nest Learning Thermostat display
- Nest Learning Thermostat base
- Trim plate
- Steel plate
- Mounting screws and wire labels
- Installation Guide
- Welcome Guide

Nest Thermostat E



What's in the box

- Nest Thermostat E display
- Nest Thermostat E base
- Trim plate
- Mounting screws and wire labels
- Installation Guide

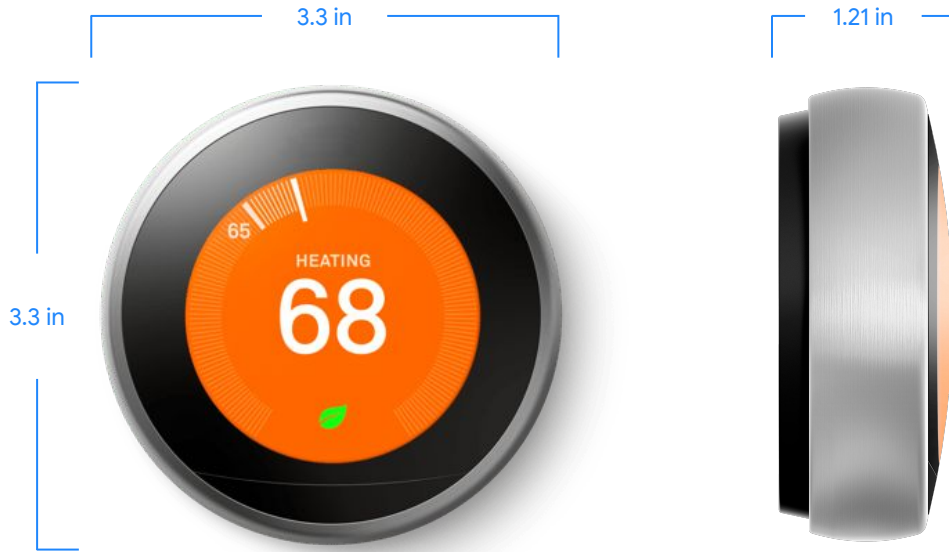
What's the differences?

Compare between the Nest Learning Thermostat and Nest Thermostat E here.

https://store.google.com/magazine/compare_thermostats



All the specs for Nest Learning Thermostat



Weight

Assembled unit:
8.6 oz (243.7 g)
Display: 7.2 oz
(205.4 g)
Base: 1.4 oz (38.3 g)

Color & Material

- Stainless steel
- White
- Black
- Copper
- Polished Steel
- Brass
- Mirror Black

Display

- 24-bit color LCD
- 480 x 480 resolution, 229 ppi
- 2.0 in (5.3 cm) diameter

Sensors

- Temperature
- Humidity
- Proximity
- Occupancy
- Ambient light
- Magnetic (for thermostat ring position)

Battery

Built-in rechargeable lithium ion battery

Power Consumption

Less than 1 kWh/month

Data Consumption

- 50MB/week upload
- 50MB/week download

Wireless

- 802.11 a/b/g/n (2.4GHz/5GHz) Wi-Fi
- 802.15.4 (2.4GHz)
- Bluetooth Low Energy

Warranty

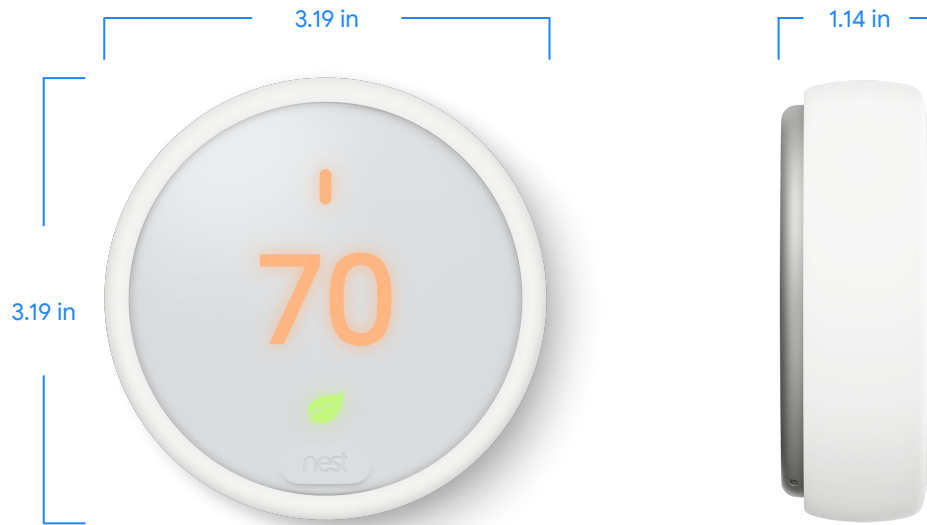
- Two-year limited warranty
- Five-year warranty with Pro ID

Compatibility

- The Nest Learning Thermostat works with 95% of 24V heating and cooling systems, including gas, electric, forced air, heat pump, radiant, oil, hot water, solar, and geothermal
- Compatible with add-a-wire products such as Venstar
- Heating: 1, 2, and 3 stages (W1, W2, W3)
- Cooling: 1 and 2 stages (Y1, Y2)
- Heat pump: with auxiliary and emergency heat (O/B, AUX, E)
- Humidifier or dehumidifier (HUM, DEHUM)
- Fan (G)
- Power (C, RH, RC)



All the specs for Nest Thermostat E



Weight

14.3 oz (408 g)

Color & Material

- White

Display

- 24-bit color LCD
- 320 x 320 resolution at 182 pixels per inch
- 1.7 in (4.5 cm) diameter

Sensors

- Temperature
- Humidity
- Proximity
- Occupancy
- Ambient light
- Magnetic (for thermostat ring position)

Warranty

- Two-year limited warranty
- Three-year warranty with Pro ID

Battery

Built-in rechargeable lithium ion battery

Power Consumption

Less than 1 kWh/month

Data Consumption

- 50MB/week upload
- 50MB/week download

Wireless

- 802.11 a/b/g/n (2.4GHz/5GHz) Wi-Fi
- 802.15.4 (2.4GHz)
- Bluetooth Low Energy

Compatibility

- The Nest Thermostat E works with 85% of 24V heating and cooling systems, including gas, electric, forced air, heat pump, radiant, oil, hot water, solar and geothermal.
- Compatible with add-a-wire products such as Venstar
- Heating and Cooling: 1 stage of heating (W1) and cooling (Y1) and a second stage of either heating (W2) or cooling (Y2).
- Heat pump: with auxiliary and emergency heat (O/B, AUX)
- The Nest Thermostat E is designed to work even if a customer's home doesn't have a common (C) wire, but installing a new C wire may be required.
- Power (C, Rh or Rc)
- Fan (G)



Installation guide

Step by step

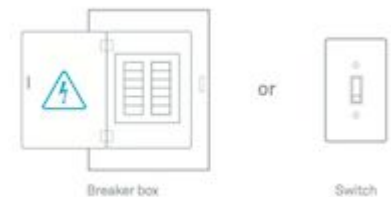
This is your comprehensive guide to setting up and installing **Nest thermostats**.

Don't have time to read through the steps? Go to the Additional Resources section to watch the installation video.

If you are pre-drilling holes, use a 3/32" drill bit. If you are drilling into hard materials such as stone, brick, concrete or marble, use a masonry drill bit and drill.

Step 1: Switch off the power

Before exposing any wiring make sure power to the system is turned off. An HVAC system can have multiple breakers so make sure to turn them all off. To check that its off, change the temperature on the thermostat appropriately for heating or cooling by 5 degrees and wait 5 minutes to see if the system turns on.



Step 2: Remove the cover of existing thermostat

Once you're sure the power is off, remove the thermostat's cover. Some pop off, others need to be unscrewed.

Important: Take this opportunity to also take a picture of the current wiring.



Step 3: Check system and get a wiring diagram

Let's confirm this setup is compatible for a Nest thermostat by visiting the [Compatibility Checker](#). Here you will also get a customized wiring diagram to show where to install the wires.

Incompatible wiring:

High voltage wires

If the thermostat is labeled 120V or 240V or has thick wires with wire nuts, the system is high voltage and isn't compatible with the Nest thermostat. Do not connect the Nest thermostat to high-voltage wires. [Learn more](#).

Stranded wires

Nest thermostats are not compatible with stranded wires. Do not connect the Nest Thermostat to stranded wires. [Learn more](#).

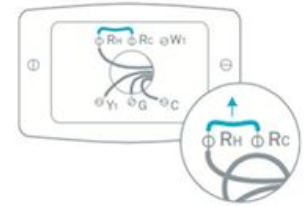




Step 4: Remove jumper wires and save them

Remove the jumper wires, the Nest thermostat doesn't need them, and save them.

Have the customer keep the current thermostat, the photo of the wiring, and any jumper wires the current thermostat uses in a safe place. This is in case they move and can reinstall the previous thermostat and take their Nest with them.



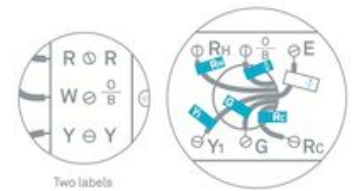
Step 5: Label the wires

If you see two sets of labels on each connector on the old thermostat's backplate, [visit here](#) for assistance.

Peel off the labels from the installation guide and attach them to the matching wires on the thermostat. You can also use the white labels for additional wires if needed.

Troubleshooting wire labels

If you have labels like W, Y, or R, use the wiring diagram that you created earlier to choose which labels to attach to these wires. If you have different wire labels not covered, [visit here](#).

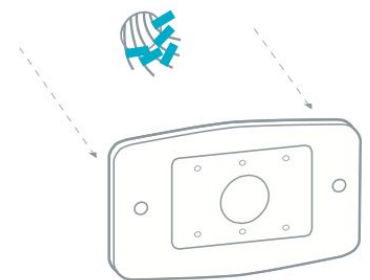


Step 6: Disconnect the wires and remove the base

Important: It's important that the power to the system is off to avoid blowing a fuse in the equipment. If you blow a fuse, the Nest thermostat won't turn on, or may display a power error after installation.

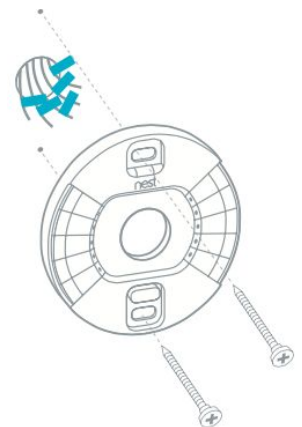
After removing the base, gently wrap the wires around a pen or pencil to ensure they don't fall back into the hole in the wall.

Ask the customer if they'd prefer to patch the wall themselves or if they would rather use the included trim plate to help hide scratches or screw holes.



Step 7: Mark where screws will go

Use the built in bubble level to make sure the Nest thermostat is level.





Step 8: Attach the Nest base

If the customer is going to use the optional trim plate, place it on the wall before installing the Nest base.

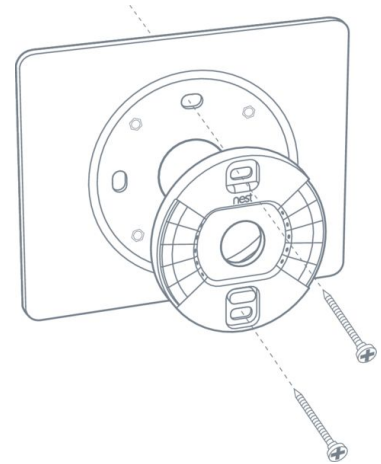
Tip: The Nest trim plate can be painted to match the color of the wall. If the customer wants this make sure its painted before installation. This is to avoid getting paint on the wiring, Nest base, or the thermostat display.

Pull the wires through the center of the base, then attach it to the wall with the screws.

Important: Use a screwdriver, not a power drill to drive in screws for the Nest base. Drills can easily over tighten the screws and crack the base and damage its electronics.

Use the bubble level to make sure the Nest thermostat is level.

The Nest screws are self tapping, so there's no need to drill into soft materials. If you need to drill into harder things like wood, use a 3/32 or 2.5mm drill bit.



Step 9: Connect the wires

Connect the wires to the Nest thermostat base by following the wiring diagram that you got from the Nest Compatibility Checker.

Press down on the connector button and insert the wire as far as it will go in. Then release the button.

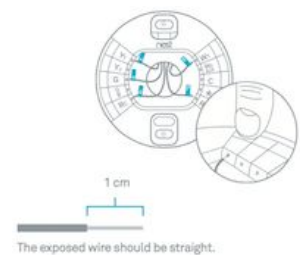
The connector button should stay down. This confirms that the wire is properly seated.

If the button doesn't stay down, take the wire out, straighten it, and put it back in as far as it will go. You may need to strip the end of the wire to make sure enough copper is exposed.

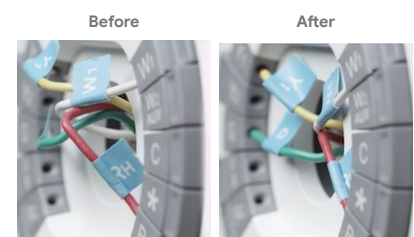
Important: Do not put more than one wire in each connector on the Nest base.

Important: Do not connect any "spare" wires to your Nest thermostat that were not connected to your old thermostat. Only use the wires on your Nest wiring diagram.

After all the wires are securely connected, push them down toward the wall to make sure they're flush with the base. If your wires stick out too far they can keep your thermostat display from connecting properly.



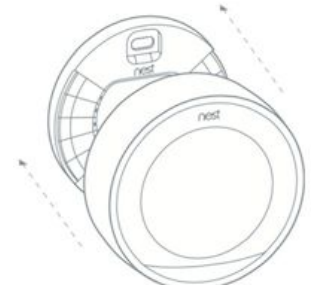
Terminals with wires should stay pressed down.



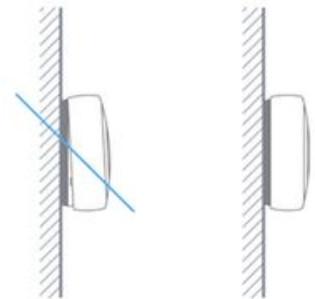


Step 10: Attach the Nest display

Hold the display so the Nest logo is right side up. Line up the pin connector on the back of the display and push it onto the base until it clicks into place.



Tip: If you don't hear the display click, use your thumb to push the wires further into the wall. This will make sure the wires aren't stopping the display from connecting to the base.



Step 11: Switch power back on

After turning the power back on, the Nest thermostat should power on automatically. If it doesn't turn on, you might see a blinking red light to indicate that the battery is charging.

Wait for the battery to charge or [check this article](#) for troubleshooting steps.

Step 12: Set up the Nest thermostat

After it's finished starting up, the Nest thermostat will guide the customer through setup.

They will tell the thermostat a few basics about their home and their heating and cooling system so it can start working efficiently for them right off the bat.

For more on setting up [visit here](#).

Entering your Nest Pro ID

Adding your Nest Pro ID to the customer's thermostat gives them easy access to you if they ever need help.

When installing a Nest Thermostat, the Pro Setup section will ask you if you'd like to enter your Nest Pro ID. Select PRO when asked if you are a PRO or HOMEOWNER to get to Pro Setup, and follow the onscreen instructions.

If the thermostat is already installed press the ring to access the main menu, turn to SETTINGS and press the ring again to select. Then turn the ring to NEST PRO and press to select. The thermostat will ask if you want to add your information.



Troubleshooting tips

Here are some common issues that may arise with Nest thermostats.

Furnace Heads-Up



Solve it:

Furnace Heads-Up can let you know when the Nest thermostat has detected a problem with the customer's forced air heating system. To troubleshoot, run a quick system test as soon as you can to confirm there's an issue. For further assistance [visit here](#).

When a C wire may be needed



Solve it:

Even though most Nest thermostats won't need the C wire, there are instances where they can help. If you're hearing strange noises from the system, heating or cooling or system fan won't turn off, or are seeing delayed messages on the screen you may need a C wire. Nest Pros should be using wire creation products like Fast-Stat or Venstar to add a C wire. [Visit here for information](#).

Thermostat won't turn on



Solve it:

There may be a few reasons why the thermostat won't turn on. If you see a blinking red or green light, or no light at all there could be a power issue or the thermostat may have frozen during a software update. There also could be a prompt on the thermostat or the app regarding Wiring Report. [All the answers are right here](#).

Heat pump cools when it's supposed to be heating



Solve it:

If the heating and cooling system is a heat pump and it blows cool air when the Nest thermostat is in heating mode (the background on the display is orange), you may need to adjust the heat pump O/B wire orientation settings on the Nest Learning Thermostat. [Here's how](#).



Category expertise: Nest Thermostats

This is how a thermostat becomes intelligent.



Control from anywhere

The Nest app allows you to control Nest thermostats from anywhere. Change the temperature or mode, turn on the fan, change temperature schedules, turn on Eco Temperatures, and even review your Energy History all from your mobile device.



Learning

With Auto-Schedule, Nest thermostat learns what temperatures you like at different times of the day. After a few days of learning, your thermostat will prepare a schedule for you. This applies to each temperature mode. So it will prepare a schedule for Heat, Cool, and Heat•Cool.



Lock

Nest thermostats have the ability to be locked by the owner so guests or curious children won't be able to change temperature settings. Lock it from the Settings menu or via the Nest app. Even if locked, Nest thermostats will continue with heating/cooling schedules. Use your four digit PIN to unlock.



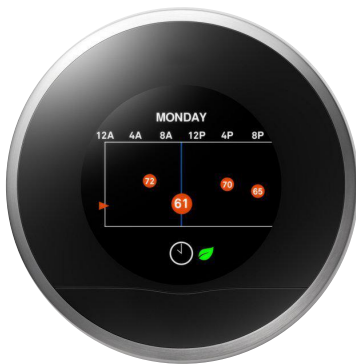
Faces

Nest thermostats show much more than just the temperature. Toggle between the easy Quick View menu to change settings like target temperature and WiFi. See notifications that pop up that help save energy as well as error messages. The Nest Learning Thermostat also has Farsight, so you can see the time, temperature, or weather from across the room.



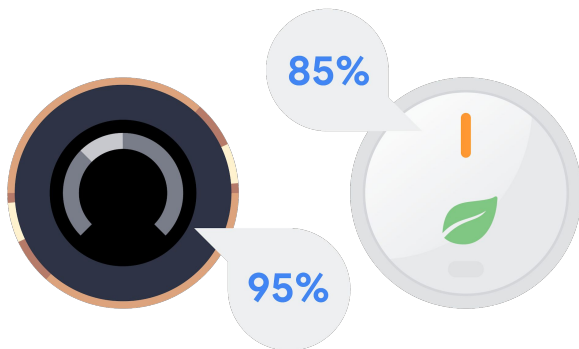
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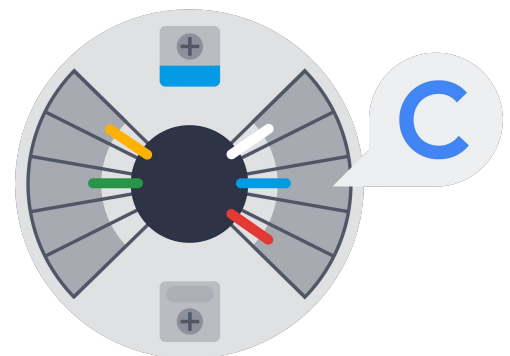
Home/Away Assist

Home/Away Assist tells the thermostat when everyone is out of the house. The thermostat will switch itself to Eco Temperatures to help save energy when no one is home. When the thermostat noticed activity, it will switch to Home mode and continue with your scheduled temperatures. Manually toggle between Home and Away in the Nest app.



HVAC

It's an easy acronym used to collectively talk about your heating, ventilation, and air conditioning systems. It's an important term to know, because it's what smart thermostats control to change the temperature. Nest Learning Thermostat is compatible with 95% of HVAC systems, while Nest Thermostat E is compatible with 85% of systems.



C-wire

A common wire is simply dedicated to delivering constant power to your thermostat. Unlike the other wires connected to your thermostat, it doesn't control heating or cooling functions. In most cases, Nest thermostats can charge their built-in battery just using your system's heating and cooling wires.



Category expertise: Nest Temperature Sensor

Making Nest Thermostats even smarter.



Nest Temperature Sensors control comfort from room to room. When placed, it alerts Nest Thermostats what temperature certain rooms should be and their priority. Just mount or place on a shelf.

Dimensions & Weight

- Diameter: 1.9 in (50 mm)
- Height: 0.8 in (22.5 mm)
- Weight: 1.6 oz (45 g)

Power

- One CR2 3V lithium battery (included)
- Up to 2-year battery life

Color

White

Operating Temperature

32° to 104°F (0° to 40°C)
Indoor use only

Other

- RoHS compliant
- REACH compliant
- CA Proposition 65
- Recyclable packaging

Sensors

Temperature

Wireless

Bluetooth Low Energy

Warranty

Comes with a 1 year limited warranty (details in box). For support, visit nest.com/support

Compatibility

Requires an installed Nest Learning Thermostat (3rd generation) or Nest Thermostat E. Identify your thermostat at nest.com/whichthermostat. Up to 6 Nest Temperature Sensors supported per connected thermostat and up to 18 Nest Temperature Sensors supported per home.



Better together

Powered by the Google Assistant, Google Nest products come together to help customers even more throughout their day.

How does it work together?

Ask the Google Assistant



Nest thermostats along with **Google Wifi**, **Google Nest Hub**, and **Google Home speakers** gives you control of your devices from anywhere at home or on the go so it's always a comfortable temperature at home.

- Change temperature with your voice.
- Enabled with the Google Assistant.

“Hey Google, turn up the heat.”



In an emergency, **Nest Protect** and Nest thermostats work together to stop bad situations from getting worse.

- The number one contributing factor to a CO event is the heating-cooling systems aiding in the spread of danger. Nest Protect will disable these systems when detected.



With **Google Nest cameras** you can check to see if anyone is in the house and adjust Nest thermostats accordingly.

- See the snow your thermostat is describing with a voice command.

“Hey Google, show me the front yard ”

Here are other handy devices that help create the smart home. All accessible from the Nest app.



[Nest x Yale Lock](#)



[Nest Hello](#)



[Nest Secure](#)



Additional resources

Prefer watching videos? Take a look at our [Nest Learning Thermostat installation video](#) and [Nest Thermostat E installation video](#):

[Tell us what you thought about this training here.](#)



Note: Localized video content for install videos are not available everywhere.



Additional resources



Here are some useful Nest thermostat links if you need more information:

- GRT: <https://googleretailtraining.exceedlms.com/student/path/11799-nest-thermostats>
- Google Store:
 - Nest Learning Thermostat:
https://store.google.com/us/product/nest_learning_thermostat_3rd_gen?hl=en-US
 - Nest Thermostat E:
https://store.google.com/us/product/nest_thermostat_e?hl=en-US
- Google Support: <https://support.google.com/googlenest/answer/9248184?hl=en>

[Tell us what you thought about this training here.](#)



Additional resources

Visit the website for a complete overview: <https://store.google.com/>

Help online: <https://support.google.com/googlenest> or at <https://pro.nest.com/support>

Want to know more about:

- Google Nest Hub? Go to
 - GRT: <https://googleretailtraining.exceedlms.com/student/path/14351-google-nest-hub>
 - https://store.google.com/us/product/google_nest_hub?hl=en-US&GoogleNest
 - https://support.google.com/googlenest/topic/7029677?hl=en&ref_topic=7029097,9371069,7029808.
- Google Wifi? Go to
 - GRT: <https://googleretailtraining.exceedlms.com/student/path/6807-google-wifi>
 - https://store.google.com/us/product/google_wifi?hl=en-US
 - <https://support.google.com/wifi/?hl=en#topic=7216602>
- Google Nest Hello? Go to
 - GRT: <https://googleretailtraining.exceedlms.com/student/path/11784-nest-hello>
 - https://store.google.com/us/product/nest_hello_doorbell?hl=en-US
 - https://support.google.com/googlenest/topic/9360528?hl=en&ref_topic=9300014,9371069,7029808.
- Google Nest Secure? Go to
 - GRT: <https://googleretailtraining.exceedlms.com/student/path/11697-nest-protect>
 - https://store.google.com/us/product/nest_secure_alarm_system?hl=en-US
 - https://support.google.com/googlenest/topic/9361854?hl=en&ref_topic=9361853,9371069,7029808.
- Google Nest x Yale lock? Go to
 - GRT: <https://googleretailtraining.exceedlms.com/student/path/11856-nest-yale-lock>
 - https://store.google.com/us/product/nest_x_yale_lock?hl=en-US
 - https://support.google.com/googlenest/topic/9369270?hl=en&ref_topic=9369404,9371069,7029808.
- Google Nest Protect? Go to
 - GRT: <https://googleretailtraining.exceedlms.com/student/path/11697-nest-protect>
 - https://store.google.com/us/product/nest_protect_2nd_gen?hl=en-US
 - https://support.google.com/googlenest/topic/9361754?hl=en&ref_topic=9346307,9371069,7029808.
- Google Nest cameras? Go to
 - GRT: <https://googleretailtraining.exceedlms.com/student/path/11806-nest-cam-family>
 - https://store.google.com/us/magazine/compare_cameras?hl=en-US
 - https://support.google.com/googlenest/topic/9360528?hl=en&ref_topic=9300014,9371069,7029808.

