

Craft	HVACR
Activity Title	Environmental Hazards and Inspection for Gas Heating
Objective Alignment	a. Identify common environmental health hazards associated with HVACR maintenance activities. b. Describe common inspection and maintenance procedures for gas heating equipment.
Training Guide	M02_NCCE0168_06_SE_C02

Cover Page

Theme

Title Environmental Hazards and Inspection for Gas Heating

Image

Asset	 shutterstock 2762410585	
Alt Text	Industrial Cooling System and HVAC Units on a Data Center Rooftop	
Prod Notes	https://www.shutterstock.com/image-photo/industrial-cooling-system-hvac-units-on-2762410585?trackingId=b4934f2b-e3a3-4a89-813c-1defea0a937f&listId=searchResults	

Author

Intro Text Block

Text Type

Intro Text	In this activity, you'll identify common environmental health hazards associated with HVACR maintenance activities, as well as common inspection and maintenance procedures for gas heating equipment. You can repeat this activity as many times as you like.
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Intro Divider

Divider Type ☐ Continue

Completion Type ☐ None

Divider Label ☐ LET'S GO

Instructions Block

Block Type ☐ Paragraph with Subheading

Heading	
Subheading	Basic Inspection Procedures.
Paragraph Text	The safe and economical operation of HVACR equipment depends on proper periodic service and maintenance. Any deficiencies must be documented, reported to the owner, and resolved with their permission whenever billable work is involved. An HVACR technician must have the skills to perform inspection and maintenance tasks on a variety of equipment and accessories while observing all necessary safety precautions. Periodic maintenance often represents a significant part of your workday.

Multiple Choice/Multiple Response

When writing **questions**:

- Avoid trick questions that can mislead the learner.
- Use a 5-character solid line when using a line-completion question: _____.

When creating **answer choices**:

- Avoid "All of the above" and "None of the above".
- Keep answer choices balanced in length and style.
- Use lowercase if completing a sentence from the question.
- Capitalize and punctuate if the choices by themselves are complete sentences.
- Capitalize only the first letter of the first word for any other words or phrases.

Multiple Choice/Multiple Response Block

Question Type ☐ Multiple Choice

Question Text	Why are forms and reports use to document that specific tasks were performed or that the installed equipment has met design and customer specifications?
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Answer Options

Correct Y/N	Answer Option Text
☐ N	As documentation of work for internal quality assurance reviews

Correct Y/N	Answer Option Text
☐ N	As a way to reduce the number of required service steps
☐ Y	As evidence in court cases
☐ N	As a reference for improving future maintenance procedures

Feedback

Correct	☐ Well done! The customer's signature is a crucial part of the document, as it typically indicates an acceptance of the services performed.
Incorrect	☐ Not quite. The documentation technicians generate may be called into question.

Activity Divider

Divider Type ☐ Continue

Completion Type ☐ Complete Only Block Above

Divider Label ☐ CONTINUE

Flashcards

Instructions should make clear reference to the interactive element ("card") and its corresponding verb ("flip") using imperative tense.

Location of interactive/element should be clarified with "the following" wherever necessary.

Examples:

"Review each of the following statements and determine whether it's true or false. Then, flip each card to see the correct answer and an explanation."

"Recall the applications for each of the following terms, then flip the cards to check your understanding."

Instructions Block

Block Type ☐ Paragraph

Heading	
Subheading	
Paragraph Text	Three critical items that should appear on all field documents are the make, model, and serial number of the equipment being serviced. Identify the characteristics of each item, then flip the card to check your answer.

Flashcards Block

Block Type ☐ Grid

Cards Content

Card Front	Card Back	Image
☐ Text Make	☐ Text The make identifies the name of the manufacturer, such as Carrier, Trane, or Goodman.	Asset Alt Text Prod Notes
☐ Text Model	☐ Text The model number identifies the specific style of the unit and many of its features. It identifies style, capacity, and electrical characteristics.	Asset Alt Text Prod Notes
☐ Text Serial Number	☐ Text The serial number is a unique sequential number assigned to the unit by the manufacturer. This number is critical when you need replacement parts for the unit.	Asset Alt Text Prod Notes

Activity Divider

Divider Type ☐ Continue

Completion Type ☐ Complete Only Block Above

Divider Label ☐ CONTINUE

Flashcards

Instructions should make clear reference to the interactive element (“card”) and its corresponding verb (“flip”) using imperative tense.

Location of interactive/element should be clarified with “the following” wherever necessary.

Examples:

“Review each of the following statements and determine whether it’s true or false. Then, flip each card to see the correct answer and an explanation.”

“Recall the applications for each of the following terms, then flip the cards to check your understanding.”

Instructions Block

Block Type  Paragraph with Heading

Heading	Environmental Health Hazards
Subheading	Rodent Hantavirus Hazard
Paragraph Text	Environmental conditions associated with HVACR maintenance can represent health hazards to technicians. HVAC systems tend to attract hazardous elements for a variety of reasons. Most of the hazards encountered by HVACR technicians are electrical or chemical. In some situations, however, biological hazards must also be considered. One such hazard involves rodents nesting in or near HVACR equipment. Flip each card to review precautionary measures that a technician needs to take when a nest or droppings are present.

Flashcards Block

Block Type  Grid

Cards Content

Card Front	Card Back	Image
 N95-Rated Disposable Face Mask	 Wear an N95-rated disposable face mask while in the area. For maximum protection, wear a full-face respirator with a high-efficiency particulate air (HEPA) filter.	Asset Alt Text Prod Notes
 Wear PPE	 Wear goggles, disposable coveralls, and heavy latex or rubber gloves when removing the materials.	Asset Alt Text Prod Notes
 Remove Materials	 After removing the materials, mop or sponge the affected area a second time with the bleach solution.	Asset Alt Text Prod Notes
 Double Bag Debris	 Double bag the debris along with the cleaning materials. Make sure to disinfect your gloves before removing them, then dispose of them as well.	Asset Alt Text Prod Notes

Activity Divider

Divider Type ☐ Continue

Completion Type ☐ Complete Only Block Above

Divider Label ☐ CONTINUE

Instructions Block

Block Type ☐ Paragraph with Heading

Heading	
Subheading	Bird and Bat Excrement Hazards
Paragraph Text	Bird and bat excrement represent a hazard during equipment servicing, especially if the units are located beneath areas where birds or bats have roosted. Click each box to review the diseases associated with organisms found in dried bird and bat droppings.

Code

Click Reveal Check Box

Content

Description
Cryptococcosis. Cryptococcus neoformans is a fungus commonly found in the dry dust of pigeon, dove, or bat droppings. Cryptococcosis is a yeast infection contracted by inhaling the mold spores of the organism.
Histoplasmosis. Histoplasma capsulatum is a fungus found in soils throughout the world. It flourishes in soils that have been enriched by bird or bat droppings for three or more years. Most infections produce no symptoms or only mild flu-like illness. However, untreated chronic or reactivated infections can result in pneumonia, blindness, chronic and progressive lung disease, and even death.
Psittacosis. Psittacosis is caused by inhaling Chlamydia psittaci bacteria that are found in feathers and droppings from any infected bird, including pigeons and doves. The disease results in fever, headaches, and muscle pain, with or without obvious respiratory symptoms. Untreated cases can progress to pneumonia or toxemia and can result in death, especially in older people.
Rabies. Rabies is a viral disease, and bats are known to be carriers. Contact with the dried blood, urine, or droppings from an infected bat is not a major risk. However, if even a scratch from a live or dead bat occurs and the bat cannot be retrieved for testing, prompt rabies vaccinations must begin.

Activity Divider

Divider Type ☐ Continue

Completion Type ☐ Complete Only Block Above

Divider Label ☐ CONTINUE

Labeled Graphic

Instructions should make clear reference to the interactive element ("marker") and its corresponding verb ("select") using imperative tense.

Example:

"Select each marker to review the components of an HVAC system."

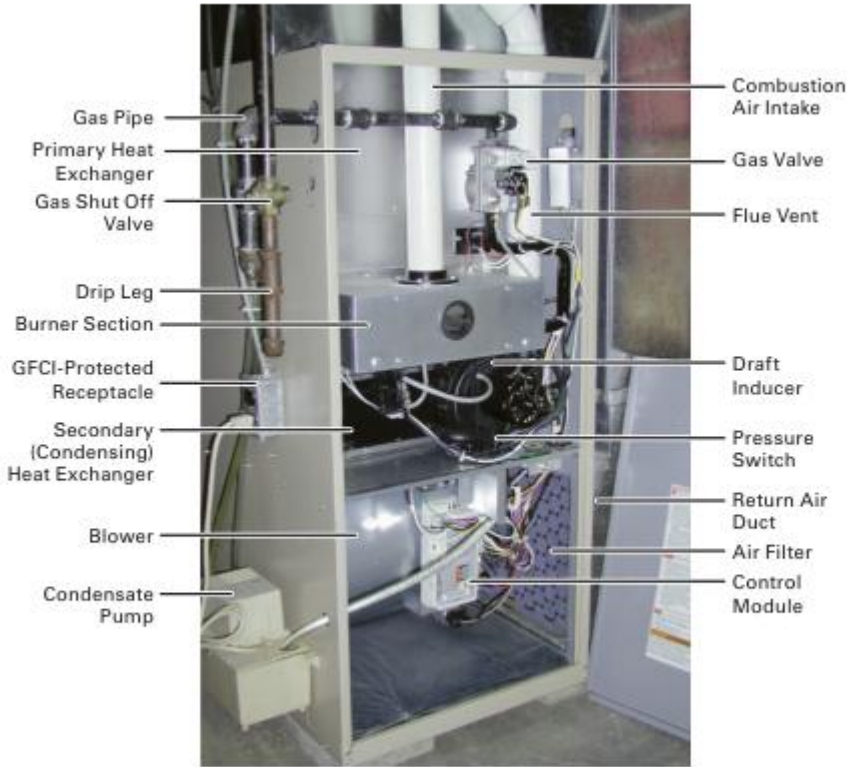
Instructions Block

Block Type  Paragraph with Heading

Heading	Gas Furnace Inspection and Maintenance
Subheading	Condensing Gas Furnace
Paragraph Text	Gas heating is the most common type of heating system in the United States. When properly serviced, gas-fired heating equipment is very effective and reliable. To operate safely and reliably, gas-fired furnaces should be serviced at least once a year by a qualified technician. Safety is an especially important consideration because burning fossil fuels can produce hazardous byproducts such as carbon monoxide (CO). Identify each major component of a condensing gas furnace. Then, click the marker to check your answer.

Labeled Graphic

Image

Asset	 Figure 72
Alt Text	Condensing gas furnace.
Prod Notes	

Markers

Marker	Title	Text
Style 	Gas Pipe	
Style 	Primary Heat Exchanger	
Style 	Gas Shut Off Valve	
Style 	GFCI-Protected Receptacle	
Style 	Secondary (Condensing) Heat Exchanger	
Style 	Blower	
Style 	Condensate Pump	
Style 	Combustion Air Intake	
Style 	Gas Valve	
Style 	Flue Vent	
Style 	Draft Inducer	
Style 	Pressure Switch	
Style 	Return Air Duct	
Style 	Air Filter	
Style 	Control Module	

Activity Divider

Divider Type (Continue)

Completion Type (Complete Only Block Above)

Divider Label (CONTINUE)

Instructions Block

Block Type (Paragraph with Subheading)

Heading	
Subheading	Gas Heating Safety
Paragraph Text	Safety is the most important part of your job, for self-protection and for the protection of others. Remember to follow general safety guidelines when working with natural gas or propane furnaces.

Multiple Choice/Multiple Response

When writing **questions**:

- Avoid trick questions that can mislead the learner.
- Use a 5-character solid line when using a line-completion question: ____.

When creating **answer choices**:

- Avoid "All of the above" and "None of the above".
- Keep answer choices balanced in length and style.
- Use lowercase if completing a sentence from the question.
- Capitalize and punctuate if the choices by themselves are complete sentences.
- Capitalize only the first letter of the first word for any other words or phrases.

Multiple Choice/Multiple Response Block

Question Type (Multi-Select)

Question Text	Conduct a gas leak test after completing any installation, repair, or service. In which area would a technician use a combustible gas leak detector, such as the one shown in the image, or a leak reactant solution? Select all that apply.  Figure 73
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	Alt text: Combustible gas leak detector
--	---

Answer Options

Correct Y/N	Answer Option Text
☒ Y	Tubing connections
☒ Y	Pipe joints
☒ Y	Gaskets
☐ N	Vents

Feedback

Correct	☒ Well done! Use a combustible gas leak detector on fuel tubing connections, pipe joints, and gaskets.
Incorrect	☐ Not quite. Use a combustible gas leak detector mainly on larger components.

Activity Divider

Divider Type ☒ Continue

Completion Type ☐ Complete Only Block Above

Divider Label ☐ CONTINUE

Accordion/Tabs

Instructions should make clear reference to the interactive element ("row", "tab") and its corresponding verb ("expand", "select") using imperative tense.

Location of interactive/element should be clarified with "the following" wherever necessary.

Examples:

"Define each of the following terms, then expand each row to check your understanding."

"Review the following steps, then expand each row to see the details for each step."

"Recall how to find the area of each shape, then select the tabs to check your understanding."

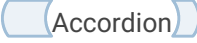
Instructions Block

Block Type ☒ Paragraph with Subheading

Heading	
Subheading	Gas Furnace Inspection and Testing

Paragraph Text	Before performing any service procedure, check with the customer and listen to any complaints. Make note of any comments that might indicate a problem. It's always best to follow the manufacturer's guidance for the equipment being serviced. The following sequence is not necessarily appropriate for all units and may need to be adjusted to both suit the specific unit and improve productivity. Expand the rows to review best practices for inspecting a gas furnace.
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Accordion/Tabs Block

Block Type  Accordion
Content

Item	Description	Image
Check the thermostat.	• Move the system switch to the Heat or Auto position. • Move the setpoint below room temperature. • To avoid damaging the control transformer, de-energize the control circuit by turning off the power to the furnace. • Replace the batteries in digital thermostats annually. • Reinstall the thermostat on the subbase.	Asset Alt Text Prod Notes
Check indoor blower operation.	• Check and record the supply voltage at the unit disconnect and ensure it's within the unit nameplate voltage range. • With the blower compartment door in place, check and record the current draw of the blower motor. • Turn off the power to the furnace before proceeding.	Asset Alt Text Prod Notes

Item	Description	Image
Inspect the blower and change the air filter(s).	• With the system de-energized, don an N95-rated face mask and change the air filter(s). • If the blower is belt-driven, remove the blower belt and check it for cracks and excess wear. • Check the blower and/or motor bearings for wear. • Lubricate the blower and/or motor bearings per the manufacturer's instructions, taking care not to over-lubricate. • Clean the blower wheel and compartment with a HEPA vacuum. • Check the blower and/or motor mounts for tightness and make sure any vibration isolators are in place and intact. • Check all the electrical wiring related to the blower, looking for sound electrical connections and terminations.	Asset Alt Text Prod Notes
Inspect the burners, ignition gear, and controls.	• With the gas and power off, check all the electrical wiring in the burner vestibule, looking for sound electrical connections and terminations. • If the furnace has an electronic ignition, inspect the igniter assembly. • Clean the flame sensor or rod with fine emery cloth to remove any deposits. • Remove and clean the burners, using a soft wire brush for outside and a round brush for the inside.	Asset Alt Text Prod Notes

Activity Divider

Divider Type

Completion Type

Divider Label

Code

Matching Activity

First Matching Block ☐ Yes ☐

Note ☐ Note: For best results, rotate your phone horizontally before starting this matching activity. ☐

Question Text	Match the guideline for inspecting a gas furnace to the correct step.
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Answer Options

Match	Sort
The heating system should start the ignition sequence, and the indoor blower should run after a short delay.	Check the thermostat.
Check it against the nameplate rated load amperage.	Check indoor blower operation.
Make sure the filters are properly fitted to the opening so air cannot easily bypass them.	Inspect the blower and change the air filter(s).
Use a feeler gauge to measure the gap between the electrode and flame rod or pilot burner. Note that a 7/64" (2.7 mm) gap is common.	Inspect the burners, ignition gear, and controls.

Feedback

Correct	☐ Keep it up! ☐ You matched all the items in the correct order.
Incorrect	☐ Consider reviewing. ☐ Some of the items aren't matched correctly.

Activity Divider

Divider Type ☐ Continue ☐

Completion Type ☐ Complete Only Block Above ☐

Divider Label ☐ CONTINUE ☐

Sorting

Instructions should make clear reference to the interactive element ("card") and its corresponding verb ("sort") using imperative tense.

Instructions should clearly describe the type of item that is being sorted ("description", "tool", "term", etc) as well as the category ("component", "application", "definition", etc).

Location of interactive/element should be clarified with "the following" wherever necessary.

Examples:

"Sort each tool into its most appropriate application."

"Determine whether the following statements are true or false and sort into the appropriate category."

Instructions Block

Block Type  Paragraph

Heading	
Subheading	
Paragraph Text	Today's heat exchangers can be difficult to inspect due to their narrow, twisting passages. Sort each description to the different technique or tool used to test the heat exchanger.

Sorting Block

Content

	Category 1 Borescope	Category 2 Standing Match	Category 3 Combustion Analyzer
Items	This tools allows you to see inside many heat exchangers.	Start the system blower but leave the burner off.	If a heat exchanger is leaking, the O2 should rise due to the oxygen-rich air entering the heat exchanger.
	The tool provides the best way to look inside a heat exchanger.	Hold it just inside each heat exchanger cell.	The CO2 reading will most likely decrease.
	Insert and guide this tool to inspect the interior of the heat exchanger.	This will waver and may blow out if there is a significant leak.	

Sorting Activity Divider

Divider Type Continue

Completion Type Complete Only Block Above

Divider Label CONTINUE

Paragraph Block with Review Table

Text  You can review the correct answers here.

Insert Table

Category 1 Borescope	Category 2 Standing Match	Category 3 Combustion Analyzer
Will allow you to see inside many of them.	Start the system blower but leave the burner off.	If heat exchanger is leaking, the O2 should rise due to the oxygen-

		rich air entering the heat exchanger.
The best way to get a look inside.	Hold it just inside each heat exchanger cell.	The CO2 reading will most likely decrease.
Insert and guide this to inspect the interior.	This will waver and may blow out if there is a significant leak.	

Activity Divider

Divider Type

Completion Type

Divider Label

Process

The instructions should accurately describe the activity.

Interactive elements ("arrow") and their actions ("select") should be clearly referenced.

Location of interactive/element should be clarified with "the following" wherever necessary.

Example:

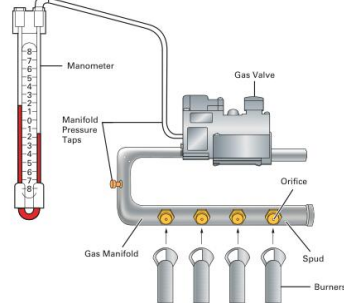
(Introduction visible) "Recall the uses and hydraulic requirements of common skid steer attachments. Then, select Start or use the arrows to check your understanding."

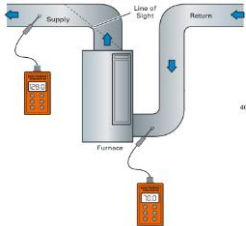
(Introduction not visible) "Select the arrows to review the common types of signs used at a jobsite."

Process Block

Content

Heading H2	Text	Image
Introduction Visible Yes	Select the arrows to review the guidelines for checking the burner manifold pressure during the operational test.	Asset Alt Text Prod Notes
Ensure power to the furnace is off.	Ensure the power to the furnace is off and the gas supply shutoff valve is closed.	Asset Alt Text Prod Notes
Remove the pressure tap plug.	- Remove the pressure tap plug near the outlet of the gas valve, or the small pipe plug located on the gas manifold downstream of the gas valve. - Either port should provide an accurate pressure reading.	 Asset Figure 78 Alt Text Typical furnace gas valve. Prod Notes

Heading H2	Text	Image
Connect a U-tube manometer.	• Connect a U-tube manometer, digital manometer, or gas pressure gauge hose to the valve or manifold. • A 1/8" MPT × barbed hose fitting is typically required. • Keep the furnace power off and set the thermostat well above the current room temperature so it will call for heat once power is restored, allowing you to observe the startup sequence at the furnace.	Asset Figure 79  Alt Text Testing gas manifold pressure. Prod Notes
Open the gas supply valve.	• Open the gas supply valve and then restore power. • The heating sequence should begin after a short delay. • The draft inducer motor will likely start the sequence. Check for quiet, even pilot and/or burner ignition.	Asset Alt Text Prod Notes
Observe the burner flame.	• Observe the burner flame. It should be a soft blue, likely with some tiny orange tips. • If there's yellow in the flame, adjust the primary air supply at the burner if possible. • If the flame is erratic, reduce the heating setpoint, then de-energize the furnace after the heat exchanger has cooled and the indoor blower shuts down. • Use a mirror to check the burner orifices for blockage or damage. Replace any flawed orifices. • If deposits need to be cleared, use a torch tip file that matches the size of the orifice, as shown in the image. • After a short delay that allows the heat exchanger to warm up, ensure that the blower starts.	Asset Figure 80  Alt Text Torch tip cleaning tools. Prod Notes

Heading H2	Text	Image
Check and record the gas manifold pressure.	- Check and record the gas manifold pressure. - Traditionally, the common manifold pressure for natural gas has been between 3" and 4" water column (w.c.). - For LP gas, the traditional manifold pressure has been 11" w.c., but you should factor in the thermal value of the fuel, as it varies regionally. - Models and brands may also vary in manifold pressure, but what the burners do have in common is a very low pressure in the manifold.	Asset Alt Text Prod Notes
Summary Visible ☐ (Yes)	With the manifold pressure correct and furnace operation stable, check the temperature rise across the furnace. This value is stated as a range and is found on the furnace rating plate.	 Asset Figure 81 Alt Text Checking temperature rise. Prod Notes

Activity Divider

Divider Type ☐ (Continue)

Completion Type ☐ (Complete Only Block Above)

Divider Label ☐ (CONTINUE)

Code

Flashcard Self-Assessment

First Matching Block ☐ (Yes)

Note ☐ (Note: For best results, rotate your phone horizontally before starting this matching activity.)

Question Text	Answer each question about the steps for checking the burner manifold pressure during the operational test.
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Answer Options

Match	Sort	Feedback
Is the power to the furnace off or on?	Off (Y), On (N)	Well done! Ensure power to the furnace is off, and the gas supply shutoff valve is closed. Not quite.
What port, the pressure tap plug for the small pipe plug, can provide an accurate pressure reading?	Either port(Y), Pressure tap plug (N)	Great job! Either port should provide an accurate pressure reading. Not exactly.
What must you do to the gas supply valve before restoring power?	Close it (N), Open it (Y)	Nice work! Open the gas supply valve and then restore power. The heating sequence should begin after a short delay. Almost.
If you witness an erratic flame when you observe the burner flames, what should you do to the heating set point?	Increase it (N), Reduce it (Y)	Good effort! If the flame is erratic, reduce the heating setpoint, then de-energize the furnace after the heat exchanger has cooled and the indoor blower shuts down. Almost there.

Activity Divider

Divider Type Continue

Completion Type Complete Only Block Above

Divider Label CONTINUE

Accordion/Tabs

Instructions should make clear reference to the interactive element ("row", "tab") and its corresponding verb ("expand", "select") using imperative tense.

Location of interactive/element should be clarified with “the following” wherever necessary.

Examples:

“Define each of the following terms, then expand each row to check your understanding.”

“Review the following steps, then expand each row to see the details for each step.”

“Recall how to find the area of each shape, then select the tabs to check your understanding.”

Instructions Block

Block Type  Paragraph

Heading	
Subheading	
Paragraph Text	Some additional tests require that the furnace be stopped and started several times. These tests are related primarily to safety controls. In many cases, the power to the furnace must be cycled off and back on again to reset the controls once certain safety devices have been activated. Expand the rows to review details about the different tests.

Accordion/Tabs Block

Block Type  Accordion
Content

Item	Description	Image
Check the draft pressure switch.	• Check the draft pressure switch by disconnecting the hose while the burners are operating. • The pressure switch is used to prove that the induced draft fan is working and generating the required pressure. When the hose is disconnected, the burners should shut off immediately. • Allow the furnace to cool off, then reconnect the pressure switch and cycle the power switch to reset the controls.	Asset Alt Text Prod Notes
Check the ignition safety lockout.	• Check the ignition safety lockout. This locks out the furnace if the main burner fails to light. • Close the gas supply shutoff valve while the burner is in operation. • The system should lock out after several attempts to reignite the burner.	Asset Alt Text Prod Notes

Item	Description	Image
Check the high-temperature limit switch.	• This device shuts down the burners when the heat exchanger temperature is too high, preventing the furnace from overheating. It usually opens quickly if the blower doesn't start. ○ Prevent the blower from operating by disconnecting the control wiring leads. ○ Initiate a call for heat at the thermostat and place a suitable thermometer probe alongside the limit control, if practical. ○ After a few minutes of burner operation, the limit should open and shut down the burner. The temperature and time at which this occurs may be specified in the product literature. ○ If the furnace continues to operate after exceeding the high-limit control setpoint, shut it off immediately and restore blower operation to cool the furnace. Replace the control and check its operation.	
Check the furnace condensate drain.	Check the furnace condensate drain to make sure it's not fouled or leaking. Condensate pumps are often required to collect and remove condensate. If present, disassemble and clean the pump and sump.	Asset Alt Text Prod Notes

Item	Description	Image
Check the PVC combustion air.	Check the PVC combustion air and vent piping for damage and ensure the pipes are properly supported as they travel to and through the outside wall. To complete the inspection, disconnect all test instruments and return the furnace to service. Restart the furnace and observe it through at least one complete heating cycle, allowing the thermostat to turn the furnace off when the setpoint is reached. This ensures that all controls are functioning properly. Many companies leave a copy of the completed service and maintenance checklist with the owner. Discuss any issues that need further attention and inform the owner of any next steps. Then clean up the work area and complete the service call.	Asset Alt Text Prod Notes

Activity Divider

Divider Type

Completion Type

Divider Label

Scenario

Instructions on how to complete an activity should accurately convey the actual activity itself.

Example:

"Jan is conducting a pre-use inspection of a wire-rope sling. She needs your help to make the best decisions for this process.

Select Continue to begin."

Scenario Block

Scene 1 Start

Background	Asset Alt Text
Title	
Start Text	You're performing preventive maintenance on a gas furnace. To verify that the draft pressure switch is operating correctly, you disconnect the pressure switch hose while the burners are running. Select Continue to begin.
Character	Craig

Scenario 1

Question

Question Text	What should happen when the hose is disconnected?
Character	☐ Neutral
Scene Desc.	

Response 1

Response	The blower motor should stop immediately.
Character	☐ Happy
Scene Desc.	
Feedback	☐ Well done! The draft pressure switch confirms that the induced draft fan is creating the proper pressure. Disconnecting the hose removes that proof signal, causing the burners to shut down immediately as a safety measure.

Try Again: ☐ No

Response 2

Response	The burners should shut off immediately.
Character	☐ Disappointed
Scene Desc.	
Feedback	☐ So close. When the pressure switch hose is disconnected, the furnace should lose proof of proper draft, and the burners should shut off immediately. This safety feature prevents unsafe furnace operation.

Try Again: ☐ No

Scenario 2

Question

Question Text	During a furnace inspection, you close the gas supply shutoff valve while the burner is operating. The furnace attempts several times to relight the burner. What should occur after multiple unsuccessful ignition attempts?
Character	☐ Neutral
Scene Desc.	

Response 1

Response	The thermostat should automatically reset the system.
Character	☐ Disappointed
Scene Desc.	

Feedback	 Almost there.  After repeated failed ignition attempts, the furnace should enter a safety lockout condition. This prevents further ignition attempts until the issue is corrected and the system is reset.
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Try Again:  No 

Response 2

Response	The furnace should enter ignition safety lockout.
Character	 Happy 
Scene Desc.	
Feedback	 Great job!  The ignition safety lockout protects the system by shutting it down when the burner fails to ignite after several attempts. This prevents excessive gas accumulation and alerts the technician to investigate the issue.

Try Again:  No 

Scene 1 End

Text	 Continue below. 
Character	Hide
Accessibility Desc.	

Conclusion

Text Type  Paragraph with Heading 

Heading Great Job!

Text You've completed the *Environmental Hazards and Inspection for Gas Heating* activity.

Exit the activity to record your progress.