

## Developing OALCF Apprenticeship Tasks for the Competency “Use Digital Tasks” (2014/2015)

### Task-based Activity Cover Sheet

**Task Title:** Refrigeration and Air Conditioning Resources

<b>Learner Name:</b>	
<b>Date Started:</b>	<b>Date Completed:</b>
<b>Successful Completion:</b> Yes ___ No ___	
<b>Goal Path:</b> Employment <input checked="" type="checkbox"/> Apprenticeship <input checked="" type="checkbox"/> Secondary School ___ Post Secondary ___ Independence ___	
<b>Task Description:</b> Search the internet to locate resources related to HVAC	
<b>Competency:</b> A: Find and Use Information B: Communicate Ideas and Information D: Use Digital Technology	<b>Task Group(s):</b> A1: Read continuous text A2: Interpret documents B2: Write continuous text D2: Use digital technology
<b>Level Indicators:</b> A1.2: Read texts to locate and connect ideas and information A2.2: Interpret simple documents to locate and connect information B2.1: Write brief texts to convey simple ideas and factual information D2: Perform well-defined, multi-step digital tasks	
<b>Performance Descriptors:</b> see chart on last page	
<b>Materials Required:</b> <ul style="list-style-type: none"> <li>• Computer with internet access</li> </ul>	

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**Task Title:** Refrigeration and Air Conditioning Resources

Refrigeration and Air Conditioning technicians use the internet to locate information for the purpose of troubleshooting and finding information about unfamiliar specifications.

Go to the website: [hvacrinfo.com](http://hvacrinfo.com).

### Learner Information and Tasks:

**Task 1:** List 5 HVAC/R Resources that are available.

- 1)
- 2)
- 3)
- 4)
- 5)

**Task 2:** Locate the meanings of capillary tubing and refrigerant. Copy and paste the meaning into a word processing document. Save the document to the "Desktop" for reference as **Capillary Tubing and Refrigerant**.

**Task 3:** Locate and open the capillary chart and list the four steps to use the Capillary Tube Length Conversion Chart.

- 1)
- 2)
- 3)
- 4)

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**Task 4:** Using the same website convert the following temperatures.

F=Fahrenheit	C=Celsius
90	
32	
5	

C=Celsius	F=Fahrenheit
-10	
15	
25	

**Task 5:** Using the same website, find the manufacturer and applications for the following unfamiliar refrigerants:

a. HC 12a

b. ISCEON 39TC / R-423A

c. SUVA 410A / R-410A

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**Task Title:** Refrigeration and Air Conditioning Resource

### Answer Key

**Task 1:** Use the internet to locate the website **hvacrinfo.com**. List 5 HVAC/R Resources that are available.

**Any five of the following resources may be listed:**

**What's the true meaning of RLA, Run Load Amps?**

**Controller Manuals**

**Compressor Specs**

**Condensing Unit**

**Specifications Refrigeration**

**Application Engineering Bulletins**

**Copeland Publications, Bulletins & Quick Links**

**Refrigeration System Design & Operation Information**

**Troubleshooting Guide:** Having a problem with a compressor?

**Scroll Compressor Troubleshooting Guide:** Why is the oil green? Why is it noisy?

**Unfamiliar Refrigerants:**

**Task 2:** Using the same website, HVAC/RInfo.com, locate the meaning of capillary tubing and refrigerant. Copy and paste the meaning into a word processing document. Save the document to the "Desktop" for reference as **Capillary Tubing and Refrigerant**.

**Capillary Tubing:**

**A refrigerant metering device consisting of a small diameter tube which controls flow by restriction.**

**They are carefully sized by inside diameter and length for each particular application. This device uses its internal diameter, length and pressure drop to determine its capacity and has a fixed regulation.**

**The capillary tubing is best suited in constant ambient conditions.**

**Refrigerant:** A refrigerant is a compound used in a heat cycle that undergoes a phase change from a gas to a liquid and back.

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**Task 3:** Locate and open the capillary chart and list the four steps to use the Capillary Tube Length Conversion Chart.

### TO USE CHART

- (1) Locate recommended cap tube I.D. in left hand column.
- (2) Read across and find conversion factor under copper cap tube size.
- (3) Multiply the given length of the recommended cap tube by the conversion factor.
- (4) The resultant length (Min. 5 feet/Max.16 feet) of copper cap tube will give the same flow characteristics as the original recommended cap tube.

**Task 4:** Using the same website convert the following temperatures.

Locate the Fahrenheit / Celsius [Converter](#)

F=Fahrenheit	C=Celsius
90	32
32	0
5	-15

C=Celsius	F=Fahrenheit
-10	14
15	59
25	77

**Task 5:** Using the same website, find the manufacturer and applications for the following unfamiliar refrigerants.

a. HC 12a

**Manufacturer/Dist:** OZ Technology Inc.

**Application:** Mobile, Marine, & Stationary Refrigeration

b. ISCEON 39TC / R-423A

**Manufacturer/Dist:** Dupont

**Application:** Centrifugal chillers designed for R-12

c. SUVA 410A / R-410A

**Manufacturer/Dist:** Dupont

**Application:** New residential and commercial air conditioning and heat pumps.

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**Task Title:** Refrigeration and Air Conditioning Resource

Performance Descriptors		Needs Work	Completes task with support from practitioner	Completes task independently
A1.2	<ul style="list-style-type: none"> <li>Scans text to locate information</li> </ul>			
	<ul style="list-style-type: none"> <li>Locates multiple pieces of information in simple texts</li> </ul>			
	<ul style="list-style-type: none"> <li>Makes low level inferences</li> </ul>			
	<ul style="list-style-type: none"> <li>Obtains information from detailed reading</li> </ul>			
A2.2	<ul style="list-style-type: none"> <li>performs limited searches using one or two search criteria</li> </ul>			
	<ul style="list-style-type: none"> <li>extracts information from tables and forms</li> </ul>			
	<ul style="list-style-type: none"> <li>uses layout to locate information</li> </ul>			
	<ul style="list-style-type: none"> <li>makes connections between parts of documents</li> </ul>			
	<ul style="list-style-type: none"> <li>makes low-level inferences</li> </ul>			
	<ul style="list-style-type: none"> <li>begins to identify sources and evaluate information</li> </ul>			
B2.1	<ul style="list-style-type: none"> <li>writes simple texts to request, remind or inform</li> </ul>			
	<ul style="list-style-type: none"> <li>conveys simple ideas and factual information</li> </ul>			
	<ul style="list-style-type: none"> <li>demonstrates a limited understanding of sequence</li> </ul>			
	<ul style="list-style-type: none"> <li>uses sentence structure, upper and lower case and basic punctuation</li> </ul>			
	<ul style="list-style-type: none"> <li>uses highly familiar vocabulary</li> </ul>			

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D.2	<ul style="list-style-type: none"> <li>selects and follows appropriate steps to complete tasks</li> </ul>			
	<ul style="list-style-type: none"> <li>locates and recognizes functions and commands</li> </ul>			
	<ul style="list-style-type: none"> <li>makes low-level inferences to interpret icons and text</li> </ul>			
	<ul style="list-style-type: none"> <li>begins to identify sources and evaluate information</li> </ul>			
	<ul style="list-style-type: none"> <li>performs simple searches using keywords (e.g. internet, software help menu)</li> </ul>			

**This task:** was successfully completed \_\_\_ needs to be tried again \_\_\_

<b>Learner Comments</b>

\_\_\_\_\_  
**Instructor (print)**

\_\_\_\_\_  
**Learner Signature**