



Railroading

Virtual Merit Badge Class Workbook

This workbook can help Scouts to explain certain requirements but they still need participate in the virtual class and read the merit badge book.

Scout's Name: _____ Unit: _____

Counselor's Name: _____ Phone No.: _____ Email: _____

1. Do THREE of the following:

a. Name three types of modern freight trains.

1.	
2.	
3.	

Explain why unit trains are more efficient than mixed freight trains.

b. Name one class I or regional railroad. _____

Explain what major cities it serves, the locations of major terminals, service facilities and crew change points, and the major commodities it carries.

c. Using models or pictures, identify 10 types of railroad freight or passenger cars. Explain the purpose of each type of car.

1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

9.	
10.	

d. Explain how a modern diesel or electric locomotive develops power.

Explain the terms dynamic braking and radial steering trucks.

Dynamic braking:

Radial steering trucks:

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2. Do the following:

- a. Explain the purpose and formation of Amtrak.

Purpose:

Formation:

Explain, by the use of a timetable, a plan for making a trip by rail between two cities at least 500 miles apart. List the times of departure and arrival at your destination, the train number and name, and the type of service you want.

Depart Location	Time	Arrival Location	Time	Train#	Service

b. List and explain the various forms of public/mass transit using rail.

3. Do ONE of the following:

c a. Name four departments of a railroad company. Describe what each department does.

	Department	What the department does.
1.		
2.		
3.		
4.		

- c b. Tell about the opportunities in railroading that interest you most and why.

- c c. Name four rail support industries. Describe the function of each one.

	Industry	Function
1.		
2.		
3.		
4.		

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- c d. With your parent's and counselor's approval, interview someone employed in the rail industry. Learn what that person does and how this person became interested in railroading.

Find out what type of schooling and training are required for this position.

- 4. Explain the purpose of Operation Lifesaver and its mission.

- 5. Do THREE of the following:

- c a. List five safety precautions that help make trains safer for workers and passengers.

1.	
2.	
3.	
4.	
5.	

- c b. Explain to your merit badge counselor why safety around rights-of-way is important.

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- c. List 10 safety tips to remember when you are near a railroad track (either on the ground or on a station platform) or aboard a train.

1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

- d. Tell your counselor about the guidelines for conduct that should be followed when you are near or on railroad property.

Explain the dangers of trespassing on railroad property.

- e. Tell what an automobile driver can do to safely operate a car at grade crossings, and list three things an automobile driver should never do at a grade crossing.

Safely operate a car:

What a driver should never do at a grade crossing.

1.

2.

3.

c f. Tell how to report a malfunction of grade crossing warning devices.

c g. List safety precautions a pedestrian should follow at a public crossing.

6. Explain the appearance and meaning of the following warning signs and devices: advance warning sign, pavement markings, crossbucks, flashing red lights, crossing gates.

	Appearance	Meaning
Advance warning sign:		
Pavement markings:		

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Crossbucks:

Flashing red lights:

Crossing gates:

7. Do EACH of the following:

- a. Explain how railroad signals operate and show two basic signal types using color or configuration.

- b. Explain the meaning of three horn signals.

1.	
2.	

3.

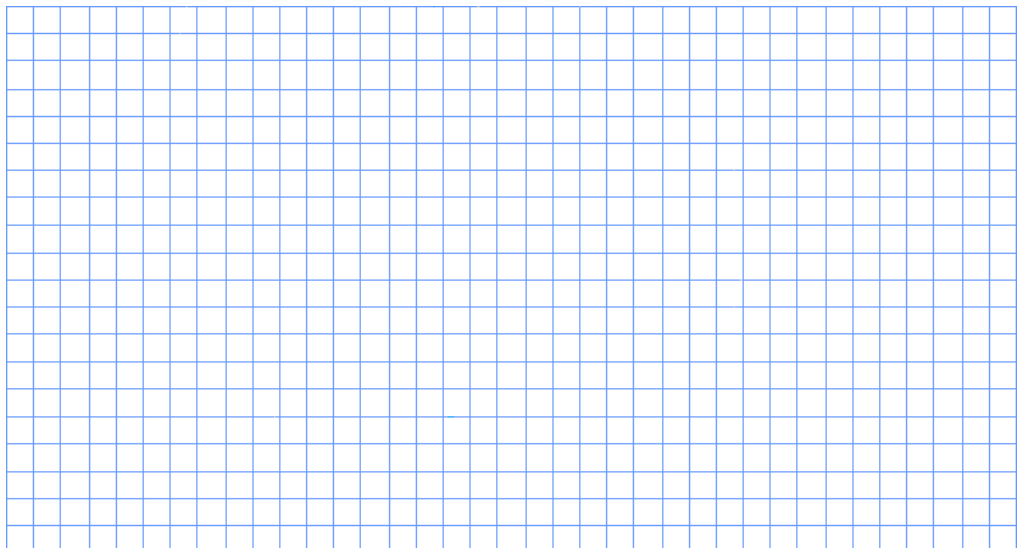
c. Describe a way to signal a train for an emergency stop.

d. Explain the use and function of the EOTD (end-of-train device) or FRED (flashing rear end device) used on the last car of most freight trains.

8. Select ONE of the following special-interest areas and complete the requirements.

c a. Model Railroading - With your parent's and counselor's approval, do TWO of the following:

c 1. Draw a layout of your own model railroad or one that could be built in your home. Design a point-to-point track or loop with different routings. Include one of the following: turnaround or terminal or yard or siding.



- 2. Build one model railroad car kit or one locomotive kit.
- 3. Name the scale of four popular model railroad gauges.

	Gauge	Name	Scale	Track Gauge
1				
2				
3				
4				

- Identify the scale of four model cars or locomotives.
- 4. Locate the website of four model railroad-related manufacturers or magazine publishers. Print information on their products and services and discuss the information with your counselor.

- 5. Build one railroad structure (from scratch or using a kit), paint and weather the structure, mount it on your layout or diorama, and make the surrounding area on the diorama scenic.
- 6. Alone or with others, build a model railroad or modular layout including ballast and scenery. Make electrical connections and operate a train. Describe what you enjoyed most.

- 7. Participate in a switching contest on a timesaver layout and record your time.
- 8. Explain the difference between powering and controlling a model railroad by using direct current, and powering and controlling a model railroad using digital command control.

- b. Railfanning - With your parent's and counselor's approval, do TWO of the following:
 - 1. Visit a railroad museum, historical display, or a prototype railroad-sponsored public event. With permission, photograph, videotape, or sketch items of interest. Explain what you saw and describe your photos, sketches, or videotape.

- 2. Purchase tickets and ride a scenic or historic railroad. Under supervision, photograph the equipment and discuss with your counselor the historic significance of the operation.
- 3. Locate the website of four rail historical groups, then find information on the history of the rail preservation operations and purpose of each group. Talk with a member of one of the groups and find out how you might help.
- 4. Plan a trip by rail between two points. Obtain a schedule and explain when the train should arrive at two intermediate points. Purchase the tickets and make the trip. Explain to your counselor what you saw.

The use of this merit badge workbook is convenient and thorough, however it is not mandatory. Any Scout who wishes to communicate their work on this merit badge in an alternative mannershould inform the Camp CIEC Staff at the time of registration. Otherwise we will assume that you will be using this workbook to assist you in your work towards this merit badge.

All participants will be held to a high standard. To earn this merit badge participation is required. Completing this workbook alone does not guarantee getting the merit badge. Scouts will have 10 days from the first scheduled day of class to submit all work towards requirements for this merit badge to Camp CIEC Staff. After reviewing all of the Scouts work we will mail out blue cards informing Scouts of all the completed requirements. If the Scout completes all the requirements to the satisfaction of the merit badge counselor the blue card will also include the merit badge counselors signature. While Camp CIEC Virtual Camp is on-going we will not be able to go back and review or sign off work from previous sessions. Scouts are expected to speak with their Scoutmaster who will assist them in finding a merit badge counselor to complete an unfinished merit badge. There is NO REFUNDS for online merit badge classes