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# Lesson Plan

## *Signal Corps*

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### Grades

4, 5, 6

### Subjects

Home Economics, Language Arts, Math, U.S. History

### Time allotted

30 minutes for general lesson, one or two days to sew flags

### Setting

Classroom and Stones River National Battlefield

### Group size

No limit

### Skills

Cooperation, communication, analysis and application, writing, sewing

### Methods

Students will design and create signal corps flags and cipher discs.

### Materials

See instructions for making a cipher disc and sewing signal flags.

### Keywords

Cipher  
Wigwag

### Objectives

At the end of the activity, students will be able to:

- *Understand the role of the signal corps during the Civil War.*
- *Demonstrate the technique of wigwag used by the signal corps.*
- *Send and decipher a coded message using the cipher disc and wigwag technique.*



### BACKGROUND INFORMATION

The Civil War was the first war to use a system of flag waving signals for long distance communication. Major Albert J. Meyer created the system used by both armies. The idea evolved from his 1851 doctoral dissertation "A New Sign Language for Deaf Mutes." By 1859, Major Meyer and his assistants began experimenting with basic equipment and details for his communication system. With the coming of the Civil War, he organized a corps of signalers for the Union. Some four hundred officers and twenty-five hundred men served at one time or another. Confederates organized under a former assistant, E. P. Alexander, and were attached to the Adjutant General's Department to handle signaling, telegraphy and secret service work. About fifteen hundred men served in the various branches.

Signal flags came in three different colors to use against a variety of backgrounds. One flag was white with a red square in the center. Another was black, which could be seen well in snow. The final was red with a white square in the center. Torches were used at night. Messages are sent by waving the flag or torch down to the left and back (ONE) or down to the right and up (TWO) and a dip in front (THREE). This system is known as wigwag and different combinations stand for letters, words, or numbers (see charts).

Messages are seldom sent "in the clear" because the enemy can easily decipher them. A cipher disc has two discs with letters and numbers around the edges and by turning one disc the cipher is changed. Therefore, in cipher, every letter "in the clear" stands for another letter, symbol even an entire message. Ciphers are changed often because each side works hard at interpreting the enemy's messages.

Signal posts were dangerous because they were exposed to enemy fire. Stations were on high points of land or if not available, tall wooden platforms were built. Each station operated day and night with alert men using powerful telescopes. After the Battle of Stones River, General Rosecrans established signal stations throughout Rutherford County. The courthouse cupola in Murfreesboro was the central station with outposts at Lavergne, Triune and Pilot Knob (eight miles to the east). A large elm tree was chosen for a platform at Pilot Knob and the signals sent to the courthouse became a familiar site. It remained a signal station until the end of the war.

### ACTIVITIES

- Discuss with students how they communicate long distance today. For example, telephone and computers.
- How might a modern soldier communicate out in the field?
- Next ask students how a civil war soldier communicated long distance information. Discuss answers.
- Explain the role and duties of the signal corps using the background information.
- Discuss the importance of coded messages and hand out instructions and materials for making a cipher disc.
- Review sewing instructions and safety procedures.
- Once flags are complete, divide students into groups so they can demonstrate the wigwag system and decipher messages with their cipher discs.

### FOLLOW-UP ACTIVITIES

- Present Your Colors lesson plan
- Participate in Ranger Education Program at Stones River National Battlefield.
- Research and discuss the telegraph system used during the Civil War.

### RESOURCES

Coggins, Jack, *Arms and Equipment of the Civil War*. Doubleday and Company, Inc. Garden City, NY.

Manasco, Clifford G., *Signal Corps Camp of Instruction Manual*. United States Army Signal Corps Museum Publication.

**APPENDIX**  
**Wigwag Alphabet**

**Wigwag alphabet**

This is the alphabet, numbers and code signals adopted late in the war:

A = II	I = 1222I
B = 122I	2 = 2III2
C = 21I2	3 = 1I2II
D = III	4 = III2I
E = 2I	5 = IIII2
F = III2	6 = 2IIII
G = II22	7 = 22III
H = 2II	8 = 2222I
I = 2	9 = 22I22
J = 22II	0 = IIIII
K = 12I2	
L = II2	AND = 2222
M = 2II2	TION = 222I
N = 22	ING = 1I2I
O = 12	ED = 1222
P = 2I2I	
Q = 2I22	Are You Ready? = II
R = 122	Wait a moment = 1222I
S = 12I	I am ready = 1I2II
T = I	Did you understand? 22
U = 22I	
V = 2III	Error = Hold flag over head and parallel to ground
W = 22I2	
X = 12II	
Y = 222	Message received & cease signaling = II,II, II, 3
Z = IIII	
	End of word = 3
	End of sentence = 33
	End of message = 333

**Pre-concerted Code**

One way to confuse the enemy is to use a pre-assigned letter or double letter for certain words or phrases, followed by a "3" to show that the single or double letter stands alone.

A = ARTILLERY	AA = ATTACK
B = BACK/RETIRE	BB = BEGIN
C = CAVALRY	CC = CONCENTRATE
D = CENTER	DD = WAIT
E = RETURN	EE = END
F = FORWARD	FF = FLANK
G = CONFEDERATE	GG = SEND
H = HALT/STOP	HH = COURIER
I = INFANTRY	II = IDENTIFY
J = CEASE FIRE	JJ = RUNNER
K = REPEAT	KK = WORD
L = LEFT	LL = LOW AMMO
M = MINUTES	MM = MEDICAL
N = DEPLOY	EMERGENCY
O = ORDER	NN = MOVE
P = LOCATION	OO = OPEN FIRE
Q = QUESTION (?)	PP = PREPARE
R = RIGHT	QQ = COUNTERMAND
S = SKIRMISHERS	RR = REINFORCEMENTS
T = EXTENDED	SS = SIGNAL (S)
U = UNION	TT = RELAY
VV = WHAT	UU = WHO
V = FIRE	WW = WHEN
W = WHERE	XX = STANDBY/WAIT
X = SHUTTING DOWN	YY = YARDS
Y = READY	ZZ = LAS
Z = IN POSITION	

**APPENDIX**  
**Signal Flag Sewing Instructions**

**You'll Need**

- Red and/or White Thread
- Straight Pins
- Scissors
- Red and white muslin, linen or other light close-knit fabric.
- 1/2" to 1" dowel rod, five foot long, one for each flag (or similar wooden staff)

**Getting Started**

The two-foot flags should be sufficient for this lesson plan, although four-foot flags could be used depending upon the size of your students. If you choose to make a larger flag, you will need to use a longer staff, up to eight feet long.

**Background**

The smallest signal flags were two feet by two feet square with an eight-inch center square. One should be white with a red square and the other red with a white square. The next size up is four feet by four feet square with a sixteen-inch center square. Colors are the same as mentioned above plus another, which was black with a white center. The largest signal flags were six feet square with a two-foot square center. One is white with a red center and the other black with a white center.

**Directions**

- Cut material 1/2" longer than the desired size for flag and two center squares. Fold edges under 1/4" TWICE and pin in place.
- Assign each student a section of the flag or center squares to hem. Have them use a close whipstitch to hem up the edges. Be sure to remind about safety with needles and pins.
- Once the edges are secure, then pin the center squares to the flag. Students can then sew around the edges to attach the squares.
- To attach the flag to the staff, you will need four ties. Take two six inch strips of cloth and sew them together at the tie edge of the flag, thus making one tie.
- When complete, tie your flag to the staff.  
*Now you are ready to try the wigwag technique.*

**APPENDIX**  
**Make a Cipher Disc**

**You'll Need**

- Two different sizes of white paper plates
- Pencil
- Marker
- Ruler
- One fastener

**Instructions**

- Start by laying the small paper plate on top of the larger one. Use a pencil and ruler to mark off 36 even spaces. Make sure your marks on the small plate line up exactly with the ones on the large plate. (see picture below)
- Next use your marker to write the letters of the alphabet and numbers 0–9 in the spaces, one per space on both plates.
- When finished writing, take the small plate and lay it on top of the large plate. Line up the letter A and make sure all other letters and numbers line up. Use the sharp end of the fastener, or your pencil, to poke a hole in the center of both plates. Hook both plates together with the fastener.
- Now you should be able to turn the small plate to change your cipher.

