girl scouts of eastern pennsylvania

Outdoor Skills Challenge Activity

Navigation

Learn how to find your way! Understanding directions and maps are essential skills to navigate our world. Once you've got those down, learn more advanced ways to navigate including handmade trail signs, Semaphore, and Morse code.

By completing the level-appropriate activities in this guide (see chart below), you'll earn your Navigation Rocker!

	Daisy	Brownie	Junior	Cadette	Senior	Ambassador
Cardinal Directions	✤	✤		✤		
Inter Cardinal Directions		✤		✤		
Trail Signs			✤			
Map Reading				✤		
Semaphore					✤	
Morse Code						✤

Navigation

Cardinal Directions D B C

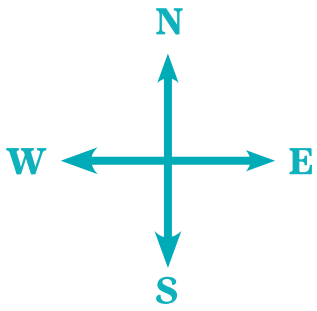
MATERIALS

Papers with one word on each North, South, East, West

OBJECTIVES

- Name the four cardinal directions in order starting with North and moving clockwise around a compass.
- Move around a room aligned to cardinal directions that are posted on the wall.

Cardinal Direction Wall (Activity One)



1. Name the cardinal directions. North, South, East, and West.
2. Have one Girl Scout stand against one wall of the meeting room. Give her the paper with the word North.
3. Have the rest of the Girl Scouts face North. From there, tell the Girl Scouts to point behind them. Tell the girls that opposite North is South. Put a second Girl Scout at the wall and have her hold the paper that says South.
4. Have the girls stand in the center of the room. Ask girls to put North to their left and South to their right. The wall straight ahead is East. Put another Girl Scout at that wall and label her East.
5. Ask the girls to point to the wall opposite the East wall. Put a Girl Scout at that wall and hand her the paper that says West.

Simon Says (Activity Two)

1. Play Simon Says with the cardinal directions.
2. Caller says “Simon Says go to the (insert direction) wall.”
3. Girls all move to the wall stated.
4. If the caller says “go to the (insert direction) wall,” without saying Simon Says, the girls should not move.
5. If a girl moves when “Simon Says” is not said, that girl is out.
6. Play the game until there’s one girl left.
7. Repeat playing the game until the girls learn the cardinal directions.

Navigation

Intercardinal Directions B C

MATERIALS

Inner Cardinal Directions Map Worksheet

Pencils

Crayons

OBJECTIVES

- Label a compass rose accurately including intercardinal directions (NE, SE, SW, NW).
- Describe the location of points on a map using intercardinal directions.

Compass Rose (Activity Part One)

1. Pass out the worksheet to each girl.
2. Have them work together to fill in the cardinal directions—north, east, south, and west—on the compass rose.
3. Explain that to be more specific, sometime cardinal directions are combined to make intercardinal directions.
4. Have the girls fill in the compass rose with the intercardinal directions—northeast, southeast, northwest, and southwest.

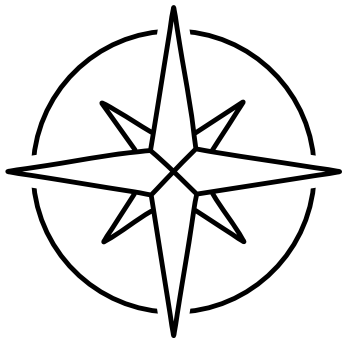
Map (Activity Part Two)

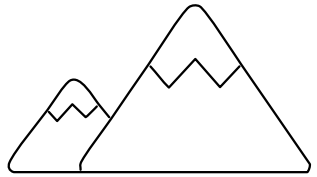
1. Decide whether the group will be working with a partner, small group, or large group.
2. Pass out the different colored crayons.
3. Read aloud each direction and have the girls follow it. Make sure to give time between each direction for the girls to be able to color the object.
4. When it is complete, the fire should be red, tent green, ball purple, tree brown, mountains gray, hiker the girl's favorite color, Personal Flotation Device (PFD) orange, and fish and hook three colors of the girl's choosing.

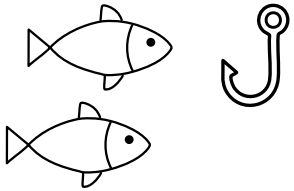
Map Directions to Read Aloud:

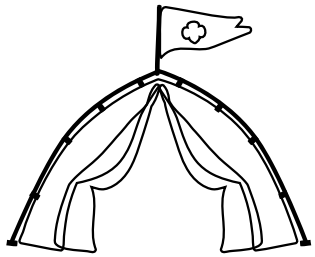
1. Fill in the compass rose with N for north, NE for northeast, E for east, SE for southeast, S for south, SW for southwest, W for west, and NW for northwest.
2. Find the campfire and color it red.
3. From the campfire go NORTHEAST and color the structure you sleep in green.
4. From the tent go SOUTHEAST and color that object purple.
5. Move all the way WEST from the object in number four and color that object brown.
6. In the NORTHEAST most corner, there are mountains, color them gray.
7. WEST of the mountains is a hiker, color that your favorite color.
8. Move SOUTHWEST from the hiker and color that object orange.
9. Mostly west from the last object, but a little north, so NORTHWEST, is the last object to color, pick three different colors to color this symbol.

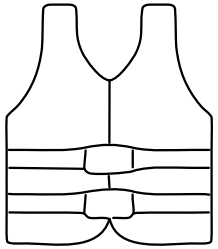
Intercardinal Directions Map

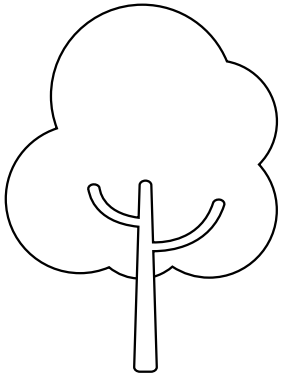


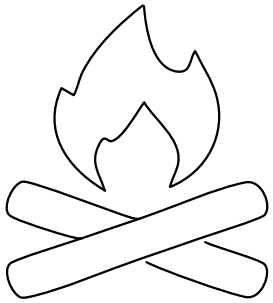


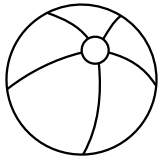












Navigation

Trail Signs J

MATERIALS

Trail Signs Guide

Stones, twigs, anything else to use for marking a trail

OBJECTIVES

- Follow trail markers/blazes on a trail
- Create and follow handmade trail markers with natural items using the trail sign guide

Practice (Activity Part One)

1. Set up ample examples of trail signs, using the guide.
2. Explain the different signs and have the girls shout out what each sign is.
3. Use the different materials to show the same sign, for example using stones to show going left and using twigs to show going left.
4. Have a very simple trail setup for the girls to follow.

Did you know? A human-made pile or stack of stones usually used as a marker is called a Cairn (pronounced like care-n).

Making the Trail (Activity Part Two)

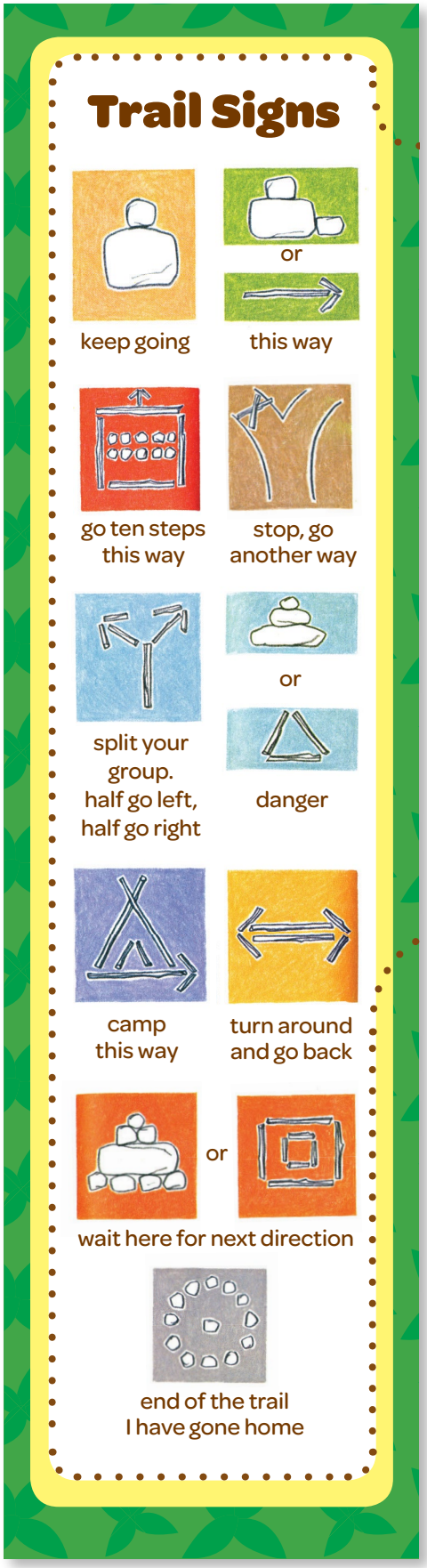
1. Have girls work in partners or alone and create a trail.
2. Make sure each trail has at least ten different signs on it to give ample directions.
3. Have the girls test their own trails out to double check all of their signs.

Try It Out (Activity Part Three)

1. Have the girls rotate around to each other's trails. Give everyone the opportunity to explore the trails.
2. Talk about the differences in each trail and what the girls liked about each other's trails.

Print enough trail sign guides for each group.

Trail Signs



Navigation

Topographical Maps C

(Adapted from Penn State's Department of Ecosystem Science and Management)

MATERIALS

- Potato
- Knife
- Paper
- Pencil
- Topographic map

OBJECTIVES

- Learn what a tropographic map is and what it's used for.
- Be able to read a topographic map.

What is a Topographic Map?

- A map that uses elevation contour lines to show the shape of the Earth's surface. Elevation contours are imaginary lines connecting points having the same elevation.
- Contours make it possible to show the height and shape of mountains, the depths of the ocean bottom, and the steepness of slopes.
- Hikers, geologists, engineers, and environmental managers use topographic maps.

Potato Map Activity

1. Cut a half of potato to create a flat surface on the bottom of the potato.
2. Cut a piece out of the top a of the potato to create a valley.
3. Have the girls look at it from the side and explain that this is a representation of a mountain or hill.
4. Slice the long side of the potato in even slices.
5. Trace each slice on to a piece of paper, making sure they stay in correct alignment with each other.
6. Ask girls to describe the connection to how a topographic map is made.
7. Look at a topographic map together and talk about what they see. How are hills and mountains represented? How can you tell how steep a mountain is?

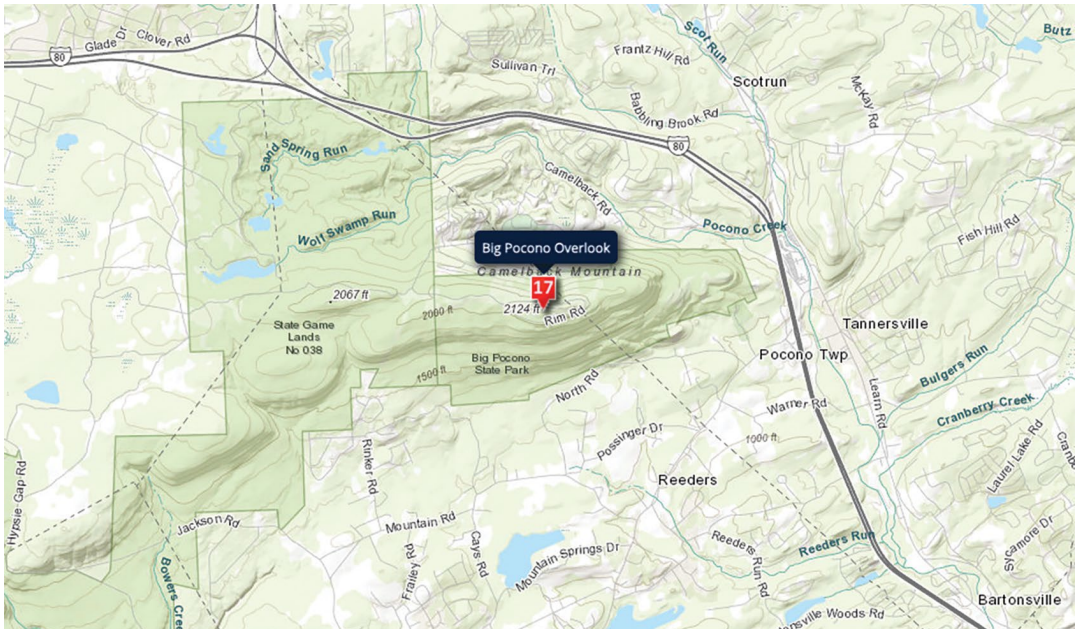
STEP 1

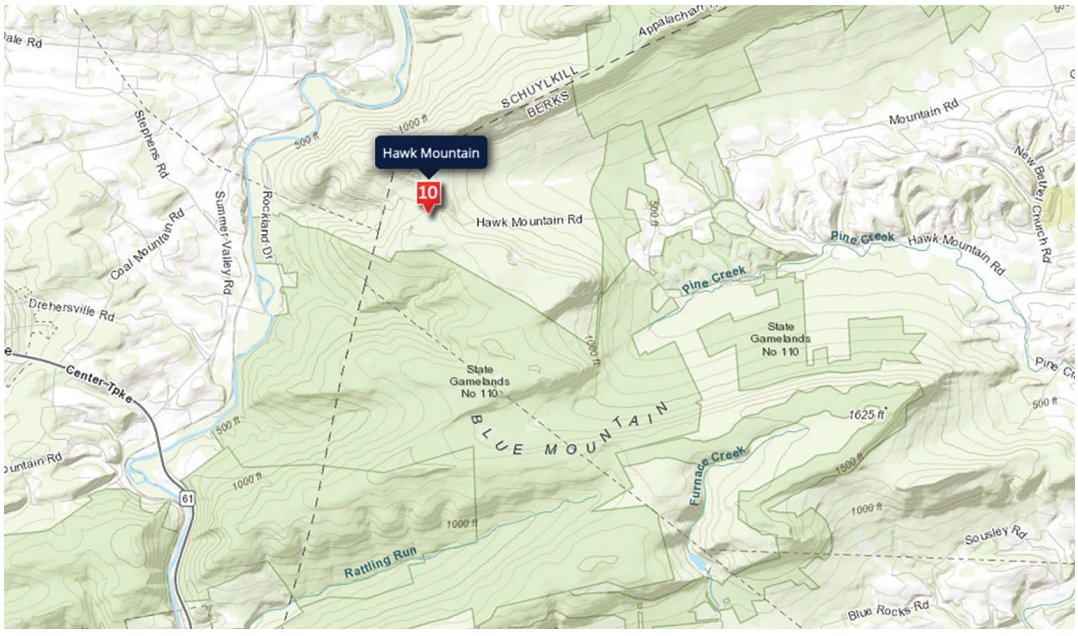
STEP 2

STEP 4

STEP 5

Topographic Maps





Maps from https://maps.dcnr.pa.gov/storymaps/geologic.html

Navigation

Semaphore S

MATERIALS

Semaphore Flags (or bandannas tied to sticks)

Semaphore Guide

Pencil & Paper

Hat or Basket

OBJECTIVES

- Girls will learn what Semaphore Flags are.
- Girls will be able to send and interpret a message in Semaphore.

What is a Semaphore?

Semaphore a system of sending messages by holding the arms or two flags or poles in certain positions according to an alphabetic code. Semaphore is a way to communicate when verbal language is not available.

Watch this video to learn more.

Practice (Activity Part One)

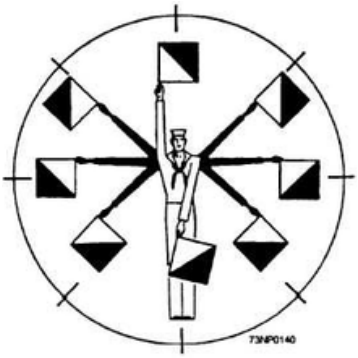
1. In partners or small groups have the girls use the semaphore guide to practice the letters.
2. With their partners or groups, practice spelling their name.

Simple Sentences (Activity Part Two)

1. Have each girl write the name of famous actress or musician.
2. Collect the papers in a hat or basket, mix them up, and have each group pull a name out of it.
3. Have the group discuss who will present the name using the flags.
4. Each group presents, while the others watch. As the group is presenting, the other groups should write down the letters represented by the Semaphore flags to guess the name!

Girl Scouts from the early 1900's practice semaphore.

These are all of the possible positions for the semaphore flags. Semaphore works similar to a clock, starting with your right hand moving and then your left hand. The two flags are never in the same position.



Using the chart on the next page, what letters do you think the girls in these pictures are practicing?

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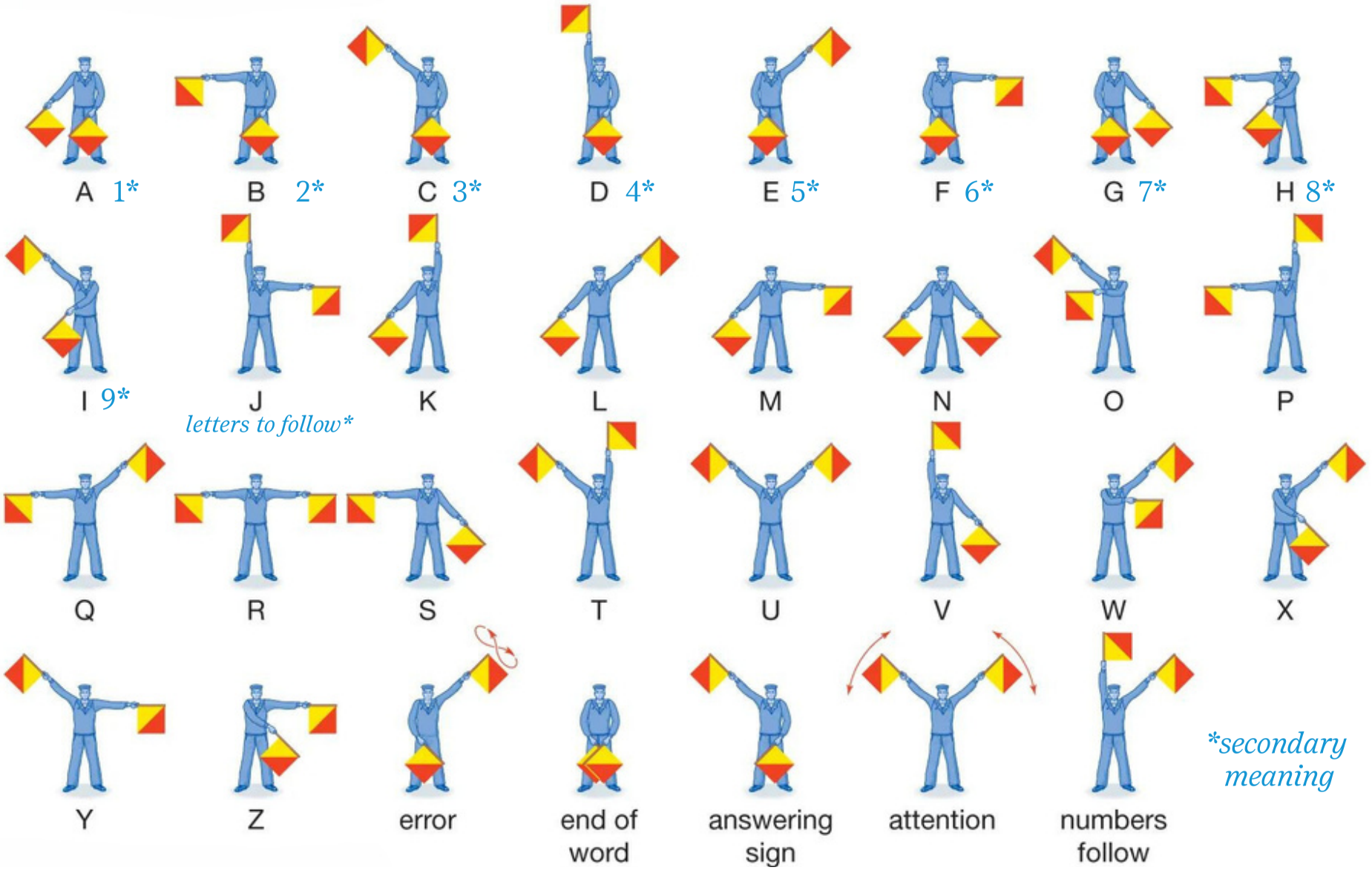
Semaphore flags were used to signal between ships, before the telegraph was invented. A person would hold a flag in each hand and move them to different positions to communicate specific letters or numbers.



Navigation

Morse Code A

MATERIALS

Flashlight

Morse Code Guide

Pencil & Paper

Hat or Basket

OBJECTIVES

- Girls will learn what Morse Code is.
- Girls will be able to send and interpret a message in Morse Code.

What is Morse Code?

A system for representing letters of the alphabet, numerals, and punctuation marks by an arrangement of dots, dashes, and spaces.

Morse Code was used on ships for long distance communication and is still used today for emergency signaling, and able to be transmitted by sound or light, making it a universal way to signal for help.

Did you know? SOS, the internationally recognized distress signal, does not stand for any particular words. Instead, the letters were chosen because they are easy to transmit in Morse code: "S" is three dots, and "O" is three dashes.

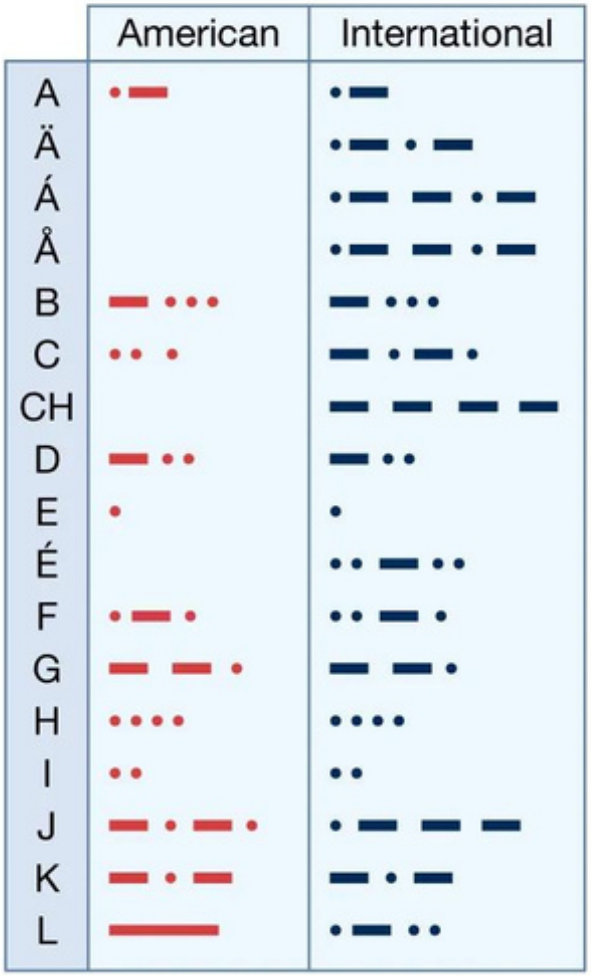
Practice (Activity Part One)

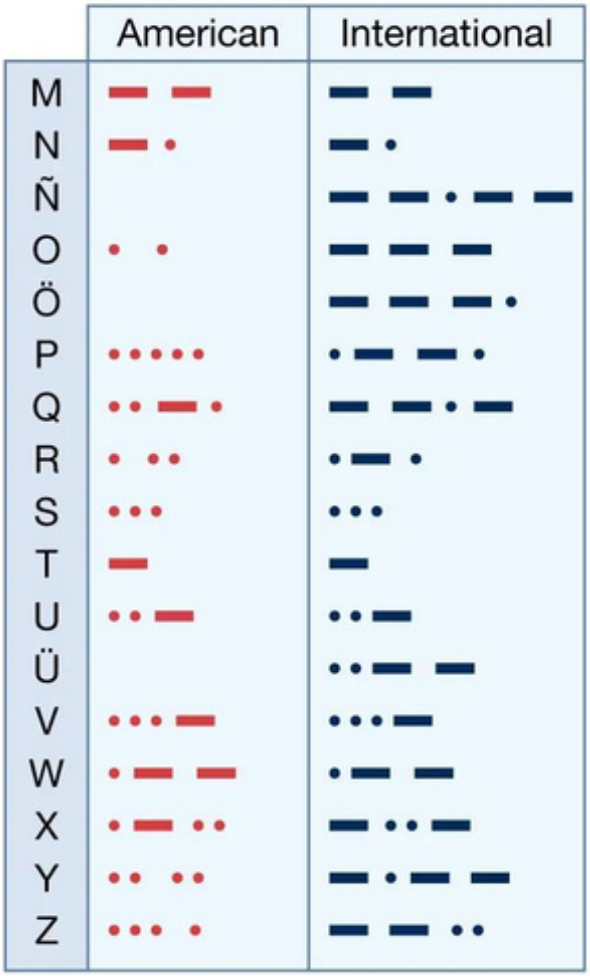
1. Have girls split into partners or small groups. Each group should have a flashlight.
2. Using the Morse Code guide, girls should practice signaling their names by turning the flash light on and off to correspond to the character.

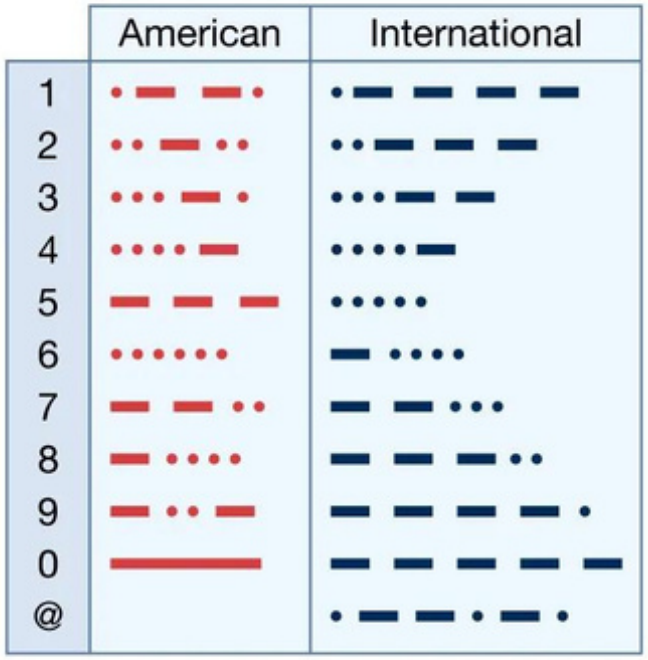
Simple Sentences (Activity Part Two)

1. Have each girl write a simple sentence or well-known phrase.
2. Collect the papers in a hat or basket, mix them up, and have each group pull a sentence out of it.
3. Have the group discuss how they will present the sentence.
4. Each group presents, while the others watch. As the group is presenting, the other groups should write down the Morse Code characters and try to guess the phrase!

Morse Code was invented in the USA in the 1830s by Samuel F.B. Morse, and was used to communicate with the telegraph. International Morse Code started being used in the 1850s so it could be used in languages other than English.







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