

# Read Between the Signs (Spy Week)

## Ten Signing, Signaling and Decoding Activities

### Suggested Morning Activities:

- **Making Cipher Disks**

*A cipher disk is used to decode encrypted messages. It is thought that Thomas Jefferson, the third president of the United States, first invented the wheel to help him code letters he wrote in his personal life.*

### You Will Need:

- Brass fasteners
- Worksheet of template copied onto card-stock

### To Begin:

1. Print out the PDF below on thick paper or glue printout on card board
2. Cut out the 2 disks
3. Cut out the rectangle next to "CODE". Children may need help with this.
4. Make holes into the disk centers and attach the smaller disk to the larger one using a brass paper fastener.
5. Have children work in pairs encrypting and decrypting messages
6. Examples:
  - KIDS MAKE STUFF GREAT in Code F would be [F]  
ECXMGUEYMNOZZ CM ALYUN

## Read Between the Signs

- CAN YOU READ THIS? in Code X would be [X] ECP AQW TGCF VJKU?
- So now try it yourself! [H] ZSNW XMF!!

### • Sign Language

*What is Sign Language? A sign language or simply signing is a way of communicating that uses hands and body language instead of sound. One way of using sign language is through finger spelling. The following activities will have kids practicing their finger spelling while playing games as a group.*

### **You Will Need:**

- Sign Language worksheet

### **To Begin:**

#### 1. Sign Language Telephone Game

Remember the game "Telephone" from grade school? Well, with this game, you sign it instead of say it. So, everyone lines up or forms a circle without looking at each other. The first person taps person #2 on the shoulder and signs something to him or her. Then, person #2 signs it to person #3, and so on. Make sure the people further along in the line don't see! When the sign gets to the last person, you see how much it's changed! You can also do this by drawing on each others' backs. Have fun!

#### 2. Animal Memory Game

Everyone forms a circle and picks an animal. Then, you go around the circle and everyone signs their animal. The person starting the game (person #1) starts by signing another person's animal sign. The person whose animal sign person #1 signed (person #2) then signs another person's animal sign. So, not only do you have to remember your animal sign, you have to remember the animal signs of the other people in the circle! This is a great way to build animal vocabulary!

### • Scytale Messages

# Read Between the Signs

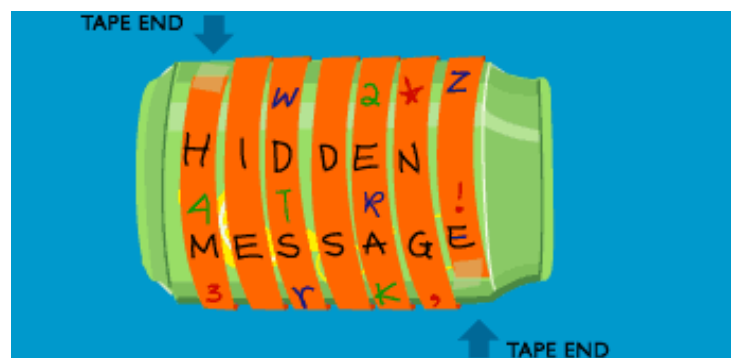
*Scytale messages are another way to code secret messages. Cut long strips and tape them together, wrapping them around something round. Unravel the strips to create the code, and pass them to a friend to help uncover the message. This was another type of coding used by spies.*

## You Will Need:

- Paper
- Scissors
- Tape
- A cylinder (something round)

## To Begin:

1. Begin by cutting out long thin strips of paper. The longer your message, the more paper you will need. Once you have enough strips tape them together to make one long strip.
2. Next, tape one end of the strip to something round (paper tube, soda can, flag pole) and wrap the paper around the cylinder. Make sure your paper does not overlap on any side.
3. Write your message across the can, so that one letter is on each strip on paper. Your message should read left to right.
4. Now add extra letters in between your message. This will help disguise your message and make it trickier to decode.



- **Trail Blazing**

# Read Between the Signs

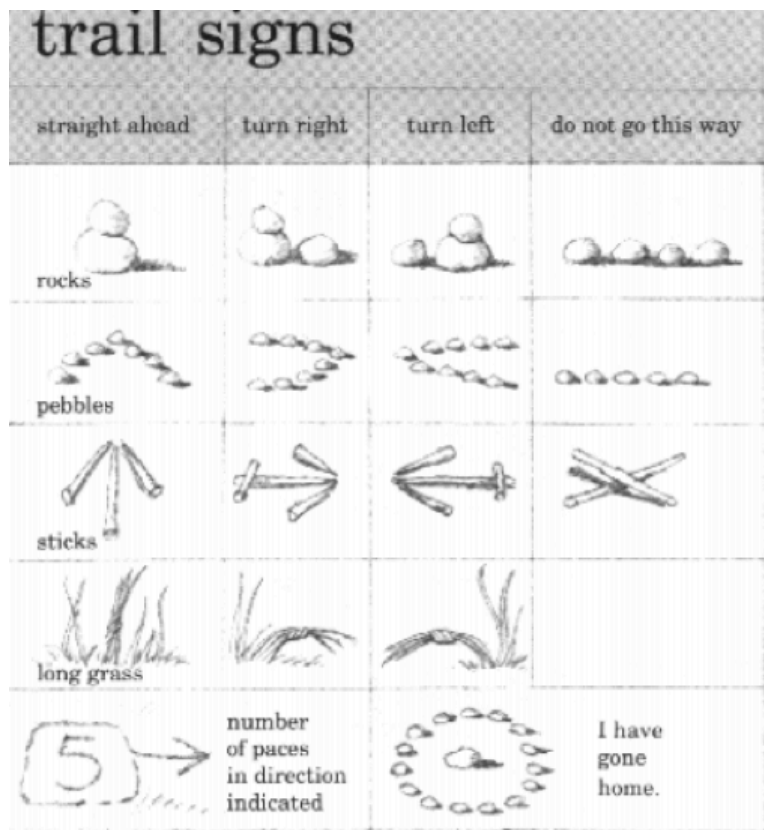
*Trail blazing is the practice of marking paths in outdoor with blazes, markings that follow each other at certain distances and mark the direction of the trail. Because you are in a park and not on the trail, it may be hard to find all of the necessary supplies. Work with what you can find, and add in markers or other tools to help make the signs.*

## You Will Need

- Sticks, stones, and other tools to make the signs

## To Begin:

1. Make signs you might see on different trails. Try to think of signs you could put in the middle of the park. Compare different “blazes” with a partner and try to decode the symbols.
2. Play Trail mark Simon Says:
  - Have children work in groups to gather rocks, sticks, and other supplies.
  - Have one group design the markings, while the others guess the symbol. Then switch groups.



## • **Drum Code**

*Be prepared for a noisy activity! Each group will need pencils and paper. Children will clap hands and tap thighs to create different sounds and rhythms to represent words or letters.*

## You Will Need:

- Pencil
- Paper

# Read Between the Signs

## **To Begin:**

1. Tell the children to imagine that they live in small villages a few miles apart. There are no telephones, radios, email, or TV. Usually, if they want to talk to their friends in the next village, they have to walk there to do it. But sometimes they might just want to send a message that their friends will get right away. They need to develop a code that both know. Suggest keeping the codes short and simple for clarity, and remind them that there are two ways to make messages sound different from each other: using the two different notes and making the rhythm different.
2. Have the group brainstorm about messages that might be useful to send. Emergency messages like "send the doctor", news like "strangers have arrived", and everyday messages like "I'll be home late", "lunch is ready" are all acceptable.
3. Divide the children into small groups (3 to 6 per group).
4. Each group is to develop a code of three to ten messages. (You decide the number, based on age, attention span, and time available.) They decide which messages they would like to be able to send, and what rhythm stands for each message. Have older children invent a way to write the code down so that they can remember it.
5. After a suitable period of time, reassemble the full group. Give each small group a chance to show off their message code. When it is a group's turn, they split into message senders and receivers, on opposite sides of the room. (Let them take turns if there is time.) For older students, make sure both groups have a copy of their written code as a reminder. You stand with the senders and point to or whisper which message they should send. Have them send the message and see if the receivers can name the message correctly.

## **Suggested Afternoon Activities:**

- **Hieroglyphics**

# Read Between the Signs

*Hieroglyphics are used by the Ancient Egyptians as a form of writing. Instead of words, hieroglyphics are made using small pictures. Children will have the opportunity to learn about the different symbols, and then make their own hieroglyphics on a cartouche.*

## **You Will Need:**

- Copies of hieroglyphics worksheet
- Tape
- Chalk

## **To Begin:**

1. Distribute copies of hieroglyph chart to individuals or groups. In addition, you'll need chalk (or markers and paper) and some type of long clear space of asphalt. or identify a space on the ground where children can draw in chalk. This will become a makeshift Egyptian wall. The children can then get to work writing their own names and short sentences in hieroglyphics. When finished, they can de-code each other's work. This is a nice peek into what archaeologists are faced with when they are working to decode messages found in Egyptian ruins
2. Distribute the cartouche template to children to write their names on to take home.
3. Egyptian hieroglyphs were based on things common in everyday life in ancient Egypt. Have children make a new set of hieroglyphs based on common thing in 21<sup>st</sup> century America. Have children write messages for each other to decode.

## • **Semaphores**

*"Semaphore is a way of signaling letters, words or numbers over long distances. Modern semaphore uses two square flags, divided diagonally with the top half red and bottom half yellow in color. There are twenty-nine potential motions in total, twenty six letters with A through K doubling as numbers, plus one error symbol and two to designate if the signal person is using an alphabetic or numerical system. Between words, the flags are to rest across the signal person's waist. It is the only circumstance in which the flags ever overlap." Taken from <http://www.gettysburgflag.com/FlagSemaphoreUnspokenLanguage.php#ixzz3dukMtlLw>*

# Read Between the Signs

## **You Will Need:**

- Semaphores worksheet
- Paper
- Markers

## **To Begin:**

1. Distribute paper to have children make the two-colored semaphore flags. Have children work in groups or individually to create a short message that they will signal to others.
2. Participants then stand a far enough distance apart that messages cannot be transmitted by yelling or mouthing words, but within line of sight of each other. Each individual or group is given a pair of semaphore flags, and code key.
3. The first group/individual makes up a short message and signals it to the next group/individual and similar to the game telephone the message gets passed around and compared when it returns to 'base' The next group or individual then has a turn to make up and pass round the message.

## • **Finger Printing**

*This activity teaches about the different patterns people have in their fingers and how each print is a little different. Kids will learn about how detectives read and match prints, and attempt to do so themselves. Lesson taken from REAL Science Odyssey: Life, "My Own Fingerprints" lesson and worksheet.*

## **You Will Need**

- "My Fingerprints" worksheet
- Smooth paper
- Transparent or invisible tape
- Pencil

## Read Between the Signs

### **To Begin:**

1. Explain that each person has their own set of fingerprints that are unlike anybody else's in the world. Today children will analyze their own prints and those of three others, as well as one mystery person's print.
2. Pass out worksheets, pencils, and tape.
3. On a piece of scratch paper, color in a heavy area of pencil. Make it dark enough so that the pencil rubs off onto your finger. You may have to "reload" this area as you continue.
4. Starting with your left hand, rub your pinky in the pencil lead until it is coated.
5. Have a helper tear off about a 1" piece of tape. Put the tape on the finger so that the print transfers to the tape. Remove from finger and tape it down in the first oval on your lab sheet.
6. Do the same for each finger on the left hand and then do the same for the right hand in the ovals on the line below.
7. Analyze each print. On the lines under each print, write whether that print is an arch, loop, or whorl.
8. For #1, write how many of each print type you have.
9. Have 3 other people each do a right thumbprint for you and place in the boxes below. Write the name of each print donor on the line below their print.
10. Get an extra, mystery print from one of the donors – preferably the most unusual so it will be easier for the kids to distinguish.
11. Compare the known prints with the mystery print. Write who you think the print belongs to on the line provided.
12. Conclude with a discussion of the activity:
  - How can having individual prints help us?



## Read Between the Signs

- How do we use fingerprints in our society? Could we do these things if people shared the same fingerprints?

### 13. For More Fun:

- Turn your fingerprints into art.
- Count how many arches, loops, and whorls your parents have and then how many your friends have. Do your parents' prints have more similarities to yours or not? Why might your prints be more like your parents'?

## • Invisible Ink

*Invisible ink is yet another way to code your writing. Typically this experiment uses a heat source after the "ink" has dried, but try letting it dry in direct sunlight instead. Ultimately, the "ink" should turn brown. If it doesn't turn brown try holding it up to the light to see if you can read the message.*

### **You Will Need:**

- Baking soda
- Water
- Paintbrush
- Plastic cups (or something to mix the water/baking soda mixture)

### **To Begin:**

1. Divide children into small groups to share the baking soda/water mixture.
2. Mix equal parts water and baking soda
3. Paint your message on paper and let it dry in the sun. Try to put it in direct sunlight so they dry.
4. When you're ready to trade hold your message up to the sun. If the ink doesn't turn brown let it dry longer in direct sunlight. If it still doesn't work wait to hold it up to a light.

# Read Between the Signs

## • Scavenger Hunt

*This is the capstone activity for this week. Children will move from clue to clue to decoding messages to reach "home base" for a reward.*

### **You Will Need:**

- Markers
- Colored paper
- Decoder for each group
- Prize for winner
- Clues:
  - Staff members write clues using at least three of the codes (eg: hieroglyphs, cipher, semaphores, trail markings) learned during the week and hides them at various points in the park.
  - Each clue should lead to the next clue, and there should be a minimum of three clues.
  - Coded clues should be written on colored paper

### **To Begin:**

1. Divide children into small groups.
2. Distribute one decoder per group
3. Hand out the first clue. Have each group proceed through the hunt by decoding clues.
4. Groups should find a prize at the end of the hunt