

## SIGNS FOR OUTDOOR EDUCATION: COMMUNICATING WITH DEAF AND HEARING IMPAIRED INDIVIDUALS

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Outdoor education has become a part of the leisure service system for special populations in Puerto Rico. Programs and activities have been planned by the Department of Recreation and Sports, Puerto Rico Bass Fishing Federation, Catholic and Baptist Pastoral Groups and others. Different groups with special needs have received the benefits of outdoor experiences. Recently, the deaf and hearing impaired population has been one of the groups served.

In order to guarantee a fulfilling and pleasurable experience, good communication is necessary between leisure educators and participants. One of the communication methods employed by deaf and hearing impaired individuals is sign language. Thus, this study is concerned with concepts related to outdoor education experiences expressed in sign language by deaf and hearing impaired individuals in Puerto Rico.

Puertorrican Sign Language (PSL) is very similar to American Sign Language (ASL), in fact many signs used by the Puertorrican deaf community emerge from ASL, with the exception of some Creole signs. This situation was created in 1902 when the Missionary Helpers of the Sacred Heart established the first education system for the deaf and formally introduced sign language as a means of communication.

Even though ASL is its own language, there are other languages employed with the deaf community in the United States. For the purposes of this paper we will refer to ASL as signs found in the literature written in the United States (Reikeof, 1987; Sternberg, 1981, and Texas Education Agency, 1980).

Sign language is not universal, notwithstanding a language called Gestuno that's been proposed. Similarities have been found in many concepts used in different countries. This is related to the amount of research in sign language and communication of universities in the United States; mainly Gallaudet University. Publications from Canada (Robinson & Stewart, 1987), Costa Rica (Ministerio de Educación), England (Sutcliffe, 1981; Sutcliffe, 1984), Puerto Rico (Mates, 1988), and Venezuela (Angulo, Alvarez & Alvarez, 1982) have been influenced apparently by ASL.



The recreation and leisure field in Puerto Rico also provides services to the deaf community and needs sign language to communicate its concepts. The signs in PSL of this presentation are a part of an investigation regarding "Sign Language for Physical Education and Recreation" (Albarrán, cinta en edición [video in edition]; Albarrán, 1991). Research with concepts in the recreation area is a new field in Puerto Rico (Vázquez, 1990a, Vázquez, 1990b; Rodríguez & Albarrán, 1988).

The original research project developed a Pictorial Questionnaire with Concepts in Physical Education and Recreation, which was administered to members of the deaf community in different parts of the island. Seventy concepts of this investigation (Albarrán, 1991) were selected and computed with their similar concept in ASL. This paper will focus on the similarities and differences in signs related to selected concepts related to outdoor education.

#### Selected Concepts

- |  |   |
|--|---|
| 1. ABRIGO, <b>COAT</b>                     | 37. CORRER, <b>RUN</b>                  |
| 2. ACAMPAR, <b>CAMP</b>                    | 38. CHALECO SALVAVIDA, <b>LIFE VEST</b> |
| 3. AGUA, <b>WATER</b>                      | 39. DORMIR, <b>SLEEP</b>                |
| 4. ALPINISMO, <b>ROCK CLIMBING</b>         | 40. ESPEJUELOS, <b>GLASSES</b>          |
| 5. ANZULELO, <b>HOOK</b>                   | 41. ESTRELLA, <b>STAR</b>               |
| 6. ARBOL, <b>TREE</b>                      | 42. FLOR, <b>FLOWER</b>                 |
| 7. ARCO, <b>BOW</b>                        | 43. FOGATA, <b>CAMP FIRE</b>            |
| 8. ARENA, <b>SAND</b>                      | 44. FRIO, <b>COLD</b>                   |
| 9. ARQUERIA, <b>ARCHERY</b>                | 45. LAGO, <b>LAKE</b>                   |
| 10. AVE, <b>BIRD</b>                       | 46. LIDER, <b>LEADER</b>                |
| 11. AYUDA, <b>HELP</b>                     | 47. LINTERNA, <b>FLASHLIGHT</b>         |
| 12. BAILAR, <b>DANCE</b>                   | 48. LUINA, <b>MOON</b>                  |
| 13. BANCO, <b>BENCH</b>                    | 49. LLUVIA, <b>RAIN</b>                 |
| 14. BANDERA, <b>BENCH</b>                  | 50. MADERA, <b>WOOD</b>                 |
| 15. BARBACOA, <b>BARBECUE</b>              | 51. MAR, <b>SEA</b>                     |
| 16. BICICLETA, <b>BICYCLE</b>              | 52. MOCHILA, <b>BACKPACK</b>            |
| 17. BINOCULARES, <b>BINOCULARS</b>         | 53. MONTANA, <b>MOUNTAIN</b>            |
| 18. BOHIO, <b>GAZEBO</b>                   | 54. NUBE, <b>CLOUD</b>                  |
| 19. BOLA DE PLAYA, <b>BEACH BALL</b>       | 55. OLAS, <b>WAVES</b>                  |
| 20. BOCHA, <b>BOCCIE</b>                   | 56. PESCAR, <b>FISH</b>                 |
| 21. BOTAS, <b>BOOTS</b>                    | 57. PIEDRA, <b>ROCK</b>                 |
| 22. BOTE, <b>BOAT</b>                      | 58. PISCINA, <b>POOL</b>                |
| 23. BRUJULA, <b>COMPASS</b>                | 59. PLAYA, <b>BEACH</b>                 |
| 24. BUCEAR, <b>SCUBA</b>                   | 60. REMAR, <b>ROW</b>                   |
| 25. CABALLO, <b>HORSE</b>                  | 61. RIO, <b>RIVER</b>                   |
| 26. CAMINAR, <b>WALK</b>                   | 62. SABANA, <b>BLANKET</b>              |
| 27. CAMINATA, <b>HIKE</b>                  | 63. SACO-DORMIR, <b>SLEEPING BAG</b>    |
| 28. CAMPANA, <b>BELL</b>                   | 64. SALVAVIDAS, <b>LIFESAVER</b>        |
| 29. CAMPO, <b>COUNTRY</b>                  | 65. SNORKEL, <b>SNORKEL</b>             |
| 30. CANOA, <b>CANOE</b>                    | 66. SOGA, <b>ROPE</b>                   |
| 31. CANTIMPLORA, <b>CANTEEN</b>            | 67. SOL, <b>SUN</b>                     |
| 32. CARACOL, <b>SHELL</b>                  | 68. SORDO, <b>DEAF</b>                  |
| 33. CASETA, <b>TENT</b>                    | 69. TIERRA, <b>DIRT</b>                 |
| 34. CAZA, <b>HUNT</b>                      | 70. ZAPATILLA, <b>TENNIS SHOES</b>      |
| 35. CEPILLO DE DIENTES, <b>TOOTH BRUSH</b> |   |
| 36. COCINAR, <b>COOK</b>                   |   |



**TABLE 1**  
**Descriptive Statistics for Selected Concepts in Outdoor Education of Puertorrican and American Sign Language**

CONCEPTS n	PSL	ASL	SAME SIGN PSL & ASL	NOT FOUND
70	44	30	26	14
	%	.63	.43	.37
				.20

Out of the seventy (70) selected concepts in outdoor education, fourteen (14) were not found in the literature. These concepts were not compared due to this matter. Two chi-square analysis ( $X^2$ ) were performed in order to establish differences or similarities among the selected concepts in PSL and ASL.

**Table 2**  
**Chi-Square Analysis for Seventy Selected Concepts in Outdoor Education of Puertorrican and American Sign Language**

CONCEPTS	PSL	ASL	$X^2$	df	p.
YES	44	56	4.235	1	.0396
NO	26	14			
TOTAL	70	70			

Statistical differences were found between the representation of concepts in PLS and ASL. This analysis includes the fourteen (14) concepts that were not found in the literature. In order to account for the ASL concepts that were not represents, PSL representations were deleted. This corrected analysis was also submitted to a statistical procedure.

**Table3**  
**Chi-Square Analysis for Fifty-Six Selected Concepts in Outdoor Education of Puertorrican and American Sign Language**

CONCEPTS	PSL	ASL	$X^2$	df	p.
YES	30	56	31.306	1	.000000002
NO	26	00			
TOTAL	56	56			

Once again, statistical differences were found between the representation of concepts in PSL and ASL. This analysis excluded the fourteen (14) concepts that were not found in the literature. According to the results of this study we may conclude that the selected concepts in outdoor education for PSL and ASL differ in their visual representation. These results tend to support that PSL and ASL are two different sign languages, regardless of the influence and similarities of the signs. We need to gather more concepts that will assist the deaf in the understanding and communication of outdoor experiences. Services and programs must assure good communication and understanding among practitioners and participants. We hope that this comparative research can help establish the need for further studies in signs for outdoor education in different countries.

## References

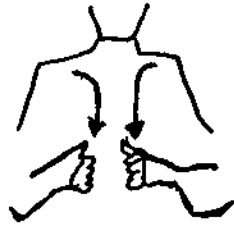
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## Appendix A Signs For Outdoor Education

01  
ABRIGO COAT

=

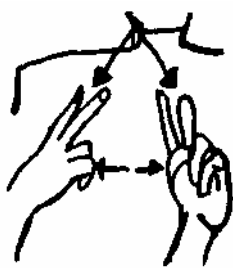


05  
ANZUELO HOOK



?

02  
ACAMPAR CAMP



06  
ARBOL TREE

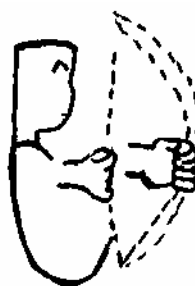
=



03  
AGUA WATER



07  
ARCO BOW



?

04  
ALPINISMO  
ROCK CLIMBING



?

08  
ARENA SAND

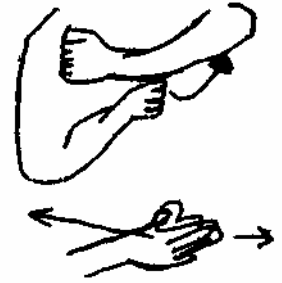
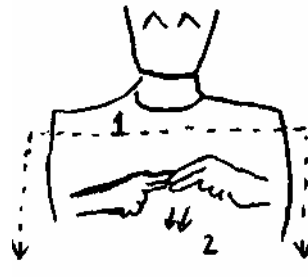


# Signs For Outdoor Education

09  
ARQUERIA ARCHERY



13  
BANCO BENCH



10  
AVE BIRD



14  
BANDERA FLAG

=



11  
AYUDA  
HELP, ASSISTANCE

=



15  
BARBACOA BARBECUE

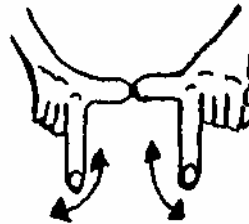


12  
BAILAR DANCE

=



16  
BICICLETA BICYCLE



# Signs For Outdoor Education

17

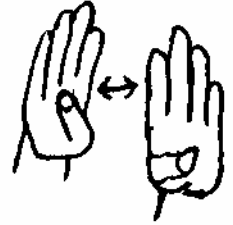
BINOCULARES BINOCULARS

=



21

BOTAS BOOTS



18

BOHIO

GAZEBO, HUT



?

22

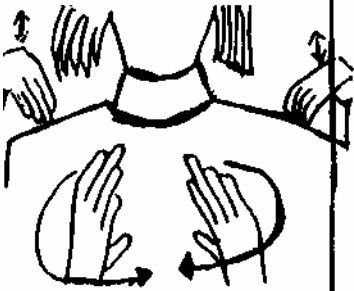
BOTE BOAT

=



19

BOLA DE PLAYA BEACH BALL



?

23

BRUJULA COMPASS



?

20

BOCHA BOCCIE



?

24

BUCEAR

SCUBA DIVING

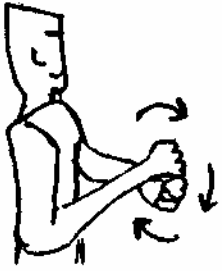


?



# Signs For Outdoor Education

25 CABALLO HORSE



29 CAMPO COUNTRY

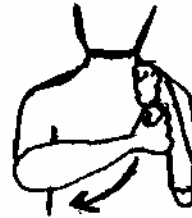


26 CAMINAR WALK



=

30 CANOA CANOE



27 CAMINATA HIKE

26

26

31 CANTIMPLORA CANTEEN



?

28 CAMPANA BELL



32 CARACOL SEA SHELL

=



## Signs For Outdoor Education

33  
CASETA TENT

02

02

37  
CORRER RUN



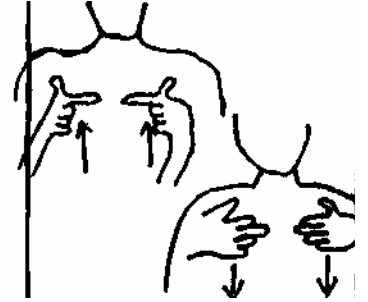
34  
CAZA HUNT

=



38  
CHALECO SALVAVIDA LIFE VEST

=



35  
CEPILLO DE DIENTES TOOTH BRUSH

=



39  
DORMIR SLEEP

=



36  
COCINAR COOK



40  
ESPEJUELOS GLASSES

=



## Signs For Outdoor Education

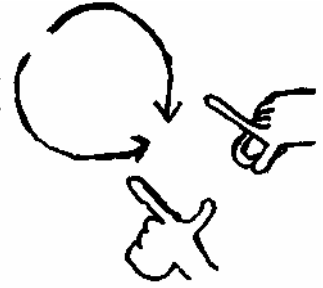
41 ESTRELLA STAR

=



45 LAGO LAKE

=



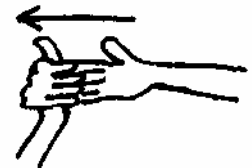
42 FLOR FLOWER

=



46 LIDER LEADER

=



43 FOGATA CAMP FIRE

=

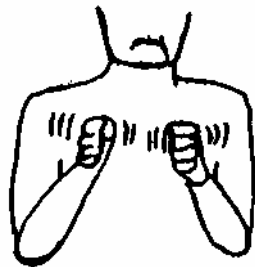


47 LINTERNA FLASHLIGHT



44 FRIO COLD

=

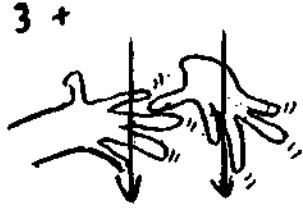


48 LUINA MOON



# Signs For Outdoor Education

49 LLUVIA RAIN



53 MONTANA MOUNTAIN



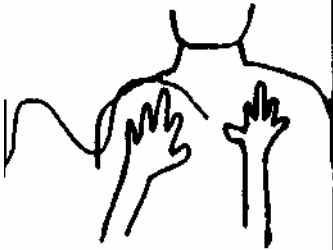
50 MADERA WOOD



54 NUBE CLOUD



51 MAR SEA

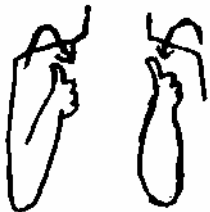


55 OLAS WAVES

=



52 MOCHILA BACKPACK



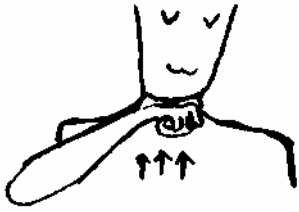
?

56 PESCAR FISH



## Signs For Outdoor Education

57  
PIEDRA ROCK



61  
RIO RIVER

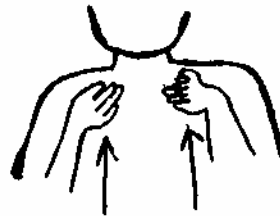


58  
PISCINA POOL

=

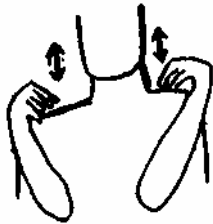


62  
SABANA BLANKET



?

59  
PLAYA BEACH



63  
SACO-DORMIR SLEEPING BAG



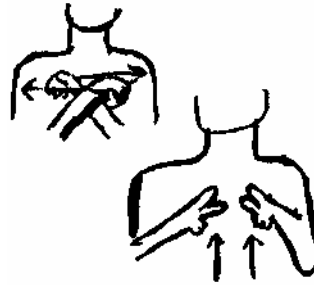
?

60  
REMAR ROW

=



64  
SALVAVIDAS LIFESAVER



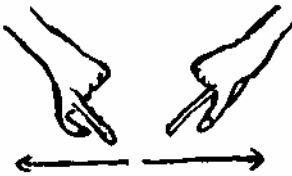
?

# Signs For Outdoor Education

65  
SNORKEL SNORKEL



66  
SOGA ROPE



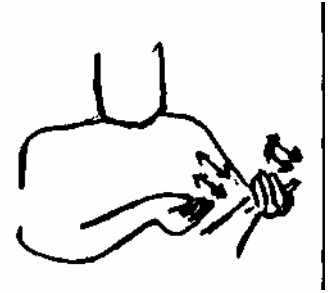
67  
SOL  
SUN



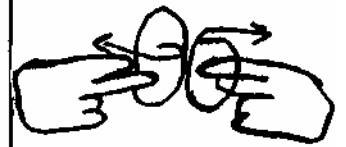
68  
SORDO DEAF



69  
TIERRA DIRT



70  
ZAPATILLA  
TENNIS SHOES



Global Therapeutic Recreation II

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