

ELINOR WONDERS WHY

EW160: ECHO LOCATION

Written by
Jorge Cham and Daniel Whiteson

Question: How does Ari know where things are when he's blindfolded?

Logline: The kids learn about echo-location

Curriculum Goals: **LS2**. Understand that animals have different body parts that are used in different ways to meet their needs.

- a. Identify body parts of animals and their function
- c. Compare how the external body parts of animals and plants are the same and/or different
- d. Explore how different external features of an animal help it survive in its environment. (Elinor and Olive learn that Ari's ability to make high-pitched sounds and his sensitive ears give him a special skill - echolocation).

SEP1. Asking questions (science) and defining problems (engineering)

- a. Demonstrate curiosity about the greater world outside of their local environment
- b. Ask more complex questions about observable phenomena
- c. Ask and/or identify cause and effect questions that can be answered by an investigation (Ari, Elinor and Olive wonder about how their voices are bouncing back near a cliff face. so they do an investigation that leads them to the idea of echoes).

SEP3. Planning and carrying out investigations

- b. Compare and contrast objects and events by describing similarities and differences in detail
- c. Demonstrate an ability to make and test predictions based on background knowledge and experiences. (Elinor and her friend contrast the echoes they all can hear with Ari's echolocation abilities).

SEP6. Constructing explanations (science) and Designing Solutions (engineering)

- a. Use background knowledge experiences, and data to construct reasonable explanations and theories of natural phenomena (science)
- b. Look for and describe patterns and relationships in natural

phenomena (science) (Elinor, Ari and Olive use their knowledge they've gained experimenting with echoes to understand Ari's echolocation)

FIRST DRAFT: January 13, 2020

It's a sunny afternoon in the forest, and ARI, ELINOR and OLIVE are on a camping trip with Ari's family. We open as Elinor and Olive are finishing setting up their tents at a campsite (we can reuse the ones from the Light The Way episode).

We see a **THOUGHT BUBBLE** of Mr. and Mrs. Bat sleeping upside down at their house.

8	MR. BAT (CONT'D) ... so setting up tents and sleeping on the ground is all very new to us.	8
9	OLIVE That's what makes camping an adventure!	9
10	MR. BAT You're exactly right, Olive. Camping is all about being out in Nature and doing things differently.	10
11	ARI And, let's not forget, having tasty camping snacks!	11
12	OLIVE Well, Ari liking snacks is not THAT different.	12
They all <SFX: LAUGH>.		
13	MRS. BAT I'm so glad that you two could join us, Olive and Elinor.	13
14	ELINOR Me too! I love camping.	14
15	ARI My favorite thing about camping is cooking dinner over a campfire.	15
16	OLIVE I really like reading a book in my tent. It makes the book feel even cozier.	16
17	ELINOR I love to go exploring in a new place, so I can see new things.	17
18	MR. BAT Well, we'll go for a nice walk soon, just as soon as I (struggling with tent pole) finish.. setting ... up ... this ... tent!	18

The tent collapses again. Miri <SFX: GIGGLES> again.

19 MR. BAT (CONT'D) 19
 (poking his head out)
 I think we know what Miri's
 favorite part of camping is.

Miri continues to <SFX: GIGGLE> and the kids join in.

20 MRS. BAT 20
 (setting Miri down and
 rolling up her sleeves)
 Oh dear. Why don't you kids go
 play? I'll help Mr. Bat.

The kids look at each other smiling and run off.

21 ARI 21
 Thanks, Mom!

2. EXT. FIELD -- DAY

The kids walk a few feet away to a field (within eyesight of
 the camp) as they talk about what to do.

22 OLIVE 22
 What should we do?

23 ELINOR 23
 Oh, I just learned a really fun
 game, want to play it?

24 OLIVE 24
 Sure, what's it called?

25 ELINOR 25
 It's called "Marco Polo."

26 ARI 26
 Who is Marco Polo?

27 ELINOR 27
 He was a famous explorer!

28 OLIVE 28
 Ooh, I love it! Let's play.

29 ARI 29
 Yeah! But... how do you play?

30 ELINOR 30
 Well, it's kind of like tag. But,
 you play with your eyes closed.

31 OLIVE 31
With your eyes closed?

Elinor pulls out a blindfold she brought along.

32 ELINOR 32
Yeah, here's how it works. If
you're "it" you wear this
blindfold.

33 ARI 33
So you can't see.

34 ELINOR 34
Right.

35 OLIVE 35
Wait... if you can't see, how do
you tag anyone else?

Olive pantomimes randomly tagging the air.

36 ELINOR 36
That's the fun part. If I'm "it"
and I say "marco", then everyone
else has to say "polo."

37 ARI 37
I get it. So when you hear them say
"polo", you can tell where they
are, without SEEING them.

38 ELINOR 38
Yes!

39 OLIVE 39
Sounds fun. Can I be "It" first?

Elinor puts the blindfold on Olive. From Olive's POV, we see
the blindfold go over her eyes. Everything is dark for a
moment. Back to the outside view, Olive is waving her arms
around.

40 OLIVE (CONT'D) 40
Wow, I can't see anything!

Ari does a silly dance.

41 ARI 41
Did you see that?

42 OLIVE 42
Nope.

He does a sillier dance.

43	ARI	43
	How about that?	

44 OLIVE 44
I got nothing.

ARI

Wow, that's a good blindfold.

46 ELINOR 46
Ok, but can you HEAR us?

Olive points to Elinor.

47 OLIVE 47
Yes! I can HEAR that you are right
there.

Ari is flying off to the side.

48	ARI	48
	Ooh! Can you hear me?	

Olive perks her ears up and points to Ari with her trunk.

49 OLIVE 49
Yes! You're way up there! Hey, no
flying!

Ari lands. They all <SFX: GIGGLE>

ARI
Cool, I like this game.

51 ELINOR 51
Ready to play?

52 OLIVE 52

I'm ready!

Elinor and Ari walk to new places.

53	OLIVE (CONT'D)	53
	Ok, here I come!	

Olive takes a few tentative steps, and walks around with her hands (and trunk) in front of her.

54 OLIVE (CONT'D) 54
 Marco!

55 ELINOR/ARI 55
Polo!

Olive moves in the direction of Ari, who scrambles out of the way. Ari and Elinor <SFX: GIGGLE>.

56 OLIVE 56
Marco!

57 ELINOR/ARI 57
Polo!

Olive moves towards Elinor, who dodges, and Olive grabs a bush instead.

58 OLIVE 58
Got you!

She lifts up the blindfold.

59 OLIVE (TO BUSH) (CONT'D) 59
Oops, you're a bush, not my friend
Elinor!

They laugh.

60 OLIVE (CONT'D) 60
Wow, that's hard!

61 ARI 61
Can I try being it?

62 ELINOR 62
Sure!

Olive hands him the blindfold. He ties it on as the girls find their places.

63 ARI 63
Get ready, here I come.

The girls smile and suppress their <SFX: GIGGLES> as Ari holds his arms out. As he starts walking, he moves much more confidently than Olive did.

64 ARI (CONT'D) 64
Let's see... where are you...

He walks straight to Elinor and tags her.

65 ARI (CONT'D) 65
Got you!

66	OLIVE	66
	Wow! You didn't even say Marco.	
67	ELINOR	67
	Yeah, how did you find me so fast, Ari?	
Ari shrugs.		
68	ARI	68
	I just kind of ... heard you were over there?	
69	ELINOR	69
	But I was totally quiet! I never said Polo.	
70	ARI	70
	Hmm, you're right. I'm not sure. Let's try again?	
He puts the blindfold back on and the girls find their places.		
71	ARI (CONT'D)	71
	Marco!	
72	ELINOR/OLIVE	72
	Polo!	
He heads right for Olive, who dodges out of the way and goes behind the bush. Ari easily follows her around the bush and tags her.		
73	ARI	73
	Got you!	
74	OLIVE	74
	But... how? How did you know I went around the bush?	
75	ELINOR	75
	Is the blindfold working?	
They check and it looks good.		
76	ARI	76
	I couldn't see a thing!	
77	OLIVE	77
	You're so good at this game, Ari. Is this really your first time playing?	

The kids <SFX: YAY! AWESOME!> and run off to follow Mr. Bat, except for Elinor, who hangs back a little, still a bit puzzled.

3. EXT CLIFFS -- LATE AFTERNOON

A cross-fade later, Mr. and Mrs. Bat lead the kids on a walk with Miri in the stroller (or in a baby carrier). Mrs. Bat takes out some baggies of trail mix.

87 MRS. BAT 87
Here, pass these out to your
friends, Ari.

88	OLIVE	88
	Looks good. What is it?	

Ari passes them around.

89 ARI 89
It's called "trail mix"

90 ELINOR 90
What's that?

91		ARI	91
		Chocolate chips and other stuff.	

92	OLIVE	92
	What other stuff?	

93 ARI 93
I dunno. I only eat the chocolate
chips.

The kids <SFX: GIGGLE> as they munch on the trail mix.

94 ELINOR 94
I love going for a walk in a new
place.

95 MR. BAT 95
Well, I'm excited to show you all
something REALLY extra cool.

They come around a bend and up to a lookout spot (with wooden guard rails) at the edge of a modest canyon. It's a nice view, and they can see pretty far down the canyon as the sun is low on the horizon. Across the canyon (not too far away) is a tall flat cliff face.

96 OLIVE 96
Wow, what a nice spot. It's SO
beautiful here.

97 MR. BAT 97
Look at those smooth, tall rocks.

98 ELINOR 98
Wow, I've never seen rocks like
that before.

Ari goes to pop a chocolate chip in his mouth, but misses. He
scrambles, but the chip falls over the edge.

99 ARI 99
Oh NOOOO!

A moment later, his echo returns <SFX: (ECHO) OH NOOOOO...>.
The kids are all really surprised.

100 ARI (CONT'D) 100
Who said that?

Mr. Bat smiles.

101 MR. BAT 101
Watch this, and you'll figure it
out for yourself.

He cups his hands towards the cliff.

102 MR. BAT (CONT'D) 102
HELLO!

A moment later his <SFX: (ECHO) HELLO...> returns. Olive and
Elinor are amazed, and try it themselves.

103 ELINOR 103
HELLO I'm Elinor!

<SFX: (ECHO) HELLO I'M ELINOR...>.

The kids <SFX: LAUGH>. Olive <SFX: TRUMPETS> towards the
cliff and it <SFX: (ECHO) TRUMPETS> back to her!

104 ELINOR (CONT'D) 104
How is that happening?

105 ARI 105
It's like the rocks are talking
back to us.

106 MR. BAT 106
Haha, in a way, Ari. What you're
hearing is the sound of your voice
bouncing off the rock and coming
back to us. That sound is called an
'echo'.

We see a thought bubble that illustrates sound as wiggly waves being emitted from the kids. One of the wiggly lines bounces off the cliff and comes back.

107 OLIVE 107
Echo. I like that word.

108 ARI 108
That's so neat! (trying it himself)
Who's the coolest bat in town?
(pauses to wait for the echo, then)
Ari!

The cliff echoes back <SFX: ECHO ARI'S LINES>.

109 ARI (CONT'D) 109
Hey, the rocks agree with me.

The kids <SFX: GIGGLE>. Elinor tries again. This time, she closes her eye in her effort to make it louder.

110 ELINOR 110
CAMPING IS FUN!

The canyon echoes back <SFX: (ECHO) CAMPING IS FUN...>.
Elinor opens her eyes and turns towards the cliffs.

111 ELINOR (CONT'D) 111
Hmmm. That is so interesting.

112 ARI 112
What is it Elinor?

113 ELINOR 113
If I close my eyes and shout, I can
tell where the rocks are from the
echo.

114 ARI 114
That makes sense. The sound
bounces, and then you hear it
coming (pointing) from there.

115 OLIVE 115
Ooohh. If we were playing Marco-
Polo with the rocks, you could tell
where they are.

116 ELINOR 116
Yeah, if you shout 'marco', you
would hear the echo.

117 OLIVE 117
I have to try this.

Elinor gives her the blindfold and she puts it on. (or just shuts her eyes). Olive points in a general direction.

118 OLIVE (CONT'D) 118
MARCO!

The cliffs <SFX: (ECHO) MARCO...> back and Olive turns and points at the cliff.

119 OLIVE (CONT'D) 119
The cliffs are that way!

Elinor makes a connection.

120 ELINOR 120
Wait, is THAT how Ari found us when we played Marco Polo and we didn't make any sounds?

121 OLIVE 121
Were you using echoes, Ari?

122 ARI 122
Was I?

123 ELINOR 123
I didn't hear him making any echoes.

124 OLIVE 124
Yeah, and he found us without even saying "Marco".

125 ARI 125
I just... heard where you were. Maybe I have a special bat-sense?

Mr. and Mrs. Bat look at each other knowingly.

126 MR. BAT 126
That's right Ari, you do. You have a special bat echo.

127 ARI 127
Really? I do? I mean, of course I do. Uh, how does it work?

128 MR. BAT 128
Bats can make a special noise that makes echoes.

129 ARI 129
Like this? <nonsense sound>

130 MR. BAT 130
 Haha. That's a funny noise. I mean
 a special noise that most animals
 can't hear.

131 ELINOR 131
 Wow, really?

132 MR. BAT 132
 Yes! Only bats can hear it (he
 wiggles his ears), and we use it to
 tell what is around us.

We see a **THOUGHT BUBBLE** that shows Mr. Bat walking in the forest, a sound coming from Mr. Bat bouncing off trees and rocks (similar to the echo visualization earlier). The kids are <SFX: AMAZED WALLA>.

133 ELINOR 133
 Why can bats do that?

134 MR. BAT 134
 Well, lots of bats like to fly at
 night. Can you guess why this
 special echo would be helpful?

The kids think for a bit <SFX: HMMM>.

135 OLIVE 135
 I know! Because it's dark at night
 and you can't see! It's like
 closing your eyes.

136 MR. BAT 136
 That's right. This special echo
 helps bats find things in the dark,
 like food.

137 ARI 137
 Ooh, night snacks!

They <SFX: LAUGH> and then kids sing to recap.

138 ELINOR/OLIVE/ARI 138
We say Echo! Echo!
The rocks say "Echo"! (last word is
echoed)
We say "Hello! Hello!"
The rocks say "Hello!" (last word
is echoed)

*ELINOR I can use
my eyes to see
what is right in
front of me.*

*OLIVE: But bats can make
a special sound
To help them know
What's around.*

*ALL: Bats use echos
And special ears
So they can tell
What's far and near*

*We say Echo! Echo!
The rocks say "Echo"! (last word is echoed)
We say "Hello! Hello!"
The rocks say "Hello!" (last word is echoed)*

Ari's stomach grumbles.

139	MR. BAT	139
	You don't have to echo that Ari, I know what that means: it's time for dinner!	

Over <SFX: LAUGHTER/AWESOME> merriment, they head back to camp.

4. EXT CAMPSITE -- EVENING

It's later, and everyone is sitting around a nice campfire, roasting veggie dogs on their long sticks.

140	OLIVE	140
	I think mine is ready.	
141	ELINOR	141
	Mine too.	
142	ARI	142
	Hmm, mine needs another minute. I like it extra cooked.	
143	MR. BAT	143
	You mean extra burnt?	
144	ARI	144
	No, I like it burnt just right.	

They <SFX: LAUGH>. Ari takes his food off the fire and they all munch and enjoy.

145 MRS. BAT 145
It's so nice to have a cozy
campfire dinner.

146 OLIVE 146
That reminds me! I want to read my
book by the cozy campfire.

147 MRS. BAT 147
Great idea, Olive.

148 OLIVE 148
But, I left my book in my tent.

She looks over into the darkness.

149 OLIVE (CONT'D) 149
And.. It's pretty dark over there.

150 ARI 150
I'll get it for you. Bats are great
at getting around in the dark.

He navigates confidently to Olive's tent, humming the tune from the ditty. Elinor looks at him and we see in a thought bubble what she's thinking: she imagines Ari walking and the sound waves bouncing off the things around him. Ari then comes back, with an extra bag of trail mix in hand.

151 ARI (CONT'D) 151
Here you go, Olive.

He gives Olive her book.

152 MR. BAT 152
And what else did you find?

153 ARI 153
An extra bag of trail mix. Like you
said dad, bats are good at finding
food in the dark!

154 MR. BAT 154
I'll echo that!

They all <SFX: LAUGH> as the view pulls up into the starry night sky and we...

FADE OUT.