

**Lesson:** Meet the crayfish lesson  
**Teacher:** Kim Nickerson  
**Video URL:** [http://education.ucsc.edu/ellisa/case\\_studies/crayfish-lesson-1a.html](http://education.ucsc.edu/ellisa/case_studies/crayfish-lesson-1a.html)  
**Clip:** Part 2

**Abbreviations:**

T = Teacher                      S = Student                      Ss = Students

1 [00:00:05]

2 T: So as you know before we left, um, for recess and we had our science talk, I did share with  
3 you that we would be investigating and observing an organism called a crayfish.

4 [00:00:25]

5 And, let me write that word up here for you. Or-gan-ism. Go ahead and read that for me.

6 S: Organism

7 T: And an organism is any living thing. Any living thing. Does anybody happen to know what  
8 organism is in Spanish? What's the word in Spanish?

9 S: [???

10 T: It's very close. Organismo.

11 [00:01:00]

12 S: Organismo!

13 T: Organism. Very similar. Very close, huh? And one example of an organism is, obviously, our  
14 crayfish. But another example of an organism could also be a dog. And another example of an  
15 organism could also be a plant.

16 [00:01:37]

17 T: This happens to be a mature brassica plant that our second graders are growing over there.  
18 That's why I have that. And as we know, scientists observe, and they try to use as many senses  
19 as possible to make careful observations. And the more observations they make, the more they  
20 can learn.

21 [00:02:09]

22 T: They can wonder, they notice, they record what they're seeing. Okay? And today you will be  
23 observing, um, the crayfish. However, in the beginning, we are just going to be observing with  
24 our eyes. Our eyes only. Please keep your hands to yourself.

25 S: Only when...[???

26 T: So we're going to be just observing for a few minutes with our eyes. Also, I'm going to  
27 remind you over and over again that this is a living organism. The scientific term is organism.  
28 Right.

29 [00:03:04]

30 T: And because it's a living organism, we have to treat it with care and respect. So when you go  
31 back to your seats, I'm going to give you a few minutes to observe, and obviously you can talk,  
32 observe the crayfish. Okay? Show me again what sense are we using only to start with?

33 Ss: Eyes

34 T: Eyes, okay.

35 [00:03:30]

36 T: Just our eyes. You can probably have an ear or two in there.

37 S: What smell?

38 T: *[whispers]* Alright. You can go to your seat.

39 Ss: *[chattering among themselves]* I noticed something cool about crayfish. I see like these little white  
40 things...[??]

41 S: That one is trying to attack that one.

42 [00:04:44]

43 T: Thank you Amphibians. Shh...good job fish. Thank you. Good job. Okay, thank you. So, we are just  
44 going to come back for a moment to the carpet and I need to show you one more thing, but I want you up  
45 close, okay? So just for a moment, please stand up, push in your chairs and join me.

46 [00:05:28]

47 T: So right about Tatyana's head are our two focus questions. The top one: what are the structures of a  
48 crayfish? And the bottom one: what are the functions of each structure?

49 S: [??]

50 T: I know. Good. I'm glad you're asking. You will, by the end of our investigation, you will be able to  
51 answer both of those questions.

52 S: What does structure mean?

53 T: I know. We're going to get there. So...thank you, by the way, very much for just observing with your  
54 eyes. And I did speak with one table just about...'cause they were wanting to get up and see what  
55 everyone else's crayfish were doing. I do want to just remind you that scientists, we observe for long  
56 periods of time because the longer we observe, the more we start to notice and then the more questions we  
57 have, okay?

58 [00:06:47]

59 T: So we want to take those times—we want to take a long time with the same organisms. Okay? I know  
60 we're curious about what everyone else's looks like. Jasmine?

61 S: I noticed that on one of the crayfish's eye, on each of them there's this clear thing...[??] There's like  
62 little worms inside of them. [??]

63 [00:07:20]

64 Ss: *[start talking]*

65 T: So we're starting to look and observe more closely. Thank you. So some of you may want to pick up  
66 the crayfish so I'm actually going to use the plastic one and show you how to handle the crayfish still  
67 with care and respect. So watch closely. You're observing me right now.

68 [00:07:58]

69 T: So how you pick up the crayfish is this body shell is called a carapace. Carapace. So say that with me.

70 Ss: Carapace.

71 T: You're going to grab the carapace gently, but not too gently, you want to make sure you're holding it.  
72 You just don't want to squish it, okay? So you're going to grab the carapace right behind the pincers.  
73 These are pincers. Say that with me.

74 Ss: Pincers.

75 T: Pincers. I'll write that word up for you later. You'll see it. Right behind the pincers. Now if...if the  
76 crayfish brings its pincers back, don't be afraid. They cannot reach you that way. That's why we're  
77 holding them back here. Okay? So you can pick it up.

78 [00:09:00]

79 Ss: [??]

80 T: So excited! So grabbing it carefully behind the pincers, okay? And it can stay out of water for a little  
81 bit. But really it needs to be in the water so if you wanted to pick it up, look on all the different parts and  
82 then you can place it back in the water. The crayfish needs to stay near or above the basin.

83 Ss: *[students chattering]*

84 T: Lauren said it. So if it falls, it has a very safe, secure place to fall. Okay? Is this a question Ulysses?  
85 Yes?

86 S: Is it able to come up to...[??]

87 T: We're going to grab it behind the pincers. But it will not hurt you. Okay? Alright, go ahead.

88 [00:09:58]

89 S: *[talking among themselves]*

90 T: Alright, I'm going to give the Amphibians five points. Five points for the Amphibians. If you're  
91 wondering why they're getting points, watch them! They're talking, they're sharing, but they're not  
92 screaming. Thank you. We want to hear each other's observations.

93 S: I'm scared.

94 T: So can you lift it up a little so we can see underneath? Can you observe what's underneath? Can you  
95 lift it up again?

96 Ss: *[chattering in background]*

97 [00:10:59]

98 T: Look closely. Oh you dropped it. That's okay. If they do it again—look closely.

99 S: I picked it up.

100 T: He did. So what—hold on...

101 *[Audio is cut off and started again at later part of class]*

102 T: Birds and Fish. Thank you. Okay. So...there will be more time where we come to the carpet. Okay?  
103 And it'll give you a little bit more focus. I'll wait. A little bit more focus for your observations. Alright,  
104 one more time.

105 And could everyone please settle in? So the people in the back can see? So we are going to raise our hand  
106 for this. Please remember that we are giving our attention to the speaker. What interesting part(s) have  
107 you observed so far? Ulysses?

108 [00:12:03]

109 S: Um, the belly of the crayfish was looking a bit [???

110 T: Eddie?

111 S: When I picked it up, um, underneath I think I saw a little of its bone.

112 S: *[Student murmurs something]* [???

113 T: Can you say that again a little louder? So we have some hypothesis happening, huh? This is why  
114 scientists observe closely. Uh...Christian.

115 S: I saw, um, a suction...like suction [???] sort of and um also a I kind of saw, um, maybe, like teeth. Just  
116 real teeth like...but they were going this way instead of going up.

117 T: Marissa?

118 [00:12:58]

119 S: I saw little like...little lines under the tail. Sort of like they're like really small.

120 T: And Reptiles. I didn't see someone's hand up from there, but I know that you had noticed—that you  
121 were discussing something when I came by. Or you were wondering about things. What—

122 S: [???]...and sometimes they come up.

123 T: Does anyone—did anyone else notice the long things—

124 Ss: *[students all answer at the same time]*

125 T: Okay. Oh. Lots and lots of schema. Okay. Thank you.

126 [13:40]

127 So...the parts that you've mentioned...like the mouth, maybe the bones, I just heard antenna or  
128 antenni...those are called structures. Structures.

129 [00:14:02]

130 And a structure is the identifiable parts of an organism. So a structure is a part of an organism. I just  
131 mixed that word right together huh?

132 S: Yeah

133 T: Organism. Okay so read that word with me. Structure.

134 Ss: Structure;

135 T: So the word structure, parts of an organism, this is also a structure. Just like a house would have floors,  
136 the walls and the roof. Organisms also have structures. And you had mentioned several of them already.  
137 For example...here we go. We had mentioned teeth or a mouth. Somebody had mentioned the tail. Okay.  
138 We've talked about...some people were making hypothesis those were antenna or antenni. We have  
139 pincers.

140 [00:15:16]

141 T: So you get to have your first notebook page and this notebook page is called Crayfish Structures. This  
142 notebook page will help you and your team focus some of your observations. There's a list of questions  
143 and you get to see if you can find them. For example, do crayfish have eyes?

144 Ss: Yes, of course.

145 T: And if so, how many?

146 Ss: Two.

147 T: Look closely. Make sure you have evidence of that, okay?

148 [00:15:59]

149 T: So I would like to remind you that the people at your team should be the ones really focusing and  
150 listening to you. Okay? Alright? That we want to make sure that other teams can hear each other so we  
151 need to talk in our regular just-right voice. Team captains can you please stay? Everyone else can go and  
152 get their pencil out.

153 [00:16:33]