

1 **CLIP 1**

2 [00:08:00.12] Interviewer: So have you encountered biology in this class yet?

3 Gregor: Well, we were just talking about ATP. And...I've been like exploring the reasons why that quiz
4 answer is right. And why I got that part of the question wrong. And that's directly applicable to the
5 biology.

6 I: Ok, so what. So in that quiz question, so I know you were asking questions about that, so what did you
7 put down for that on the quiz?

8 G: Well, I mean, I put that when the bond's broken that's energy releasing. Even though I know, if I really
9 think about it, that obviously that's not an energy-releasing mechanism. Because like, you can't break a
10 bond and release energy, like you always need to put energy in, even if it's like a really small amount of
11 energy to break a bond. Yeah, but like. I guess that's the difference between like how a biologist is
12 trained to think, in like a larger context and how physicists just focus on sort of one little thing. Whereas
13 like, so I answered that it releases energy, but it releases energy because when an interaction with other
14 molecules, like water, primarily, and then it creates like an inorganic phosphate molecule that has a lot
15 of resonance. And is much more stable than the original ATP molecule. So like, in the end releases a lot
16 of energy, but it does require like a really small input of energy to break that bond. So I was thinking that
17 larger context of this reaction releases energy. Because I know what the reaction is, ya know? So, um,
18 not, does the bond breaking release energy. And I know the answer's no, but I just I don't know, it's hard
19 for me to...uh...convince myself.

20 **CLIP 2**

21 [00:18:23.19] G: I guess that's just the difference between physics and chemistry and biology.

22 [00:18:27.06] I: What would you say is the difference there?

23 [00:18:29.02] G: It's just your scale. Like, physics really love to think about things in vacuums, and like
24 without context, in a lot of senses. So, you just think about like whatever small system you're-- isolated
25 system you're looking at, and I guess chemist or biologists thinking about more of like an overall context,
26 that like wherever a reaction or process is happening, like that's important to what's going on. So like
27 yes, in a sense, the O-H forming is the part that is releasing energy, but you have to look at it in
28 comparison to everything else, like you have to compare it to like where it came from, rather than
29 saying like-- rather than just like focusing in on that one part. So I think that's sort of just like a
30 difference in perspective.