Ms Fargason's Energy Activity Clip 1

[Just prior to the discussion, Ms. Fargason had asked the class which of two ways of stretching a rubber band would push the car further: (1) one stretched sideways a little and pulled back far; or (2) one stretched sideways a lot and pulled back some. This had also been discussed extensively in a previous class. The class voted, and a majority thought the one stretched sideways a lot would push the car further.]

[00:00:03.11] Ms. Fargason: But Kevin thought this one [the one stretched further sideways—pointing at drawing in journal projected on screen] would push the car farther and then he said this --- that this rubber band has more energy. Energy. I even --- he kinda put a question mark there because he wasn't exactly sure what he meant by that, but he knew he wanted to say that about this rubber band, that it has more energy. So I want to talk more about that and maybe try to answer Kevin's question, so that he doesn't have to have a question mark there anymore. So what do you think that can mean that, that rubber band has more energy? Or why would this rubber band push the car farther? What do we think about that? Caleb?

[00:00:44.11] Caleb: The rubber band is just like a steep hill.

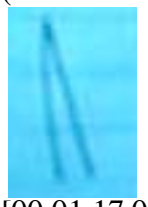
[00:00:47.26] Ms. Fargason: What do you mean?

[00:00:47.26] Caleb: By where the car heads down the ramp but it's getting pushed by a rubber band --- instead of going down a hill.

[00:00:57.07] Ms. Fargason: So you said --- so it's like a steep hill. So this rubber band and a steep hill are kind of similar? Kevin is it okay if I write on your notebook?

[00:01:07.15] Kevin: Yeah.

[00:01:11.14] Ms. Fargason: So Caleb's making a comparison that a steep ramp like this (draws a very steep ramp in journal) --- can you see it?



[00:01:17.00] Caleb: No, like this. [Moves hand more horizontally.]

[00:01:20.23] Ms. Fargason: Can you come up and draw what it would look like?

[00:01:27.24] Caleb: (Draws ramp in journal.) Like this. 

[00:01:33.15] Ms. Fargason: So, okay, thank you. So a ramp like this and a rubber band like this are similar (pointing to Caleb's ramp and Kevin's rubber band)? And did you say why you think they're similar?

[00:01:46.03] Caleb: Because they have the same energy.

[00:01:49.23] Ms. Fargason: They have the --- these have --- these two have the same energy? [Writes 'energy' and draws line connecting Caleb's ramp and Kevin's rubber band.] What do you mean by that?

[00:01:58.05] Caleb: They go the same speed.

[00:02:00.09] Ms. Fargason: Okay, so these --- when you say energy you mean they would go the same speed? [Writes 'go the same speed' on projected journal.]

[00:02:04.17] Caleb: Uh, huh.
[00:02:07.15] Ms. Fargason: Okay. What do you think about what Caleb said? Do you like that definition of energy, Kevin? Is that what you meant when you said it has more energy?

[00:02:23.15] Kevin: Um... [nods]

[00:02:23.15] Ms. Fargason: Is that [is] what you meant?

[00:02:25.19] Caseena: Energy goes the same.

[00:02:26.01] Ms. Fargason: What, Caseena?

[00:02:32.02] Caseena: I was reading that

[00:02:32.02] Ms. Fargason: Oh, you were reading it, that it goes the same speed? So where this ramp here, Caleb, does this one have a lot of energy? [Draws line with very little downward slope below the drawing of the steep ramp.]

[00:02:43.13] Caleb: No.

[00:02:43.13] Ms. Fargason: Why not.

[00:02:43.13] Caleb: Because it's just like this [makes a flat hand gesture]

[00:02:50.03] Ms. Fargason: 'Cause it's almost like straight down? [Holds hand tilted downward, like a steep ramp.]

[00:02:55.14] Caleb: No, because it's almost like, flat. [Makes gesture with hand tilted only slightly downward.]

[00:03:01.09] Ms. Fargason: But it's going down like this. [Traces over the steep ramp already drawn on projected journal.]

[00:02:57.22] Caleb: Oh, I thought you meant the one below it.

[00:03:06.07] Ms. Fargason: No, I'm sorry --- a ramp like this [traces over steep ramp]. Does that one have a lot of energy?

[00:03:12.28] Caleb: Yeah, but it will crash at the bottom.

[00:03:08.18] Ms. Fargason: But this one has a lot of energy. Yes? [Caleb nods. Ms. Fargason writes the word 'energy' above steep ramp on projected journal.] What does that mean? Where is the energy?

[00:03:25.07] Kervin: I know.

[00:03:25.07] Ms. Fargason: Kervin.

[00:03:28.27] Kervin: Like, um [repeats]. You pull it, like if it's too loose, you will go like this..it'll [makes hand gesture]

[00:03:37.04] Ms. Fargason: The rubber band?

[00:03:38.06] Kervin: Yeah.

[00:03:39.25] Ms. Fargason: So like this one? [She points to the upper picture on the projected journal showing a loose rubber band that is not stretched sideways very much.]

[00:03:41.11] Kervin: Yeah. If you pull it back hard enough, its still going to go but, uh, it's not going to go as far because, uh, like [repeats] what is Alex using.

[00:04:04.16] Alex: Hey! [inaudible]

[00:04:10.04] Kervin: What is Alex using as a loose rubber band, if it's too loose it might, uh, like crash into another car or flip and it won't have that much speed.

[00:04:22.01] Ms. Fargason: Okay. So what I heard --- it won't have, this one [pointing to the upper picture of the loose rubber band] won't have as much speed?

[00:04:28.13] Kervin: Yes. I think that was as Kevin was saying. Speed. [Ms. Fargson writes on projected journal. Can't tell exactly what she wrote, but it's something like 'doesn't have as much speed'.]

[00:04:34.27] Ms. Fargason: So energy and speed go together?

[00:04:36.15] Kervin: Yeah, sometimes, yeah.

[00:04:38.04] Ms. Fargason: What do you mean, sometimes?

[00:04:40.15] Kervin: Like, like, um, speed and energy. Sometimes energy means like a car has enough gas. That's energy. And speed is like two people are racing and they're running and they have that much speed.