Features Analysis Chart—Energy Transfer

Teacher Name:	
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Circle One: PRE POST

Describe the assessment item: Question 3 on the pre-post assessment for the Energy Transfer unit: Tom and Marla go to a local amusement park. They're excited to ride in the bumper cars, but Tom can't get his car to move. Marla sees her chance to run into Tom. BAM! Marla hits Tom's car.

- A. Describe what happens to the motion of both Marla's car and Tom's car after the crash.
- B. What happened to the energy in the cars during the crash?

Describe the ideal response:

- A. The force from the collision pushes the cars away from each other.
- B. Some of the kinetic (motion) energy in the cars transformed to heat and sound.

Features of a Complete, Accurate Response	1	2	3	4	ŝ	9	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
1. Objects that are moving have motion energy.																																				
2. Motion energy is called <i>kinetic energy</i> .																																				
3. When an object moves faster, it has more kinetic energy.																																				
4. The speed of an object changes after a collision.																																				
5. Energy is transferred from object to object during a collision.																																				

Features Consistent with Student Misconceptions/Problems	1	2	3	4	ŝ	6	L L	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
1. The energy stopped working.																																				
2. Energy goes away.																																				
3. Kinetic energy is lost.																																				
4. Motion went away.																																				
5. Tom's energy stayed the same.																																				
6. Energy is lost.																																			-	
7. There was no energy after the crash.																																				
8. The cars stopped after the crash.																																				
9. The cars didn't have energy, so they stopped.																																				
10. Crashing equals stopping.																																				
11. All energy is sound.																																				
12. The cars stopped because the electricity stopped.																																				