

**Indiana Course-Aligned Assessment
Integrated Chemistry and Physics – Sample Items**

1. A plane flies with a velocity of 120 km/h south against the wind that is blowing with a velocity of 20 km/h north. What is the plane's speed relative to the ground?
 - A 60 km/h south
 - B 100 km/h south
 - C 120 km/h south
 - D 140 km/h south

2. A guitar string, as it is plucked, changes _____ energy into _____ energy.
 - A mechanical, kinetic
 - B gravitational potential, mechanical
 - C gravitational potential, kinetic
 - D mechanical, sound

3. Three unknown reactants are provided in lab. The task is to determine which chemicals react with one another. Provide two signs that would indicate a chemical reaction.

Answer Key

Item	Answer	Alignment
1	B	ICP.1.1
2	D	ICP.2.3
3	Color change, temperature change, precipitate formation, gas production	ICP.5.5