Name _____ Class _____ Date _____ 21

Skills Worksheet

Concept Review

Section: Laws of Motion

1. **Interpret** the following situations to determine whether an object's velocity is being altered by an applied force (answer *Yes* or *No*).

   _____ **a.** a batter hits a baseball upward into right field

   _____ **b.** a satellite orbits Earth at a constant speed of 7000 m/s

   _____ **c.** a submarine moves due east at a constant speed of 45 m/s

   _____ **d.** a falling book lands on the floor with a pre-collision speed of 9 m/s

2. **Calculate** the acceleration of a 82 kg couch that is pushed across the floor with an unbalanced force of 21 N.

   _____

3. **Apply** Newton's first and second laws to explain why an object moving in a circular path at a constant speed is undergoing acceleration and has a force exerted on it.

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4. **Determine** the force needed to accelerate a 1357 kg car forward at 8.0 m/s^2.

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5. **Explain** why a backward-facing car seat is safer for an infant than a seat that faces forward during a collision or abrupt stop.

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6. **Use** the concept of inertia to illustrate why volleyball is not played with a ball that has a mass similar to a bowling ball.

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