**FPS – Motion Notes**

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period\_\_\_\_\_\_\_\_\_\_

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| I can… |
| *define and apply concepts of motion.**apply knowledge of distance and displacement.**Solve and interpret speed problems.* |

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| Bellwork |
| What is a frame of reference? |

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| ***Motion Notes*** |
| 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is an object’s change in position relative to a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the change in the position of an object.
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ measures the total path taken.
4. Displacement is the **change** of an object’s position. Displacement must always indicate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
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| 1. http://playbackonline.ca/wp/wp-content/uploads/2010/10/Scaredy-Squirrel.jpgA squirrel walks from a tree (position 0m) to his hole in a log (position 1m) in 1 sec. He hears a dog coming and springs to another tree (position 5m). The squirrel remains stationary in the tree for 2 sec until he feels safe enough to sprint back to the log (1m) in 1 sec.

**5m****0m** |
| 1. Let’s make a position vs. time graph.A squirrel walks from a tree (position 0 m) to his hole in a log (position 1 m) in 1 sec. He hears a dog coming and sprints to another tree (position 5 m). The squirrel remains in the tree for 3 sec until he feels safe enough to return to the log (1 m) in 1 sec.

**Position (m)****Time (s)****0 1 2 3 4 5****0 1 2 3 4 5** |
| 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the distance traveled divided by the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ interval

during which the motion occurred. **Speed** describes how \_\_\_\_\_\_\_\_\_ an object moves.1. Speed measurements involve \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. The SI units for speed are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ per \_\_\_\_\_\_\_\_\_\_\_\_\_ (m/s).
3. When an object covers equal distances in equal amount of time, it is moving at a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
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|  | $$Speed= \frac{distance}{time}= \frac{ }{ }= \frac{ }{ }$$ |
| 1. Speed can be studied with graphs and equations.**Speed** can be determined from a distance-time graph. When an object’s motion is graphed by plotting \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ on the y-axis and \_\_\_\_\_\_\_\_\_\_ on the x-axis, the slope of the graph is speed.
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| 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the speed of an object in a particular \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. **Velocity** describes both \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
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| **Math Skills** |
|  | ***Velocity*** – Metal stakes are sometimes placed in glaciers to help measure glacier’s movement. For several days in 1936, Alaska’s Black Rapids glacier surged as swiftly as \_\_\_\_\_\_\_ meters per day \_\_\_\_\_\_\_ the valley. Find the glacier’s velocity in meters per second (m/s). Remember to include direction. |
| **Given:****Unknown**:**Perform conversions**:**Use the equation for speed**:$$Speed= \frac{distance}{time}= \frac{ }{ }$$**Write the velocity by including direction**: |