**General Physical Science – Forces & Motion Practice**

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

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| I can… |
| *Calculate net force, weight, momentum, and velocity of free fall.* |

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| ***Practice Problems*** |
| Let’s calculate momentum. Use this formula: $momentum\left(kg∙\frac{m}{s}\right)=mass \left(kg\right)×velocity (\frac{m}{s})$1. A 45 kg child runs at a velocity of 10 m/s.
2. A 1000 kg bus drives at 60 m/s.
3. A 48 kg dog is stopped at 0 m/s.

Try the next 3 on your own, and get a teacher’s initial to check them! Don’t forget UNITS! |
| 1. A 0.5kg ball rolls at 32 m/s.
 | Teacher Initial |
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| 1. A 70 kg woman jogs at 30 m/s.

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| 1. A 6000 kg trains comes to a stop.
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| Let’s calculate weight on Earth. Use this formula: $weight\left(N\right)=mass \left(kg\right)×9.8 (\frac{m}{s2})$1. The average man weighs 80.7 kg in America.
2. The average Labrador weighs 26 kg.

Try the next 3 on your own, and get a teacher’s initial to check them! Don’t forget UNITS! |
| 1. A 0.5kg ball.

 | Teacher Initial |
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| 1. A 70 kg woman.

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| 1. A 6000 kg train.

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| Let’s calculate force, mass, and acceleration using Newton’s second law. Below is the formula and the triangle we used in class. $Force\left(N\right)=mass \left(kg\right)×acceleration (\frac{m}{s2})$1. The **force** of a 1970 kg accelerating at 60 m/s/s.
2. The **acceleration** of a 70 kg woman applying 15 N of force.
3. The **mass** of a ball applying 100 N of force at 50 m/s/s.Try the next 3 on your own, and get a teacher’s initial to check them! Don’t forget UNITS!
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| 1. The **force** of a 2000 kg accelerating at 100 m/s/s.
 | Teacher Initials |
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| 1. The **mass** of a ball applying 85 N of force at 42 m/s/s.
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| 1. The **acceleration** of a 65 kg woman applying 10 N of force.
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| Let’s calculate the velocity or time of a free falling object. $Velocity\left(\frac{m}{s}\right)=time falling (s)×9.8 (\frac{m}{s2})$1. What is the **velocity** of a rock that falls from a cliff for 16 seconds?
2. What is the **time** of a child jumps up and falls for with a velocity of 2m/s?Try the next 3 on your own, and get a teacher’s initial to check them! Don’t forget UNITS!
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| 1. What is the **velocity** of a ball that falls for 100 seconds?
 | Teacher Initials |
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| 1. What is the **time** of a bird that falls at a velocity of 16 m/s?
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| 1. What is the **velocity** of a ball that falls for 16 seconds?
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