

A STEM in the Park Take Home Activity

STEM in the PARK

Science, Technology, Engineering, and Mathematics

Ft. Meigs Math



What You Need

- This card
 - Scratch paper
 - Pencil
- *Round any decimal places to the nearest whole number

What To Do

Rule of Three

Cannons were made in various sizes and were described by the weight of the cannonball they fired. For instance, a “six-pounder” fires a cannonball that weighs six pounds. A twelve-pounder fires a cannonball that weighs twelve pounds. You get the idea.

Gunners would have to know how much gunpowder to use a particular cannon they were firing. To do this, they used what was known as “The Rule of Three”. In other words, they multiplied the weight of the cannonball by $\frac{1}{3}$ to determine the proper amount of gunpowder for each shot.

Using the Rule of Three, how many pounds of gunpowder should be used to fire one cannonball from

- 1) A six-pounder?
- 2) A twelve-pounder?
- 3) A twenty-four-pounder?

Continued on back

Learn...

Supplying an Army

Part 1

One pound of gunpowder contains 7,000 grains and a single musket round is made using 155 grains of gunpowder. How many rounds will one pound of powder make?

Part 2

Each soldier carries 30 musket rounds in his cartridge box. A company is made up of 100 soldiers and a regiment has 10 companies. Now that you know how many rounds one pound of gunpowder makes, how many pounds of gunpowder will each company need to make sure the whole regiment is full of ammunition?

How Long Can Soldiers Fight?

Every soldier was trained to load and fire their musket once every 20 seconds and you already know a soldier carries 30 rounds of ammunition in his cartridge box. If a company was in battle, how long could it fight before the soldiers had to be resupplied with ammunition?

Investigate...

How Gunpowder Burns

Gunpowder is made up of 75% charcoal, 15% Sulfur, and 10% saltpeter (potassium nitrate). When a spark or flame touches the gunpowder, in what order do the three ingredients ignite? At approximately what temperature (F) does sulfur ignite?

Check out www.fortmeigs.org/kids for the answers

**This activity is brought to you by Fort Meigs:
Ohio's War of 1812 Battlefield in Perrysburg,
Ohio**

Answers:

Rule of Three

- 1) 2 lbs.
- 2) 4 lbs.
- 3) 8lbs

Supplying an Army, Part 1

45 musket rounds per 1 lb of powder

Supplying an Army, Part 2

67 lbs. of gunpowder per company
670 lbs. of gunpowder per regiment

How Long Can Soldiers Fight?

10 minutes

Visit fortmeigs.org for more fun and information