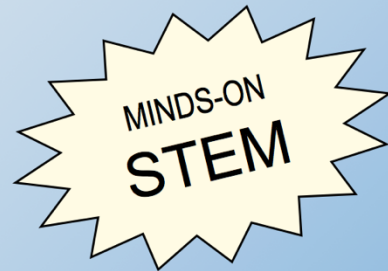

Word Problem of the Week



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Puzzles Embedded in Words

AGES 11–14

A Free STEM Activity

Welcome!

Thank you for downloading **Word Problem of the Week**, a minds-on STEM activity. As the volunteer STEM Project Leader for 4-H in Valley County, I created this three-part series to keep area youths and their families engaged in education during the COVID-19 pandemic. Although the real-world problems have a decidedly rural feel (Valley County sits in Idaho's Heartland), the concepts and techniques used to solve them are broad in scope.

Content at a glance

- Suitability: Youths in grades 6–8 (ages 11–14)
- Duration:
 - Three word problems, 50–60 minutes each
 - Best delivered over consecutive weeks
- Three word problems:
 1. Three Farms
 2. Airplane Fuel (*in keeping with the “STEM Through the Lens of Aviation” theme, of course!*)
 3. Mulch
- Solution challenges:
 1. Draw it – depict the problem graphically (e.g., as a picture, diagram, or sketch)
 2. Rewrite it – extract the key information
 3. Solve it – show an organized approach to the solution

Teaching aids

- Problem and solution videos, along with PDFs of the slides used in the videos, are available here:

Materials needed

- Pens, pencils, and blank worksheets
- Copies of the word problems
- Internet access to view the problem and solution videos and their associated PDFs

You are encouraged to infuse the word problems with your own experience, knowledge, and teaching style. If your students find creative ways to solve the problems, or if you have any questions, please email Rich@RichStowell.com.

Terms of Use

The word problems in this series are available free of charge for use by formal and informal educators, and by family members working together on the solution challenges for each word problem.

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Clip Art: Female detective looking through magnifying glass courtesy ClipArtKey.com

ReadMe

These word problems are designed for formal and informal educators who want to guide youths through activities that apply math concepts to solve real world STEM problems. Families should be encouraged to participate as well by suggesting they work together on the elements required in each solution package.

What are word problems?

Watch the two-minute Intro video at <https://www.richstowell.com/stem-outreach/word-problems/>

In essence, word problems are puzzles embedded in words. We must be like detectives looking for the clues that will help us solve them. More than 60 years ago, for example, President John F. Kennedy issued a fifteen-word challenge that became one of the greatest endeavors ever undertaken:

How do we land humans on the moon and return them safely to the earth?

It would take years and hundreds of thousands of people working together to solve this problem. Although the word problems in this series are nowhere near as complex, they do increase in difficulty from Week 1 to Week 3. Additionally, the solution package for each problem must have three parts:

1. Draw it – depict the problem graphically (e.g., picture, diagram, sketch)
2. Rewrite it – extract the key information
3. Solve it – show an organized approach to the solution

Above all, try to have some fun with these!

Expressing words as equations is facilitated by identifying nouns, verbs, conjunctions, and modifiers, and relating them to mathematical symbols and operations. Along the way, the following topics are reviewed:

Topics Reviewed	Three Farms	Airplane Fuel	Mulch
Substitutions			
Rates			
Units			
Triangles			
Pi			
Assumptions			
Area & Volume			

Feedback

Once you've delivered the content, please feel free to provide feedback to Rich@RichStowell.com.



About the Author

Rich Stowell has been a full-time aviation educator since 1987 and a Master Flight Instructor for 20 years (now Emeritus). He has logged more than 10,200 hours of flight time, written three aviation textbooks and more than 80 aviation magazine articles, co-authored several papers, scripted a half dozen aviation video programs, and delivered more than 450 presentations. Rich is the 2014 National FAA Safety Team Representative of the Year and 2006 National Flight Instructor of the Year. For his outreach efforts, Rich received the 2019 Idaho Southern District and Valley County 4-H Distinguished Service Awards, and was named the 2016 iExploreSTEM West Central Mountain Region Person of the Year. He was a certified DoS Observer from October 2019 to October 2021 and holds a bachelor's degree in Mechanical Engineering from Rensselaer Polytechnic Institute in Troy, NY.

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