Ben Seibert
Integrated Lesson Plan

STEM Spring 2011

Math and Writing Integrated

Overview:

The lesson incorporates both math and writing concepts from a 5th grade curriculum. The project is called a Kerpoof Math Story and originates from the Kerpoof website (www.kerpoof.com) which is amazing in many ways and could be used in various subjects. This project is meant to be more of an enriching experience for math and writing students and should be done after concepts have been covered in both math and writing. It adequately targets higher levels of Bloom's Taxonomy as it requires students to process learned information in math and writing and apply it to the creation of a story. It works well towards the end of the year in 5th grade since students have learned the basic multiplication and division concepts and have been practicing narrative style writings since the beginning of the school year. It makes sense for these two subjects to come together, at this point in a school year, due to the nature of the Kerpoof website and the need for enrichment in both of these particular subject areas.

Grade Level: 5th

Topics: One and two digit multiplication and division with narrative storytelling

Standards:

M5.A.2.1.1 - Solve problems involving addition, subtraction, multiplication and division of whole numbers (multipliers up to 2 digits – divisors of one digit) and decimals including money (answer through hundredths – no divisors with decimals).

M5.A.3.2.1 - Use addition, subtraction, multiplication and division to compute accurately without a calculator (multipliers up to 2 digits, single-digit whole number divisors or multiples of 10 – whole numbers through thousands and decimals through hundredths- no divisors with decimals).

1.5.5.A: Write with a clear focus, identifying topic, task, and audience.

1.5.5.B: Develop content appropriate for the topic. Gather, organize, and select the most effective information appropriate for the topic, task, and audience. Write paragraphs that have a topic sentence and supporting details

 1.5.5.C: Organize writing in a logical order. Use appropriate transitions within sentences and between paragraphs. Include an identifiable introduction, body, and conclusion.

1.5.5.D: Write with an understanding of style, using a variety of sentence structures and descriptive word choices (e.g., adjectives, nouns, adverbs, verbs) to create voice. Include specific details that convey meaning and set a tone.

1.5.5.F: Use grade appropriate conventions of language when writing and editing. Spell common, frequently used words correctly. Use capital letters correctly. Punctuate correctly. Use correct grammar and sentence formation.

Time: 1-2 weeks; depending on time to work in language arts setting

Objective: To create a math story using Kerpoof.com (or other means) that includes math story/word problem scenarios that involve each of the following concepts of multiplication and division plus writing:

1. Multiply numbers by one- and two-digit numbers

2. Estimate quotients with whole numbers, decimals, or money divided by 2-digit whole numbers

3. Divide three-digit whole numbers by two-digit divisors

4. Find the quotient of four-digit whole numbers divided by two-digit divisors including money

5. Divide numbers whose quotients include zeros in the middle of the quotient

   1. The story will have a focus throughout and make sense.

   2. The story will be organized and have a beginning, middle, and ending.

   3. The story will have good content development with details.

   4. The story will use good style and author's voice.

   5. The story will use good writing conventions.

 Procedures: YOU WILL NEED ACCESS TO COMPUTERS OR LAB FOR THIS LESSON

Introduce students to Kerpoof.com and the abilities of the website. Ask students if they have any experience with the website and its workings. Demonstrate for students how to set up an account and how to create a safe username and password. (students will need an email address for an account)

After students have created accounts and browsed the website, hand out the student project guidelines sheet that is attached below. Inform students of the incorporated objective and concepts that will be covered in this project.

Show students the planning/organizer sheet and start by reviewing math concept number one of single and double digit multiplication. Ask students how they could possibly incorporate this math concept into a narrative writing piece. List ideas for math stories on board or chart paper.

Show students the story making process by modeling Kerpoof website and introduce them to the many themes it provides. Show them how to use their organizer to help them set up the problems and beginning, middle, and end to their stories. Remind students that a good story always has a good plan.

Monitor students as they plan their stories and review a new math concept from the planning sheet each day. Encourage students to write the example problem on their organizer to help them when they go to continue with writing and drafting their stories.

Work along with the language arts teacher and set aside time for them to help conference with the students looking for the elements needed for a good narrative writing. Make sure the LA teacher has the expectation sheet for this project ahead of time. I suggest giving the students around 9-10 class periods to complete this project.

Allow students who begin to finish early to peer conference with each other using their grading checklists to ensure that they have a quality product. Students will submit this project to the teacher via email and students must be shown how to send a completed Kerpoof story. Also collect all student project sheets and use the attached checklist for scoring. Their planning sheet will also be helpful with assessing their final product. It is suggested they receive both a math score and writing score for this project.

Adaptation: Students who are not comfortable with Kerpoof.com may also want to create their story using paper and drawings. This may also apply to the most creative or artistic students who need more freedom with their stories. The same project sheet and grading checklist can be used for a written book.

See attached student project sheet below with grading checklist included:

KERPOOF MATH STORIES

Objective: To create a math story using Kerpoof.com (or other means) that includes math story/word problem scenarios that include each of the above concepts of multiplication and division.

To begin: Preview Kerpoof **story mode** and get a feel for the various settings and options available to you.

Next: PLAN your story with the organizer and prepare your questions ahead of time. It may help to figure out the answers at this time as well.

Last: Construct your story using Kerpoof software or paper with binding.

Please hand this sheet into the teacher when the project is due. You will be graded using the checklist below:
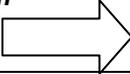
Grading Checklist

- ✓ 5 points for correct set up of questions on above concepts
- ✓ 5 points for correct answers to questions that are checked in story
- ✓ 5 points for an interesting, organized story that makes sense throughout
- ✓ 5 points for creativity, style, and use of figurative language
- ✓ 5 points for conventions in story (spelling, capitalization, grammar, neatness)
- ✓ 5 points for a focused detailed writing
- ✓ 2 points for using provided planning sheet and turning project in on time

Total Points: /32

Notice-This project will count as a double grade due to length of time!

Math Story Question Planning Sheet

Multiplication Concepts	Division Concepts
1. Multiply numbers by one- and two-digit numbers	**2. Estimate quotients with whole numbers, decimals, or money divided by 2-digit whole numbers**
Check division problems using multiplication	**3. Divide three-digit whole numbers by two-digit divisors**
Check division problems using multiplication	**4. Find the quotient of four-digit whole numbers divided by two-digit divisors including money**
Check division problems using multiplication	**5. Divide numbers whose quotients include zeros in the middle of the quotient**