Humpty Dumpty and the Great Fall Challenge

K-2 Grade STEM Start-Ups

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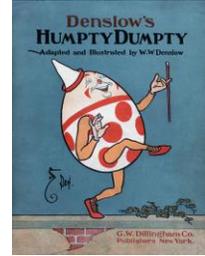
Summer 2016

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1. HUMPTY DUMPTY AND THE GREAT FALL CHALLENGE

Primary Resource: *Humpy Dumpty* by W.W. Denslow or any other version of this nursery rhyme.

1.1. INTRODUCTION

Why is teaching rhyming so important? There are many reasons, but research shows that being about to divide words and recognize smaller parts is an important skill that is crucial for reading and spelling. Furthermore, rhyming teaches students who are learning to read about the patterns and structures in both spoken and written words. This phonemic awareness leads to reading and writing success.

In this lesson, students will pay close attention to the rhyming patterns hidden in the poem *Humpty Dumpty*. Students will engage in a conversation about what parts of the poem rhyme and will complete a rhyming activity based on their readiness level. Once students are comfortable with the rhyming patterns in the poem, they will create rhymes of their own to extend Humpty Dumpty's story. The class will then build a class book with all of their rhymes and illustrations.

Finally, students will complete a silly and fun design challenge to investigate and design a safe way for Humpty Dumpty to get down safely off the wall. The students will create a container that will protect a raw egg from cracking or breaking from a high fall. In this challenge, students will engage effectively in collaborative discussions with diverse partners and build on others' ideas and express their own clearly. They will review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions.

1.2. MATERIALS

- *Humpy Dumpty* by W.W. Denslow or any other version of this nursery rhyme.
- Raw Egg

For the design challenge, you can use any materials you want! Listed below are just some examples of materials you could use:
- Cardboard tubes
- Newspaper
- Old boxes
- Paper
- Tape, glue, rubber bands

- Popsicle sticks
- Baggies
- Straws
- Feathers
- Cotton balls

1.3. LANGUAGE ARTS WORK

1.3.1. EXPLORE THE TEXT

Before reading: Questions/Activity:
- What are rhyme words? (Words that have the same ending sounds.)
- Do you know or have your ever heard of any examples of rhyming words?
- Read the following list of words and tell students to touch their nose when they hear words that rhyme.
  - Words: (cat, hat) (see, be) (mix, cap) (do, at) (hip, dip)

During reading: Students will identify the parts of the poem that rhyme by touching their nose when they hear words that rhyme.

After reading: Depending on students' readiness level, one of the following activities will be completed. These activities are designed to give the student a list of rhyming words that will be used to assist in the creation of their poem:

- The teacher and student will read together a list of words from different word families. The student will pick and circle a few rhyming words on the list they might want to use in their poem.
- Rhyming Word Sort: The student will complete a picture or word sort. After sorted, they will decide what words they might use in their poem.
- Rhyming Ladder: Students will complete one or two rhyming ladders which will create a list of rhyming words.
- The student will look through other rhyming mentor texts and will brainstorm a list of rhyming words.

1.3.2. PART 2

- Using the template below, students will compose new Humpty Dumpty rhymes; they should only focus on the first two lines.

Humpty Dumpty _____

Humpty Dumpty _____

- o Example: Humpty Dumpty sat in a puddle.
  Humpty Dumpty needed a cuddle.

- Once students have their two-line poem, they will create a page for a book.
  - o Differentiation: Either the teacher or student will write their lines on the page.
  - o Extensions: Students can illustrate and/or color their poem.
- Students can combine their pages into one large class book; the last page should be the original Humpty Dumpty rhyme (see Figure 1). This lesson is adapted and images are taken from One Time Through.)
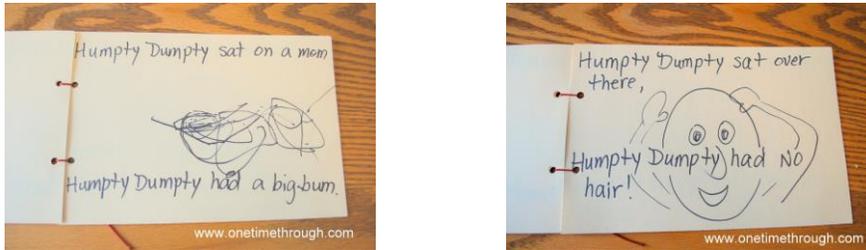

Figure 1: Student examples of illustrated 2-line poems

1.4. DESIGN CHALLENGE

Thank goodness you're here! Our dear old friend Humpty Dumpty keeps falling off his wall and all the King's horses and men cannot keep putting him back together again. You need to help Humpty before it is too late! Mother Goose has asked for your help! Your task is to work together in groups to investigate and design a safe way for Humpty to get down safely off the wall. The goal is to create a container that will protect Humpty (a raw egg) from cracking or breaking from a high fall.

1.5. DESIGN PROCESS

In their journal the students will answer the following questions:

- Ask: (can be done orally through discussion)
  - o What is the problem?
  - o What are the materials?
- Brainstorm: (can be done orally through discussion)
  - o What are some ideas?
- Plan:
  - o Draw and label a sketch for your solution
- Test (can be done orally through discussion)
  - o Was your challenge successful? Why or why not?
- Improve/Reflection: (Can be done orally through discussion)

- o If you were to do the challenge over, what would you keep the same and what would you do differently? (Justify/Provide evidence for each answer.)

1.6. RUBRIC

Category	Developing (1)	Good (2)	Excellent (3)	Score
Language Arts Work	The student was not able to complete the rhyming activity and was unable to create two lines for the poem.	The student was able to complete the rhyming activity with help and was able to create two lines for the poem with help.	The student was able to complete the rhyming activity and was able to create two rhyming lines for the poem.	
Design Process	**Brainstorming**: Ideas are unclear to connect to problem. **Plan/Create/Build:** The design and model is not aligned with the criteria, constraints, and intent of the problem. **Improve/Reflection:** Student only explains one concept either what would be kept the same or what would be changed. Also, does not provide evidence for response.	**Brainstorming**: Ideas are somewhere aligned to problem but need explanation to make clear. **Plan/Create/Build**: The design and model is somewhat aligned with the criteria, constraints, and intent of the problem. **Improve/Reflection:** Student explains what would be kept the same and what would be changed, but does not provide evidence for response.	**Brainstorming**: Ideas are aligned to problem. **Plan/Create/Build:** The design and model is aligned with the criteria, constraints, and intent of the problem. **Improve/Reflection:** Student explains what would be kept the same and what would be changed. Provides evidence for response.	
Collaboration	Ignores and distracts others. Shows no understanding of project and has a negative attitude during work time. Argues with others and does not ask or answer any questions.	Listens respectfully and follows directions. Shows understanding of project and sometimes will argue with others. Asks and answers questions.	Listens respectfully and engages in discussion. Shows understanding of project and has a positive attitude during work time. Never argues with others. Asks and answers questions and provides evidence to support answers.	

1.7. RESOURCES

- List of different word families for the teacher and student to read together:
- https://s-media-cache-ak0.pinimg.com/originals/29/fa/af/29faaf2cb20db35aee12a1c5db20d0ca.jpg
- The Florida Center for Reading Research contains many different types of rhyming picture and word sorts along with lessons: http://www.fcrr.org/curriculum/pdf/GK-1/PA_Final_Part1.pdf

- Mrs. Wyatt's Wise Owl Teacher Creations contains a lesson and template for a rhyming ladder.
  - Rhyming Ladder: https://drive.google.com/a/tcnschools.org/file/d/0B-H0WkhMCKDHNFNKSHYzXzVMUEE/view
- *One Time Through* includes the picture book lesson: http://onetimethrough.com/
- This 5 Step Engineering Design Process template can help the students answer the questions for the design process during their challenge.
  - The Works: The Hands On Museum - http://teachers.egfi-k12.org/wp-content/uploads/2010/05/Post-lesson-Student-Activities-Engineers-and-the-Engineering-Design-Process.pdf