

Children's Literature and Mathematics
Shel Silverstein's *The Missing Piece*

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PJ 4

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Summary:

Shel Silverstein. *The Missing Piece*. HarperCollinsPublishers: New York. 1976.
ISBN: 0-06-025671-0

The Missing Piece is about a circle that is missing a triangle-shaped piece of itself. It doesn't like that it is missing a piece so it sets out on an adventure to find it, singing:

Oh, I'm lookin' for my missin' piece
I'm lookin' for my missin' piece
Hi-dee-ho, here I go
lookin' for my missin' piece

While searching for the perfect piece to complete itself, it sings and enjoys the scenery. But after the circle finally finds the exact-sized triangle that fits it, it begins to realize that it can no longer do the things it used to enjoy doing. It decides that it was happier when searching for the missing piece than actually having it. So the circle puts down the piece and continues to sing and roll around in search of its missing piece.

Critique:

Accuracy:



For the most part this book is accurate. It promotes deeper thinking, with the question of the missing piece. The students are constantly trying to figure out what the proper shape is. There is no math specific language, but the concepts that are presented in the illustrations are accurate and there is no inaccurate math language.

Visual and Verbal Appeal:



This book is not very inviting visually for the readers. The pictures are all black and white with minimal variation; therefore it is not very inviting. The cover would not pop out at a reader if they were looking for a good book. However, some of the pictures do have some humour behind them that would make readers laugh. The format and presentation of the book is very fresh and interesting. It's not simply a math text but is presented in a way that draws the reader in even with its simplicity.

Connections:



Overall, this book offers few meaningful relationships between mathematics and the “real world.” It connects to the idea that a whole is not complete if it is missing a piece but sometimes in life when you find what you thought you were looking for it is not what you expected it to be. It does not allow connections to be made between mathematics and other content areas, nor does it offer connections to be made between different ideas in mathematics.

Audience:

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This book reaches out to many ages because of the humour behind it. The ideas and pictures presented in the book could make an older adult laugh, as well as a grade 1 student. The connection of looking for something you thought you needed to be complete and finding out its not, relates to many adults as they struggle with everyday struggles. Readers are left wondering what is yet to come, in the sequel, *The Missing Piece Meets the Big O*, known as foreshadowing.

Wow Factor:

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This book has positive and negative aspects. The one wow factor that this book possesses is humour. Humour is very important when trying to engage students in a subject they may not have positive associations with. By drawing them into concepts through a humorous story, you are setting up the students to succeed. However, this book is also simple and does not present a lot of new and rich ideas. This book is more suited as a starting point for shape concepts and not a book to use if you are working on depth and heightened thinking.

Overall:

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In general, this book would be useful as an introduction to the grade one, geometry and spatial sense unit. The story itself is very likeable and students would enjoy listening. The story’s humour will draw the students in, making them eager to learn about geometry. However, this book is not very mathematical. It would benefit from more mathematical language and more complex ideas.

Self-Assessment:

Criteria/Level	Level 4	Level 3	Level 2	Level 1
Level of Completeness	Assignment has all required components in greater detail (book abstract, expectations, exploratory student activity/ task, questions, book critique, self-assess)	Assignment has all required components (children’s book abstract, expectations, exploratory student activity/task, questions, book critique, self-assess)	Assignment has some required components (children’s book abstract, expectations, exploratory student activity/task, questions, book critique, self-assess)	Assignment has few required components (children’s book abstract, expectations, exploratory student activity/task, questions, book critique, self-assess)

Questions	Includes before/during/after questions; discussion questions are likely to interest learners and foster conceptual understanding. Most are open-ended and exploratory in nature.	Includes before/during/after questions; discussion questions are likely to interest learners and foster conceptual understanding. Some are open-ended and exploratory in nature.	Includes one/few of before/during/after questions; some discussion questions may interest learners and foster conceptual understanding. One/few are open-ended and exploratory in nature.	Lacks before/during/after questions; discussion questions are not likely to interest learners and foster conceptual understanding. None are open-ended and exploratory in nature.
Quality of Writing	The lesson has very few spelling/grammar errors. Overall writing quality is excellent and articulate. Activity is clearly defined and clear connections made to the expectations.	The lesson is mostly free of spelling/grammar errors. Overall writing quality is clear and articulate. Activity is clearly defined and clear connections made to the expectations.	The lesson has a number of spelling/grammar errors. Overall writing quality is unclear and satisfactory. Activity is unclear and lacks connections made to the expectations.	The lesson has many spelling/grammar errors. Overall writing quality is poor and unsatisfactory. Activity is missing/unclear and lacks connections made to the expectations.
Book Critique	Critique of the book is very well-written, and is based on HMJ article. Each of five categories is treated separately and includes much detail.	Critique of the book is well-written, and is based on HMJ article. Each of five categories is treated separately and in adequate detail.	Critique of the book is somewhat articulate, and is based on HMJ article. Categories are not treated separately and lacks specificity.	Critique of the book is poorly written, and/or not based on HMJ article. Categories are not treated separately and lacks any specifics.

Comments:
/ 20

Overall Assessment: 19

We believe we deserve the mark 19/20 because we have met almost all of the level four expectations for this assignment. The only area that we believe may not be quite at level four quality is the open-endedness of our questions. Not all of our questions are open-ended because we have developed this lesson as an introduction to the unit. Some questions are just one answer statements that require no explanation.

1. Lesson Plan Information	
Subject/Course: Math	Name: Sonja Deneault and Kailey Ritter
Grade Level: 1	Date: January 19, 2009
Topic: Geometry and Spatial Sense	Time and Length of Period: 11:00-11:40 40 mins.

2. Expectation(s) and Learning Skills
<p>The students will:</p> <ul style="list-style-type: none"> – Identify and describe common two dimensional shapes (e.g., circles, triangles, rectangles, squares) and sort and classify them by their attributes (e.g., colour; size; texture; number of sides), using concrete materials and pictorial representations (e.g., “I put all the triangles in one group. Some are long and skinny, and some are short and fat, but they all have three sides.”); – Identify and describe shapes within other shapes (e.g., shapes within a geometric design); <p>Today, students will:</p> <p>Identify and describe common two dimensional shapes (e.g., circles, triangles, squares) and sort and classify them by their attributes (e.g., colour; size; texture; number of sides), using concrete materials and pictorial representations (e.g., “I put all the triangles in one group. Some are long and skinny, and some are short and fat, but they all have three sides.”)</p> <p>Students will also identify and describe shapes within other shapes (triangles within circles).</p>

3. Pre-assessment
<p>A. (i) Students</p> <p>Students will be able to recognize the following shapes; circles, squares, and triangles.</p> <p>(ii) Differentiation of content, process, and/or product (may be accommodations and/or modifications)</p> <p>Have M.B. sit at the front of the carpet area during the reading of the story and the lesson. Make sure that S.L. and G.R. are separated on the carpet area.</p> <p>Make sure to support non readers during the singing of the song. Go slowly and sing multiple times so that they can memorize the words.</p>

B. Learning Environment

The lesson will take place on the carpet area. Teacher will be sitting while reading the students a book. During the activity the students will be walking around the classroom while searching for their match. The volume will be above what is expected if working independently at desks, because of a need to practice using the mathematical language or terms.

C. Resources/Materials

- Shel Silverstein. *The Missing Piece*. HarperCollinsPublishers: New York. 1976. ISBN: 0-06-025671-0
- Cutouts of circles with different size triangle pieces, half short and fat and half skinny and long, cut out of them (enough for each student to have their own)
- Chart paper
- Markers
- Scrap paper for each student
- Pencil for each student
- Missing Piece song written on chart paper
Oh, I'm lookin' for my missin' piece
I'm lookin' for my missin' piece
Hi-dee-ho, here I go
lookin' for my missin' piece

4. Content (The What)

Teaching/Learning Strategies (The How)

A. Introduction (motivational steps/hook/activation of students' prior knowledge)

(15 mins.)

I will read the students Shel Silverstein's book *The Missing Piece*. I will ask the following questions before, during, and after the read aloud:

Before:

What do you think this story is about?

What shape is on the front?

What is wrong with this shape?

Does anyone see a shape within this shape?

What shape is the missing piece?

*Have the student draw what they think the missing piece looks like on a scrap piece of paper.

During:

Pg. 3 Why do you think the shape is not happy?

Pg.15 Why can't the shape roll very fast?

Pg. 33 Do you think this is his missing piece? Why or why not?

Pg. 39 What about this shape? Will it fit?

Pg. 67 Why does this shape seem just right?

Pg. 72 Is that the missing piece?
 Pg. 74 What shape is it now?
 Pg. 75 Why can the shape roll faster now?
 Pg. 86 What do you think the shape is going to do?

B. Content for New Learning	B. Teaching/Learning Strategies for New Learning
<p>(5 min.)</p> <p>Two-dimensional shapes: Triangles, Squares, Circles</p> <p>Triangle</p> <p>Circle</p> <p>Triangles can be different sizes</p> <p>Triangles have three sides</p>	<p>I will ask these questions after I finish reading the story.</p> <p>Can you name all the different shapes we saw in this story?</p> <p>What shape was the missing piece?</p> <p>Does the missing piece look like how you predicted it to look? *Have the students refer to their scrap piece of paper.</p> <p>What shape was made when the missing piece was found?</p> <p>Did all the triangles look the same?</p> <p>What was the same about all of the triangles?</p>

5. Consolidation/Recapitulation Questions (Check for understanding/scaffolded practice)

(2 min.)

I will ask the students to name some examples of two-dimensional shapes and list some of their characteristics.

6. Application (Moving from guided, scaffolded practice to increasingly independent practice and understanding / gradual release of responsibility)

(15 mins.)

Cut several circles, half the number of students in your class, of the same size and then cut out fractional pieces from them. Each one should be different. Pass out a piece to each student in the class and have the students attempt to match their pieces with the bigger shapes to which they belong. Once they find their match they will both say “We found our missing piece” and both sit down as quickly as possible. Once all the students are seated I will go around to each group and have them hold up their whole circle. I will ask them “how did you find each other?”

Depending on time this activity will be repeated by mixing up the cards and handing them out again.

7. Lesson Conclusion

(3 mins.)

Students will gather back on the carpet still in their pairs. I will ask them to sort themselves into two groups; circles missing long and skinny triangles and circles missing short and fat triangles.

Finally I will have the class sing the missing piece song with you. I will have it up on chart paper so that they students who can read can sing along. I will sing the song three times so that the students who cannot read have a chance to learn it and join in.

8. Assessment (collection of data) / Evaluation (interpretation of data)

I will assess the students by observing them while they are looking for their match. I will look to see if they are able to understand if their shape fits or does not fit in another shape.