

Rectangles

ISBN: 9780516230771

Summary:

“Rectangles” is a book that introduces children to rectangles throughout a city landscape. It identifies rectangles in signs, fences, buildings and windows. It lays a good foundation of what a rectangle is and makes the shape meaningful because it presents the material in the real world.

Grade Level: Kindergarten and grade 1

Accuracy

Score: 5/6

The book “Rectangles” shows pictures of rectangles and rectangles only. The mathematical question of “What is a rectangle?” is never addressed (two sets of parallel lines containing four 90 degree angles). However, children are challenged to identify rectangles in city landscapes. Compared to most children’s books, where shapes are simply represented, this book challenges students to recognize rectangles in the real world, which makes it more meaningful. In doing so, the idea of a rectangle is layered.

A further benefit of this book is that it invites children to use other mathematical concepts in relation to rectangles. For example, on page 6, children are given the opportunity to count the number of rectangles in a fence. On page 12, they are asked to identify which building (all of which are rectangles) is the biggest (attribute). One aspect this book is lacking is the opportunity for deeper thinking in relation to rectangles. The majority of the questions posed in the book are knowledge based and a few are comprehension questions.

Finally, each picture corresponds beautifully with the text. Each double page is set-up so the text is on the left and the picture is on the right. Each page of text asks the student to discover something about rectangles in the picture. Since it is not a story in the sense that there is no beginning, middle and end, the time the child takes to investigate the picture does not interrupt with the flow in any way.

Visual and Verbal Appeal

Score: 2/6

For a child, the pictures in the book “Rectangles” probably wouldn’t be too engaging. While they are bright, they are merely pictures of city landscapes. Children who live in a city could look out their window and get a similar sensation. For rural students, the pictures may be more astounding.

Also, the text itself is nothing special. As mentioned previously, it is not a traditional story. However, the content is very clear and engages the reader through its connection to the pictures. The text invites the reader to examine the picture carefully and the level of vocabulary is appropriate as an introduction to rectangles.

Connections

Score: 4/6

“Rectangles” does an excellent job of making connections with math and the real world, providing images that children are familiar with in their everyday life. It allows children to recognize that certain shapes are all around us. Rectangles can be seen all over signs, buildings and windows.

The book also does a good job connecting rectangles with other mathematical principles. As mentioned before, it asks students to identify rectangles in a variety of landscapes, count them and compare their size.

Overall, the text and pictures do a decent job of making connections between rectangles and the real world.

Audience

Score: 1/6

As mentioned previously, “Rectangles” is not a story book. Therefore, children who read it must understand the mathematics in order to enjoy the story. However, the concept of rectangles is fairly simple and very young students should be able to understand the text and its relationship to the pictures.

Due to its simplistic nature, the book does not offer a lot of foreshadowing. After the first reading, most students should have a good understanding of what a rectangle is. Future readings won't lead to any additional discovery of the concept. The novelty of discovery that the initial reading brings will be lost since students will know the answers to where the rectangles are located.

Finally, the books appeal to different cultures and genders can be argued. Most cultures do not take offence to cities. However, some view the progress of man as endangering nature and may take offence to a book that highlights cities. Furthermore, buildings may be far more interesting for boys than they are for girls since boys often play with building blocks.

WOW Factor

Score: 0/6

This book has no “Wow” factor. However, that does not mean it isn't a valuable book for young children to read. By giving children the opportunity to explore shapes in the world around them, children will find mathematics more meaningful.

1. Lesson Plan Information	
Subject/Course: Math	Name: James Cousin & Natasha Nizam P/J 1
Grade Level: Junior / Senior Kindergarten	Date: January 20, 2009.
Topic: Geometry and Spatial Sense – Rectangles	Time and Length of Period: 2:40 – 3:20pm (35 min)

2. Expectation(s) and Learning Skills The students will:
<ul style="list-style-type: none"> • Km3 - identify and describe, using common geometric terms, two-dimensional shapes through investigations with concrete materials • compose pictures and draw two-dimensional shapes <p>Today, students will:</p> <ul style="list-style-type: none"> • identify as many rectangles within the classroom as they can • record each of the rectangles found in the classroom as drawings on a piece of paper

3. Pre-assessment
<p>A. (i) Students</p> <ul style="list-style-type: none"> • have learned and reviewed squares and circles • have a stable understanding of the 3 attributes of shapes (size, colour and thickness). <p>(ii) Differentiation of content, process, and/or product (may be accommodations and/or modifications) N/A</p>
<p>B. Learning Environment</p> <ul style="list-style-type: none"> • Story - sitting on the carpet all students facing the teacher sitting in rows • Identify rectangles – within the confines of the classroom (including the coat room) • Share findings – carpet in the form of a circle

C. Resources/Materials

- Book: "Rectangles" by Jennifer S. Burke
- 22 sheets of white paper
- 22 coloured pencil crayons
- 15 "I'm a rectangle!!" Rectangle stickers

4. Content (The What)

Teaching/Learning Strategies (The How)

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

(3 min)

- Access prior knowledge. Put a picture of a circle and a square on the board.
- Introduce new shape; rectangle.
- Ask students if it's the same. Ask students how a rectangle is similar and how it differs from the two shapes they know.
- Record observations in chart with circle, square and rectangle on the y-axis and student determined criteria on the x-axis.

B. Content for New Learning

(15 min)

Rectangles found in the environment and identifying attributes

Attributes of a triangle

B. Teaching/Learning Strategies for New Learning

- **Read aloud**

Book: "Rectangles" – by Jennifer S. Burke

P.6

There are rectangles on the fence, name something else in the picture that is in the shape of a rectangle.

P. 7

What else is a rectangle on this page?

How are the two rectangles (the pool and the x) the same?

How are they different? (looking for students to compare and contrast using the different attributes)

- **Observation/discovery questioning**

Describe the sides of a rectangle.

Are they all the same? If not, how are they different?

What would happen if all the sides of a rectangle were the same?

	<p>Do you think squares are rectangles? Why? Why not?</p> <p>What else can you tell me about rectangles?</p> <p>What would happen if rectangles did not exist in the world?</p>
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5. Consolidation/Recapitulation Questions (Check for understanding/scaffolded practice)

(3 min)

- How many sides does a rectangle have?
- Are all four sides the same? If no, how are they different?

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

(10 min)

- Students will be given one sheet of paper and a pencil crayon
- Students will explore the classroom looking for as many rectangles as they can find within the room
- Rectangles in their environment will be recorded as drawings on their piece of paper with their pencil crayon
- They will be asked to write one thing that is the same amongst all the rectangles they drew on their paper
- Upon completion of the task the class will regroup on the carpet (seated in a circle) to report their findings
- Invite children to share their discoveries by raising their hand
- If the student gives a correct answer, give the student an "I'm a rectangle!!" sticker to place on that object

7. Lesson Conclusion

(5 min)

- What was the same with all of the items you found in the classroom that are in the shape of a rectangle?
- What is different?

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

- **Identification of rectangles** – checklist
- Student will receive a check if they are able to identify a rectangle in the classroom

Criteria/Level	Level 4	Level 3	Level 2	Level 1
Level of Completeness		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 questions; discussion questions are interest learn foster conceptual understanding; open-ended; 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 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 unclearly defined 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 basic. Each category is treated independently and in detail.	Critique of the book is somewhat articulate, and is based on HMJ article. Each category is treated separately and lacks specificity.	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:

Overall Assessment: / 20%

We worked very well together and had very similar opinions of this book. While the concept of the book was very easy, we worked together to find a way to make it interesting while building upon the students perceived previous knowledge of shapes. While the critique of the book was hard due to its' simplistic nature, we came to a consensus that the book was valuable even if its' WOW factor wasn't huge. It taught a valuable concept in a way that applied to the real world.