

# **TEACHING TO THE DIFFERENCES IN A CLASSROOM**

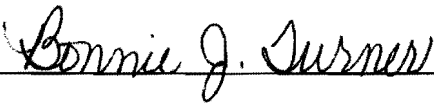
An Honors Thesis (HONRS 499)

By

Brielyn Grogan

Thesis Advisor

Bonnie Turner

  
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Ball State University

Muncie, Indiana

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**Abstract:**

This project examines the use of differentiation in an elementary classroom, which was inspired after my student teaching placement. During my student teaching in a 2<sup>nd</sup> grade classroom, I had a diverse group of learners. I completed my student teaching wondering what could be done to better educate students in a way that best fit their learning styles and levels. It is the teacher's responsibility to educate the students no matter what their needs. Individual needs of students can be met by using differentiation in the classroom to adapt lesson plans and teach them in a way by which they learn best. I wrote a few example lesson plans for teachers to use for ideas on how to use different methods of differentiation in a classroom.

## **Acknowledgements:**

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- I need to thank Mrs. Kvam and her 2<sup>nd</sup> grade class for inspiring my topic. I was motivated to find out more about differentiation after my student teaching placement during the fall of 2008.
- I want to thank Chelsey Sigler for helping me edit my thesis during the final stages.

## TEACHING TO THE DIFFERENCES IN A CLASSROOM

Most elementary classrooms today can be compared to the one-room schoolhouse of the past. There are children of varying ability levels with specific learning strategies by which they learn best. This creates a struggle for classroom teachers because their responsibility is to accommodate to each student. There are multiple ways to meet the learning needs of students by using differentiation in the lesson planning process. Before being able to use differentiated instruction, instruction that varies and is adapted to the individual students in a classroom, the teacher must be familiar with and follow Response to Intervention (RTI). With a combination of RTI and differentiation, teachers can understand the needs of their students and effectively teach to the differences in the classroom.

Response to Intervention is a tiered method that shows the academic and behavioral needs of students. RTI can be explained as an “objective examination of the cause-effect relationship(s) between academic or behavioral *intervention* and the student’s *response* to the intervention” (1, p. 2). Using RTI, students’ progress can be assessed by the three tiers to determine what type of instruction is needed for students.

Tier 1 is the largest of the three tiers because it includes the general classroom. In this tier all students are included and instruction/assessments are done using a whole-class method. According to RTI Action Network, the goal is to be sure that students’ difficulties are not due to a lack of instruction in the classroom (9). Students may also be identified as ‘at risk’ through district or state tests or by a screening process. These students are given additional assistance and instruction

during the school day. If progress is not shown in at least 8 weeks, students are then moved to Tier 2. There are also oral reading fluency benchmarks completed three times a year to monitor the progress of students and identify the lowest 20%, who will be moved on to Tier 2 (1, p. 149).

Once in Tier 2, students are exposed to more intensive and specific instruction. This tier is only for students whose data has placed them here because they were not making progress in the general classroom and/or have individual needs. Since this tier has a smaller number of students than Tier 1, there is small-group instruction times incorporated to the time spent in the general classroom. Most small group instruction concentrates on the areas of math or reading. The time spent in this tier is longer than Tier 1, but according to RTI Action Network, it should not be longer than a grading period (9). If students do not respond well to the targeted interventions, they will be moved on to Tier 3.

Tier 3 is comprised of individual intensive interventions and comprehensive evaluation. This is the final tier for students who have not responded to intervention in the previous tiers. If students are evaluated again and do not respond to the specialized interventions of Tier 3, they will be referred to complete a “comprehensive evaluation and considered for eligibility for special education services under the Individuals with Disabilities Education Improvement Act of 2004” (9). An Individualized Education Program (IEP) may be developed to explain how the student will be taught best in the classroom. Continuous monitoring of student progress is necessary even after the steps in each tier take place.

Response to Intervention may vary from school to school, as there are many different approaches such as: problem-solving, functional assessment, standard protocol, and hybrid approaches (9). These are all different ways, each with the common goal of helping students to be taught in a way that best fits their individual needs. RTI “has the potential to influence how and when LD [learning disability] is identified, as well as the nature of early intervention and instruction” (10). With RTI implementation in many schools, fewer students have been labeled as disabled, but instead have “developed critical basic skills” (1, p. 10) that have helped them excel in school. The system of RTI will be successful in general education classrooms as long as teachers properly use the system and interpret the results. Teachers must understand how to use intervention with their students, as it is now acknowledged that classrooms are full of students that learn differently.

Even when using RTI and students’ learning needs identified, teachers need to do more within the classroom to teach to all students. This can be done through differentiated instruction. The goal of differentiation is to “maximize each student’s growth and individual success by meeting each student where he or she is, and assisting in the learning process” (6). This can be achieved by recognizing student differences in background knowledge, preferences in learning, interests, and language skills. After differences are recognized, the teacher must take these into consideration and approach teaching in a way that meets the differing abilities in the same classroom.

The developmental needs of students should be addressed when deciding on opportunities to use in the classroom. There are four main elements that teachers

can differentiate in a classroom. A teacher may begin by using one of the ways, and eventually work up to using differentiation in all areas. These four elements include content, process, products, and learning environment.

### **CONTENT ELEMENT**

The content is the material, knowledge or skills that the student needs to learn. All students will be given access to the content, and some may require direct instruction, while others who understand the content, skip directly to applying the content to a task. Some students may excel more, allowing them to do independent work ahead of their classmates (5). The teacher should use instruction that is concept-focused and principle-driven, not focused on small details and facts.

With differentiation, the difficulty of content will be adjusted based on students' needs, while focusing on the same concept (6). Some ways to differentiate content include: using varying leveled reading text, having books on tape, pairing students up with reading buddies, meeting with small groups to re-teach (for struggling students)/extend skills (for advanced students) (12).

### **PROCESS ELEMENT**

Differentiating the process means using varying activities and strategies for students to explore the concepts. Students have distinctive learning styles, so there should be different paths for them to take in the classroom to learn the material. Flexible grouping can be used to have students interact as they develop new knowledge. Groups of students may change based on the content, which keeps students engaged and interested in learning. It is important to have a strong and effective classroom management plan in a classroom using varying processes. A

teacher must be organized and have effective strategies to keep all students on task and engaged in their learning (6). Teachers may use tiered activities, where all students work on the same skills, but have differing amounts of support or challenge. Interest centers in the classroom give students choices on exploring topics of interest. There may be diverse leveled material at each center so a variety of students can work on activities that fit them. Having a to-do-list or classroom agenda will keep both the teacher and students organized and aware of what work needs to be completed (11). The process of learning varies depending on a student, and teachers should be encouraging of all students to make learning more successful.

## **PRODUCT ELEMENT**

Another way to differentiate would be to vary the intricacy of the product that shows a student's mastery of a concept. A student who is below grade level may have a product that has lower expectations and a student working above grade level may have to demonstrate advanced thinking that is more complex (5). Students should feel challenged on their own levels, so choice may be involved to let students decide on a product that would best fit them.

Giving students options of how to express their learning could include creating a puppet show, writing a letter, making a poster, or choosing to work in a group. Choice should be encouraged as long as the student feels challenged and requirements are met for showing mastery of the topic. Since products may vary, teachers will use assessments that vary as well. Rubrics may work best to evaluate certain projects, while checklists or informal assessment works best for others.

Whatever the form of assessment, it should be varied to meet the skill level of the student. When students are active in their learning, they will be engaged and feel like responsible learners in the classroom.

## **ENVIRONMENT ELEMENT**

The final element is the learning environment, which includes accommodating to individual learning styles. According to Howard Gardner, there are eight categories of intelligences that affect the ways in which humans learn best. These can also be applied to students in the classroom. Some students may be bodily-kinesthetic learners, meaning they learn better when they are physically active and moving around. They typically are not strong at reading or hearing about topics. Verbal-linguistic learners, on the other hand, learn best when they can read things or listen to speakers (7).

A classroom may have multiple types of learners, so the classroom should be fitting for all. There should be places in the room that are quiet and allow thinking, and other areas that allow students to move about and be active in their learning. It is important to consider that students' strengths or intelligences may vary based on subject area, so the learning environment should be flexible depending on what is being taught (5). The classroom environment must create a setting that is open and comfortable for all students to allow them to learn in their desired style.

The INTASC (Interstate New Teacher Assessment and Support Consortium) is a set of principles that are used for pre-service teachers to ensure they "integrate content knowledge with the specific strengths and needs of students to assure that all students learn and perform at high levels" (4). Out of the 10 principles, two

include the main idea of differentiation. Principle 3 states that the teacher understands differences in students learning approaches and creates opportunities that fit the learners. Principle 4 says that the teacher should use a variety of teaching strategies to build students' development. Both of these principles are taught to pre-service teachers, so they should be prepared to focus on differentiation in their classrooms.

Many teachers think that differentiated instruction is a waste of time and is not practical in a classroom setting, but it can be achieved through planning and organization. If teachers have a goal set to meet the needs of all students, and teach to the different learners, they can use differentiation. This does not mean that only some students will be engaged, but rather, "all students have equally engaging learning tasks" (5).

Differentiating a lesson does not mean that separate lessons have to be taught to individual students, one lesson can take on separate forms. If a lesson is taught to the whole group, students can later break into smaller groups to complete an activity. Work centers may be set up, where students move from station to station, performing different activities, while the teacher still has the ability to focus on students who need more assistance.

With the multitude of students in one classroom today, a teacher has a great number of students to accommodate. Through the use of RTI and differentiation, more students can be taught to in ways that fit their needs. Effective teachers take the time to differentiate lessons because they know that by connecting to the students, more learning will take place.

## **Differentiated Lesson Plans**

The following pages include lesson plans that each are focused on a piece of children's literature and include differentiation ideas. They are intended for primary students, but this could depend on the levels of students in a particular class. There are Indiana State Standards and Indicators listed, as well as National Standards for the particular topic. Also listed is a set of materials to be used in the lesson. For each lesson, there is a whole group section where the teacher will read the specified children's book, and then host a discussion with the whole class. After the whole class session, the students can break into smaller groups based on the differentiated method.

Not all lessons will work in the specified grade or for all students, but they can be used as a building block for teachers. Remember that differentiated lessons can be differentiated such as ability levels and learning intelligences.

## Lesson 1

The Very Hungry Caterpillar, Eric Carle

### **Book Summary:**

This children's picture book is a classic for primary students. It tells the story of a caterpillar that starts as an egg and then hatches into a very hungry caterpillar. He ate through lots of food on different days of the week until he became a big, fat caterpillar. He forms a cocoon and then becomes a beautiful butterfly.

**Subject/Topic:** English (Sequencing)

**Grade:** 1

### **Indiana State Standards:**

*Standard 2: READING: Comprehension and Analysis of Nonfiction and Informational Text - Students read and understand grade-level-appropriate material. The selections in the Indiana Reading List illustrate the quality and complexity of the materials to be read by students. At Grade 1, in addition to regular classroom reading, students begin to read a variety of nonfiction, such as alphabet books, picture books, books in different subject areas, children's magazines and periodicals, and beginners' dictionaries).*

1.2.2 – Identify text that uses sequence or other logical order.

*Standard 3: READING: Comprehension and Analysis of Literary Text - Students read and respond to a wide variety of children's literature. The selections in the Indiana Reading List illustrate the quality and complexity of the materials to be read by students. At Grade 1, students begin to read a wide variety of fiction, such as classic and contemporary stories, poems, folktales, songs, plays, and other genres.*

1.3.1 – Identify and describe the plot, setting, and character(s) in a story.  
Retell a story's beginning, middle, and ending.

## **National Standards:**

*ENG.K-12.3: Evaluation Strategies* - Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They draw on their prior experience, their interactions with other readers and writers, their knowledge of word meaning and of other texts, their word identification strategies, and their understanding of textual features (e.g., sound-letter correspondence, sentence structure, context, graphics).

## **Materials:**

- The Very Hungry Caterpillar, by Eric Carle
- Picture cards of food (enough for all students in Apple/Pear groups)
- Sentence strips (5 for each student)
- Word Bank
- Hole Punch
- Sheet of foods (1 for each student)
- Yarn (1 piece for each student)
- Paper to write out final activity

## **Whole-Group:**

The teacher will read the book out loud to the class. Be sure the students are shown the illustrations and the format of the book as it is being read. Have the students make predictions about what will happen to the caterpillar and what else it might eat. After the reading of the book, discuss what happened to the caterpillar throughout the book.

- “How did the caterpillar start out?”
- “What happened to the caterpillar at the end of the book?”
- “What foods did the caterpillar eat?”

Have the students discuss the outcome of their predictions that they made throughout the reading of the book. Then discuss with the students how books have order to them. Ask them if anyone knows what the parts of a story are. Explain the terms – beginning, middle, and end or first, next, and last.

The teacher will break the students into ability groups – Apples (low), Pears (middle) and Oranges (high). This can be based on their reading abilities or levels depending on the strength and comprehension skills.

### **Differentiated Plans:**

#### *Apples (Low):*

Give the students a set of pictures cards of the foods in the book (See: Appendix). Have them use their memory skills to put the cards back in the correct order. After each student puts them in order, they will check their work with a partner. They will then write out the days of the week on strips of paper and match them with the food eaten on that day. Here is a student checklist:

- \_\_\_ 1. Put the food cards in the correct order that the caterpillar ate them.  
FIRST → LAST
- \_\_\_ 2. Check your order with a partner.
- \_\_\_ 3. Write out the days of the week on paper strips.
- \_\_\_ 4. Match the days of the week to the food that the caterpillar ate on that day.

#### *Pears (Middle):*

Give the each student 5 sentence strips that say 'On \_\_\_\_\_, the caterpillar ate \_\_\_\_\_.' Using their knowledge from the book, they will fill in the blanks using a key with the following words (Tuesday, Thursday, Friday, Wednesday, Monday, Three, One, Five, Two, Four, Apple, Strawberries, Pears, Oranges, Plums). They will put the sentence strips in order from first to last. After

filling in the sentence strips, they will check their work with a partner and then together make a list of the food the caterpillar ate on Saturday. After all groups of partners have written all the food they think he ate, they will check in the book and see which group was able to remember the most food. The students can use the following checklist:

- \_\_\_ 1. On the sentence strips, fill in the blanks using the word bank.
- \_\_\_ 2. Put the sentence strips in order from first to last.
- \_\_\_ 3. Check your work with a partner.
- \_\_\_ 4. Make a list of all the food the caterpillar ate on Saturday with your partner.
- \_\_\_ 5. Use the book to see which set of partners listed the most food correctly.

*Oranges (High):*

Give the each student 5 sentence strips that say 'On \_\_\_\_\_, the caterpillar ate through \_\_\_\_ \_\_\_\_\_.' Using their knowledge from the book, they will fill in the blanks. Encourage them to think back to how the book was organized and how the caterpillar ate through the fruits. They will then put the sentence strips in order from first to last. Then, the students will check their sentence strips with a partner. On their own, each student will try to list the food that the caterpillars ate through on Saturday. After all students complete their list, they will check the book to see who recalled the most correct food. The students can use the following checklist to do their work:

- \_\_\_ 1. On the sentence strips, fill in the blanks.
- \_\_\_ 2. Put the sentence strips in order from first to last.
- \_\_\_ 3. Check your work with a partner.
- \_\_\_ 4. Make a list of all the food the caterpillar ate on Saturday.

\_\_ 5. Use the book to see what student listed the most food correctly.

**Concluding Activity/Assessment:**

After the students have done their differentiated work in groups, all students will be given a sheet of paper with the pictures of the food and a piece of yarn. They will cut apart the pictures of the food and put them in any order that they want and string it through the yarn (by punching a hole in the paper). They will then write out their own stories about the order of they would eat the food. The students fruit categorization will be a depending factor on how much they will need to do and write.

*Apple:* Write out at least 3 of the foods that they eat.

*Pear:* Write out at least 4 of the foods that they eat.

*Orange:* Write out at least 5 of the foods that they eat.

Make a list of words that can be used (include the names of the food and days of the week). Show the students an example of what they can write.

EXAMPLE: On Tuesday, I ate a strawberry and a cake.

The students will be evaluated by how they write out the order of the food and the number of sentences that are written depending on their group.

*Additional Resource:*

<http://www.teachingheart.net/veryhungrycaterpillar.html>

## Lesson 2

How Big is a Foot?, Rolf Myller

### **Book Summary:**

There was a Queen who did not have a bed, so the King decided that he would have a bed made for her. The carpenter did not know how big to make the bed, so the King measured her with his feet. When the apprentice with tiny feet made the bed, it was far too small for the Queen. A sculptor made a copy of the King's foot and the carpenter's apprentice used it to make a bed that actually fit the Queen. From that point on, the King's foot was used whenever someone wanted to measure something.

**Subject/Topic:** Math - Measurement (Inches/Feet)

**Grade:** 2

### **Indiana State Standards:**

*Standard 5: Students understand how to measure length, temperature, capacity, weight, and time in standard units.*

2.5.1 - Measure and estimate length to the nearest inch, foot, yard, centimeter, and meter.

2.5.2 - Describe the relationships among inch, foot, and yard. Describe the relationship between centimeter and meter.

2.5.3 - Decide which unit of length is most appropriate in a given situation.

### **National Standards:**

*Measurement: PreK-2* - Apply appropriate techniques, tools, and formulas to determine measurements.

## **Materials:**

- How Big is a Foot? by Rolf Myller
- Construction paper
- Ruler for each student
- Clipboards
- Pencils
- Large board/paper for recording
- Written word problems
- Laminated note cards with images
- Recording sheet
- Music player or computer
- Instruments (optional)

## **Whole-group:**

Before reading the book, encourage students to listen for things that relate to the topic of measuring. After the book is read, a discussion will follow about how things are measured and the things that happened in the book.

- “Why was the first bed not big enough for the Queen?”
- “How did making a copy of the King’s foot help make the bed?”
- “What units can we use to measure things?”

Have two students trace their feet on construction paper.

- “Are they the same size?”
- “So what is a FOOT?”

Review with the students what an inch is and how it can be measured. Discuss how 1 foot is equal to 12 inches. This is typically the length of a ruler. Give each student a ruler and discuss the correct way to use a rule to measure an item. The 0 marker on

the ruler should be lined up with one end of the item, and then measure to the nearest inch. As a class, make a list of things that would be about 1 foot long and then items 1 inch long.

Show examples of how to write measurements, including the units, such as inch or foot. Students can write items as 1 foot 5 inches if it is larger than just 1 foot. Be sure to emphasize the use of units and what they each equal. Without these units, the numbers mean nothing.

After going over the basics of measuring with rulers, using inches and feet, students can explore the learning centers. Explain each of the centers to the students and have labels on each of the tables, along with a set of directions for students to use. If time allows, students can explore each of the centers. If there is not enough time, students should explore at least 2 of the centers. They are differentiated based on learning intelligences, because it is shown that students learn best in various ways. Encourage the students to choose a center that best fits them, and another one that might not be within their normal learning style.

### **Differentiated Learning Centers:**

#### **Hands-On:**

Students who are bodily-kinesthetic or visual-spatial learners will learn best by exploring measuring, so they can use rulers to measure items around the classroom. They can work with partners or individually to discover measurements.

Each student/group of students will be given a clipboard with 6 items to measure and a ruler. The items could include: desk, math book, stapler, pencil, computer screen, or overhead.

Once items are measured, they can compare the units that they recorded, and then write their measurements on a large piece of paper or board that will showcase all measurements. The teacher should monitor to make sure students are measuring correctly and using units.

### Written Work:

Students who are verbal-linguistic learners might enjoy this center, where they can use written words or their mental vision to explore measuring. They will be given written problems about measuring and will solve them. Encourage the students to show their work and be able to explain how they found an answer. Include a multitude of written problems at the station for students to work on. The problems could include the following:

- The desk is 20 inches across. How many feet is this? Will there be inches left over?
- The bulletin board is 3 feet 6 inches. How many inches is the bulletin board all together?
- There is a boy that lines up 5 bricks that are each 8 inches long. How many inches will the line of bricks be? How many feet and inches?

### Picture Measuring:

Students who are visual-spatial learners would be able to visualize and form mental pictures of objects. This center would consist of measuring pictures and predicting measurements of objects. Include a set of laminated note cards with a picture on one side. On the back of the note card, include the real measurement of the object in the pictures.

Have the students write their estimate on the note card and then flip it over to check how close they were to the actual measurement. On a recording sheet, they will write the difference of the real measurement to their estimation.

Use images such as: a shoe, a tree, a car, a diving board, a stapler, a water bottle

### Musical Work:

Students who show a creative side, and are musical learners, can create a song that explains how to measure things. They need to have certain terms in their song (inch,

foot, measure), and can use actions to go along with the words. Have a variety of song tunes listed for students to use. They can have one student hum the tune and the other sing the words that go along. Encourage them to write down their lyrics and possibly even 'sing' about a problem.

Allow them to listen to this song to give them an idea:

[http://www.harcourtschool.com/jingles/jingles\\_all/1measure.html](http://www.harcourtschool.com/jingles/jingles_all/1measure.html)

**Concluding Activity/Assessment:**

Have students write or draw a picture about the process of measuring an item. You should be able to tell step by step how to measure something by reading or viewing their work. They should also include the measurement of a foot to an inch.

## **Lesson 3**

### **Spaghetti and Meatballs for All! Marilyn Burns**

#### **Book Summary:**

This is a mathematical storybook about a family dinner. Mr. and Mrs. Comfort invite their family members over, and have to rearrange the tables and chairs each time someone else comes in the door. They try to move the tables and chairs so people can sit next to each other, and this introduces the concept of perimeter and area, because the number of people that can sit around the perimeter of the table changes.

**Subject/Topic:** Math (Area/Perimeter)

**Grade:** 3-4

#### **Indiana State Standards:**

*Standard 5: Students understand how to measure length, temperature, capacity, weight, and time in standard units.*

3.4.3 – Find the perimeter of a polygon.

3.5.4 – Estimate or find the area of shapes by covering them with squares.

4.5.3 – Know and use formulas for finding the perimeters of rectangles and squares.

4.5.4 – Know and use formulas for finding the areas of rectangles and squares.

4.5.5 – Estimate and calculate the area of rectangular shapes using appropriate units, such as square centimeter, square meter, square inch, or square yard.

4.5.6 – understand that rectangles with the same area can have different perimeters and that rectangles with the same perimeter can have different areas.

**National Standards:**

*Measurement: 3-5* - Apply appropriate techniques, tools, and formulas to determine measurements.

*Measurement: 3-5* - Understand measurable attributes of objects and the units, systems, and processes of measurement.

*Geometry: 3-5* - Use visualization, spatial reasoning, and geometric modeling to solve problems.

**Materials:**

- Spaghetti and Meatballs for All!, by Marilyn Burns (multiple copies)
- Square tiles
- Recording sheet chart
- Note cards

**Whole-Group:**

After reading the book out loud to students without mentioning the idea of area and perimeter, discuss the story and what they noticed. Then ask them what area and perimeter are and if they think they are related. Read the book out loud again, having students think about area and perimeter and if they are related. They can use square tiles to arrange the tables as Mrs. Comfort does.

- Area is the space a shape’s surface covers, which is measured in square units.
- Perimeter is the distance around a shape, measured in units of length.

In the back of some editions of the book, there is a section, “For Parents, Teachers, and Other Adults” which would be beneficial to use. It explains the mathematics of

the story and how to model it out with the students. This could be done before they break into the groupings to do the differentiated work.

Group the students into colored groups – yellow (low), red (middle), and blue (high). Their levels should be based on their mathematical ability and problem solving level. The activities are similar, but the questions will vary by ability level.

**Differentiated Plans:**

*Yellow - Low:*

Using square tiles, record the area and perimeter for each setup of tables on a chart (shown below) and sketch a picture of the table arrangement. Also record how many people could be seated at each table. (Students can work with partners in their grouping and use a copy of the book to recall the table setups).

Figure Number	Area	Perimeter	People seated	SKETCH
1	Sq. units	Units	People	

- Which one would fit the most people?
- Which one would fit the least amount of people?

*Red - Middle:*

Using square tiles, record the area and perimeter for each setup of tables on a chart (shown below) and sketch a picture of the table arrangement. Also record how many people could be seated at each table. (Students can work with partners in their grouping and use a copy of the book to recall the table setups).

Figure Number	Area	Perimeter	People seated	SKETCH
1	Sq. units	Units	People	

- What do you notice about the area/perimeter of the figures?
- If there were going to be 4 tables, what would be the greatest perimeter?

*Blue - High:*

Using square tiles, record the area and perimeter for each setup of tables on a chart (shown below) and sketch a picture of the table arrangement. Also record how many people could be seated at each table. (Students can work with partners in their grouping and use a copy of the book to recall the table setups).

Figure Number	Area	Perimeter	People seated	SKETCH
1	Sq. units	Units	People	

- If there were 24 people, what would be the best table arrangement?
- What would be the area and greatest perimeter with 10 tables?

**Concluding Activity/Assessment:**

Collect the note cards with their answers from the differentiated groups. Check the answers to be sure the students have an understanding of area and perimeter. Each student will be responsible for turning in their own note cards, even if they work with a partner.

Students will answer the following question and explain their reasoning, which may include a sketch.

- “Why shapes with the same area have different perimeter?”

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