Title: Graphing Points on a Coordinate Grid

Subject Matter Emphasis and Level: Math Grade 3

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Brief Description of the Lesson/Unit:
The students will create a picture by graphing points on a coordinate grid.

SD Content Standards:
4.S.1.1. Students are able to interpret data from graphical representations and draw conclusions.

Unpacked:
The students will be able to identify points on a graph using pairs of numbers called coordinates. They will create a picture of their own using coordinate pairs of numbers.
Stage 1: Identify Desired Results

1. What enduring understandings are desired?
   The students will understand how to identify points on a graph using coordinate pairs of numbers. They will then use this knowledge to create a picture using coordinate pairs.

2. What essential questions will guide this unit and focus teaching/learning?
   How do I identify a point on a graph using coordinate pairs?
   How do I find a point on a graph given the coordinate pair of numbers?
   How do I create patterns of coordinate pairs to make a picture?

3. What key knowledge and skills will students acquire as a result of this unit?
   The students will learn to identify coordinate pairs of numbers on a graph and to plot points on a graph given coordinate pairs of numbers.

4. What prior learning, interests, misconceptions, and conceptual difficulties might be brought to this unit?
   The students may be familiar with the format of a graph, but they may not know there is a vertical and horizontal axis.

Stage 2: Determine Acceptable Evidence

1. What evidence will show that students understand?
   The evidence will come from pretesting, assignments, small group work, quizzes, tests, and creating an actual picture and listing coordinate pairs of numbers.
   Performance Tasks:
   
   Hands on work.
   Group work with teacher and large grid on the white boars.
   Teacher modeled picture on grid or graph paper.
Other Evidence:
*Quizzes, Tests, Prompts, Work Samples (summarized):*

- Quizzes and tests given by teacher.

Unprompted Evidence: *(observations, dialogues, etc.)*

- Observing students as they create their own pictures by planning points on grid/graph paper and identifying them.

*Student Self-Assessment*

- The students will attempt to create pictures from other students’ coordinate pairs of numbers.

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**Stage 3: Plan Learning Experiences and Instruction**

2. *What sequence of teaching and learning experiences will equip students to develop and demonstrate the desired understandings?*

**Major Learning Activities:**

- Teach led explanation of coordinate pairs.
- Group work on identifying points and creating points on a coordinate graph.
- Creating pictures of their own incorporating the use of coordinate pairs of numbers on graph paper.

**Materials & Resources (technology & print):**

- Saxon Math 5/4 teach edition and supplemental practice materials
- Saxon Math 5/4 - aligned Accelerated Math Library
- The Best of Mailbox- Grades 4-6 Book Two
- White Boards
- Graph paper

**Management:**
Teacher led skills initially. Small group participation combining students who may have difficulty with those who encourage and provide growth and development. Final transition would be to independent work, so I can actually assess their total understanding.

**Support Services and Special Teacher Notes:**

Title 1 as well as SPED support from those teachers.

**Extensions and Adaptation:**

Extensions: Encourage those students with greater understanding and knowledge to pursue creation of my complimented pictures that utilize more coordinate pairs of numbers.
Adaptions: Group those that have difficulty working independently and give additional instruction. Have them work again with another student volunteer.

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**Stage 4: Plan Differentiation**

3. What differentiated instruction strategies are being used in this lesson/unit?

**Differentiated Process:**

1. Small groups- interpersonal work
2. Individual and independent work- students can work at their own pace and create a picture that will show their level of understanding.
3. Using coordinate pairs of numbers to create pictures improves critical thinking skills.
**Differentiated Content:**
- Peer assistance.
- Creating illustrations using their knowledge of coordinate numbers.
- Visual work
- Teacher circulation around the room to help intervene if need be

**Differentiated Product:**
- Manipulative and hands-on work
- Working with a peer or alone
- Encouraging students to create their own pictures to illustrate their understanding of coordinate pairs of numbers