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GPS – Day Two

By Marisa Vrablic

Essential Question

What are coordinate grids and how to use them? How to write directions to get from one place to another?

Standard(s)

Subject Area - 3: Science and Technology and Engineering Education Standard Area - 3.3: Earth and Space Sciences Organizing Category - 3.3.B: Origin and Evolution of the Universe Grade Level - 3.3.1.B: GRADE 1
Standard – 3.3.1.B3: Distinguish between scientific fact and opinion. Ask questions about objects, organisms, and events. Understand that all scientific investigations involve asking and answering questions and comparing the answer to what is already known. Plan and conduct a simple investigation and understand that different questions require different kinds of investigations. Use simple equipment (tools and other technologies) to gather data and understand that this

allows scientists to collect more information than relying only on their senses to gather information. Use data/evidence to construct explanations and understand that scientists develop explanations based on their evidence and compare them with their current scientific knowledge. Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced, and review and ask questions about the work of other scientists.
Assessment Anchor – S.K-2.A.1: Reasoning and Analysis
Anchor Descriptor – S.K-2.A.1.1: Identify the applications of scientific, environmental, or technological knowledge.
Eligible Content – S.K-2.A.1.1.2: Identify examples of technology; S.K-2.A.1.1.3: Describe how technology can help people (e.g., home appliances, phones, computers, transportation).

Subject Area – 1: Reading, Writing, Speaking, and Listening
Standard Area – 1.4: Types of Writing
Grade Level – 1.4.1: GRADE 1
Standard – 1.4.1.B: Write informational pieces using illustrations when relevant (e.g., descriptions, letters, instructions).

Objectives

Students will be able to state what coordinate grids are and how to use them.
Students will be able to write clear directions from one place to another.

Materials and Equipment

- Loose leaf paper
- Blank coordinate grid
- Coordinate grid with map of classroom
- Pencils
- All objects needed for this activity (This varies on students' "ticket out the door" from day 1 and what the teacher would like to use as examples.)
- Books about maps (See bibliography)

Procedures

Introduction

- "Today we are going to talk more about GPS. GPS's use coordinate grids to give people directions. We are going to be learning about what coordinate grids are and how to use them. We will also learn how to write directions for the "ticket out the door" you did yesterday."

Anticipatory Set/Activating Learning Strategies

- I will start off the lesson by reviewing what they learned the day before. “Who can remember what GPS is? *Take a few answers.* GPS is a Global Positioning System. It is a map that is in a computer-like object that helps to tell us where to go. They use satellites in space to figure out a person’s location and where they want to go or their destination.”
- I will then connect what they learned to what they are going to learn about in the lesson. “Do you know how maps are made? Maps are made through surveyors. These surveyors are people who go around the world and find different points of the world. They connect these points together. They then make a coordinate grid. Does anyone know what a coordinate grid is? *Take some answers.*”

Sequence of lesson

- The teacher will discuss what a coordinate grid is and how it is used. In doing so, the teacher will show an example of what a coordinate grid looks like. This provides students with a visual representation of what they are learning. After explaining what a coordinate grid is and what it looks like, the teacher will talk about how to use coordinate grids and maps to create directions for when a person wants to get from one place to another. The teacher will also show a map of their classroom and talk about why it is an aerial view. After discussing this, the teacher will model how to write directions from one place to another, choosing an object or location that they will not use for the guided practice. “A coordinate grid is what a map uses to know where it is going. A coordinate grid has numbers across the top and letters down the side. *Show example of coordinate grid.* This coordinate grid can be turned into a map of anything. It can be of our classroom, our school, our town, our state, our country, or even the whole world. For today, I’m going to show you a map of our classroom on a coordinate grid like this. *Show map of classroom on coordinate grid.* When looking at this map, it looks like you are on the ceiling looking down on the classroom. Does anyone know why that is? *Take some answers.* It is like that so that you can see everything on the map at the same time. This is called an aerial view. Can you say aerial view. *Have students repeat it back.* Now, I’m going to show you how you can make directions with this map. First, I am going to think about where I want to start my directions. I think I am going to start at my desk. So on the first line of my paper, I am going to write ‘Start at teacher’s desk.’ Next I am going to write the directions. I have already picked out what object and location that I want to write my directions to. *State what your object is and where it is located so that the students can understand how to get from point A to point B.* So I want to think about what is the best way to get from my desk to my object.” The teacher will show the students how to write

directions using key terms such as right, left, straight, or back. The teacher should provide students with arrows that go in the desired direction to help them with remembering and understanding the different directions. The teacher should also tell the students that there does not need to be a set number of directions. However, the directions should not take them all over the place. They should also be clear so that the person who is reading them knows where to go.

- After the teacher demonstrates writing the directions, the teacher will have students follow their set of directions to an object in the room. The teacher will separate the students into four groups, picked by them. The students will each have different directions to different objects in the room (i.e. the garbage can or the pencil sharpener). With these directions, there will be a starting point, a set of directions for the students to follow, and they will not know what they are trying to find to until they get there. When students find their object, they are going to write what that object was and draw a picture on the back of their directions. "O.K. gals and guys, we are now going to get into four groups. When I put you in those groups, you will be given a set of directions. These directions will tell you where to start, but not where you finish. Each group has a different set of directions that will lead them to a certain place. Do not tell the other groups if you found your given location. We will see at the end what everyone's location was. When you have found the end of the directions, I want you to write on the back of the directions where they led you and draw a picture. When you are done, come sit on the carpet and talk quietly with your group." After giving the directions to the students, the teacher will monitor their ability to follow the directions and work in groups. This activity is used to help students understand why making clear directions is important to finding a specific object or location. The students will then share what their object is and where it was. The teacher will discuss the importance of clear directions, using the directions that were given to the group.
- For the last activity, the teacher will give students loose leaf paper to write their directions on. The teacher will also give each student back their "ticket out the door" from day 1 so they can look off of it to write their directions. Key points to remind the students of: they can pick any starting point that they would like to, they do not have to have a set number of directions, they should not write directions that make the reader go all over the room, and directions should be clear and easy to follow. The students will then give their "ticket out the door" back to the teacher and hand in their directions for their "ticket out the door."

Closure/Summarizing Strategy

- Once all the students finish, the teacher will then ask them what coordinate grids are, how we use them, and what the good ways to

write directions are. The teacher will talk about how tomorrow the students will be given each other's directions and have to find them.

Assessment/Evaluation

- The summarizing strategy discussion will be the informal assessment of the students' knowledge of the lesson. The directions that each student wrote will be formally assessed for clear directions and whether or not it will be efficient for another student to follow.

Assignments (if any)

No assignments

Special Considerations

Early Finishers

Students will read books about maps until all the students are finished. (Books are listed in the bibliography.)

Remediation

Students will work one-on-one with the teacher to help write their directions. Teacher may simplify and break down the activities as needed.

Enrichment

Students will be asked to write multiple directions for different objects within the room from different starting points.

Special Accommodations

Students will work in pairs or groups of three to write directions for their collectively chosen object.

Bibliography

Baer, E., & Rkman, S. (1990). *This is the way we go to school: A book about children around the world*. New York, NY: Scholastic.

Hennessy, B., & Joyce, P. (2004). *The once upon a time map book* (2nd ed.). Cambridge, MA: Candlewick Press.

Rabe, T., & Ruiz, A. (2002). *There's a map in my lap!: All about maps*. New York, NY: Random House.

Ritchie, S. (2009). *Follow that map!: A first look at mapping skills*. Toronto: Kids Can Press.

Scullard, S. (1991). *The great round-the-world balloon race*. New York, NY: Dutton Children's Books.

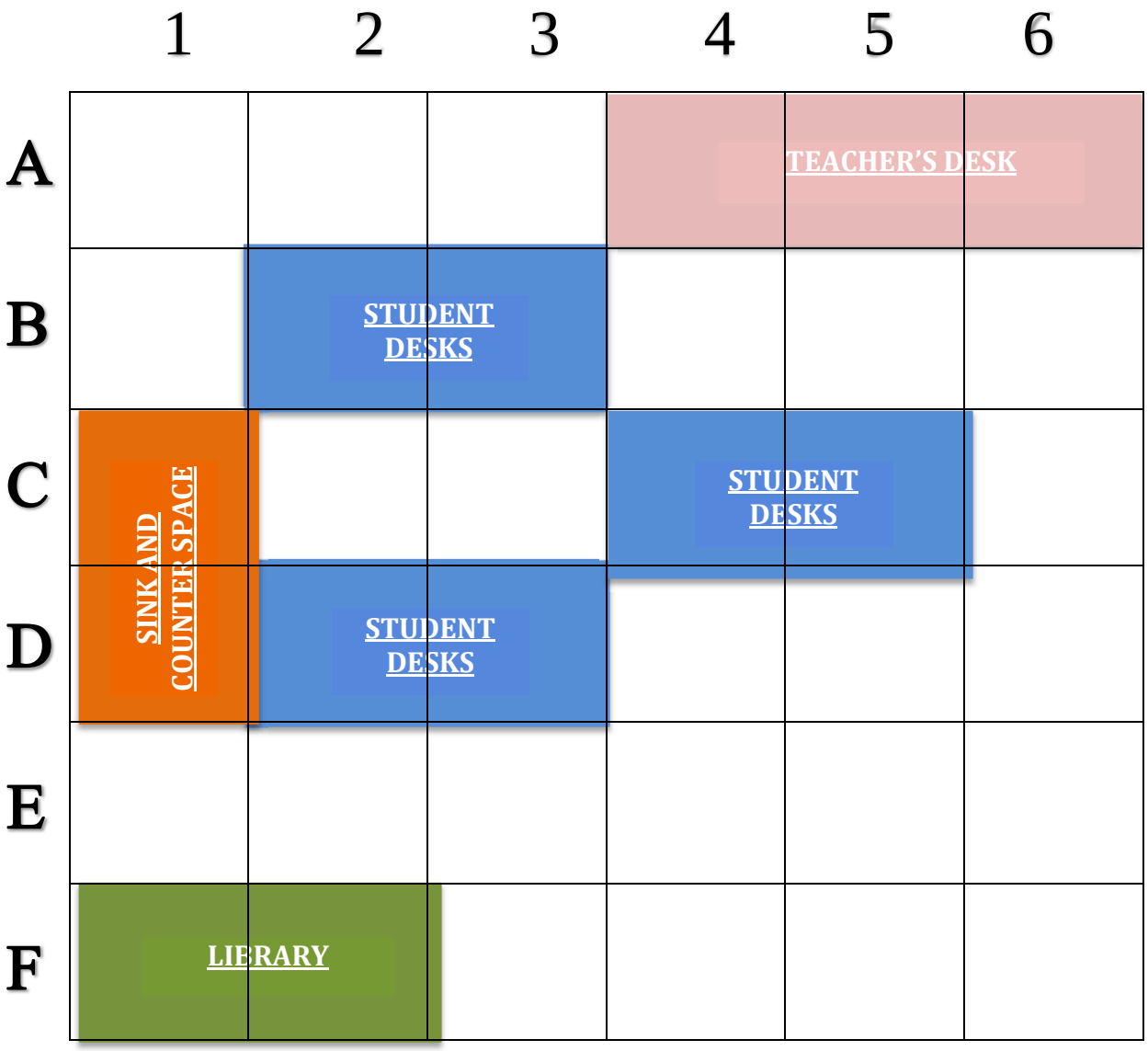
http://www.pdesas.org/Standard/Views#188667|155222

http://www.pdesas.org/Standard/Views#28342
http://www.pdesas.org/Standard/Views#188667|155222

Coordinate Grid

	1	2	3	4	5	6
A						
B						
C						
D						
E						
F						

Example Classroom Map



Note: This is for example purposes only. For in class use, I would recommend putting in the actual number of desks and be more specific about areas within the classroom.