**Lesson Plan *2*: *Algebra/ Topic: Patterns***

**Teacher Name: Marci Sams**

**Lesson Title: Patterns**

**Target Grade Level: 6th Grade**

**Estimated Time for Lesson: 54 minutes**

**Lesson Objective:**

The learner will be able to represent, analyze and determine relationships of data by correctly continuing a given pattern of change and creating tables to organize the data.

**Learning Target:**

Recognize and continue patterns, and creating tables

**Taxonomic level of objective:**

Analyze, Create

**Unit goal that align with the lesson objective:**

The student will be able to describe patterns of change using tables, graphs, equations and formulas, using variables and constants to write formulas and equations.

**Standard that aligns with the lesson objective:**

6.3.5 Represent, analyze, and determine relationships and patterns using tables, graphs, words, and symbols when possible.

**Assessment:**

Knowledge will be assessed using red, yellow, and green stickys to hold up during check-ins. During warm up students will be mandated to write, using a specific color pen, responses on individual whiteboards. Students will be working in groups to complete a worksheet with new content included. Progress will be assessed by stamping completed sections before students can move on. These worksheets will be taken home with students to assist homework, but they will be handed in along with homework for assessment, but not graded.

**Taxonomic levels of assessments:**

Interview, and artifact

**Literacy Across the Content Areas:**

Literacy will be used by students talking with partners and tables groups, and writing a description of the pattern with words and numbers. Students will also be taking notes down and writing down rules in their quad books.

**Materials:**

Power point presentation, Individual white boards, White board pens, document camera, composition books, Patterns and Tables worksheet

**Anticipatory Se*t*:**

Have students take a second to think about where they have seen a pattern. Give an example ie. “I drive by a farm with different heights of Christmas trees from small to large grouped by year they were planted.” Have them share with their table group what they come up with.

**Lesson Sequence:**

Students will get out planner and write down homework and learning target for the day.

*Anticipatory Set:* Have students take 3 minutes to think-pair-share an example of a pattern they are familiar with. Use power point slides to launch this activity.

Explain we are going to analyze number and symbol patterns and organize the data from these patterns by creating tables.

Warm-up:

Review what a variable is and talk about what letters can be used as a variable.

Each table should have two whiteboards already placed on them. Tables will group in teams of two (three if there are only three at the table).

Each student will have a different colored white board pen then the other students in their group.

Students work together, but take turns writing responses to the questions on the power point presentation slides, and holding them up for the instructor to see.

Directions are on slides, explain some verbally, and let students read some directions. Have students hold up green sticky when they understand and are ready to start.

Show first question and look at responses on whiteboards, if they are incorrect alert group and have them redo their answer. If groups are struggling have them use help from other groups.

The first five questions ask the difference between numbers in a pattern. The following slide has more directions. Before introducing the directions (or before the fifth question) have students hold up a green, yellow, or red sticky to check for understanding.

Once you have a majority of green shown move on to second type of pattern questions located on the next slides. If students are not showing green use the white board and write some number patterns in equal intervals and have students all work together to correctly respond.

The next five questions are number patterns where the students are to respond with the next number in the sequence. The fourth and fifth slides are symbol patterns and the students are directed to draw the next pattern. Use the green, yellow, red sticky check-in between the number and symbol pattern questions. Then use the same check-in strategy again after the two symbol pattern questions.

Framework:

Have students get out there quads (directions are on a power point slide). Find out what page the majority of the students are at so you can have students from other periods turn directly there. Have them discuss with their table how they would attempt to create a table from the pattern. Once the entire table is stuck have one of the members at the table hold up a red sticky.

If one of the groups makes progress have them give you a few of the steps to make a table on the big whiteboard at the front of the classroom.

While the instructor creates two tables on whiteboard (one if 20 minutes since class has started has already passed) the students will follow along creating the same table in their quads.

Have students turn to the back of their quads for the next available R&E section page.

Have students take cornell notes style notes with the heading R&E: Creating Tables.

While filling out rules and equations notes (example is printed on sheet for reference) ask the following questions (also on sheet).

-“is it important to label your tables?”

“Why?”

“Talk with your tablemates about why it is important, or not important, to label your tables.”

“If you think it’s a good reason write it in your notes.”

“What do we use tables for?”

Making graphs

Determining patterns

Making predictions

(How much work will get done)

(How much something will cost.)

(The amount of materials needed to build something.)

Once the notes are completed have the students come up and get their worksheets and homework. Having them come up gets them awake and moving after sitting and taking notes.

Do the first question in each of the first two sections on the document camera with the students. Then have them work in groups, or individually on the worksheet. Have the student groups, or individuals hold up a red sticky if they need help, and a green one once they have finished a section so they can be checked off and move onto the next section.

If any groups finish early they can begin on their homework.

Closure

Five minutes before class ends have them write what their homework is in their quads and remind them they will need their worksheet as an example on their homework.

**Enrichment** **Activities (Early Finishers/ TAG/ Special Needs):**

The worksheet has several sections that include bonus/challenge questions. Students will be asked to perform a task, with no expectations, they have not been introduced to before. This gives the TAG students a chance to construct a way of performing this on their own.

**Differentiation:  Meeting needs of individual learners**

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| --- | --- | --- | --- |
| **Multiple Intelligences**  x  Linguistic  x  Visual/Spatial  □  Musical  x  Intra-personal  x  Math/Logic  x  Kinesthetic  x  Inter-Personal  □  Naturalist | **Learning Styles**  □  Mastery  x  Interpersonal  x  Understanding  x  Self Expressive | I**nstructional Grouping**  x  Whole class  □  Learning centers  x  Pairs  x  Small groups  x  Mixed ability  □  Ability grouping | **Student Interests and Funds of Knowledge**  □  □  □  □  □  □ |

***Accommodations*:** *High achieving students can follow the enrichment activities listed above. IEP students will be in mixed ability groups for assistance. We are using power point slides for visual and linguistic learners. Students have autonomy of working alone or in groups with worksheet.*

***Modifications*:** *I.E.P students can finish a shortened version of the worksheet and use assistance from teachers or other students. Homework will be scaled back for these students as well.*