



Investigation/Lesson: Arrays and Factors

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Content Vocabulary:

array
factor
repeated addition
factor pairs

Concepts/Skills/Core Content:

What are the goals of the lesson? What should a student know/be able to do as a result of this lesson?

- Student should be able to recognize arrays in real life and be able to use multiplication as a means to count objects.
- Student should be able to use arrays to find factors of a number.

Which core content bullet(s) is addressed in this lesson?

- 1.2.1
- 1.3.1
- 1.5.1

Materials:

What materials are needed for this lesson?

- examples of arrays from everyday life (muffin pan, egg carton, picture of windows on side of a building, cheese crackers, etc.)
- Hershey bars (1 per group of students)
- grid paper or marker boards (1 per student)
- blocks or multilink cubes to make arrays (18 per group of students)

What materials preparation is necessary for this lesson?

- count out blocks for the students before hand (pick a number with at least 6 factors, like 12 or 18)

Classroom/Materials Management:

How will students be grouped?

- Small groups (3-4) to work on Hershey Bar exercise and finding factors with blocks.

How will materials be distributed/returned?

- Hershey Bars
- blocks or multilink for making arrays

Thinking Through the Lesson:

Introduction (Warm Up/Anticipatory Set)-

-Read Amanda Bean's Amazing Dream

-Show the students examples of arrays in real life and ask them how many of each item there is.

Explain that you can either count each item separately or you can count by rows or columns. Relate multiplication to repeated addition.

Facilitation (Guided Practice)-

-Each student will be given a Hershey Bar and asked to find the array associated with the bar.

Afterwards, they will break the Hershey Bar into its separate pieces. The students will then be asked to make any other array they can with the individual pieces. (There are 12 pieces in a Hershey Bar so they can find a 1×12 , 2×6 and a 3×4 array).

-The students will then be given a number of blocks (18 is a good number) and be told to find all of the arrays associated with that specific number of blocks. They will then be told that finding the different arrays is a way to find the factors of a number (factors should have been introduced prior to this lesson).

Closure-

-The students will be given an object and told to find the array. They will draw the array on their marker boards and write the multiplication sentence that goes along with the array. The students can then hold up the marker board to be checked. Also, give the students a number and tell them to draw all of the arrays associated with the number and tell us what the factors are.

Assessment: How will you assess whether all students have learned what was expressed in the lesson goals?

Most of this was described in the closure section above. If the students can answer the questions on their own and show us on the marker board, then they most likely have learned the lesson.

Student Notes/Notebooks:

Where and how will students record important classroom information? How will students know what to record?

-They will write some of the first examples of arrays in their math notebook so they can look at it later.

How will students organize their notes/notebooks?

-The definition of an array will be given as well as the definition of a factor (which they should already have).

-They will then draw examples of arrays that we go over in class (they can use the grid paper in their notebook to keep things straight).

How will you provide feedback to your students about their notes/notebooks and their organization?

-We usually ask to see their notebooks at the end of lesson to make sure they have recorded the necessary information.

Literacy Connections: Are there books that would enhance learning in this lesson?

Amanda Bean's Amazing Dream by Cindy Neuschwander

Homework (Independent Practice):

-The students will be asked to find examples of arrays in the classroom or at home. Then can then draw the array and write the multiplication sentence associated with it.

-The students will also be given numbers and told to find the factors using arrays.