Paideia Seminar Lesson Plan

Text: **1-100 Number Chart**

Grade/Subject Early ES / Mathematics

Ideas, Values: Mathematics, Pattern, Reasoning, Sign & Symbol

Pre-Seminar Content

Launch Activity:

Write the numbers 1-100 on small sticky notes and distribute all 100 sticky notes to the class. Have students walk up to a sheet of poster paper and stick their numbers up on the poster at random. Discuss whether they see any patterns in the numbers as they are displayed. Keep the poster for future reference.[1]

Inspectional Read:

Have participants examine the text as a table of numbers and list as many different patterns as they see. Have them number the rows and columns in the top and left-hand margins of the chart (each is 1-10). Practice reciting the numbers in the chart in order by counting as a whole class from 1 to 100. (Feel free to repeat this exercise over multiple days.)

[1] If your students are already familiar with the 1-100 Chart, they will probably try to recreate it, even in this first exercise. If so, consider, placing the sticky notes at random yourself, in order to emphasize the "chaos" that will eventually be replaced with "order."

Background Information:

Share as appropriate: A numeral is a symbol or name that stands for a number. Examples: 3, 49, and twelve are all numerals. Through the centuries, various cultures have used different methods for writing numerals. Share a version of the following chart as appropriate to show different methods of representing the same numerals:

Western	0	½	1	2	3
Roman			I	II	III
Arabic-Turkish	٠	١/٢	١	٢	٣
Malay-Persian	٠	١/٢	١	٢	٣
Eastern Arabic	٥	١/٢	١	٢	٣
Hyderabad Arabic	٥	١/٢	١	٢	٣
Indian (Sanskrit)	०	१/२	१	२	३

Vocabulary:

Post definitions for any mathematical terms that you as facilitator or the students as participants will need in the discussion. Also note any math vocabulary that you want students to master as part of this experience (*integer, number, numeral, digit*, etc.). Be sure to include *row, column, and diagonal* so that you and the students can reference the rows and columns in the chart as well as use the word diagonal based on the core question. Discuss the relevant definitions with examples until students are comfortable using them.

Analytical Read:

Divide the class into pairs (perhaps assigning your best math students into different pairs so as to distribute expertise) and assign one integer (0-9) to each pair at random. Ask each pair to explore the table for that number and identify any patterns they discover. Have each pair share insights in the order of the numbers themselves.

Pre-Seminar Process

- Define and state purpose for Paideia Seminar.
- Describe the responsibilities of facilitator and participants.
- Have participants set a Personal Goal.
- Agree on a Group Goal.

Seminar Questions

Opening (Identify main ideas from the text.):

- What do you think is the most important number in this chart? Circle it on your copy of the chart or write it on an index card. (round-robin-response)
- Why is that number important? (spontaneous discussion)

Core (Analyze textual details.):

- How are the numbers in each row of the chart related?
- How are the numbers in each column of the chart related?
- Look at the last column on the right-hand side. What role does zero play in that column?
- Using a ruler or other straight-edge, draw a diagonal line from the number ‘’11” in the upper left-hand corner to the number “99” in the lower right. Can you describe the pattern that explains the numbers on this line? (11, 22, 33, 44, etc.) What would be the next number on this line if you extended it?
- Find the spot that is exactly in the middle of the chart. Point to it with a pencil. What numbers are close to that spot? Why?

Closing (Personalize and apply the ideas.):

- How does this chart help us understand our numbers? Should we display it permanently in our classroom? Why or why not?

Post-Seminar Process

Have participants do a written self-assessment of their personal participation goal.

- Do a group assessment of the social and intellectual goals of seminar.
- Note reminders for next seminar.

Post-Seminar Content

Transition to Writing:

Distribute a second set of sticky notes (1-100) like the ones that were used in the *Launch Activity*. Ask students to again place them on a second sheet of poster paper, only this time in the same order and structure as the 1-100 Number Chart. Compare the two posters that are made up of the same ingredients. Discuss how the two groups of 100 numbers are alike and different. (Laminate the two posters so that the sticky notes on both are preserved for the *Publication* stage.)

Writing Task:

How is a random number in the 1-100 number chart related to the numbers in the same column and row? After reading and discussing the 1-100 number chart about the relationships of numbers, write a short paragraph in which you explain how a number of your choice is related to the numbers is the same column and row. Use evidence from the text to support your response. (Informational or Explanatory/Explain)

(LDC Task#: 14)

Brainstorm:

Invite participants to talk in small groups for up to five minutes to share thoughts about what the writing task is asking and how they might respond. Have the entire class share which numbers they are planning to write about (duplication is not a problem).

Structure the Writing:

Provide students with a template for this assignment as necessary by giving them a series of sentence starters. Also refer to the words that were defined and discussed in the *Vocabulary* stage (add them to the Math Word Wall if you have one).

First Draft:

Have students write their paragraphs and then read them to a partner. Assist students in transferring ideas and words from the board to their paragraphs as needed.

Collaborative Revision:

Have students work in pairs to add details from the 1-100 Number Chart to their paragraphs. Be certain that each student has explained the relationships to numbers in both row and column.

Edit:

After editing by the teacher, have students copy over their paragraphs for publication, stressing what a finished paragraph looks like.

Publish:

Create a display in your classroom that consists of the posters of the original, random display of numbers (*Launch Activity*), the students re-creation of the 1-100 Number Chart using the numbers on sticky notes (*Transition to Writing*), and the actual chart itself. Post the student paragraphs with a string or other link from each paragraph to the appropriate number. Invite the grade level teachers from your school to a special cookie and punch party and have the students explain the numerical patterns and relationships revealed in the Number Chart.

This Paideia Lesson Plan was created by:

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1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100