Patterns & Algebra

Unit 4: Patterns

Lesson 27: T-Tables

Objective
*Learn to create a T-table for growing block patterns and to identify rules of number sequences in T-tables.
*Create growing block patterns for data presented in T-tables. PA4-9 and PA4-10

Complete *all* **OR** *a selection* **of the following activities**

Warm-up: What's Growing Here?

Project or draw:

Step 1: 🔲
Step 2: 🔲🔲
Step 3: 🔲🔲🔲
Step 4: ?

Ask:

What's happening in this pattern? How many blocks will be in Step 5? Step 10?

Now try:

Step 1: 🔲🔲
Step 2: 🔲🔲🔲🔲
Step 3: 🔲🔲🔲🔲🔲🔲

Invite:

- Multiple answers
- Drawing their own "next steps"
- Sharing "rules" they see (e.g., +2 each time)

Teaching Activity A: From Pattern to T-Table

Materials: Pattern blocks, grid paper, or drawing tools

Instructions:

1. Provide 3 terms of a block pattern built from squares (e.g., stairs, pyramids, rectangles).
2. Students count and record the number of blocks in each term in a T-table.

Example:

- Term 1: 2 blocks
- Term 2: 4 blocks
- Term 3: 6 blocks

T-table:

Term Number	Number of Blocks
1	2
2	4
3	6

3. Students identify the rule in words: The number of blocks is 2 times the term number.

Teaching Activity B: T-Table to Pattern Challenge

Instructions:

1. Provide a T-table:

Term Number	Number of Blocks
1	3
2	6
3	9

2. Ask:
    a. What's the rule?" (×3)
    b. What might Term 4 look like using blocks?
3. Students build or draw a block pattern that shows the rule and matches the numbers in the T-table.
4. Check: Does the shape show the right number of blocks for each term?

Real-Life Anchoring: Math in the World and Life

Scenario:

Imagine you're laying bricks. Every new row, you add 2 more bricks than the last.

Ask:

- What would the T-table look like?
- How can this help us predict how many bricks we'll need for 10 rows?

Other examples:

- Beads added to friendship bracelets
- Cookies placed in rows on trays
- Chairs set out for guests

Reflect: Why might someone want to notice or track a pattern?

Exploration Stations: Playing with Math

Build and Record: Use blocks to build a 3-term growing pattern. Record it in a T-table and write the rule.

Mystery T-table: Students are given a partial T-table. They must build what the pattern might look like.

Draw It, Table It: Given a drawing of a pattern, students fill in the matching T-table and complete the next term.

Create & Swap: Students create their own pattern with a rule, build or draw it, and trade with a partner who must fill in the T-table.

Questions for Understanding: Perspective-taking and application

- ☐ Two students see this pattern: 4, 8, 12. One says it's adding 4. The other says it's multiplying by 4. What makes sense?
- ☐ You thought the pattern added 3 each time, but then it jumps by 5. What do you do?

Wrap-Up Reflection: Learning into life

- ☐ What kind of patterns do you notice in your life?
- ☐ How do you know when something is *really* a pattern?
- ☐ How did your brain enjoy making a table to hold the pattern?
- ☐ Why might someone want to notice or track a pattern?

Extend Learning: Creative Invitation

Pattern Poster:

Design a growing pattern (e.g., flowers, shapes, rockets) that follows a clear rule. Include a T-table and explanation.

JUMP Math 4.1 Lessons

PA4-9 and PA4-10

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Lesson co-created by Open AI (2025), [Aiden Cinnamon Tea, Chat GPT 4.5], Jump Math Teacher Resources, Meghan McMillen and Laura Mann @ NIDES, August 2025.