Pattern Pair Power

Build two patterns and compare matching terms.

5.PAR.6.1 · Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms by completing a table.

Name _____ Date _____

MATCH THE TERMS

Use each rule to list terms in order. Compare terms in the same position. Describe how to change a term in Pattern A to get the matching term in Pattern B.

Worked example

Pattern A starts at 3 and adds 6. Pattern B starts at 10 and adds 12. Write the first four terms and describe the relationship. Complete a paired table with one row for each position, then compare matching rows.

1. Pattern A: 3, 9, 15, 21.
2. Pattern B: 10, 22, 34, 46.
3. Double each Pattern A term, then add 4.

A: 3, 9, 15, 21; B: 10, 22, 34, 46. Pattern B is double Pattern A plus 4.

Matching terms

Position	Pattern A	Pattern B
1	3	10
2	9	22
3	15	34
4	21	46

1. Practice

A starts at 8 and adds 5. B starts at 16 and adds 5. Write the first five terms. How are matching terms related?

2. Practice

A starts at 11 and adds 8. B starts at 27 and adds 16. Write the first five terms. How are matching terms related?

3. Practice

A starts at 16 and adds 7. B starts at 37 and adds 14. Write the first five terms. How are matching terms related?

4. Practice

A starts at 17 and adds 8. B starts at 24 and adds 8. Write the first five terms. How are matching terms related?

5. Practice

A starts at 11 and adds 5. B starts at 62 and adds 25. Write the first five terms. How are matching terms related?

6. Apply

At a gaming club, Lee earns 11 tickets in the first week and 5 more tickets each week. Sam earns 18 tickets in the first week and 5 more tickets each week. Complete the paired table for the first five weeks. Use matching rows to compare the amounts earned that week. How are their matching amounts earned that week related? Compare each separate week.

Complete both patterns

Week	Lee tickets	Sam tickets
1	_____	_____
2	_____	_____
3	_____	_____
4	_____	_____
5	_____	_____

7. Apply

For a pet shelter drive, Noor collects 14 cans on the first day and 7 more cans each day. Eli collects 33 cans on the first day and 14 more cans each day. List the amounts collected that day for the first five days. How are their matching amounts collected that day related? Compare each separate day, not the accumulated collection.

8. Challenge

A starts at 8 and adds 5. B starts at 47 and adds 25. Write the first five terms. Explain how to change any Pattern A term into the matching Pattern B term.

What to accept

Accept equivalent relationship wording, such as “add 8” or “8 more.” Students may list terms in a table or in ordered lists. For Apply It 1, require the completed paired table; ordered lists remain acceptable for the other list tasks.

1. Practice

A: 8, 13, 18, 23, 28; B: 16, 21, 26, 31, 36. Pattern B is Pattern A plus 8.

2. Practice

A: 11, 19, 27, 35, 43; B: 27, 43, 59, 75, 91. Pattern B is double Pattern A plus 5.

3. Practice

A: 16, 23, 30, 37, 44; B: 37, 51, 65, 79, 93. Pattern B is double Pattern A plus 5.

4. Practice

A: 17, 25, 33, 41, 49; B: 24, 32, 40, 48, 56. Pattern B is Pattern A plus 7.

5. Practice

A: 11, 16, 21, 26, 31; B: 62, 87, 112, 137, 162. Pattern B is 5 times Pattern A plus 7.

6. Apply

Lee: 11, 16, 21, 26, 31; Sam: 18, 23, 28, 33, 38. Sam's weekly amount is Lee's weekly amount plus 7.

Add 5 for each new week in both patterns. Compare each pair of amounts earned that week. Require the completed five-row paired table for this item: (11,18), (16,23), (21,28), (26,33), (31,38).

7. Apply

Noor: 14, 21, 28, 35, 42; Eli: 33, 47, 61, 75, 89. Eli's daily amount is double Noor's daily amount plus 5.

Start with 14 cans for Noor and 33 for Eli. Add 7 to each preceding Noor daily amount and 14 to each preceding Eli daily amount. Twice each Noor daily amount plus 5 equals Eli’s matching daily amount.

8. Challenge

A: 8, 13, 18, 23, 28; B: 47, 72, 97, 122, 147. Multiply a Pattern A term by 5, then add 7.