LESSON MAKER PRO

Pattern Power Plans

Use structure to solve real-world math problems.

GRADES K-12 · MA.K12.MTR.5.1

MA.K12.MTR.5.1 "Use patterns and structure to help understand and connect mathematical concepts. Mathematicians who use patterns and structure to help understand and connect mathematical concepts: Focus on relevant details within a problem..."

NAME _____ DATE _____

PLAN WITH PATTERNS

Look for equal groups, repeated changes, or parts that can be solved one at a time. Make a short plan, solve in order, and check your result with a related fact or equation.

WORKED EXAMPLE

At a game design fair, 14 booths give away 11 stickers each. How many stickers do the booths give away altogether?

1. There are 14 equal groups of 11 stickers.
2. Break 14 into 10 and 4.
3. 11 × 10 = 110 and 11 × 4 = 44.
4. 110 + 44 = 154.

Answer: 154 stickers

PRACTICE 6 problems

1 A craft club makes 6 rows of 8 friendship bracelets. Use equal groups to write an equation and find the total number of bracelets.

ANSWER _____

2 The art room has 63 markers. The teacher puts 9 markers in each supply box. Which operation helps you solve this, and how many boxes can be filled?

ANSWER _____

3 A theater club puts 12 chairs in each of 7 equal rows. Use the row structure to find the total number of chairs.

ANSWER _____

4 Students plant 96 seeds equally in trays. Each tray holds 12 seeds. How many trays do they need? Write a multiplication fact that checks your answer.

ANSWER _____

5 Jalen has 18 game points. He earns 6 points each week for 5 weeks. Find his total number of points. Show the plan you used.

ANSWER _____

6 An arcade gives 15 tickets for each game played. Priya plays 6 games. How many tickets does she earn? Write a division equation that checks your answer.

ANSWER _____

APPLY IT Show your work

1 At a video game tournament, 8 teams have 3 players each. Every player earns 9 points for finishing a challenge. How many points do all the players earn?

WORK SPACE

ANSWER _____

2 The Reading Quest chart shows pages read by a class each day. The number of pages increases by the same amount each day. If the pattern continues through Friday, how many pages will the class read altogether from Monday through Friday?

READING QUEST

Day	Pages Read
Monday	12
Tuesday	24
Wednesday	36

ANSWER _____

CHALLENGE One step up

A school carnival has 144 prize tickets. Volunteers put 6 tickets in each envelope, then arrange 8 envelopes in each prize bundle. How many prize bundles can they make? Explain your reasoning with equations.

WORK SPACE AND ANSWER

ANSWER KEY

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A craft club makes 6 rows of 8 friendship bracelets. Use equal groups to write an equation and find the total number of bracelets.	**6 × 8 = 48 bracelets**
2	The art room has 63 markers. The teacher puts 9 markers in each supply box. Which operation helps you solve this, and how many boxes can be filled?	**Division; 7 boxes**
3	A theater club puts 12 chairs in each of 7 equal rows. Use the row structure to find the total number of chairs.	**84 chairs**
4	Students plant 96 seeds equally in trays. Each tray holds 12 seeds. How many trays do they need? Write a multiplication fact that checks your answer.	**8 trays; 8 × 12 = 96**
5	Jalen has 18 game points. He earns 6 points each week for 5 weeks. Find his total number of points. Show the plan you used.	**18 + (5 × 6) = 48 points**
6	An arcade gives 15 tickets for each game played. Priya plays 6 games. How many tickets does she earn? Write a division equation that checks your answer.	**90 tickets; 90 / 15 = 6**

PART 2 · APPLY IT

1. **216 points** Find the number of players first: 8 × 3 = 24. Then find the total points: 24 × 9 = 216.
2. **180 pages** The pages increase by 12 each day, so Thursday is 48 and Friday is 60. Add 12 + 24 + 36 + 48 + 60 to get 180.

CHALLENGE

3 prize bundles. 144 / 6 = 24 envelopes, and 24 / 8 = 3 bundles.

Accept equivalent multiplication, division, or repeated-addition equations when they match the situation. For written plans and checks, accept correct equations in a different valid order.