

Try It! 30 minutes | Pairs

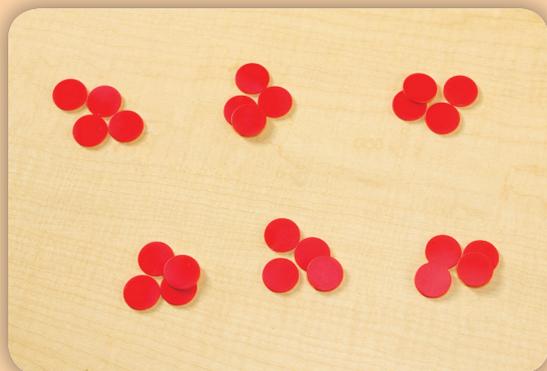
Here is a problem about exploring division.

There are 24 students in Mrs. Lopez's class. Mrs. Lopez divided the class into groups of 4 students. How many groups are there?

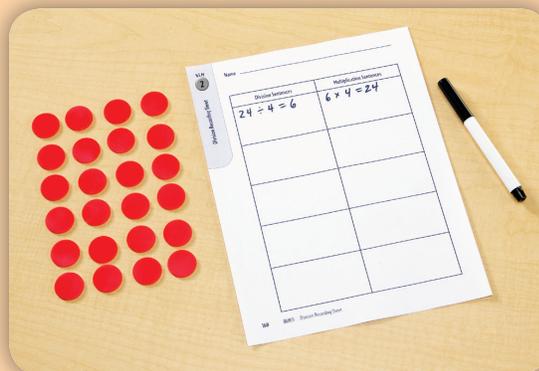
Introduce the problem. Then have students do the activity to solve the problem. Pass out Two-Color Counters and a Division Recording Sheet (BLM 2) to students.

Materials

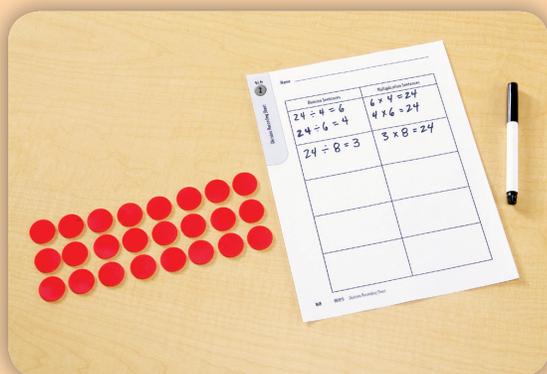
- Two-Color Counters (24 per pair)
- Division Recording Sheet (BLM 2; 1 per student)
- paper (1 sheet per student)
- pencils (1 per student)



1. Say: We are going to divide our counters into equal groups of 4. Tell students that this is one way to show 24 divided into equal groups of 4. **Ask:** What division sentence are we modeling?



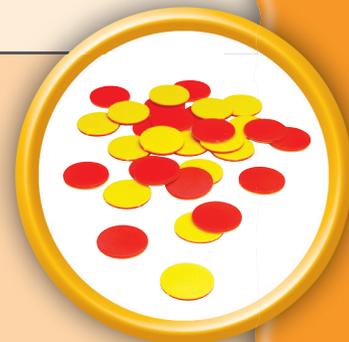
2. Have students use their groups to construct an array to show the product of 6 and 4. **Ask:** What multiplication sentence is displayed? Have students fill out the Division Recording Sheet, using counters to assist them.



3. Have students use arrays of counters to model the other ways of dividing 24 into equal groups. They should write a division and multiplication sentence for the models they built on the recording sheet.

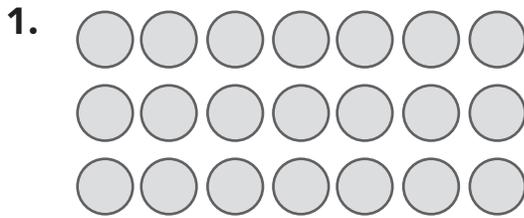
Look Out!

If students have difficulty using arrays to perform division, you may wish to show them a multiplication array. Point out that they need 4 columns, and they have 24 counters to use up. Have students put 1 counter in each column, adding rows until the counters have all been used. Also, watch for students who can divide using paper and pencil but cannot display the operation using manipulatives. This may indicate that the student lacks number sense and is relying on the memorization of facts.



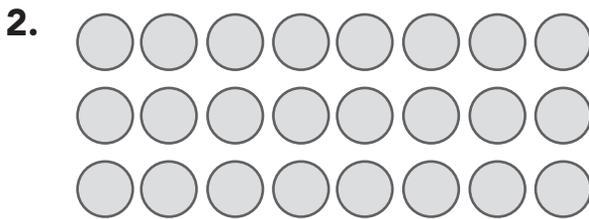
Use Two-Color Counters to build each array. Rearrange the counters into groups of the size shown. Complete each division sentence.

(Check students' work.)



put into groups of 

$$\underline{21} \div \underline{3} = \underline{7}$$



put into groups of 

$$\underline{24} \div \underline{4} = \underline{6}$$

Build each array using Two-Color Counters. Group the counters to be able to complete each division sentence.

(Check students' work.)

3. 45 into 9 groups

4. 32 into 4 groups

5. 30 into 6 groups

$$45 \div \underline{9} = \underline{5}$$

$$32 \div \underline{4} = \underline{8}$$

$$30 \div \underline{6} = \underline{5}$$

Write each division sentence. Write a related multiplication sentence.

6. 15 into 3 groups

$$15 \div \underline{3} = \underline{5}$$

$$\underline{5} \times \underline{3} = 15$$

7. 28 into 7 groups

$$28 \div \underline{7} = \underline{4}$$

$$\underline{4} \times \underline{7} = 28$$

8. 20 into 2 groups

$$20 \div \underline{2} = \underline{10}$$

$$\underline{2} \times \underline{10} = 20$$

9. 35 into 5 groups

$$35 \div \underline{5} = \underline{7}$$

$$\underline{5} \times \underline{7} = 35$$

10. 48 into 8 groups

$$48 \div \underline{8} = \underline{6}$$

$$\underline{6} \times \underline{8} = 48$$

11. 81 into 9 groups

$$81 \div \underline{9} = \underline{9}$$

$$\underline{9} \times \underline{9} = 81$$

Answer Key

Challenge! Problem 2 shows 3 rows of 8 Two-Color Counters for a total of 24 counters. Write a fact family for the model shown. Write a fact family for the model you create from the 24 counters. Explain how the number 24 can have two different fact families.

Challenge: (Sample) The fact family 3, 8, and 24 have the following: $3 \times 8 = 24$; $8 \times 3 = 24$; $24 \div 8 = 3$; and $24 \div 3 = 8$. The fact family 4, 6, and 24 have the following: $4 \times 6 = 24$; $6 \times 4 = 24$; $24 \div 4 = 6$; and $24 \div 6 = 4$. The number 24 has more than one factor pair.

Name _____

Division Sentences	Multiplication Sentences