

Directions: Use the activities below to enable students to think about division in challenging and meaningful ways.

Ideas taken from:

Developing Number Sense in the Middle Grades, NCTM

Number Sense in the Middle Grades, Marilyn Burns

Writing Division Stories

Write a division story that follows two rules:

- It must end in a question.
- The question must be one that's possible to answer by dividing.

Solve your problem in as many ways as you can. Exchange papers and solve each other's problems.

17 Kings and 42 Elephants (Read the book by Margaret Mahy)

In this book, 17 kings go on a journey using 42 elephants. Your challenge is to figure out how 17 kings could divide up the work of taking care of 42 elephants. Explain your reasoning.

Remainders, Remainders

Write the solutions to $17 \div 4$ in appropriate ways for the following situations.

- Share 17 cookies among four children.
- Share 17 balloons among four children.
- Share \$17.00 among four children.
- Do $17 \div 4$ on a calculator.

Explain the reasons for your different answers.

Some Problems to Try:

1) No Dividing Allowed!

If $56 \overline{) 6916} \quad 123.5$ Then $56 \overline{) 6917}$

2) Just Use Your Brain Power—No pencil or paper!

The answer to...

$$624 \overline{) 24676}$$

is the same as the answer to...

$$312 \overline{) \quad \quad \quad}$$

3) Make up your own problem to share. Exchange with another group.

Sharing Candy

Find the numbers of candies that can be shared equally among two, three, four, five, and six people. Examine these lists and see what patterns you notice and which numbers appear on more than one list.

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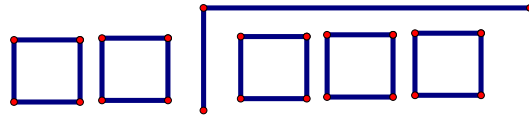
What patterns do you observe?

What divisibility rules could you make up using your patterns?

Finding the Largest Quotient

1) Pick 5 digits. Use the same five digits for both questions below.

- Arrange the digits in the division problem to produce the largest product possible. Write your solution below.



- How do you know you have the largest possible?
- Arrange the digits to produce the smallest product possible. Write your solution.
- How do you know you have the smallest possible?
- How many different quotients are possible using the five digits selected?

2) Try it with 5 different digits. Then write your method for dividing any three digit number by a two digit number to form the largest and smallest possible quotient?