Prime Time

Glossary

Abundant Number – A number with proper factors that add up to more than the number. Fox example, 24 is abundant, because its factors 1,2,3,4,6,8 and 12, add to 36.

Common Factor- A factor that two or more numbers share. 7 is a common factor of 14 and 35, 7 divides both numbers evenly.

Common Multiple – A multiple that two more numbers share, 7 & 5 are common multiples of 35, 70, 105 etc.

Composite Number – A whole number with factors other than itself and 1, a number that is not prime

Deficient Number – a whole number with proper factors that add to less than the number.

Factor – A number that divides another number evenly, such as 7 x 5 = 35, so both 7 and 5 are factors of 35.

Prime Number – A number with only two distinct factors, 1 and the number itself. 1 is not considered to be a prime number.

Proper Factors – All the factors of a number, except the number itself, For example, the proper factors of 8 are 1,2, and 4.

Square Number – The product of a number with itself. Examples of square numbers are 9, 16, 25 etc.

Web Resources

You will find the Factor Game and the Product Game at:

www.illuminations.nctm.org

Factor Game

Product Game

Everett Public Schools

Connected Mathematics Project

Everett Public Schools Mathematics Program

Prime Time

Factors and Multiples

Unit Goals:

- **Understand the relationships among factors, multiples, divisors, and products**
- **Recognize that factors come in pairs**
- **Fundamental Theorem of Arithmetic – any number can be written in exactly one way as a factor of its primes**
- **Recognize situations in which problems can be solved by finding factors and multiples**

Proposed Time Frame:
Approximately 6 weeks

Mathematics in Investigations

investigation 1 The Factor Game

* Classify numbers as prime and composite
* Recognize factor pairs (2x3=6)
* Discover the connection between dividing and finding factors of a number

Investigation 2 The Product Game

* Review multiplication facts
* Develop relationship between factors and multiples

Investigation 3 Factor Pairs

* Recognize that factors come in pairs (The factor pairs of 8 are 1 and 8 and 2 and 4)
* Represent factor pairs as the dimensions of a rectangle
* Determine whether a number is prime or composite

Investigation 4 Common Factors and Multiples

* Recognize a number may have several different factorizations
* Use different strategies for finding the prime factorization of a number
* Recognize primes as the building blocks of whole numbers

Tips for Helping at Home

Good questions and good listening will help children make sense of mathematics and build self-confidence. A good question opens up a problem and supports different ways of thinking about it. Here are some questions you might try, notice that none of them can be answered with a simple "yes" or "no".

Getting Started

* What do you need to find out?
* What do you need to know?
* What terms do you understand or not understand?

While Working

* How can you organize the information?
* Do you see any patterns or relationships that will help solve this?
* What would happen if…?

Reflecting about the Solution

* How do you know your answer is reasonable?
* Has the question been answered?
* Can you explain it another way?

At Home:

1 Talk with your child about what's going on in mathematics class.

2 Look for ways to link mathematical learning to daily activities. Encourage your child to figure out the amounts for halving a recipe, estimating gas mileage, or figuring a restaurant tip.

3 Encourage your child to schedule a regular time for homework and provide a comfortable place for their study, free from distractions.

4 Monitor your child's homework on a regular basis by looking at one problem or asking your child to briefly describe the focus of the homework. When your child asks for help, work with them instead of doing the problem for them.

At School

1 Attend Open House, Back to School Night, and after school events.

2 Join the parent-teacher organization

Connected Mathematics Project

Phone: 425-385-4062
Fax: 425-385-4092
Email: mstine@everett.wednet.edu