Class Starters & Enders

Making the Most of Instructional Time
Five Minute Lessons

Class Starters and Enders help utilize the last minutes of class when a lesson ends but there is not enough time to start another, or for an interest approach at the beginning of class. Mini-lessons correlate to GPS in the programs areas below.

Mother's Milk: Colostrum

Program Areas: Healthcare, Agriculture, and Biotechnology

Instructions: Read the material and make notes of important points, answer questions, and be ready to discuss this topic.

Colostrum is a nutritional type of milk produced by mammals in the late stages of pregnancy. This thick and sticky substance is produced in the mammary glands of a mother 1-2 days before giving birth. It is important that newborn mammals nurse to receive colostrum shortly after birth. Colostrum provides resistance towards disease, and helps in the formation of the digestive tract. Colostrum supplements are used by both athletes and others hoping to increase health and build muscle.

Colostrum plays a very important role in the first 24 hours of life for mammals. Colostrum is full of **antibodies** and **immunoglobins** used in the prevention of diseases. A major source of colostrum, or at least in the greatest amount, is from cows that have just given birth. A calf should consume colostrum in the first 12 hours of its life in order for it to be most effective. This is similar in most other mammals as well. After about 12 hours a calf's digestive system will not be able to utilize colostrum.

Although colostrum is mostly used in the cattle industry, humans also produce this milk for their newborns. Having very tiny digestive systems, newborns need all the help they can get in producing their first bowel movements and building up disease immunity. Since colostrum has a somewhat laxative effect on the body, it aids a newborn in the passing of **meconium**, or its first **stool**. Infants receive the first milk in a very small but concentrated amount. Just as in cattle, human colostrum contains immunoglobins that help strengthen the immune and digestive systems.

Babies tend to thrive more when fed a diet of human colostrum and milk rather than commercial formulas. Growth promoters present in colostrum help infants adjust to oral feedings and maintain their digestive tracts.

In some cases, **bovine** (cattle) colostrum supplements are used for human consumption. Most people that decide to ingest colostrum do so in hopes of preventing diseases and to fight infections. Athletes also take colostrum to help improve their performance and prevent contracting illnesses during the season. These supplements come in forms that include capsules, powder, muscle drinks, and tablets.

Review

1. What are antibodies and immunoglobins used for?
2. From what animal do we obtain the most colostrum?
3. How does colostrum help a newborn child's digestive system?
4. Why do people take bovine colostrum supplements?
5. Why do athletes take colostrum?
6. What is meconium?
7. Where in the body is colostrum produced?
8. T/F. Mothers produce colostrum for only a short time after giving birth.
9. T/F. Babies tend to thrive more when fed colostrum and milk rather than commercial formulas.
10. T/F Mammals nurse their young and produce colostrum.

Language Connection

Define the following terms:

antibodies	bovine	colostrum
immunoglobins	meconium	stool

Science Connection

Research medicines or products obtained from animals that are used to help prevent/treat human diseases.

History Connection

Research the ways in which colostrum was used before antibiotics were introduced.

Georgia CTAE Resource Network - Written by Morgan Blacklock and Frank B. Flanders, Ed.D.