

## **00-000-00, CCNE: What's the difference between cow's milk, goat's milk, formula, and breast milk?**

Client-centered nutrition education uses methods like group discussions and hands-on activities to engage participants in learning. This outline starts with a **Snapshot of the Session**, and then includes two parts:

**Part 1: Planning the Nutrition Education Session** - The first section prompts the nutrition educator to think about the learning objectives, materials, and preparation necessary to carry out the session.

**Part 2: Session Outline** - The second section outlines the key parts of the session. The nutrition educator uses this outline to lead the session.

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### **Snapshot of Group Session:**

**CCNE Lesson title:** What's the difference between cow's milk, goat's milk, formula, and breast milk?

**Developed by:** Dietetic Intern

**Date Developed:** October/2012

**Approved by:**

**NE Code:**

**Class Description:** This class is designed to inform mothers' about the differences between cow's milk, goat's milk, formula, and breast milk.

**Target Audience:** Pregnant adults

**Type of Learning Activities:** Discussion, Handouts

## Part 1: Planning the Nutrition Education Session

**Lesson:** Type lesson code and title here.

Item	Notes for Planning the Session
<p><b>Learning Objective(s)</b> – <i>What will the clients gain from the class?</i></p>	<p>By the end of the session, participants will:</p> <ul style="list-style-type: none"> <li>• Be able to recognize the primary differences between goat’s milk, cow’s milk, breast milk and formula.</li> <li>• Identify the benefits of breastfeeding.</li> </ul>
<p><b>Key Content Points</b> – <i>What key information do the learners need to know to achieve the learning objective(s)? Aim for three main points.</i></p>	<ol style="list-style-type: none"> <li>1. Mother’s should understand that cow’s milk, goat’s milk, breast milk and formula are all different.</li> <li>2. Breast milk contains everything the infant needs.</li> <li>3. Mother’s should recognize that breastfeeding is the most beneficial for her and the child.</li> </ol>
<p><b>Materials</b> – <i>List what you will need for the session (i.e. visual aids, handouts, supplies). Attach supplemental materials.</i></p>	<ul style="list-style-type: none"> <li>• Handout (Nutrient Comparison of Milks’ &amp; Formula)</li> <li>• Pens/pencils</li> <li>• Blank paper for each participant for brainstorming</li> </ul>
<p><b>Resources</b> – <i>Review current WIC resources or other reliable resources like WIC Works.</i></p>	<ul style="list-style-type: none"> <li>• Breastfeeding Promotion and Support Module. Stock No. 13-27-1 English</li> <li>• Nutrient Comparison of Milks’ &amp; Formula</li> </ul>

***Class Flow & Set Up*** –  
*Consider the flow of the session & room set-up. Note any extra preparation that may be needed.*

If class is large enough, chairs can be arranged in a circle to help engage each participant in the discussion. As the instructor, sit in one of the chairs.

## Part 2: Session Outline

**Lesson:** Type lesson code and title here.

Item	Notes for Conducting the Session
<p><b>Introduction:</b> Create a respectful and accepting learning environment by welcoming participants, introducing yourself, reviewing agenda, exploring ground rules, making announcements, etc.</p>	<p>Greet and welcome the participants as they enter the classroom and give them the Nutrient Comparison of Milks' &amp; Formula handout. Make them feel comfortable. Once it is time to begin, introduce yourself, your position, and then the class by stating:</p> <p>“Hello everyone, my name is _____ and I am a _____. Our class today will be about learning the differences between cow’s milk, goat’s milk, breast milk and formula. Without any knowledge on the different types of milk, it might be confusing for you to understand what is different about each one and what is best for you and your child. No worries, we will address this today by discussing each one and reviewing the Nutrient Comparison of Milks' &amp; Formula handout I gave you. If you have any questions along the way, feel free to ask me at any time.”</p>
<p><b>Icebreaker:</b> Anchor the topic to the participants’ lives. Use a question or activity likely to bring out positive but brief comments; Can be done as a group or partners.</p>	<p>Have each participant introduce themselves, and have them state something that they would like to learn today.</p> <p>On a piece of paper, write down what their questions are so that you can address it during the class or after class.</p>
<p><b>Activities:</b> For each learning activity, list instructions and include three to five open-ended discussion questions. Keep in mind that activities should enable participants to meet the learning objectives.</p>	<p><b>DISCUSSION:</b> Start the class with a discussion by asking an open-ended question to encourage verbal participation.</p> <p>Ask the class:</p> <ul style="list-style-type: none"> <li>• “Can someone give an example of something that is different between cow’s milk, goat’s milk, breast milk or formula?”</li> </ul> <p>Inform participants that milk from cows, goats and humans are all different because they are designed for what each specie needs, and each specie has different needs.</p> <p>For each following activity, the participants will need their pen/pencil and paper for brainstorming. Before starting the first activity, have them draw a line vertically down the center of the paper and horizontally across the paper to create 4 quadrants. Have them do the same thing on the</p>

Item	Notes for Conducting the Session
	<p>backside of the paper.</p> <p><b>ACTIVITY ONE: COW'S MILK</b></p> <ul style="list-style-type: none"><li>• In one quadrant, have the participants brainstorm and write down a few things that they think makes cow's milk different from other milks or formulas. Give them a few minutes to do this.</li><li>• Then, teach them about cow's milk and review the handout with them.</li><li>• Lower in carbohydrate in comparison to human, protein consists of 20% whey and 80% casein (casein forms a tough curd, which is harder for infant to digest)</li></ul> <p><b>ACTIVITY TWO: GOAT'S MILK</b></p> <ul style="list-style-type: none"><li>• In the next quadrant, have the participants brainstorm and write down a few things that they think makes goat's milk different from other milks or formulas. Give them a few minutes to do this.</li><li>• Then, teach them about goat's milk and review the handout with them.</li><li>• Not commonly used anymore, higher in protein, lower in carbohydrates, lower in cholesterol</li></ul> <p><b>ACTIVITY THREE: FORMULA</b></p> <ul style="list-style-type: none"><li>• In the next quadrant, have the participants brainstorm and write down a few things that they think makes formula different from mammalian milk. Give them a few minutes to do this.</li><li>• Then, teach them about formula and review the handout with them.</li><li>• Made from cow's milk or soy milk with additional sugars, fats, vitamins and minerals. Contains no cholesterol (important for brain and nerve development), recently added long-chain fatty acids, no lactose (most common sugar in breast milk) in soy based formulas, cow's milk formula harder to digest since it's primarily casein protein (tough curd, harder to digest and causes larger stools).</li></ul> <p><b>ACTIVITY FOUR: BREAST MILK</b></p>

Item	Notes for Conducting the Session
	<ul style="list-style-type: none"> <li>• In the next quadrant, have the participants brainstorm and write down a few things that they think makes breast milk differ from other milks. Give them a few minutes to do this.</li> <li>• Then, teach them about breast milk and review the handout with them.</li> <li>• Colostrum – first stage of lactation, then change to transitional (week after birth). High in fat, protein, fat-soluble vitamins, and all antibodies needed for baby. Then mature milk comes.</li> <li>• Mature – more diluted than colostrum. Foremilk is released at the beginning of feeding and then hindmilk is released which is creamier, and higher in fat and calories.</li> <li>• High in cholesterol (needed for brain and nerve development), and high in carbohydrate, primarily lactose, to aid in growth (much higher than cow and goat milk). Lactose also helps absorb calcium, iron and promotes good gut bacteria growth, which inhibits growth of parasites, bacteria and fungi. Contains long chain-fatty acids for retinal and brain development. Protein is made of about 60% whey and 40% casein (higher amount of whey compared to casein which helps with digestion since they form smaller curds). Generally provides all vitamins and minerals the infant needs. Minerals and fat-soluble vitamins (A, D, E and K) not typically affected by mother’s diet. Water-soluble vitamins (Bs’ and C) are partially affected by mother’s diet. Contains antibodies that are provided to the infant through mother’s breast milk (IgA, IgD, IgE, IgG, IgM), which protect the infant and fight against harmful bacteria and disease. Breastfed infants produce more antibodies in response to immunizations. Has living cells that offer protection: leukocytes – white blood cells that fight infection, macrophages – makes lysozyme which kills bacteria, and macrophages activate lymphocytes which make antibodies, kill infected cells, and make the immune system stronger. Contains oligosaccharides (simple sugar chain) which excrete bacteria by binding with it, and lactoferrin (protein) which binds with iron and prevents bacteria from binding with it. Contains free fatty acids which damage virus membranes, and fibronectin which reduces inflammation.</li> </ul> <p><b>ACTIVITY FIVE: WHAT IS THE BEST CHOICE?</b></p>

Item	Notes for Conducting the Session
	<ul style="list-style-type: none"> <li>Now that you have taught the class about the differences between cow's milk, goat's milk, formula and breast milk, have the participants turn their page over (there should be 4 empty quadrants that they drew earlier). Have them label each quadrant with cow, goat, formula and human. Then, they should write down something they learned today about each one. While they are doing this, also have them circle which milk option they think is the best for them and their child, and why it's the best option. Give them plenty of time to think about this.</li> </ul>
<p><b>Review and Evaluations:</b>  <i>Invite participants to summarize the key points and share how they will use what they learned in the future. List a question/activity to prompt this. List any community or other resources for clients.</i></p>	<p>Ask the class as a whole to look back on the discussion today. Then, ask them to tell you 5 things that they learned. Conclude the class by briefly reminding them that all milk is different, but breast milk is natural, is beneficial to the mom and baby, and provides everything the baby needs to grow and develop.</p> <p>Welcome any questions or concerns the participants might have.</p>
<p><b>Personal Review of Session (afterward):</b> <i>Take a few moments to evaluate the class. What will you change?</i></p>	<p><b>What went well?</b></p> <p><b>What did not go as well?</b></p> <p><b>What will you do the same way the next time you give this class?</b></p>
<p><b>Supplemental Information –</b>  <i>Describe any attachments and include any other needed information.</i></p>	<p>If any mother has further questions and wants to breastfeed, encourage them to talk to a breastfeeding counselor at their WIC clinic, and provide them with any handouts on breastfeeding that are available.</p>

<b>Nutrient Comparison of Milks' &amp; Formula</b>					
<b>Nutrient</b>	<b>Cow's Milk</b>	<b>Goat's Milk</b>	<b>Formula</b>	<b>Human Colostrum</b>	<b>Human Milk</b>
<b>Calories</b>	19	21	20		20
<b>Fat</b>	3.4	4.2	3.8	2.9	3.5
<b>Cholesterol</b>	14	0.82	0	29	14
<b>Carbohydrates</b>	4.8	4.5	6.9	6.5	7.3
<b>Protein</b>	3.3	3.6	1.5	3-1.3	1.3
<b>Calcium</b>	130	134	52	26-39	18-26
<b>Iron</b>	0.07	0.07	0.16-1.8	0.07	0.03-0.06
<b>Magnesium</b>	13	14	7	3.6	2.8-3.3
<b>Phosphorous</b>	120	111	35	12	14-16
<b>Potassium</b>	138	204	72	71	44-54
<b>Sodium</b>	49	50	18	41	11-13
<b>Zinc</b>	0.38	0.30	0.78	0.8-7.5	0.04-0.2