Names of group members: _____

Life or Death Food Decision

As we know, based on the "10 percent rule", about 90% of food energy in ecosystems is never transferred from one feeding level to the next. The ten percent rule of energy ability has an impact on survival.

Imagine you and two friends are shipwrecked on an island. You want to survive as long as possible, and it could be over a year before help arrives! Here are some details about your imaginary situation:

- The only food you have is 1 dairy cow and a thousand pounds of grain.
- It is not possible to plant anything (so no food crops will be available in the future).
- Seafood is not an option.
- There is no grass or hay on the island for the dairy cow to eat.
- There is plenty of clean, fresh water.
- There is enough firewood for cooking your meals.

Your assignment: Work in small groups to come up with a strategy that will maximize the number of days you can survive. Fill in the chart on the next page as you evaluate your options.

NOTE: The students will need to come to a consensus within their groups. If there are 5 or 6 students in each group the odds are higher that there will be differences in opinion, which in turn will stimulate more meaningful discussion.

Options	Pros	Cons	Good survival choice? (Y/N)
Let the cow eat a portion of the grain. Meanwhile, drink the cow's milk and your portion of the grain. When the cow has finished its grain, eat the cow.	You'll have a happy cow…(but only for a while).	If the cow eats grain, only about 10% of the energy from the grain will turn into meat. The will mean fewer days of food ahead.	N
Drink the milk and then kill the cow immediately. Then spend the rest of the time on the island eating meat and grain.	You'll get some calories from the milk, which will give you energy as you're preparing the meat. You won't waste any of the grain's energy on the cow. The cow will be sacrificed right away, so it will not suffer for long.	If you're a vegetarian, you may not be happy about sacrificing the cow. Also, you have to figure out some way to preserve most of the meat. (HINT: Hang it up to dry. Beef jerky and boiled grain will see you through a lot of days!)	Y
Don't feed the cow anything. Drink the cow's milk first, eat the cow next (when milk production stops), and then eat the grain.	You won't waste any of the grain's energy on the cow. You will get energy from the milk (but only for a few days).	The cow will suffer from hunger. Also, the cow's milk production will decline rapidly since she's not being fed. She'll lose weight so you will have fewer meat calories, but you'll have calories from the milk.	Y
First feed all the grain to the cow, and drink the cow's milk. Then, after you run out of grain and the cow stops producing milk, eat the cow.	If you're squeamish about killing the cow, and you think a rescue ship will come right away, you'll feel better about your decision (but our job is to MAXIMIZE our survival time!)	If the cow eats grain, only about 10% of the energy from the grain will turn into meat. This will mean fewer days of food ahead.	N
Eat the grain first, and then eat the cow.	If each person eats 2 pounds of grain a day, 1000 pounds of grain will last 3 people about 167 days.	The cow will suffer and die while you're eating the grain.	N