Pregnancy and parturition (delivery) can be a stressful time for a mother cat (queen) – especially if she's never been through it before. Sometimes a queen will reject a kitten, or even a whole litter, due to shock or some other psychological problem. Or the queen may have been killed by a car or some other reason, leaving the kittens on their own. It is these times when someone must taken over the responsibility of raising the orphaned kittens. Some shelters may have individuals

that take infants to foster at their own homes. However, by the spring and summertime, most shelters have already reached their capacity and there is no one left to take the kittens. Raising orphans kittens takes a lot of time and effort, but it's such a rewarding experience to watch the little baby grow up into a beautiful cat, knowing it was you who saved its life.

Materials Needed

- Box suitable for the kitten (or the litter), with tall sides and warm, comfortable lining
- KMR® (kitten milk replacer), available at veterinary hospitals or pet stores
- Small nursing bottle and nipple, available at pet stores
- Syringes (for precise measuring), available at veterinary hospitals
- Cotton balls or pieces of soft cloth material
- Pedialyte®, available at grocery stores
- Karo® syrup, available at grocery stores
- Full fat plain yogurt
- Small flea comb



A clean, strong cardboard box or a clear-plastic tub can be used. Make sure the sides are tall enough that the kitten won't be able to climb out and get lost or injured when she starts moving around more. Line the box with comfy towels and drape one over the top to trap warm air inside for a cozy environment (but make sure the kitten can still get fresh air). Place the box in a draft-free place and out of direct air-flow from heating/air-conditioning vents.



Your first priority should be to keep the kitten warm. Newborns younger than 10 days lack the shiver reflex and will lose body heat very rapidly. A normal kitten's rectal temperature will range from 95° - 99°F for the first week, 97° - 100°F for the second and third weeks, and will then reach a normal adult temperature of 100° - 102°F by the fourth week. You can provide constant heat with an incubator, or if that's not available, you can use hot water bottles, dryer-warmed towels, or a micro-waved tube sock containing uncooked white rice, all of which must be re-heated every 2 – 3 hours. Do NOT use electric heating pads as these can (and probably will) burn the kitten's delicate skin. An ideal sleeping area is between 85° - 88°F for the first 3 weeks, then 79°F thereafter. A chilled kitten will likely die from accompanying metabolic problems related to the heat loss. You must warm a chilled kitten SLOWLY (too rapid warming can result in death). A chilled kitten will also most likely be dehydrated.

Dehydration

Kittens need a regular liquid intake to prevent dehydration. Two signs of dehydration are the loss of skin turgor (elasticity) and tacky/dry mucous membranes (like the gums) in the mouth. A severely dehydrated kitten will probably refuse to nurse and will need to be rehydrated by a veterinarian.

Hypoglycemia (low blood sugar)

Glucose is the form of sugar found within the bloodstream and used for energy. Glucose is formed during the digestion of foods and is stored within the liver. Most instances of low blood sugar (hypoglycemia) in a kitten are the result of inadequate nutrition; either not enough or poor quality (undigestible) food. Kittens with hypoglycemia will lack energy and seem lethargic or listless. Glucose is fuel for the body and without it, the kitten will have no energy for metabolic functions. In severe instances, the kitten may seizure or go unconscious (and possibly die) because the brain tissue and muscles needs glucose to function. If a kitten is hypoglycemic, it is imperative to immediately provide it with sugar – Karo® syrup or honey are excellent sources. It can be applied directly to the gums for absorption, or mixed with formula during a meal. If the kitten fails to respond to the sugar, or if hypoglycemia episodes are frequent, there could be a more serious problem with the liver, and the kitten should be seen by a veterinarian.

Mealtime

If this little kitten was hypothermic (abnormally-low body temperature) and in shock when you found him, you should only give him children's Pedialyte® (or an equivalent) for the first two hours, until he warms up. Then switch to kitten formula (KMR®). If you are using children's Pedialyte®, dilute it half and half with water that has been boiled and cooled. Feed

1mL every half an hour for the first two hours using a dropper or feeding syringe. Also make sure your kitten is on his tummy and not his back when you feed (to avoid choking). Feed very slowly so the fluid does not go down the windpipe and choke your kitten. After two hours, if your kitten has warmed up, you can begin to feed him the formula. Never feed a kitten cow's milk or human baby formula because cats cannot digest the proteins in either of these diets, causing stomach upset and severe diarrhea. Use KMR® (kitten milk replacer) mixed according to the directions on the container. Add ¼ teaspoon of full fat yogurt to the first bottle of each day. This will aid in your kitten's digestion.

Feeding Techniques

First, prepare the nursing bottle for proper feeding. You will need to cut a small X in the tip of the nipple to allow the formula to flow through when the kitten suckles. If you tip the bottle upside down and formula only comes out after considerable squeezing, the hole is too small (and the kitten won't be able to feed and may refuse to nurse after becoming discouraged). If the formula drips quickly from the nipple, the hole is too large (and it may choke the kitten). The hole is the correct size when the formula slowly drips from the nipple while upside down.

Make the KMR® formula according to the mixing directions on the container. For weak kittens, add a little Karo® syrup to the formula (to give the kitten extra glucose). Warm the formula to body temperature by removing the nipple and microwaving it for a few seconds. Shake the bottle well to evenly distribute the warmed formula and get rid of any hot spots. Check the temperature – it should be warm (never hot). Do not reuse formula that you have previously warmed – always mix fresh formula for each feeding. Add ¼ teaspoon of full fat yogurt to the first bottle feeding of the day to aid in the kitten's digestion.

To start feeding, place the kitten on its belly on a warm, cozy towel or blanket. Tilt the bottle so the formula fills the nipple and touch it to the kitten's mouth. He may start suckling right away, but some kittens may need encouragement. You can put a small dab of Karo® syrup in his mouth with your finger to stimulate suckling. Never squeeze formula into the kitten's mouth or you may choke him.

Feed the kitten until he is comfortably full – not until his belly is tight and distended. When he's full, small bubbles of formula will form around his mouth and he'll spit out the nipple. You'll need to burp him like a human baby to expel excess gas and prevent gastric pain and upset. Hold him on your chest, lap or shoulder and gently rub or tap his back with two fingers until he burps.

Some kittens are too weak to nurse and will need to be tube fed. If you've never done this before, don't try. Consult your veterinarian for instructions.

Kitten Feeding Schedule

Birth – 1 week = every 3 hours (8 times per day) 1 – 3 weeks = every 4 hours (6 times per day) 3 – 4 weeks = every 5 hours (5 times per day) 4 – 5 weeks = 4 – 5 times per day

Daily Feeding Requirements

Birth – 1 week = 24mL per day
1 week = 32mL per day
2 weeks = 54mL per day
3 weeks = 80mL per day
4 weeks = 104mL per day
5 weeks = 128mL per day

For example, a 2 day old kitten requires 24mL of formula divided into 8 feedings, equaling 3mL per feeding (24 / 8 = 3). In general, the kitten will need about 8mL per ounce of body weight per day.



Keeping Good Records

After every feeding, keep a record of how much the kitten has taken. This will help work out whether he's getting enough throughout the day. Also, keep track of his development by weighing him at the same time every day using a small kitchen scale (or something similar to record small increments). Keeping track of his weight will help you identify any weight loss or potential problems quickly. Also, your doctor will be glad you kept these records in case any problems arise down the line.

Approximate Kitten Weight Chart **

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Birth = approx. 3 oz. (0.25 lb)

1 week = approx. 4 oz. (0.25 lb)

2 weeks = approx. 7 oz. (0.5 lb)

3 weeks = approx. 10 oz. (0.5 lb)

4 weeks = approx. 13 oz. (0.75 lb)

5 weeks = approx. 16 oz. (1 lb)

8 weeks = approx. 2.5 lbs.
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Kitten Hygiene

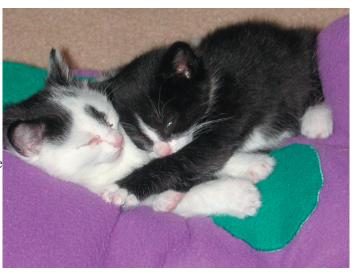
Kittens that were not able to nurse the queen in the first few days following birth, missed out on the antibody-packed milk called colostrum. Colostrum provides kittens with a passive immunity to many diseases until about 6-8 weeks of age. Kittens who did not receive any colostrum, are more susceptible to disease. Therefore, extra care must be taken to ensure a clean environment for the kitten to grow.

Keep the kitten isolated from other animals or children in the house until he's older. Wash your hands thoroughly both before and after handling the kitten. Wash and change the kitten's bedding material frequently. Wash the nursing bottle with warm soapy water after each use (formula left in the bottle will rapidly grow bacteria, possibly infecting your kitten). Keep all your supplies together in a container so when you need to get up in the middle of the night to feed the kitten, everything you need is easily accessible.

Kittens need to be manually stimulated to eliminate urine and feces. Usually, the queen would lick the kitten's belly and genitals to stimulate him to go, therefore, you will need to do it for him after each meal. There are a few different ways you can do this. The first, using a wetted, warm cotton ball or piece of cloth and gently stroking the kitten's belly and anal area while he is on the floor on a towel. You can also hold him over a sink and stimulate him the same way. Keep stimulating him until he finishes eliminating (but know when to stop or you may make the delicate skin raw). Normal stools are a toothpaste-like consistency and are a yellow-mustard color. If the kitten has diarrhea, you may be overfeeding him or the formula may be too rich (try diluting it with water). Don't worry if the kitten isn't having stool after every feeding or even every day. Kittens will start to eliminate on their own by 2 to 3 weeks of age.

If you are fostering more than one kitten at a time, the littermates may start suckling on the other kittens' genitals. This tends to alarm people if they've never experienced it before, but it's actually common behavior seen in young kittens. It's important that it is not allowed to continue – the genitals of the kittens being suckled on may become damaged, or the kittens doing the suckling may ingest urine or feces and become very ill. Never separate the kittens – they need the continued closeness and warmth of their siblings. Instead, try giving them something else to suckle (like a balled-up piece of cloth dipped in warm water and honey, or a small stuffed animal or blanket). The kittens may also be suckling the other kittens because they are hungry, so try feeding more at each meal.

If, at any point, the kitten appears to have fleas, consult your veterinarian about the appropriate treatment for the age of your kitten.



^{**} All these weights are approximate. Your kitten may be slightly over or under weight and still be perfectly healthy. If you have any concerns, or if the kitten just doesn't seem "right", consult your doctor.



Stages of Kittenhood

Birth to 2 weeks

For the first week of life, the kitten's main activities include eating and sleeping. The eyes and ears are still closed at this point but he can crawl a little. The remnants of the umbilical cord will fall off around 3 days old. After it falls off, monitor the area carefully for infection (swelling, redness, or discharge) – use a small amount of antiseptic on a cotton swab to dab the area. Kittens under 10 days old cannot regulate their own body temperature so they must be kept warm to avoid chilling (see *Keeping the Kitten Warm* area of this guide for details). They will develop the shiver reflex after about 10 days and will be able to better regulate themselves. Between 5 and 10 days of age, the eyes and ears will begin to open (interesting fact – all kittens eyes are blue, they will change to their permanent color later). Keep the kitten out of bright light and away from loud sounds.

2 to 3 weeks

The kitten should be able to see and hear everything around him now. His vocal range will start to develop as well (mewling, hissing and purring). He will start to explore his box by walking short distances so be sure he cannot fall out of it. The kitten will start to eliminate on his own now. He will begin teething, and his eyes will start changing to their permanent color. The socialization window is now open so begin introducing him to other people and animals (as long as they're healthy).

4 to 5 weeks

Kittens have pretty much mastered walking and will start running in short bursts. They are also developing basic instinctual responses such as arching the back when startled. The meow will become more pronounced. It's also time to start litter training the kitten. Use a shallow container with low sides and a small amount of clumping (sand-like) litter. Kittens usually learn how to dig, squat, and bury by watching their mothers do it, but now you must point him in the right direction. Set him in the box and use one of his front paws to gently dig in the litter. If you have another cat, he may learn better by watching them do it (kittens learn best by example). At first, he may play in the box and have a few accidents, but they eventually get the general idea. He'll use it most after waking up, after eating meals, and after playtimes. The kitten may not cover his waste at first, but some cats never learn to do this. Also, it's time to start weaning the little guy onto semi-solid food.

Weaning

This is a hard thing for a kitten who has become accustomed to bottle feeding, and he may be reluctant to give it up at first. Start with putting a little formula mixed with canned kitten food (so it's a milkshake-type consistency) in a shallow saucer. Don't forget to warm it up a little. Try to get the kitten to lick it off your finger (to teach him to lick it out of the saucer). Once he's eating out of the saucer, decrease the amount of formula until he's just eating the canned kitten food. Some kittens go right from the bottle to eating dry kitten food, so make sure and offer that as

well. During the weaning process, the kitten may walk through his food and make an almighty mess with it – this is a natural act of kitten curiosity with his new food. Put newspaper or pads under the plates to keep the mess to a minimum. Don't forget to offer a small bowl of fresh water everyday. If you think he's eating but not drinking, you may syringe water into his mouth a few times a day until he starts drinking on his own.

6 to 7 weeks

At 6 weeks old, he should make his first visit to the veterinarian. If he had any colostrum from his mother after birth, his passive immunity will start to wear off now. He may receive his first feline





distemper vaccine at this age, depending on your hospital's vaccination protocol. The kitten should be completely weaning and eating from a bowl by 7 weeks old. He will be running and playing well now. He will also start to learn basic hunting and stalking moves, especially if he has another cat to play with. Toys start to become very fun – but avoid any string, yarn, or small pieces that the kitten may swallow. Remember, kittens are very curious and will use their mouths to explore new objects, just like human babies. Continue socializing the kitten by carrying him around, turning him over on his back, grooming him, talking to him or petting him while he's eating, and examining his ears, mouth, and under his tail. The more different situations he is exposed to now will increase his ability to cope with new things later on.

8 weeks

If you aren't planning on keeping the kitten, he can be placed in a new home now. Kittens reared by their mothers should stay with her until 10-12 weeks of age, but hand-raised kittens can go between 8-9 weeks. He will receive another distemper vaccine (or his first now, depending on the protocol), and should also be tested for feline leukemia and FIV

There are few things more rewarding than hand-raising a newborn kitten. The information in this guide should not replace or override your veterinarian's recommendations – it is meant as a general guideline for hand-raising kittens. If, at any point, your kitten doesn't seem "right", consult your veterinarian.

Conversion Chart

1 mL (milliliter) = 1 cc (cubic centimeter) 1 mL (milliliter) = approx. 0.03 fluid oz. 1 fluid oz. = 28 mL 1 oz. (ounce) = approx. 28 grams 1 gram = approx. 0.03 oz. (ounces)

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