

Bottle-Feeding & Care of Orphaned Kittens

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Should You Take These Kittens In?

Mom is *always* best! Is there a foster mom available? *Anywhere?*

Determine the Age of the Kittens

- Newborns should weigh about 100 grams (3.5 ounces) at birth. Weighing less than 3 ounces greatly increases the chance the kitten will not survive.
- Umbilical cord stump falls off by 3 days after birth.
- Kittens get their front teeth first at 3–4 weeks of age and then their back teeth at 5–6 weeks.
- Kitten Development Photos: www.boutiquekittens.com/kitten-development

Just Born

- At birth, kittens are both blind and deaf
- Cannot urinate or defecate on their own (until 4 weeks)
- Umbilical cord may still be attached

One Week

- Eyes closed
- Ears folded over
- Cannot walk
- Sleep 90% of time, nurse 10% of time

Two Weeks

- Eyes begin to open at around 10 days
- Eyes are blue
- Ears open and stand up
- Begin to crawl
- Start to knead

Three Weeks

- True eye color may start to appear
- Eyesight improves
- Kitten takes first steps (wobbly, frequent tumbles)
- Start to cut baby teeth (kittens get their front teeth first at 3–4 weeks)

Four Weeks

- Kittens get their front teeth first at 3–4 weeks
- Can urinate and defecate without help (you should begin litter box training)
- Start weaning process
- Explores environment
- Plays with littermates
- Learns to dig
- Rolls over and can get back up

Five Weeks

- Baby teeth are in (kittens get their back teeth at 5–6 weeks)
- Weaning and learning to nibble solid food

Getting Ready

Supplies You Will Need

For the nest:

- Large carrier or cardboard box(es) for nest
- Heating pad or SnuggleSafe microwavable pads
- Heartbeat simulator (stuffed animal with heartbeat or alarm clock or watch that ticks) — look for SnuggleKitties with heartbeat *and* heater! www.snuggleme.com

Have extras of these items, as they will need to be changed or discarded often:

- Towels to put on top of heat source (2 at a time)
- Baby blanket for kittens to burrow in
- Soft towels (no loops)
- Wash cloths (no loops)
- Paper towels or gauze pads (for elimination)

Other supplies needed:

- Commercial kitten milk replacer (recommended brand and type: KMR Powder)
- Nursing bottles and nipples (recommended brand: Four Paws, available at Petland)
- Bottle brush
- Small whisk
- Small funnel
- Ear or digital thermometer for kittens
- Thermometer for formula
- Vaseline jelly, K-Y jelly
- Kitchen (food) scale, available at hardware store, Bed, Bath & Beyond, or Weight Watchers
- Non-clumping cat litter or shredded newspaper
- Hand sanitizer
- Bleach
- List of important phone numbers
- Charts and pens
- Books, articles, and DVDs

You may need:

- Stuffed animal (company for a single kitten)
- Unflavored Pedialyte electrolyte replacement solution
- Karo syrup (never use sugar)

Prepare a Warm, Dry Nest

Keeping warm is the *most* important thing for newborn kittens — even more important than food! If you know in advance when the kittens are coming, buy or gather the needed supplies and prepare the nest in advance of their arrival.

- Bleach carrier with a solution of 1 part bleach to 10 parts water. Rinse and dry thoroughly.
- Never mix bleach in the same room as the kittens (or any other pets) and never use a spray bottle of bleach solution in the same room as the animals.
- Kittens need room (nest) temperature around 90° F from birth to 1 week, around 80–85° F from 1 week to 1 month, then 75° F after 1 month of age.
- Heating pad: Set on *low*, do *not* cover holes on sides of carrier.

- Be *very* careful with heating pads — even brand new ones have been known to run too hot and cause burns.
- You can also use a SnuggleSafe disk or hot water bottle.
- You can use a heavy sock with some uncooked dry rice in it, microwaved for 60 seconds (stays warm for 2–3 hours).
- Place 2 towels on top of the heating pad or other heating source.
- Place a baby blanket in the nest for the kittens to burrow in.
- Leave half of the nest empty, so the kittens can get away from the source of the heat.
- Never leave a heating pad plugged in while you are out of the house. Do *not* use a cheap extension cord or allow cord to curl (these are fire hazards).
- Do *not* place anything on top of the kittens.

Assess the Health of the Kittens

Healthy kittens cry just a little, squirm around a bit, eat a lot, sleep a lot, and gain weight. Sick kittens are inactive, cry a lot, may not eat much, and just look “not quite right.” When in doubt, see a veterinarian. Kittens do not have a lot of “reserves” and can become very ill very fast!

Major Threats to the Health of Newborn Kittens

Hypothermia, Dehydration, Diarrhea, Hypoglycemia, Flea Anemia

Hypothermia (Chilling):

- *Important: Never feed a cold kitten!*
- How to tell: pads of feet and/or ears feel cool or cold. Put your finger in the kitten’s mouth, if it feels cold, then the kitten’s temperature is too low. This is life-threatening and must be dealt with immediately.
- Warm up hypothermic kittens slowly over 1–2 hours. Wrap the kitten in a towel, hold it close to your body, and keep rubbing it. Check the temperature again with your finger.
- Don’t warm up too fast, wait until body temperature regulates itself.
- Put Vaseline on rectal thermometer before inserting it. Use caution — you can puncture rectum.
- Digital thermometers will beep when done (temperature has registered).
- Rectal temperatures:
 - Newborn kitten: 97–99° F
 - By Week 2: 98–100° F
 - By Week 4: 100–102°F

Dehydration:

- Assess for dehydration in kittens younger than 6 weeks by looking at their urine (should be very light yellow if they are properly hydrated; dark urine means dehydrated), and their mouths (gums should be moist and slightly slippery to the touch; pale and dry gums indicate dehydration).
- Other signs include: Pull up scruff of neck and it stays up (more reliable in older kittens). Eyes are open but look sunken. Face looks drawn at sides (normal would look round). Kitten acts lethargic. Not eating well, not latching on to nipple.
- If one kitten is dehydrated, most likely they all are.
- If you see dehydration in your kitten(s), see your veterinarian. They will need to be hydrated with sub-q fluid.
- Most times, kitten(s) will only have to be hydrated (given sub-q fluid) one time.

Diarrhea:

- If diarrhea is severe, kitten(s) may need hydration. Probiotics may also help.
- If diarrhea is recurring and will not go away on its own, see your veterinarian. Treatment will be needed to resolve it.
- Diarrhea can become life-threatening (dehydration), and usually is from feeding too much too soon, or from parasites. Take a fecal sample to the veterinarian first thing!

Hypoglycemia:

- Hypoglycemic kittens are weak, depressed, and inactive, and may have muscle twitching and/or convulsions. Place a small amount of Karo syrup on gums (this will raise the kitten’s blood sugar) and take kitten to a veterinarian immediately!

Flea Anemia:

- Caused by severe flea infestation. If one of the kittens has fleas, most likely they all do.

How to Safely Remove Fleas

- Check the kittens for fleas and flea dander.
- If they are infested with fleas, they can die from anemia.
- During and after bath, keep kittens warm.

Supplies

- Dawn or Lemon Joy dishwashing liquid
- Soft towels with no loops
- Blow-dryer

Pre-Warm Bathroom

- Steam bathroom before you bring the kittens in it.
- Close the bathroom door and windows, and run the shower with hot water
- Put a towel under the door and run the shower with hot water until the room is warm with steam.

Bathe Kittens

- When bathing, hold each kitten tightly by the scruff of his neck.
- Talk reassuringly to them during the process.
- Start by quickly making a soapy ring around the head/neck and tail/anus. Part the hair quickly and work soap down to the skin. The fleas will not be able to cross these wet soapy rings.
- Once they sense the water, the fleas will attempt to run into body orifices to hide. Some will go to the orifices on the head (ears, eyes, and nose), and the others will run to the anus.
- Only a few drops of liquid soap is needed per kitten.
- Make a stripe down belly with the liquid soap.
- Don't dilute the liquid soap.
- Soap them up and rinse right off — the entire process should be quick.
- Don't leave soap on long.
- Don't get soap in their eyes.

Rinse

- Don't immerse head in or under water.
- Don't submerge kittens in sink of water.
- Rinse kittens.
- Towel dry or blow dry on lowest setting. If blow drying, constantly move dryer back and forth.
- Place kittens back into their warm nest.

Tips

- *If one kitten has fleas, they all do.*
- *The easiest place to spot fleas or flea dander is on the belly because the fur there is thin.*
- *You can also use baby shampoo and a flea comb and just comb out all the fleas with some patience and diligence for those kittens who are too cold, weak, or sickly.*
- *Don't use dish soap more than once to wash the kittens — it can dry out the skin quickly. Even human baby shampoo can dry out their skin — use a special shampoo made for kittens.*

How to Bottle-Feed Newborn Kittens

- Kitten formula should be *carefully* warmed up to about 95–100° F before feeding.
- *Never* feed a kitten who is hypothermic and is less than 95° F — can cause aspiration pneumonia and be fatal.
- To avoid diarrhea when you first start feeding, mix the formula using only half the recommended amount of KMR (and dilute with Pedialyte for the remaining amount), then work up over a few feedings to full recommended amount of milk replacer.
- Normal kitten stomachs are tiny and can only hold about one teaspoon of formula for every 4 ounces that they weigh. Don't overfeed — this causes diarrhea!
- If a kitten seems to have problems getting suction, with milk dribbling out of his nose, and is not gaining weight and crying a lot, have the vet check for a split hard palate (cleft palate).

Kitten Weight

Weigh your kittens at the same time every day and record their weights on the chart. After birth, a kitten usually doubles his weight after one week. The kitten will continue to gain approximately half an ounce each day.

Refer to “Average Weight Chart for Kittens” from Alley Cat Allies.

Steps to Bottle-Feed a Newborn Kitten

- Sterilize the bottle and nipple.
- Warm up the formula, and test the temperature with thermometer or on wrist.
- Bottle-feed the kitten.
- Burp the kitten.
- Stimulate the genitals so the kitten can urinate and defecate.
- Offer more formula to the kitten (if he/she has not consumed the full required amount).
- Clean the kitten.
- Place kitten back into the warm, dry nest.

Nursing Bottles & Nipples

- There are different kinds of bottles (the difference is the shape of the nipples).
- Recommended brand: Four Paws (available at Petland).
- Pinch nipple and trim off the tip.
- Start very small (you can always make it bigger).
- Unscrew nipple and make sure you can see through the hole.
- If the hole is not dead center, when feeding the kitten make sure the flow of milk flows down towards the tongue and not up at the roof of the mouth.
- Make the hole just big enough to allow the formula to slowly drip from the nipple when the bottle is inverted.
- Use one bottle and nipple for each litter — do not share between litters.

Commercial Kitten Milk Replacer

- Comes in powder or canned. Available in pet food stores, veterinary offices, and online (www.revivalanimal.com).
- Make sure formula is not near the expiration date and is fresh and not rancid. Steps to check powdered formula freshness:
 - Check the expiration date and discard any cans at or past their expiration dates.
 - When you open the aluminum pop-top, smell the formula. Safe formula should have a vaguely sweet smell or, at the very least, should smell like powdered milk. If it smells like anything else,

no matter how slight, such as chemicals, cheese, bad cooking oil, or even just a slightly “sharp” smell, it is rancid and dangerous to feed to kittens.

- Once opened, the can of powdered formula must be refrigerated!
- Don’t switch back and forth between powdered and canned formulas (this will cause diarrhea).

Preparing the Formula

- Use a little whisk to mix formula — it gets the lumps out.
- Buy several bottles and nipples, then sterilize and fill several at one time and refrigerate. Warm each as needed. Be aware that formula has a limited shelf life.

Sterilize the Bottles & Nipples

- Sterilize the bottle and nipples in boiling water, place on clean towels and let cool completely.

Proper Position of the Kitten for Bottle-Feeding

- *Important: Position the kitten properly.* Raising his head may cause aspiration (inhalation of formula into lungs), which could be fatal.
- Kitten should be feet down/head straight (picture him nursing on mom).
- Never feed a kitten on his back like a human baby.
- Never hold the kitten in the air while feeding.
- Kitten should be manipulating the suction. Do not squeeze or force formula into his mouth.

Bottle-Feeding

- Warm up bottle of formula by placing it in a cup of water that was microwaved briefly.
- Don’t put bottle in microwave. Toxins from plastic/rubber may leach into milk.
- Test temperature of formula by squeezing a few drops on your wrist. It should feel warm, not hot.
- Shake bottle to mix up any hot spots.
- Hold kitten by scruff of neck.
- Put nipple in side of mouth then center it, let kitten position it comfortably.
- Squeeze a few drops out, then stop, you should feel the kitten latching on.
- Do not overfeed — this can cause diarrhea.

What to Do If They Don’t Latch On

- Kitten may not understand what the bottle is and he may roll nipple on tongue.
- Brace face with heel of palm and fingers, don’t let him move head around.
- Try again and squeeze a few drops of milk out.
- Kittens usually get it on the second try.

When & How Much to Feed

- Refer to “General Feeding Chart” and read the instructions on the type of formula you are using.
- If the kittens are very small or weak, feed every 2 hours.
- Once they are stabilized, (nursing well, no diarrhea), you can feed every 3 hours.
- Do not overfeed — this can cause diarrhea.
- Feed the kittens at evenly spaced intervals, around the clock. Consistency is the key to keeping diarrhea at bay.

Conversion Chart:

1 ounce (weight) = 28 grams

1 gram = 0.035 ounces (weight)

1 fluid ounce = 30 cc = 30 ml = 6 teaspoons

1 teaspoon = 5 cc = 5 ml

1 teaspoon = 0.17 fluid ounces

Burp

- Kittens must be burped after every feeding.
- Hold the kitten upright against your shoulder or place one hand under his belly and gently pat and rub his back.

Clean & Dry the Kittens

- Clean the kittens with a damp wash cloth.
- Dry thoroughly with a towel and place kittens back in their warm, dry nest.

Stimulation Means Elimination

- Kittens should be peeing almost every time after you feed them. If no urine is produced after 12 hours, take them to the veterinarian *immediately*.
- Normal kitten poop is mustard or brown colored, firm, and formed in tiny little logs, but still a bit squishy, especially as a newborn. Green or yellowy watery stool usually means overfeeding.
- Kittens usually poop at least once a day, but individual kittens can vary. Take them to the veterinarian if they don't poop for more than two days.

Supplies

- Cup of warm water
- Paper towels or gauze pads

How to Stimulate a Kitten for Elimination

Immediately after feeding:

- Turn on side.
- Stimulate the genitals.
- Rub in one direction like mom would.
- Do not rub back and forth — friction is irritating.
- Keep up until all urination stops (this means the bladder is empty).
- Kitten will *not* keep peeing when you stop rubbing, so continue until bladder is empty (nothing comes out).
- After his bladder is empty, offer more formula.
- If he rolls the nipple on his tongue and does not latch on to it, he is full and done feeding.

Tip: Cotton balls and pads are not recommended because they shed.

Normal vs. Abnormal Elimination

Urine:

	<u>Normal</u>	<u>Abnormal</u>
<u>Color</u>	Pale Yellow	Dark
<u>Odor</u>	No odor	Pungent (strong)

Stool:

	<u>Normal</u>	<u>Abnormal</u>
<u>Color</u>	Yellowish/Brown	White or green

Tips:

- White stool is a sign of malabsorption, a serious problem.
- Green stool may indicate an infection that needs to be treated by an antibiotic.
- Dark, pungent-smelling urine is a sign of dehydration.
- A kitten's stool will get darker once he/she starts to eat meat (done with formula).

Illness & Disease

- Normal weight gain is about 10–15 grams per day (about 0.35– 0.5 ounces per day) for newborns, and then about a half an ounce or more per day for the first few weeks.
- Sanitation is important, newborn kittens have low immunity, wash your hands before you touch them.

Things you are likely to see (in order of most common to less likely):

URI (Upper Respiratory Infection)

Usually caused by one or more viruses – therefore antibiotics do not treat it. Antibiotics may be prescribed by your veterinarian to combat secondary infections that take hold due to weakened state of immune system caused by the virus.

Herpes Virus & Calici Virus

Herpes virus and Calici virus are very common and cause upper respiratory infections — little kitty colds. Kittens can be affected by both viruses at the same time (and often are). Both viruses make kittens susceptible to bacterial infections, which usually mean a lot of greenish-yellow mucoid discharge from the eyes and nose, and usually require antibiotics.

Herpes Virus causes watery eyes and nasal discharge with sneezing, and may also affect the eyes more severely causing eye ulcers. If eyes are crusted shut, clean with a warm saline solution and gently pull open.

Calici Virus causes similar upper respiratory symptoms and also sometimes mouth sores, but can be more serious and affect other parts of the body and/or be deadly.

- Symptoms often start with upper respiratory signs, and may also include not eating or change in eating habits due to ulcers (sores) in mouth that make it painful to chew or swallow.
- Kittens may go lame in one or more limbs, e.g., limping on left front leg or both back legs.
- There are different strains, one of which can be particularly deadly.
- Veterinarians may not think of Calici at first, instead looking for neurological and muscular conditions to explain the lameness.
- Kittens are too young to be vaccinated.
- Very contagious (as is herpes virus).

Coccidia

A hard-shelled parasite that cannot be killed by bleach.

- Throw out paper towels after wiping surfaces down.
- May see clear or raspberry jam-like substance in stool or diarrhea.
- Wipe kittens clean and dispose of cloths.

Giardia

A water-born parasite that causes diarrhea.

Diarrhea

Can be life threatening. If not caused by a change in the type of formula (from canned to powder), it will not go away on its own and needs to be treated by a veterinarian. May require probiotics, sub-q fluids, anti-parasitic medications, etc.

Feline Panleukopenia (Feline Distemper) Virus

Especially dangerous to orphaned kittens, and is very contagious, so proper hygiene and isolation of the newborns from other cats is essential. Kittens can experience life-threatening diarrhea, vomiting, dehydration, fever, septicemia, and shock. Kittens who are born to infected moms can have nervous system damage that results in a staggering walk, tremors, and balance problems, but these kittens can still be adopted and live somewhat normal lives.

Fading Kitten Syndrome

Some kittens seem to be doing well and then become unthrifty and sickly a few weeks after birth. Sometimes this happens no matter how well you have been taking care of your foster kittens. Sometimes nature knows something we do not, and a kitten may succumb despite our best efforts. Just know that you gave each of your foster kittens loving care, and the kitten did not die alone, but had a caring, loving home that he or she would not have otherwise had.

Antibiotics

Used to treat a bacterial infection. You must give the complete course of medication — do not stop early. Do not contribute to the creation of super-bugs.

***Tip:** If a kitten has watery diarrhea, an oral antibiotic may pass right through without being absorbed. Ask your veterinarian if an injectable medication may be more appropriate.*

When to Deworm & Vaccinate

- Most kittens will have worms and/or other parasites. Orphaned kittens can be dewormed as young as 2 weeks, and will need deworming every 2 weeks. See your veterinarian for the proper medication and dosing information. Young kittens are very sensitive to medications, so always check with your veterinarian first before giving medications.
- Normal kittens get their initial immune system from their mom's colostrum within the first 16 hours after birth, which protects them for many weeks. There is no real substitute for mom's colostrum, but sometimes probiotics can help with gastrointestinal problems. You can sometimes use a donor cat's blood for some minimal protection in high risk kittens (see your veterinarian to discuss risks and benefits).
- Kittens start to make their own antibodies at about 4 weeks of age, so orphaned kittens are most vulnerable to diseases from birth to 6 weeks of age. This is why they are best taken care of in your home and away from other potentially infected cats (as well as enjoying the feeding and TLC you provide, of course).
- Routine vaccinations should start between 6–8 weeks of age for most kittens. Vaccinations can start as early as 2 weeks for some orphans, depending on their situation. Consult your veterinarian to discuss exposure risks and need for vaccination. Certain vaccinations can be harmful to very young kittens if given too early or if the wrong type is given for their age.

Weaning Your Kittens

- Transition from eating formula in a bottle to eating solid kitten food from a dish.
- Start the weaning process at 4 weeks of age.
- Put formula in a shallow bowl or pan (low sides). A Frisbee works well.
- The weaning process can be messy, as kittens may at first eat in the bowl and not from it.
- At the same time you start the weaning process, start leaving out fresh water in shallow dishes. Filtered or spring is ideal. From now on, water should be out at all times.
- Begin to add solid food (a high-quality canned kitten food) to the formula in the shallow bowl — 2 parts canned food blended with 1 part formula.
- Encourage the kitten to eat this mixture by smearing some on his lips or putting some on your finger and putting it in his mouth.
- Reduce a kitten's bottle feeding as he starts to eat more frequently from the shallow bowl.
- Gradually reduce the amount of formula until the kitten is eating only solid food.
- Start introducing dry kitten food in the shallow bowl.
- Feed as much as they will eat, a minimum of three times a day.
- Changes in a kitten's diet can cause diarrhea.
- Weaning should continue until 6 weeks of age or older. It takes time for kittens to be strong enough to chew dry kitten food.
- Be sure to socialize your kittens to as many different people and animals as possible. Friendly adult cat interaction is especially helpful in preventing future behavior problems.

Tips:

- *Do not give kittens cow's milk (they cannot digest it easily).*
- *Do not feed your kittens food that contains onions (it can cause anemia).*
- *Do not feed your kitten regular canned tuna (it can cause vitamin E deficiency).*

Resource List

Books

- *The Guide to Handraising Kittens* by Susan Easterly (Note: The temperatures listed are no longer accurate). Available from Alley Cat Allies at www.alleycat.org.

DVDs

- *Feline Neonatal Care* by Loudoun SPCA (Note: The film advises to cover the kittens with cloth. We do not suggest this, as the kittens can suffocate. Do *not* place anything on top of the kittens.) Available from Alley Cat Allies at www.alleycat.org.

Websites

- www.kitten-rescue.com
- cats.about.com
- www.NYCFeralCat.org
- www.alleycat.org

Kitten Development Photos

- www.boutiquekittens.com/kitten-development

The Adoption Process

- Use an adoption application.
- Screen adopters (check references).
- Charge a fee to adopt.
- Do a visit (inspection). Look for screens on windows, etc.
- Get a signed adoption contract.
- Follow up.