
Bottle Feeding

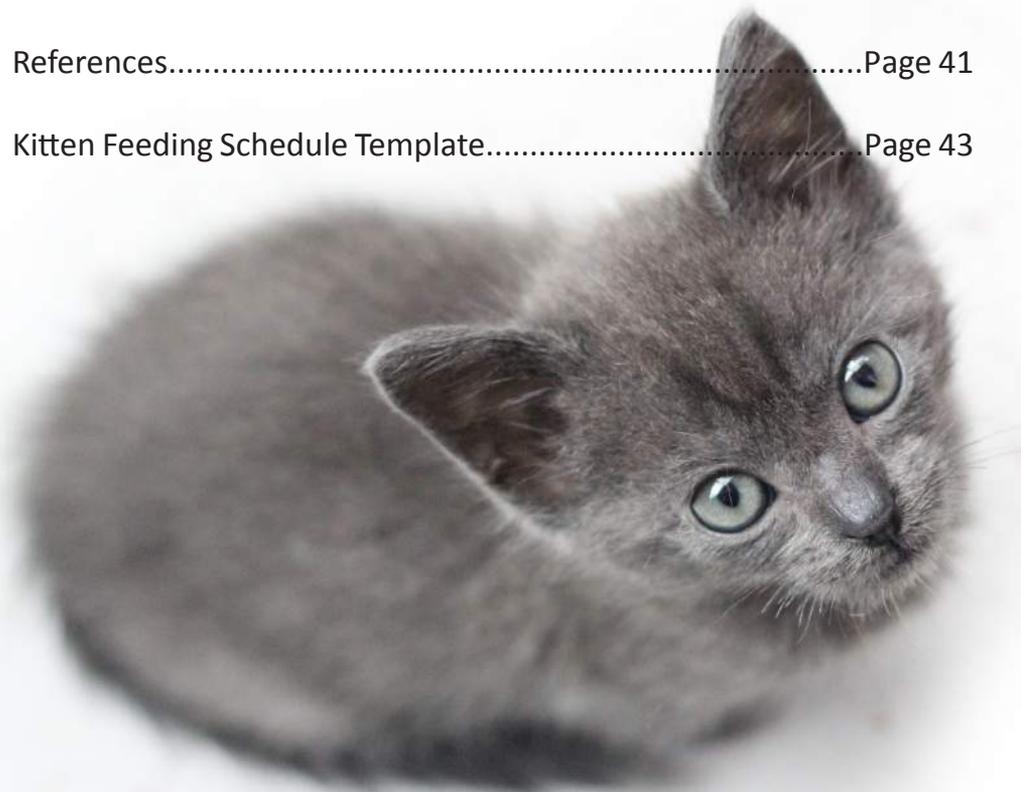
Kittens

A Journey of Sweat, Tears and Formula



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Teeth Development in Kittens

1 Week of Age



Center (4) Incisors
(front teeth between the canines)
3 weeks

2 Weeks of Age



3 Weeks of Age



Outer Incisors
3-4 weeks
Canines 4 weeks

4 Weeks of Age



5 Weeks of Age



Lower molars
4-5 weeks
Upper molars
5-6 weeks
Lower pre-molars
5-6 weeks

6 Weeks of Age



7 Weeks of Age



Upper pre- molars
7-8 weeks

8 Weeks of Age



Kitten Supply List



For Environment:

- Heating Pad without Automatic Turn Off
- Microwavable Warmer (Snuggle Safe)
- Travel Crate (with open top)
- Small and Medium Wire Crate
- Towels, Bath Mats, Fleece Blankets
- Soft and Fluffy Stuffed Animals
- Potty Pads
- Ziploc Bags, gallon (Snuggle Safe)

For Cleaning of Kitten:

- Dawn Dish Soap
- Small Towels
- Hair Dryer
- Baby Wipes, unscented, hypo allergenic

For Feeding:

Ketchup & Mustard Squeeze Bottles
Formula (such as KMR or Esbilac (powdered))
Kitten Bottles
Extra Nipples
Coffee or Tea Mug
Canned Kitten Food
Dry Kitten Kibble
Low-Lipped Dishes/Bowls
No-Flip Dishes
Digital Scale

For Elimination:

Baby Wipes, unscented, hypo allergenic
Low Lipped Litter Pans
Baby diaper cream
Nail Trimmers
Natural or Non-Clumping Litter





Meet Pixie!

This enchanting little girl came to the SPCA of Texas when she was no more than 24 hours old. After being found by one of our transfer partners, they asked if we were able to take her in and give her the proper around-the-clock care needed for someone so young and, of course, we said yes.

Now follow along the journey with Pixie as she assists in teaching you how to save kittens in similar situations by properly identifying ages, nutritional needs and possible health concerns.

0 to 2 Weeks of Age



Pixie at one day of age

Aging & Development

At birth, kittens are born with their eyes closed, the inability to hear and are unable to walk properly; although they are able to shuffle around. Their ears are not developed so they will appear small and close to their head. They will also not have teeth during this period and are unable to eat on their own. Their umbilical cords will be attached and, without a mother, will naturally fall off in under a week, so there is no need to remove it. Once it falls off a small amount of redness is normal but if concerned contact a veterinarian.

Typically orphaned neonatal kittens tend to grow and gain weight at a slower pace. Normally, kittens at birth weigh about 1.8oz (.11 pounds) and will double or triple in weight the first week. Around 14 days old they will reach up to about 8.8oz (.55 pounds).



A Kitten's mouth at 1 day of age



A Kitten's mouth at 1 weeks of age



8 *Pixie at one week of age*



Pixie at two weeks of age

At around 10-14 days old, their eyes will begin to open and it is natural for them to be partially open for a few days during this process. At around 14-18 days of age their eyes will be completely open but are still unable to see clearly; they will also begin to stand and will become a little more active.

Their ears will be more developed but still won't be able to clearly decipher noises. Kittens at this age will not have any visible teeth but should be able to feel the beginnings of incisors along their upper gum line.



A Kitten's mouth at 2 weeks of age

Environment

It's important that newborn kittens have a safe, comfortable, warm and enclosed environment. Open top plastic airline crates are found to be the easiest because the kittens are easily accessible for multiple daily feedings. Warmth is key for kittens! At this age they are unable to regulate their own body temperature, and if it drops too low, are unable to digest food properly.



It is recommended that the environment's temperature is around 97 degrees and can be accomplished by using heat sources such as electric or microwaveable heating pads.

Be sure to check that the electric heating pads do not have an automatic shut off feature and to follow the directions on microwaveable heating disks.



It is important that newborn kittens have a safe, comfortable, warm and enclosed environment

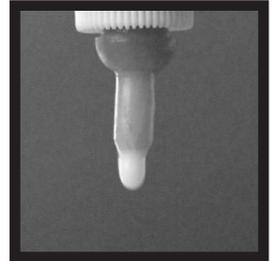
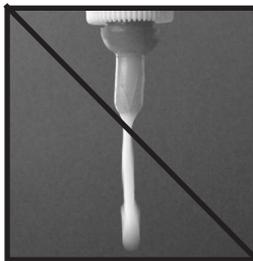
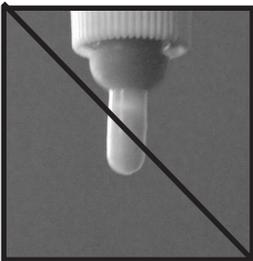
It is easy to overheat a kitten so there should always be a towel or blanket between them and the heat source and leave an unheated area that the kitten is able to move to if they get too hot. Use a blanket to create a nest like boundary around the inside edges of the crate, especially in front of the wire door and use one to cover the crate to trap heat inside. Fleece is a good material to use since it is able to retain heat.

Small to medium sized fluffy stuffed animals work as good replacements for cuddle friends and kittens are able to suckle on them instead of each other. Placing an analog watch can simulate a heartbeat, or using a stuffed animal with a simulated heartbeat; this small addition can be imperative for single kittens.

Feeding



A small 2oz ounce bottle is recommended for feeding during this age. Use a pair of scissors to cut a small “X” at the tip of the nipple to allow formula to flow properly. Having it too large or small can be dangerous or frustrating to the kitten so be sure to check it by flipping the bottle upside down and squeezing gently. If the formula is pouring out, the opening is too large and if it’s not coming out at all, the opening is too small. If slow and consistent drops are coming out then the opening is a good size.



There are several common brands of kitten formula and they can come in either a canned or powdered form. Powder is recommended due to cost effectiveness for kittens this young since they will be on it for at least another 3-4 weeks. Mix the powder according to the packaging and make sure that the consistency has no lumps when putting it into the bottle. A good way to mix and dispense the formula to the bottle is by using plastic squeeze bottles with a thin tip (i.e. ketchup/mustard squeeze bottles).

Never make more formula than needed in a 12 hour period and be sure to read the storage instructions on the powder. Most kitten replacements, both the powder and mixture, are required to be refrigerated.

Never microwave a bottle. Place water into a coffee mug and heat it in the microwave then place the bottle into water until it has been warmed. The water can also be heated on the stove or by using an electric kettle. Always test the warmth of the formula against the inside of your wrist before feeding a kitten.



The most important thing to remember when bottle feeding kittens is that they are to be fed with their stomachs down and not on their backs. Feeding a kitten on their back or at a backwards angle can cause aspiration, which is the formula getting into their lungs. This can lead to serious illness or death.



When teaching a kitten to eat from a bottle the first couple of times is usually the hardest as they have to get used to latching onto the nipple, which can take a few feedings.

When introducing the bottle for the first time, gently wash the nipple first to help remove the plastic taste. Some kittens will latch onto the nipple easier than others, but most of them will need assistance. Gently open their mouths and place the nipple inside, then lightly squeeze the bottle so they can taste a few drops.

Remember that this may need to be repeated a few times before the kitten realizes that it's food.

Always make sure kittens are bottle fed with their stomachs down and not on their back.



While feeding them, watch the nipple and make sure the formula is flowing to them and that the kitten is actively swallowing; some kittens will just suckle on the nipple without actually eating. After feeding, while the kitten is still on its stomach, gently tap their backs to help them burp up air bubbles.

A newborn kitten will need to nurse around every 1-2 hours. Their stomach can only hold around 2mL/cc per feeding and they are recommended to eat about 13-14mL/cc daily.

At a week old their stomachs will be able to hold about 6mL/cc per feeding, and are recommended to eat around 40mL/cc daily.

At two weeks of age their times needing to eat can be increased to every 2-3 hours. Now their stomachs hold about 9mL/cc per feeding and kittens are recommended to eat about 68mL/cc per day.

After the bottle is emptied or about every three feedings, be sure to thoroughly clean and sterilize the bottle and nipple. Allowing the bottle pieces to sit in boiling water for about 3-5 minutes is a good way to sterilize.

Elimination

Normally a mother cat will lick a kitten to stimulate urination and defecation. To simulate this with an orphan kitten, use warm baby wipes, cotton balls or wash cloths and gently rub the kitten's genitals in a circular motion. They will normally urinate pretty quickly, if not immediately, but getting them to defecate can take a little longer. If it has been over a minute and they have still have not eliminated, stop and try again later.

Kittens will normally only defecate once or twice daily, but it is not uncommon for them to go 24 hours. If concerned, contact a veterinarian.



After stimulating to go to the bathroom, dry the kitten thoroughly, with a hair dryer or a towel, before placing them back into their kennel.

Cleaning

At this age, since kittens are unable to regulate their own body heat, they can become chilled very quickly and so bathing is not recommended until they are older. Using a warmed baby wipe or wash cloth to wipe them off can not only clean them if needed but it also simulates a mother's grooming which is good for their wellbeing.

Afterwards kittens should be completely dried using either a towel or a hair dryer on warm low.



Socialization

Handling is very important to the socialization of kittens but during this stage, excessive handling outside of feeding and grooming is not recommended for disease control and should be limited to one to two individuals.

3 Weeks of Age



Pixie at three weeks of age

Aging & Development

At 3 weeks old kittens' incisors will start to protrude, and their ears will start to become more erect. Their hearing has started developing and they are able to move towards noises. Their eyes are fully open at this age and their vision will still be developing so they will not be able to focus but are able to see movements. They will become more mobile and begin learning to walk but will have issues with coordination and they may try to start playing with their siblings if they have any.



A Kitten's teeth at 3 weeks of age

Typically kittens are around 12oz (.75 pounds) at 3 weeks old. If the kitten was without a mother at birth, they may not be to this weight yet.

Don't panic as long as the kitten seems alert, active, is eating well and consistently gaining weight.

If concerned, contact a veterinarian.



Environment

At this age the environment won't change from a newborn kitten's environment but giving them a medium sized airline crate will allow them more space for movement. Toys can start to be introduced; plastic lattice cat toys from strings can hang from the top of the crate to give them something to attempt to bat at. They won't need a lot at this point, but having a few with different textures and sounds is good for them to begin to experiment with.

Feeding

Bottle feedings can begin to extend to about every 3-4 hours. A kitten at 3 weeks of age can handle about 14mL/cc per feeding and should be eating around 95mL/cc daily. By 4 weeks old the daily recommended amount is 120mL/cc and their stomach can hold about 18mL/cc per feeding. Keeping a feeding schedule is a good idea to make sure that feedings are consistent. If a bottle fed kitten gets too hungry, they become more difficult to feed as they will try to thrash out and claw at the bottle or nipple.

Consult with a veterinarian about what brand of kitten food to wean them onto and at about 3.5 weeks of age, start blending in a little kitten food in the bottle with the formula (be mindful of chunks). This will not only will help the kitten's digestive system adjust better to the food change but it will also help in weaning by introducing them to a different taste, rather than just formula.

Elimination

Kittens will still need to be stimulated to go to the bathroom at this age, but they will begin to go on their own as well; which will start to require more consistent cleanings. Be sure to make sure they are completely clean and dry before being put back into their crate.

You can begin stimulating over a litter box and placing them in it afterwards can help them with the association.

Cleaning

With the kittens starting have more possible accidents, they will need to be cleaned more often. Full baths are still not recommended at this point but using warm water and unscented dawn soap to do quick “butt baths” and cleaning their tail and rear end/back legs as this will be the area that will need to most attention to cleaning. Always have towels and hair dryer ready to dry the kitten immediately after the bath. Never put them back in their crate without fully drying them off.

Socialization

Positive handling can begin to be more prevalent at this age. Starting to pick them up for more than just feeding and care will help them get used to human interactions. Be sure to still limit it to one or two people for continued disease control.



4 Weeks of Age



Pixie at four weeks of age

Aging & Development

Usually the most noticeable difference with kittens this age is that their ears will begin looking more like normal cat ears; much more pointed and erect. The beginnings of their canines will start to show and there will be a jump in activity level. The kittens will be walking more and starting to pounce and play, although they will still not be completely coordinated. Normally, kittens around 4 weeks of age are around 16oz (1 pound). Neonatal bottle fed kittens may not be quite this weight yet.



A Kitten's teeth at 4 weeks of age

Kittens will begin to regulate their own body heat at this age but keeping the heat source for them is still recommended. Their bodies will continue to fill out and become more evenly proportional.

Environment

A medium airline or wire crate should still be large enough to add a small litter box while allowing for more space for movement. Toys should be available as the kittens will be more playful and curious of their surroundings. Hanging plastic lattice cat toys from strings from the top of the crate along with having toys of different textures and sounds can help to stimulate the senses. It is important to continue to provide soft stuffed animals and blankets for the kittens to cuddle and suckle. This will also help to discourage inappropriate nursing.





Feeding

Kittens will still be on the bottle at this age, but introducing them to a little bit of kitten wet food blended with formula in the bottle will help their weaning off it in the coming week. Putting some wet kitten food on your finger and gently put it on the roof of their mouth will help them in learning that it is food. Depending on the kitten, some may take to this faster than others, but most at this age will be confused by it and refuse to eat from anything but the bottle. Some kittens may take to it and will try to suckle it off as if it was a bottle.

Since they will still be getting all their nutrients and calories from the formula, kittens around 4 weeks of age should be eating about 122mL/cc daily at about 18mL/cc per feeding. This will begin to cut feedings down to about 4-5 times daily and if they are healthy and eating well then they should be able to go throughout the night without needing to eat.

Elimination

At this age, kittens can start transitioning from stimulation as they are going to start going to the bathroom by themselves more often. Most kittens instinctually will go to a litter box if it is provided, though they are most likely to have accidents at this age. Kittens will naturally dig in it and figure it out, some quicker than others. Putting a piece of stool in the litter box can help their association of it.

They should have access to a litter box at all times and make sure the rim of the litter box is low enough for them to be able to get in and out of it. You can use low-lipped plastic Tupperware or pie dishes, as they are easier for kittens of this age to get used to the litter box. Some kittens, when figuring out litter may try to eat it. Using non-clumping litter is recommended so if ingested it will not cause digestion issues and it also does not stick to them as they're using it. It will need to be cleaned out at least once a day or as it gets dirty.

Cleaning and Socialization

As fully bathing kittens is still not recommended for another week, quick “butt baths” are still the best way of keeping them clean if they have accidents and using baby wipes to clean their face if needed.

At 4 weeks old kittens are able to be handled more outside of cleaning and caring for them. Having playtime with toys is a good way to start stimulating their senses and natural hunting instincts of chasing. They can start to be introduced to different people, but make sure that hands are properly washed to help with disease control.

5 Weeks of Age



Pixie at five weeks of age

Aging & Development

Kitten's ears at this age will be completely erect, their lower molars will start to show and they will be able to focus on sights and sounds much better. Their motor skills will be improving almost daily and they will most likely start to climb up things if able. Their muscle mass will continue to fill out and will look a lot more like little cats. Typically kittens at 5 weeks old are around 18-19oz (1.15 pounds). They are able to regulate their own body heat but can still be chilled easily.



A Kitten's teeth at 5 weeks of age

Environment

Their crate environment will continue to stay the same as at 4 weeks of age; even keeping the simulated heartbeat and heat source. They can be moved to a larger crate, but be mindful of openings. Most kittens can squeeze between bars of a large wire crate. At this age they can be out in a small room when being supervised so they can start to explore new things. They also should not have too much space between them and the litter box.

Feeding

This is the most difficult stage of raising a bottle fed kitten because it is not as easy to measure the amount they are eating. Weaning them off the bottle can be time consuming but it is very important to stay patient, and keep a very close watch on them.

Weighing them daily during the weaning process is highly recommended so weight loss can be caught quickly and bottle feedings can increase if necessary. Kittens may eat some of the food after they figure out how to eat out of the bowl, but they still may not be eating enough to maintain the allotted daily amount needed.

To begin weaning a kitten onto eating from a dish, take an extremely shallow lipped container (i.e. small tupperware lid, or a small plate) and place some gruel (wet kitten food mixed with water and formula) onto to it. The consistency needs to be watery since the kitten will try to suck it up like they do with the bottle.

Chances are the kitten will just walk right through it for the first several times, so putting a bit into their mouth to give them a taste of it and gently directing their mouth to the plate will help them figure it out. Depending on how quickly the kitten catches on, this could take several feedings over the period of a few days for them to figure it out. Once they start to nibble on it, watch them closely because they won't get it every time and will try to chew on the rim. If this happens direct them back to the food. Start leaving a small shallow dish of water out for the kittens at all times.

Bottle feeding will still need to be supplemented until they fully understand eating, and are eating the recommended amount; this could last for another week.

Read the food cans to figure out how much they should be eating daily. Don't bottle feed before getting them to eat from the dish. They will be more likely to try and eat from it if they are hungry. Once they are consistently eating from the lid the formula can be taken out of the gruel so they are eating watered down wet food.



Elimination

At this point they should be going to the bathroom on their own. If they are too far away from the litter box they may not be able to make it back in time and have an accident so make sure they are always near one. Diarrhea can be very common at this stage due to change of diet and since they may be accidentally over fed due to supplemental feedings. If the kitten seems to be losing weight or the diarrhea seems to be getting worse, consult a veterinarian.



Cleaning

Cleaning will be happen more frequently at this point since the kittens will be covered in wet kitten food while they are getting used to eating. If the kitten's whole body is dirty, they can now be fully bathed in a light stream of warm water and unscented dawn soap.

Do not make a bath in the sink, always use a small stream of warm running water. Make sure that while bathing they are never taken out from under the water for any period of time outside of rubbing the soap on them or to dry them. The warm water will help their body temperature to stay up.

In most cases, just their rear ends, feet, neck and cheeks are dirty so you can just clean their rear/tail, feet, and neck (see below for face). This will help cut down on time and also help alleviate the chance of the kitten getting chilled. Be mindful of not fully submerging their head or face under the stream or getting water in their eyes or ears. Gently scruff and tilt head and upper body away from stream of water. To clean their faces when they are full of food, gently scruff them and use your fingers to apply warm water to the crusted on food. Gently rub any caked on food with your fingers and then rinse away any debris.



It is very important to keep kittens clean during this time. Though it is more time consuming than at younger ages, by keeping them clean kittens are more likely to catch on and learn to clean themselves sooner and have proper adult grooming habits. If a kitten is dirty, especially on its face, it can lead to hair loss, broken whiskers, and contribute to a kitten fading.



Socialization

Socialization will continue to stay the same as the week prior. More playtime and supervised exploration of the house is good since the kittens will continue to gain more energy as they grow.

6 to 8 Weeks of Age



Pixie at six weeks of age

Aging & Development

This is the age when kittens tend to be the easiest to care for if they are healthy and active. They are almost completely self-sufficient and will just need more socialization. Six week old kittens begin to get their upper molars in and their lower pre-molars. At this age kittens will typically be 24oz (1.5 pounds). Around 7-8 weeks old their upper pre molars will start to protrude and they will typically weigh around 32oz (2 pounds). Although bottle babies tend to be closer to 9-10 weeks old before reaching 2 pounds.



A Kitten's teeth at 6 weeks of age

Environment

As long as the kitten is healthy and active, they can still stay in their crate at night and during the day they can be out in a small room to be able to play and run out energy. You can place multiple litter boxes throughout the room so that the kittens have easy access to a litter box at all times. Continue to provide several different types of toys and stuffed animals for them to cuddle with. They don't need to have the heat source or the simulated heartbeat, but if the kitten is single it might still be comforting to them.



A Kitten's teeth at 7 weeks of age



Pixie at seven weeks of age

Feeding

At around 6.5 weeks old a kitten should have transitioned from watered down wet food to eating just kitten wet food. At this age, a kitten should be eating completely on their own with no supplement bottle feedings.

Start putting down a small bowl of watered down kitten dry food and a small bowl of water and leaving it out at all times so the kitten can eat from it throughout the day if they choose. There are some kittens that may prefer dry food to canned; but be sure to still give canned food to make sure their water and calorie intake is still normal. If the kittens are not interested in the watered down dry food, try adding it to the wet food.

By 7 weeks old their food and water can be moved to small no-slip bowls and the dry food will no longer need to be watered down. Around 8 weeks they should be eating the dry food and begin only giving them wet food once to twice a day to help with weight gain and development.





Elimination

Kittens at this age should be using litter boxes regularly now, but make sure there is still one close by and make sure to clean it consistently. If they are having issues covering up after going to the bathroom you can place them in the litter box after they have gone and use their paw to cover up their urine and stool.

Cleaning

Kittens at this age should begin cleaning themselves baths should only happen as necessary. Make sure that if they are bathed that they are fully dry before letting them run off. Baby wipes are a good way to wipe them off if their face needs to be cleaned.³⁵



Pixie at eight weeks of age

Socialization

This is the age period that the kittens are becoming their most active and playful. They are coordinated enough to start jumping up and off of things if they choose and love to get into everything. Make sure that they have toys, stuffed animals and a scratching post.



A Kitten's teeth at 8 weeks of age

Daily handling with people is very important. Keep all handling positive, be sure to mess with their paws and pet them all over so they are continually used to handling and petting.

Slowly introduce them to everything around the house, family members and friendly animals included, different sights and household sounds. Consult with a veterinarian about when they should get their first round of shots before taking them out of the house, but taking them for car rides in a crate can help later on when going on car rides as an adult cat.

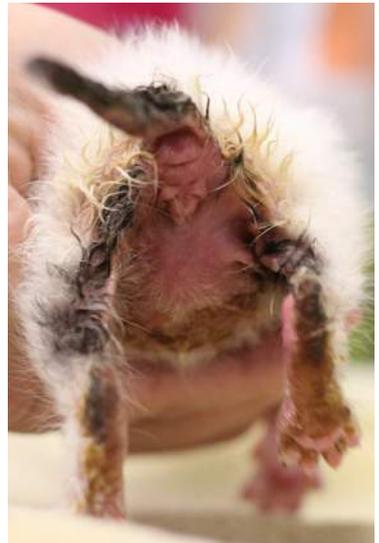


Kitten Health Issues



Diarrhea

Diarrhea is a common issue with bottle fed kittens. Since they are already not getting mother's milk their systems have to adjust to a replacement. Overfeeding is the primary cause of diarrhea. People will normally want to let the kitten eat as much as they want but this will result in over extending their stomachs and causing diarrhea. Be sure to also track the amount of food they are eating so if it does begin, the information can be shown to a veterinarian.



A Kitten with diarrhea

Other common causes for diarrhea are changes in diet and intestinal parasites, among other things but talk to a veterinarian if diarrhea arises to determine the cause and subsequent treatments. Prolonged diarrhea can lead to hypoglycemia, low body temperature and dehydration which can ultimately lead to death. This can happen fairly quickly sometimes so it is always best to keep notes on the kitten's weight, eating habits and activity level. Any changes should be brought to attention.

Feces should be pasty in texture and yellow/tan in color when kittens are eating formula. Once eating solid food, their poop should be dark brown like a healthy adult cat's.

Upper Respiratory Infections

URIs can be fairly common in orphaned kittens since not having a mother can cause a compromised immune system. Before 4 weeks of age it is recommended to keep the handling of the kitten down to one or two caregivers so disease control can be better monitored. Some symptoms of an upper respiratory can be congestion, weepy eyes and/or a runny nose.



A Kitten with ocular discharge

Consult a veterinarian for diagnosis and subsequent treatments if these symptoms are noted. The infection can be contagious to other cats so be mindful of other litter mates and other animals in the house.



Fading Kitten Syndrome

Fading kitten syndrome is a blanket term used for young kittens that may “fade” or suddenly die. The clinical signs of it are vague because it can be a combination of medical and situational/behavioral issues. Fading kittens tend to stop eating, are lethargic, sleep away from siblings or heat sources and generally seem to have given up their will to live. If these signs are noted, consult with a veterinarian immediately.

Caring for and fostering neonatal kittens can be difficult because unfortunately, despite everything that you do, you will still have kittens that do not survive. Kittens can crash quickly and unexpectedly, which is why a fading kitten can be so devastating. Always remember that even though their time here might be short the important thing is that they spent their life being truly loved and cared for.

References for Kitten Care

Book: Hand-Raising the Orphaned Kitten

Vital Facts about a kitten's special needs during its first weeks of life

M.L.Papurt, DVM

Maddie's Fund

<http://www.maddiesfund.org/>

Kitten Rescue, Las Angeles

<http://www.kittenrescue.org/>

Sue Freeman's Guide to Rescue Cats

<http://www.rescueguide.com/orphkits.html>

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**Pixie says thanks
for joining us on the
journey to save lives!**

Kitten Feeding Schedule

Date: _____ Weight: _____

		Feeding	
Time	Amount	Time	Amount
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
Notes			

Date: _____ Weight: _____

		Feeding	
Time	Amount	Time	Amount
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
Notes			

