Malt Extract Brewing with Steeping Grains

Pick a recipe and buy ingredients-

I used BrewToad.com to look for recipies and tweaked them. If you are nervous about going from scratch at many places you can buy kits that have all the ingredients and and a specific recipe.

Blacksburg:

- EATs
- Nice Dreams

Online:

- http://www.northernbrewer.com/
- http://www.mdhb.com/index.php
- http://www.annapolishomebrew.com/en/

Gather your gear-

On brewing day, there will be a lot going on. You will go through a lot of equipment. You will want to make sure that you have everything staged so that you know exactly where it is, and don't have to run away from the boil to find one key component. A watched pot may not boil, but an unattended brew kettle will most certainly boil over.

Print your Brewing Checklist for Extract Based Recipes
http://www.brewersfriend.com/checklist-extract/

Print your Beer Recipe Template for Extract Recipes
http://www.brewersfriend.com/brewday-extract/

The gear list handout has needed items broken out by phase of use.

Prep your yeast-

You will want to go to the manufacturer's website and look up the desired fermentation temperature range and attenuation range of the yeast and record that.
If you are using a liquid yeast, you will want to make sure you allow it to come to room temperature before you pitch it. Some of the yeast packs have nutrient pouches inside them to help ensure a healthy yeast batch. If you are using that style of yeast pack, follow the instructions on the package for how to rupture the interior pouch without opening the package. Yeast "slap packs" will swell indicating the yeast is viable. Proofing using the jar method below is not required for slap packs.

If the liquid yeast is in a test tube style container, shake it to suspend the sediment. Proofing the yeast is a good idea if you are uncertain of the age of the yeast.

Dry yeast will need to be rehydrated and then proofed as mentioned below.

Optional: mix yeast with 85F water, ½ t energizer, 1T sugar, 1t nutrient in a sanitized jar. Seal the jar and shake occasionally during brewing. Watch out it doesn't explode (try cling wrap or loosening lid). The yeast should start to consume the sugar and produce CO2. This lets you know you have a viable yeast culture. The easiest way to tell is to slowly open the jar and listen for the hiss of escaping CO2, much like a soda bottle.

Clean and sanitize-

We are using PBW (Powdered Brewery Wash) as our cleaning agent. Scrub and rinse all your gear. After cleaning sanitize. We used a no rinse (Saniclean).

The boil-

When boiling don't use a lid. A propane burner is best, but a kitchen stove will work. Just don't try to boil 6 gallons on a stove, it will never happen. Stoves just do not have the energy output required to boil that much water. It is easier to boil half the batch and add water later than it is to attempt to do a full boil on a stove. When boiling on the stove, start with about two gallons of water, boil for 10 min, then pour into the fermenter or carboy. Take the remaining 3 gallons, and use that to make a concentrated wort.

A propane burner or "turkey fryer" has the output required to boil the full batch, but sometimes, some water is left out in order to leave room for the foam and to prevent a boil over.

Starting up.

Add enough water to the pot that you can still add the ingredients and have room to spare for foaming. In my 6gal pot, that is about 3.5 gallons. Start on the low side, and add more later if needed.

Make sure that the water is not chlorinated. If you are using tap water, run it through a filter first. If you are cursed with tap water that even the pets won't drink, then you might want to consider using bottled or distilled water. You have to be careful with distilled water, because some recipes need the minerals in the water to taste right. This is more of a problem for all grain brewing, since extract brewing already has the mineral profile of the water used to make the extract.

Steeping Grains.

Pour the steeping grains into the boil bag and tie the bag closed. Leave room for the grain to expand. We tied it shut with string to make it easy to remove when we were done steeping. Add the bag to the cold water and let it steep in the water as it heats to near boiling (~170degF). Remove the steeping bag before the water boils. Let the bag drain, but do not wring it out.

This adds non-fermentable carbohydrates to the wort which helps with mouthfeel and can add some residual sweetness.

Boil

Add your ingredients per the recipe.

Watch for rapid frothing. Stir frequently. Adjust heat to maintain boil but not boil over. Have ice on hand to stop a boil over. Throw in one or two pieces as needed and stir rapidly. Once hot break occurs (foaming drastically reduced) less frequent stirring is required.

20 minutes before you are done boiling add a copper chiller, if you have one.

Cut off the heat at the end of the boil time (for this IPA it is 60 minutes)

Fermentation

Run the chiller with water to cool to <90F. If you do not have a chiller you will need to do an ice bath (with the lid on) after you are done the boil.

Put the yeast into fermentor, pour in wort (hot mixture) and strain out hop particles.
If needed, add additional water to achieve the desired 5 gallon batch size. Cleanliness and sanitation are very important since the wort can be easily infected by bacteria in this state. An airlock is used to keep the fermenter sealed during fermentation. Your beer will ferment for 1-2 weeks.

Racking into a secondary fermenter

When it stops bubbling (or <1 bubble per minute), check specific gravity. If gravity is in yeast attenuation range, add clarifier. Attenuation for California Ale Yeast is 73-80%. If attenuation has not been reached, wait 24 hours and recheck gravity. If attenuation has still not been reached, move carboy to a warmer location, wait 24 hours and recheck. Stuck fermentation may be possible. Google “stuck fermentation” for possible troubleshooting steps,

Calculate Attenuation -- **Attenuation = 100 % * (starting gravity - current gravity) / (starting gravity - 1)**

24 hours later move to secondary fermenter leaving behind the trub (stuff in bottom).

Dry hopping and specialty items

Before moving into new containers add

- tea
- orange peel

check back 7-21 days

When beer has clarified to your liking, it is ready for bottling.

Priming and Bottling

Once the beer is fully fermented, it is siphoned to another container to prepare for bottling. Here priming sugars such as corn sugar sugar are mixed with the beer. The beer is siphoned into bottles and each bottle is capped with a bottle capping device.

Aging

Once the beer has been bottled it needs to age for 2-6 weeks. It should be stored in a cool, temperature stable location and out of direct sunlight. Exposure to UV light will kill the yeast. resulting in a flat beer.

During aging the yeast will ferment the remaining sugar you added and create carbon dioxide. This carbon dioxide will naturally carbonate your beer so it is nice and bubbly. In addition, undesirable sediments such as excess yeast and proteins will drop out of the beer during aging and this will enhance the flavor of your beer. In may take several months to reach peak flavor, though homemade beer usually drinkable after a month.

References:
http://drinkcraftbeer.com/home-brewing/how-to/how-to-home-brew-beer-in-your-kitchen.html
http://www.howtobrew.com/sitemap.html