How to Make a NSN Banner Frame Kit

Frame is made using ¾” PVC pipe, about 5 sticks should be enough.

Please read all instructions before cutting and assembly.

This frame is adjustable to hang the different size banners that come with the NSN kits.

Check off list

- ☐ 18 ½” cut 4 for two for “A” one for “D” one for “G”
- ☐ 47 1/8” cut 2 for “B”
- ☐ 5 ¾” cut 3 one for “H” and 2 for “C”
- ☐ 41 7/8” cut 2 for “E”
- ☐ 24 11/16” cut 2 for “F”
- ☐ 24 ½” cut 4 for “P”
- ☐ 30” cut one for “K”
- ☐ 16 ¼” cut 2 one for “L” and one for “N”
- ☐ 31” cut one for “M”

- ☐ 2 four way fittings
- ☐ 2 “T” fittings
- ☐ 7 unions
- ☐ 6 elbow fittings
- ☐ Cleaner, primer, and glue for PVC pipe

- ☐ 4 Quick release clips
- ☐ 12 Bungee Balls
- ☐ 4 small 10” bungee cords
- ☐ 4 tent pegs

- ☐ About 24 ft of ¼” rope (I used glow in the dark rope)
- ☐ 8 eyebolts 2” long with 8 nuts and 2 washers
- ☐ 4 VELCRO straps
- ☐ Masking tape
- ☐ Drop cloth for spray painting

Spray paint colors for color coding to assemble adjustable frame:
I painted all the pipe white to cover the printed information that was on it. This is a personal preference but it made it so much easier to label. Do all painting <u>after</u> gluing and drilling all holes.
White (optional)
Blue
Red
Purple
Gray
Green
Black

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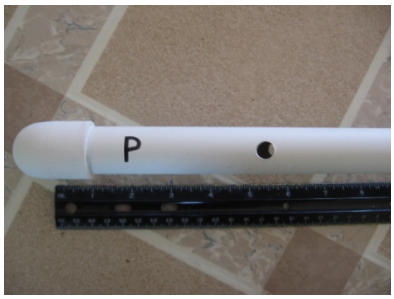
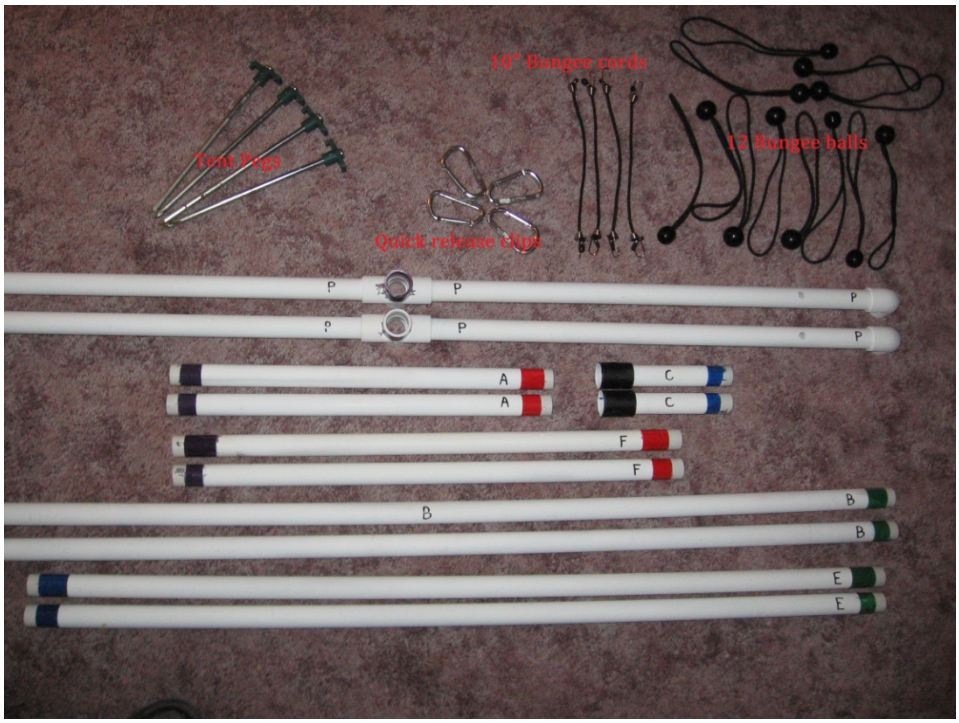
Glue all the fittings in place as follows: Dry fit before gluing.
Glue one of the four way fittings onto one end of **24 ½"** pipe, then glue an elbow on the other end. Making sure the open ends of both fittings are flush to the ground (you may have to trim a little off the four way fitting so it will be level, see photos).



Next glue another **24 ½"** pipe to the other end of the four way fitting then an elbow on the other end and make sure the open ends are flush to the ground as before. Make a second one just like this one. Drill a hole about 5" from the elbow end at about a 30° angle towards the four way. Make the hole large enough for the tent pegs. Do this on all 4 ends. Paint the top center of the four way purple, use masking tape to tape off the area to be painted and newspaper to control over spray. These will be labeled **"P".** Set aside.

The next 4 pipes are the 24 11/16" (both) and 2 of the 18 ½" pipes. Put masking tape around all ends to cover ½" of the pipe. You don't want paint on the ends. (Optional) Paint all the pipes white to cover all writing on the sides. These pipes only need to be color coded. After the white paint has dried wrap around masking tape about an inch from the end where you applied the other masking tape. Paint the area between the masking tape purple on <u>one</u> end of all 4 pipes and the other end red. I used a paper towel to control the over spray on the pipe. Label them "A" for the 18 ½" ones and "F" for the 24 11/16" pipes. Set aside. See photo below how the ends are painted.

The labeled items in photo below will be used when hanging the different banners.

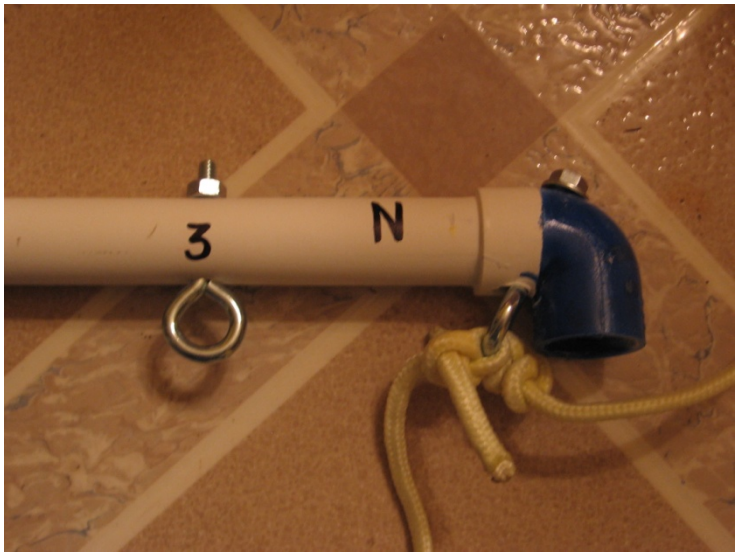


The next pipes will be painted similar to the ones above. Use both **47 1/8"** and the **41 7/8"** for this step. Prepare the pipes as above. Tape the ends then paint white. After dry then apply masking tape to mark where you want to color code the ends. This time paint one end of each pipe green then the other end blue. Label the 47 1/8" pipes as "B" and the 41 7/8" pipes as "E". Set aside.

Now we are ready for the **5 ¾"** pipes, all 3 of them. Glue a union fitting to each of the 3 pipes. Set 2 of these assemblies aside for a bit. We need to drill a hole straight through this pipe. Make this hole as straight as possible and big enough for your eyebolt. Drill the hole center 3 ¾" from the end of the pipe without the union fitting (do this on only one of them). Put masking tape around all 3 of the pipe ends without the union fitting ½" from the end as before so you can paint them white. When dry prepare the ends for color coding as before. Tape around the base of the union for color coding too; work with the assemblies without the drilled hole on this next step. Paint the union fitting side of the pipe assembly black and the other end blue. Label both of these as "C" and set aside. The assembly with the hole drilled is painted on both ends gray. Label this assembly as "H". Put an eyebolt through the hole you drilled earlier with the eye of the bolt parallel to the pipe. Hold the pipe with the eyebolt with the eye on the bottom and nut on top with the glued union fitting on the right then mark that eyebolt as #6. Set this aside.

We are ready for the two remaining **18 ½"** pipes. Glue a union on one end of each pipe. On one of these pipes we need to drill a hole for an eyebolt; measure from the end without the union 10 ½" to drill the hole. Tape the ends to prep for painting white as before on both pipes; once the white paint is dry tape for color coding on the union ends and non-union ends. Paint both ends gray. Thread the eyebolt through the hole on the one you drilled the hole. Make sure the eyebolt is parallel to the pipe. While holding the assembly with the eyebolt towards the ground and the union on the right label the eyebolt #4 then label the pipe as "G". The other pipe will be labeled "D".

The **16 ¼"** pipes are next. On one of the pipes glue the "T" fitting and on the other pipe glue an elbow on one end. So now you have two pipes each with a different fitting on one end. Let's work on the one with the elbow fitting. Two holes will be drilled in this pipe. Drill the center of the first hole 12 ½" from the non-fitting end. **Special note:** Make sure you drill the hole parallel to the elbow. See photo below.



As seen in the photo above drill the second hole in the corner of the elbow, then prep both pipes for painting white by placing masking tape on the end without a fitting ½" from the end. After the white paint dries prep for color coding.

From this photo you can see the color coding on the pipe with the “T” fitting and paint each end, one side red and the other green. Paint the elbow blue on the other pipe. Gray is on both pipes on the ends without any attached fittings. Mark the pipe with the “T” fitting “L” and with the elbow “N”. From the photo above with the elbow fitting insert the eyebolt as seen and label the eyebolt #3 like in the photo. Also insert the second eyebolt like in the photo. (I made the hole in the elbow a little larger and used the washer to make the eyebolt fit better). We will add the ropes later in the assembly.

The next pipe we will work on is the **30”** pipe. Glue a “T” fitting on one side of the pipe and a union on the other side. Paint the pipe white. When dry prep to color code. The union end is painted gray and the “T” fitting is painted red and green just like the one above. Label this pipe “K”.

The last pipe is the **31”** pipe and it will have an elbow glued on one end and a union on the other. This pipe will have 4 holes drilled in it. Drill one in the elbow just like the one above, and the next one 8” from the union end. The next hole will be 13 1/8” from the union end and the last hole is 28” from the union end. **Special note:** All these holes must be aligned and parallel to the elbow. See photo.

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Paint the pipe white then color code the ends after the white paint has dried. Use masking tape to mark where you want to paint. The union end is gray and the elbow end is blue. Insert all the eyebolts as seen in the photo on the previous page. Label this pipe as “M” and **mark the eyebolts #1, #5, and #2 respectfully** with the elbow to your left and open end facing down as shown in the photo on the previous page.

Assemble the frame using the Moon / Earth banner from the Space Rocks Kit using the instructions on how to assemble the frame. Do this outside so you can secure the frame to the ground and attach the guy lines (ropes). Once you have the frame assembled and you get to the point to secure the guy lines this is where you will attach the ropes for the first time and the ropes will be a fixed length and will fit all frames for all banners listed in the instructions. With only one exception, the Sun / Solar System banner, that is where the 10” small bungee cords will be used. Refer to instructions.

Cut about 6 ft of rope and tie a bowline knot on one end. Loop the end of the bowline knot around the tent peg as described in the frame assembly instructions. Tie the other end of the rope to the eyebolt in the elbow using a buntline hitch. Do this for all 4 guy lines. Attach a VELCRO strap on the bowline end of each rope. When the ropes are being stowed butterfly the ropes and secure with the VELCRO straps. When used for an indoor activity leave the lines butterflied and attached to the eyebolt. Cut off excess and burn the ends so they won’t fray. See the following photos.